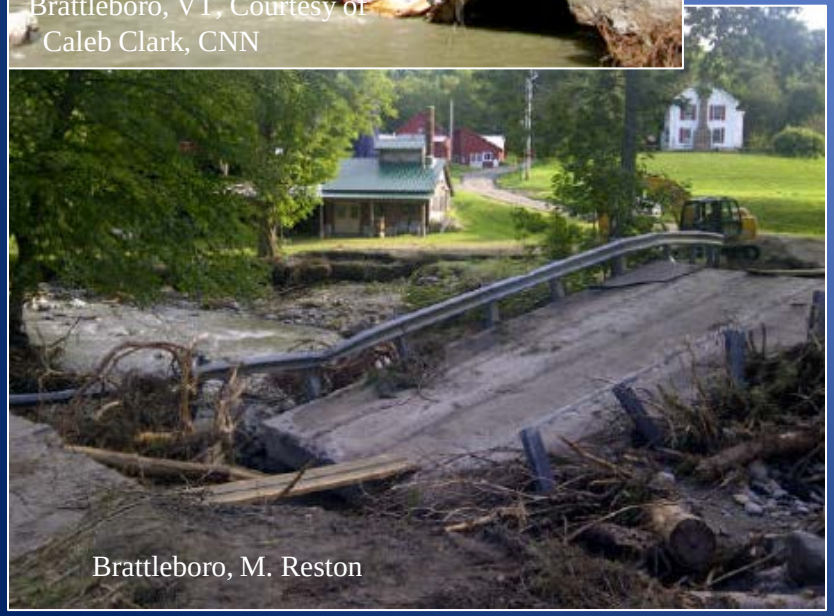
Preparing for the Storm; Reflections on Flooding, Community Resilience and the Important Role of Climate Science.

