Annie Cox is the Coastal Training Program Coordinator at the Wells National Estuarine Research Reserve in Maine. She develops and organizes workshops and trainings for professionals working with and making decisions that affect natural resources in the region.

Annie holds a M.S. in Ecological Design from the Conway School in Easthampton, MA and a B.S. in Biology from the University of Maine at Farmington. She became interested in land use planning issues while teaching sustainable agriculture and aquaculture in rural Zambia during her two years as a Peace Corps volunteer.
Building Research Skills in K-12 Education
Sarah Nuss
Education Coordinator
Chesapeake Bay National Estuarine Research Reserve in VA

Summary Points:
• This project sought to help businesses in Kennebunk and Kennebunkport, Maine self-assess their resilience to natural disasters. Annie Cox and the Wells Reserve led the project, which was supported by a Science Transfer grant from National Estuarine Research Reserve System Science Collaborative.

Are small coastal businesses thinking about disaster preparedness?

Anne Cox
Wells National Estuarine Research Reserve
NERRS Science Collaborative Webinar Series
June 21, 2018 3:00-4:00 pm EST
Summary Points:

• The goal of the project was to engage with the business community in Kennebunk and Kennebunkport using the Tourism Resilience Index (TRI) that was developed by Mississippi-Alabama Sea Grant.

• The Tourism Resilience Index is a tool that helps businesses assess if they can maintain their operations before, during, and after a natural disaster.

• A secondary goal was to engage with the business community in the area so that Annie and the Coastal Training Program at the Wells Reserve could better understand their needs as a target audience.

• The Coastal Training Program at the Wells Reserve brings science to the people that make decisions that affect natural resources. Its primary audience is decision makers and prior to this project, the program had not been able to bring in the business audience to participate in much of their programming.

Project Goals:

• Engage business community
• Transfer the Tourism Resilience Index (TRI)
• Use TRI to help businesses assess their ability to maintain operations before, during, and after a natural disaster
• Share findings with business community, climate adaptation professionals

High Tide + Nor’easter March 2018
(1 of the 4 Nor’easters that month)
Summary Points:

- Kennebunk and Kennebunkport are two towns in southern, coastal Maine. The Kennebunk River separates them.

- Both towns are scenic and quaint but have slightly different socioeconomic characteristics. Kennebunkport is one of the Top 5 wealthiest towns in Maine based on per capita income. Kennebunk is less wealthy, as the 28th wealthiest town in Maine.

- Both have large seasonal and tourist populations in May-October. The population in both towns increases by 25% during tourist season.

- Both have aging populations and shrinking school enrollments—a problem that all towns in Maine, as the oldest state in the nation, face.

- Kennepunkport struggles with providing affordable housing for mid- to low-income residents.

A small walkable downtown lined with shops and restaurants
Maine’s beaches region is the primary destination for overnight visitors to Maine.

Summary Points:

- The project team chose to work with Kennebunk and Kennebunkport on this project because they represent Maine’s beaches region, an area where coastal businesses and climate impacts overlap.

- The beaches region extends along the southern coast of Maine, from Kittery to Cape Elizabeth, and is popular because it has beautiful, sandy beaches and shops, restaurants, and businesses along the coastline. This makes the region the state’s largest economic asset and the biggest draw for tourists of any region in the state.

- However, its low-lying beaches and coastal businesses make the region particularly vulnerable to sea level rise and extreme weather events, which are becoming increasingly frequent.
Summary Points:

- A 2008 study by Colgan and Merrill at the University of Southern Maine and the New England Finance Center underscores the beaches region’s vulnerability. The study specifically identified Kennebunkport as one of the most vulnerable communities to disaster in the state because its economic assets, including jobs, are in close proximity to the Kennebunk River and the ocean.

- This study was not front page news and, in fact, the Kennebunkport town planner had not seen it until Annie brought it up to him. This underscored the importance of the project, and the unique role the Coastal Training Program plays in science translation and serving as an intermediary between research and management/decision making.

