

## Nicole MacStay

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**From:** stanley fry <stan@sfry.com>  
**Sent:** Wednesday, May 30, 2018 11:44 AM  
**To:** Nicole MacStay  
**Subject:** FW: cheney fields----I

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**From:** Stan Fry <stan@sfry.com>  
**Date:** Monday, May 28, 2018 at 5:28 PM  
**To:** Barbara Miller <bmillier@grantwritingresource.com>, <Tyward1198@gmail.com>, <Kmelito@gmail.com>  
**Cc:** Stan Fry <stan@sfry.com>  
**Subject:** Re: cheney fields----

Dear Barbara, Karen, and Tyler;

I am writing this letter to the Select Board as a follow up to my letter requesting permission to graze cattle on Town land. The initial request was motivated by much of the reading I have done over the last two years about the changing nature of conservation; the need to keep conserved land healthy, the positive impact that grazing can have on the soils and the overall environment by removing carbons causing global warming. I have felt and still feel that conserved land needs to be properly managed. Further, and very important to my interest in the economic well being of Peterborough, I feel this is an opportunity for the town to be a leader in a movement that is gaining national attention, and that is important to the health of our planet.

I include here some comments after walking the fields with the conservation committee, some details on my plans, and a few comments on some concerns I have heard from the abutters.

### Observations on the field:

On May 22nd, the Conservation Committee asked that I walk the town property at Old Street road. Although I had walked the trail numerous times this was the first time I had explored some of the areas.

My initial impressions were:

-The sink holes were much more numerous than I had originally thought and some much larger than apparent from a distance. At least one was large enough to lose a tractor within the sinkhole. These represent a significant danger to humans and livestock. I would need to repair these and it might actually take a 2<sup>nd</sup> attempt at repairing in a few years after settling occurs.

-There were many places where the thatch from mowing was so thick that grass was unable to effectively grow. The grass quality is more degraded in these areas as well as many other areas than suffer from low nutrient value in the soil.

-the soil quality is degraded. There were many places that 'typical' meadow plants were no longer growing and the soil will continue to degrade if left as-is.

-the water issues are much more extensive than obvious. It is clear that there are many springs flowing through the property, but it is also clear that the poor soil quality is not helping. It is dead and not supporting plant growth which would typically disperse and consume much of the water.

My initial request to graze this land was based on a general desire to improve the field, create a 'scenic' opportunity for the community and help the town demonstrate its 'green' goals. After the field inspection, it is easy to conclude that the fields are in much worse condition than most have thought and in many ways the notion of it even being a meadow is threatened by the deteriorating quality of the soils, in large part due to the decades of field mowing and the effect of water in many areas.

My original intent was to create a marketing opportunity with the Town to show the benefits of regenerative agriculture, techniques that are now getting much attention. See cover story of the NY Times Magazine of April 15, 2018, which details the degradation of fields based on removing livestock and field mowing and further identifying the benefits of grazing cattle for removing carbon from the air to help reverse the global warming crisis. But after a closer examination of the fields I have a much stronger feeling that the degradation of these fields must be reversed for environmental and conservation purposes. And in fact, those fields are in danger of losing their character as a 'meadow' because of decades of field mowing without enough animal activity eating the forage to stimulate root growth of the meadow grasses, which is the main driver in keeping soils healthy.

Plan for implementing grazing:

**Fencing:** the initial plan is creating two large fields; one on either side of the trail path. The fencing method is using wood post at intervals, narrow fiberglass rods in between, with strand wire connecting. The fence is electrified using a solar panel. The panel is approx. 18 x 18". The fence on the south side would be in the tree line. The cows prefer a shady spot on sunny days in mid-day.

**Trail:** the fencing would follow the trail line. The distance from the trail is flexible. It could be quite close so that the cows could be enjoyed by walkers or 50' from the trail. The cows would be used to keep grasses along the trail down by closing it off with a temp string during rainy weather, allow the cows to graze for the day and then return them to the field. This will also reduce the tick population, which is evidently an issue to some that walk the trail.

