



The Gulf of Maine Research Institute and Addressing Climate Change in our Backyard

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**Gulf of Maine
Research Institute**

Science. Education. Community.

Mission

The Gulf of Maine Research Institute develops and delivers collaborative solutions to global ocean challenges.

GLOBAL OCEAN CHALLENGES

Seafood Sustainability



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Healthy Ocean Ecosystems



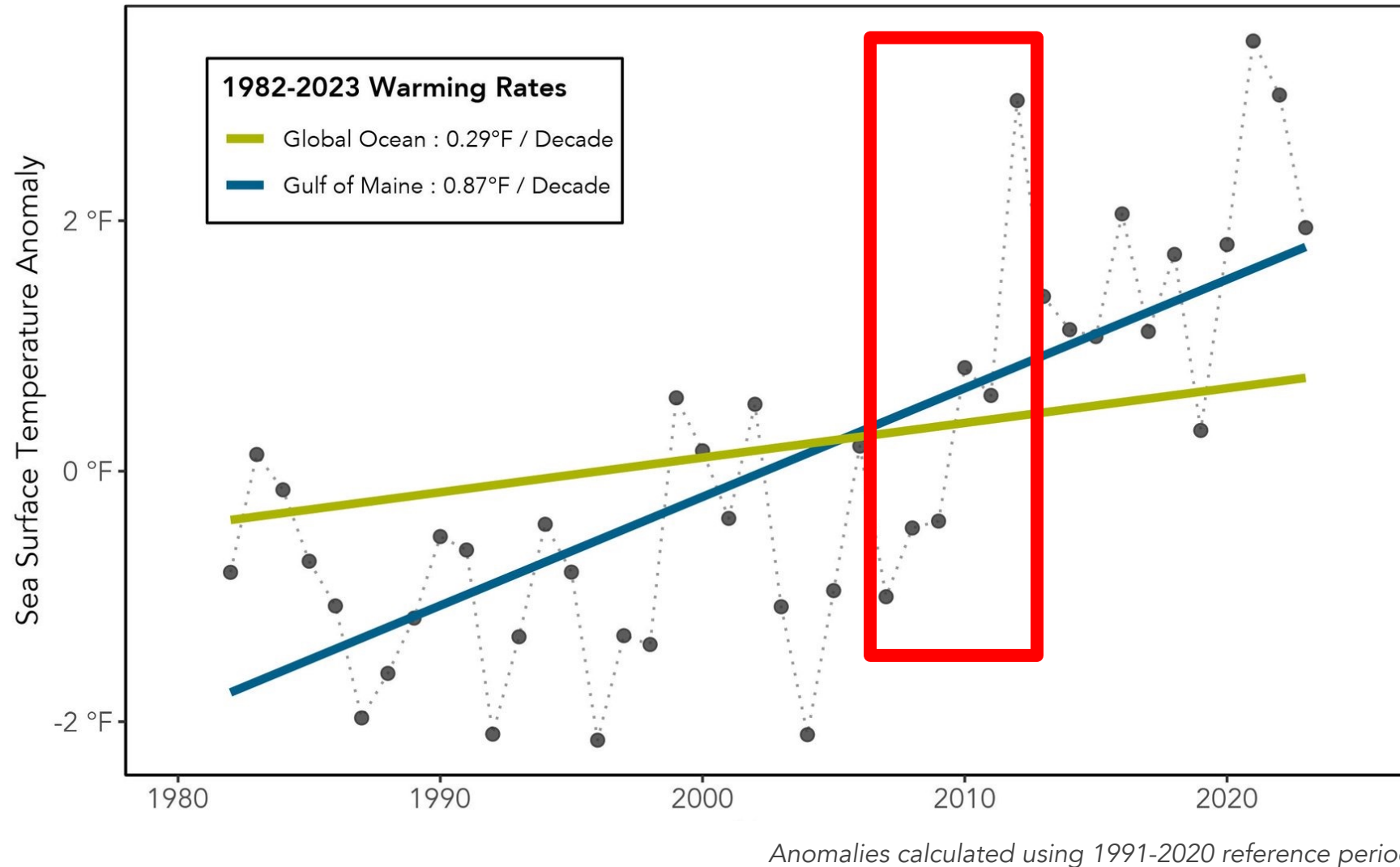
Climate Change



Marine Economy



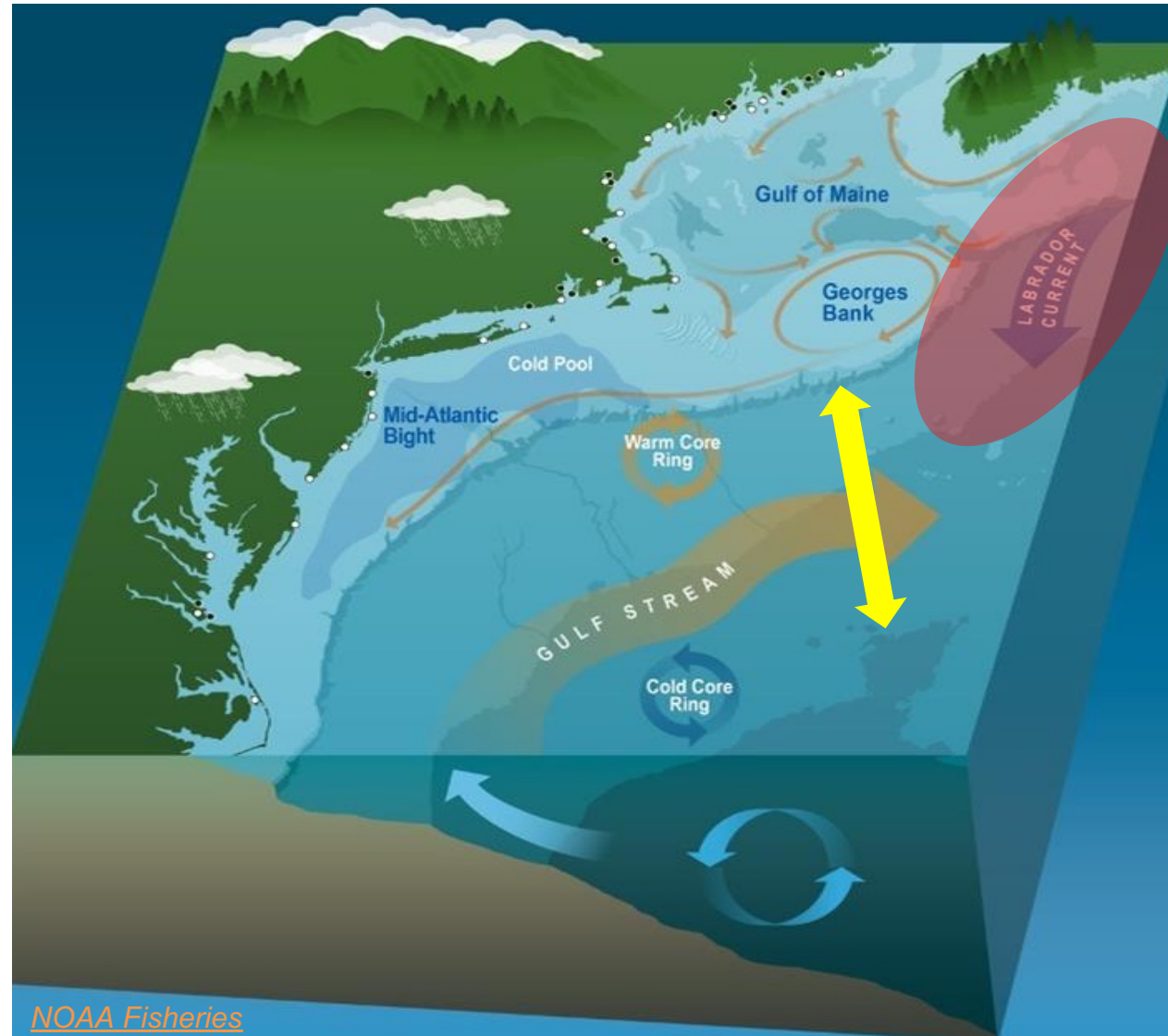
WARMING: What's happening?



