

VERMONT'S CLASS I WETLANDS

An Interactive Journey

Otter Creek Wetland Complex

Class I Wetland Candidate

Best of the Best



A Class I Wetland in the State of Vermont is...

VWR Definition: “is exceptional or irreplaceable in its contribution to Vermont's natural heritage and, therefore, merits the highest level of protection”

Best of the Best

Class I, II, and III Wetlands: What's the Difference?

	Class III	Class II	Class I
Size	Small	Generally >0.5 acre (vernal pools are an exception)	Often Large (currently 10– 730 acres)
VSWI * mapped?	Not usually	Often mapped	Always mapped
Functional Significance	None, but function may be present	Significant	Exceptional and/or Irreplaceable
Standard Buffer Size	None	50-feet	100-feet
Permit Requirement	None required	must demonstrate avoidance and minimization, no undue adverse impacts or non-compensable impacts	Buffer zone permits similar the same as Class II. Wetland impacts permitted only for compelling public need to protect public health & safety

*Vermont Significant Wetlands Inventory

But What Does It Mean For Landowners?

- Permitting activities within the Class I wetland can only occur if activity is meeting a compelling need for public health or safety
- Allowed/Exempt uses still apply for Class I wetlands.
Example: so if there are agricultural fields already in the wetland or buffer, they can still be used for farming (crops, hay, pasture). Same with someone wanting to log the land (silviculture), or if a road/structure is existing and it needs to be maintained-Allowed Use, and no wetland permit needed.
- Permitting activities within the Class I buffer is similar to Class II permitting, no real no change there.

In some ways wetland protection is already happening due to other regulatory programs or town zoning.

Specifically from Middlebury to Brandon, the Otter Creek wetland complex overlaps flood zones and river corridors, so there may already be restrictions for development within the wetland and may even be applied beyond the buffer size of 50-ft at the municipal level.

The wetland rules supports the purpose of these other two aspects of regulation and function (Floodplains and Rivers), and increased buffer size emphasizes the importance of this space for a variety of reasons including wetland protection.

Why Does it Matter?

- If land within the wetland or buffer is used for agriculture, but then the farmer decides to call it quits and instead wishes to install solar panels or subdivide the land for residential or commercial development.
- The protection to the Class I wetland is absolute.
- Permitting in the buffer is reviewed under the same Rules as a Class II buffer.
- The proposed project would need to first look at avoidance of impacts and then minimization of impacts to the buffer...and this area is slightly larger than a Class II buffer, so added wetland protection.

Why Does it Matter?

- Actually giving recognition to those wetlands throughout VT that meet the Class I criteria and are deserving of that recognition.
- Town bragging rights! largest wetland in the state and it is a Class I wetland.
- For some communities along the Otter Creek, the wetland complex makes up a big portion of it and it would be nice to highlight that as a positive.
- Community identity.
- Education and outreach potential and opportunities (whether it becomes Class I or not). Helping landowners around the wetland understand what they have and how great it really is, and it reaches people outside the community including those in the legislature -letting them know that wetlands are important, clean water is important, and communities support both.

There are currently 8 Class I wetlands in Vermont...and a petition by the Ripton Conservation Commission to reclassify the Beaver Meadows Wetland Complex has been received by the Wetland Program.

Class I Wetlands Prior 2017

- Dorset Marsh (1992); 262 ac.
- Northshore Wetland (2000); 10 ac.
- Tinmouth Channel Wetland (2001) 736 ac.

In 2017, Dennis Pond, Chickering Fen and the Sandbar Wetlands were reclassified, more than doubling Class I protection from 1,010 to 2,595 acres.

In 2018, Peacham Bog and the LaPlatte River Wetlands were added.

Future 2018: the Beaver Meadows Wetland, petitioned by the Ripton Conservation Commission is likely to be accepted this Fall

28,000 ac. of potential Class I's in the LC Basin.



Class I Wetlands Today

November 2018

How are Class I Wetlands chosen?

Because they are considered Exceptional or Irreplaceable

- **Representative Example** of a wetland type
- **Rare Community** type
- **Community Assemblage/Wetland Complex**
- **Landscape Association**

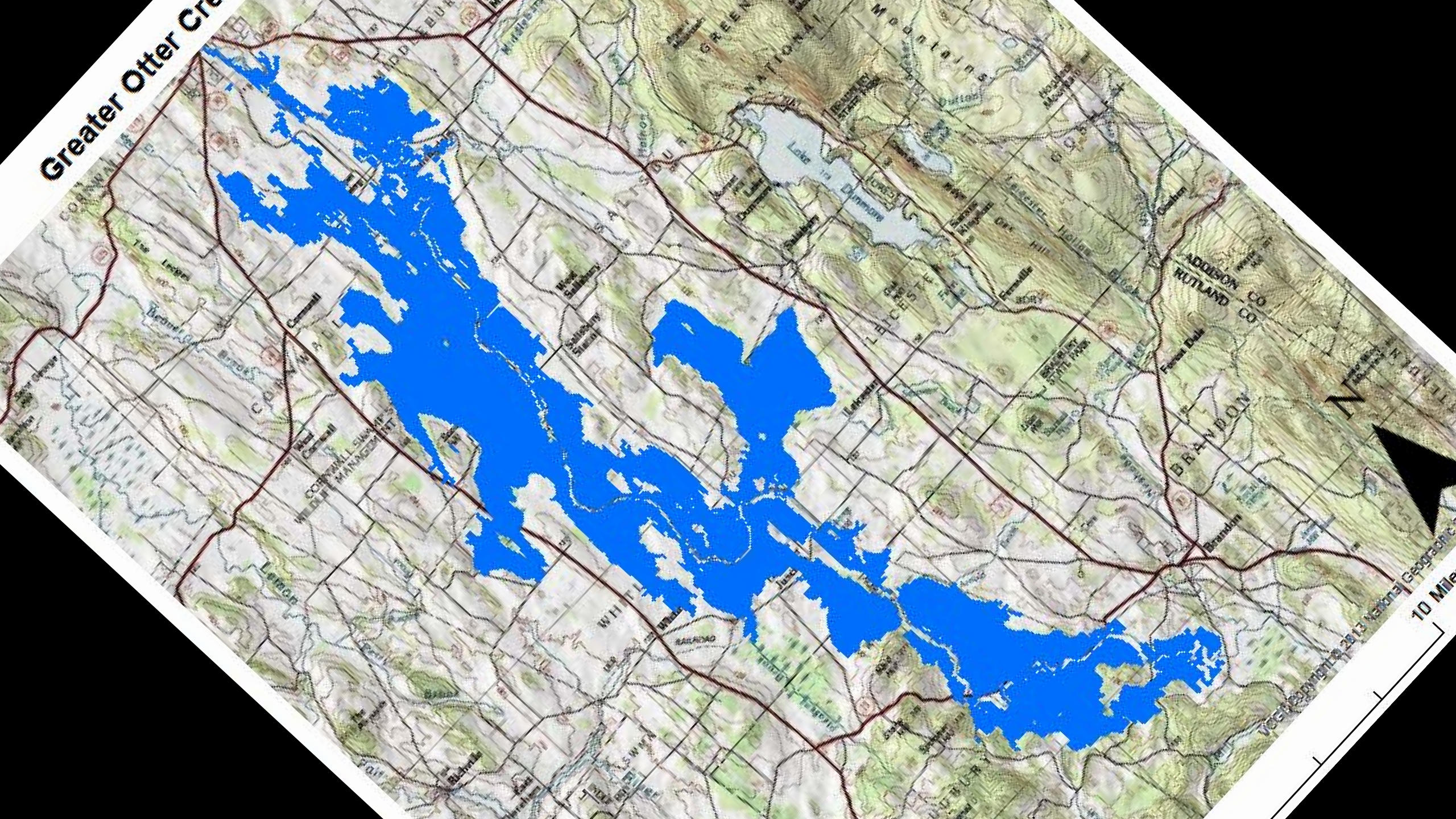
Subcriteria: RTE, undisturbed condition, intact landscape, research/education, connectivity (wildlife)

