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February 13, 2024

House Committee on Environment and Energy  
House of Representative  
115 State Street  
Montpelier, Vermont 05633-5301

Subject: H. 687 - An act relating to community resilience and biodiversity protection through land use; "critical resource areas"

Dear Chair Sheldon and all Committee members,

Thank you for your invitation and the opportunity to provide testimony on the "critical resource area" concept and definitions as presented in H.687. A copy of my current resume is included with my testimony.

I would like to reiterate my strong support for H.687. With the changes proposed in H.687, Act 250 will be one of Vermont's important tools to help conserve biological diversity and maintain a climate-change resilient natural landscape, while at the same time encouraging housing and other development in appropriate locations. The addition of "forest block" and "connecting habitat" criteria, the addition of a "road rule" or equivalent, the reduction in the number of lots triggering the "subdivision" definition, and the "tiered approach" described in the Natural Resources Board's report are all key elements of updating Act 250 and making it relevant in addressing current social and environmental conditions in Vermont.

Following are my comments and suggestions on the "critical resource areas" in the order they are presented in H.687 (Draft No. 2.2, 2/6/2024).

**River corridor:** Riparian areas/river corridors fit the Tier 3 concept and "critical resource areas" very well, as they can be accurately mapped, there is relative permanence to their location, and they have very high ecological significance. Riparian areas may have the greatest concentration of ecological functions of any of Vermont's landscape features. Natural riparian areas support and protect river geomorphic processes, water quality, aquatic biota (fish, invertebrates, plants), flood attenuation, floodplain natural communities, rare plant species, necessary wildlife habitat, and landscape/wildlife connectivity.

There are several approaches used for mapping riparian areas/river corridors, and a consistent approach will be needed if these are to be identified as "critical resource areas" and used as a jurisdictional trigger for Act 250 under Tier 3. Vermont DEC's Rivers Program maps River Corridors and small streams in a restricted manner that focuses on hydrogeomorphic functions of rivers and streams. Vermont Conservation Design "surface water and riparian areas" and the

Reserve Forest “riparian areas” typically map wider riparian areas and extend upslope to include more headwater streams; this broader mapping approach is aimed at capturing more of the riparian area and floodplain ecological, biological, and landscape connectivity functions. My experience is that there is high consistency in the mapping of DEC’s River Corridors, but they miss smaller headwater streams and the ecological functions of the wider riparian area and floodplain. This difference in mapping approaches will need more discussion if riparian areas/river corridors are to be used as a “critical resource area” for Tier 3. These mapping approaches are all available on the [Natural Resources Atlas](#).

