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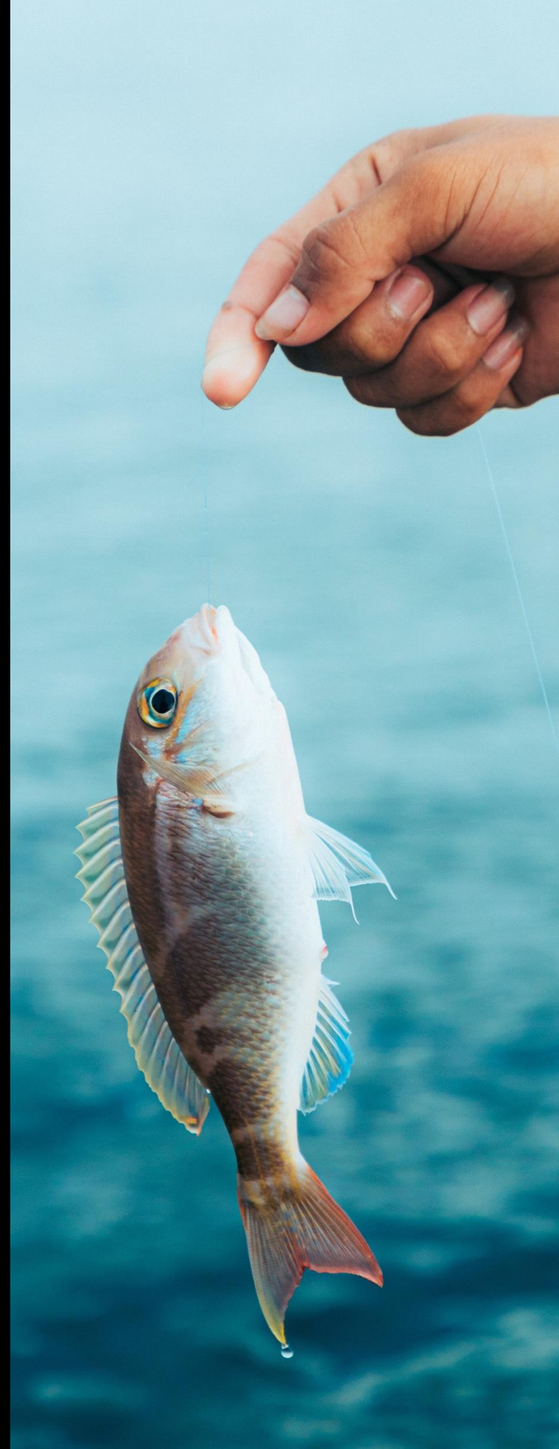
A NOVA STAR SUSTAINABLE SPACE HARBOR INITIATIVE

TURBINES & TRAWLERS: FINDING BALANCE IN WHALEPORT'S RENEWABLE FUTURE

Team 3



MEET OUR TEAM

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Introduction

- Nova Star is expanding from space tourism to building sustainable space harbors on Earth.
- Whaleport, a historic coastal city, will be the first model, powered 100% by renewable energy.

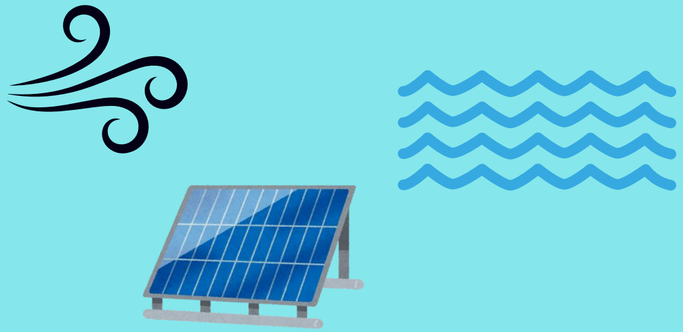
⚠ The plan to install offshore wind turbines has raised concerns from the local fishing community.

