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# **UNOLS and Ocean Leadership**

Access to the Sea: Evolving the Nation's Ocean  
“Laboratory” as part of the Ocean Research System

Sherri W. Goodman

President & CEO

*December 4, 2015*

# NO PAIN... NO GAIN

## Knorr/Melville Conversion Project



R/V Knorr Characteristics  
Before and After Refit

	Former	New	Change
Length Overall (feet)	245	279	+34
Beam (feet)	46	46	
Draft (feet)	16	15.5	-0.5
Full Load Displacement (tons)	2,415	2,670	+255
Propulsion Horsepower	2,800	3,000	+200
Cruising Speed (knots)	10	12	+2
Maximum Speed (knots)	12	14	+2
Fuel Capacity (gals)	122,000	155,000	+33,000
Cruising Range (miles)	10,000	12,000	+2,000
Crew	25	24	-1
Scientists	24	34	+10
Lab Space (sq. ft.)	1,540	3,130	+1,590
Scientific Storage (sq. ft.)	1,020	1,776	+756
Main Deck Working Area (sq. ft.)	3,424	3,764	+340

# A Little Bit Of History...

Cruise Tracks 1992 - 1997

- R/V Knorr
- R/V Melville



Ocean Leadership and UNOLS share strong ties to the ocean science community with a broad overlap in our member institutions.



# **FORCES SHAPING OCEANOGRAPHIC RESEARCH**



**WE WENT FROM THE  
HUNT FOR RED OCTOBER**

An aerial photograph of a coastline. The water is a mix of deep blue, turquoise, and a large, irregular area of reddish-brown, indicating a red tide bloom. The beach is sandy and runs along the right side of the frame. The land beyond the beach is dark and appears to be a forested area. The text "TO THE HUNT FOR RED TIDES" is overlaid in white, bold, sans-serif font in the center of the image.

# TO THE HUNT FOR RED TIDES



**NATIONAL SECURITY THEN**



**NATIONAL SECURITY NOW**

**NATIONAL SECURITY NOW**





CAUGHT ON  
BOAT  
**GREYHOUND II**  
KEY WEST FLA.

