



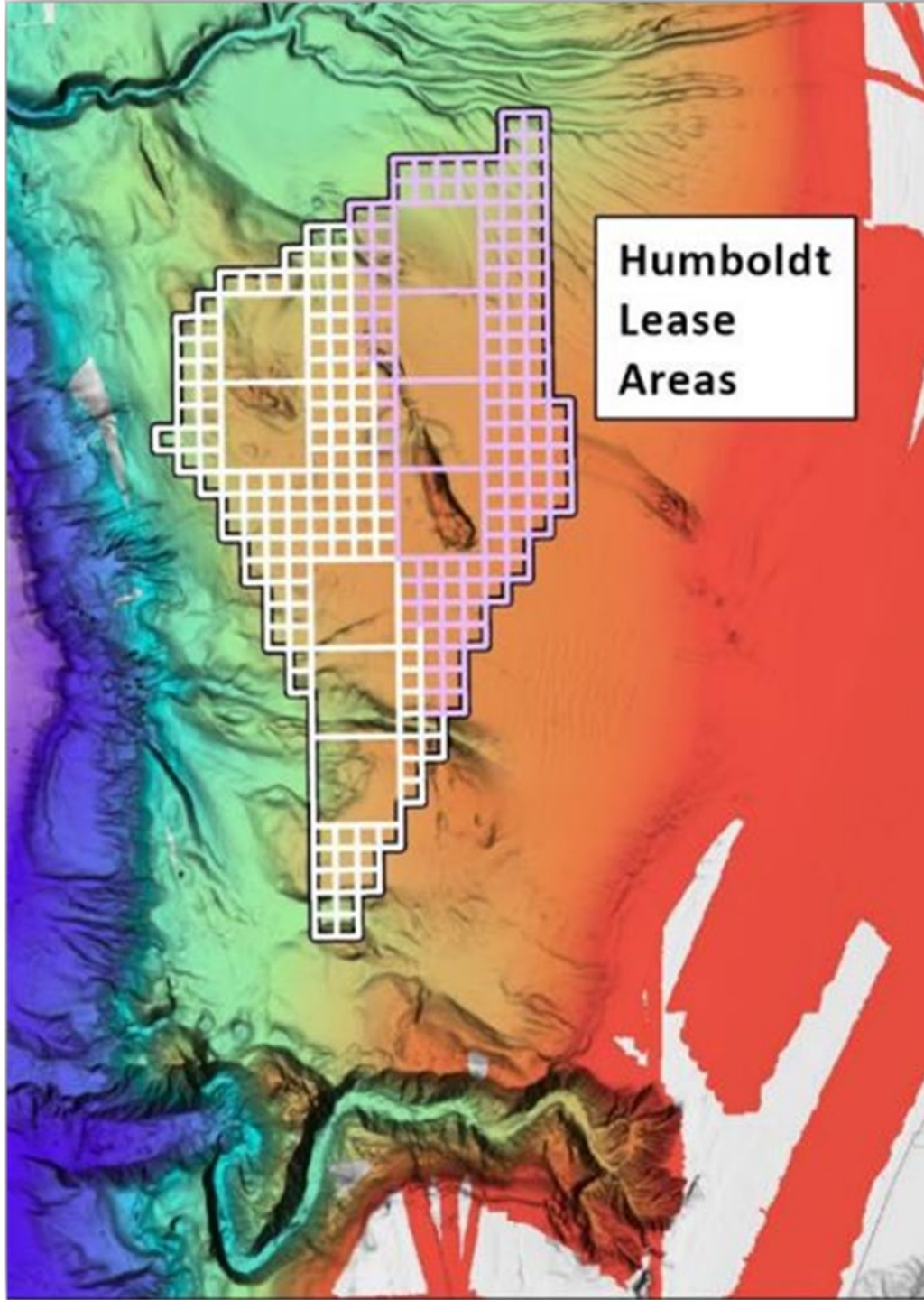
EXPRESS

*Expanding Pacific Exploration and Research of
Submerged Systems*

Jeremy Potter

On behalf of partners at NOAA, USGS, MBARI, BOEM





Outline

What is EXPRESS?

Why is it relevant?

What has been done?

How do I find the data?

Where did the work occur?

What difference does a day make?

Who is responsible?

WHAT IS EXPRESS?