Nova Star's Renewable Energy Vision

Goal

- Transition Whaleport to 100% renewable energy in 10 years

Energy Sources



Core values

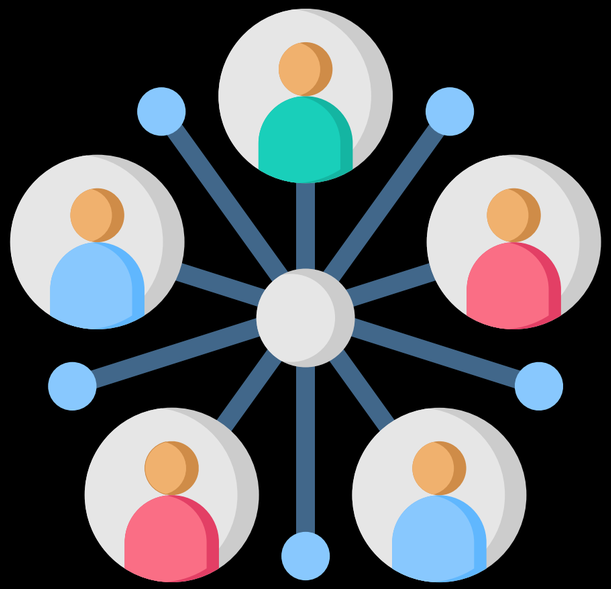
- Sustainability
- Ethical Innovation
- Community Inclusion & Cooperation

"We're not just building a new type of grid.

*We're building **shared ownership, community trust,** and a **global model** of sustainable transformation"*

Aligning with the SDGs

Stakeholder Landscape

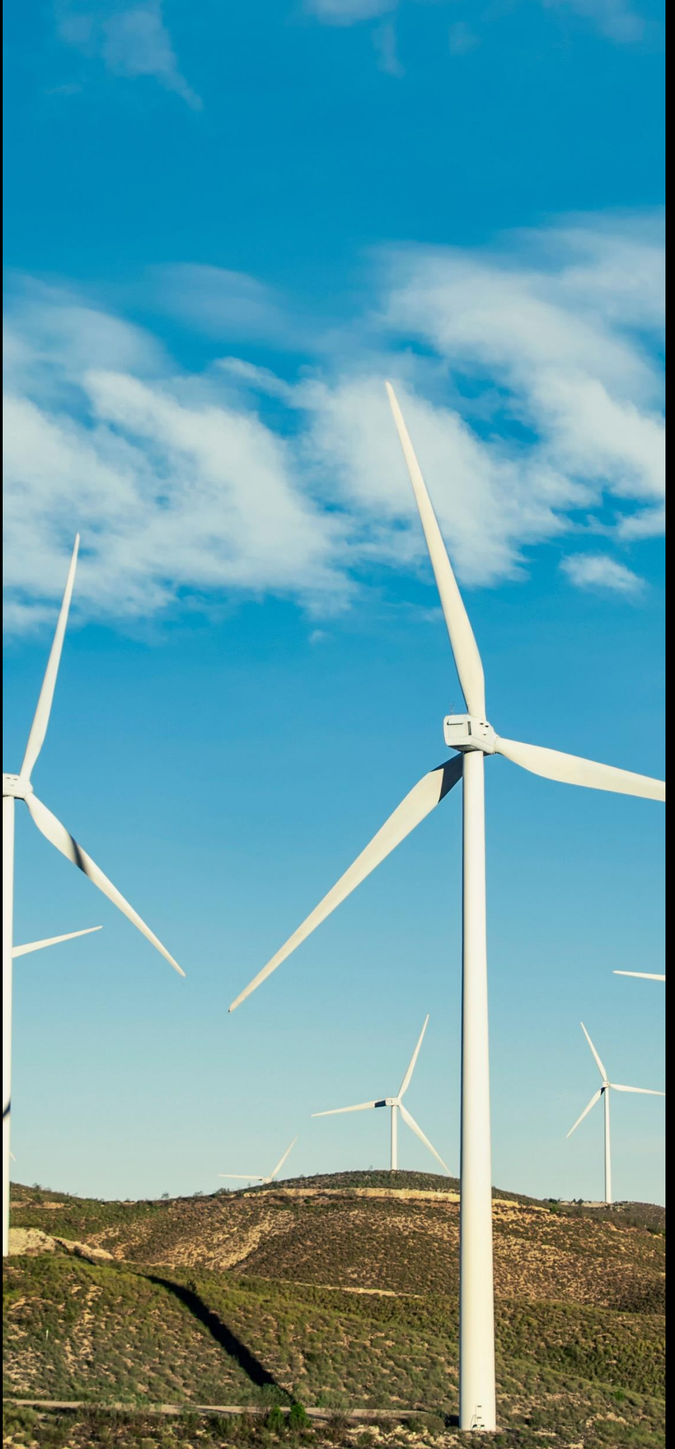


Stakeholder	Interests	Concerns
Nova Star	Innovation, ROI	Delays, backlash
Fishermen	Jobs, rights	Loss of access, culture
Residents	Clean energy, equity	Transparency
NGOs	Conservation	Marine health
Students & Youth	Skills, future careers	Inclusion

