

CONDUCTING AN ECOSYSTEM SERVICE ANALYSIS

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WOODS INSTITUTE
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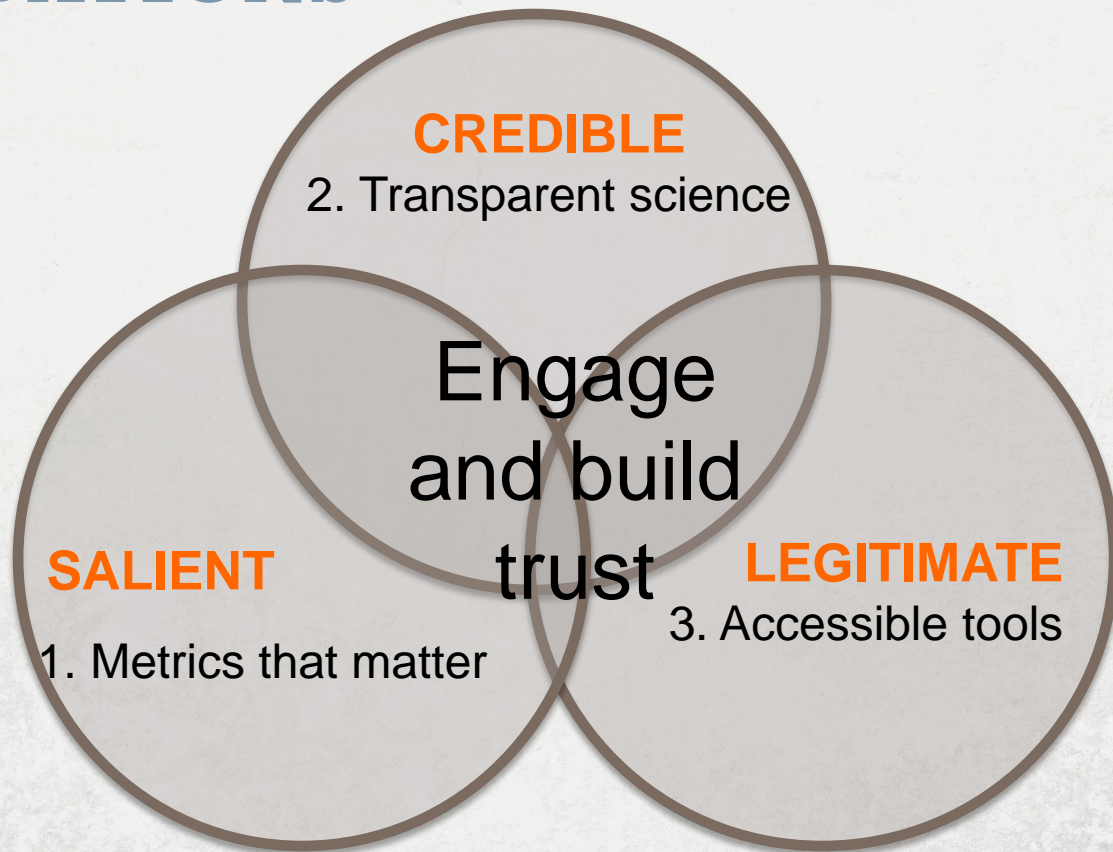
The Nature
Conservancy



INSTITUTE ON THE
ENVIRONMENT
UNIVERSITY OF MINNESOTA
Driven to Discover™

Rob Griffin, Ph.D.
rmgriff@stanford.edu

FOUNDATIONS



Cash et
al. 2003

PRECONDITIONS

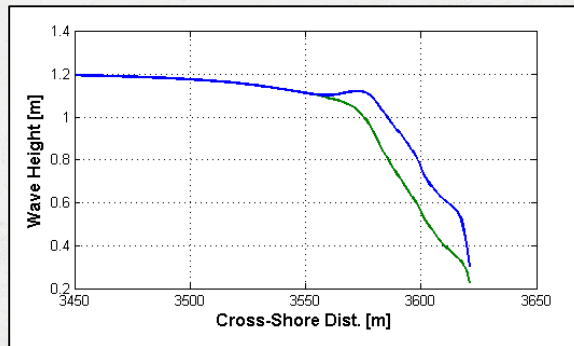
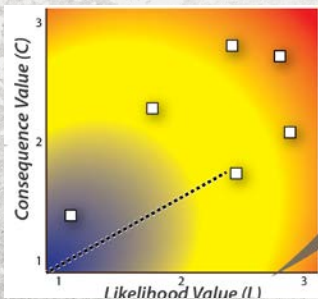
1. Is there a **decision** to be made?
Clear authorities, timeline
2. Are the **right players** involved?
Key stakeholders, decision-makers receptivity to ES
3. Are there **local champions** for an ES approach?
4. Does the team have the **right capacity**?
5. Is there **optimism** that ES info might change decisions?
Specific answerable questions, measurable metrics

