Whitaker Institute

Linking Local Knowledge and Fishery Management to Improve Community Support and Compliance

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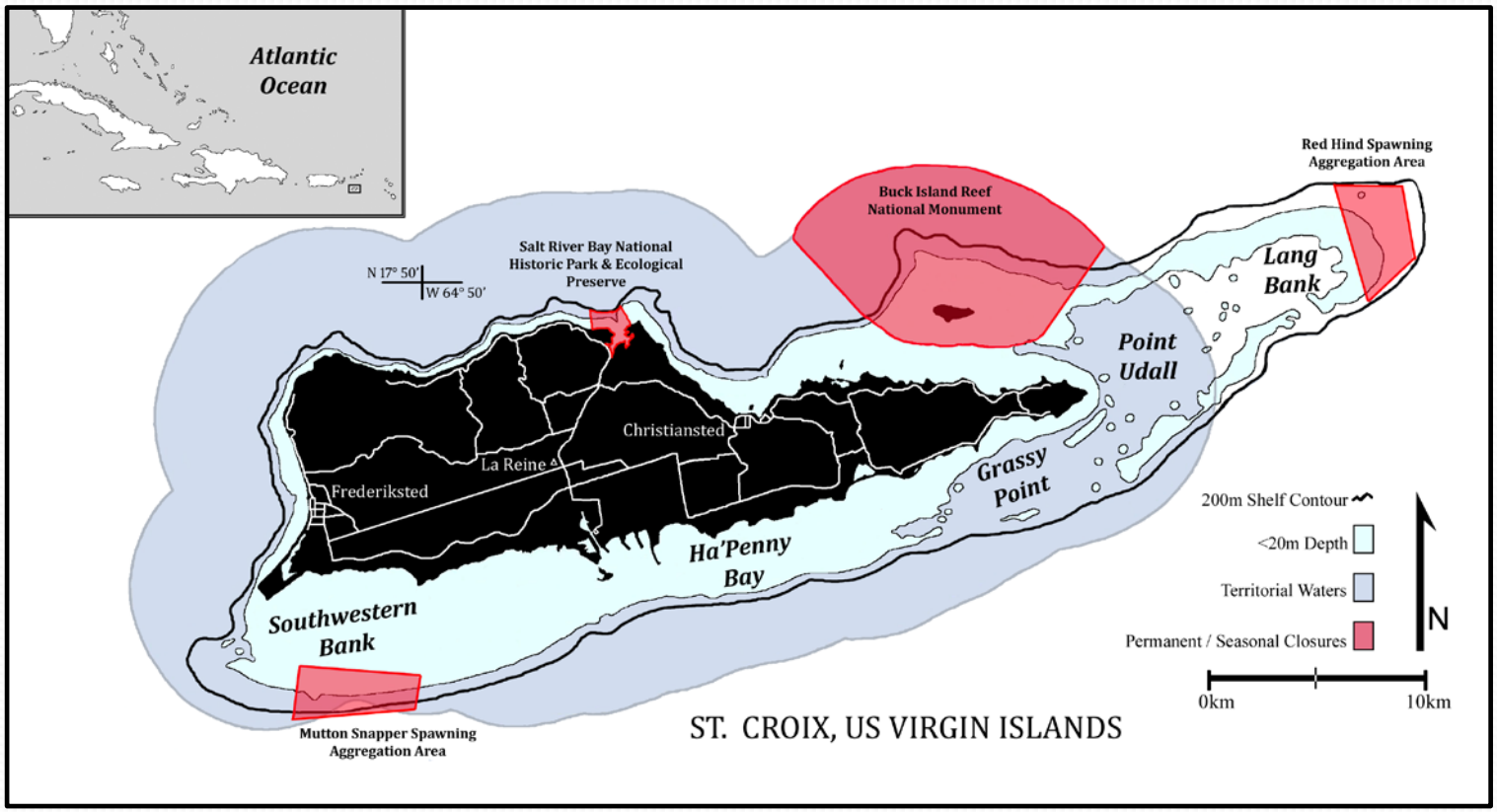
SEMRU Socio-Economic Marine Research Unit

FULBRIGHT

The Case Study: St. Croix, USVI

- ***The Request:*** St. Croix's fishing community has been vocal in their desire for local data and locally-tailored management that reflects their fishing methods and markets.



