

Using Mental Modeling and Communication Audits to Link Ecosystem Service Valuation to Restoration Goals

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Overarching goal: To improve communication about buffers and riparian ecosystem services

- 1. Create consistent messaging to similar audiences.**
- 2. Create messages that better resonate with the public.**

Methods:

- Communication audit
- 22 mental model interviews and 1 stakeholder focus group
- Landowner focus group
- Confirmatory Questionnaire

Step 1: Communications Audit

Documentation of current communication methods, messages, evaluation, and goals

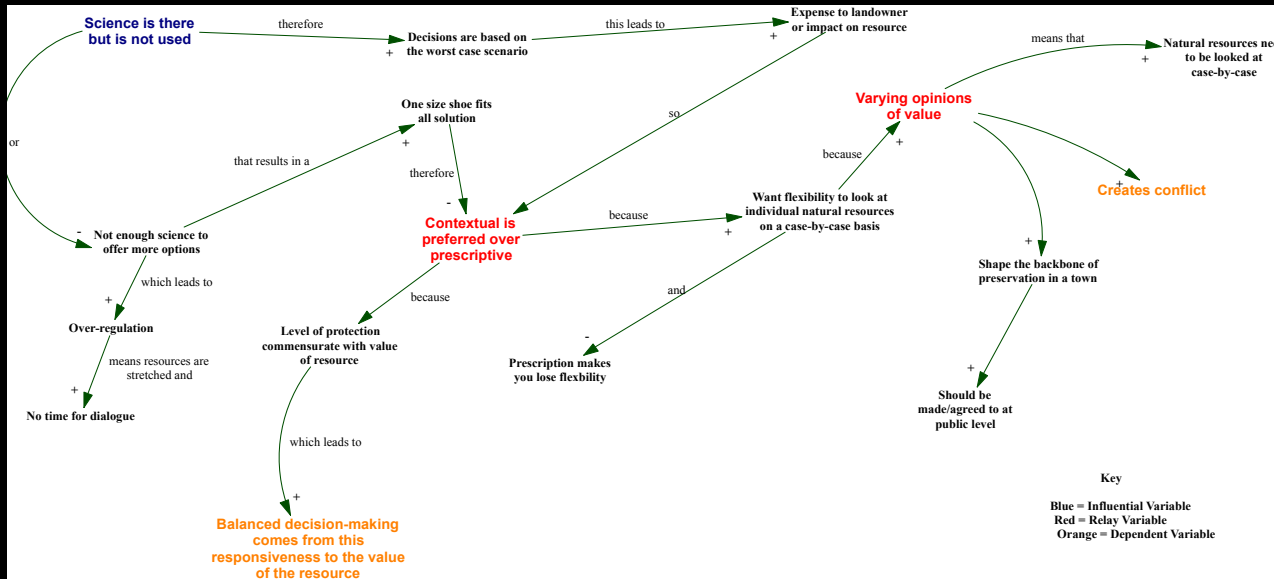
The screenshot shows the homepage of the Wells Reserve website. At the top, there is a navigation menu with links for 'About Us', 'Blog', 'Contact', 'Directions', 'Media', and 'Search'. Below this is a main header with the logo 'wellsreserve at laudholm' and several menu items: 'Research and Monitoring', 'Education and Training', 'Stewardship and Conservation', 'Preservation and Protection', 'Visit and Explore', and 'Support and Effort'. A butterfly icon is positioned to the left of the logo.

The main content area features a large yellow banner for 'laudholm live! summer concerts for the coast'. Below the banner are several smaller sections: 'Summer Concerts in the Big Barn', 'Sign Up Now for Summer Camps', '14th Wells Outdoor Antiques Show & Sale', and 'Changing Landscapes'. A calendar for June 2014 is visible on the left side, with a 'View Full Calendar' button below it.

On the right side, there are three columns of content: 'Visit the RESERVE' with links for Directions, Trails, Exhibits, Volunteering, and Jobs & Internships; 'Find Out WHAT'S NEW' with links for Disaster Preparedness, York River as Good Candidate for Wet and Scenic Study, Impacts of green crab predation on soft-shell clams, Feathered Friendship, and Greenland is Melting; and 'Our Partner LAUDHOLM' with links for MAKE A GIFT, Weddings and Rentals, Laudholm Nature Crafts Festival, About Laudholm Trust, and Testimonials.

At the bottom, there is a grey banner that reads 'GET MONTHLY UPDATES WITH NEWS AND PROGRAMS -- SIGN UP NOW' with a swan icon on the right.

Step 2: Conduct Mental Model Interviews



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What comes to mind when you think about areas in which land and water meet?