QUESTION DRIVEN COMMON THEMES

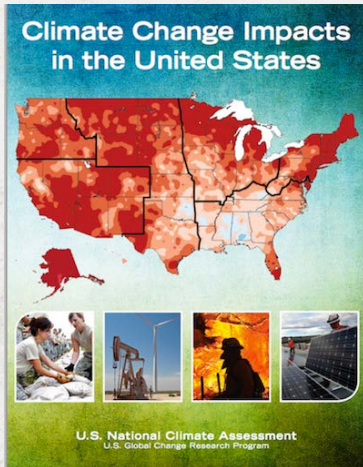
What is the baseline value of ES?

What is the return on investment?

Where to put things?
Reporting metrics



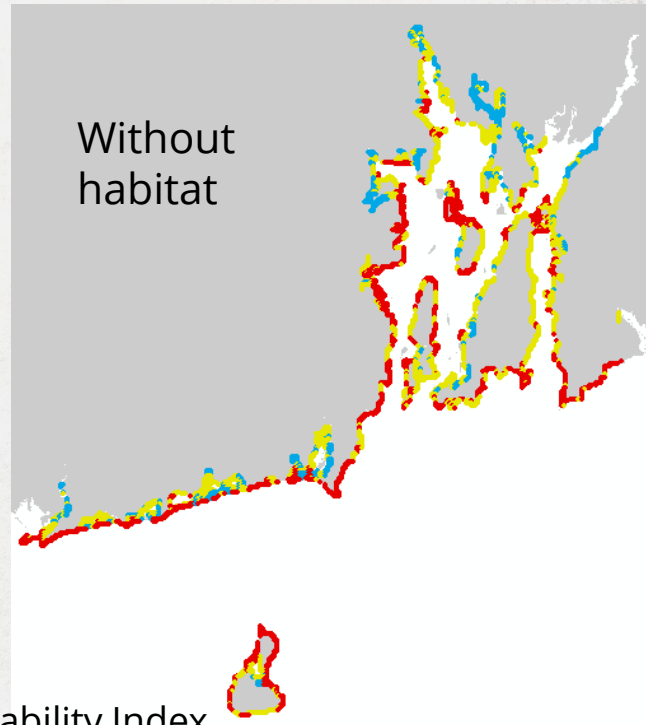
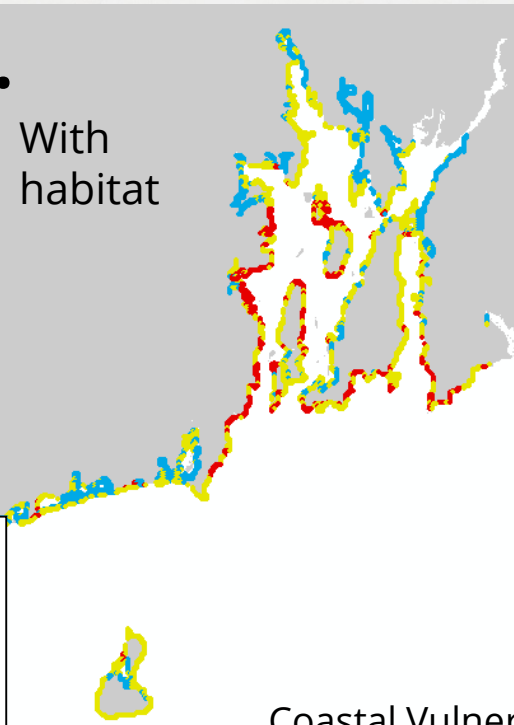
BASELINE VALUE SCENARIOS



R.I.