GOING FISHING?  
YOU CAN BUY  
YOUR BEER RIGHT HERE

**TROPHY FISHING THEN**

*Capt. John's*  
**GREYHOUND V**  
PH. 296-5139 or 296-5923

**DAY**  
LEAVES 11 AM  
*Capt.*  
**GREY**  
PH 296-5

**TROPHY FISHING NOW**



**CA JOHN**

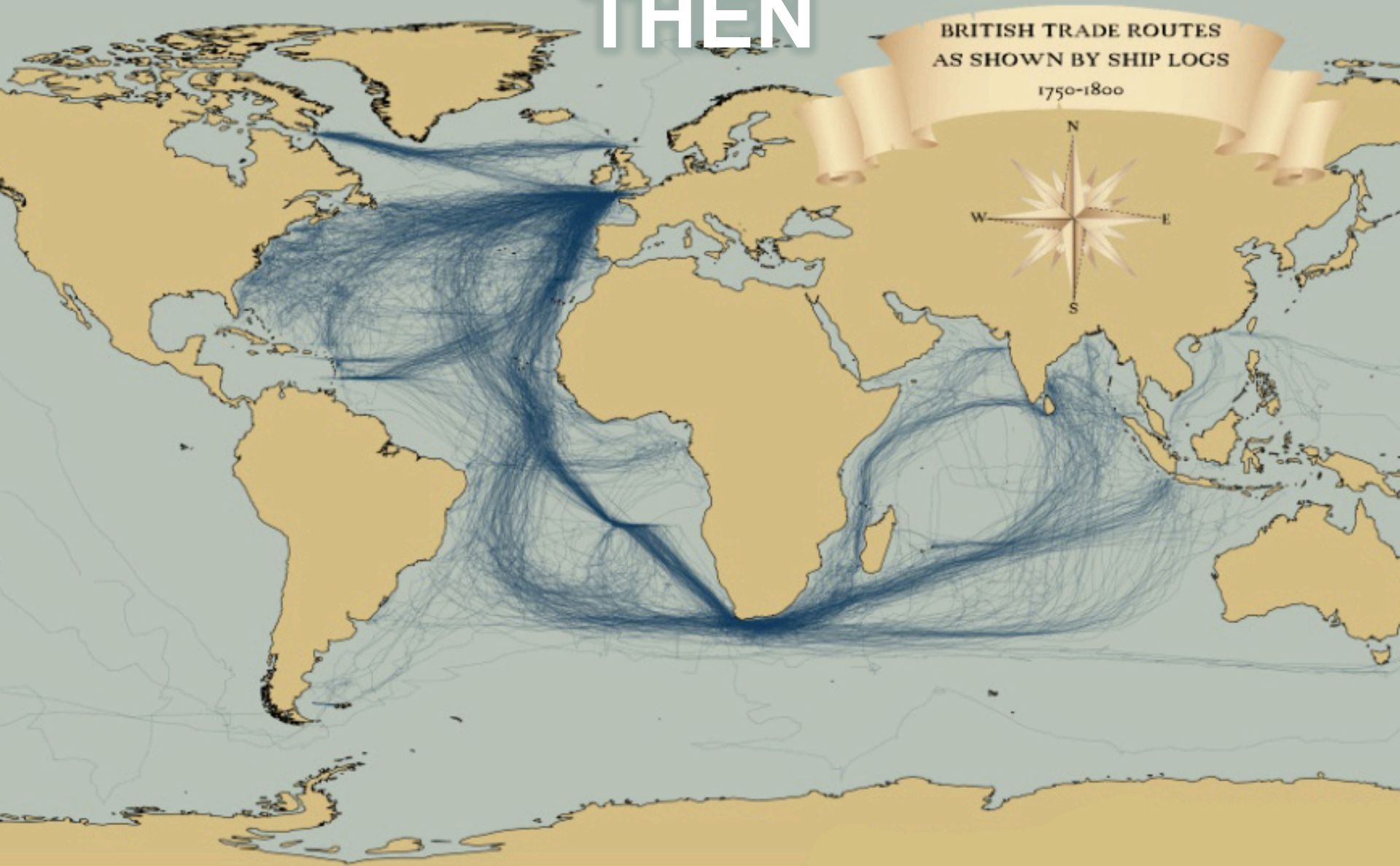


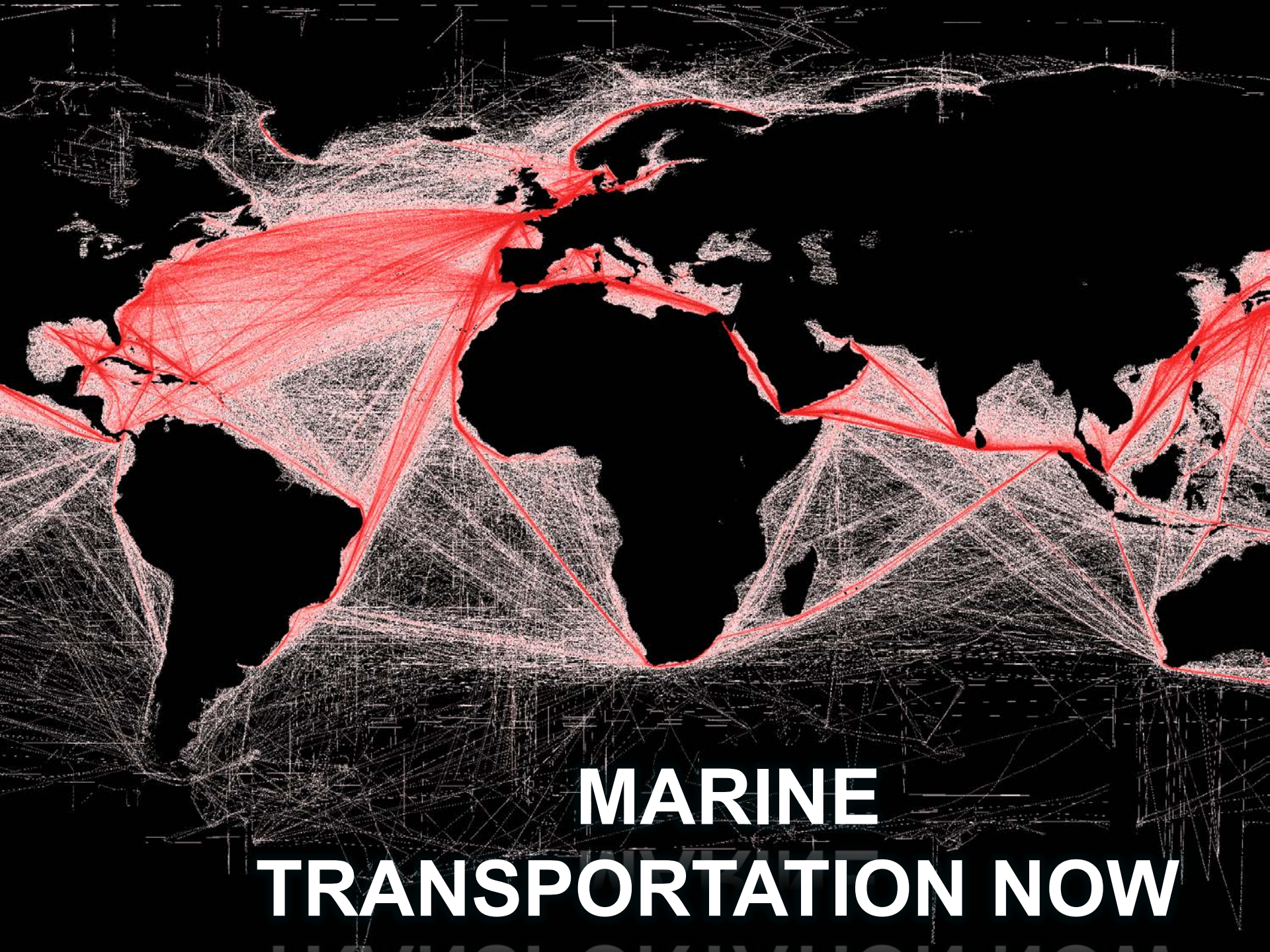
**COMMERCIAL FISHING THEN**



**COMMERCIAL FISHING NOW**

# MARINE TRANSPORTATION THEN





**MARINE  
TRANSPORTATION NOW**