Purpose

Improved understanding of living marine resources

Potential offshore energy and mineral resource development

Coastal/submerged hazard mapping and assessment

Participating Orgs

NOAA 15

USGS 4

BOEM 2

MBARI 1

BSEE - 1*

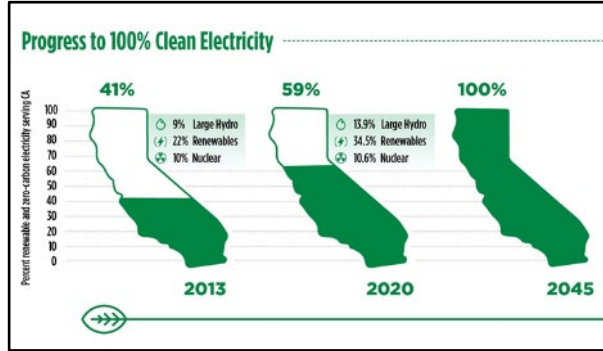
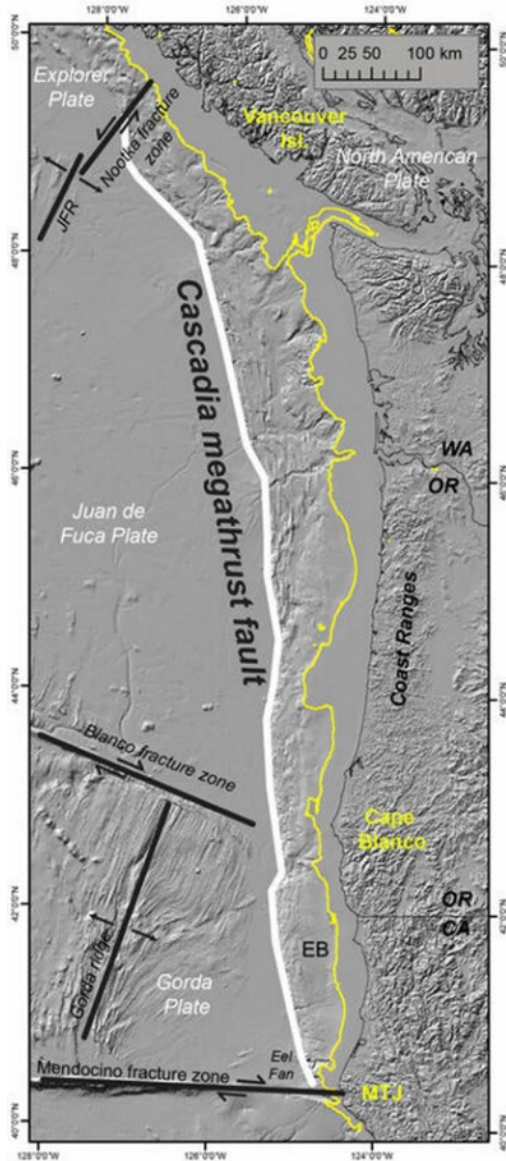
Motivation

Limited resources (e.g., ships and funding)

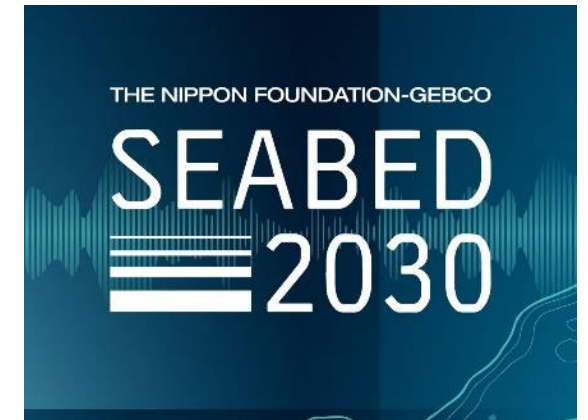
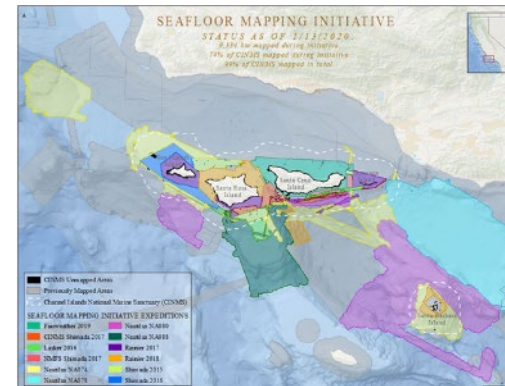
Recognized need for better regional coordination