With
habitat

Without
habitat



nature
climate change

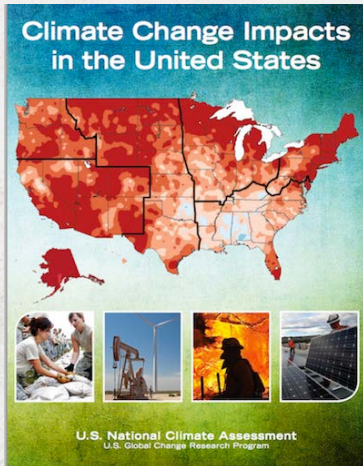
LETTERS

PUBLISHED ONLINE: XX MONTH XXXX | DOI:10.1038/NCCLIMATE1944

Coastal habitats shield people and property from sea-level rise and storms

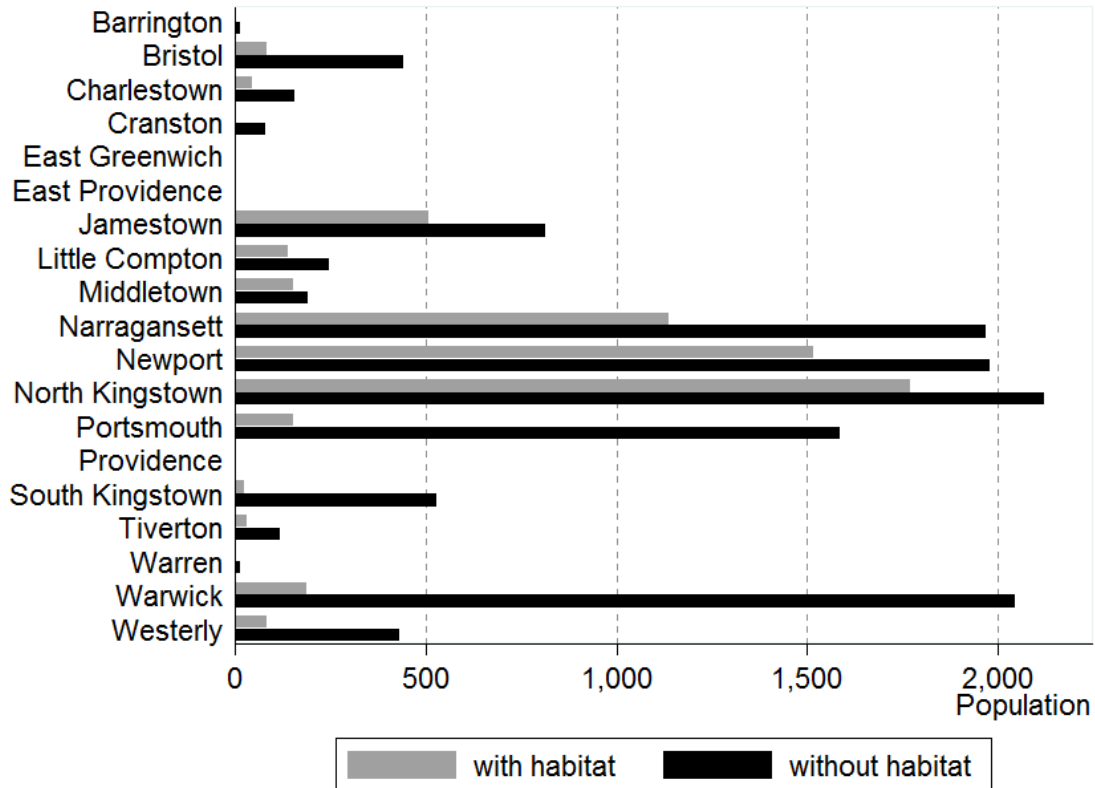
Katie K. Arkema^{1*}, Greg Guannel², Gregory Verutes³, Spencer A. Wood², Anne Guerry²,
Mary Ruckelshaus², Peter Kareiva⁴, Martin Lacayo² and Jessica M. Silver²

