

**Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Watershed Management Division**

**Class I Determination Rulemaking Decision  
Issued Pursuant to Section 4.3 of the Vermont Wetland Rules**

In the matter of:

Agency of Natural Resources  
**for the reclassification of Chickering Fen from Class II to Class I with a 300 foot buffer zone.**  
Lightning Ridge Road, Calais

File #:2016-209

The Secretary may, upon a petition or on his or her own motion, determine whether any wetland is a Class I wetland, pursuant to 29 V.S.A. § 410. The Secretary may establish the necessary width of a buffer zone of any Class I wetland as part of any wetland determination pursuant to the Rules. Section 4.2 of the VWR

As required under 29 V.S.A. § 410 and Section 7 VWR, this wetland determination is based on an evaluation of the extent to which the wetland serves the functions and values of Rules, is exceptional or irreplaceable in its contribution to Vermont's natural heritage and, therefore, merits the highest level of protection. Public notice of this wetland determination has been given in accordance with Section 8.3 of the VWR.

**Summary**

1. The State of Vermont's Wetlands Program initiated this determination process in May of 2016. The Wetlands Program, acting under its own motion, has gathered various documentation and data for a Wetland Determination. Because there was no petition submitted by a third party, no petition was placed on notice. A pre-rulemaking meeting was conducted with The Nature Conservancy on July 18, 2016, and contents of this determination and informational materials were sent to all landowners on July 14, 2016.
2. The subject wetland is located in East Montpelier and Calais north of Chickering Road and south of Lightening Road. A map showing the approximate location of the Class I wetland is attached. The wetland is 15 acres, located at stream headwaters in a flat bench surrounded by low relief, north-south oriented ledges. A map showing the approximate location of the proposed Class I wetland is attached.
3. Rebecca Chalmers, Julie Foley, and Shannon Morrison, District Wetland Ecologists conducted a site visit to the subject property on April 24, 2013.

4. The wetland in question is currently identified as a Class II wetland on the Vermont Significant Wetlands Inventory (VSWI) map. The proposal is to reclassify this wetland from Class II to Class I, and to update the VSWI map to define the general location of the Class I wetland.

The proposal is also to alter the buffer zone width from the default 100-foot buffer zone established under Section 4.2 of the VWR to 300 feet. This buffer width incorporates 65% of the undisturbed watershed for Chickering Fen.

5. The wetland in question includes a 10 acre Intermediate Fen, a size that is large and rare in Vermont. The fen has peat substrate, rare and threatened fen species, and no significant disturbance. Four S1 (very rare) and three S2 (rare) plant species and one S1/S2 dragonfly reside in the wetland.

This site is composed of a series of enriched headwaters swamps and open wetlands and the surrounding ~1000 acre matrix is predominantly second-growth, primarily mixed wood forests, mostly hemlock-, red spruce-, and white pine - northern hardwoods, provides a relatively natural context with little recent harvesting activity noted. A few rural homes and gravel roads are present at the periphery of this contextual area. Approximately 10 acres of the wetland is an intermediate fen and pond; 2.6 acres of wetland to the north is Calcareous Red Maple-Tamarack Swamp; and the remaining wetland around the periphery includes a variety of softwood swamps, seeps and a vernal pool to the north.

## **Findings**

As required by 10 V.S.A. § 914 and Section 8 of the VWR, this wetland determination is based on an evaluation of the functions and values of the subject wetland as described in Section 5 of the VWR. Section 5 provides that in evaluating whether a wetland is a Class II or a Class I wetland, the Secretary shall evaluate the functions that the wetland serves both as a discrete wetland and in conjunction with other wetlands by considering detailed functional criteria. Consideration shall be given to the number of and/or extent to which protected functions and values are provided by a wetland or wetland complex.

1. The protected functions of the subject wetland include the following: water storage for flood water and storm runoff as described in Section 5.1 of the VWR; surface and groundwater protection (Section 5.2); wildlife and migratory bird habitat (Section 5.4); exemplary wetland natural community (Section 5.5); rare, threatened and endangered species habitat (Section 5.6); education and research in natural science (Section 5.7); recreational value and economic benefits (Section 5.8); and erosion control through binding and stabilizing the soil (Section 5.10).
2. The following protected functions are considered exemplary or irreplaceable: exemplary wetland natural community (Section 5.5); rare, threatened and endangered species habitat (Section 5.6); education and research in natural science (Section 5.7).