Secretary Deb Markowitz, Vermont Agency of Natural Resources

Brattleboro, VT, Courtesy of Caleb Clark, CNN

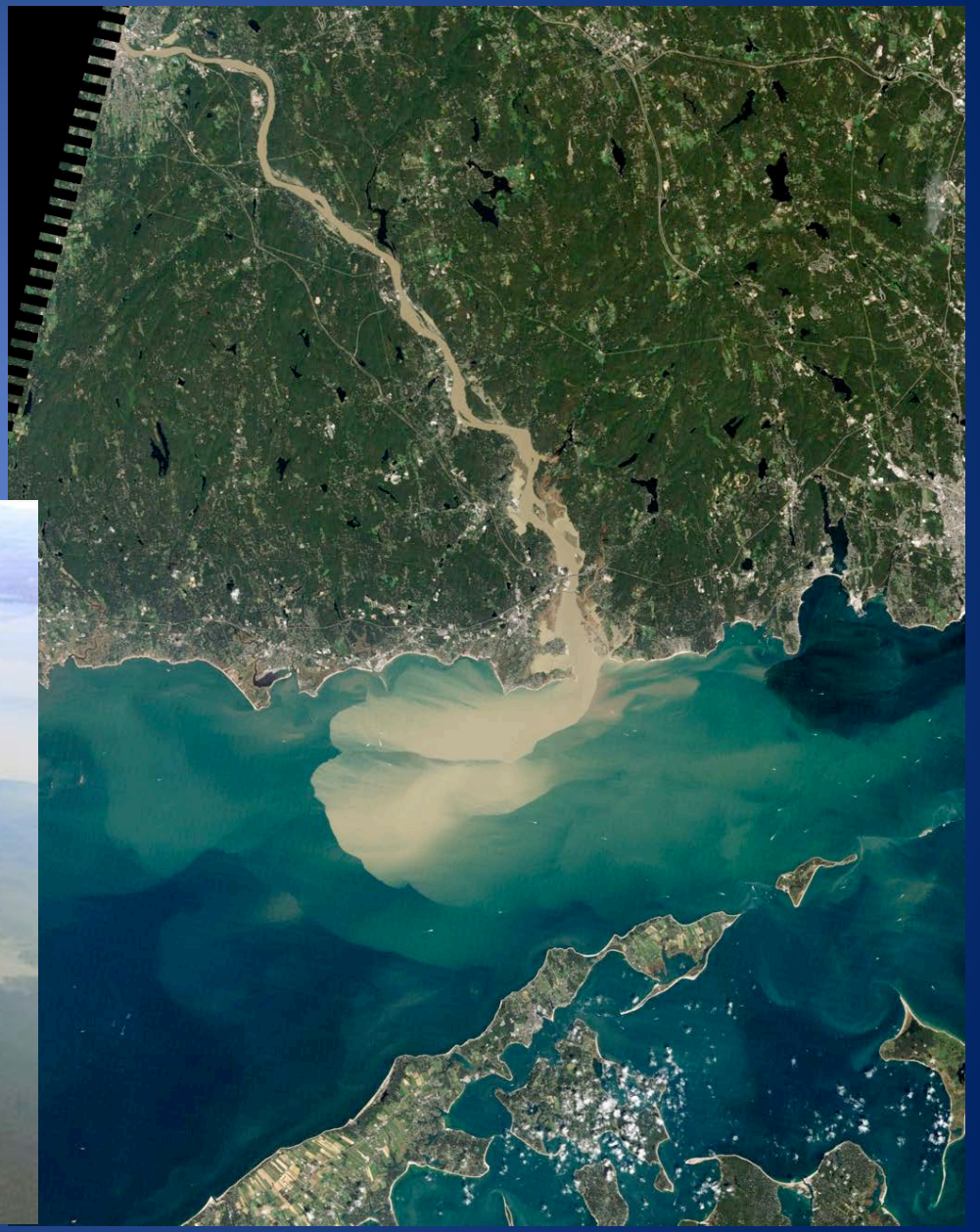


Brattleboro, M. Reston

Wilmington, J. Cantore

Lake Champlain, Spring 2011, Courtesy LCBP

Mouth of Connecticut River from Irene 2011



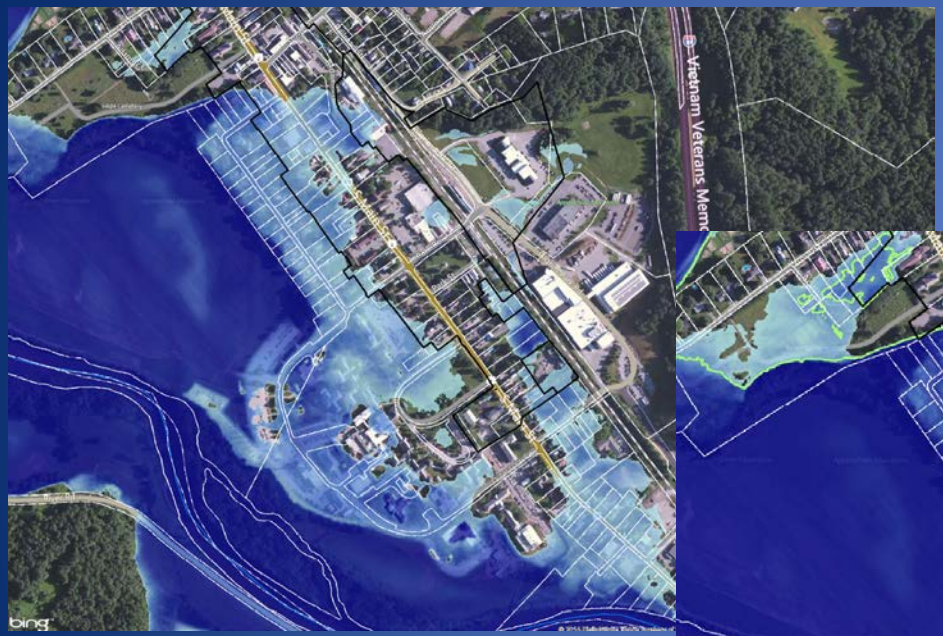
Three Examples of Partnerships

Science to Action

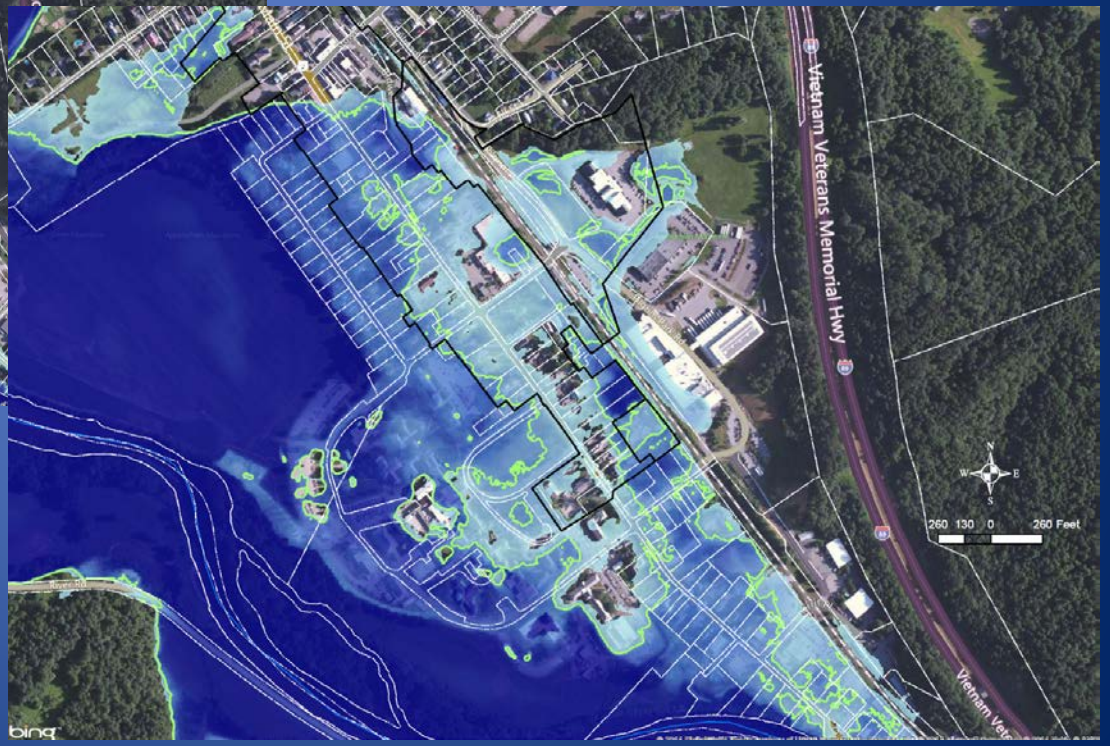
- Supporting local decision making on floodplain management
- Supporting strategic climate-resilient conservation
- Developing tools for understanding floodplains

For Local Decision Makers: Do the benefits of floodplain protection outweigh the costs?

A multi-faceted analysis of changes in river flows and floodplain extent, and the costs of floodplain development



What would 100 year floodplain boundaries look like if they were redrawn today?



And in the future?

ADD IN: Earth Economics Analysis of the Benefits of Floodplain Protection

Floodplain Land Cover Class	Acres	Low Value ($/acre/year)	High Value ($/acre/year)	Annual Low ($/year)	Annual High ($/year)
Agriculture	43	352	10,808	15,002.66	460,125
Forest	41	5,823	6,461	238,135	264,223
Shrubland / Grassland	80	9,147	9,247	732,250	740,275
Wetland	71	5,807	55,870	411,952	3,963,203
River	43	2,119	77,089	91,589	3,331,725
Village Greenspace	37	2,404	17,919	87,999	655,966
Developed Land	129	Not Valued	Not Valued	Not Valued	Not Valued
Total	**443**			**$ 1,576,928**	**$ 9,415,519**