Overlapping data and information needs

Nothing to lose



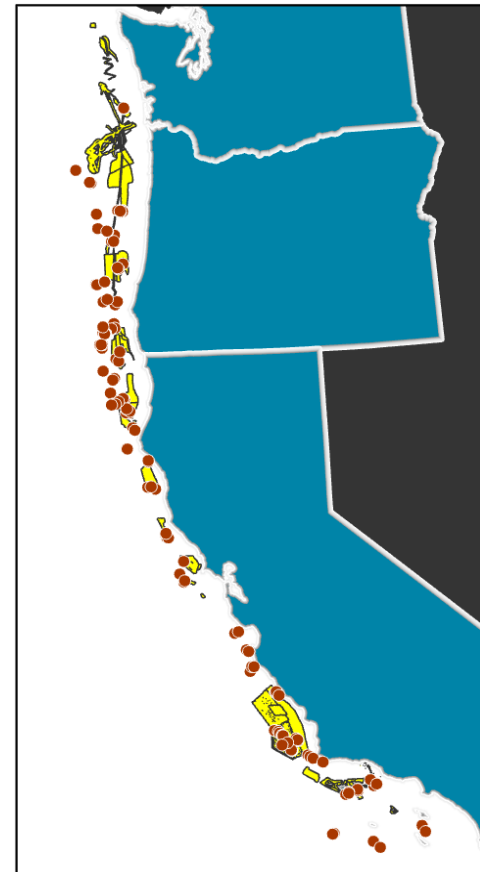
RELEVANCE



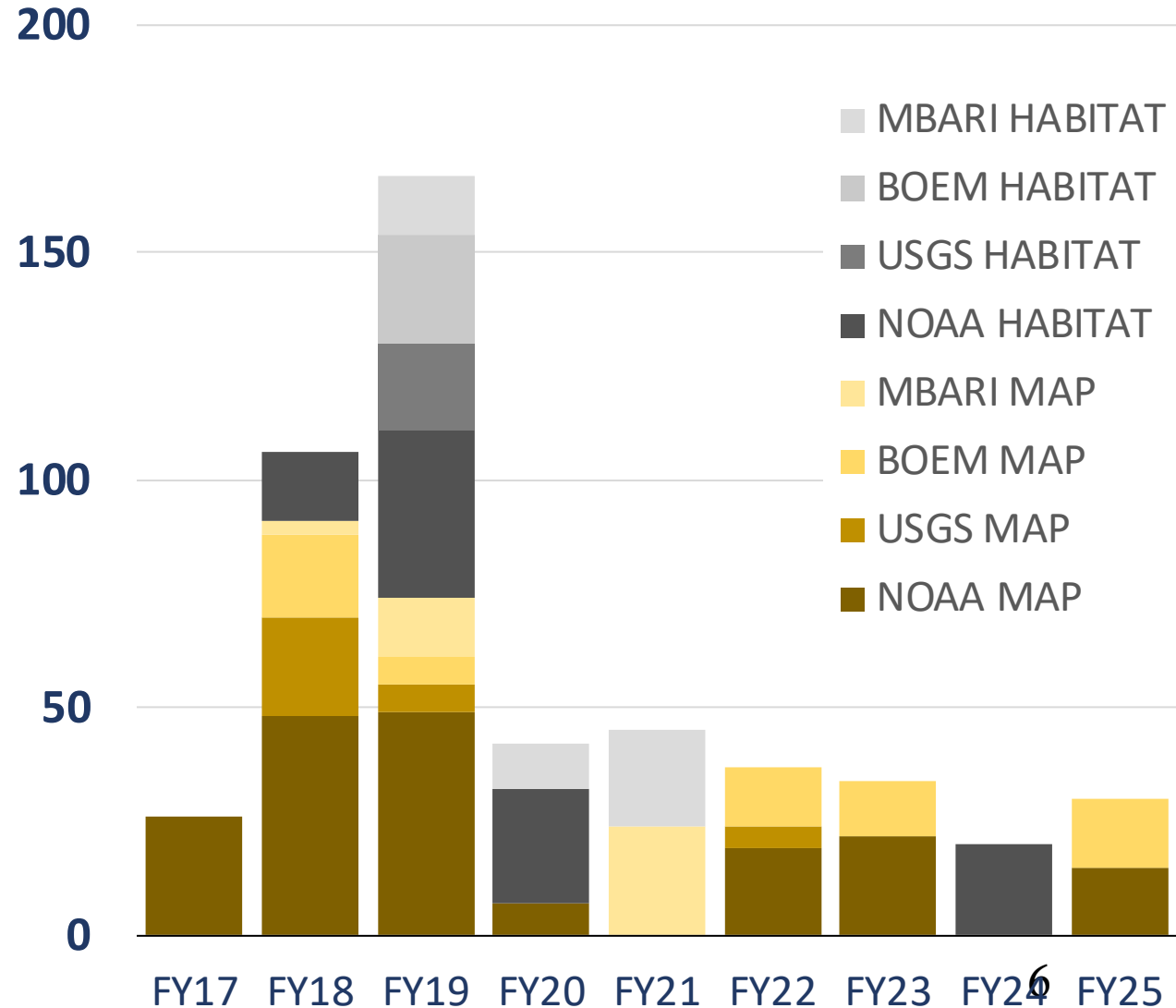
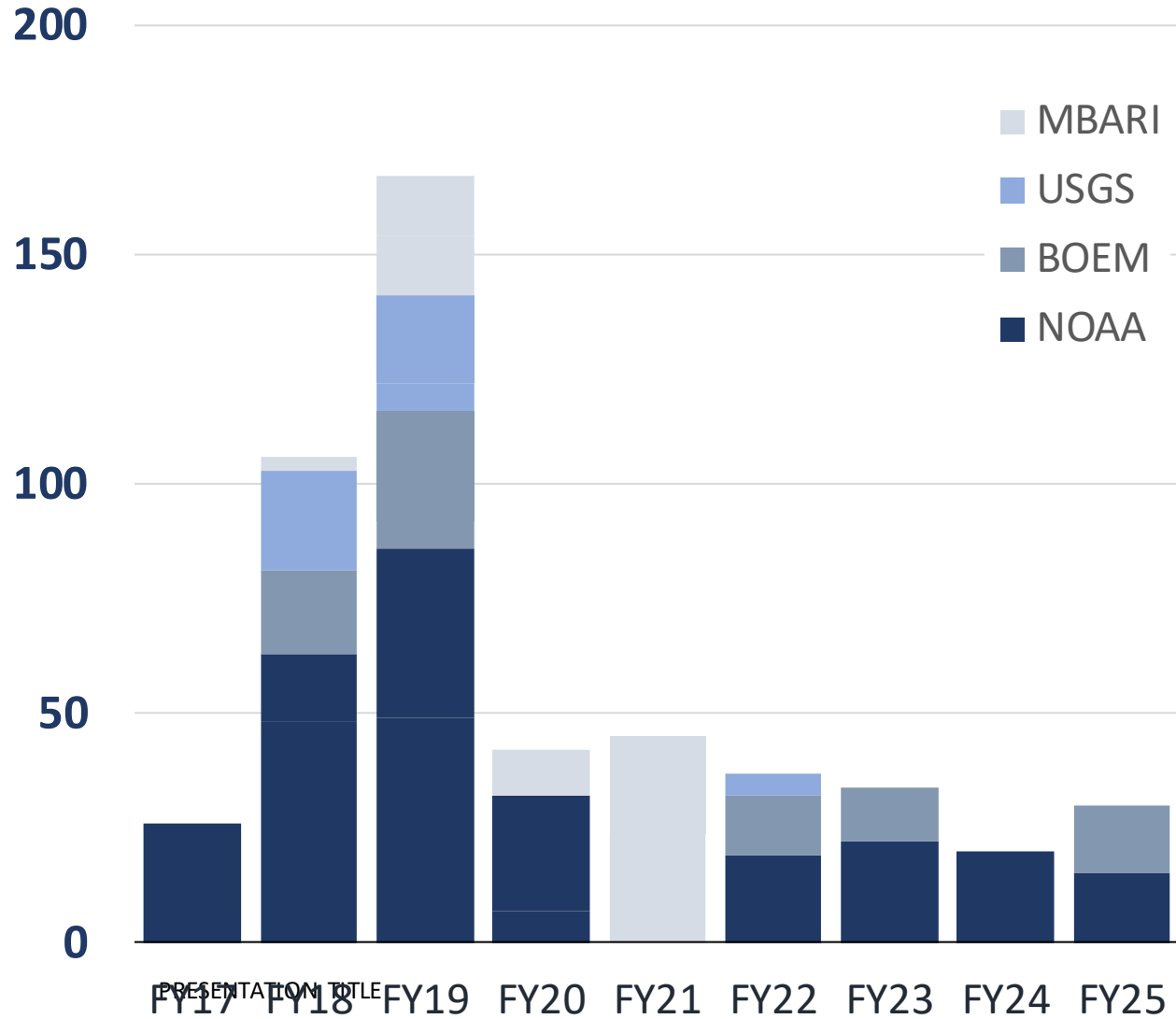
WHAT HAS BEEN DONE