**3. Water Storage for Flood Water and Storm Runoff**

Wetlands that provide for the temporary storage of floodwater or stormwater runoff to the extent that they make an important contribution to reducing risks to public safety, reducing damage to public or private property reducing downstream erosion or enhancing the stability of habitat for aquatic life are significant wetlands.

The wetland is significant for the water storage for flood water and storm runoff function as confirmed through a site visit by Agency staff. The wetland has a constricted outlet and physical space for floodwater expansion, coupled with emergent vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration.

**4. Surface and Ground Water Protection**

Wetlands that make an important contribution to the protection or enhancement of the quality of surface or of ground water are significant wetlands.

The wetland is significant for the surface and ground water function as confirmed through a site visit by Agency staff. Physical and vegetative characteristics that indicate the wetland provides this function include: hydroperiod permanently saturated; presence of seeps and springs; and wetland contains a high amount of microtopography that helps slow and filter surface water.

**5. Wildlife Habitat**

Wetlands that support a significant number of breeding waterfowl, including all species of ducks, geese and swans, or broods of waterfowl or that provide important habitat for other wildlife and migratory birds are significant wetlands.

The wetland is significant for the wildlife habitat function as confirmed through a site visit by Agency staff. The wetland is home to the first recorded sighting in Vermont of the Ebony Boghaunter dragonfly. The Ebony Bog Haunter has only been found in five wetlands in Vermont and is an S1/S2 species. The wetland provides amphibian breeding habitat, turtle habitat, and has habitat to support otter and mink. The wetland is important for a variety of migratory birds, including waterfowl species that use the wetlands for feeding, breeding, and resting.

**6. Exemplary Wetland Natural Community**

Wetlands that make an important contribution to Vermont's natural heritage are significant wetlands. These include wetlands that are identified as high quality examples of one of Vermont's recognized natural community types.

The majority of this wetland is considered an A-ranked Intermediate Fen (S2) by the Vermont Fish and Wildlife Department's (VFWD) Natural Heritage Inventory NHI in accordance with their wetland natural community classification system as published in

Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont, and revised classification lists by VFWD.

This wetland is one of the largest Intermediate Fens in Vermont. The fen is exemplary quality and is surrounded by intact forested landscape, further adding to the exemplary quality of the wetland. A second exemplary wetland natural community, also ranked by VFWD, is the Calcareous Red Maple-Tamarack at the north end of the wetland.

The wetland is significant and irreplaceable for the exemplary wetland natural community function as confirmed through a site visit by Agency staff.

**7. Rare, Threatened, and Endangered Species Habitat**

Wetlands that contain rare, threatened, or endangered species of plants or animals are significant wetlands. Eight rare, threatened and endangered species live in this wetland according to VFWD's Natural Heritage Inventory. This includes four S1 plant species, three S2 plant species and one S1/S2 dragonfly. The dragonfly was first discovered in Vermont at this wetland and has now been found in four other Vermont wetlands.

The wetland is significant and exemplary for the rare, threatened and endangered species habitat function as confirmed through a site visit by Agency staff.

**8. Education and Research in Natural Sciences**

Wetlands that provide, or are likely to provide valuable resources for education or scientific research are significant wetlands.

The wetland is significant and exemplary for the education and research in natural sciences function as confirmed by Agency staff. Sterling College regularly visits the wetland for educational research. The wetland is open to the public by The Nature Conservancy and its trails and boardwalk are used by many people for educational outings.

**9. Recreational Value and Economic Benefits**

Wetlands that provide substantial recreational values or economic benefits are significant wetlands. The wetland is open to the public by The Nature Conservancy and its trails and boardwalk are used by many people for outings. The wetland and buffer provides birding, hiking, and photography and is heavily used for these purposes.

The wetland is significant for the recreational value and economic benefits function as confirmed through a site visit by Agency staff.

**10. Erosion Control through Binding and Stabilizing Soil**

Wetlands that are important for erosion control are significant wetlands. Such wetlands are typically located along stream, river, pond or lake shorelines, where erosive forces are present.

The wetland is significant for the erosion control through binding and stabilizing soil function as confirmed through a site visit by Agency staff.