The Case Study: St. Croix, USVI

Photos: L. Carr, G. Martinez

So What's the Problem?

- ***The Request:*** St. Croix's fishing community has been vocal in their desire for local data and locally-tailored management that reflects their fishing methods and markets.

The Issues:

- Data Uncertainty
- Geography
- Ecology
  - Coral Species Listing
  - Role of Parrotfish

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  - Local Consumption
  - Lack of Alternatives
- Cultural Identity
  - Crucian fishers hold a special place in the local community

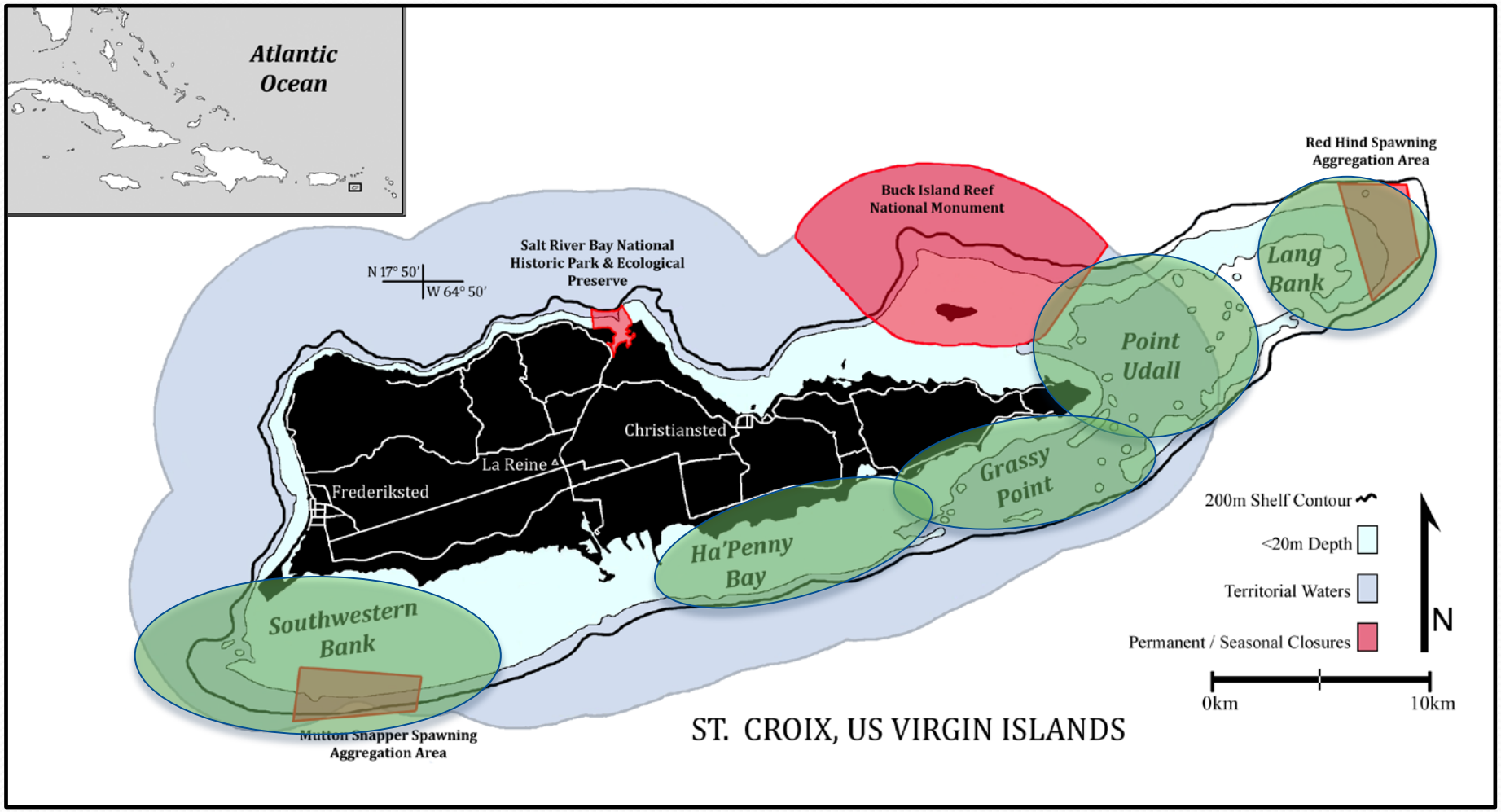
So What's the Framework?