- The Gulf of Maine is warming **>3x faster** than the global average
- Summer is warming 4x faster than the global average
- 2023 was the 5th warmest year on record
- Regime shift occurred ~2007-12, on top of long-term warming trend

Check out all Seasonal & Annual Warming Updates at: gmri.org/warmingupdates/

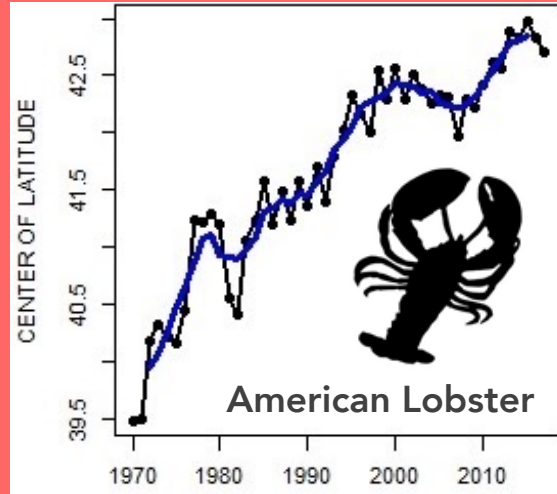
WARMING: Why is this happening?



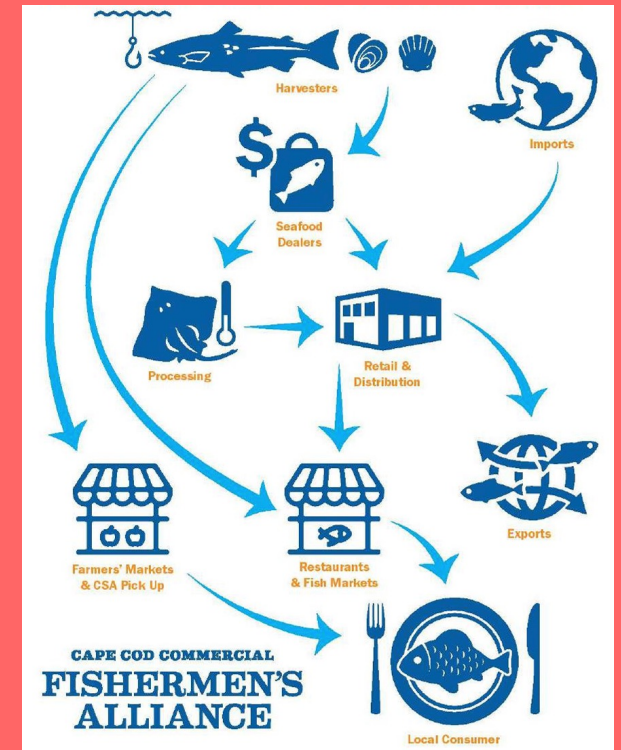
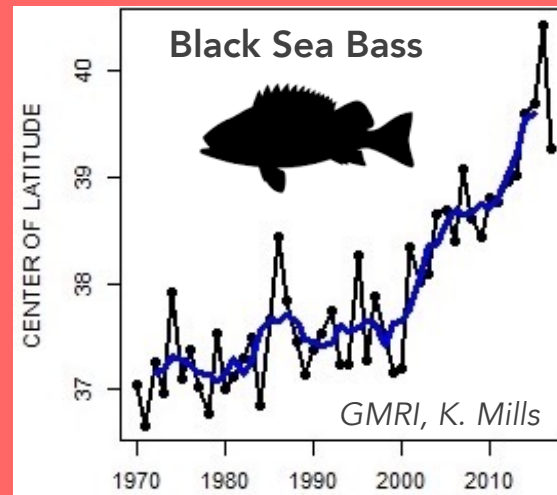
WARMING: Why does it matter?



Decreases in cod and lobster productivity have been linked to increases in temperature



The hospitability of this region to various species is changing

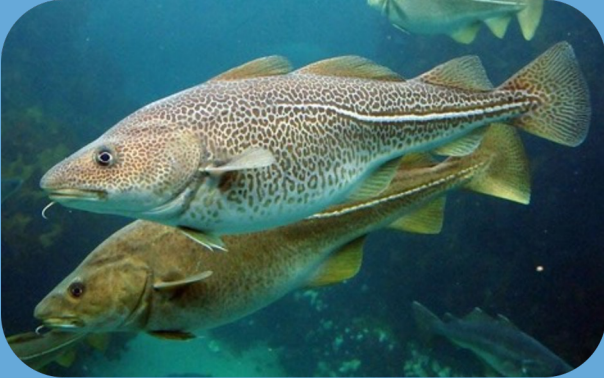


Supply Chain Impacts

- ✓ Fluctuations in supply
- ✓ Ocean space competition
 - ✓ Extreme events
 - ✓ Insurance costs
- ✓ Loss of certifications

WARMING: What can we do about it?