Key Data & Trends

- 29% of global electricity is now renewable (IRENA)
- 20% faster adoption in states with RPS (NREL)

- Case models:
- Denmark’s Middelgrunden Wind Co-op
- Burlington, VT — 100% renewable
- Costa Rica’s clean grid
- Whaleport overlap: turbine zones affect 2 major fish routes



Turbines vs. Trawlers

Conflict Zone: Turbine Placement vs. Fishing Grounds

- Planned wind turbines overlap with key commercial fishing zones
- Estimated 10%+ reduction in catch during construction, possibly more long-term

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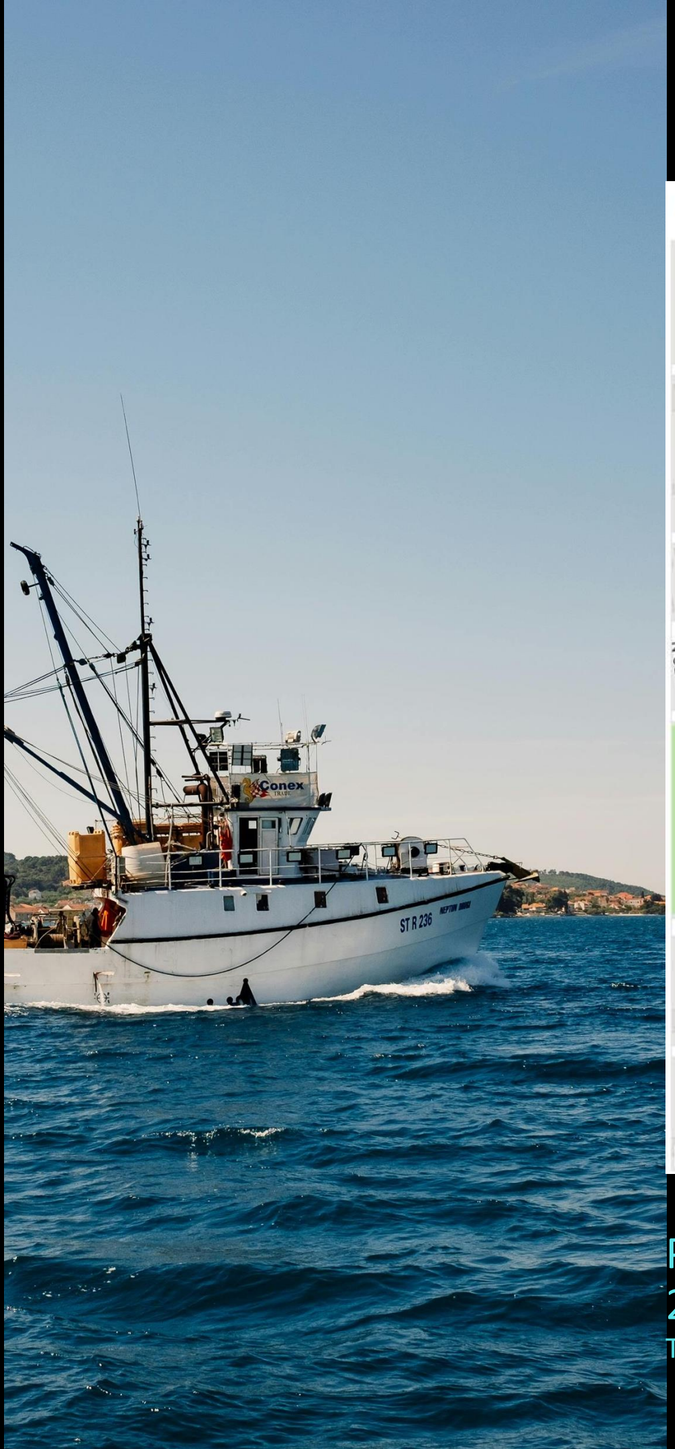
Fishing Community Concerns

- Habitat disruption and potential collapse of localized fish stocks
- Noise interference affecting fish communication and migration
- Cultural identity and generational livelihoods at stake
- Fear of restricted access to historical fishing grounds

