**BIOL 416: Ravensfield farm visit (Oct 15) field trip reflections**

What were the two most interesting ideas you learned on the Ravensfield farm visit, and **why** were they so interesting to you?  **Please think deeply for these reflections, but keep your answers very concise.**

1. One idea I found interesting during our field trip on Sunday was her lack of constant weeding in the garden. Although she does get rid of them occasionally, she opened my eyes to what the weeds can do to help the soil and surrounding plants. They can add to the organic matter and help the soil with some of its lacking nutrients. I think many people, including myself, always see weeds as a bad thing that doesn’t offer anything to the environment around them. Now, I look at them in a new light and will hopefully change the frequency of when I weed to help the soil.

The other interesting idea was that every piece of land deserves to be loved. This idea is often forgotten or never even thought about in modern agriculture. It is an excellent way to remember that the land can do what needs to be done if shown the proper love. If the land is mistreated, you can tell the difference, and even if the majority of the land is not of use for what you want, it still deserves to be loved and taken care of. This could make a huge difference in turning modern agriculture towards more sustainable practices.

1. Titia said that agriculture cannot be sustainable without animals. This is an interesting idea because of how to define the word sustainable for agriculture. When we saw the dairy farm, it could be considered sustainable in the sense that the cattle produce manure which is used to fertilize the crop that feeds the animals. But there was also an excessive amount of waste and outputs that are not sustainable to the environment as a whole. Whereas at Titia's farm, she has a small number of animals that can support her garden without the overproduction of waste and animal output. She had a more complete cycle where she used everything and had a limited negative output. It's definitely important to have animals for agriculture but within a more small-scale way that is more sustainable for the whole system.

She also mentioned a theory she had about the reduction of pollinators. She thought that EMF radiation may impact bees' ability to locate their homes/pollination sites as it disrupts their own vibration signalling. This is an interesting idea I had not considered before. It makes you question and think about all the more hidden human effects and their impact on the natural environment.

1. One of the most interesting things I learned about at the Ravensfield Farm was Titia’s philosophy about maximizing her resources. She explained that in many modern forms of agriculture, the microbes and organisms are picked and chosen from the land, with the one’s not serving the needed purpose being removed. She does not practice this and instead finds uses for just about everything, including woodchips, twitch grass, and artichoke plants to create abundance using natural processes.

This leads into another point that I found particularly interesting, which was Titia’s concept of recycling the same way the earth does. She explained that most of what she does as a farmer is just moving things from one place to another. By doing so, she doesn’t have to utilize any synthetic agricultural methods, and instead co-opts processes that naturally occur to work in her favour. These concepts were interesting to me because I appreciated how low impact Titia’s lifestyle was from most people in terms of the environment. Titia’s style of agriculture differs because she values the land above all else and I think she proves that other, less sustainable methods such as monoculture and the use of synthetic fertilizers, are truly not necessary to produce quality food at measurable amounts.

1. One thing I learned from this field trip that I thought was really interesting was the idea of valuing plants that might be thought of as weeds to other people. The farmer, Titia, told us the story of when she first bought her land, the depleted soil only supported weedy plant species such as yellow dock. A lot of people wanted to get rid of this plant, but in contrast, she did not think the same way. Instead, she valued the plant for what it did – bringing calcium from the lower parts of the soil to the higher parts – and did not rush to get rid of it. After a while, the composition of the soil changed, and yellow dock went away naturally as other species started growing and competing. This demonstrates ecological succession, and the significance of this is how a functioning ecosystem can lead to diversity over time. Essentially, Titia used principles of ecosystems in her land use management. However, this concept of letting nature take its course is not done or cannot be done in modern industrial agriculture because you are losing time when crops can be grown, which is difficult if you are trying to feed many people (since we all need food, all the time). In essence, there is a disconnect between biological/ecosystem processes and our global food system, but it's not something I have a quick solution for.

The second thing I thought was interesting was how running an organic farm still doesn’t remove you from the outside world. In the first case, the organic feed Titia was buying was deficient in some nutrients, which meant she had to add them herself. Second, pollinators were lessening, despite being in a relatively rural area with limited industrial activity. These things show that even though you are putting a lot of effort into running a farm based on ecosystem health, there are some things that cannot be controlled by individuals. This reminded me of news stories about finding tiny human-made microplastics in places where humans don’t exist, like in polar caps and the bottom of the ocean - it speaks to how human activity has impacted the entire planet and we cannot escape it. Industrial agriculture farms can spend money on solutions to these problems as they arise, but individual farmers like Titia, who have nothing to do with these problems, must still deal with the effects. Also, since the current industrial agricultural system is incentivized to increase products without regarding ecosystem principles, problems outlined by Titia are overlooked. Overall, it’s an uphill battle if you want to do something against our current system of agriculture. As mentioned earlier, there are no quick fixes to this problem, as it is a nuanced problem reaching beyond agriculture. On the bright side, the continued existence of farms like Ravensfield in itself speaks to how ecosystem-oriented farming is still valued and can still operate.

1. Using the framework that nature has (i.e. soil->plants->food->animals cycle) for agriculture to minimize the amount of work that is needed to be done, using nature’s helpers. I find this intriguing and interesting because the majority of agriculture does not use this effective method and instead depletes the soil of its minerals and biomass and then has to amend the soil chemically (results in more effort).

Building off of this is the “quality over quantity”, this is intriguing because once again in conventional agricultural practices, this is not the case. The main focus in our society is quantity and getting everyone “fed” when it should be getting the nutrients they need. Both of these things make me wonder why conventional agriculture doesn’t use these more effective agricultural practices, as it would be better for people and financially as well.

1. Two things that I thought were very interesting was that the digestive enzymes in chickens are also active outside of their bodies, making chicken manure a useful tool to help aid in decomposition. This is very useful knowledge for a farm since compost is one of the most important factors of gardening.

Another thing that I found very interesting was when Titia was explaining about how bees are affected by electric fields caused from radio/cellphone towers. This idea is very important to investigate considering the important of bees and other insects to the successful crops worldwide. I have linked an article that found that these radio waves do in fact alter honeybees' ability to forage🙁 which may have extremely implications in the future.   [https://www.sciencedirect.com/science/article/pii/S0048969723038342?via%3Dihub](https://can01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.sciencedirect.com%2Fscience%2Farticle%2Fpii%2FS0048969723038342%3Fvia%253Dihub&data=05%7C01%7C18kjsh%40queensu.ca%7C782ace24fb5a481d2ed008dbcf20a741%7Cd61ecb3b38b142d582c4efb2838b925c%7C1%7C0%7C638331511363596593%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=HzNwVemsr2g%2FM4el5dWzU6YELIi%2BD674XGi8gZQhYtA%3D&reserved=0) I also want to note that I found her weeding strategy very interesting as she works with nature rather than against in a way that most farmers could never fathom, and I found it very beautiful. Overall, I greatly enjoyed this week’s field trip and I wish more people could have joined us! PS we made sunchoke soup and it was so good! 10/10