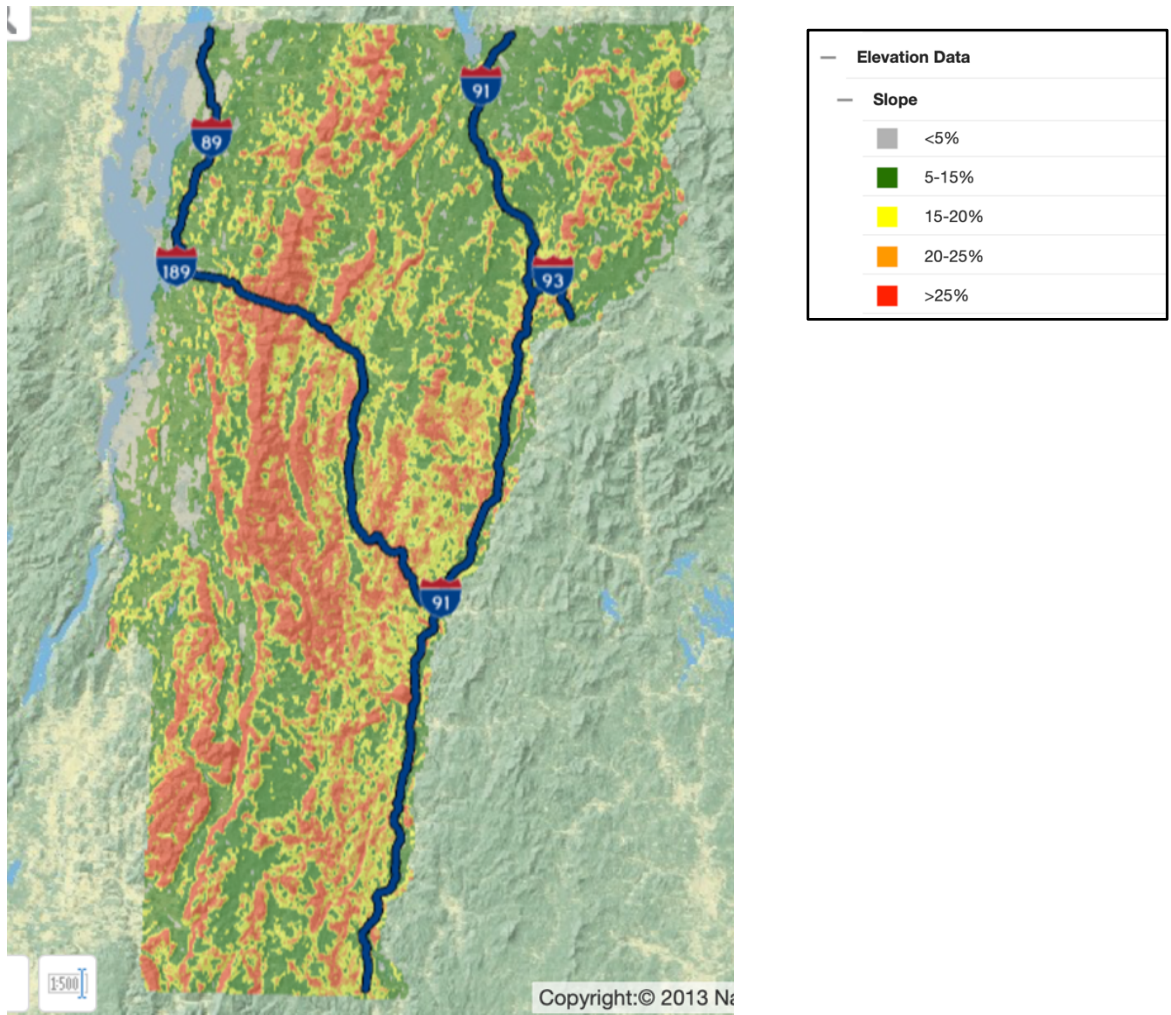
I understand that S.213 is being discussed as an approach to broaden jurisdiction under the DEC Rivers Program to protect river corridors, and that the resulting DEC permits could provide a rebuttable presumption under Act 250 jurisdiction similar to the Vermont Wetland Rules and Act 250 criterion 1(G). There would be great efficiency if a DEC Rivers Program permit process could be designed to protect all the concentrated ecological functions that riparian areas provide. My concern is that this would require a major overhaul of the program to fully address landscape connectivity, wildlife habitat, rare species, significant natural communities, and aquatic biota, and would also require expertise and resources for review of wildlife, fish, and ecological considerations. The alternative is using riparian areas/river corridors as a Tier 3 “critical resources area” as proposed in H.687, which would allow review of other ecological functions of riparian areas under Act 250 criteria 1(A) headwaters, 1(D) floodplains, 1(E) streams, 1(F) shorelines, 4 (erosion and capacity of the soil to hold water), 8 (rare and irreplaceable natural areas, 8(A) necessary wildlife habitat, and the new criteria 8(B) forest blocks and 8(C) connecting habitat. I think this approach is more likely to provide the level of review needed for riparian areas.

**Significant wetland:** The Vermont Wetland Rules currently provide excellent protection for Vermont’s significant wetlands, including for 10 ecological and social functions and values. The jurisdictional triggers for wetland alterations are well established in the Wetland Rules. The rebuttable presumption that a wetland permit satisfies Act 250 criterion 1(G) seems well supported and efficient. I suggest that it is not necessary to include significant wetlands as a Tier 3 “critical resource area.”

**Land at or above 2,000 feet:** I see that this feature has been deleted from the current version of H.687. I support that decision. Lands above 2,000 feet elevation cover a very large area of Vermont. Although these upper slopes of Vermont’s lower hills are an important component ecological function and aesthetic of the landscape, I do not believe this elevation range contains “critical resource areas” in a concentrated sense as do riparian areas or significant wetlands.