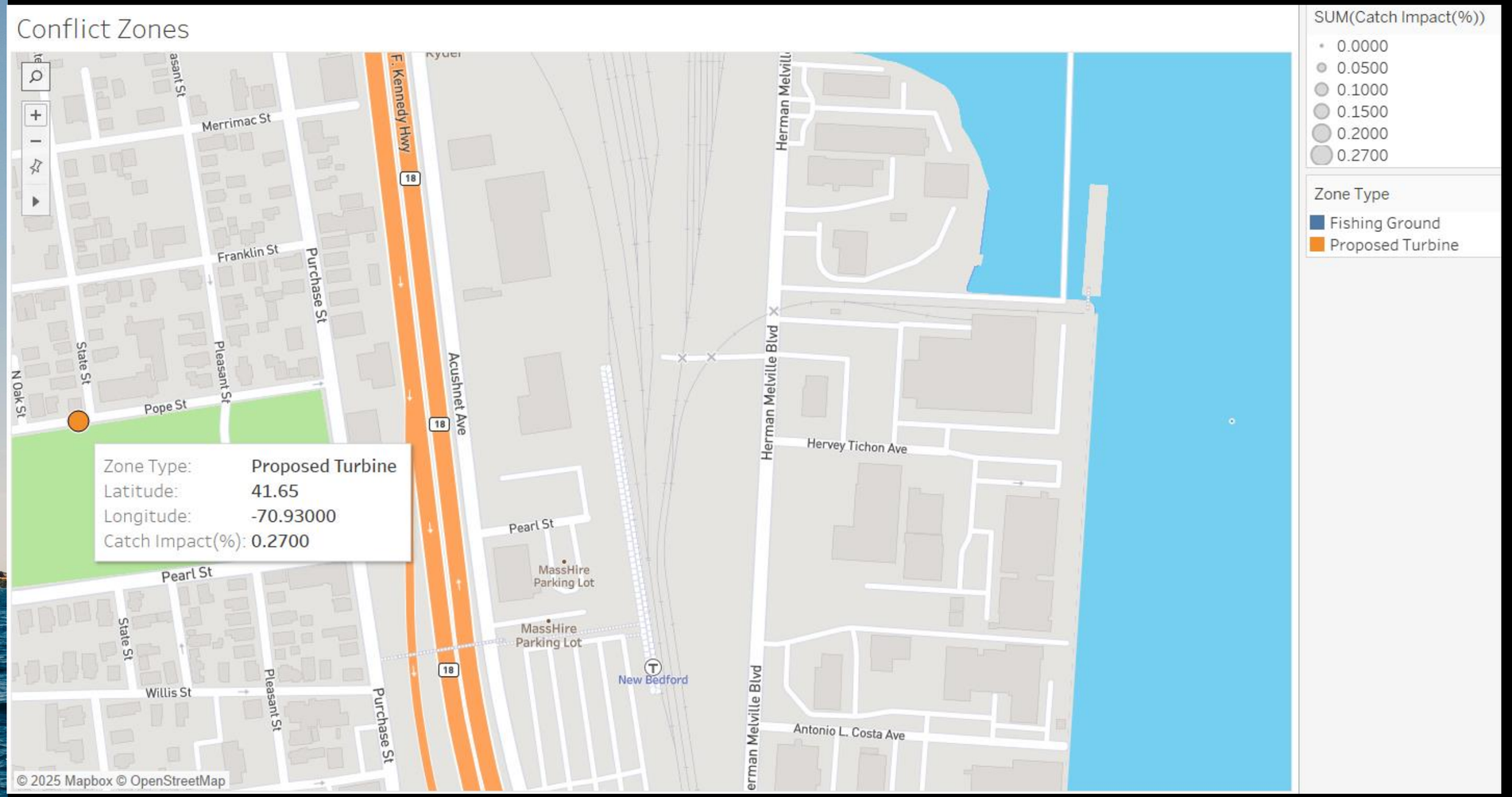
Our Role: Marine Biodiversity Protection

- Pre-installation Impact Assessments
- Species distribution mapping & seasonal timing to avoid breeding seasons
- Noise reduction tech
- Engage fishermen in collaborative marine zoning councils