“... significant economic assets in close proximity to a shoreline that will be retreating with sea level rise ...”

Colgan and Merrill 2008
Summary Points:

- The project team included Kennebunkport’s Town Planner, the Kennebunk-Kennebunkport-Arundel Chamber of Commerce, Laudholm Trust, the Wells Reserve, and the National Estuarine Research Reserve Association.

- Laudholm Trust, the Wells Reserve’s Friends Group who raises money for one-third of the reserve’s operating budget, connected Annie with the Chamber of Commerce. The Chamber of Commerce then connected Annie to local businesses.

- The meeting pictured here was to develop a list of businesses Annie should interview about resilience. The Town Planner was helpful because he knew which businesses were experiencing flooding, while the Chamber of Commerce Director was helpful in navigating the business landscape and suggesting who might be receptive to participating in the project.

- Project end users were small business owners in Kennebunkport and Kennebunk lower village.

Methods

- Literature Review

- Interviews

- Used SEAS courses and literature to determine elements of successful collaboration

- Interviewed 52 people from 30 organizations and coded transcripts for common themes

- Case Profiles

- Studied nine watershed collaboratives to assess transferable lessons

Project Approach

- Spring 2016: Student recruitment; Application review; and Lesson Plan Development workshop

- Fall 2015: Teacher reviewers tested lesson plans in the classroom and provided feedback

- Spring 2017: Final edits to lesson plans and Lesson Plan Expo open to teachers statewide
Mississippi Alabama Sea Grant developed a series of resilience indices: tourism, fisheries, ports, coastal communities: masgc.org/publications/category/resilience-indicies (sic)
Summary Points:

- The Tourism Resilience Index contains 55 questions across six categories:
  1. Business and operations plans;
  2. Disaster and preparedness plans;
  3. Marketing;
  4. Workforce;
  5. Federal/state/local resources; and
  6. Resource access and knowledge.

- Mississippi-Alabama Sea Grant developed the questions with industry leaders and focus groups. The project team used these same questions for their project. However, they adapted the resources at the end of the Index with New England-specific resources.

- The project team used their grant money to provide an incentive for businesses that agreed to be interviewed and complete the Tourism Resilience Index. Businesses could elect to receive a Chamber of Commerce fee waiver or a gift card.

Asked 40 questions based on their:
- Business and operation plans
- Disaster preparedness plans
- Marketing
- Workforce
- Federal, state and local resources
- Resource access and knowledge

- Provided incentive, waived Chamber fee or provided gift card

Source: MWV Chamber of Commerce/Wiseguy Creative, Flickr

Findings from Interviews:

Downloads by Activity

www.wellsreserve.org/tourismresilience
Summary Points:

• To engage businesses, the project team initially visited the towns’ business association to let them know about the incentive, sent out an email blast, and made cold calls to businesses they identified as a team. These tactics were not particularly successful.

• The project team pivoted and asked the Chamber of Commerce to send an email or text message to businesses notifying them that the project team wanted to talk to them about resilience. This proved successful. The team interviewed 22 business owners or managers who represented 30 businesses, including shopping and specialty retail, lodging, restaurants, finance and insurance, real estate, ports, and recreation.

• Interviews lasted 30-90 minutes, during which time the interviewees completed their questionnaire, calculated their score, and discussed resources available to increase their resilience with the project team.

• Interviewees exhibited a range of attitudes about the interview. Some were excited, but others were distrustful and thought that their answers would be used against them. This made it important that interviewees were allowed to keep their index scores and resources book, and the project team only took their notes from the interviews with them.
Summary Points:

**What:** A grant-sponsored collaboration of public, academic, and nonprofit organizations

**Purpose:** To enhance the capacity of NH stakeholders to make informed decisions about buffer restoration and protection in the Great Bay region

**Why values and aspirations:**

Questions we asked

- Tell us why the SRW is special to you. What's it like living and working here? What makes the watershed important? What qualities are most important to you?
- What is your biggest hope for the future of the SRW?
- Imagine a collaborative was formed and we are now 5 years into the future. What would success look like to you?