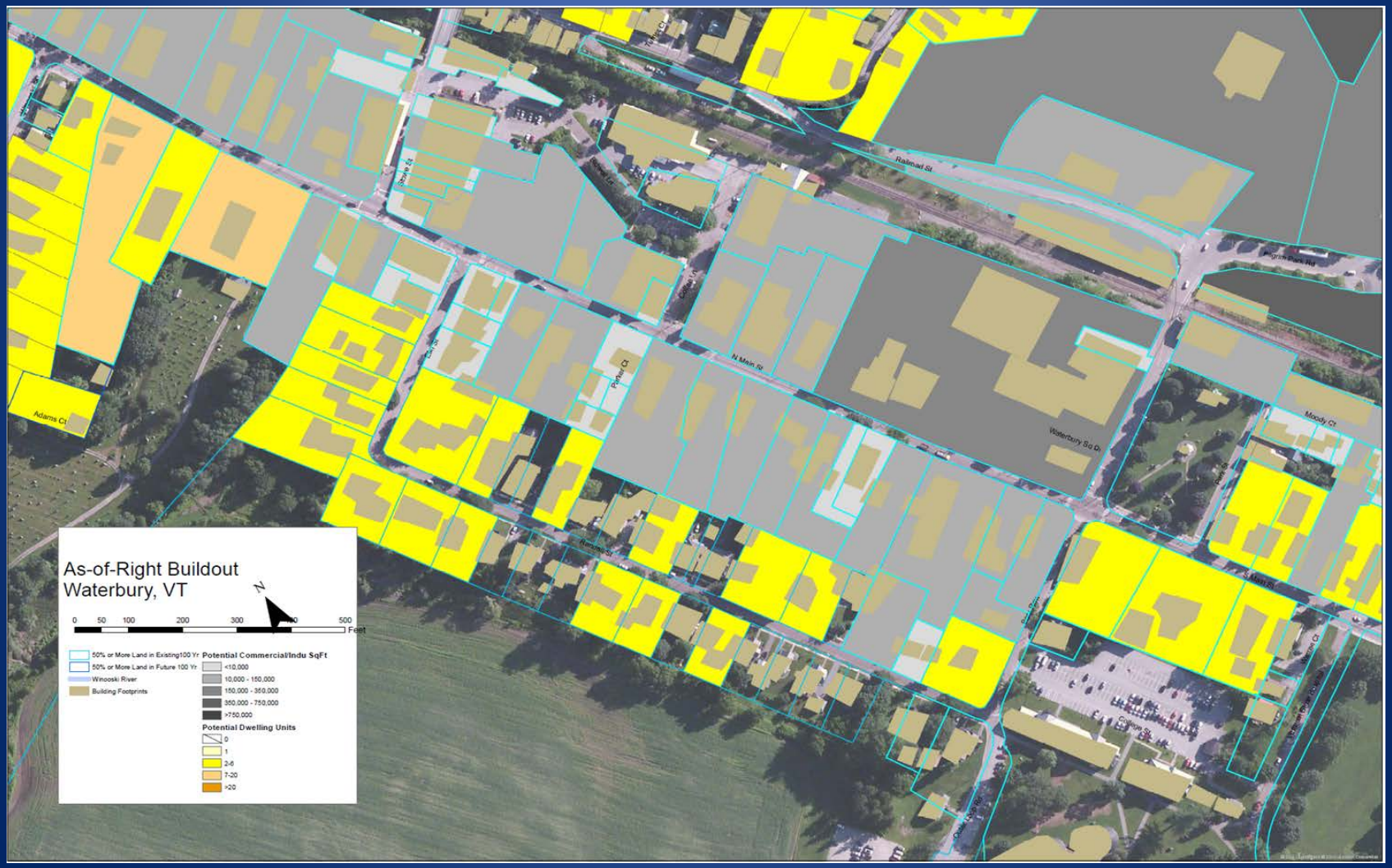
100-Year Floodplain

RANGE OF VALUES FOR ECOSYSTEM SERVICES IN THE FLOODPLAINS OF THE LAKE CHAMPLAIN BASIN

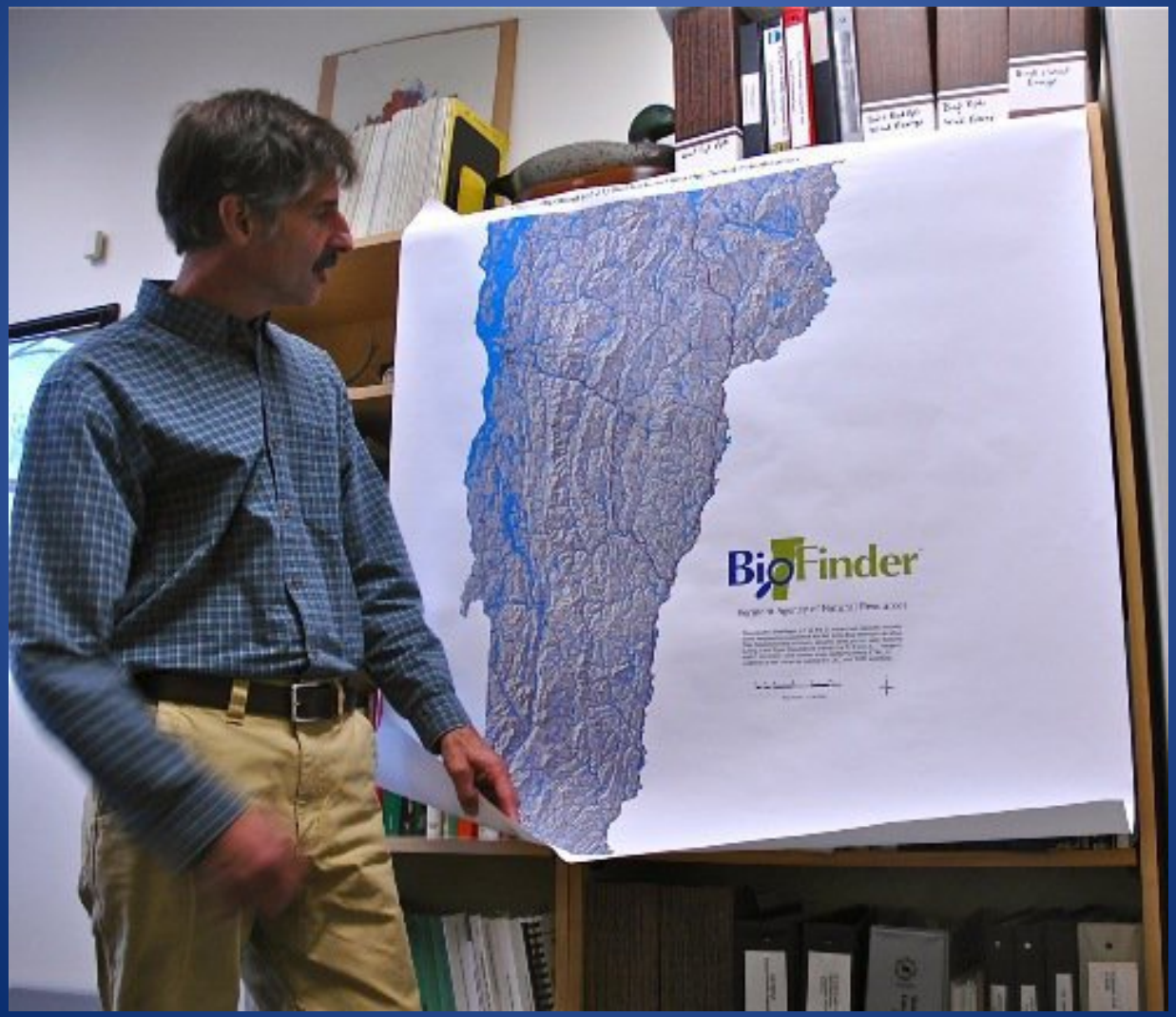
Floodplain Land Cover Class	Acres	Low Value ($/acre/year)	High Value ($/acre/year)	Annual Low ($/year)	Annual High ($/year)
Agriculture	43	352	10,808	15,035.94	461,146
Forest	49	5,823	6,461	285,630	316,921
Shrubland / Grassland	95	9,147	9,247	869,427	878,956
Wetland	73	5,807	55,870	422,514	4,064,821
River	43	2,119	77,089	91,971	3,345,601
Village Greenspace	46	2,404	17,919	110,891	826,615
Developed Land	201	Not Valued	Not Valued	Not Valued	Not Valued
Total	**550**			**$ 1,795,470**	**$ 9,894,061**