Good interspersions of persistent emergent vegetation and water is present along the course of the headwater stream in this wetland, providing erosion control function.

11. The Secretary shall also determine whether the wetland is exceptional or irreplaceable based on an evaluation of the extent to which the wetland contributes to Vermont's natural heritage. In determining whether a wetland is exceptional and/or irreplaceable in its contribution to Vermont's natural heritage the Secretary shall, at a minimum, consider the whether the wetland is categorized as one or more of the following: Representative Example of Wetland Type; Rare Community Type; Community Assemblage/Wetland Complex; and Landscape Association.
12. The exceptional or irreplaceable characteristics of the wetland include the following: Representative Example of Wetland Type and Rare Community Type.

**13. Representative Example of Wetland Type**

Wetlands that are considered exceptional for this criteria exhibit a reference condition for the wetland type(s) with minimal evidence of human disturbance. Based on size, condition, quality and function, these wetlands represent a reference condition for wetland type, and are therefore exceptional.

The wetland includes a representative example of an Intermediate Fen in reference condition. The Intermediate Fen is 10 acres, the largest of its type in Vermont, and the entire wetland is 15 acres and ranks High on the Vermont Rapid Assessment Method (VRAM) with very little human disturbance. The 194 acres are conserved by The Nature Conservancy, including the wetland and most of its watershed. The surrounding landscape is intact forest with little human disturbance.

**14. Rare Community Type**

Wetlands that are considered irreplaceable for this criteria contain unique or rare wetland community type(s) which may be slow-forming or near the extent of its natural range.

Two rare wetland community types are present: Intermediate Fen and Calcareous Tamarack-Red Maple Swamp. The majority of this wetland is considered an A-ranked Intermediate Fen (S2) by the Vermont Fish and Wildlife Department's (VFWD) Natural Heritage Inventory NHI in accordance with their wetland natural community classification system as published in Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont, and revised classification lists by VFWD. The Intermediate Fen is slow forming, with a peat accumulation of up to 29 feet deep, and uncommon. The Intermediate Fen is 10 acres, a large high quality example in Vermont, and the entire wetland is 15 acres and ranks

High on the Vermont Rapid Assessment Method (VRAM) with very little human disturbance.

15. In addition to the above criteria, when determining whether a wetland is exceptional and/or irreplaceable in its contribution to Vermont's natural heritage the Secretary may also consider the following qualities that would contribute to a wetland being exceptional and irreplaceable: undisturbed condition, intact landscape and connectivity.
16. The exceptional or irreplaceable characteristics of the wetland include the following:

**Undisturbed Condition:** Those wetlands in a relatively undisturbed condition.

The wetland and buffer zone undisturbed or minimally disturbed as demonstrated by the VRAM score and the 194 acres are conserved by The Nature Conservancy, including the wetland and most of its watershed. The surrounding landscape is intact forest with little human disturbance.

### **Determination of Wetland Classification**

Based on information gathered by the Wetlands Program, input from The Nature Conservancy, and information from the Nongame Natural Heritage Program of the Vermont Department of Fish and Wildlife, the Secretary has determined that the wetland under consideration is a Class I wetland.