... Turbines vs. Trawlers

Conflict Zones



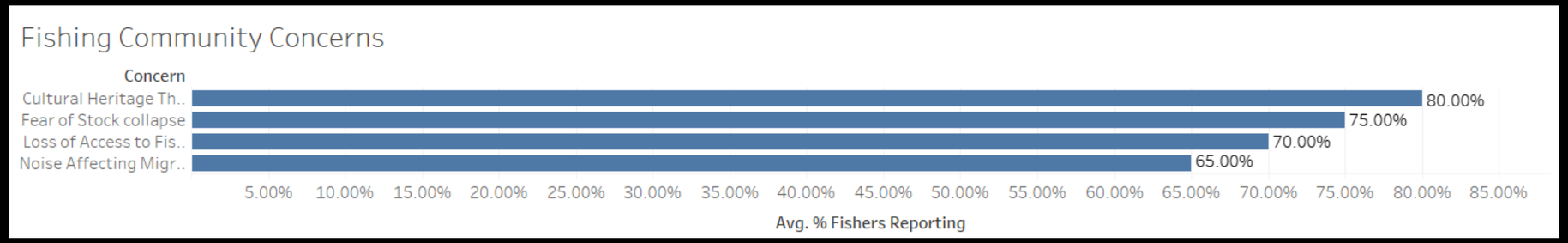
SUM(Catch Impact(%))
0.0000
0.0500
0.1000
0.1500
0.2000
0.2700

Zone Type
Fishing Ground
Proposed Turbine

Proposed turbine placements overlap key fishing grounds, with projected catch losses up to 27%. This visualization highlights areas where marine zoning conflict is most acute.

These are reasonable mock coordinates for offshore New Bedford (Whaleport proxy)

… Turbines vs. Trawlers



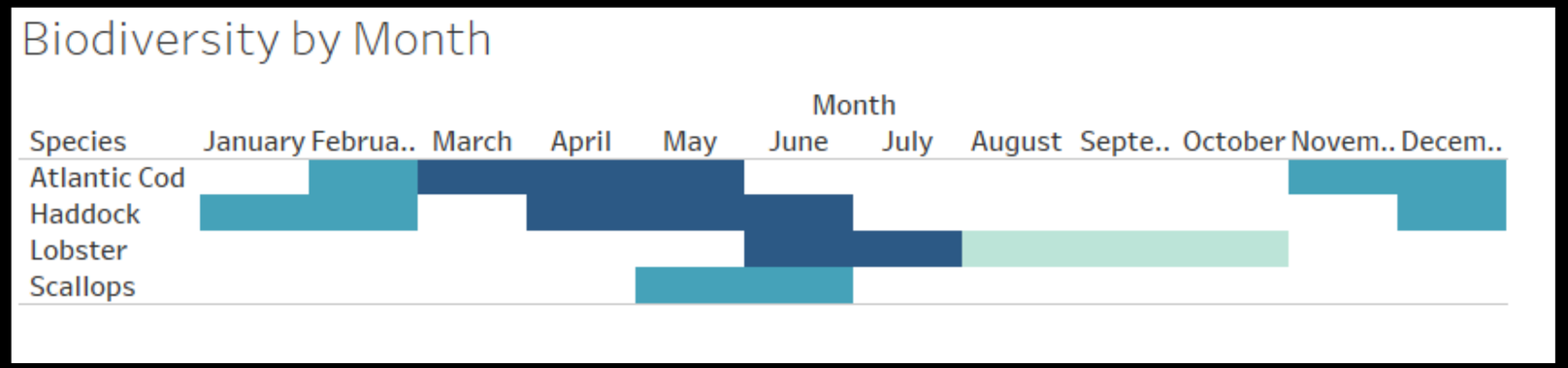
1. Cultural identity is the #1 concern (80%)
This shows that the conflict isn't just about jobs — it's about heritage, family legacies, and way of life.

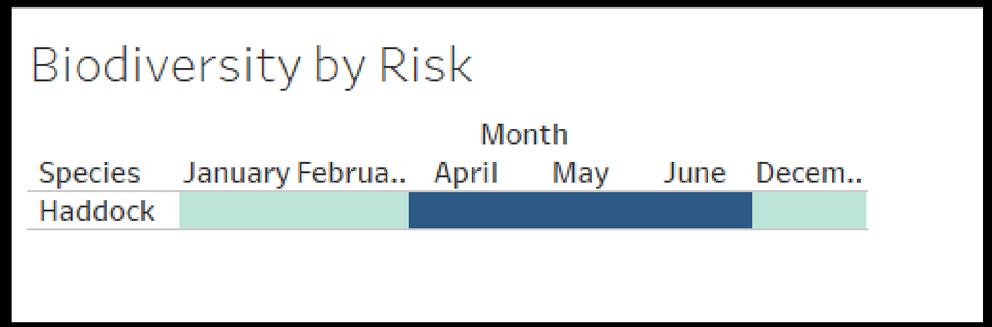
2. Fear of stock collapse is high (75%)
Fishers are deeply worried that turbines will disrupt spawning grounds, migration routes, or ecosystems — confirming the need for biodiversity mapping.