**Field amendments / improvement of grass quality:** we soil test our fields on a yearly basis. My initial plan is to apply bio char (form of charcoal / ash) in late season. We use this material on all of our pastures and have migrated to using it on our lawn on pine St. It has enormous benefits, and has no odor. Any other amendments could be approved through the town Conservation Committee if so desired.

**Water:** water would be supplied to the animals from a movable tub. The size is approx. 2' high, 2' wide and 3' long. We would either use a hose from the stone barn, or use a Gator to carry it in a tank from Pine Street

**Access:** although the best access is on Cheney St, the land is not accessible without crossing private property. We have discussed the access on Old Street Road with the town and plan to enter from the east. There are the remains of an access road from Old Street Road when the fields were originally used for grazing.

**Rotational grazing:** Although we are creating two fields, the actual grazing would be done on sub-fields within the two fields. We would use a string fence to keep the cattle in small areas to create an intensive grazing environment. There are many benefits to this technique. The main reason to use intensive rotational grazing is that it simulates the natural environment that grasslands evolved over time - where herbaceous wild animals would come through a field and eat grasses in a tightly-packed herd (because they would have been exposed to predators) and would have eaten as much as possible in a small area, and migrated to a new area that was free of their waste and find new forage. When herbaceous animals (ruminants) eat the grasses, it stimulates root hair growth in the plants, which causes the leafy part of the plant to sequester CO2 to re-build its body, and causes a complex chain reaction to occur in the soil to cause the development of good bacterial and fungal communities (think probiotics) in the soil. This process establishes a robust and healthy landscape both below and above ground. Using high density rotational grazing, we can rebuild biodiversity in soils, which results in a healthier landscape and a happier, healthier cow.

**Herd:** I believe that the fields when healthy could support 10-12 animals. Possibly the first few years we would put 6 animals on the land. If there is inadequate grass to support a full season of grazing we would remove them to existing fields on our farm.

**Excessive wetness:** the grazing of animals (compostable material, soil improvement, hoof compaction) will help reduce water issues because it will improve soil quality and absorption rate of soils on site. But I would strongly recommend that much of the fields be key lined. Key lining is a process of cutting into the soils perpendicular to contour (similar to topography lines on a map) in order to catch runoff (sheet flow) from the top of the hillside to the bottom. The point of key lining is to evenly distribute the resources, such as water and minerals, throughout the site to eliminate patches of field that do not get enough water (typically top of field) as well as places that hold water (typically bottom of the slopes). This could take multiple years of successive passes as significant areas are too wet to initially perform the operation. Consequently, each year a little additional area would be subsoiled.

Response to some of the abutter concerns:

**Trail Access:** there would be no limitation on the use of the trail, it would be available in its current pathway without obstruction. I am a very strong supporter of the use of the pathway. As stated above on a day that there is in-climate weather we would have the cows graze down the grass in the path way to keep it low, and free of ticks.

**Safety:** the cows are not aggressive. They are not carnivorous as some might think. They are actually scared of people and if approached may turn and walk away unless they are familiar with the person. This particular breed is quite gentle. I have never seen one of these cows 'charge' at a human.

**Esthetics:** I have great concern about how the fields would be maintained and how they would appear visually. I do not want to be associated with an effort that is not respectful of the property or the scenic qualities. Since we do not plan to feed hay on the property there would be no debris to clean up. With respect to the sight line of fences there is a relatively small amount of fencing given the property size. Also, many of the properties look out across the fields and consequently over much of the fences. Wooden posts well-spaced are used, the actual wire is barely visible. I visited my farm after starting to write this and took photos from distances closer to the fences than many of the abutters homes are located to the fenced area. In these photos the fences were not visible.

**Electric fences:** the fences are charged electrically from a battery / solar panel. The charge discourages cattle from exiting the fields. The charge is such that they can detect it before the touch it. A human can touch the wire, and will remember that they did, but it is not strong enough to injure someone. It does not provide a jolt that approaches anywhere near that of an electric house outlet. The shock can be measured in the range of a static shock, like touching a door knob.