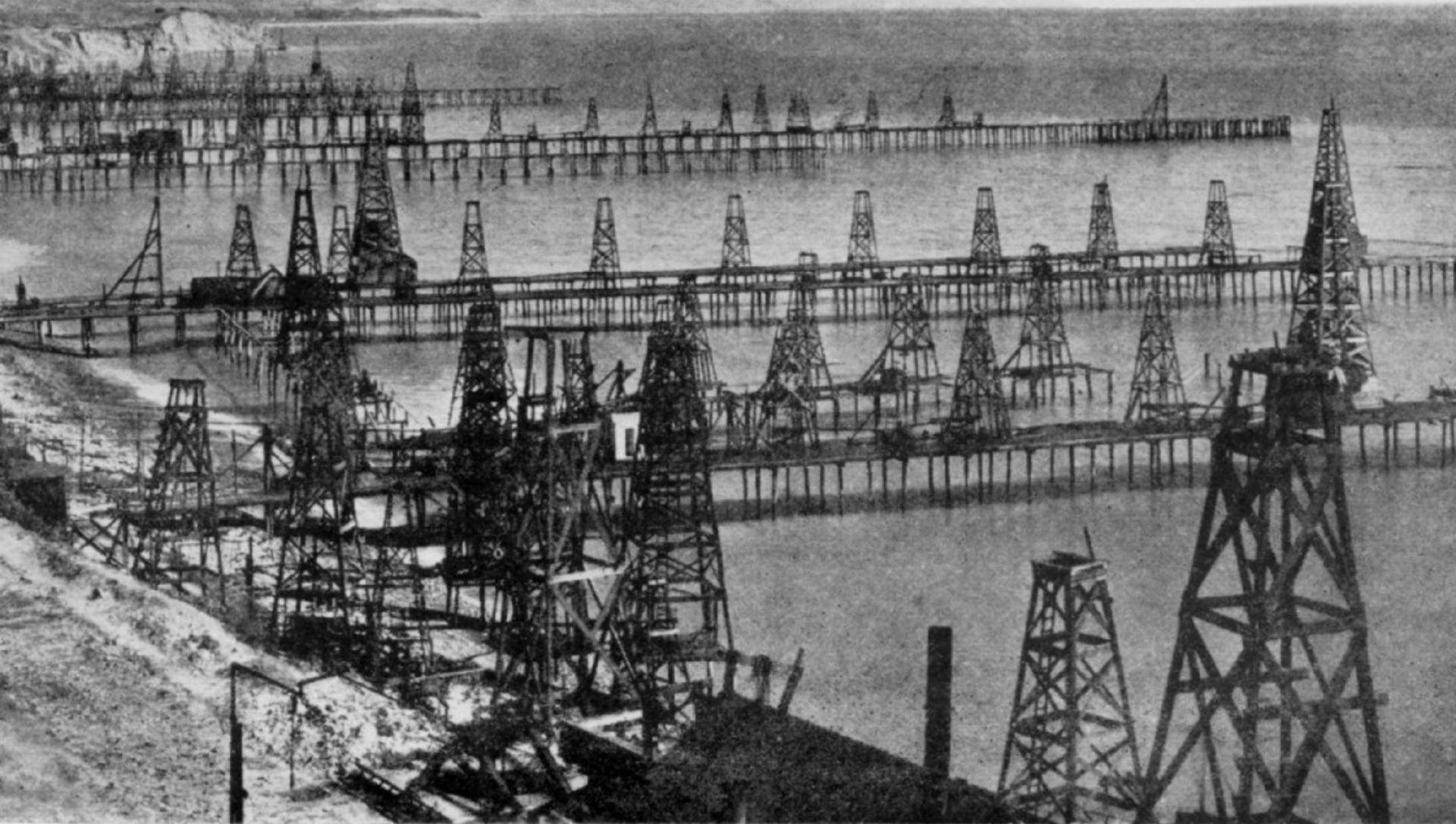
# COASTAL RESILIENCE THEN

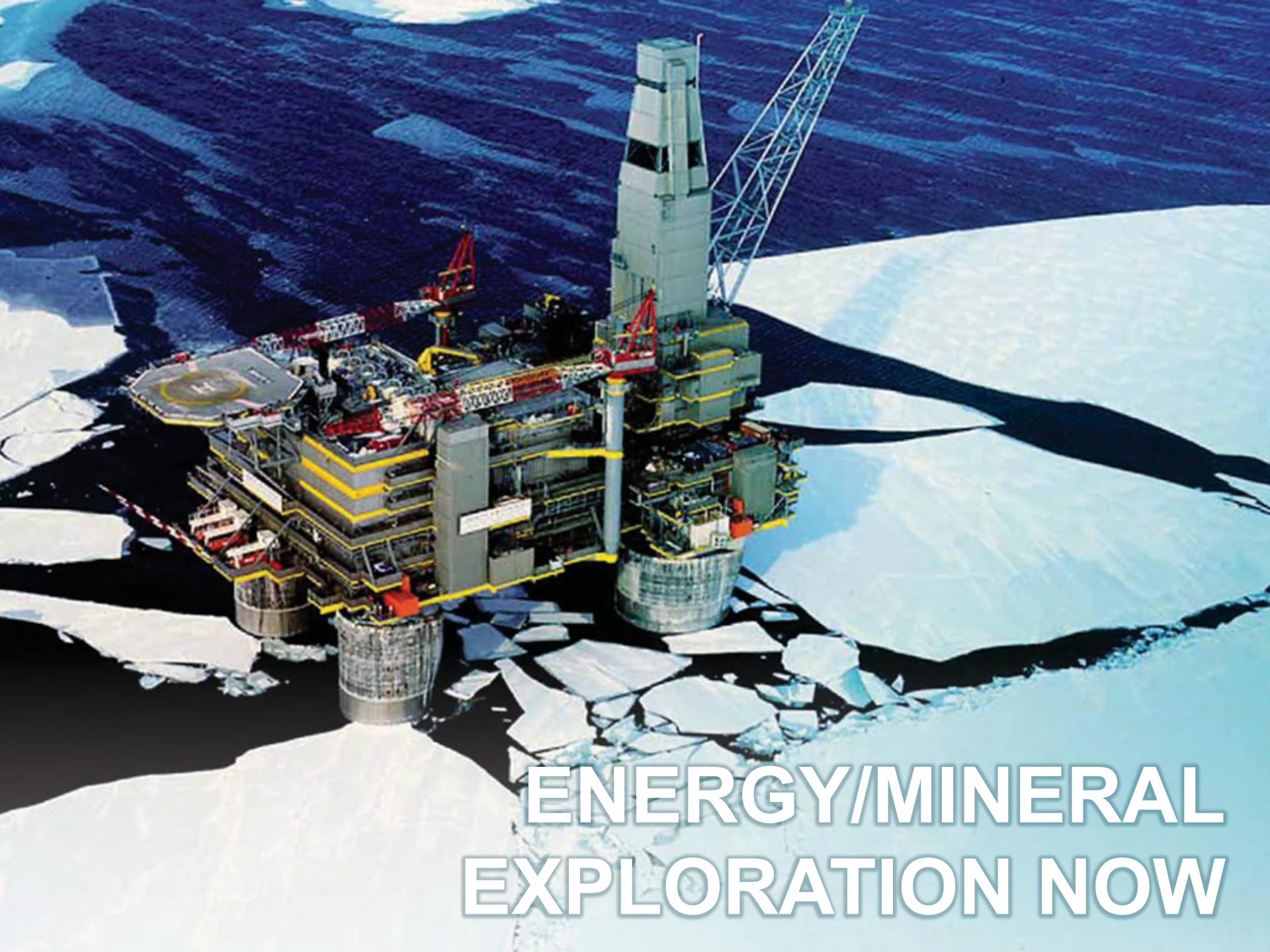


# COASTAL RESILIENCE NOW



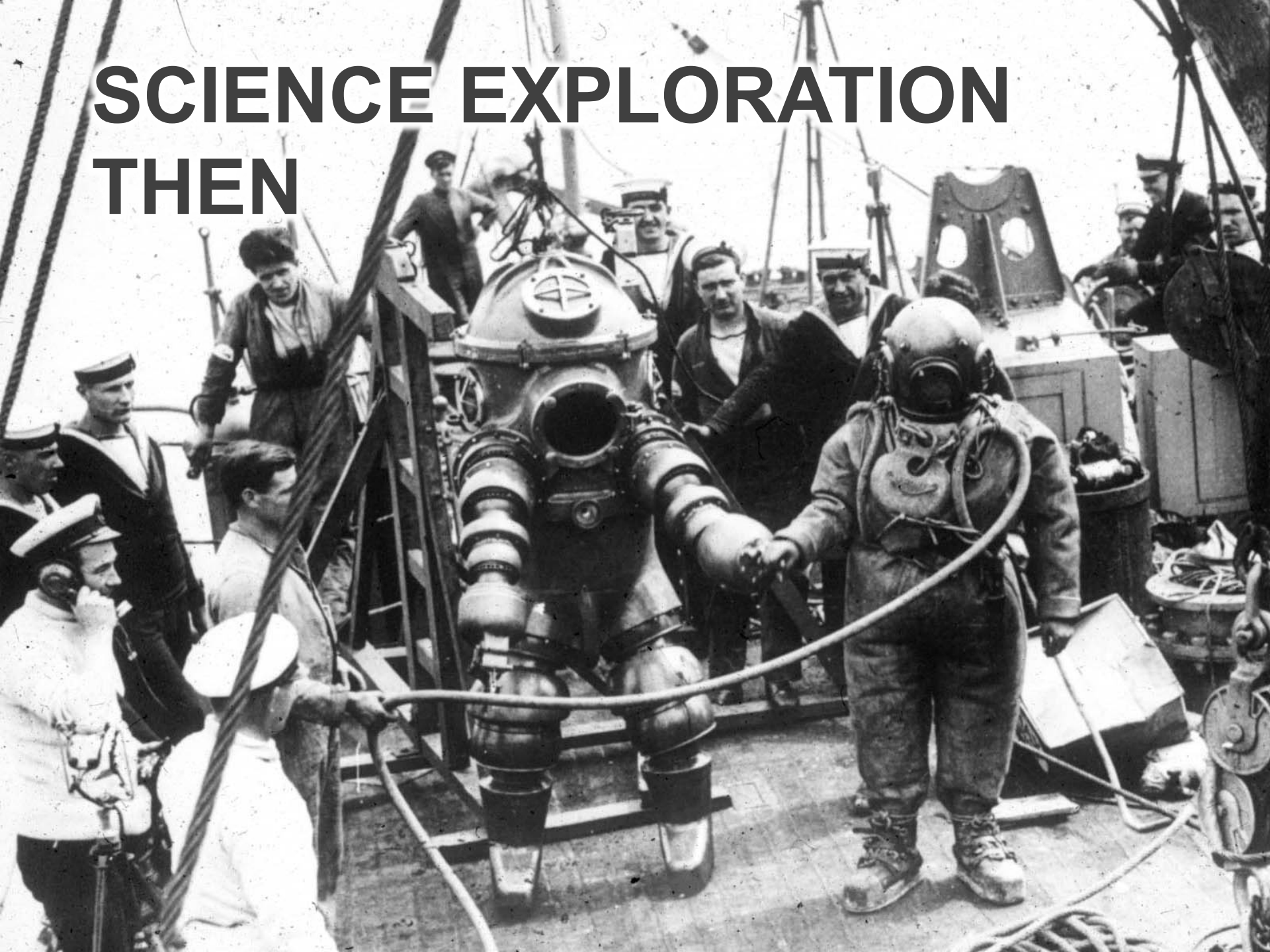
# ENERGY/MINERAL EXPLORATION THEN





**ENERGY/MINERAL  
EXPLORATION NOW**

# SCIENCE EXPLORATION THEN



# SCIENCE EXPLORATION NOW



# EMERGING THREATS

EMERGING THREATS





**OVERFISHING**

# PIRATE FISHING



An aerial photograph showing a large, dark green algal bloom in a body of water, likely a bay or estuary. The bloom is concentrated in the lower right portion of the image, extending from the shoreline. The surrounding land is a patchwork of agricultural fields in various shades of brown, tan, and green. The text "ALGAL BLOOMS / DEAD ZONES" is overlaid in white, bold, sans-serif font at the bottom center of the image.

