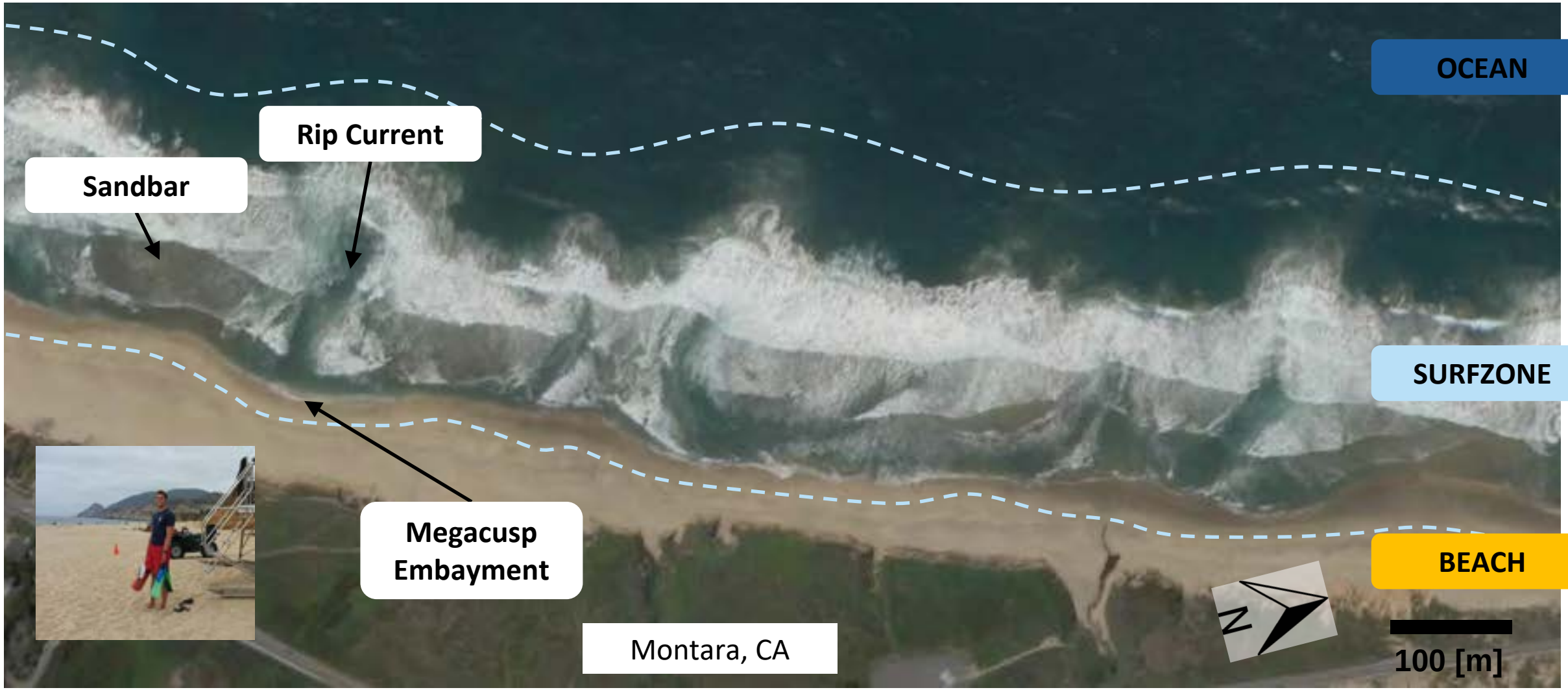
High Resolution Satellite Datasets for Coastal Managers – Worth the Cost?