**Lessons Learned**

- End Users
- Partnerships
- Using a model
- Management of graduate students
- Copyright
- Leveraging funds

Reviewing resource section was a way to talk about sea level rise and climate change impacts
Summary Points:

Key lessons the project team learned from engaging with the business community:

- Find a trusted contact to connect you with businesses, such as a Chamber of Commerce.
- Have some type of way to incentivize businesses to meet with you.
- Meet businesses on their time and in their space rather than asking them to come to you.
- Engender trust by allowing businesses to take their index scores and resources book with them with they leave the interview.

Lessons learned from engaging with businesses:
- Work with a trusted contact (Chamber of Commerce)
- Have an incentive
- Go to them, or go where they go (business association meetings, chamber meeting)
Collectively businesses have much experience with disaster response

Summary Points:

- Interviews revealed that collectively, small businesses have a lot of experience with disaster and do think about disasters somewhat frequently. Disasters can include flooding, hail, fire, or even sinkholes in the parking lot.

- Few businesses actually have an actionable plan in place that they test annually.

- Since businesses have many experiences dealing with and recovering from disasters, they could benefit from sharing their experiences and lessons learned with each other.

Nuisance flooding of parking lot, Kennebunkport Oct 2016
Summary Points:

- People in the Great Bay watershed, and in NH as a whole, value the provision of ecosystem services and are willing to invest resources to maintain and improve them.
- Buffers are an effective means of maintaining these valued services including water quality, wildlife habitat, and flood risk reduction.
- There are certain widths and vegetative compositions needed within buffers in order to maintain ecosystem services at a specified level.

Perceptions of Issues:

- Recreation
  - Overuse
  - Safety, security, privacy
  - Lack of awareness of impacts

- Water Extraction
  - Stormwater runoff
  - Conversion of private forestlands

- Development
  - Growth of Conway and Biddeford/Saco
  - Ecological connectivity
  - Inadequacy of federal standards
  - Benefits of hydroelectric power generation
  - Loss of local control
  - Private benefit from a public good
  - Distrust of science

Nuisance flooding? Kennebunkport Jan 2018
Summary Points:

- This is a business owner standing in ankle-deep water after a major snowstorm in 2018. One adaptation this business used is to place indoor/outdoor carpeting in the restaurant so that they are more resilient to flooding.

“I had to call the fire department because the water was over the (electrical) outlets and (there was) some smoking and sparking,” Luanne MacDonald, Portland Press Herald, Jan 4, 2018
Summary Points:

After the interviews, the project team took the lessons they learned and combined them with recommendations from a post-Hurricane Sandy assessment and the New England Climate Preparedness Conference Business Panel to develop a list of best practices for disaster preparedness for small businesses. They included:

1. **Diversify suppliers and contractors.** For example, the Brattleboro Savings Bank was not directly affected by Hurricane Sandy, but the people who managed their servers were affected. This meant the bank went out of service for a week while their providers were trying to recover and get their business operations back online.

2. **Develop a succession plan.** Many business owners have an informal plan in their heads but if they pass away or someone else takes over the business, they may face a steep learning curve.

3. **Develop a continuity of operations plan.** It may be particularly helpful to store hard copies of critical records, payroll information, etc. in a separate location (a theme heard from businesses post-Sandy).

4. **Know what your insurance covers and adjust it annually.** Businesses that have been through a disaster are often surprised to find that their insurance doesn’t cover smaller expenses, which can add up quickly.
Summary Points:

- Initially, the team hoped that in their interviews, each business would identify one item they would tackle to increase their resiliency (e.g., create a staff succession plan), and the team would check in on the business one year later to see if they had completed it. However, it quickly became apparent that this would not happen over the course of the interviews.

- Annie surveyed the businesses after the interviews to see if they found the index helpful, what other information they might need to develop new disaster management strategies, and in what format they wanted the information (e.g., a workshop, one-page document, etc.).