TOTALS: 2018 to PRESENT

Days-at-Sea/# ships	600 / 13
Square km mapped	> 40,000
ROV dives	224
AUV dives	84
Cores	> 1,700



SHIP DAS BY AGENCY AND PURPOSE

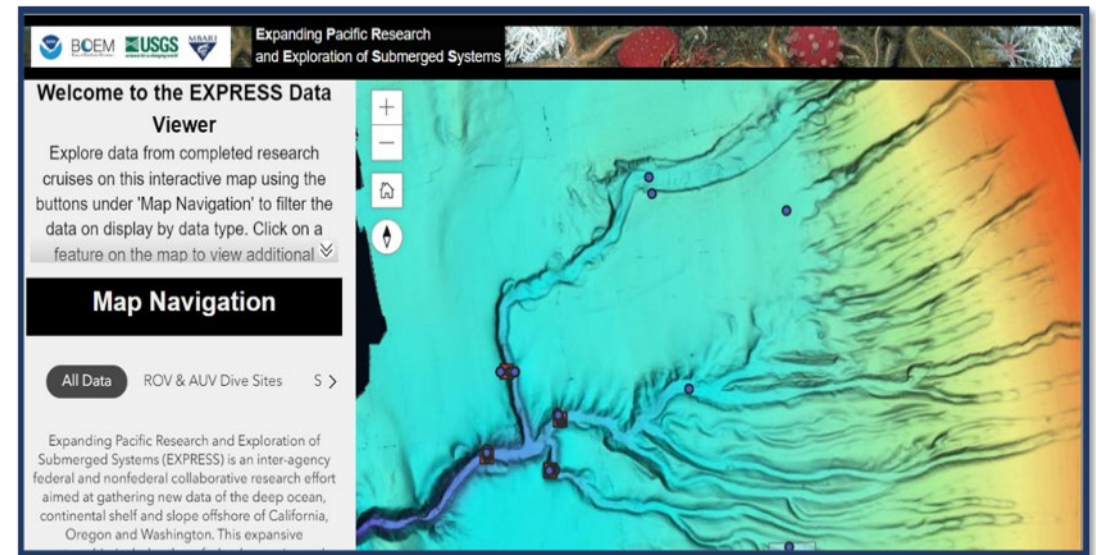
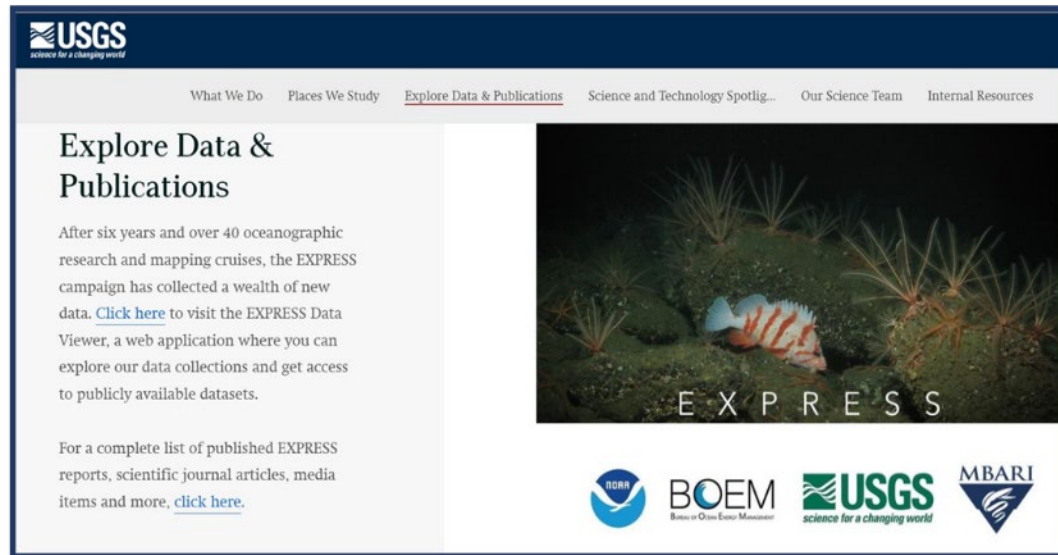


WHERE IS THE DATA?