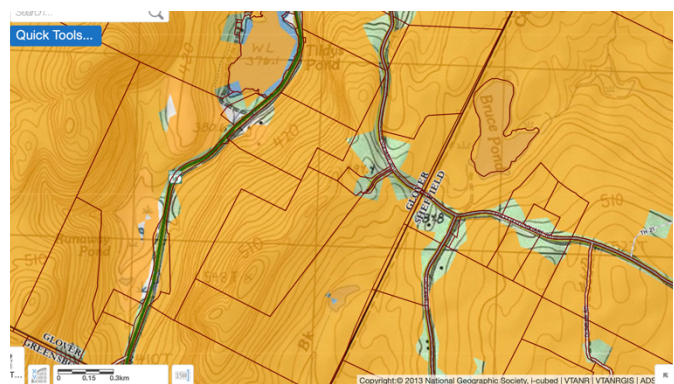
**Land characterized by slopes greater than 15 percent and shallow depth to bedrock:** Lands with slopes greater than 15 percent occupy a large area of Vermont. The map below from the Natural Resource Atlas shows slopes greater than 15 percent in yellow, orange, and red. (It is notable how little of Vermont is flat (gray on the map)! It is primarily the clayplain forests of Addison County, sandplain forests of Chittenden County, river floodplains, and the large wetland complexes of Otter Creek swamps, the Missisquoi Delta, and the Nulhegan Basin that have

slopes less than 5 percent.) By itself, lands with slopes greater than 15 percent do not seem to meet the expectation of “critical resource areas” with relatively small land area, concentrated ecological functions, or great environmental risk associated with development. Combining shallow depth to bedrock with slopes greater than 15 percent certainly refines and reduces the area of the state included as a potential “critical resource area.” Shallow to bedrock soils are more likely to support uncommon natural communities, but statewide definition and mapping of shallow to bedrock soils is not refined and would be difficult to use as a jurisdictional trigger. Uncommon to rare natural communities also occur on steep slopes of deep sands and silts, and these areas are much more subject to erosion and environmental risk when developed. Also, area of Vermont that are nearly flat (as mentioned above) and naturally vegetated (not in agricultural use or developed) likely support some of Vermont’s rarest natural communities, including clayplain forests, sandplain forests, floodplain forests, and many wetland types. Overall, I do not think that “land characterized by slopes greater than 15 percent and shallow depth to bedrock” is a good choice for identifying “critical resource areas.” I do think that additional discussion of slope and soil types may be useful in identifying potential “critical resource areas.”



**Area with any amount of prime agricultural soil:** I do not feel qualified to comment on prime agricultural soils as a potential “critical resource area.”

**A parcel containing all or part of a connecting habitat:** Connecting habitat in Vermont Conservation Design includes Connectivity Blocks, Riparian Areas, and Wildlife Road Crossings. Together these features form a network that allows wildlife and plants to move and shift distributions in response to habitat needs in the short term and shifting climate in the longer term. The network of these three features functions as a whole, with connectivity blocks forming core habitat and movement stepping-stones, riparian areas providing concentrated movement habitat for many species, and wildlife road crossings acting as pinch points in landscape connectivity for which maintaining suitable habitat on both sides of the road is critical. Of these three features, the maps below show only the Highest Priority Connectivity Blocks (orange color) from Vermont Conservation Design. The map on the left shows all of Vermont, and the map on the right shows an area in the vicinity of Glover and Sheffield, with parcels included with fine red boundaries. Much of the state is occupied by this network of connecting habitat and many thousands of parcels are included within it. Although I believe connecting habitat is one of the most important ecological features of Vermont’s landscape needing protection, I do not believe the network should be considered a “critical resource area” for H.687. Trying to identify a subset of the network of connecting habitat as most critical (such as I-89 in Bolton or Route 7 in Wallingford) downplays the critical importance of keeping the entire landscape connectivity network ecologically functional. I believe Tier 2 with increased jurisdictional triggers (“road rule” and reduced number of lots) is a better approach.



**Other potential “critical resource areas” not identified in H.687:** Rare and uncommon natural communities, rare plant and animal species and their habitat, vernal pools, old forests, and areas of concentrated wildlife habitat are all features of high importance contributing to Vermont’s biological diversity. However, I do not think that any of these features should be included as “critical resource areas” in H.687. Although current statewide mapping is good for many of these features, inventory and mapping is an ongoing process, with new elements added every year. In addition, some of these features are dynamic in their location, such as rare animal species and some wildlife habitat, making the mapping inappropriate as jurisdictional triggers. Other features, especially state-significant natural communities and rare species populations have been mapped on private properties, with the permission of landowners, and with the intent of providing landowners biological and ecological information to aide them in making land stewardship and management decisions. To introduce rare species and natural community maps as an Act 250 jurisdictional trigger would seem to be breach of trust with these landowners.

Thank you for considering these comments. I would be happy to answer any questions that you have.

With respect,

Eric Sorenson