Best of the Best

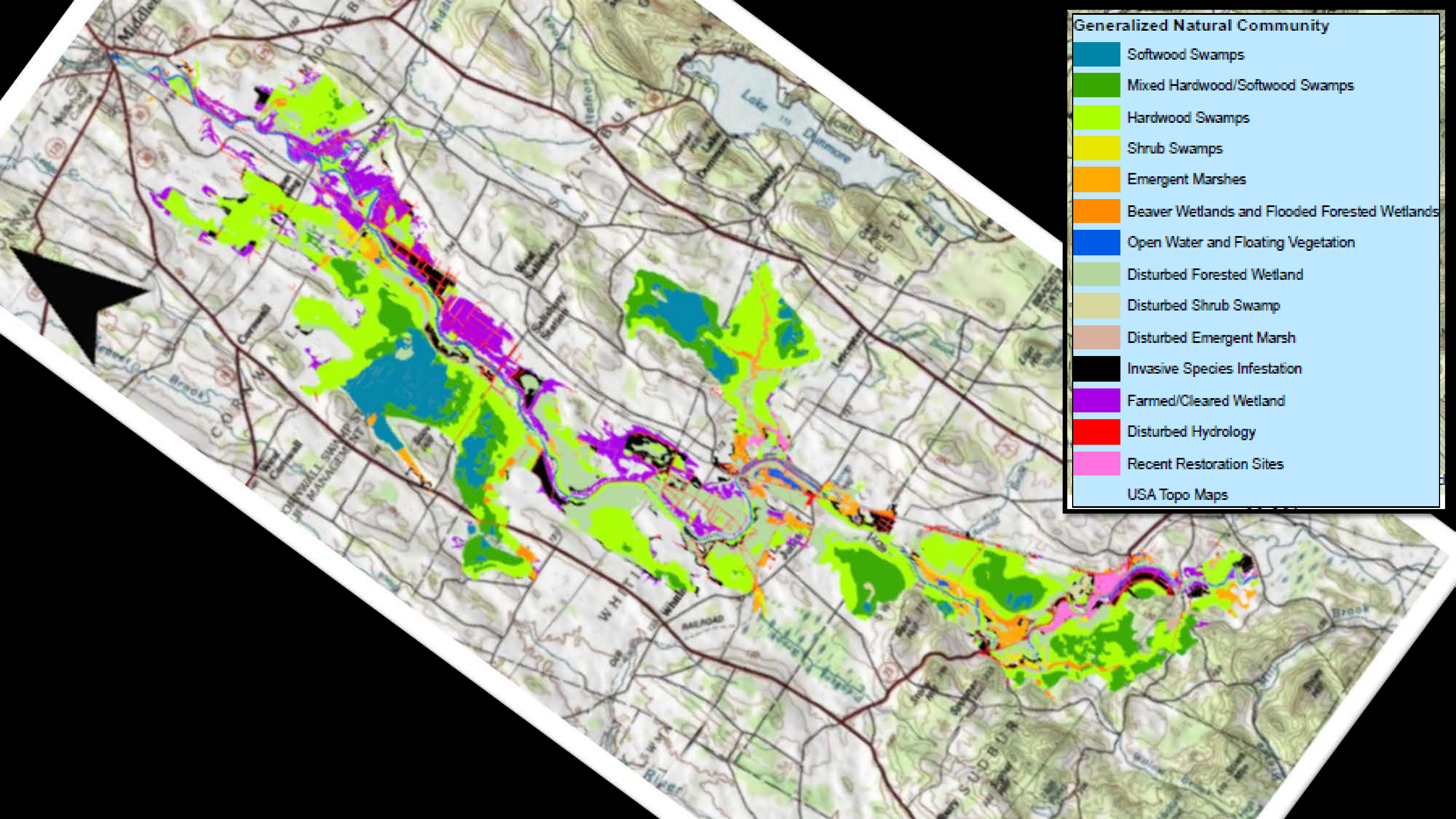
Sand Bar Wetland-undisturbed floodplain forests are one of the many functions that make this wetland complex significant



Greater Otter Creek



VCS (2009) 12/13 Vermont Geographic
10 Miles



- Generalized Natural Community**
- Softwood Swamps
 - Mixed Hardwood/Softwood Swamps
 - Hardwood Swamps
 - Shrub Swamps
 - Emergent Marshes
 - Beaver Wetlands and Flooded Forested Wetlands
 - Open Water and Floating Vegetation
 - Disturbed Forested Wetland
 - Disturbed Shrub Swamp
 - Disturbed Emergent Marsh
 - Invasive Species Infestation
 - Farmed/Cleared Wetland
 - Disturbed Hydrology
 - Recent Restoration Sites
 - USA Topo Maps



10 FUNCTIONS and VALUES

Storm & Flood Water Storage

- Otter Creek Wetland Complex is large in size and contains small streams and open water areas surrounded by dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration.
- There is physical space where storm and flood waters can disperse and evidence of ponding occurring in areas.
- History of downstream flood damage to public or private property.