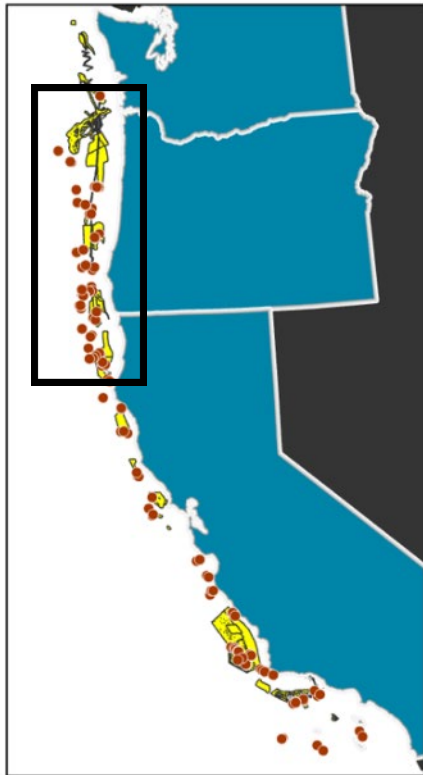
Communicate EXPRESS “message”

Connect users to data:

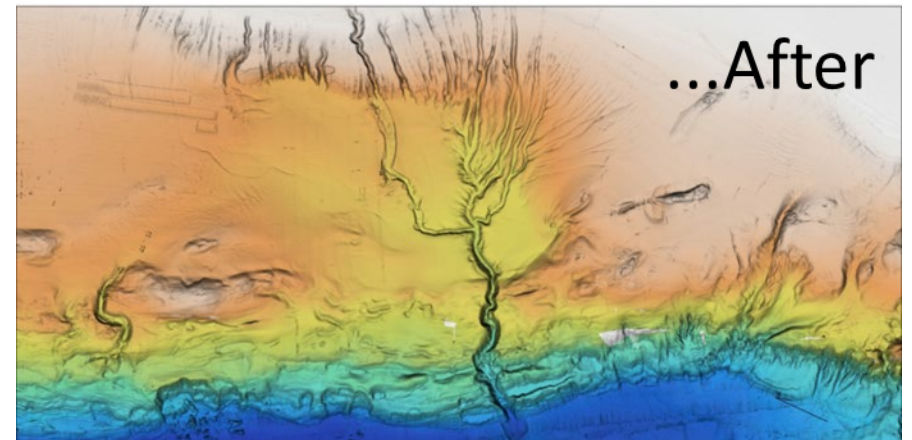
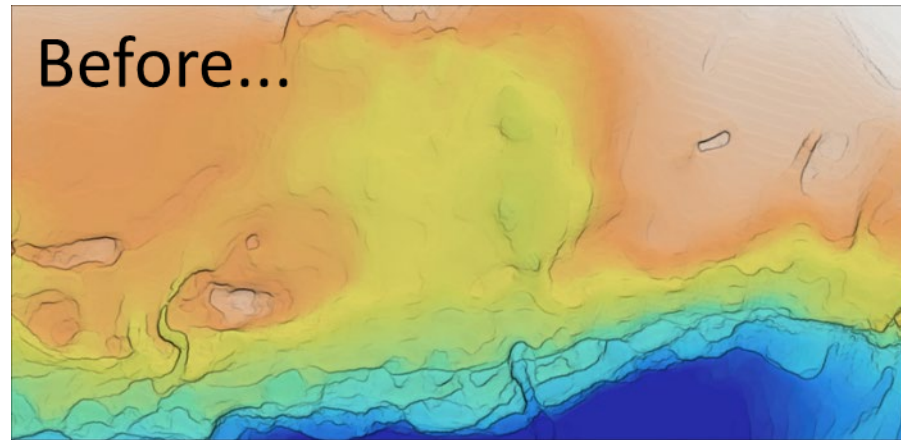
- Geospatial
- Summary metrics
- Data releases
- Publications



CASCADIA MARGIN



Comprehensive & complementary
geological and biological investigations
Ship-based multibeam, AUV ultra high-
resolution multibeam, ROVs, AUVs
“Filling the gaps”