**ALGAL BLOOMS /  
DEAD ZONES**



**ACIDIFICATION**



# MARINE DEBRIS





**INVASIVE SPECIES**

# THE ARCTIC

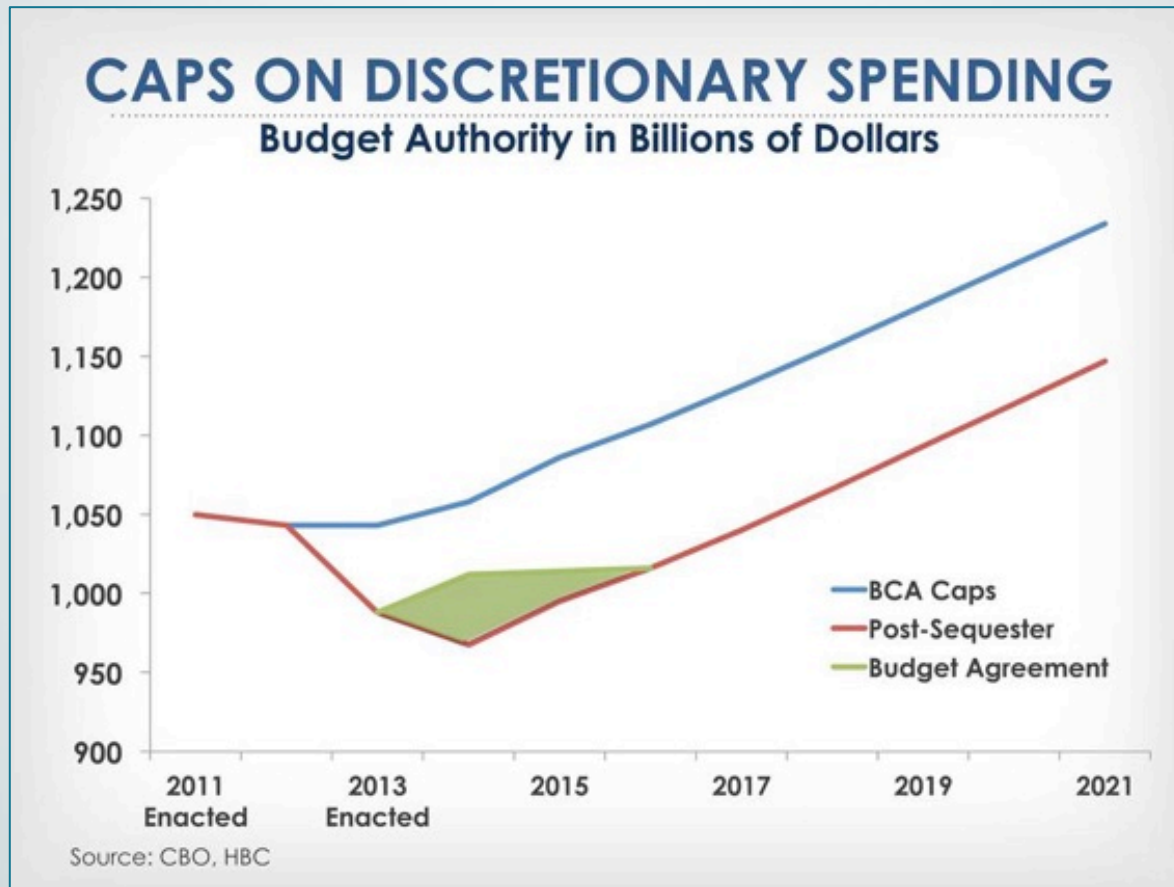


# CURRENT CHALLENGES



# Downward Funding Pressure

## Budget Control Act (sequestration)

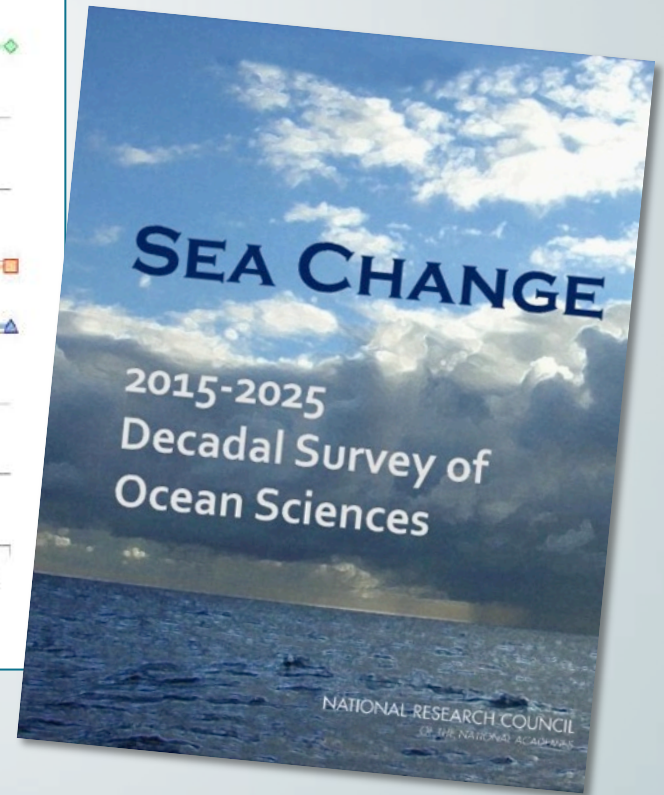
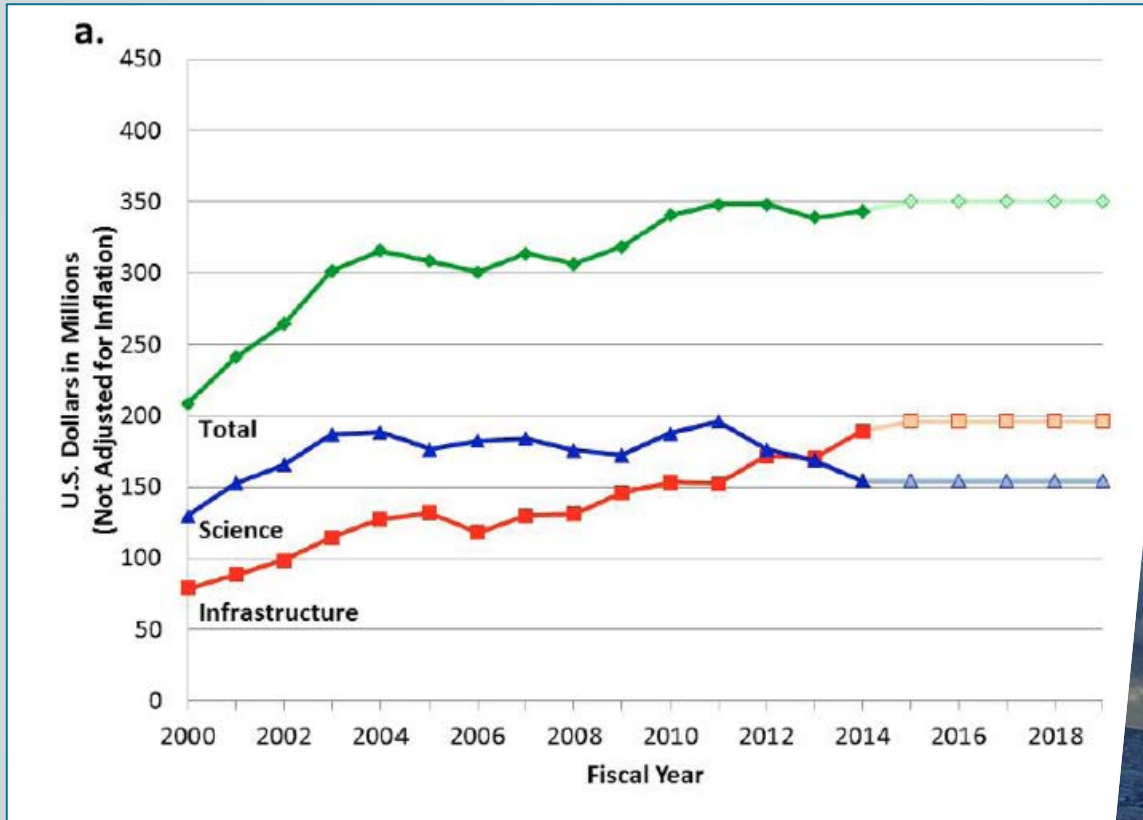