This function of Otter Creek Wetland Complex is considered irreplaceable.



The Otter Creek Wetland Complex provides an irreplaceable function for storm and flood water storage.

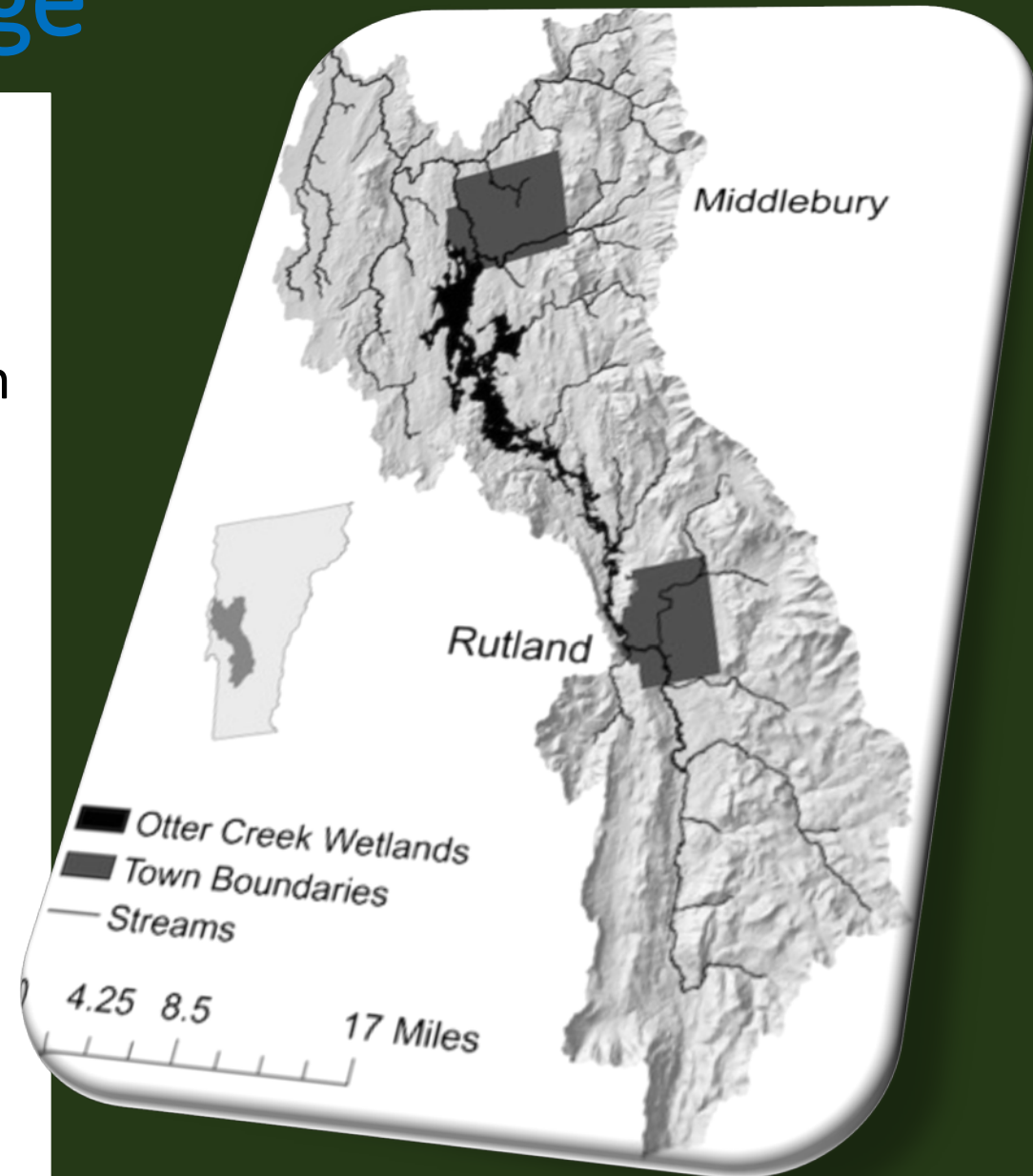
Flood & Storm Water Storage

University of Vermont Studies

Wetlands & floodplains protected Middlebury from as much as **\$1.8 million in flood damage** during Tropical Storm Irene.

AND

Researchers analyzed 10 flood events to estimate the economic value of the Otter Creek floodplain/wetlands near Middlebury. They found the natural barrier **saves the town up to 78%** of potential damages, or between \$126,000 to \$450,000 per year on average.



Water Quality Protection

- Otter Creek Wetland Complex is large in size and naturally vegetated and;
- The wetland is adjacent to surface waters, such as Otter Creek and contributes to the water quality of Lake Champlain.
- Wetland contains a high amount of microtopography that helps slow and filter surface water and areas within the wetland complex has a hydroperiod that is permanently flooded or saturated.
- The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: row crops; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.

This function of Otter Creek Wetland Complex is considered significant...irreplaceable?