2018

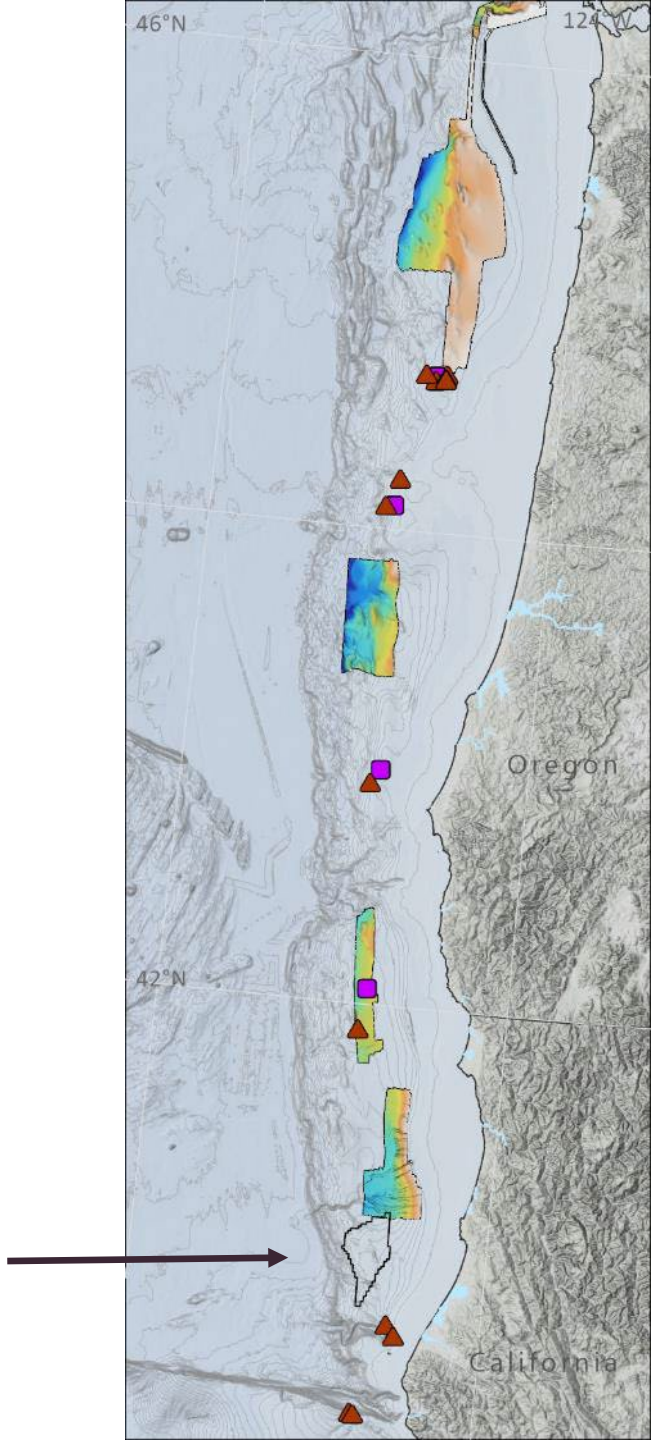
Mapping

- NOAA Ship *Rainier*
Approx. 6,500 sq km added

Habitat

- NOAA Ship *Bell M. Shimada*
 - 13 ROV dives, video & bio samples
 - 5 AUV dives, photo mosaics
-

California
Humboldt
Call Area
2018



2019

Mapping

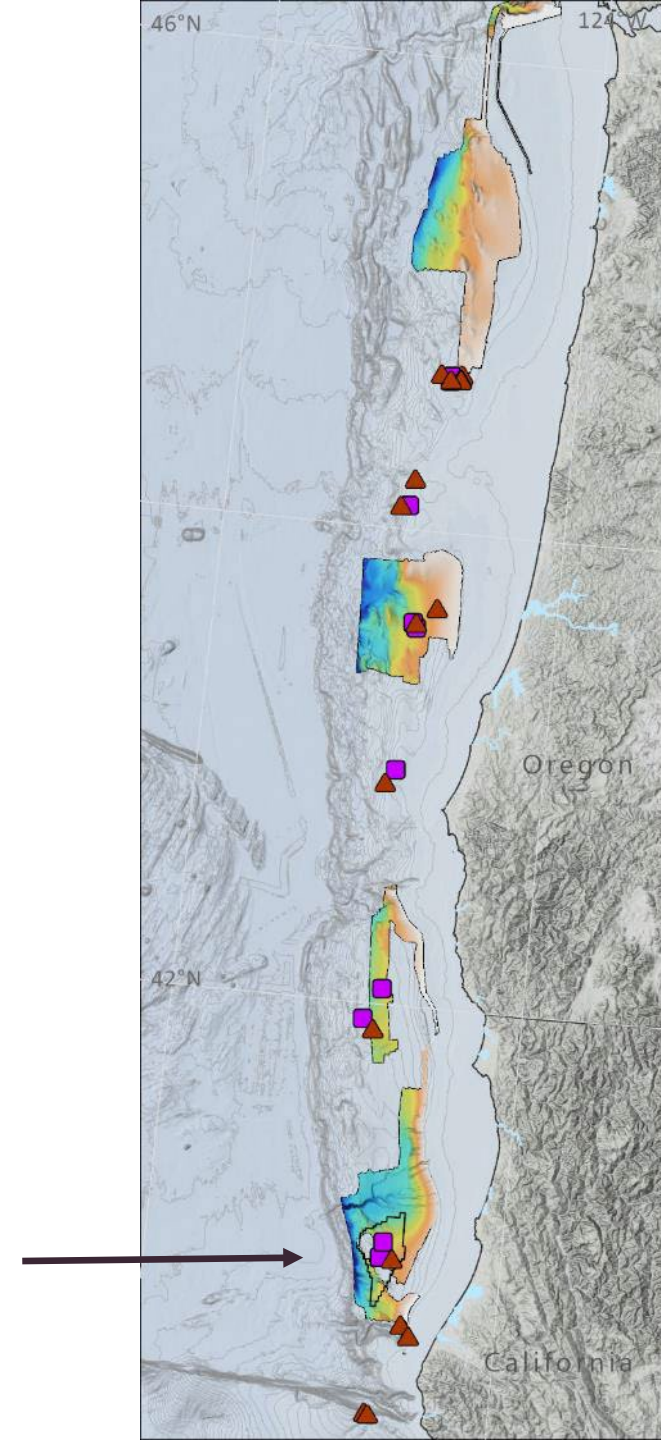
- NOAA Ship *Fairweather*
Approx. 3,000 sq km added