Kelby Kramer[1,2] | WHOI Marine Policy Center[1]

1 WOODS HOLE OCEANOGRAPHIC INSTITUTION

2 MIT Civil and Environmental Engineering

Studying Surfzone Features with Satellite Imagery



“High” Spatial and Temporal Resolution PlanetScope Imagery

Pixel Resolution

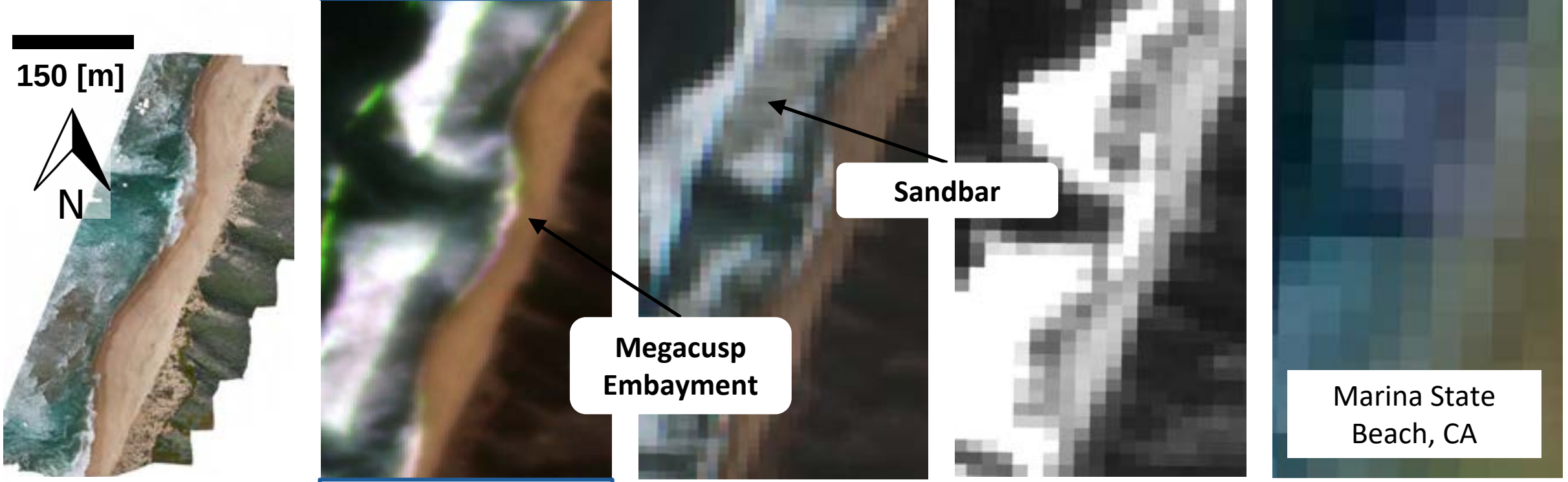
Drone 0.03[m]

PlanetScope 3[m]

Sentinel-2 10[m]

Landsat Pan 15[m]

Landsat 30[m]