- For next steps, the project team is hoping to scale up the project by engaging more stakeholders, such as the state tourism office, towns, local banks, and more Chambers of Commerce. They recognize that having each business draft individual plans may not be practical and that they need to think creatively about how to engage with businesses effectively to promote and increase tourism resilience.
Summary Points:

- Interviewees most frequently cited time and relevance as barriers to resilience planning. Many said that planning does not seem relevant if you are not worried about a disaster coming. For instance, one interviewee stated that their business had weathered storms for 38 years and that nothing bad had happened yet.

- A post-Sandy study looked at businesses after the hurricane to see if the business owners found the disaster to be a learning experience and if it would incite them to take more preparedness planning procedures. Generally, businesses stated that the hurricane would not change their behavior.

- The study highlights the psychology of learned helplessness and amnesia, showing that the prevalent mindsets towards small business disaster preparedness are often “If I can survive Sandy, I can survive anything” or “Chances of another Sandy happening are so slim that I’m not going to waste my time preparing for it.”

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Planning Barriers

Barriers to developing or maintaining disaster preparedness plans (from interviews):

- Time
- Relevance

Scarinci 2016:

58% of survey participants revealed that they still did not have a plan in place after their Sandy experience

Of the 42% with a plan, only 13% were formalized
next steps for anyone

- Start the conversation
- Use existing resources
- Build off previous work
- Work with partners to incentivize action
Questions:
Which aspects of the Tourism Resilience Index were adapted from the Gulf to Maine?
None of the questions were changed or removed, but the project team did change the resources section so that it was applicable for New England.

Have you connected with FEMA or the Small Business Administration about your project or future efforts? They both have a lot of experience with incentivizing hazard preparedness.
Yes. The team has tried to engage Maine’s Small Business Administration in an event with the beaches region Chambers of Commerce to share lessons learned about surviving disasters, but the workshop ended up not being offered due to low enrollment. Finding a way to work with them differently will be part of the project’s next scaling up effort.

Do you find peer-to-peer exchange is challenging among businesses in competition with one another? Does that competition seep into disaster preparedness?
Absolutely, the businesses are competitive, and they are a different audience than the people who the Coastal Training Program typically works with (i.e. managers, decision makers), who love sharing best practices. That being said, the businesses we interviewed often said that when a disaster occurs, the whole community pitches in to help each other. But there is definitely a hesitancy from the businesses to share their mistakes or things that haven’t worked well for them with competitors.

Questions?
acox@wellsnerr.org
wellsreserve.org/tourismresilience

This work was sponsored by the National Estuarine Research Reserve System Science Collaborative, which supports collaborative research that addresses coastal management problems important to the reserves. The Science Collaborative is funded by the National Oceanic and Atmospheric Administration and managed by the University of Michigan Water Center (NA14NOS4190145).

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Questions:

Did you get a sense for how much of an incentive small businesses need to develop a continuity plan?

No, our project was only giving businesses an incentive to participate in the interviews. I would direct you to Mississippi-Alabama Sea Grant (http://masgc.org/) with questions about continuity plan incentivization, because they have funding to incentivize actions in the Tourism Resilience Index.

Who has been your most effective partner? Have you discovered new partners who have been helpful in extending your work?

The Chamber of Commerce was our most effective partner, but it was also fun to work with the Volunteer Coordinator at Wells, with whom the Coastal Training Program does not typically cross paths. The project certainly strengthened our partnership with the Kennebunkport Town Planner, who we have worked with on other projects. Next, we would like to work with the Maine Tourism Office, more Chambers of Commerce, and the Small Business Administration to expand the scope of our project.

You said this was an entry point for you in terms of working with local businesses. Did you find this was an effective topic for engaging businesses and building those new relationships?

I think disaster preparedness was an ambitious topic to begin with, since it’s a topic that really scares some people. The area has regular high tides with flooding, so some people do lose sleep thinking about it, while others are just used to it.

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