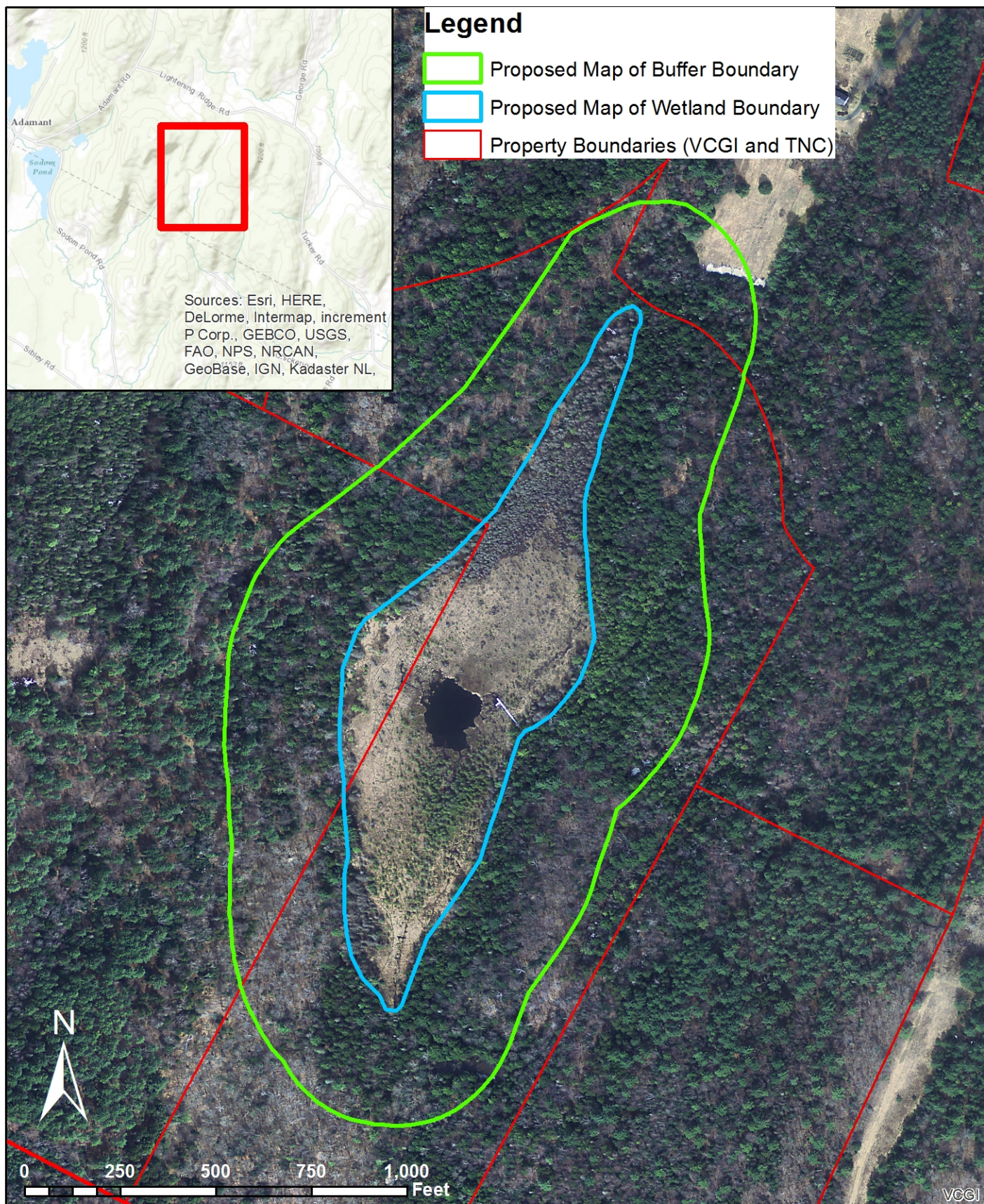
### **Required Buffer Zone**

In order to protect the functions that make the wetland exceptional or irreplaceable, the Secretary has determined that a 300 buffer zone is required for the wetland. The reference condition of the wetland complex is due largely to the undisturbed condition of the surrounding watershed. "Fens that develop and are maintained under the influence of mineral-rich groundwater seepage or discharge are threatened by alterations in the quality or quantity of the associated groundwater," (Thompson and Sorenson, 2005). A large percentage of the watershed (65%, about 75 acres) will receive additional protection with this extended buffer zone.

### **Effect of Class I Wetland Determination**

Activity in a Class I wetland or its associated buffer zone is prohibited unless it is an allowed use under the VWR, or unless it is authorized by a permit, conditional use determination or order issued by the Secretary. The Secretary may impose any permit conditions as necessary to achieve the purposes of the VWR. Section 9.1 of the VWR. This Determination does not relieve the petitioner or any other person of the responsibility to comply with all other applicable federal, state or local laws.





**Proposed Mapping of Class I Wetland  
and 300-foot Buffer  
Chickering Fen, Calais**



VERMONT DEPARTMENT OF  
ENVIRONMENTAL CONSERVATION  
**WATERSHED  
MANAGEMENT DIVISION**  
WETLANDS PROGRAM

Created by C. Hohn on 8/29/2016. Imagery: April and May 2013, VCGI Northwestern Vermont Color Imagery.  
Property boundaries per VCGI and The Nature Conservancy.