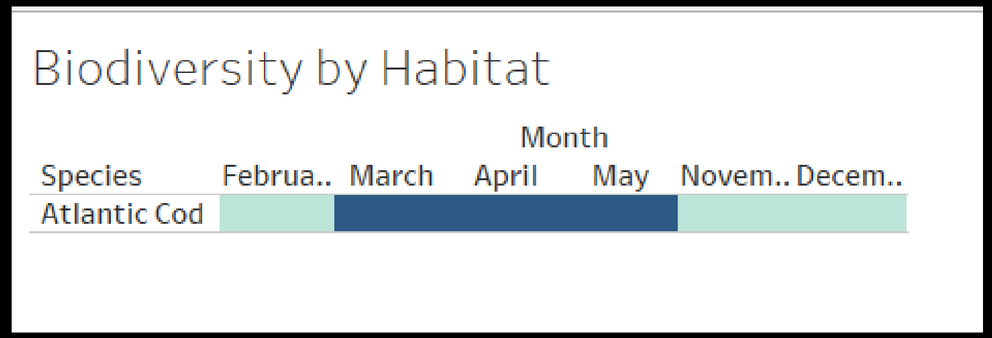
3. Loss of access is just as urgent (70%)
Even if fish stocks survive, fishers fear they'll be pushed out of traditional zones — this is where zoning policy matters.

4. Noise concerns are significant (65%)
This shows that people understand how underwater noise can disorient fish — and this group wants tech-based mitigation.

... Turbines vs. Trawlers







Atlantic Cod has high Sensistivity from March to May = Key Period to avoid seabed disruption

Migratory Species(Haddock) require longer seasonal protection

Benthic Shelf Zones (for the Atlantic Cod) should be off limits in Q2 construction phases

Our 3-Pronged Solution for Whaleport

Balancing Marine Protection, Community Equity & Clean Energy

Community-Owned Energy Co-Ops

- Fishermen become co-owners of offshore turbines
  - Profit-sharing
  - Voting rights
  - Planning Influence.
- Empowers fishermen
  - Participate in marine spatial planning,
  - Building ecological ownership

Blue-Tech Education Hub

- Establish Training Center
- Digital and Marine tech jobs
  - Turbine maintenance
  - Marine robotics
  - GIS zoning tools.
- Trains next generation of AI use
  - Ecosystem monitoring
  - Sustainable Zoning

Eco-Marine Zoning + Harbor Councils

- Use Adaptive Zoning + Seasonal Mapping with shared governance councils
  - (Fishermen + Marine biologists) to guide turbine placement.
- Allows protection of
  - Breeding seasons
  - Maintain fish stocks
  - Monitor biodiversity hotspots.

Technical Integration Plan

- **Smart Site Selection:** Avoid critical habitats using EIAs + marine biologist input
- **Eco-Friendly Construction:** Build outside marine breeding seasons; reduce noise with mitigation tech
- **Monitoring & Compliance:** Use sensors to track biodiversity + water quality; adapt in real-time
- **Inspired by Success:**

1. Block Island: Protected fish with adaptive ops
2. Hornsea One: Reduced seabed disruption with trenching tech
3. Cape Wind: Moved turbines after wildlife review

Timeline & Rollout

Phase 1 (Year 1):
Community forums: “Turbines & Toast”
Environmental impact assessments
Pilot co-op legal model

Phase 2 (Years 2–3):
Blue-tech training programs
Install initial wind units + GIS tracking

Phase 3 (Year 4+):
Scale turbines
Public dashboards
Global case study release

Global Relevance

Leading By Example

Replicable Model

Present a Standard

First coastal city
- Fully powered by Wind, Solar, Tidal

Measurable Case Study for renewable energy transformation
- International cities
- Future Projects

Ecological Revitalization

Boost Coastal Resilience

Turbines act as artificial reefs
- Promote marine life
- Insights for coastal cities

Integrate nature-based solutions with human infrastructure

Supports habitat diversity

Ethical Engagement

Community-first

Ethical outreach solutions
- Multilingual, cultural mapping

Fishermen Integration
- Co-owners, co-decision makers

Proactive Ethics Model
- Early Engagement
- Transparent Compensation
- Inclusive Training

Source - NewBedFordLight

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