- ***Magnuson-Stevens Fishery Conservation and Management Act provides the legal framework for all federally-managed fisheries in the US and its territories.***

NS-8: Conservation and management measures shall, consistent with the conservation requirements of this Act [i.e. NS-1 and NS-3], take into account the ***by utilizing economic and social data [i.e. NS-2] that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.***

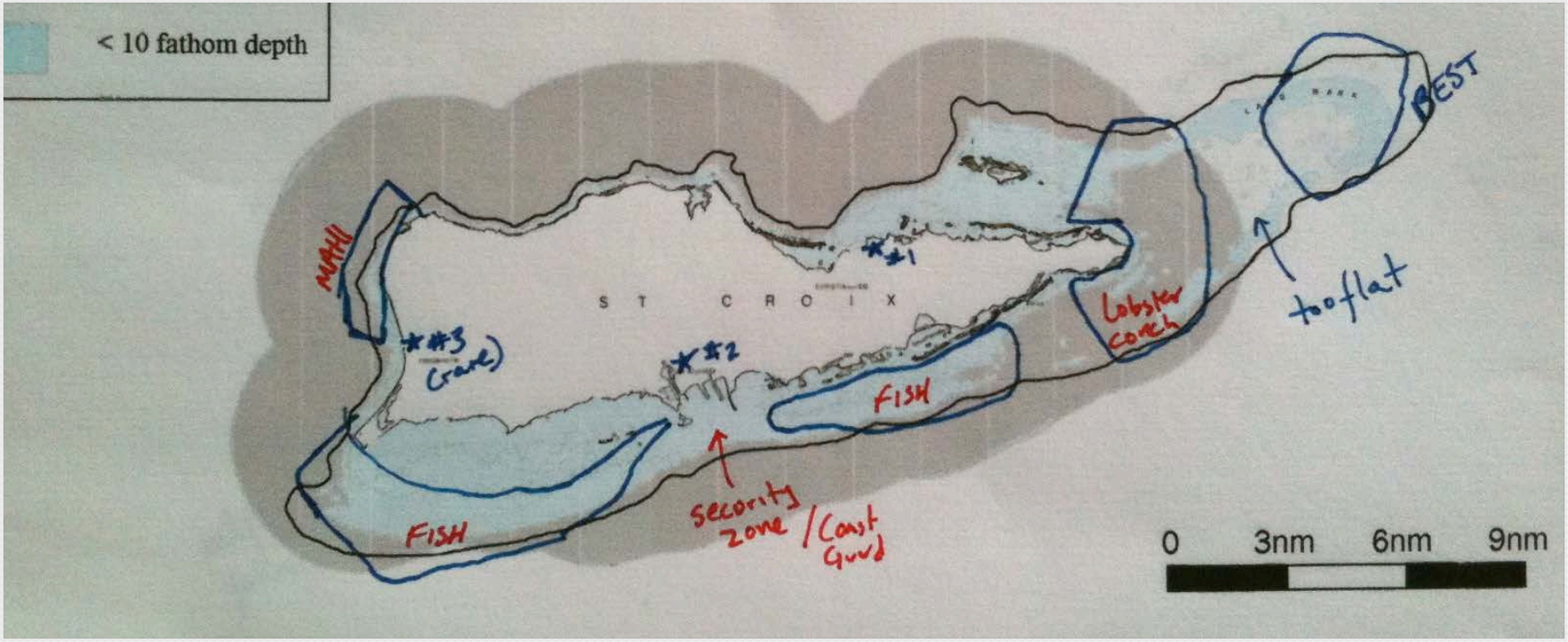
16 USC 1851-1852
MSA § 301-302

The Data: St. Croix, USVI



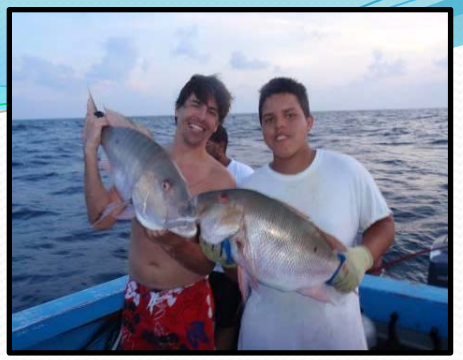
The Data: Social Science

- **Local Ecological Knowledge and Behavior:**
  - **Fills in data gaps**
  - **Reveals ecosystem processes and reef community dynamics**
  - **Can measure regulatory effectiveness and community support**



