Issue 5

Sustain US

June 2017

The Sustainable Agriculture & Forestry Scholarship Endowment Fund Newsletter

Who will feed and house future generations?

The answer to this question is much larger than this scholarship program, but one thing is for certain: It will take professionals and practitioners educated and trained in sustainable agriculture (food production) and forestry (wood production) in order to sustain a healthy population.

Introducing the 2017 Scholarship recipient

Emily Nagel of Rural Red Wing, MN

Her immediate response: I want you to know that this scholarship *allows* me to study forestry at the University of Minnesota. Without it, I would be graduating early with a degree in Geography alone. The depth of knowledge of forest systems that I will now be able to reach & apply would be unattainable without your generosity. Thank you.

About her current and future studies she wrote: I study geography at the U of M. I am based out of the geography department's Center for Dendrochronology [Ed.: the science or technique of dating events, environmental change, and archaeological artifacts by using the characteristic patterns of annual growth rings in timber and tree trunks] where I am currently researching Red Pine phenology. This current educational focus is part of a larger university project on Boundary Waters fire history. In order to properly manage the forests of the Boundary Waters, the historic fire regime must be well understood.

This area of study is, of course, a very narrow, specialized field within both forestry and geography. For the rest of my undergraduate career, I plan to broaden my studies to include a Forestry and Natural Resource Management major. Within this major, I will specialize in forest ecosystem management and conservation. In this track, I am mostly looking forward to studying forest dynamics, wildlife conservation, and responsible lumber harvesting.

My previous coursework in climatology and biogeography will integrate well into my upcoming coursework in forestry. In many places, forest dynamics are changing rapidly with a changing global climate. As I see it, to better understand the processes at work within a single forest or ecosystem, forestry through a geographic lens will be useful. I hope to work with interdisciplinary ecosystem conservation teams in the future. With a background in geography and a future in studying forestry, I hope to be able to contribute to the preservation of forest ecosystems as a conservation scientist.

Emily received a $5,000 scholarship.

One of her professors had this to say:

"...[Emily] is one of the rare students that regularly visited me in my office hours to challenge me with questions that far exceeded the topical materials being offered in the classroom...It was clear to me then that Emily was a student that was embracing her education in a serious, and broad manner...it became quickly clear that she had a strong desire to understand the complexity of environmental problems..."

Allison Harvey, one of last year's scholarship recipients, provides an update

I am a recent graduate of the University of Minnesota-Twin Cities campus with a degree in Environmental Sciences, Policy, and Management, focusing on soil science. I soon hope to be a certified soil scientist.

After wrapping up my degree, I spent the last two weeks as a teaching assistant in the field with a hybrid class called Field Studies of Soils/Minnesota Soils and Land Use. The first week tackled pedology (another term for soil science). The students broadened their classroom understanding of soil by getting their hands dirty in the field. They explored soil formation in regards to climate, biology, topography, time, geology, and historical and current land use. The students also learned how to identify and document physical, chemical, and biological soil characteristics and processes.

The second week sought to understand how our soil effects land use. While many of us may have dosed off during 8th grade earth sciences, soil science is a very real, relevant link to processes that affected Minnesota more than 10,000 years ago. While there are distinct soil property differences between un-glaciated,

"Sometimes it is not enough to do our best; we must do what is required."

—Winston Churchill

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...Coming from an agriculture background, even my head was spinning at the depth and breadth of knowledge the producers had for their land."

—Allison Harvey

southeast Minnesota and the rest of the state, looking closer at the soil reveals even more subtleties within glaciated areas. Farmers in the undulating ground moraine of southwestern Minnesota manage differently than the farmers of Lake Agassi in the northwest, and those farmers face different challenges than producers in the often droughty Anoka Sand Plain. The practices we visited were as diverse as the landscapes they depended upon.

We listened to farmers explain their dairy, beef, sheep, crop, vegetable, forest, and peat mining operations that spanned the production spectrum from conventional to certified organic. Across all of these perspectives, we also listened to University of Minnesota extension agents talk about tile drainage and toured an ethanol plant. The premise of the class was to listen and ask questions. Coming from an agriculture background, even my head was spinning at the depth and breadth of knowledge the producers had for their land. Many of the students had limited agriculture experience, and I have no doubt that this class will be one to remember. What struck me the most about this class was witnessing the students' perspectives change as the week progressed.