Fish Habitat



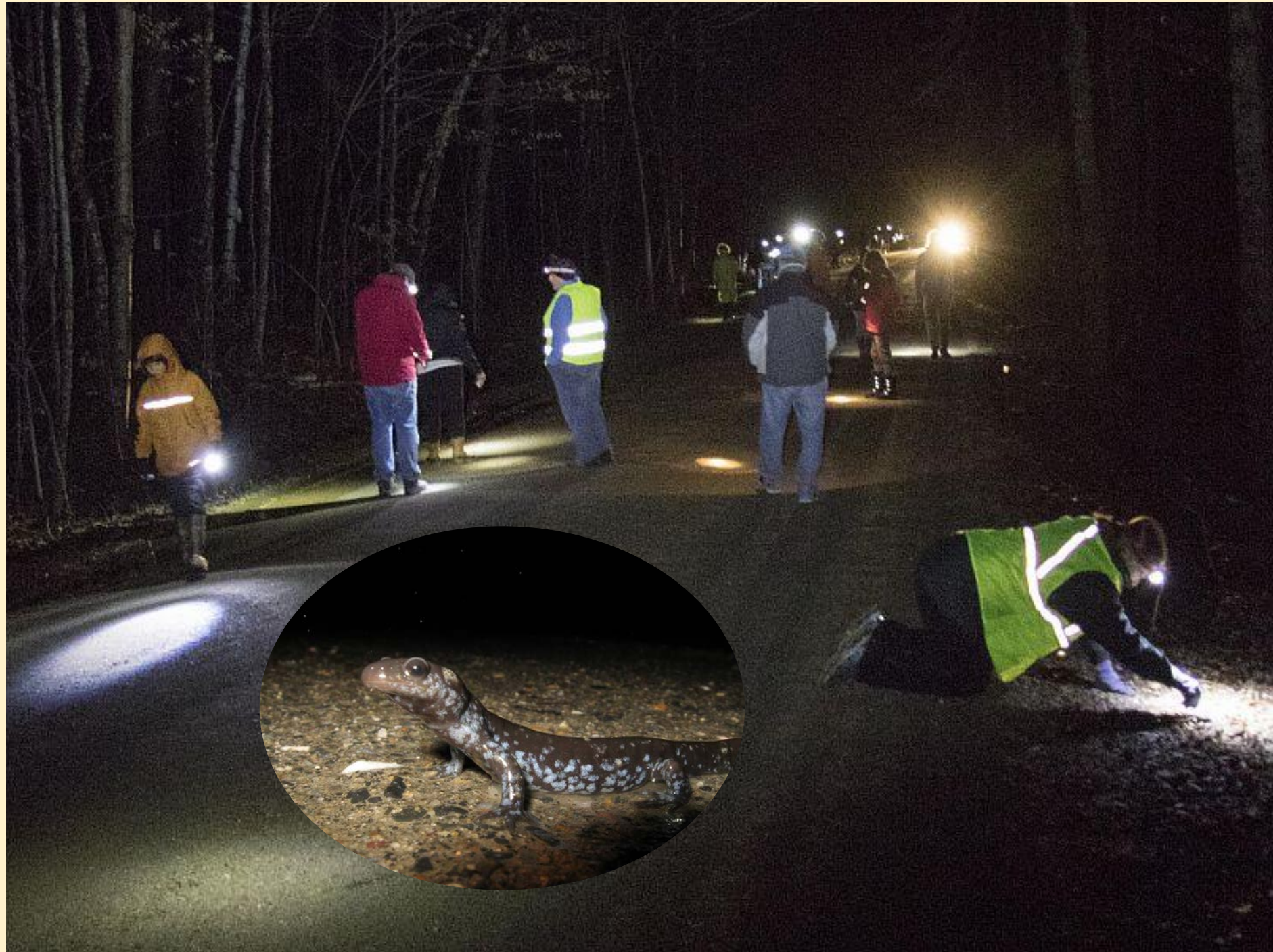
- Otter Creek provides good fishing opportunities and the wetland supports the high water quality of the river by helping to maintain water temperature, water depth and providing organic matter as a food source.

This function of Otter Creek is considered significant

Wildlife & Migratory Bird Habitat

- Otter Creek Wetland Complex is a large complex composed of multiple wetland types, streams and open water components. This wetland supports a diversity of wildlife habitat through natural communities, structural diversity, interspersions of habitats and edges.
- Numerous species of birds have been documented as listed in the Breeding Bird Atlas of VT, including a number of wetland dependent species
- The wetland supports beaver, muskrat, mink and river otter, Indiana and little brown bat in addition to other mammal species.
- 2,500 frogs and salamanders were counted crossing Morgan Road in just two hours, one evening in 2018. Thousands more probably crossed into the Salisbury Swamp after 10 PM. This 500 foot long stretch of road is critically important to some common, some unusual, and some rare salamanders.

This function of Otter Creek Wetland Complex is considered exceptional and irreplaceable.



Exemplary Wetland Natural Community

- Otter Creek Wetland Complex contains numerous community types, with some identified, described and mapped on the ANR Atlas as state significant natural community(ies).

Example: Buttonbush swamp

This function of Otter Creek Wetland Complex is considered significant





Rare, Threatened, and Endangered Species Habitat:

Numerous RTE plant species are found within the wetland complex including: green dragon, ram's head, showy and yellow lady's slipper.

- A number of RTE birds have been documented such as the blue-winged teal.
- Both the little brown and Indiana bat have been captured within Cornwall and Salisbury Swamps: maternity colony sites.
- Blue-spotted & Four-toed salamanders have been documented at the Morgan Rd crossing in Salisbury.

This function of is considered exceptional and irreplaceable.