(Carr *unpub.*)

The Data: Ecology



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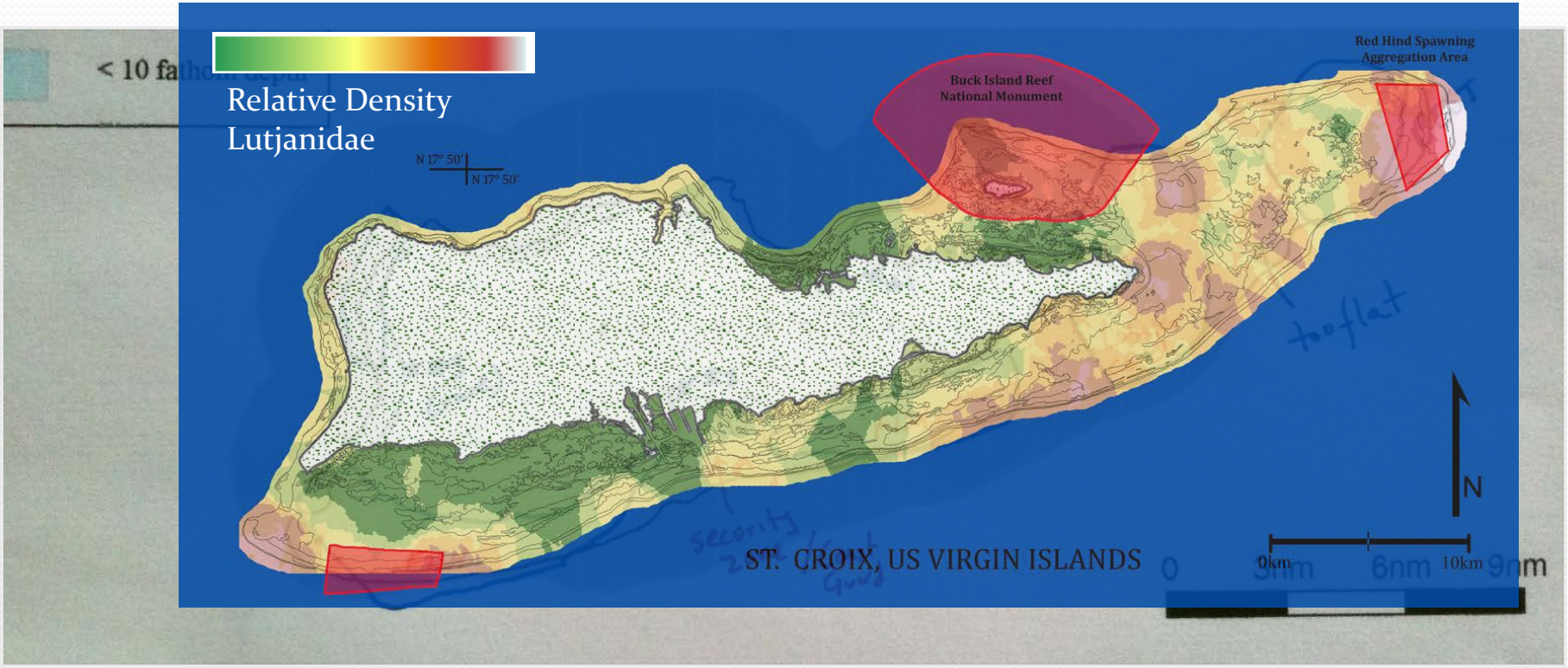
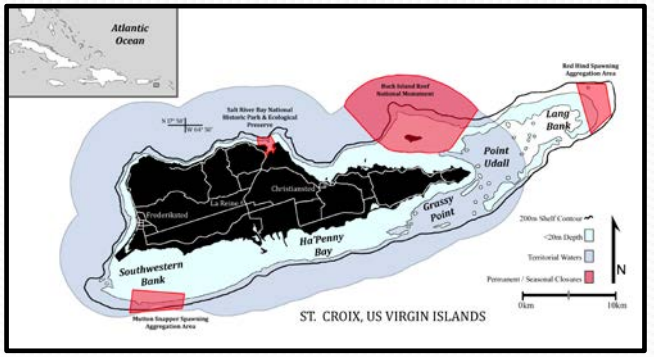