I think that we can learn a lot from this class in regards to developing sustainable agriculture. Growing up in agriculture and having academic conversations about sustainability, among other experiences, has made me realize that there are very distinct camps that approach agriculture sustainability in very distinct ways, with little overlap. I think there is a very deep divide between fostering sustainable conversations and the actual producers. The divide may have formed simply based off of convenience, but it often dances close to criticism, prejudice, and bigotry. Some experts develop theoretical models, or declare that we need a system makeover, or argue that the system is heading in the right sustainable direction. Before we stake our claim in any camp, we should first declare ourselves listeners, determined to seek the truth over being right. Please take hold of these opportunities. Besides, when you speak, you are repeating what you already know. Where's the fun in that?

Scholarship Evaluation Criteria Seek to Find and Fund Strong Future Advocates

The successful candidate will:

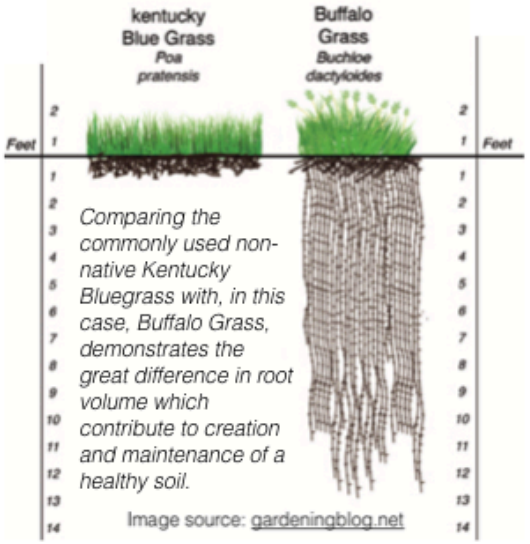
- have a demonstrated strong interest in and commitment to sustainable agricultural and/or forestry practices,
- be committed to protecting and preserving our natural resources and related economic and social conditions,
- have strong communication skills *and*
- possess leadership characteristics.

Sustainability embraces many disciplines, methodologies, and institutional practices. Therefore scholarship recipients are those who seek to be exposed to skill and knowledge building about changing environments and human health; energy, climate, and built environments; the power of culture and society; and ethics, economics, and public policy.

The successful applicant will be from the counties of Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha and Winona and be studying at a university or college in MN, WI, IA, SD, or ND at the junior or higher level.

Healthy Soils are Soils with Deep and Plentiful Roots

Soil health, also referred to as soil quality, is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. This definition speaks to the importance of managing soils so they are sustainable for future generations. To do this, we need to remember that soil contains billions of living organisms that when provided the basic necessities of life—food, shelter, and water—perform functions required to produce food and fiber.[4]



Comparing the commonly used non-native Kentucky Bluegrass with, in this case, Buffalo Grass, demonstrates the great difference in root volume which contribute to creation and maintenance of a healthy soil.

Image source: gardeningblog.net

"Healthy soil gives us clean air and water, bountiful crops and forests, productive grazing lands, diverse wildlife, and beautiful landscapes.

Soil does all this by performing four essential functions:

- ***Regulating water***—Soil helps control where rain, snowmelt, and irrigation water goes. Water and dissolved solutes flow over the land or into and through the soil.
- ***Sustaining plant and animal life***—The diversity and productivity of living things depends on soil.
- ***Filtering and buffering potential pollutants***—The minerals and microbes in soil are responsible

"Soil is a living and life-giving substance, without which we would perish.

As world population and food production demands rise, keeping our soil healthy and productive is of paramount importance. So much so that we believe improving the health of our Nation's soil is one of the most important conservation endeavors of our time."[4]

This is why the Sustainable Agriculture & Forestry Scholarship Endowment Fund is offering scholarships to students who want to learn how to protect and enhance this vital resource.

for filtering, buffering, degrading, immobilizing, and detoxifying organic and inorganic materials, including industrial and municipal byproducts and atmospheric deposits.

- ***Cycling nutrients***—Carbon, nitrogen, phosphorus, and many other nutrients are stored, transformed, and cycled in the soil.

Soil is Alive. Dirt is Dead.

A single teaspoon of soil can contain billions of microscopic bacteria, fungi, protozoa and nematodes. A handful of the same soil will contain numerous earthworms, arthropods, and other visible crawling creatures. Healthy soil is a complex community of life and actually supports the most biodiverse ecosystem on the planet.[6] When pesticides are used, they kill one or more of the micro organisms found in the soil. This leads to an interrupted or absent web of soil life, hence the soil is dead or almost dead.