# Politicization of Science

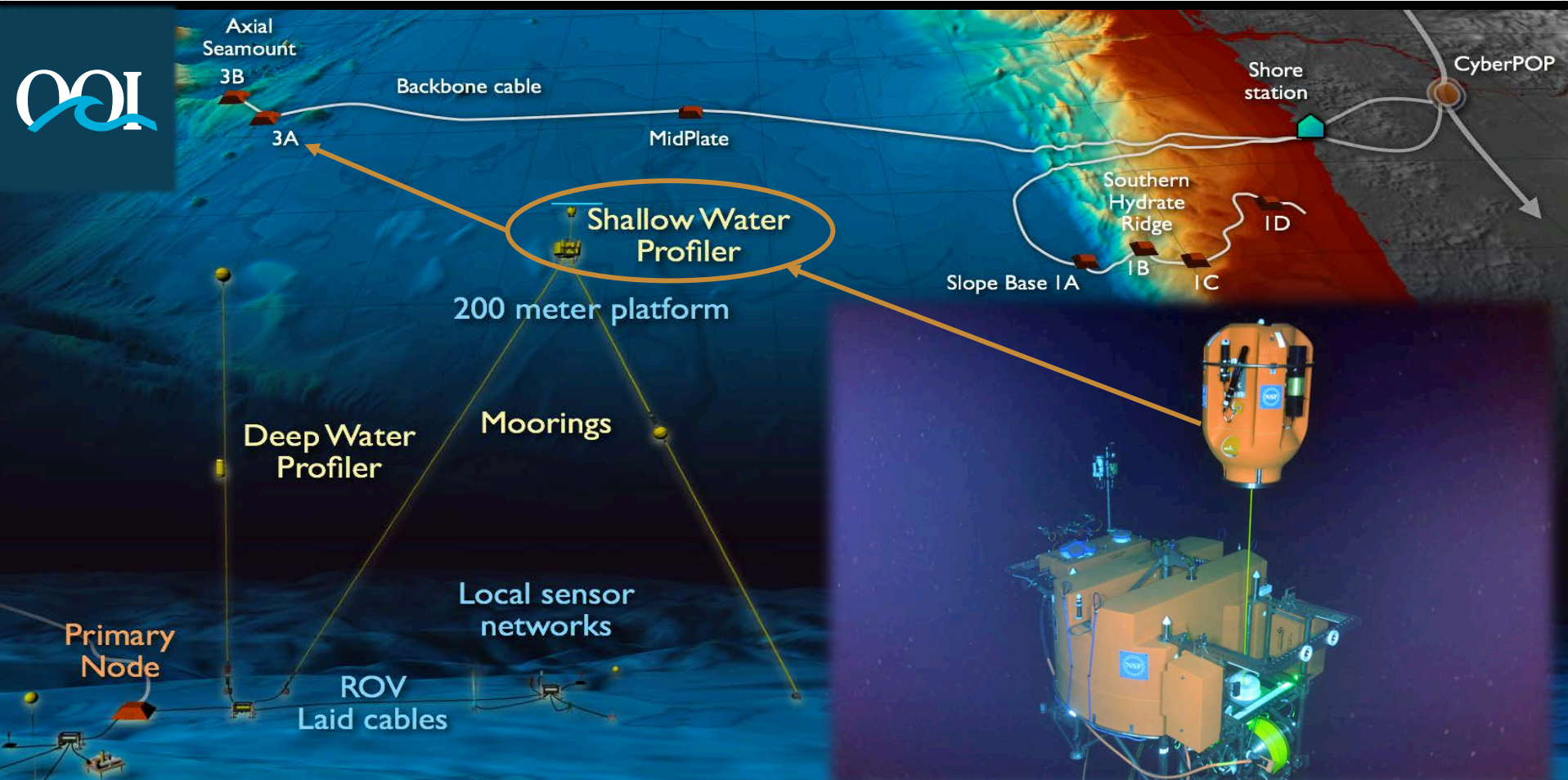
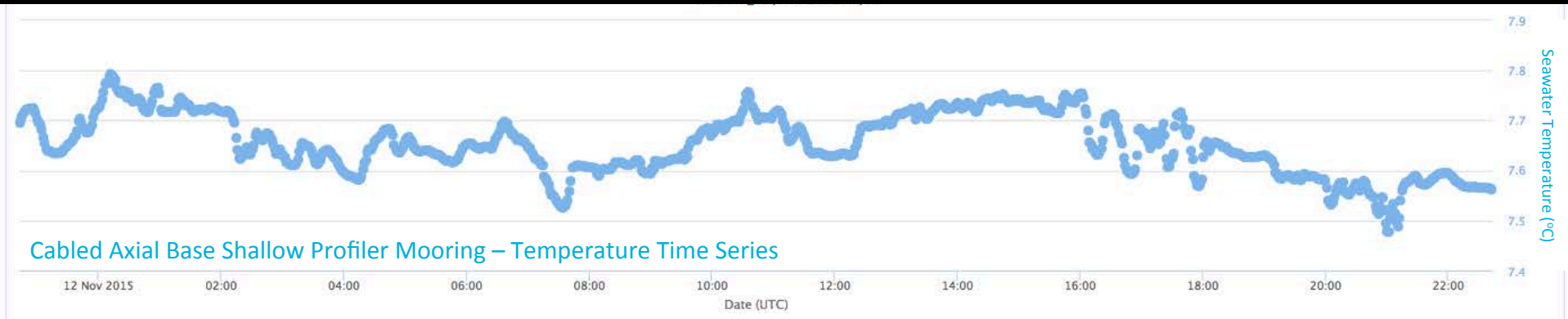
- Value & credibility of scientists in question
- Peer review process under attack
- Climate skeptics
- Congressionally proposed cuts to NSF GEO, NASA Earth Science, & NOAA Climate