(Carr and Gedamke *in prep.*)

The Data: Economics

Regulatory Period	Lang Bank ($)	Sig. Difference (max = 4)
Red Hind	565 ± 268	2
Mutton Snapper	746 ± 245	3
MSSAA + Conch	394 ± 174	3
7/1 – 9/3	527 ± 288	4
	By Conch Season	
Open Conch	628 ± 284	4
Closed Conch	456 ± 254	4



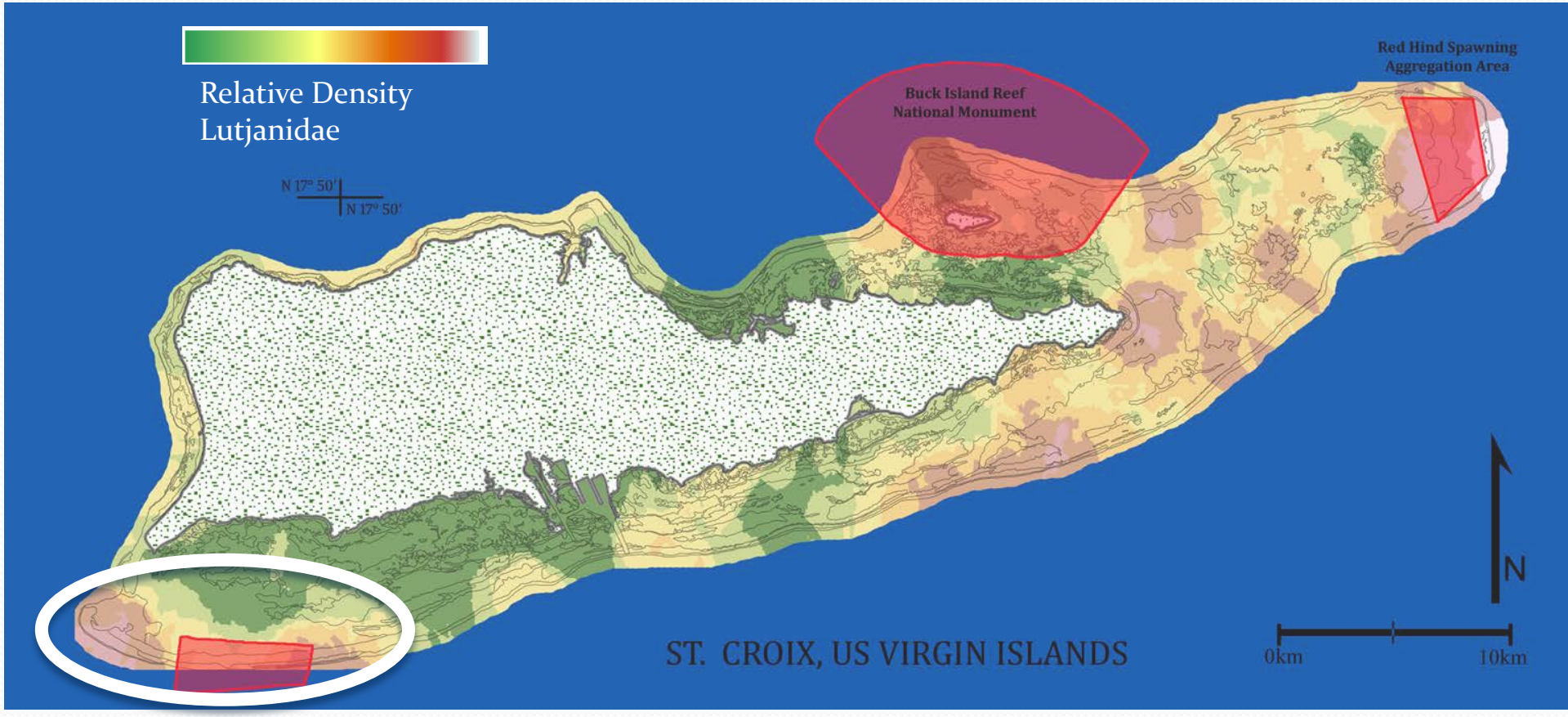
$$V_{model} = \$396 \pm 165$$

$$V_{market} = \$422 \pm 216$$

Positive Factors	Negative Factors
Open Conch Season (+$294)**	RHSAA Closure (-$142)**
Flat Seas (+$145)	MSSAA Closure (-$18)
Calm Winds (+$29)**	