500-Year Floodplain

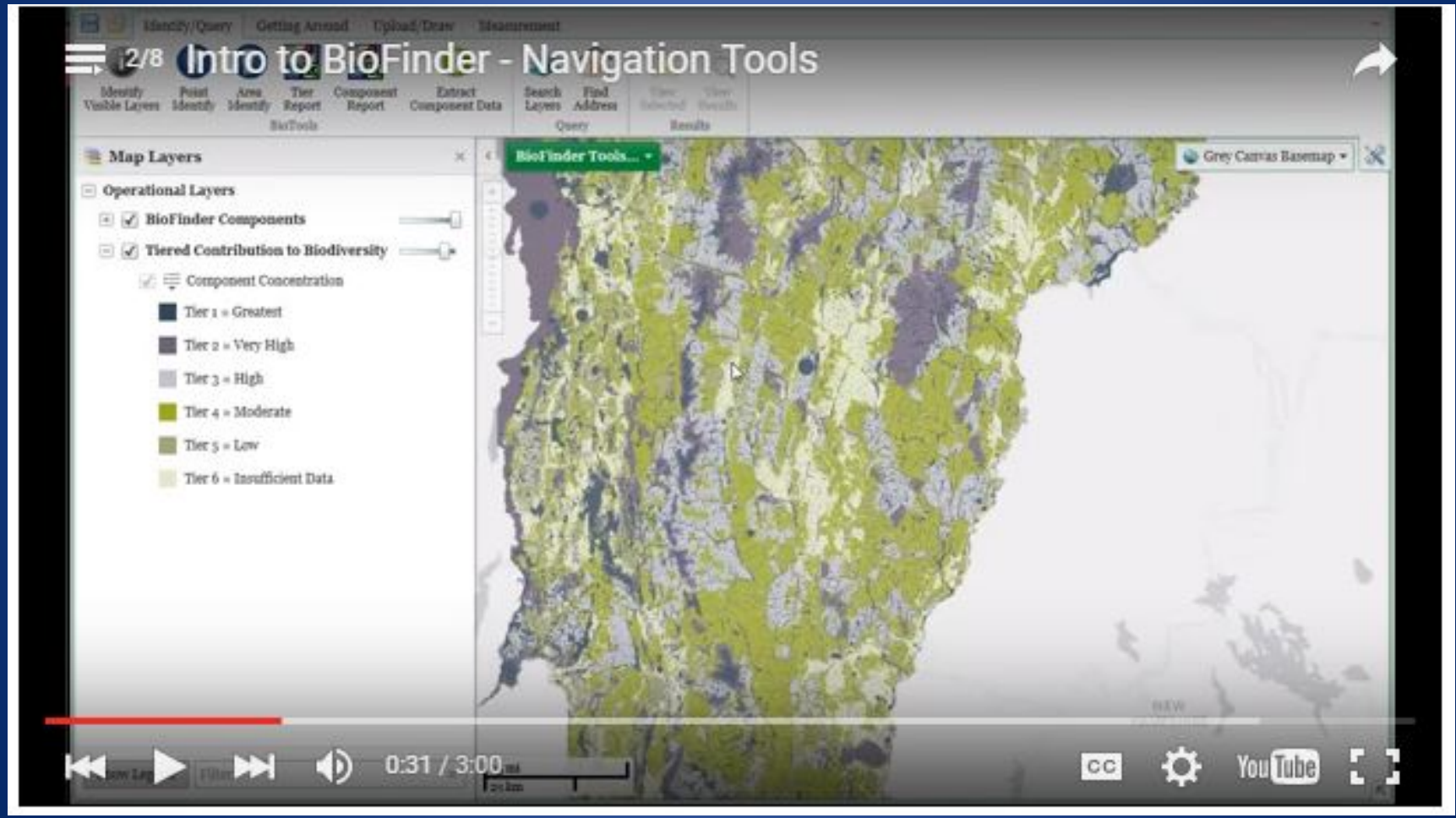
Analysis and Modeling of Potential Future Costs of Damage to Structures in the Floodplain



Using science to support climate resilient conservation



Tools for local leaders, supported by in person training and on line tutorials.



A "Flood Ready" Web Site

VERMONT

VERMONT.gov
official state website

Search

Flood Ready

State of Vermont

- Home
- Rising Danger - Flood Costs
- Community Risk Assessment
  - Community Reports
  - Map Tools
  - Vermont Flood Ready Atlas
- Update Your Plans
- Use Natural Flood Protection
- Improve Infrastructure
- Find Funding
- Making It Happen
- Get Help

Map Your Community

FLOOD READY

Community Reports

How many public buildings are in the Special Flood Hazard Area (SFHA)?
How many structures in the flood hazard area have insurance today?
What are the next steps we can take to

The links below will bring you to the sea
Be sure your browser allows pop-up

Community

- Expanded Community Report - Flo
  of plans.