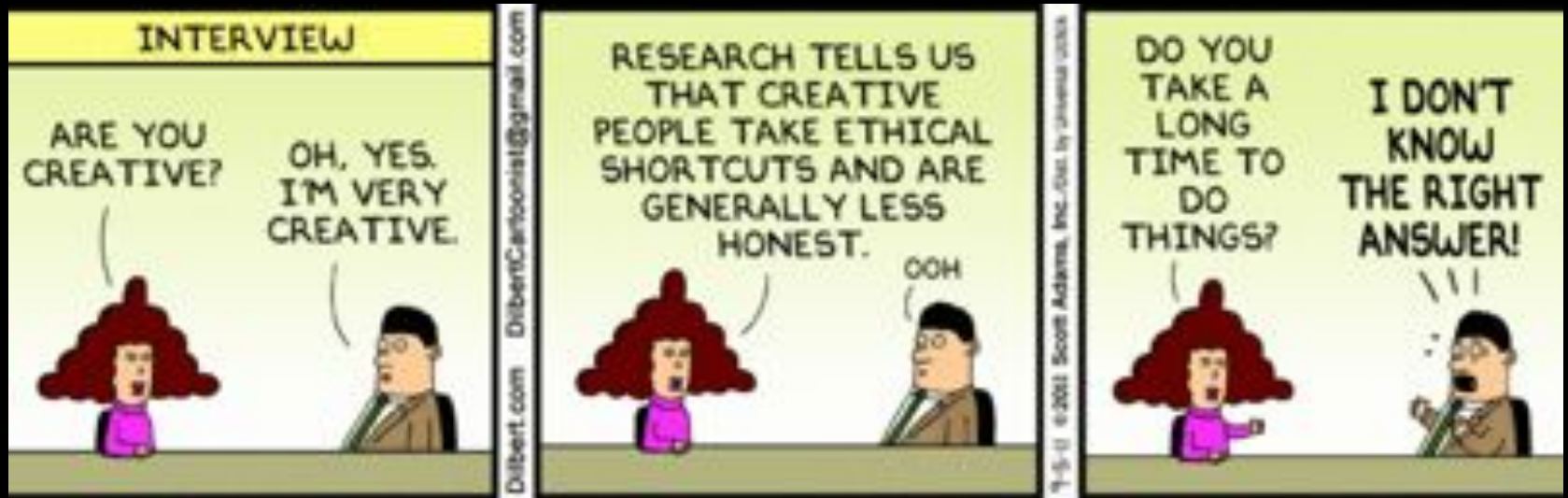
What are the challenges associated with riparian buffers?

Can you tell me about “value” as it pertains to buffers?

Eliciting Beliefs



The Value of Open-Ended Interviews



Step 3: Coding the Interviews – Descriptive & Analytic

own home
alone / lonely
When you move into your own home, you're alone. There is no bustle of people around the house. *people around*

miss company
background noise
I miss having someone to chat to when I get home; I put the TV or some music on. There's some background noise; the silence makes me feel so alone. Sometimes I will be sat watching Irish TV and think I should be out doing something rather than watching this rubbish. *lonely*

doing
tired / depressed
I read a lot but sometimes I am too tired and just want to veg out. But it's been good to move out of mum and dad's as it's not healthy to rely on them as they won't last forever. *independent* *support*

distance
conflict
It's good to have some distance as when I was at home I was arguing a lot with my dad and that was made me decide it was time to go. *marry out*

Step 4: Analyzing the Interviews

The screenshot displays the NVivo software interface. The top ribbon includes tabs for File, Home, Create, External Data, Analyse, Query, Explore, Layout, View, and Picture. The main workspace is titled 'Sample Project.nvp - NVivo'. On the left, the 'Sources' pane shows a tree view with 'Internals' expanded to 'Area and Township', which includes 'Interviews', 'News Articles', 'Project Administration', and 'Survey'. Below this, other source types like 'Emails', 'Memo', and 'Framework Matrices' are listed. The central pane shows a search for 'Area and Township' with a table of results:

Name	Nodes	References	Created On	Created By	Modified On	Modified By
Area and Township Information	12	22	22/06/2010 2:14 PM	WWS	22/07/2010 9:48 AM	WWS
Competing water uses	5	12	17/04/2010 1:03 PM	WWS	25/06/2010 6:48 AM	WWS
Marsh	3	7	17/04/2010 1:03 PM	WWS	26/07/2010 12:44 PM	WWS
Marshallberg harbor	1	2	17/04/2010 1:03 PM	WWS	27/06/2010 11:03 PM	EDR

Below the table, the 'Competing water uses' source is selected, showing a 'Click to edit' link. The main view is split into two panes: a photo of a boat docked at a pier and a table with the following data:

	Region	Content
1	740,240 - 1200,520	Large waterfront homes. These are not indicative of typical homes of those who engage in commercial fishing, but more indicative of second or vacation homes.
2	150,80 - 800,530	Commercial fishing boats. These are likely shrimp trawlers. Note that they have large "booms" that can be lowered laterally from the boat to hold the trawling net behind the boat as it travels.
3	810,350 - 1200,430	Recreational fishing boats

The bottom status bar shows 'In Nodes' and 'Code It'.