(Carr and Heyman 2014)

The Data: Policy Concerns



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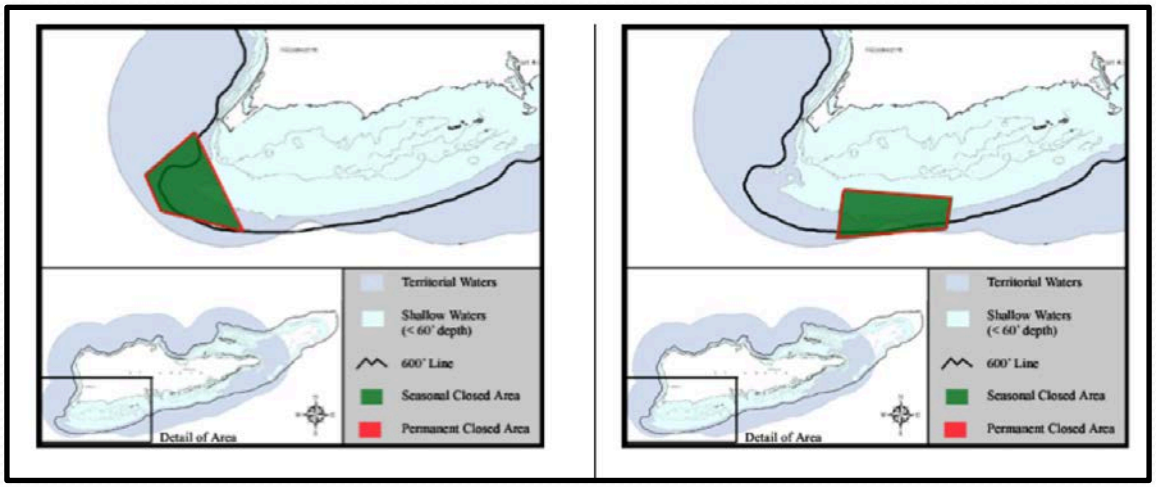
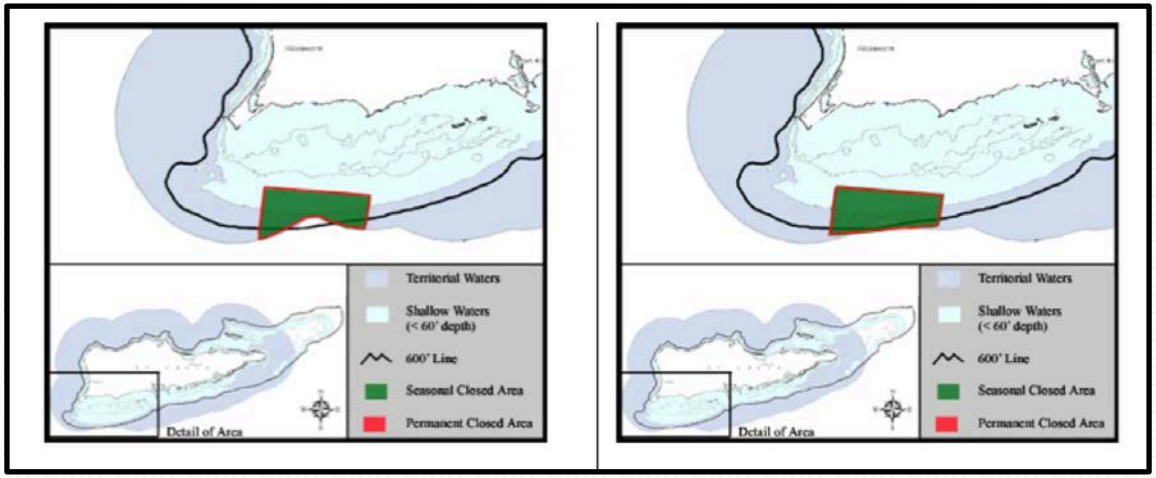
Informing Fisheries Policy