Diversify Sources & Species



Evolve Business Operations



Maine Lobstermen's Assn

Modify Infrastructure



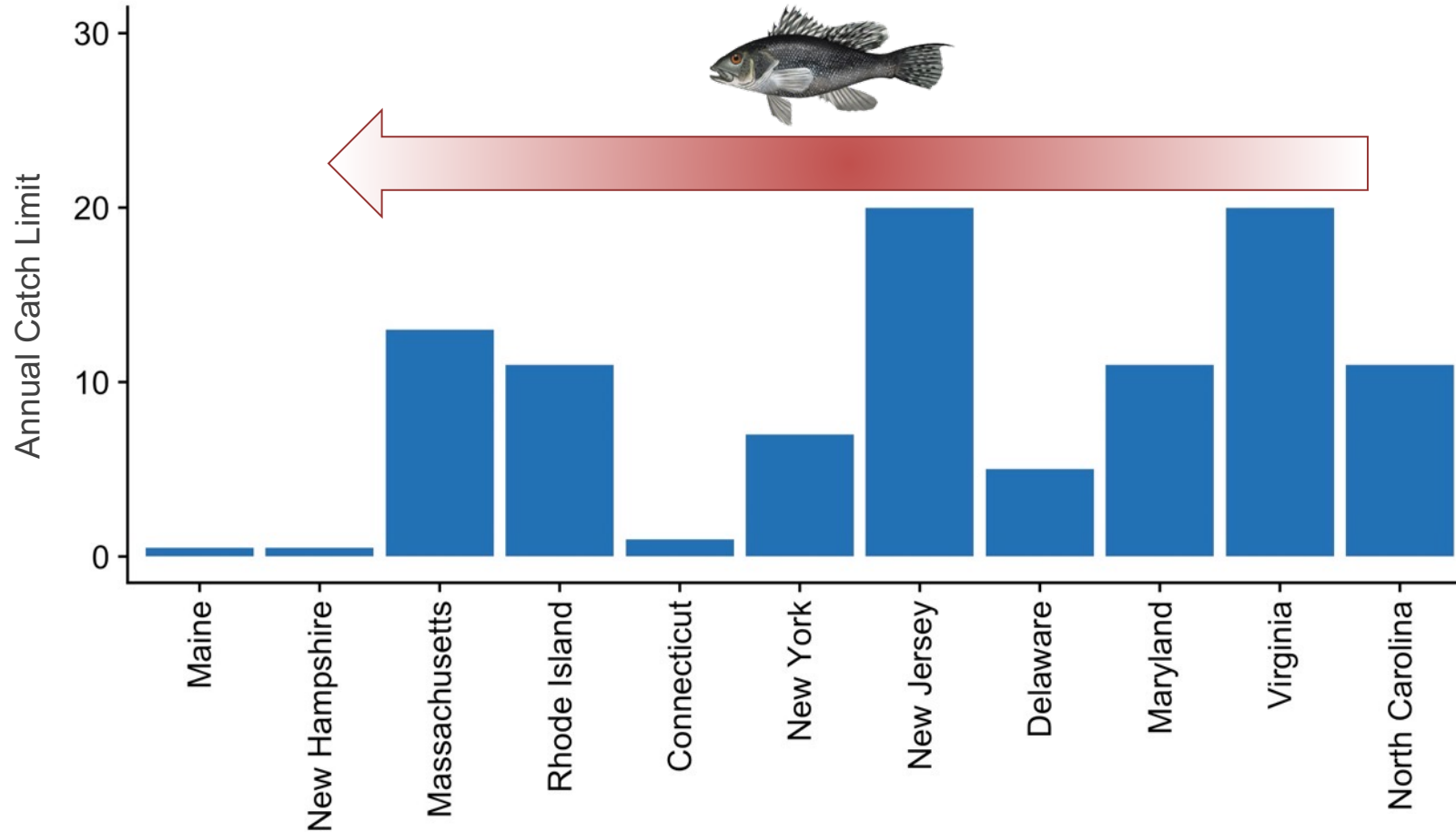
Marketing, Consumer Education, & Business Networking