Collective Model Themes

1. Fairness of regulation approach
2. Creating a new norm among “Mainers”
3. Deliberative dialogue
4. Balancing economic and environmental decisions
5. Trust and responsibility
6. Communicating the value of buffers

Step 6: The Survey

- N: 1103
- Female: 60%, Male: 40%
- Mean age: 59
- Mean income: \$40K – 59K
- Mean Years of residency: 35
- Live in watershed: 55%
- Education: 50% college & above

Step 6: The Survey

1. To maintain a high quality of life in Maine, it is important to balance development with preservation and conservation.
2. I have heard of the Shoreland Protection Act.
3. I understand the goals of the Shoreland Protection Act.
4. There is sound scientific research that supports current zoning regulations on riparian land.
5. I consider myself a custodian of the land.
6. Regulations are needed to protect shoreland and clean water.
7. It is equally important to protect private property rights and clean water.
8. The long-term protection of the environment is more important than the right of an individual property owner to develop his/her property.

Theme: Communicating the Value of Buffers

52% either haven't heard of the Shoreland Protection Act or are neutral

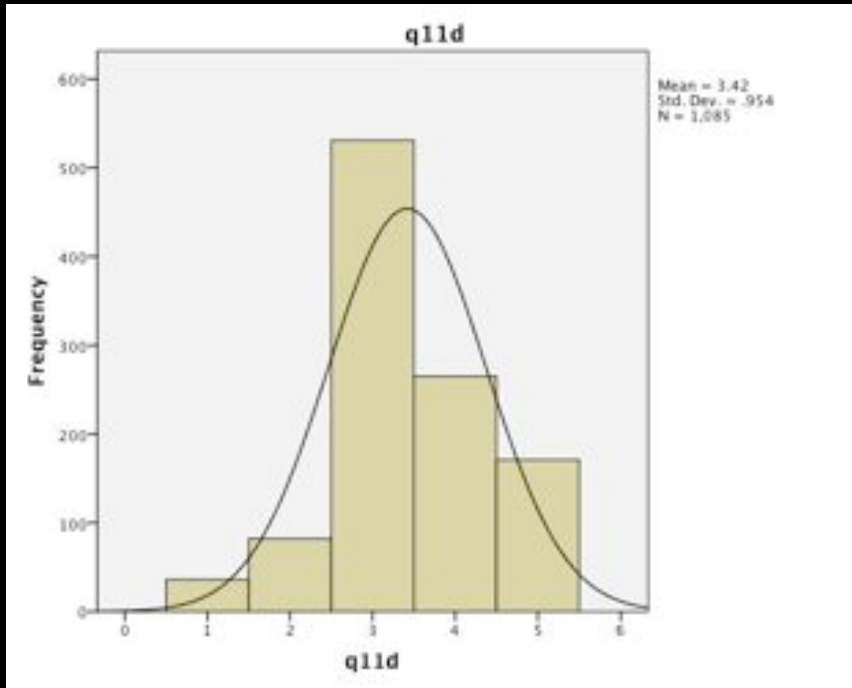
59% either don't understand the Shoreland Protection Act or are neutral

Theme: Communicating the Value of Buffers

Knowledge of shoreland protection act increases, understanding increases

As age increases, understanding of shoreland protection act increases

Theme: Fair Regulation



49% neutral on whether there is sound science to support current regulations

88% agree that regulations are needed to protected shoreland and water quality

Theme: Fair Regulation

As environmental importance increases,
interest in regulations increases

As income increases, interest in regulation
decreases

Theme: Creating a New Norm

69% consider themselves a custodian of the land

Theme: Balance Economic and Environmental

88% agree that it is equally important to protect private property rights as clean water

Theme: Balance Economic and Environmental

As importance of property rights increases,
Environmental importance decreases

As income increases, importance of
property rights decreases

As amount of education increases,
importance of property rights decreases

Step 6.1: Landowner Focus Group

Theme: Trust and Responsibility

- Don't like being told what to do and want to be trusted to be custodians of their land
- Want contextual regulation
- Role of government is to educate and advise not coerce or control

Step 7: Putting it all together

Target younger audience to educate about the Shoreland Protection Act

Link property rights and environmental importance

Be aware that income and education may influence one's feeling of having the "right" to own their property

Step 7: Putting it all together

Design messages about trust and stewardship

Design messages about thoughtful regulation and enforcement

Educate about the science behind regulations & fair enforcement and identify science gaps

Promote the positive role of local government

Step 7: Putting it all together



Thank you!



University of
New Hampshire