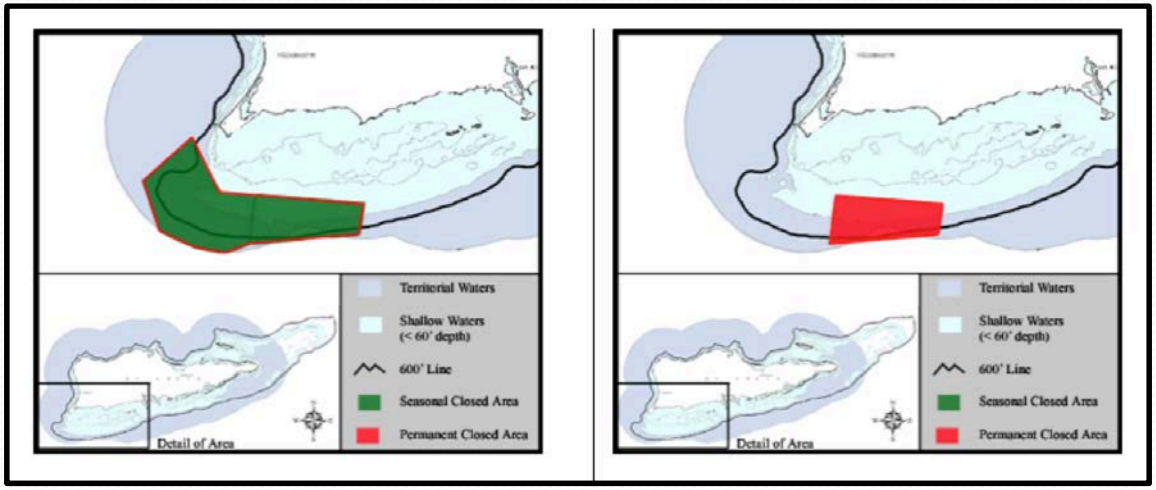
A = 70 (50%)
B = 70 (50%)



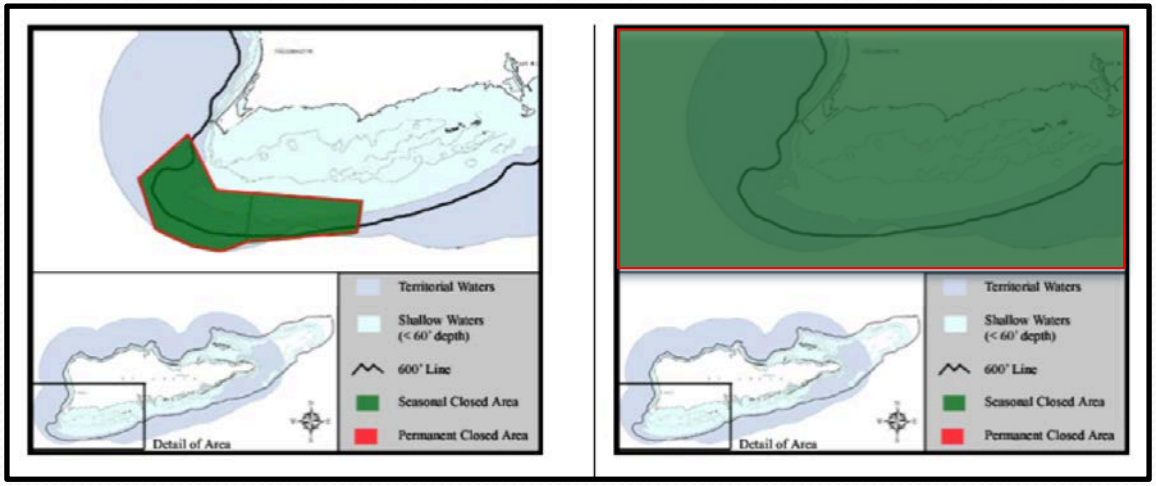
A = 27 (19%)
B = 113 (81%)

(Carr and Heyman *in review.*)

Informing Fisheries Policy



A = 97 (69%)
B = 43 (31%)



A = 93 (66%)
B = 47 (34%)

(Carr and Heyman *in review.*)

What We Learned

- ***The Research:*** Science-Driven, Ecosystem-Based Guidance:
  - ***Strengthens Policy –*** Timely multidisciplinary data can be integrated into policy analyses;
  - ***Gives Voice to the Community –*** Perspectives and important lessons can be incorporated into proposed regulations, building community support and compliance for regulatory regimes.