Infrequent

~Daily
Frequency

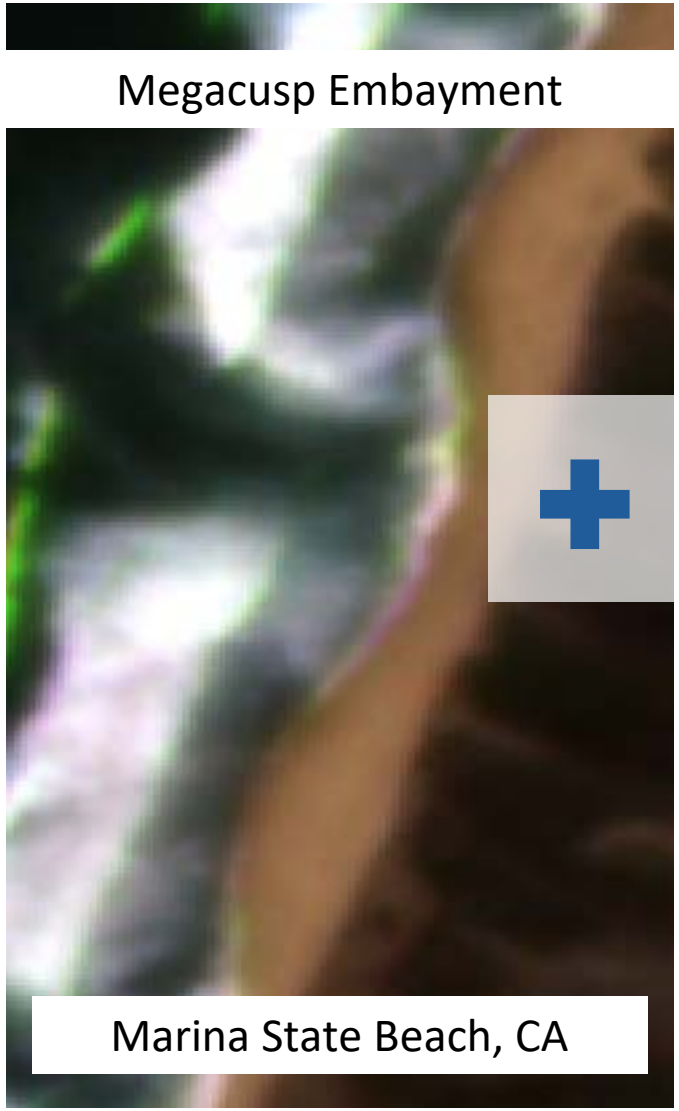
5-10 Day Frequency

8-16 Day Frequency

8-16 Day Frequency

Revisit Frequency

Surfzone Features Can Drive Episodic Hazards

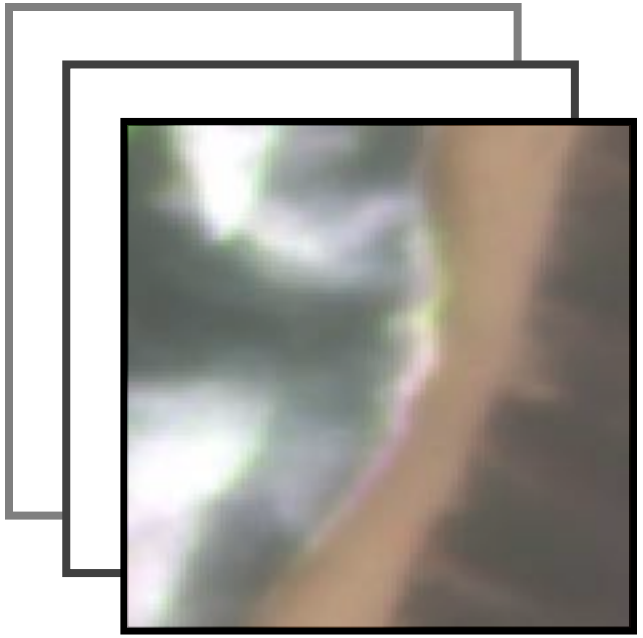


Big Waves & High Water Levels

Local Erosion Hotspots

Surfzone Datasets and Applications

10 Years of Imagery



Applications for Coastal Managers

Long Term:

- Risk Maps for planning
- Zoning or Policy Changes

Near Real Time:

- Hotspot monitoring
- Pre-storm resource allocation

Feature Datasets:

- Sandbars
- Embayments

Improve Our Understanding of: Where, When, Why

Environmental Conditions

Cost/Benefit Case Studies – Searching for a California Partner

What is the net cost/benefit of high spatiotemporal erosion datasets for coastal managers over different planning horizons?

