Social Science and Policy Internship Summary

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My Work Overview

- Range of projects this summer with Pete Wiley and Kim Penn
  - Economic contributions of the NERRS
  - Human Dynamics
  - Waquoit Bay’s management options and ecosystem services
  - Funding and financing resilience
- Observed many meetings
  - Economics eLearning development, ecosystem services training, GEMS webinar
- Weekly book club meetings to discuss literature
Economic Contributions of the NERRS

Next Steps: finish collecting data, run economic analyses, round out communications aspect and recommendations for future work across system
<table>
<thead>
<tr>
<th>Key Message</th>
<th>Value</th>
<th>Study Scope/Location</th>
<th>USD Year</th>
<th>Potential Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial fishing</td>
<td>1.7 Million annually (value of annual commercial catch associated with increased biomass productivity)</td>
<td>Great Bay</td>
<td>2015</td>
<td>Congress X</td>
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<tr>
<td>Nitrogen removal</td>
<td>$19.211.5 Million (reduced pollutant treatment costs to municipalities for reducing nitrogen in water column)</td>
<td>Great Bay</td>
<td>2015</td>
<td>State Rep X</td>
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<td>2015</td>
<td>Local Rep X</td>
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<td>Carbon sequestration</td>
<td>$130,725 (reduced harm in terms of net agricultural productivity, human health, property damage, etc. associated with increased carbon sequestration between gain and sustain scenario and lose habitats scenario)</td>
<td>Great Bay</td>
<td>2015</td>
<td>State Gov X</td>
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<td>Existence Value</td>
<td>Local residents value salt marshes, eelgrass, and oyster beds protected by the reserve</td>
<td>Great Bay</td>
<td>2015</td>
<td>Local Gov X</td>
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<tr>
<td>Recreation (Oyster harvesting)</td>
<td>Investing and protecting in the marsh capitalizes on interest in recreational oyster harvesting, bringing in revenue from licenses</td>
<td>Great Bay</td>
<td>2015</td>
<td>Businesses X</td>
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<tr>
<td>Aquaculture (Commercial oysters)</td>
<td>$131,171-$142,102 (increased value to aquaculture farms by acres expanded in Gain scenario)</td>
<td>Great Bay</td>
<td>2015</td>
<td>Residents X</td>
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<tr>
<td>Aesthetic Appreciation</td>
<td>$478 million (in taxes, real estate commissions, home construction and utilities/maintenance)</td>
<td>NH - statewide</td>
<td>1996/97</td>
<td>NGOs X</td>
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<td>Wildlife</td>
<td>$685 million (in money state wide in direct expenditures in the state)</td>
<td>NH - statewide</td>
<td>1996/97</td>
<td>Academics X</td>
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Human Dynamics

- Developing an approach to characterize the relationship between the NERRS and human behavior and values
- Expanded planning process and visualized timeline in a flowchart
- Pitched project at Getting Creative Think Tank sessions to gauge interest and feedback
- Contributed to scoping aspects through informational interviews and qualitative analysis
- **Next Steps:** Planning/development phase, submitting proposal to Strategic Visioning
Planning Process Flowchart

National Estuarine Research Reserve System
NOAA Office for Coastal Management
Human Dynamics Planning Process

Coordination
Summer 2020
Garner OCM and Reserve Management Support
- Contact reserve staff for initial input
- Establish steering committee
- Meet with strategic committee
- Compile communication elements
- Present organizational context
- Establish milestones

Information Gathering
- Identify and reach out to potential partners
- Develop information on human dynamics elements
- Elicit reserve staff suggestions for improvements
- Identify OCM priorities

Design
Fall 2020 – Winter 2021
Project Planning
- Set up effective planning process
- Establish team of reserve and OCM staff to ensure project is in line with identified needs
- Project planning activities based on brainstorming and scoping outcomes
- Write proposals and statements of work

Approval
- Steering committee review
- Presentation and input at the annual meeting

Implementation
Spring 2021 – Onward
Project Execution
- Manage project vehicles
- Engage with researchers, partners, and audience as needed

Evaluation

Step 2: Information Gathering
Action Item
Identify and reach out to potential partners by contacting reserve managers. Schedule interviews and focus group discussions with managers and steering committee to discuss current ecosystem services work and to elicit improvement suggestions [MILESTONE].

Action Item
Develop information on each of the elements needed to inform the information gathering process. Write and revise white paper to gather and explain ideas to partners and stakeholders.

Action Item
Facilitate a process to identify OCM priorities via discussions with project team and partners.

Decision Point
Assess how each human dynamic element should be addressed, how they are independent, and which are top priority [MILESTONE].
Questions for Human Dynamics Semi-Structured Interviews of Reserve Staff

Human Dynamics are a set of elements that describe and communicate the reciprocal relationship between humans and coastal and estuarine resources through social science, communications, and engagement. Specific elements include, but are not limited to, ecosystem services; economics; socioeconomic indicators; knowledge, attitudes, perceptions, and beliefs; stakeholder engagement, and communications and outreach.

Purpose: To develop a holistic approach to better characterize the dynamic relationship between Research Reserves and human behavior and values—what information is needed, how it can be used, and how it all fits together.

- How integral are Human Dynamics (HD) activities to your reserve?
- How do HD elements align with your reserve goals and objectives? For example, is HD information needed to achieve or evaluate your reserve goals and objectives? If so, how does HD information inform the reserve objectives?
- How do you feel you are doing in terms of obtaining the HD information that you need and engaging in HD activities? How do you go about collecting this information? What is its priority level?
- In addition to what we have described as elements of human dynamics, are there any other areas that we have missed that should be included?
- How important do you feel it is to better coordinate the human dynamics elements in the reserves? What would it look like if we did?
- What are the barriers and challenges to adding social science capacity to your reserve?
  - Hiring, funding, etc
Ecosystem Services of Waquoit Bay

- Hydrologic Alterations of Salt Marshes project
- Read project proposal, one-pager, and online tool to identify ecosystem services of ditches
- Identified trade-offs in ecosystem services of different management options
Funding and Financing Resilience

FAQs for Funding and Financing Coastal Resilience Projects

Purpose: To present coastal managers and community planners with introductory information regarding funding and financing mechanisms for resilience and natural infrastructure projects, to provide resources and links for opportunities and more information, and to give examples of successful funding and financing projects.

1. What are the different types of funding and financing? What are the considerations of each?
2. Where should I search for funding? What options are available?
3. What are some examples of funding and financing projects?

Next Steps: Finish communications process and align with webinar content
Peer-to-Peer Case Study

Next Steps: finish interviews and write summary
“Choose Your Own Adventure” Toolkit

- Toolkit/decision tree to accompany funding and financing webinars
- Brainstormed ideas for structuring and content
- **Next Steps:** continue work of decision tree to teach managers how to make best financial decisions based on community size, current funding, and project
Reflections and Conclusions

- Reaffirmed my interest in civic service and a career in the environmental sciences
- Intersection of social sciences and teaching with the natural sciences
  - ES training, Human Dynamics
- Learned about present topics in the field through “book club”
  - Ecosystem services, services to ecosystems, cultural services
- Informational interviews -- exposure to wide variety of career paths, roles, and backgrounds
Thank You!

- Pete Wiley and Kim Penn, for being the most supportive, caring, and best mentors ever!
- Everyone who has helped me with my projects
- Everyone who has let me sit in on meetings and contribute
- Informational Interviews
- Leonard D. Schaeffer Fellows in Government Service & Princeton Internships in Civic Service