Education & Research

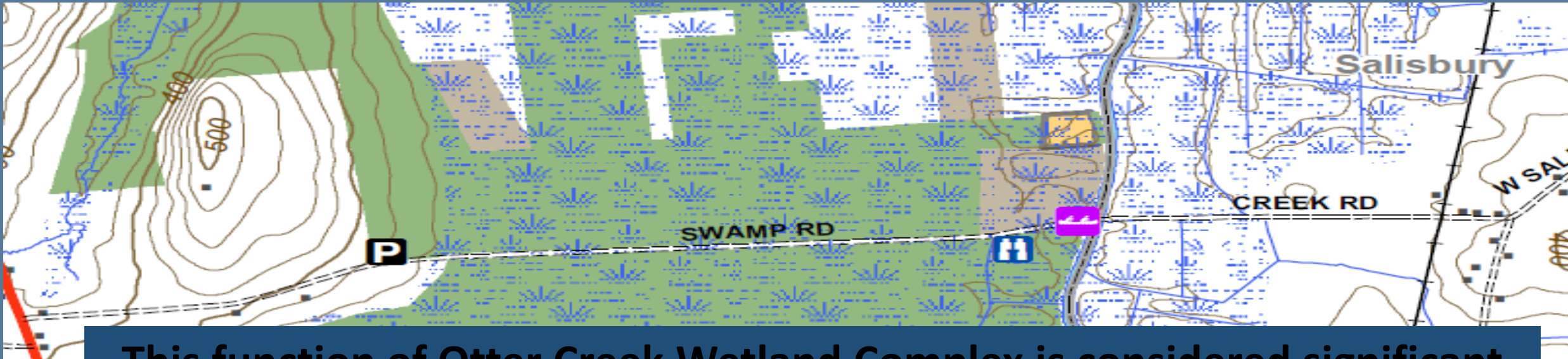
- Areas of the wetland are owned by TNC or the VT F&W providing public access.
- Contains unique natural communities, like Clayplain forest.
- RTE species; Indian and little brown bats.
- Functional research, like floodplain reconnection, Floodplain storage and hydrologic studies.

This function of Otter Creek Wetland Complex is considered significant.



Recreation & Economic

- The Otter Creek Wetland Complex is utilized by the community and others to enjoy birding and non-motorized boating.
 - Fishing in Otter Creek which the Wetland Complex supports.
 - The wetland provides habitat for species that are hunted and trapped, including beaver, muskrat, otter and mink.



This function of Otter Creek Wetland Complex is considered significant

Open Space & Aesthetics

- This wetland complex can be readily seen by the public. It is surrounded and bisected by major roads. It possesses special or unique aesthetic qualities due to open water components and natural communities. It has prominence as a distinct feature in the surrounding landscape.

This function of Otter Creek Wetland Complex is considered significant

Erosion Control



- There is the Otter Creek and other small streams within the Wetland Complex which experience fast moving water. The dense, persistent vegetation along stream banks reduce erosive forces, protecting nearby lands and sedimentation further down in the watershed.

This function of Otter Creek Wetland Complex is considered significant

A close-up photograph of a dragonfly perched on a brown twig. The dragonfly's wings are transparent and covered in numerous small, glistening water droplets. The background is a dense, intricate spider web, also heavily laden with dew droplets, creating a complex, geometric pattern of light and shadow. The overall scene is set against a soft, out-of-focus background, likely a natural outdoor environment.

Class I Criteria

Rare Community Type

Representative Example

Community Assemblage/ Wetland Complex

Landscape Association

Class I Sub-criteria

Undisturbed Condition

RTE

Intact Landscape

Connectivity

Representative Example

The complex contains a number of wetland community types, each representative of the community type based on species present.

RTE

Numerous RTE species have been documented throughout the Otter Creek Wetland Complex

Rare Community Type

State significant natural communities have been identified, described and mapped on the ANR Atlas

The specifics would be described within the petition

Community Assembly/Wetland Complex

- Wetlands that are considered exceptional for this criteria are larger wetland complexes usually associated with multiple wetland community types and bodies of water, which have high species diversity and function.
- Otter Creek Wetland Complex wetland complex has numerous natural community types present ; shown on the Draft natural community map.
- Otter Creek Wetland Complex is the largest wetland in Vermont; + 15,000 ac.
- Numerous species of wetland dependent plants, birds, amphibians/reptiles and mammals are have been documented within the Wetland Complex

Landscape Association

These wetlands are irreplaceable because of the critical nature of their landscape position, and the corresponding functions in that landscape. They are often exceptional because of their size, function and value.

- The Otter Creek Wetland Complex wetland complex occupies a valley along the Otter Creek River providing water storage and water quality functions that are critical in relation to its landscape position.

Cornwall Swamp WMA is part of the largest interior wetland complex (~3,500 ac.) in Vermont and, as such, is considered a National Natural Landmark by the National Park Service.

Connectivity

From a landscape perspective, the Otter Creek Wetland Complex provides stopover habitat for migratory birds, and the streams, wetland and river connection are utilized by beaver, river otter, mink, all of which are species that move long distances to meet their life requisites and use the area for feeding, refuge, movement, and reproduction. and other wildlife.

