

A summary of remarks made by Dan Brooks on Feb. 21, 2023 during a virtual meeting of the state legislature, addressing Payments for Ecosystems Services.

- I have lived and farmed in W. Pawlet, VT since January 2011.
- We have a diverse farm with a small woodlot on the NYS border. We're also lucky to have the D&H Rail Trail, running parallel with the Indian River, bisecting our 85 acres. Almost every year since our arrival our section of the Indian River has gone dry by the end of June. Last summer, it dried up much earlier and stayed dry much longer. Even now, the extremely dry and abnormally warm winter means the river is much lower than it should be and the lack of snow pack means the watershed likely won't have time to replenish before the heat of this summer.
- Although people tend to think of droughts and forest fires as events that don't happen here, the reality is that they can and they do. As a farmer, I am very concerned by the lack of winter precipitation, especially given our increasingly dry/hot spring and summers, and I believe that this is only going to get worse with each year.
- Given the growing likelihood of year round hot/dry weather due to climate change, I am alarmed by the lack of any mention of beavers and the critical roles they play in mitigating drought as well as flooding and all of the other ecosystem services they provide in the Southern Lake Champlain 5 year basin plan. I attended the PMNRCD sponsored meeting held in Wells, VT this past December where they presented the plan and were taking public comments. There was something in the plan called, at the time, "Septic Socials", fun get togethers meant to gently encourage lakeside residents to discuss with their neighbors the merits of not allowing their sewage to empty into Lakes St. Catherine and Bomoseen. Yet when I asked whether beavers and the wetlands they create and maintain were anywhere in the plans I was not only told no, another attendee related how beavers had dammed up a section of the lake preventing motor boats from passing so, of course, the dam and the beavers had to be removed.
- It is this "beavers are a nuisance" mentality that I firmly believe must be changed. The Agency of Ag, the NRCS, VT Fish & Wildlife, VT Dept. of Transportation, and every major organization or agency whose purview might potentially include beavers should be educated about beavers, their wetlands, the ecosystems they create, the water quality functions they provide, and the myriad of other reasons why they should not be perceived as just a single animal species, but rather the keystone species they actually are. And then those agencies and organizations should be adequately funded to create a comprehensive Public Education program designed to cover the entire state in which residents can learn all about beavers and the amazing work they do.
- Instead, the 124 page report of the 5 year basin plan which covers the entire southern Lake Champlain basin from Dorset to Charlotte only mentioned beavers once, on the very last page and it was in the context of my public comment. Ironically, the report does include a

section about beaver analog dams, which are man made structures meant to replicate actual beaver dams, because they filter water.

- A recent study <https://www.nature.com/articles/s41467-022-34022-0> by Stanford University shows that beaver dams and wetlands can mitigate climate driven drought and improve water quality: "the beaver dam boosted removal of unwanted nitrogen from the studied East River section by 44% over the seasonal extremes. Nitrogen is an especially pernicious problem for water quality as it promotes overgrowth of algae, which when decomposed starve water of the oxygen needed to support diverse animal life and a healthy ecosystem." Beaver wetlands recharge aquifers and the series of canals and channels that beavers construct direct water outward across expanses of dry land, creating crucial water sources.
- The idea that taxpayer dollars are being used to construct and install fake beaver dams which are less functional than actual beaver dams (beavers also create those valuable wetlands), while also being used to trap and kill actual beavers who build actual dams for free seems ridiculous.
- I have been in frequent contact with Sarah Flack who is an author and grazing consultant living on a 174 acre farm in Fairfield, VT. She told me that beavers moved onto the farm in 1974, the same year she did, and she and her family do everything they can to make their coexistence possible, even surrendering a portion of their hay field to the wetlands. She also related the story of another farming family that she knows who love the beavers that have moved onto their property so much that every so often, when the water level gets too high, the family works together to carefully remove just enough of the dam's structure to allow the water level to drop so that it is once more tolerable.
- Above are just 2 examples where payments for ecosystems services could be made to compensate farmers and landowners who recognize the crucial role beavers play in protecting our watershed, creating diverse habitats, filtering water, creating carbon sequestering systems, providing flood control, and storing water among other things.
- Lifelong Vermonter Skip Lisle of Grafton has spent the past 40 years inventing and perfecting Beaver Deceiver flow devices which allow beavers to exist near humans. In addition to an advanced degree in Wildlife Management, he is passionate about beavers and the wetlands they create, and has built and installed Beaver Deceivers all over the world. The success rate for flow devices he has custom constructed and installed is 100%, with minimal maintenance. I believe that funding for his consultation along with construction and installation of his flow devices should be part of the Payment for Ecosystem Services.
- Sarah Flack provided 3 points that she believes should also be part of Payment for Ecosystem services:
 - 1. A new category of Current Use specifically for wetlands with no tax.**
 - 2. Education assistance for towns and municipalities to address misinformation regarding beavers, along with funding for consultation with Skip Lisle; this should also include having him construct and install his Beaver Deceivers where appropriate. (League of Cities and Towns could potentially administer this.)**
 - 3. Payments and incentives for farmers when cropland, pasture, farm infrastructure is affected, above and beyond typical NRCS conservation stewardship program payments.**