EXAMPLE:

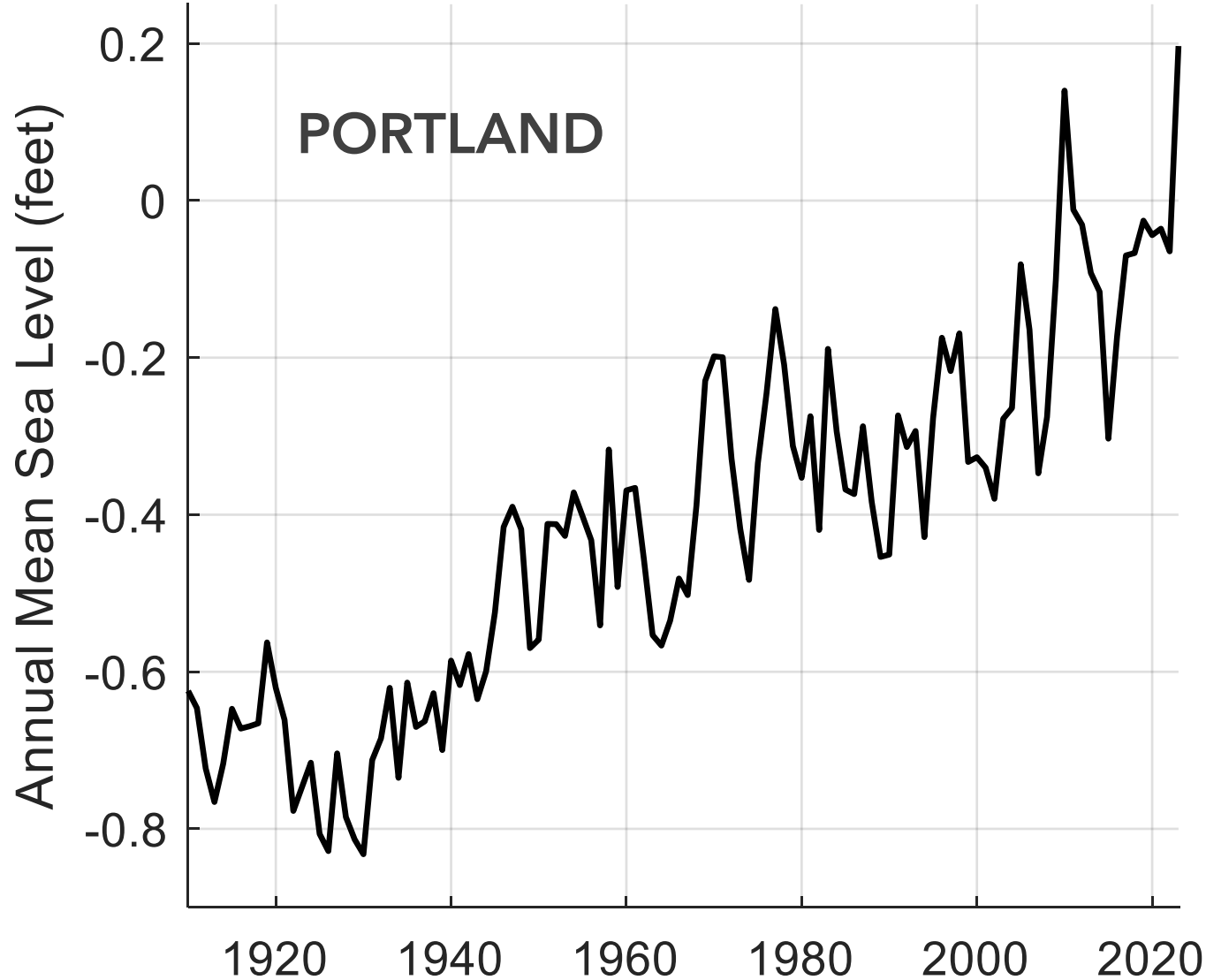
Responding to (Capitalizing Upon?) Change

