

Date: February 2, 2017

Memo

To: Vermont Senate Committee on Natural Resources and Energy

Sen. Christopher Bray, Chair

Sen. Brian Campion, Vice Chair

Sen. Mark A. MacDonald

Sen. John Rodgers

Sen. Christopher A. Pearson

From: Everett W. Haddard, *Student, Bennington College, Center for the Advancement of Public Action*

Subject: The Role of Regenerative Agriculture in Vermont Clean Water Solutions

In recognition of the recent Clean Water Report by the State Treasurer, I ask the committee to examine the potential role of regenerative agriculture in promoting the soil health critical to meeting statewide TMDL regulations.

Most relevant to the current clean water debate are regenerative agriculture practices which:

- 1) Reduce the need for fertilizers;
- 2) Increase the water and nutrient retention of agricultural soils; and
- 3) Reduce water and wind erosion which cause nutrient pollution.

For the purposes of this testimony I will focus on these benefits rather than the potential for regenerative agriculture to play an essential role in atmospheric remediation and carbon sequestration.

Agricultural activity accounts for 41% of Vermont's contribution to phosphorous pollution in the Lake Champlain basin, and phosphorus is a leading water pollutant statewide. A leading contributor to this is phosphorus-rich manure, and the subsequent runoff or erosion of highly sandy/silty, often-tilled soils.

Regenerative agriculture practices emphasize healthy soils, which are less prone to erosion, and reduce or remove the need for frequent tilling and fertilizer application. Frequent tilling practices that reduce root structures are made essential due to the application of fertilizers on the top layer of soil, an unhealthy cycle which only treats the symptoms of unhealthy agricultural soil. However if this can be replaced by regenerative practices that emphasize root structures, bumper crops, composting, and livestock comingling, we can reduce the need for external nutrient application and break this unhealthy cycle.

I propose the committee examine one or more of the following strategies when considering any future clean water regulation:

- 1) Amending Best Management Practices to include regenerative agriculture;
- 2) Creating a phosphorus pollution credit trading system (similar to RECs); or
- 3) Classifying regenerative agricultural lands separately in a tiered per parcel fee system.

Best Management Practices (BMP):

Presently, BMP include measures to mitigate the effects of conventional farming, but not the sort of transformational change in practices regenerative agriculture presents. Under S.43, certified regenerative land must have soil which: increases in topsoil, sequesters carbon, or increases in the amount of organic material. These are evidence of healthier soil. If regenerative certification were included in BMP, this would give farmers the financial backing they need to pursue such a transformation of practices. Amendments to BMP were included in the Treasurer's report, however as BMP are often tied to federal funding, this may be a complicated solution.

This option requires the most financial backing from the state, but is most likely to achieve the greatest transition toward regenerative agriculture

Phosphorus Credit Trading:

Multiple states have implemented phosphorus pollution credit trading programs, including a Vermont pilot program in 1997. However, this pilot program was not continued due to unclear regulation as to a trading system. The advantage of phosphorus credit trading is similar to renewable energy credits (RECs). By allowing different industries to trade the legal benefits of pollution reduction, Vermont could achieve TMDL targets at a lower cost than if every industry was to operate in isolation

If a phosphorus credit trading program was implemented, I recommend regenerative agricultural certification be included as an eligible practice for phosphorus credit. This would offer a financial incentive for farmers wishing to pursue regenerative practices without charging that cost to the state directly.

Tiered, Per-Parcel Fee:

The largest funding mechanism included in the Treasurer's report was a per-parcel fee. Although a flat fee was analyzed in the report, the preferred model for a per-parcel fee would be a tiered fee system, based on land use.

If this fee were adopted, I recommend including certified regenerative land on a cost-tier lower than conventional agricultural land, in recognition of the reduced nutrient pollution of regenerative land, as compared to conventional agricultural land.