Habitat

NOAA Ship *Reuben Lasker*

- 4 ROV dives, video and bio samples
- 6 AUV dives, photo mosaics

California
Humboldt
Call Area
2018



2020/2021

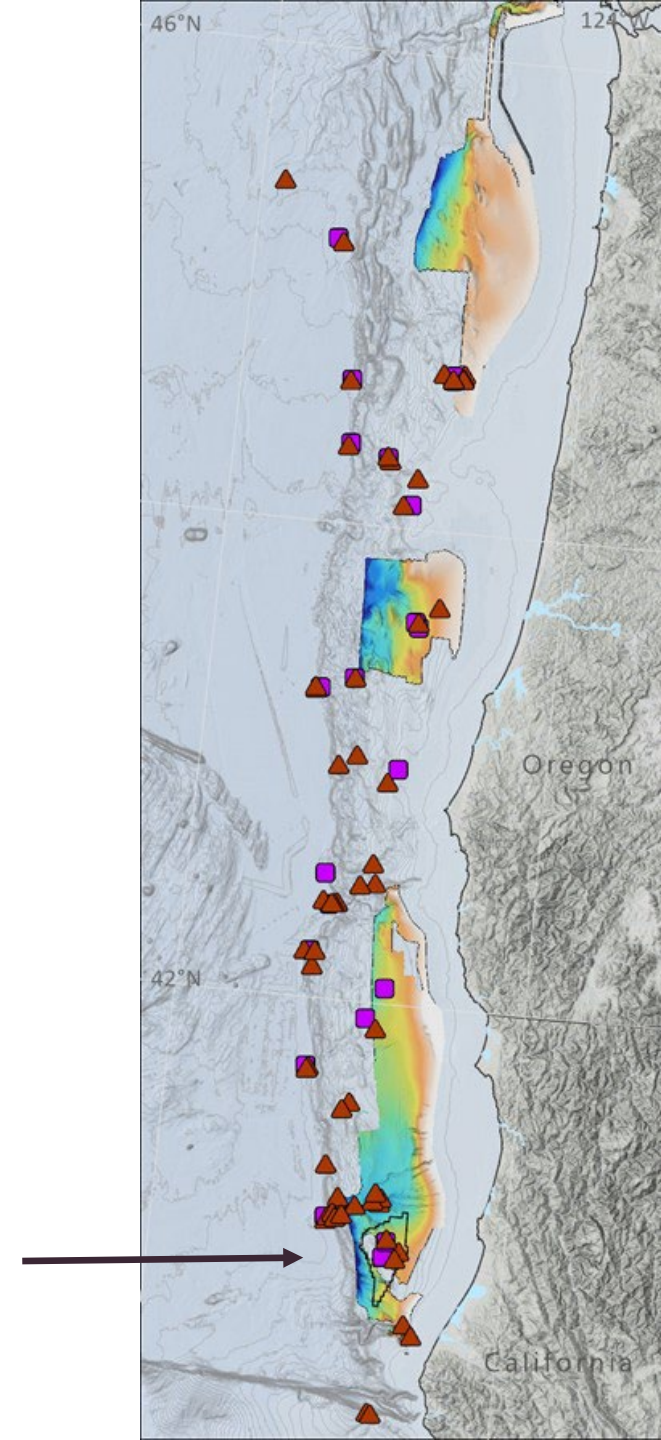
Mapping

- NOAA Ship *Fairweather*
Approx. 3,700 sq km added

Habitat

- R/V *Western Flyer* & *Rachel Carson*
 - 22 ROV dives, cores & biology
 - 11 AUV dives, ultra high res.
Bathymetry; ~160 sq. km total
-

California
Humboldt
Call Area
2018



2022/2023

Mapping

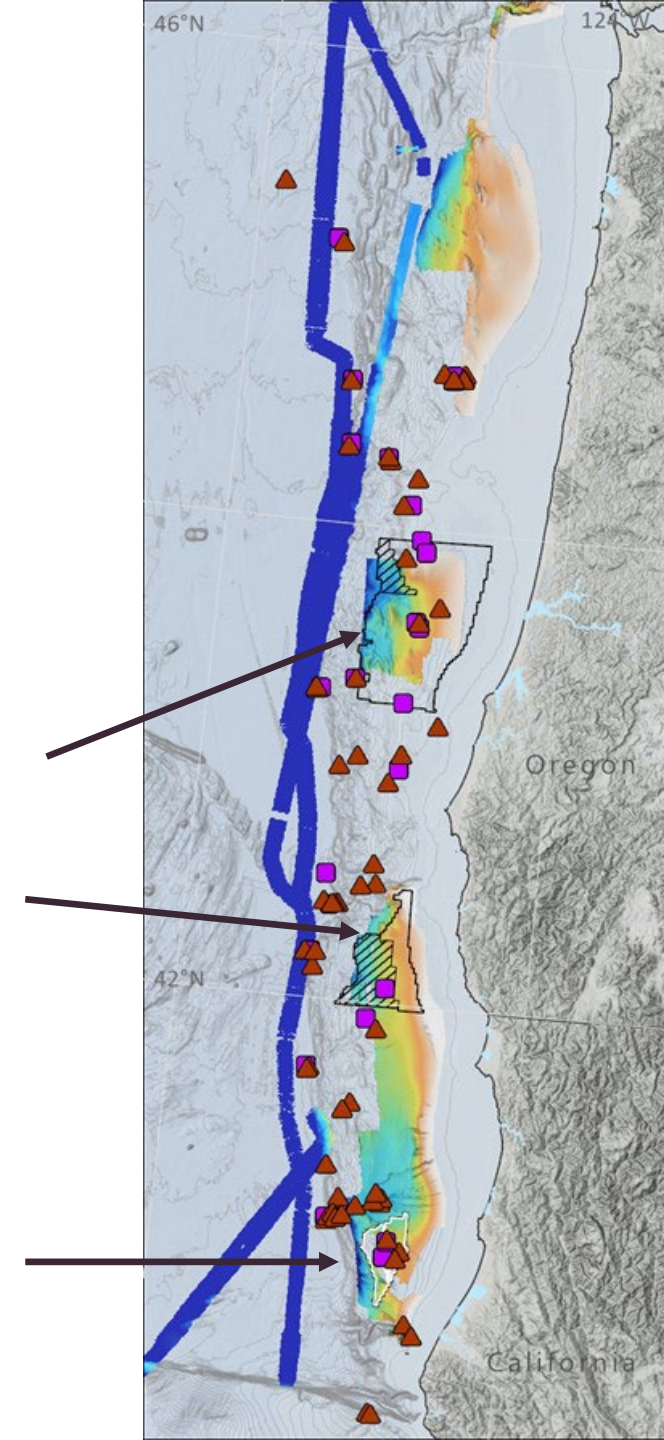
- NOAA Ship *Fairweather*
Approx. 1,500 sq km added
- NOAA Ship *Okeanos Explorer*
Approx. 9,000 sq km added