# Ocean Science Decadal Survey





# OOI Cyberinfrastructure Enables Ocean Data Access



# OOI Construction and Data Status Update: Dec. 2, 2015

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Fall 2015 marked the completion of the build and deployment phase of all OOI marine infrastructure, including 7 arrays, 59 instrumented sites, 36 mobile assets, and over 800 instruments. The OOI Cyberinfrastructure system handles observatory mission command and control, management of data streams, and facilitates data download via an online user interface. The COL team has been focused on readying this CI for public access.

Cyberinfrastructure is undergoing a large software update that is currently in process. The software update is critical for access, as it provides essential bug fixes in data processing identified during internal system testing, as well as key enhancements to the user interface. The OOI CI system will be made available to the public on Monday, December 7. Expanded details about the specific roll-out schedule will also be posted on the OOI website early next week.

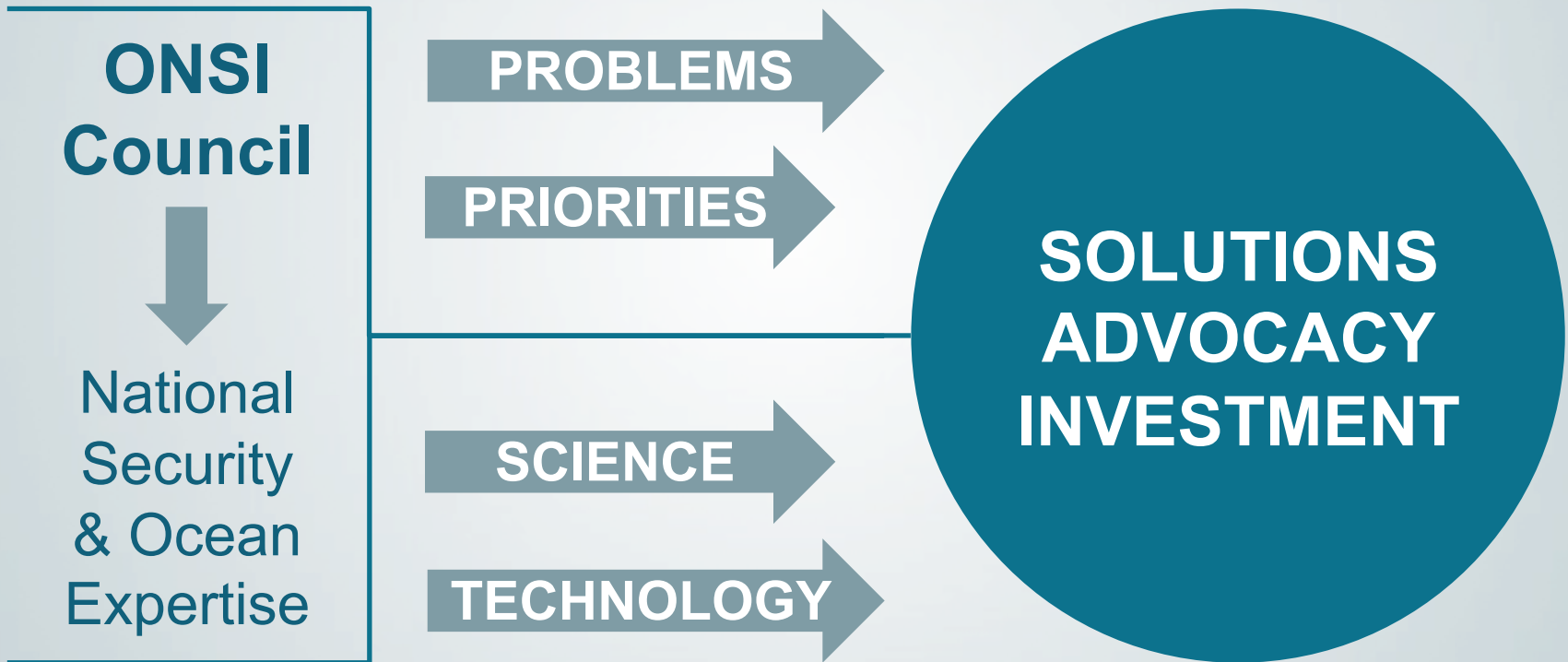
For specific questions, please contact the OOI help desk –  
**[help@oceanobservatories.org](mailto:help@oceanobservatories.org)**

