CHALLENGES OF URBAN COASTAL ENVIRONMENTS
Cities by the Sea

More than half of the world’s population lives by the coast, with a growing fraction in cities.

More than two-thirds of the world’s megacities are on the coast.

90 percent of all marine species live along the coast.

Economic Effects for US

Major economic impact from depleted fisheries

Coastal areas contribute $1 trillion to annual US GDP & support 60 million jobs

Nation’s ports: $700 billion/year
Overfishing

One out of five people on the planet rely on fish as a primary source of protein.

70 percent of the world’s fish species are either fully exploited or depleted.

Lack of understanding complex ecology impedes policy.

Major economic impact from depleted fisheries

Sea level projected to rise 28-98 cm by 2100
WHY NORTHEASTERN?

The Marine Science Center
Nahant, Mass. (25 minutes from Main Campus)

Outstanding and Unique Coastal Sustainability Academic Programs
Three Seas Marine Biology Program | New Marine Biology Major
WHY NORTHEASTERN?

Hiring Faculty in Urban Coastal Sustainability Across the University

BRIAN HELMUTH
Climate Change Science & Policy, Physiological Ecology

RANDALL HUGHES
Biodiversity, Conservation Biology

JON GRABOWSKI
Fisheries Biology, Ecology

JUSTIN RIES
Biogeochemistry, Ocean Acidification

- Climate Change & Ecological Forecasting
- Genomics (Ocean Genome Legacy)
- Ocean Engineering & Remote Sensing
- Biodiversity & Ecosystem Function
- Fisheries Biology
- Community & Evolutionary Ecology
- Biogeochemistry
- Conservation Management & Policy
OUR INVESTMENT

State-of-the-Art Seawater System

Experimental Greenhouse & Tank Farm

Renovated Edwards Laboratory

Research Across the World

Palmer Station, Antarctica

Gulf of Maine

Conch Reef, Florida Keys

Panama
OUTCOMES

Gray vs Green vs Hybrid Solutions?

Develop a Sustainability Industry

Sensors

Mariculture

Habitat Restoration

Northeastern University
College of Science

Northeastern University
Urban Coastal Sustainability Initiative
OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE

OUTCOMES

Be A Global Leader In Urban Coastal Sustainability

Figure 1: Vision of SHINE