BLACK SEA BASS



There's a need for a more dynamic regulatory & management regime

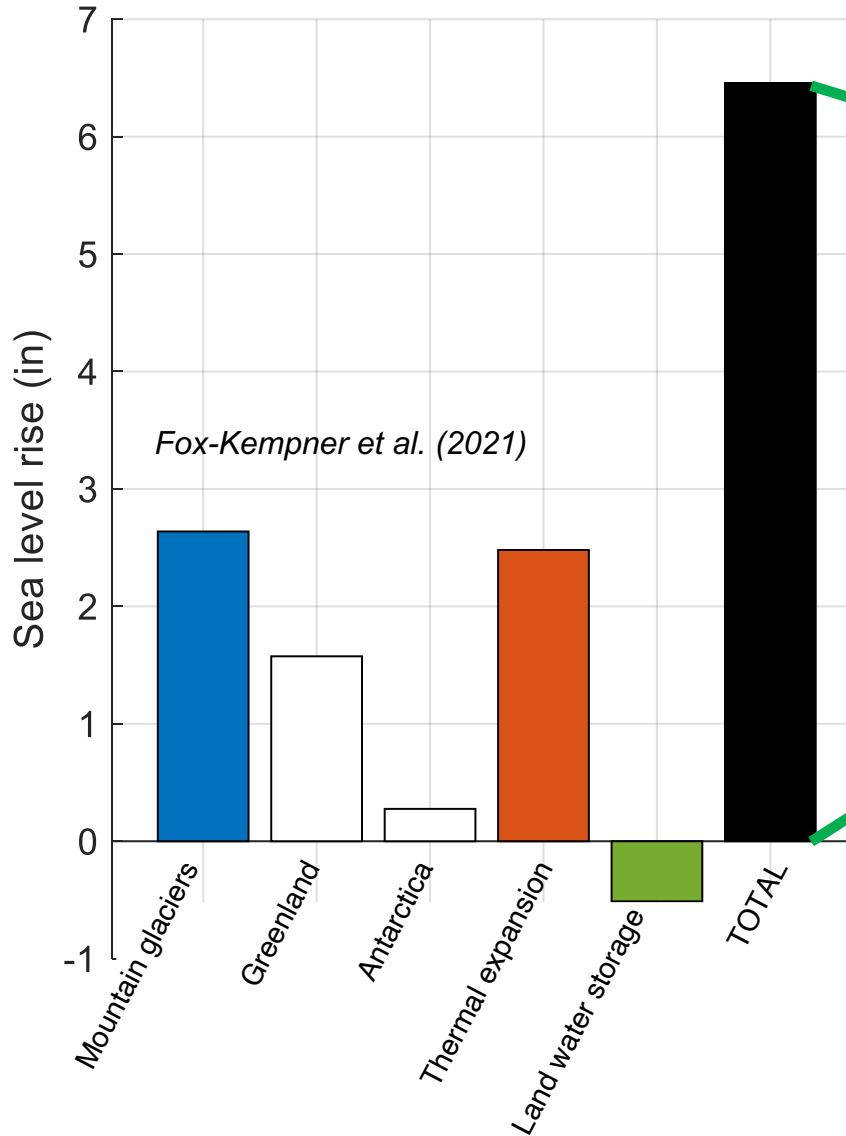
SEA LEVEL RISE: What's happening?