Two-Year Case Studies (2026-2028)

For Local Partner We Will Provide:

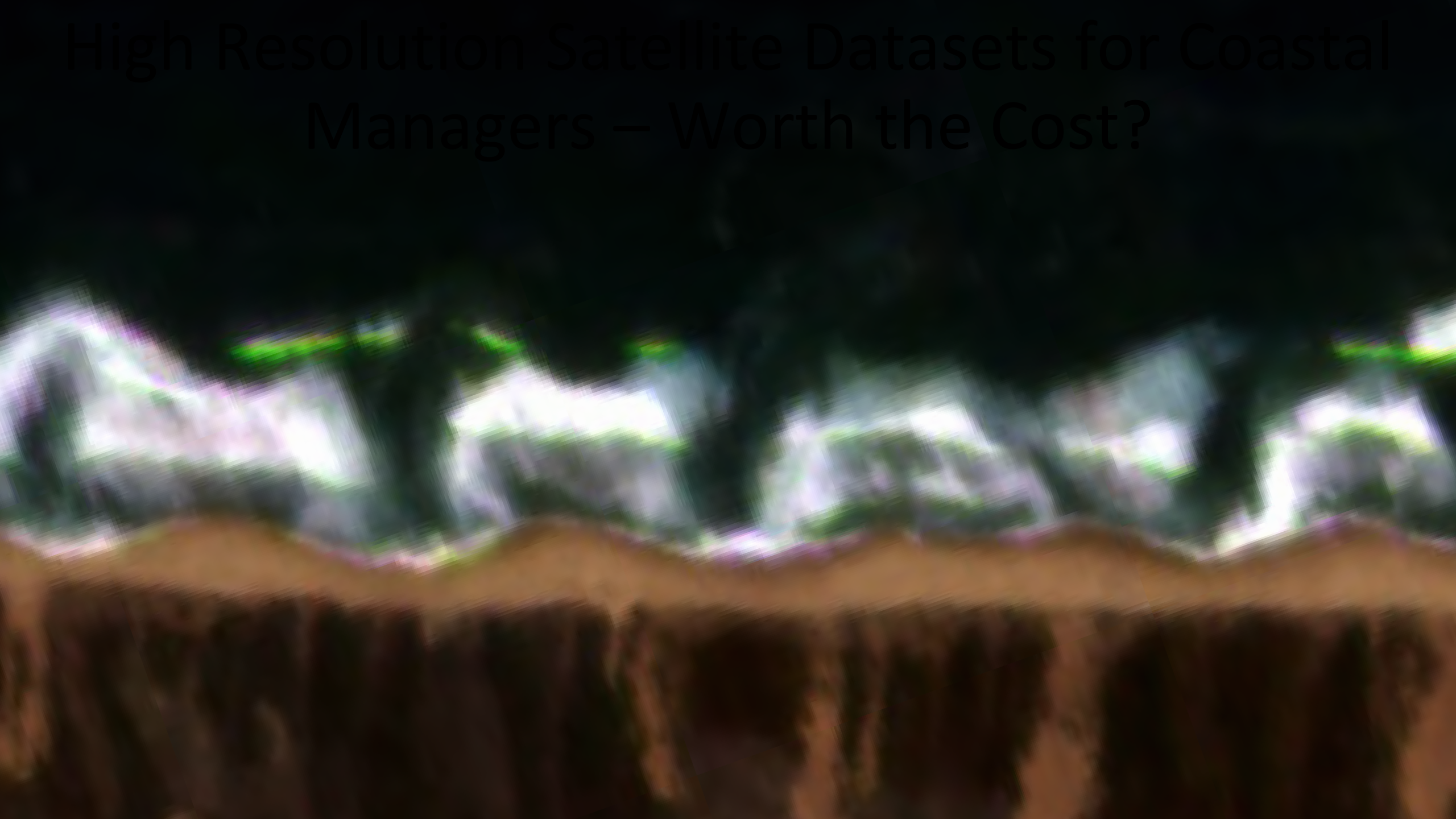
- 10-year dataset of features with analysis of local scale hazards and an asset risk map
- Weekly monitoring for proactive response

Throughout the Collaboration We Will:

- Preform value of information analyses
- Conduct sensitivity analyses (input costs, scaling factors, environmental risk factors, etc.)

Comments? Questions? Interested?

Reach Out!

kelbyh2o@mit.edu

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