Summaries by community, region, c

- Flood Hazard Summary Report - S
- ERAF Summary Sheet - Communi
- Other Reports Available Online

More

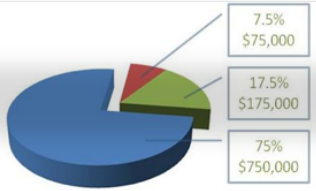
- Recent Data Updates
- When Will the Information Be Updated Next?
- If You Think a Record May Be Wrong
- More on Interim Criteria for ERAF

You must have "pop-ups enabled" to view the reports!

Flood Hazard Summary Report

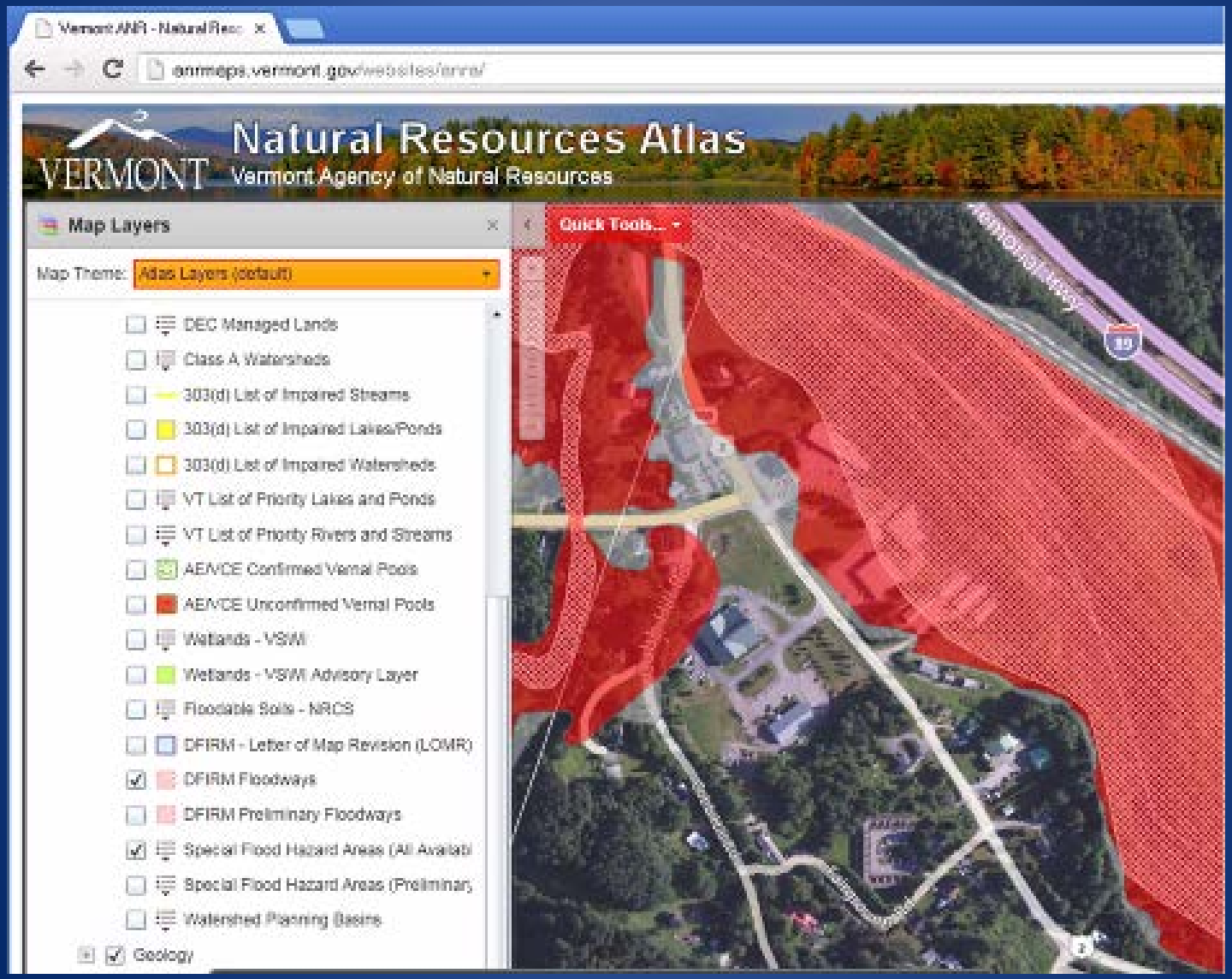
Summary of Flood risk data and mitigation actions for ERAF.