# Why the Oceans and National Security Initiative (ONSI)?

Lead the National Security community to address Ocean-related issues with Ocean science and technology



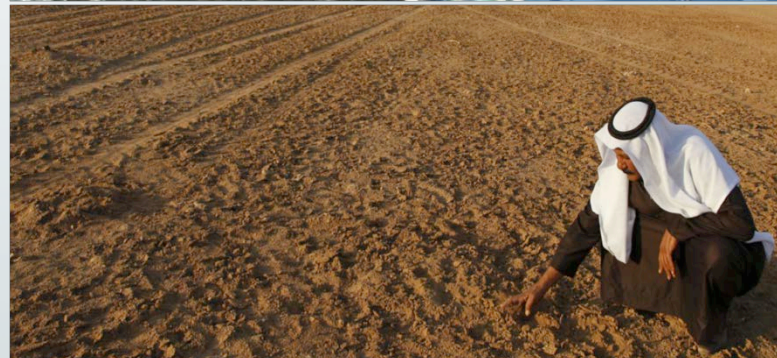
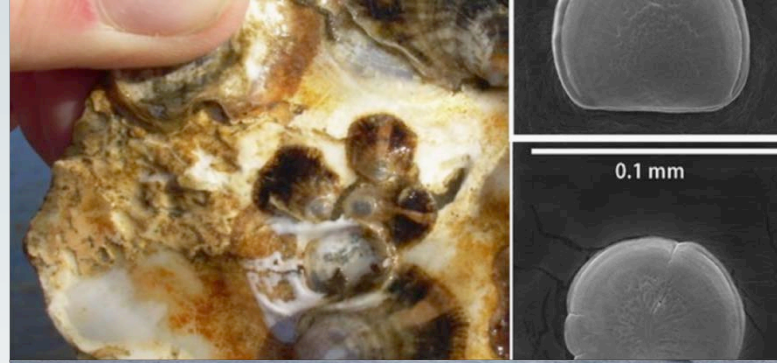
# How?



Quarterly Meetings → OL Member Input → Interim Findings → Annual/Final Report

# What?

## Year 1: Food Security





# THE ATLANTIC: OUR SHARED RESOURCE

*Making the Vision Reality*

## Galway Statement on Atlantic Ocean Cooperation



- The 'Galway Statement on Atlantic Ocean Cooperation' was signed on 24 May 2013 by representatives of the European Union, the United States and Canada who agreed to join forces on Atlantic Ocean Research
- The goal is to better understand the Atlantic Ocean and promote the sustainable management of its resources



# THE ATLANTIC: OUR SHARED RESOURCE

*Making the Vision Reality*

## Galway Statement Implementation Working Groups - Priority Areas of Cooperation

- Formal trilateral working groups have been established to advance scientific planning under agreed upon areas of priority research:
  - Aquaculture
  - Oceans Literacy
  - Atlantic Seabed Mapping (***UNOLS Opportunity***)
- Establishment of formal working groups in remaining areas of research cooperation are being explored

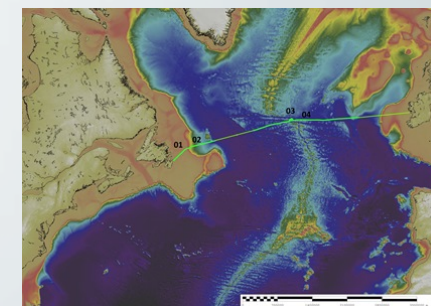
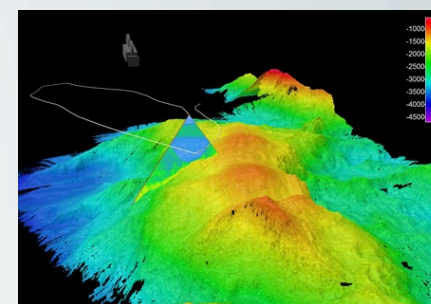


# THE ATLANTIC: OUR SHARED RESOURCE

*Making the Vision Reality*

## Atlantic Seabed Mapping Working Group – Progress

- Draft Terms of Reference developed for review
- White Papers developed:
  - *Improving, Sharing, Discovery & Access of Seafloor Data in the North Atlantic*
  - *Technology: Methods for Collecting Data*
- Two opportunistic trilateral surveys completed:
  - *Celtic Explorer* Atlantic Transect from St. John's, Newfoundland to Galway, Ireland (June 1-8, 2015) **Video – <https://vimeo.com/133034327>**
  - *CCG Louis St. Laurent* Transect from Halifax, Nova Scotia to Tromsø, Norway (July 23- August 3, 2015)





# Tell the story of Ocean Leadership & UNOLS

- Ocean Health
- National Security
- Climate Change

*The enduring value  
of ocean research*





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