BASLINE VALUE SCENARIOS

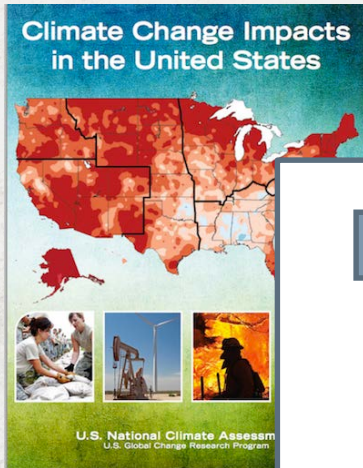


Coastal habitats shield people and property from sea-level rise and storms

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BASLINE VALUE SCENARIOS



Baseline State



= ES Value

Alternate State

Barrington
Bristol
Charlestown
Cranston
East Greenwich

Westerly

0 500 1,000 1,500 2,000
Population

with habitat without habitat

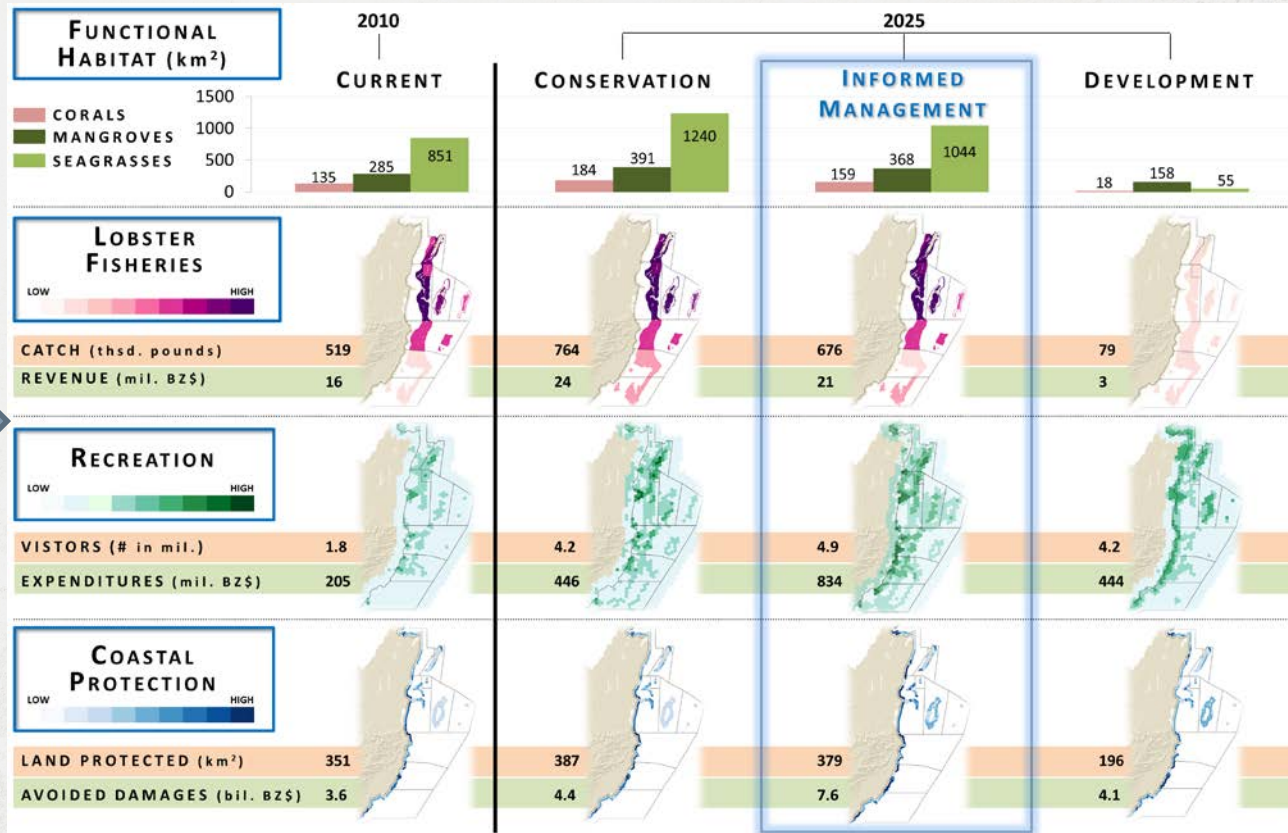
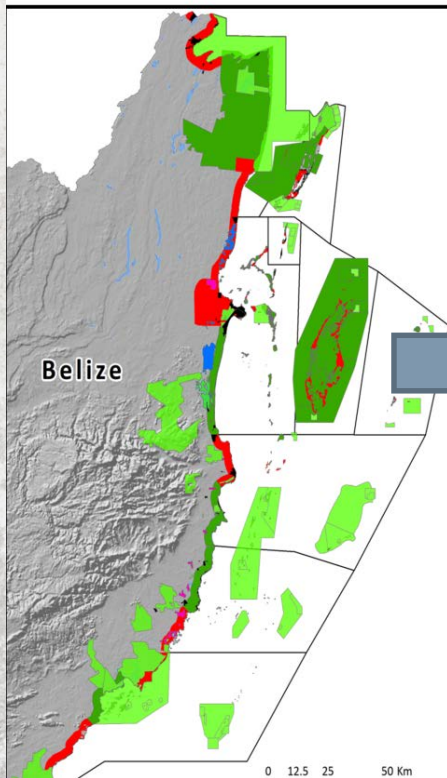
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WHAT IS THE RETURN ON INVESTMENT?