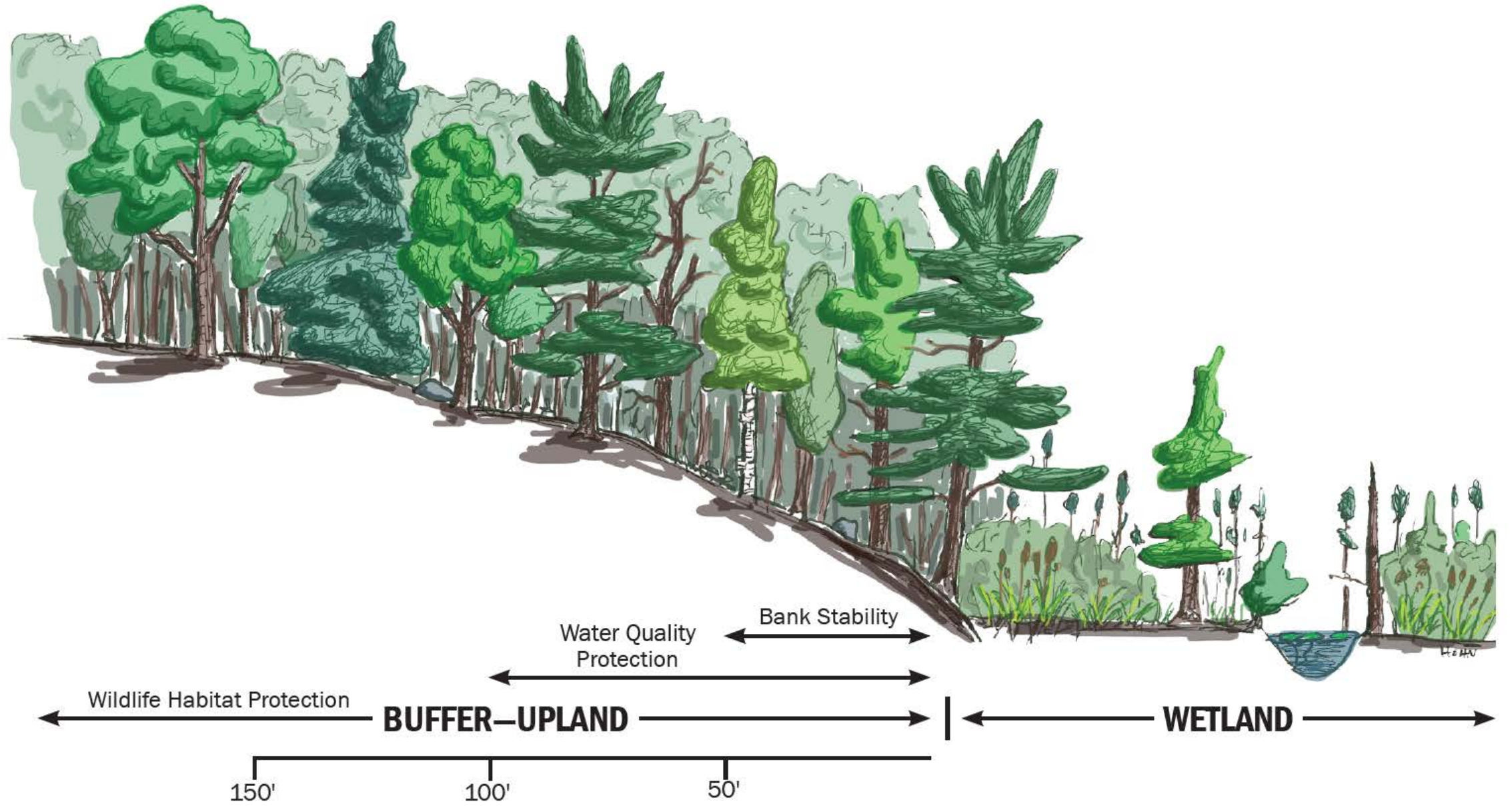
Buffer Zone

Area of upland around a wetland which provides protection to function and value

Buffer Functions:

- Filtering sediments/nutrients;
- Preventing erosion- protecting water quality;
- Protecting and providing additional wildlife habitat;
- Preventing the spread of invasives species into the wetland; and
- Buffer protects against other disturbance such as light and noise infiltration or access by people and dogs.





Buffer: needs to be supported scientifically, but is also influenced by overall location, land owner and community support and the purpose for why the wetland is being recognized for designation.

- LaPlatte River (Shelburne) and Dorset Swamp (Dorset) have 100 ft buffer, both surrounded by pre-existing and current development, numerous landowners.
- Chickering Bog has a varied buffer between 100-300 ft wide again because some of the area is owned by F&W, and other areas by private landowners-striking a balance.
- Peacham Bog has a 500 ft buffer- captures the current management area by FPR and encompasses almost the entirety of the bogs watershed, which is its sole hydrologic input.
- Dennis pond has a 300 ft buffer
- Beaver Meadows wetland is proposed by the Ripton Conservation Commission with a 400 ft buffer to maintain at least a 75% canopy, in order to maximize the protection of the ecological integrity of this very significant peatland complex and the wildlife habitat it provides, and to minimize adverse effects on the quality of surface water entering the wetland.