County:
Region:
Community:
Show All
Search | Clear Search



Printable Reports

River Corridor Maps



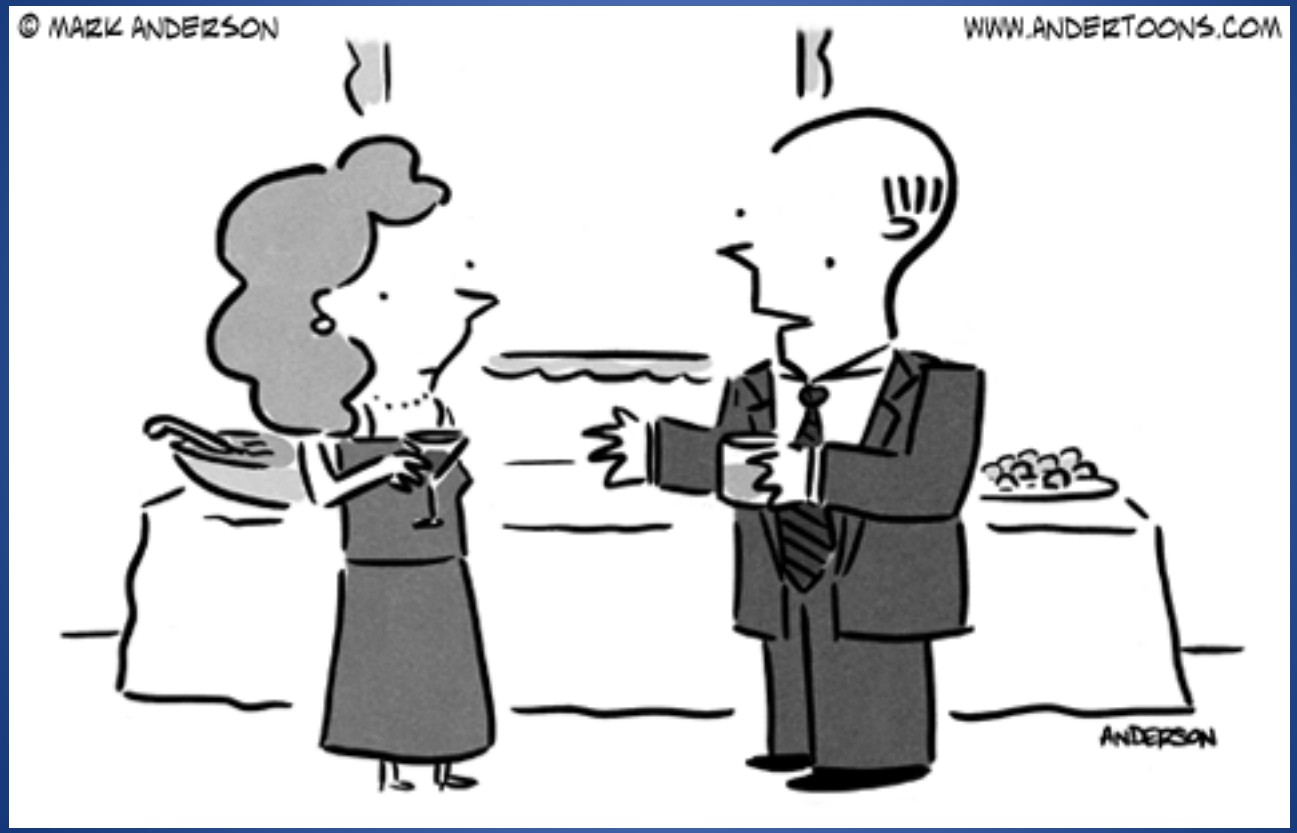
Elements of Success at the Science / Policy Interface

a. Working across disciplines and organizations to help decision makers at all levels understand complex climate impacts the costs and benefits of action.

b. Beginning research with a strong focus on how decision makers might use the results – how will it inform practical decisions in town, regional or state planning and investment?

c. Developing tools, training and technical assistance to make science digestible by busy people, and facilitates its regular use.

"You wouldn't understand what I do for work – I'm a Climate Scientist."



"I understand -- you're in Politics!"