MULTI-CRITERIA ANALYSIS

Compromise

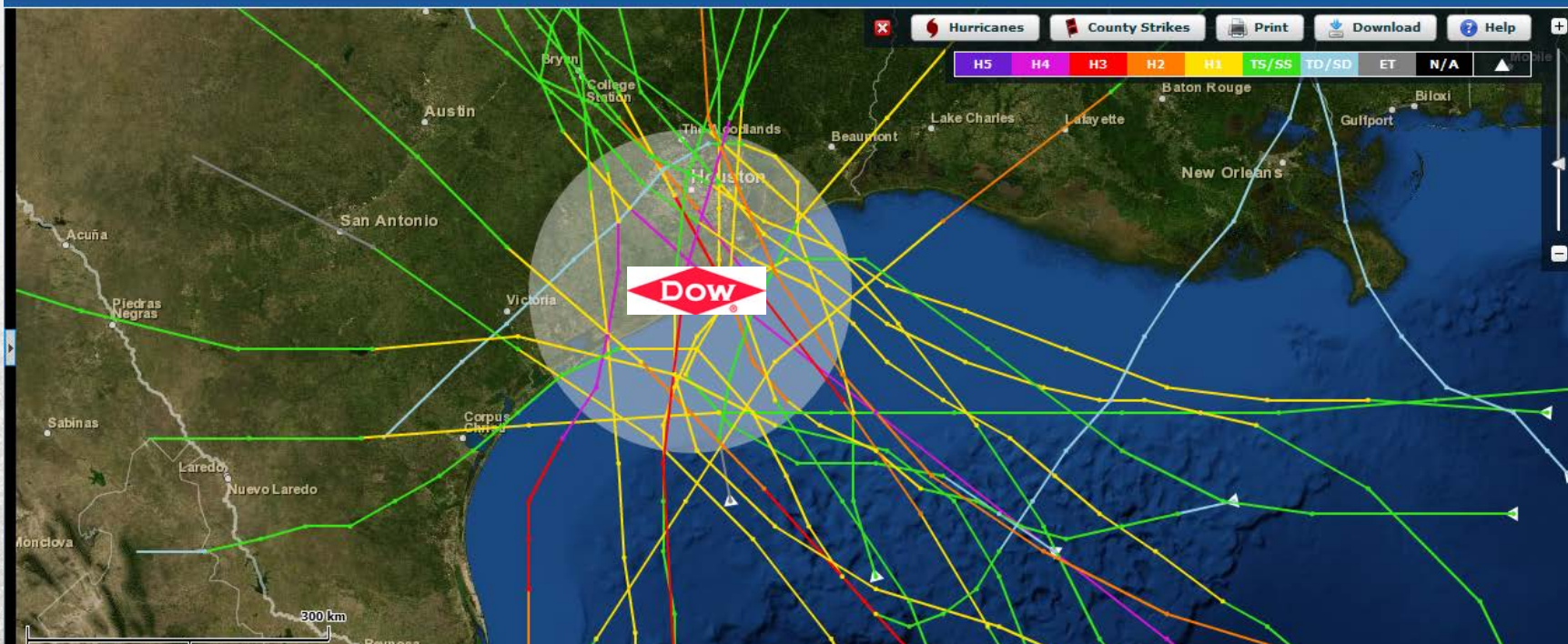


COST-BENEFIT ANALYSIS

COASTAL PROTECTION FOR DOW CHEMICAL FACILITIES

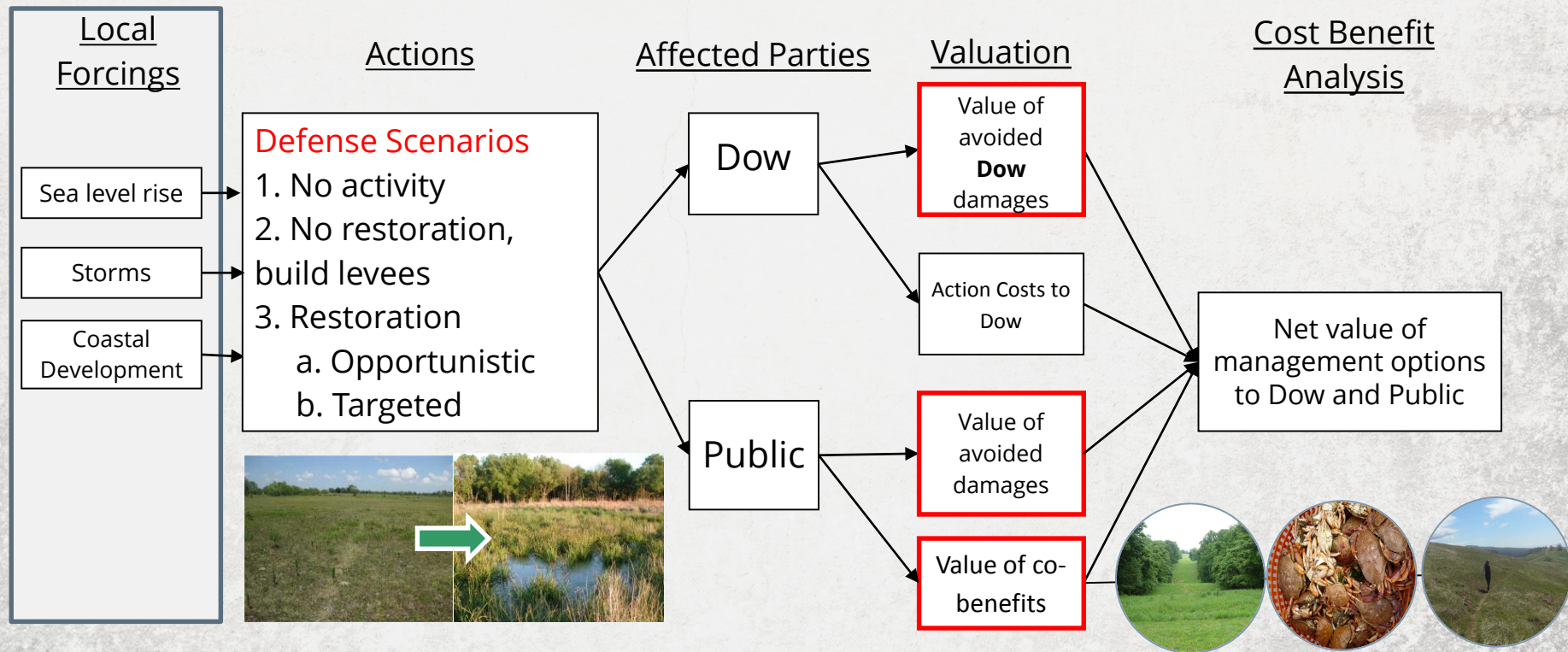
Historical Hurricane Tracks 1913 - 2013 (n = 23), 50 mile radius from Freeport, TX