The Typical Suburban Lawn is an "Artificially Enhanced Monoculture."[5]

More surface area in the United States is devoted to lawns than to individual irrigated crops such as corn or wheat.[2]

Homes, golf courses and parks may grow more acres of turf grass than U. S. farmers devote to corn, wheat and fruit trees—combined.[1]

"Common characteristics of a lawn are that it is composed of only one grass species, it is subject to weed and pest control, it is subject to practices aimed at maintaining its green color (e.g., watering and fertilizing), and it is regularly mowed to ensure an acceptable length.

Greater amounts of chemical fertilizers and pesticides are used per acre of lawn than on an equivalent acre of cultivated farmland, and the continued use of these products has been associated with environmental pollutions, disturbance in the lawn ecosystem, and increased health risks to the local human population [3]

A dominant reason for heavy pesticide and water use is the nature of the grasses used and that they are kept short—always. Lawns therefore have limited root structures which leads to dead or almost dead soil.

We all want clean water to drink and healthy soils to grow our food. By limiting use of pesticides and fungicides in our lawns and fields we can create a healthier home for everyone.

To learn how you can manage your lawn (and other large monocultures) in order to minimize pollutions, maximize carbon sequestration, and reduce water use, go to

http://yalebooks.yale.edu/book/9780300086942/redesigning-american-lawn

OR

http://harvardmagazine.com/2011/03/when-grass-isnt-greener

References

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4) https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/

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6) https://permaculturenews.org/2010/06/17/the-story-of-soil/

7) http://www.rochesterarea.org

8) https://www.cfstandards.org

Please share this Newsletter with others who might be interested in helping the cause. Thanks!

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"How wonderful is it that nobody need wait a single moment before starting to improve the world"
—Anne Frank

Thank you for your willingness to help with the goal of achieving sustainability for our children, grandchildren and their futures

Become a Donor. Let's Work Together to Protect our Resources

If you too are concerned about the indiscriminate use of chemicals which are killing our pollinators, polluting our water, and negatively effecting our food supply, then JOIN US by donating today.

The Rochester Area Foundation is the administrator of this scholarship fund.[7]

Contributions to the Fund are fully tax deductible.

Methods of contributions are numerous:

- ☆ A check or credit card is wonderful, use form below.
- ☆ Matching funds from employer.
- ☆ Direct transfers from an IRA (see website for method and be sure to contact your financial advisor, accountant or lawyer).
- ☆ Endowments through your Estate Plan, wills or life insurance policies. (See website for method and be sure to contact your financial advisor, accountant or lawyer for advise).

We already have contributors using most of the above methods.

100% of your donation goes to build this endowment fund!

The Scholarship Endowment Fund is structured such that only earnings from the invested capital is used to pay for scholarship(s) and Fund operating expenses. This rule assures that the Fund will operate in perpetuity.

The Rochester Area Foundation (RAF)[8] is the steward of the Fund. RAF, a 501 (c)(3) Foundation, is accredited by *National Standards* for operational quality, donor service and accountability in the community foundation sector.

The National Standards for U. S. Community Foundations Accreditation Program certifies U. S. community foundations that meet and exceed federal and state law requirements in practice and by policy. The accreditation process is rigorous, and undertaking it demonstrates a community foundation's commitment to accountability and excellence to its donors, its community, policymakers, and the public.[8]

RAF's administrative fees are 1% of the annual fund balance and are amply covered by RAF's investment performance.

Neither scholarships nor fees are reducing the endowment equity!

The Founders issue and mail periodic newsletters and these costs are also covered elsewhere.

The Fund continues to receive new charitable donations, and we are grateful for repeat donations and the end-of-life bequests received.

This helps us build this Endowment Fund to become self-sustaining at a significant scholarship level of $5,000.00 per year or (much) more—forever. The size of the Fund determines how many scholarships we can provide.

This Fund is set up to be operated in perpetuity as managed by the Rochester Area Foundation.

Visit our website for additional details about past donors, honorees, how to donate using IRAs and wills, how to identify employer matching gifts, etc.,

http://protectourresources.org

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Sustainable Agriculture & Forestry Scholarship Endowment Fund

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Your donation and its tax deductibility will be confirmed in a letter from Rochester Area Foundation. Donors and honorees will be recognized in the RAF Annual Report and the Scholarship web site unless otherwise requested. For bequests and end-of-life donations—please see our website.