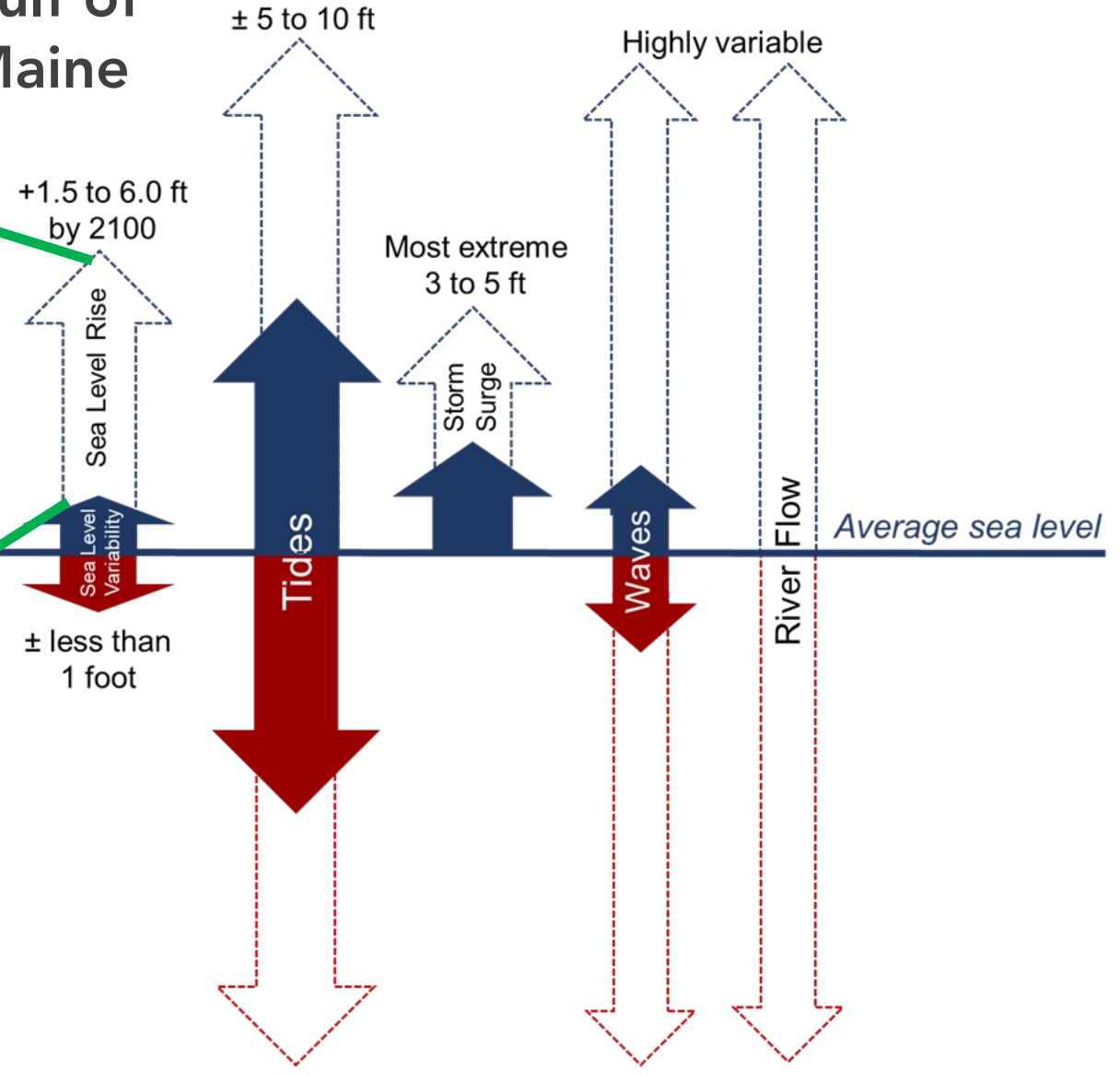
Sea level has risen by ~8" in Portland in the last century

SEA LEVEL RISE: Why is this happening?