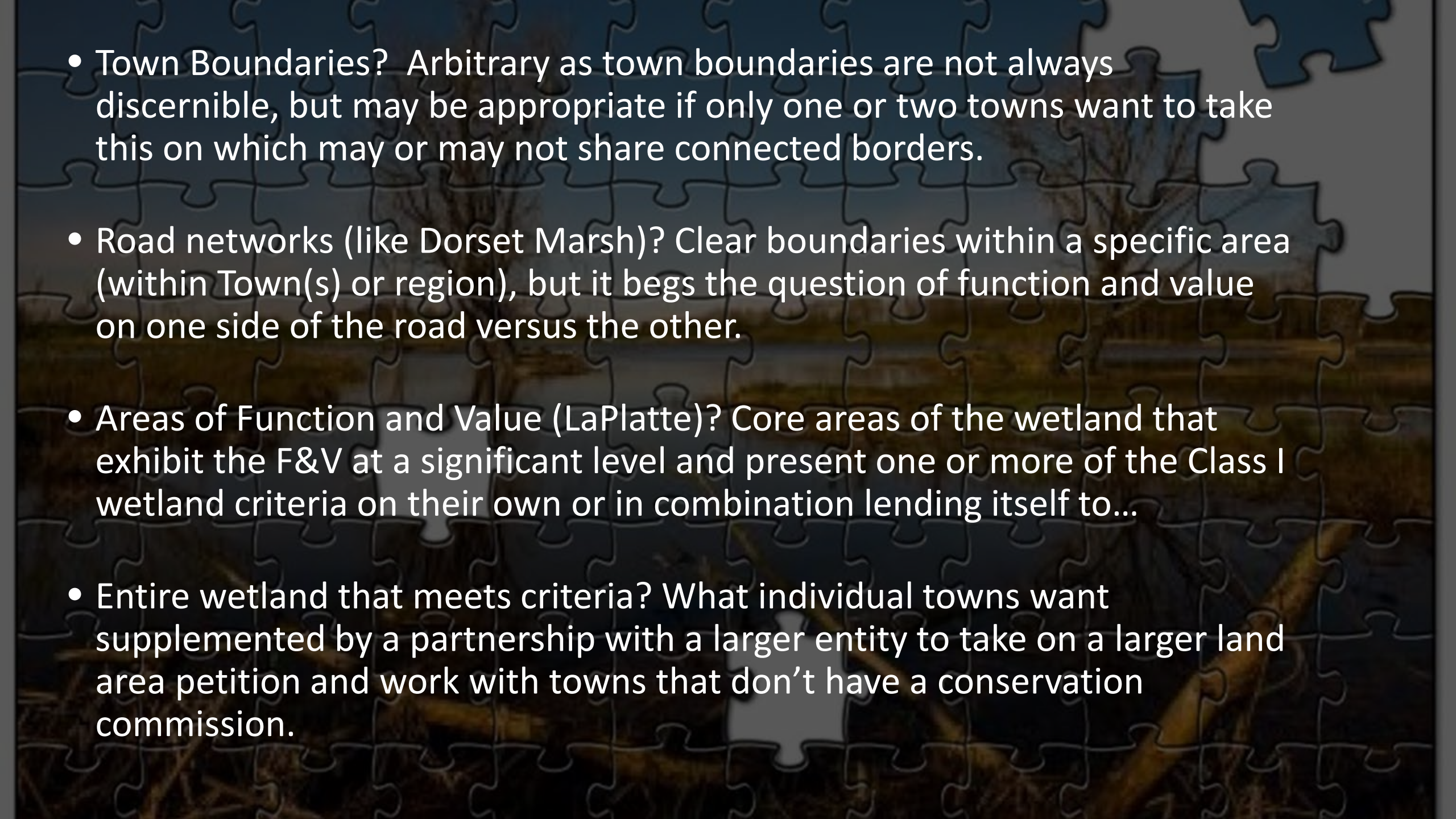
Roles and Process



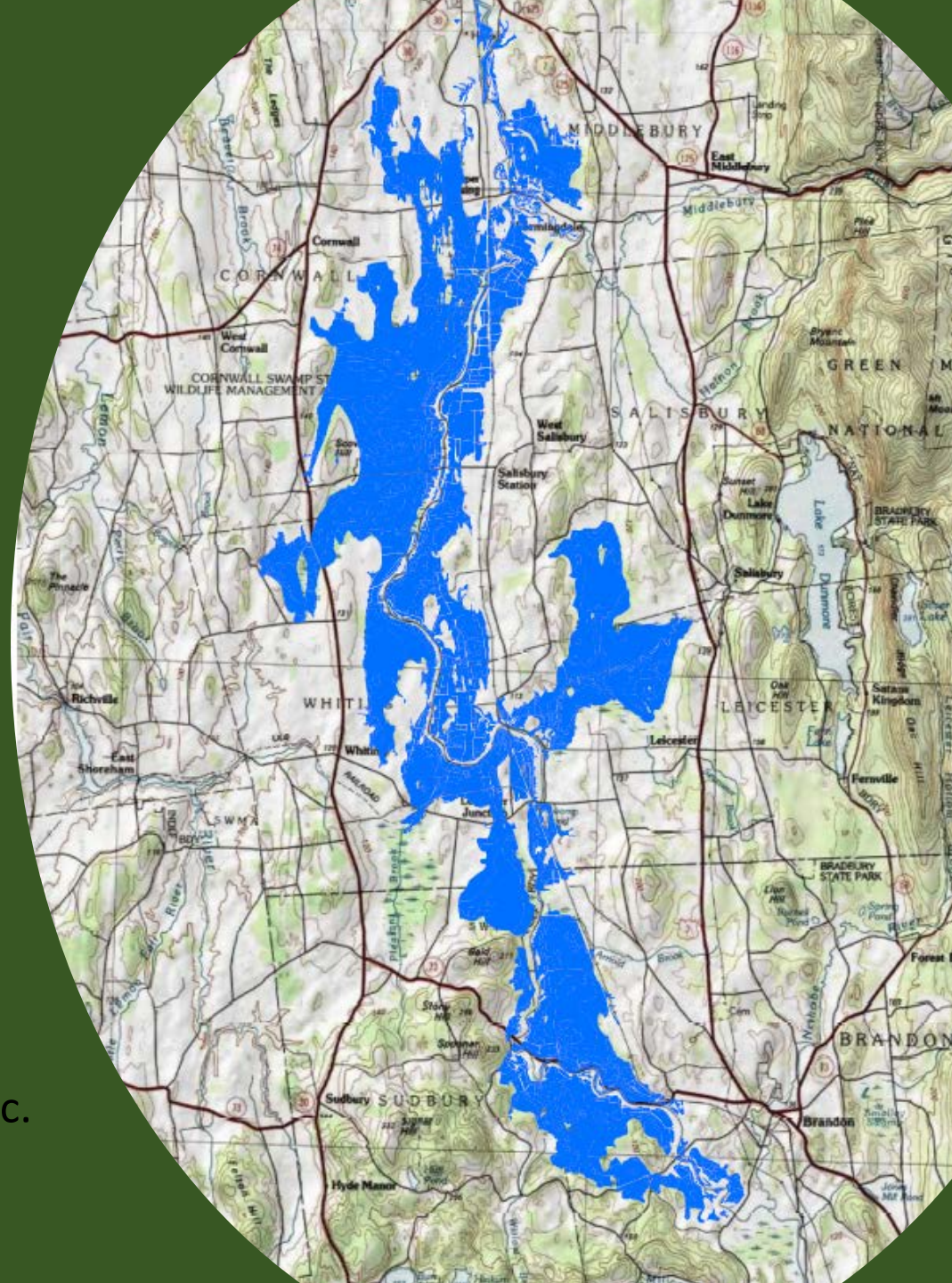
- A partnership with entities, like **VNRC**, Middlebury College, TNC, the Middlebury Land Trust, F&W, a Regional planning commission may be very beneficial to help with the organization, land owner contact, outreach, education, completing of Petition, public meetings, gathering data etc, writing letters of support.
- Each town can individually or jointly can engage the community and all the landowners that would be included as part of this process. (Ripton River example)

One Petition: Part of OR the Whole



- 
- Town Boundaries? Arbitrary as town boundaries are not always discernible, but may be appropriate if only one or two towns want to take this on which may or may not share connected borders.
 - Road networks (like Dorset Marsh)? Clear boundaries within a specific area (within Town(s) or region), but it begs the question of function and value on one side of the road versus the other.
 - Areas of Function and Value (LaPlatte)? Core areas of the wetland that exhibit the F&V at a significant level and present one or more of the Class I wetland criteria on their own or in combination lending itself to...
 - Entire wetland that meets criteria? What individual towns want supplemented by a partnership with a larger entity to take on a larger land area petition and work with towns that don't have a conservation commission.