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



COST-BENEFIT ANALYSIS

COASTAL PROTECTION FOR DOW CHEMICAL FACILITIES



Hartford

Rhode Island

providen ce

National Ocean Council

APRIL 2013

24.6.2008 [25] 0884-40

DECISION 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 17 June 2000
establishing a framework for community action in the field of marine environmental policy (Marine
Strategy Framework Directive)

THE BROWNIE PUBLISHED AND THE CONTENTS OF THE BROWNIE PUBLISHED

Having regard to the Treaty establishing the European

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee (2).

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in

1000

(1) States were asked the *appropriateness and production of*

resembling the *Apanteles*, *Blacus* and the *Campoplex* group.

(2) It is evident that pressure on natural marine resources and the demand for marine ecological services are often

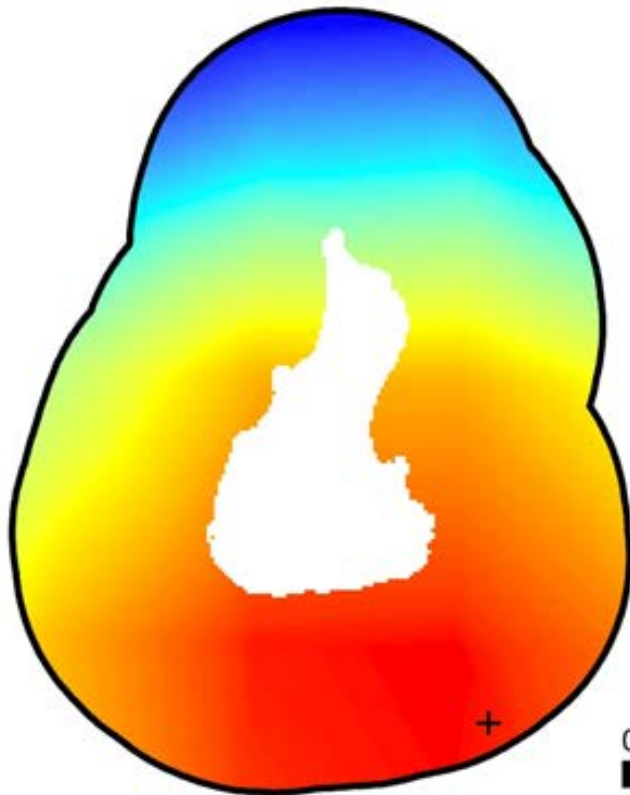
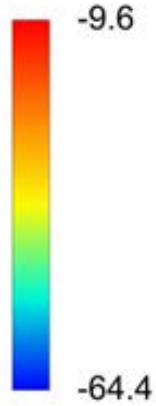
(3) *Journal of the European Association of Law Economists* 2004, p. 3.