Global SLR Contributions

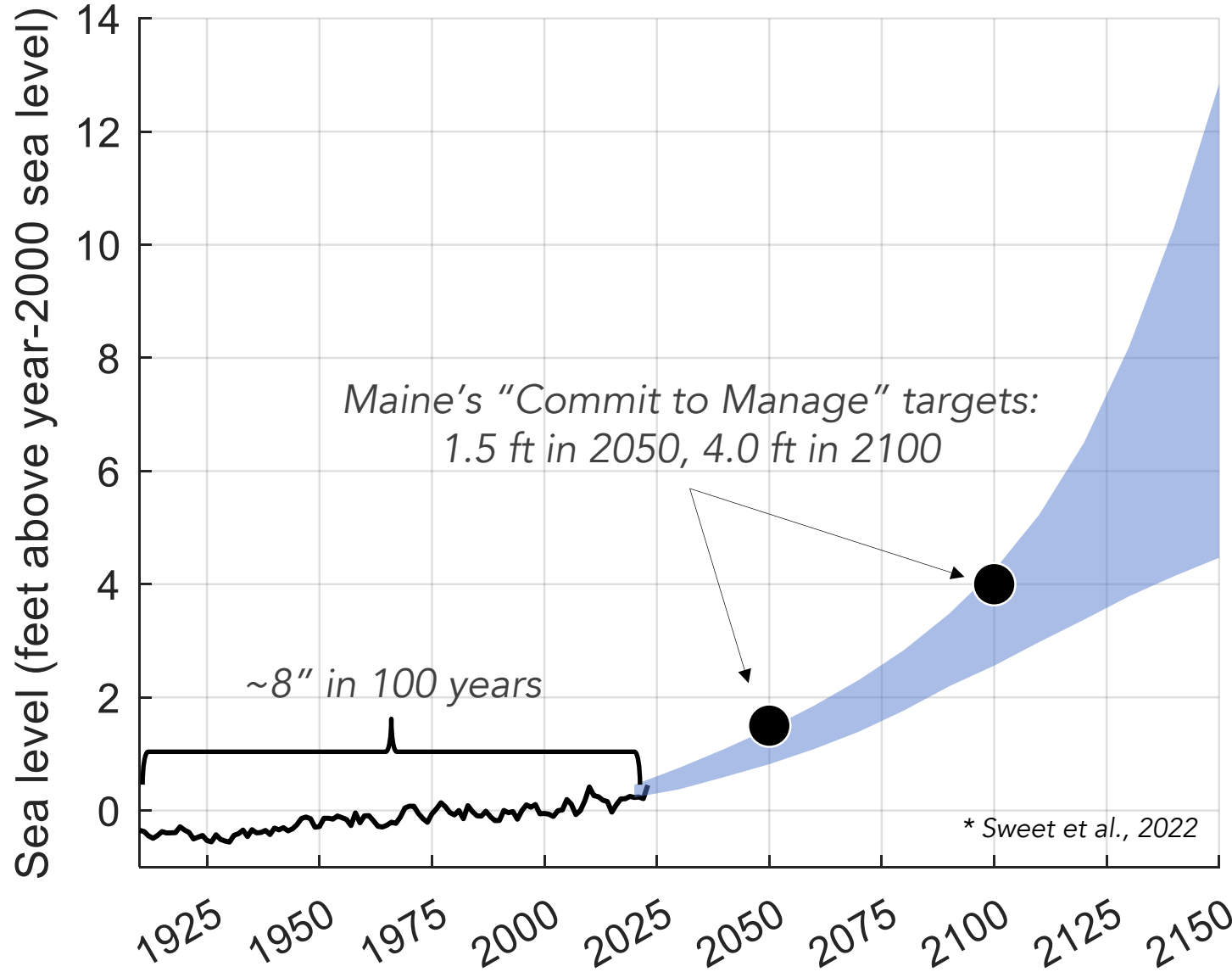


Gulf of Maine



SEA LEVEL RISE: Why does it matter?

Portland



SEA LEVEL RISE: Why does it matter?

- Tide, surge, wave, & river flow conditions for the Jan 2024 storms were not unprecedented
- ...but the impacts were. Why?
- Because of +8" of long-term sea level rise (plus +3" of 'abrupt' increase from 2022 to 2023)
- ... and these numbers are relatively small in comparison to what's projected over the next century



SEA LEVEL RISE: What can we do about it?



- Accessing Finance
- Adaptation Engineering & Living Shorelines
- Coastal Planning & Climate-Smart Land Use
- Inclusive & Transparent Processes for Prioritization

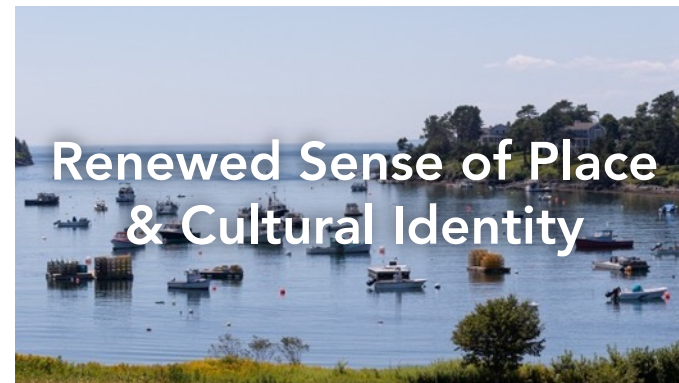


EXAMPLE:

Community Science & Scenario-Based Planning



GMRI IMPACT: Thriving Coastal Communities





Thank You!

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gmri.org/climate



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