Habitat

- R/V *Rachel Carson*
 - AUV 1-meter res. mapping
 - NOAA Ship *Bell M. Shimada*
 - 3 ROV dives, video & bio samples
 - 3 AUV dives, photo mosaics
-

Oregon
Call Areas
8/29/22
Wind Energy
Areas
2/13/2024

California
Humboldt
Lease Areas
12/7/2022





WHAT A DIFFERENCE A DAY MAKES

DATE	ACTIVITY
Jul 2017	CA, MBARI, BOEM call
Aug 2017	BOEM brokers deal
Sep 2017	USGS/MBARI/BOEM prioritization
Oct 2017	NOAA maps area
Apr 2018	MBARI AUV surveys
Sep 2018	USGS/NOAA/BOEM cruise
Feb 2019	MBARI ROV survey

WHO IS RESPONSIBLE?



Rick Brennan
*Chief, OCS HSD



Chris Scholin
MBARI CEO



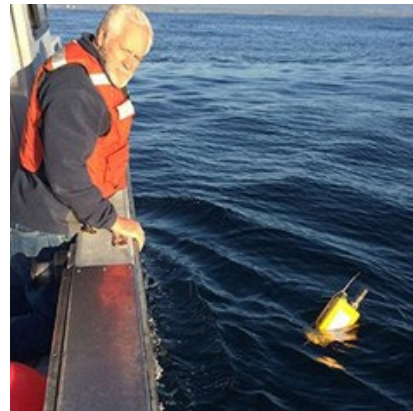
Ben Evans
*CO *Rainier*



Chris Caldwell
ONMS CINMS



Ashley Chappell
NOAA IOCM



Charlie Paull
MBARI Geologist

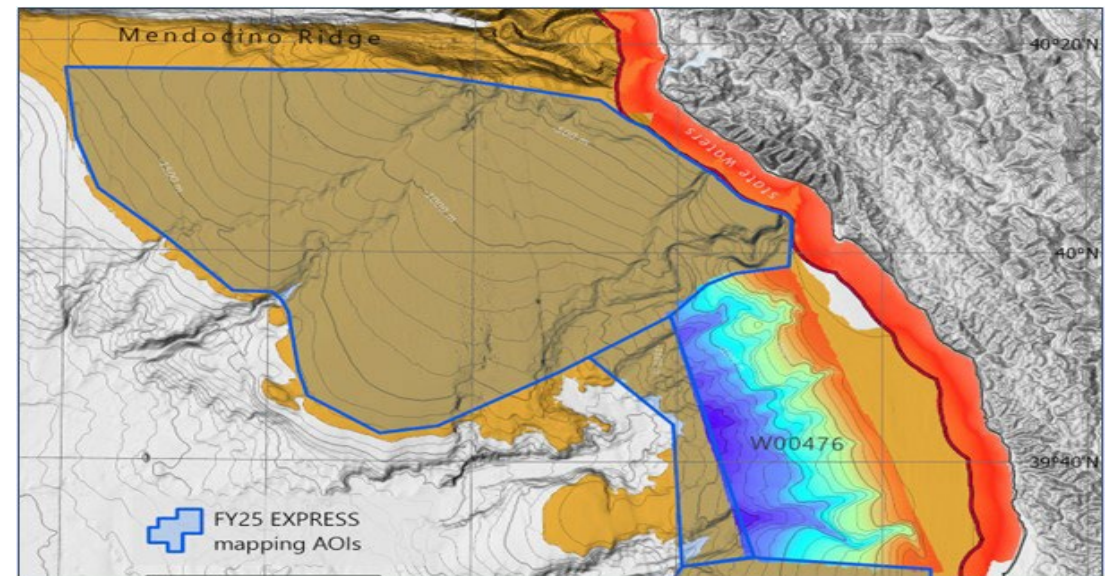


Guy Cochran
USGS Geophysicist

WHAT'S NEXT?

FY24 NOAA Ship *Shimada* - 20 DAS focused on AUV surveys of benthic habitats

FY25 NOAA Ship *Fairweather* - 30 DAS to complete high-res mapping gaps in support of OR and CA offshore wind energy





THANK YOU

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<https://www.usgs.gov/science/express-expanding-pacific-research-and-exploration-submerged-systems>