Journal of Great Lakes Research 36 (2010) 109–119

100

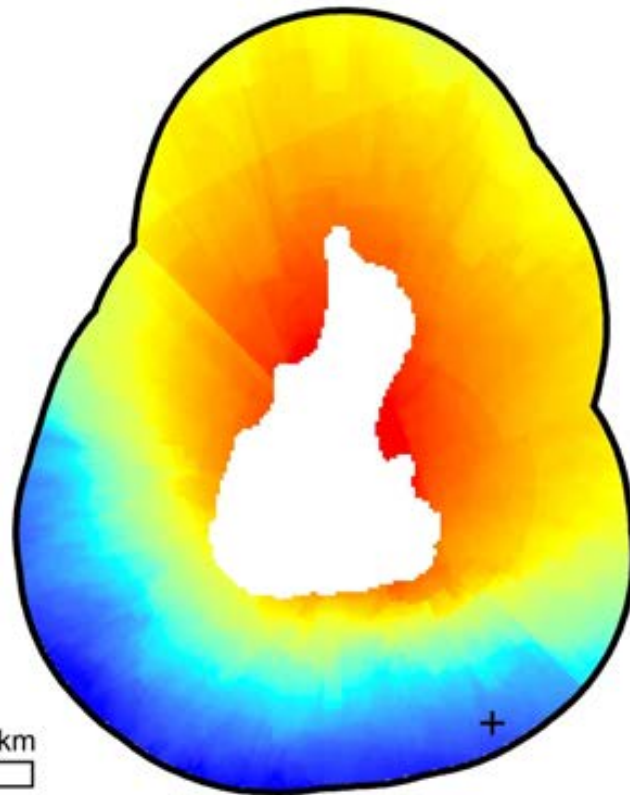
WHERE TO DEVELOP?

Net Present Value (\$ millions)



Wind Energy

Viewer Days (millions)

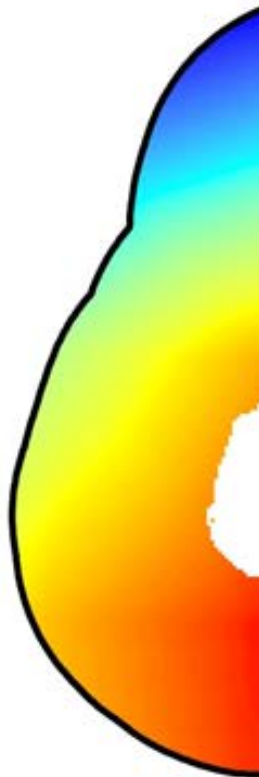


Visibility

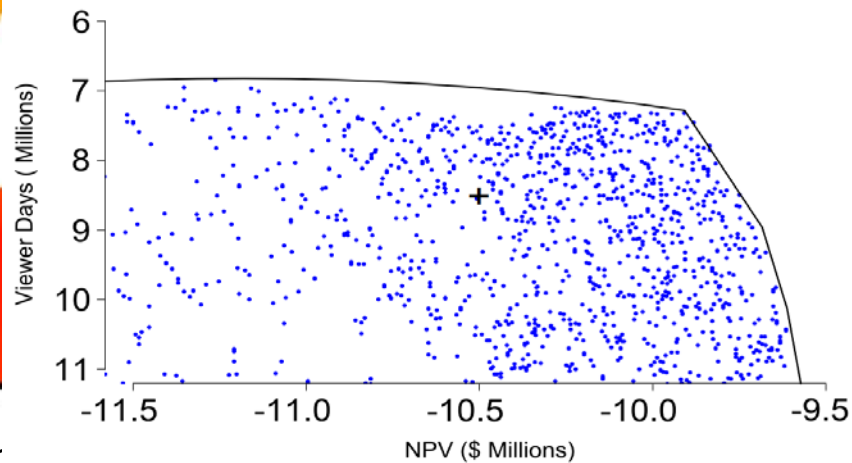
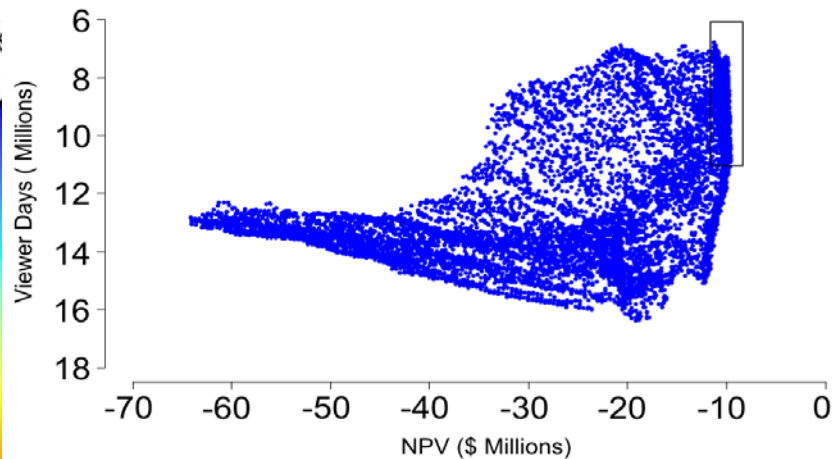