Photo: L. Carr

Take-Home Lessons for Ireland

- ***The Research:*** This research carries relevant lessons applicable in Ireland:
  - ***Scale***
  - ***Community Identity***
  - ***Community Participation***
  - ***Data Gaps & Adaptive Approaches***
  - ***Multiple Stakeholder Engagement***

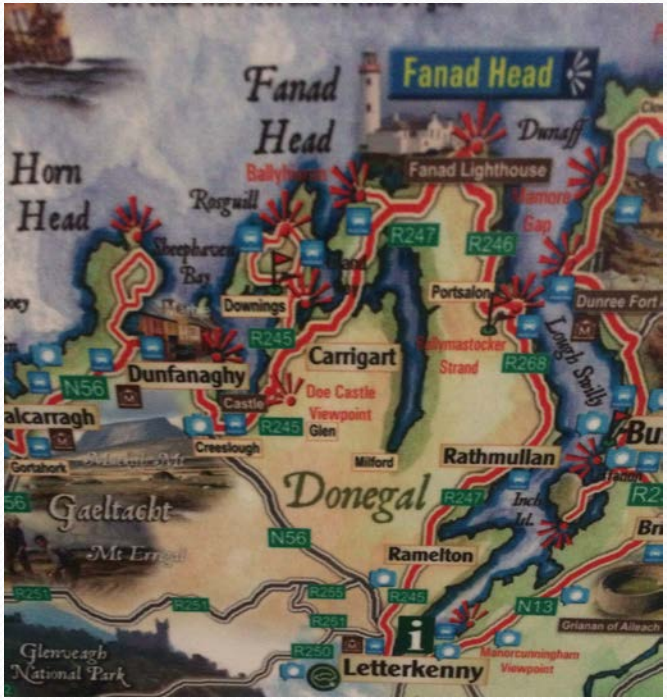


Photo: P. McBride

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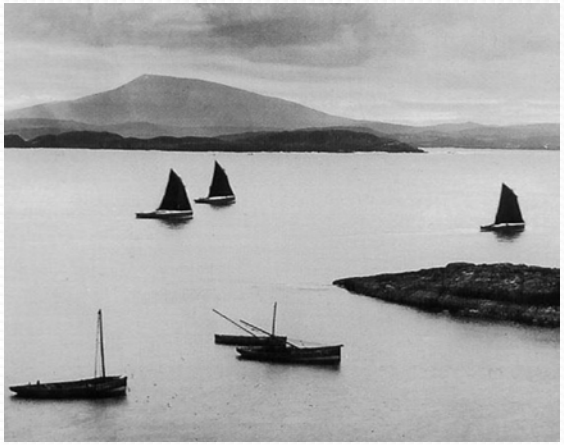

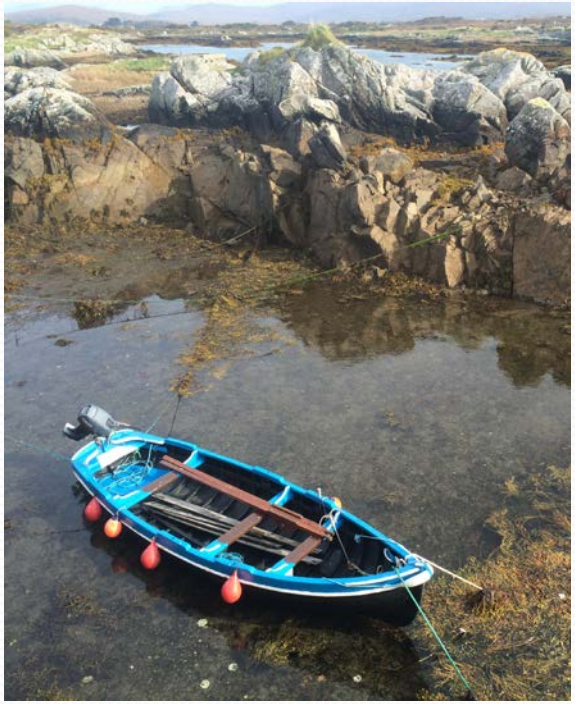

Photos: L. Carr and P. McBride

Thank You
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