1. Do you (Towns) want to pursue this endeavor?
2. Identify approximate boundaries.
3. Boundaries may incorporate a partnership.
4. Identify Partner/Petitioner (can be joint commissions)
5. Garner support from Selectboards/Zoning Boards
6. Identify and initiate abutting Landowner Contact
7. Gather data and documentation (TNC, F&W, FPR, NRCS, ACOE, Wetlands Program, River Watch)
 - Mapping, Natural Communities, and RTE
 - VRAM and F&V assessments
 - Restoration site info (NRCS, ACOE)
 - Reports, Research, testimonials
7. Determine buffer size (100 ft, 300 ft, variable etc.)
8. Create outreach materials (brochure, FAQs, Powerpoint; I have templates; VNRC?); send some info ahead of time...
8. Hold initial public meeting (invite to abutting landowners specifically; can open up to larger audience if wanted (VNRC?))
9. Address questions, concerns, gauge public support
10. Make changes into Petition, such as boundaries, buffer sizes etc.
11. Submit Petition and the process continues.



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CLASS I WETLANDS

[Determination and Class I Rulemaking Petition Form](#)

Existing Class I Wetlands

Chickering Fen Wetland, Calais, Vermont

- [Determination Decision](#)

Dennis Pond Wetlands, Brunswick, Vermont

- [Determination Decision](#)

Dorset Marsh, Dorset, Vermont

- [Determination Decision](#)

LaPlatte River Wetlands, Shelburne

- [Determination Decision](#)

Northshore Wetland, Burlington, Vermont

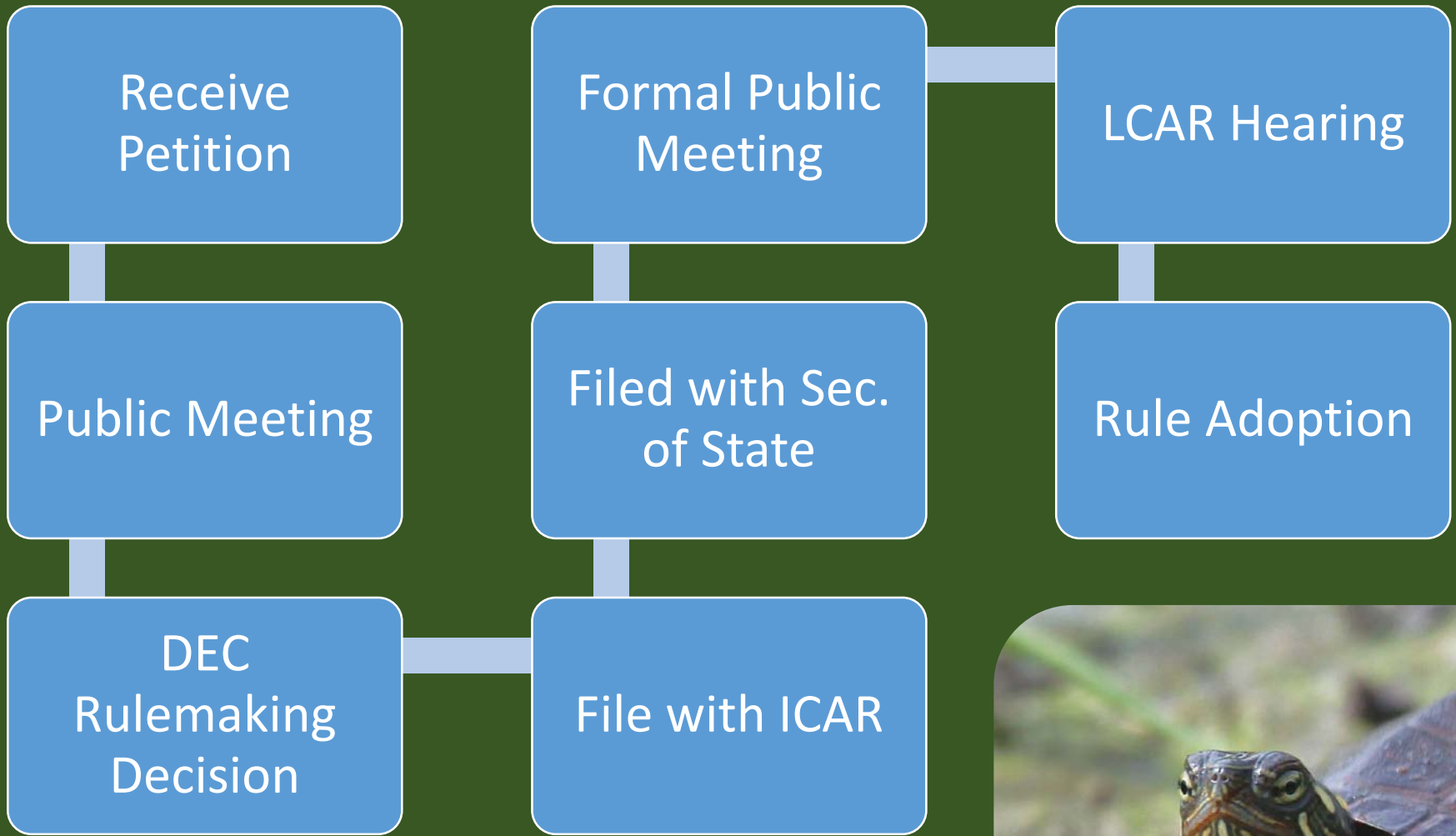
- [Determination Decision](#)



Determination
Petition Form

FREE

Complete and
submit



Class I Designation Process





Welcome to the Vermont Class I Wetland Tour!

Class I Wetlands are exceptional or irreplaceable in their contribution to Vermont's natural heritage. They are healthy, in great condition, and intact. Because these wetlands are so exceptional and irreplaceable, these wetlands are given the



1
Class I Wetland Candidate
Black Gum Swamps



2
Class I Wetland Candidate
LaPlatte River Marsh



3
Sandbar Wetland Complex
Class I Wetland



4
Chickering Fen Class I
Wetland



5
Northshore Class I Wetland
Burlington, Vermont



6
Tinmouth Channel Class I
Wetland



7
Dorset Marsh Class I
Wetland



8
Dennis Pond Class I
Wetlands

Be the next Class I wetland added to the story board and identified on the VT map.

- <http://www.vtfarmtoplate.com/features/wetlands-ecosystems-benefit-the-food-system>
- Restoration potential/grants mapping