

George Jones Farm and Improving Soil Quality

Evidence as to Why Project is Important

Soil loss and contamination is a growing problem across the United States. Much of this stems from industrialized agriculture that strives for productivity above all else. For example, when crops are repeatedly grown in the same plot, they deplete the soil of core elements such as nitrogen and phosphorus. This is happening today with corn, soybeans, wheat, rice, and cotton, which are by far the most intensively cultivated crops worldwide. One solution is to add artificial nutrients to the soil in the form of fertilizers - about 150 millions tons in 1990 alone. Unfortunately, this leads to polluted crops and other environmental consequences when the excess chemicals runoffs into groundwater.

Wind erosion accounts for about a billion tons of soil loss a year, about 60-80% of which is attributable to human actions. Soil erosion lowers crop yields as plants have less organic matter to work with. That lost soil often ends up in inconvenient places like behind dams, once again showing the link between soil issues and other environmental problems. Rapid deforestation and an agricultural system focused on purely monocultural growing operations has led to erosion and a loss of soil up to ten times the replenishment rate in parts of the United States.

The United States is the home of industrialized agriculture. Agrochemical science requires money, knowledge, and the will to dominate nature. All three of these factors were present in the United States during the rapid population increase that started in the mid twentieth century and continued through the present. In Ohio 50% of farms are smaller than 70 acres. This suggests that a large number of Ohio's farms are family-owned or small-scale farms and most likely a switch away from high energy input

agriculture. If the US, along with the rest of the global population, is to sustain itself into the future, it must look to break from methods of mass food production and embrace more traditional and alternative methods as demonstrated on George Jones Farm.

Framework for Solution

The ultimate goal of our project is to shift Oberlin farming practices in a more sustainable direction. Our focus is on improving soil quality on local farms by implementing organic composting practices, decreasing the use of synthetic fertilizers and pesticides, and advancing alternative or traditional farming techniques, like polyculture, crop rotation and cover crops.

In order to improve the soil quality on farms throughout the Oberlin area, we need to know what exactly constitutes healthy soil. Different types and qualities of soil are identified by color, structure and texture, which are useful attributes in evaluating soil quality. Acidity, organic matter and contaminants influence soil color, which is often the first sign of whether soil is healthy. Structure affects plant growth as well as aspects of erosion and air and water movement. Texture refers to relative concentrations of silt, clay and sand. These criteria are instrumental in assessing the quality of Oberlin farms' soil and in measuring soil improvement over time.

These indicators, as well as the evidence and interview material we will provide demonstrating the importance of healthy soils, will be compiled into a comprehensive yet accessible guide to soil quality. This educational tool would be distributed among farmers, students and any other interested community members in an effort to promote awareness and employment of more soil-friendly and sustainable farming practices. It would emphasize how natural systems methods yield the best soils that are least reliant on artificial inputs that degrade them. This guide would constitute the bare-bones

framework for an educational program geared towards bringing local farmers, community members and students together. Such educational networking sessions could be held at George Jones Farm or the New Agrarian Center. Oberlin schools could integrate the farm and soil issues into academic curriculum as well as on-the farm projects and instruction.

Ultimately, we hope that exposing both current farmers and younger generations to the significance of sustainable soil management will yield positive results in both the short and long term. Though it may prove difficult for current farmers to break from the mechanized agricultural system encouraged in the U.S. to date, we are confident that our efforts will at least pique the interest of many of these agrarians. Furthermore, our endeavors emphasize a continuation of farm-to-school outreach programs, influencing younger generations' interpretation of what constitutes sustainable farming methods. Cultivating an interest and appreciation of sustainable farming in local schools is absolutely essential if our project is to have any kind of long-term impact.

In creating a successful program of this sort, we aspire to improve soil quality on farms in the Oberlin area, particularly through encouraging organic and natural systems methods of agriculture. We would be able to quantify the impact of our program through continued tests carried out by John Peterson's classes, expanded throughout the Oberlin area. In the end, we think that our work could create a healthier local food system to the benefit of all.

Case Studies

Several case studies provide examples of soil education networks and programs that would be applicable at George Jones Farm and in the greater Northeast Ohio region. The Farm to Community Mentors Program of the Northeast Organic Farming

Association of Vermont provides a model for developing networks and connections between farmers and the community. The Farm to Community Mentors Program seeks to raise understanding of sustainable agriculture and support the viability of farms through networks of dialogue and education between farmers, surrounding communities and schools. The program runs farm-based agricultural projects for kids and uses farmers as a source of knowledge. George Jones Farm and the Oberlin community could begin creating connections that stimulate a broader interest in agriculture and soil issues and support of local farms. Using the Farm as a place for mentoring and educating could facilitate student and community knowledge of organic farming and soil quality.

An example of an effective farm educational program is the Weaver's Way Co-op Farm in Philadelphia. The farm has connections with local elementary and middle schools and engages schoolchildren through projects on and related to the farm, as well as workshops and classes on soil/weather measurement and environmental change. George Jones Farm could develop connections to the Oberlin schools and facilitate a way for students to learn about soil science in the classroom and then apply those lessons at the farm, particularly by working with teachers to develop curriculum that incorporates the farm and increases knowledge about soil and sustainable farming.

A strategy for educating farmers about why and how to maintain soil quality is exemplified by the University of Wisconsin Extension Soil Management Outreach program. The program has engaged in an expansive educational initiative with presentations and on-farm demonstrations about maintaining soil quality through sustainable farming methods. Classroom sessions on soil quality are combined with field sessions in which participants view concepts first hand and learn how to implement the

information. George Jones could serve as a location for onsite training that educates farmers about soil. George Jones could also use the resources and technical expertise of the Ohio State University Extension program and Oberlin College, particularly student interns, to develop a similar initiative and expand agricultural training.

Interviews

After conducting interviews with people from different backgrounds in agriculture and with different opinions on farming techniques, we have come to understand the importance of soil to farmers. In order to our goals it is integral that we work with the people that farm for a living and have the direct knowledge. The two interviews we found to be most enlightening were with Aaron Englander, head grower at the George Jones farm; and Jay Buchan, a farmer from northeast Indiana and former employee of Tech Services Incorporated, an industrial agriculture technology company.

Englander's beliefs are generally in line with the position of this policy brief, and the direction of the brief was certainly influenced by his ideas. As a farmer, he views soil as a life form in a certain sense of the word. "Good soil is alive," he asserts, "and biodiversity is the key to a good soil." Overall, Englander thinks that more people growing their own food is the best and most simple answer to our agriculture crisis, which will also create a better, more reflective society.

Buchan gave us a slightly different perspective on soil, which is narrower and more technical but highlights the reality of industrial farming. As a grower of subsidized crops, he views soil as something that must be constantly replenished. In order to replenish the soil, he collects data on the levels of nitrogen, phosphorous, and potassium in the soil and makes up for deficiencies by treating the soil with synthetic fertilizers. His

emphasis was on cost and producing the most yield per dollar spent.

From these interviews, we realized that there are two fundamentally different ways to approach soil: holistically and analytically. While the motives behind these two farmers' work differ greatly, there is merit in both their approaches, and in order to understand soil in relation to agriculture, both approaches must be used.

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