WHERE TO

Net Present Value (\$ millions)



Wir



Visibility



\$

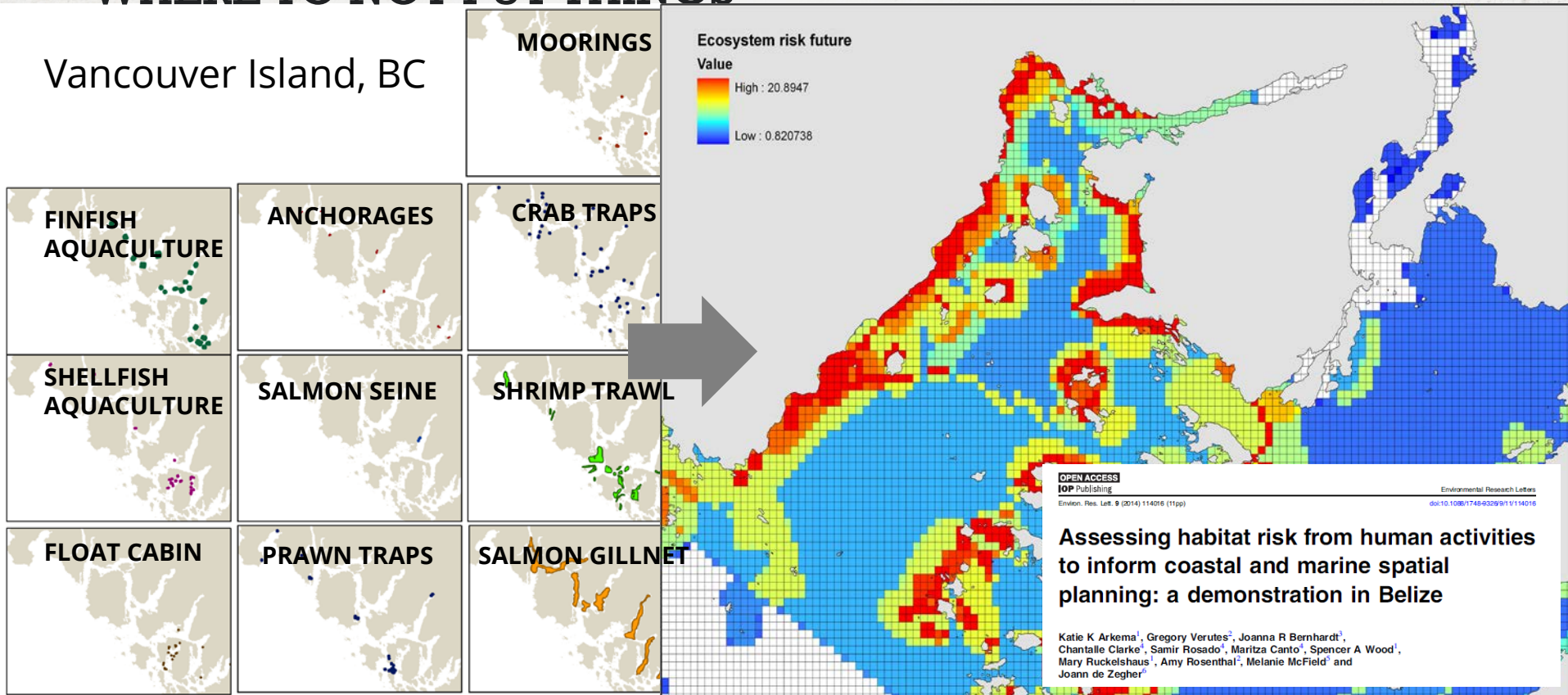


**WHERE TO
CONSERVE/
RESTORE?**

WHERE ARE THREATS TO HABITAT?

“WHERE TO NOT PUT THINGS”

Vancouver Island, BC



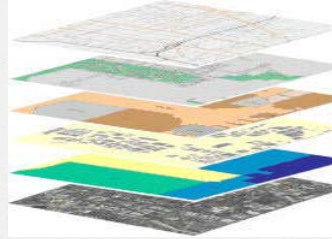
1

Define Partnerships,
Roles & Objectives



2

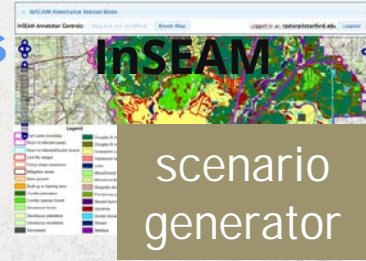
Select Services,
Compile Data



Generate Baseline &
Scenarios

3

Optimize



4

Assess Outcomes



5

Synthesize
Results

6

Iterate & Build
Capacity

7

Inform
Decisions