**Access to fields:** (fencing) given the style of intensive grazing only one field would be closed off at a time and the gates to un-used fields may be left open so that the public can walk through. During winter the gates on both fields would always be open. Extra gates could be added to allow abutters easier access to the fields, although I would suggest limiting this to a reasonable number as additional posts are required for the gates and the esthetics of many posts might be disappointing. (**sink holes**) I have spoken to 6 abutters at this point about the use of the fields and safety concerns. There seems to be an overwhelming concern about abutter access. With that said not one of those 6 abutters was aware of the significant number of dangerous sink holes on the property. This makes me question the amount of use the fields are actually getting. (**wet fields**) In our walk-about on the field it was interesting to see how much of the land is very wet, and it would require management of the grazing in some areas restricted to late season, but with that said a fairly large part of the property is so wet that it is hard to imagine the abutters actually using it. I firmly believe that a combination of key-lining and grazing will reduce this issue significantly and *make more of the field accessible for foot traffic when the fields are open without cows* and for grazing. (**Winter**) Typical grazing period would be from sometime in May through October-November depending on the season. This year we started the grazing **effort** the last two weeks of May. There is not a plan to keep animals on the property during winter, but these fields would benefit significantly from being feed over the winter with large amounts of hay (creating more decompostable material that will seed the field for better quality forage). I am not proposing this because of a need for daily equipment to feed the hay.

**Smell:** given the small number of animals I do not believe there would be any odor noticed by the abutters. We graze fields with many more animals than proposed here and have no issues with odor. In fact, we have a winter field where greater than 50 animals are wintered at one time for months and there is little to no odor. It is important to note, this is not a farm, it is a grazing field in an idyllic setting with an attempt to create better pastures. The odor from the currently decaying matter and sick soil in the wet areas creates more odor than the cows will create.

**Moo'ing:** Numerous people have brought up the concern over moo'ing. I understand there is a concern related to moo'ing when a cow is ready to breed. I have not noticed this phenomenon. I visit the cows nearly every day and moo'ing isn't something I often hear. Possibly weeks without hearing a MOO. Moo'ing does happen when we wean the calves from the moms but that is not a practice that we plan for these fields. With all that said an occasional Moo might be appealing to many.

**Flies:** there could be flies attracted to the animals and the manure but the opportunity for this small number of animals to have a negative impact on the abutters is very small, especially considering the distance to the actual homes. It is also important to notice that healthier soils (due to grazing) will attract more critters up and down the food chain that will eat flies and ticks, resulting in a net decrease in the pests in the neighborhood.

**Dogs:** the dogs would be repelled by the fences. I would hope that dogs would not chase the cattle, but it is unlikely there would be any negative impact. There would not be calves on the property so there would not be an issue of a cow trying to protect its calf.

**Bog wetland:** it is not healthy for the cows to be in the bog water and as a consequence we would temp fence to keep them away from the bog

**Loose cattle:** on occasion a cow can break loose. It is not a common occurrence. Over the years we have two incidents, where we have had a loose animal, both related to loading cattle in a truck. In both cases we were present. In one case a bear decided to walk across the field while we were loading. It can take a bit to retrieve the cow. The animals aren't particularly destructive nor will they try to enter a residence. In almost all cases they return to the field if left to their own. Regardless these are not animals that are going to be chasing people.

**Loss of Pollinators:** The current field circumstances does not have an abundance of pollinators. Pasture grass is considered a very good pollinator. But one would expect with the proper soil conditions numerous pollinators would re naturalize on the fields. We typically see up to 30-40% of the pasture mixture as clover which readily blooms and is a very good pollinator.

**Intent of Land Purchase:** The easement seems quite clear about the agricultural uses. I heard many explanations for why the text exists, many seem as they are an attempt to rewrite history, but agricultural use is clearly identified as a major goal of the easement.

Lastly, since all we hear are the abutters concerns, I would like to point out that quite a number of town residents have stopped me on the street, written letters, or called to state their support for the towns involvement in an effort like this.

With Regards,  
Stan Fry