

**FRIENDS
of HEMPSTEAD
PLAINS**
at NASSAU COMMUNITY COLLEGE

The mission of the Hempstead Plains at Nassau Community College is to preserve, restore and manage the Hempstead Plains prairie habitat on the campus of Nassau Community College and foster good stewardship of the land through education and research.

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Table of Contents

Society	2
Technology	2
Reading	3
Engineering	3
Arts	4
Math	4
Science	5
Committee Reports	6
Student Insight	7
Upcoming Events	7

Meadowlark



Friends of Hempstead Plains at Nassau Community College

Spring, 2016 Volume 15, No. 1

President's Message

The Education and Research Center on the Nassau Community College campus promises to be an engaging, informative resource for students and the general public. I have already noticed a marked increase in student and professor participation, outreach activities with the boy and girls clubs, as well as interest regarding our SITES certification from the professional community. The full-day landscape architecture educational program on horticulture, sustainable site development, green roofs and storm water management is just one example of what's to come.

I look forward to seeing many of you at the gala on Thursday, May 19th at 6 PM at the Hofstra University Club/Mack Hall. As usual the room will be filled with our friends and colleagues. We will have a chance to honor our award recipients, be treated to delicious food and beverages, have a chance to catch up with each other, plan the future together, have a brief history lesson on the plains, and with some luck win a raffle. Our honorees this year include Brian Schneider from Nassau County Department of Public Works, who has been instrumental in the construction of the Education and Research Center; Angela de Caprariis-Salerno, who tirelessly provided support to many of our efforts, Alex Beach, our summer helper for the past three years, and high school student Erik Roll, an enthusiastic environmental steward.

It is a wonderful time at the Hempstead Plains! Flowers are blooming; grass is growing; birds are nesting; summer is definitely in the air. On a tour we took today, the beauty and freshness of the Plains became apparent. I welcome you to visit the Plains and together we can participate in the wonderful activities.

Editor's Message

Special thanks go out to the prior newsletter editor, Angela de Caprariis-Salerno, who applied her eye for detail, and grace with the human language, to many of our outreach efforts. She will be appropriately honored at our upcoming gala. As the new editor, I keep her many lessons in mind as I try to rise to her standard and deliver the level of communication to which you have grown accustomed. Since I don't have her skills with the computer, I have had to change some of the layout, hopefully you still enjoy its flow.

Since STEM (Science, Technology, Engineering and Math) is hot these days, I have opted to adapt the newsletter to include these topics, along with the Arts, Reading, and Society to form the acronym: STREAMS. Please keep in mind that the articles enclosed herein are a sampling of what FHP does in these areas, and the selection represents the editor's choices in the moment of assembly. And since we have been doing more, and will be doing more, we are planning to expand the frequency of the newsletter to quarterly, while moving to email delivery to help lower our costs, while including enhancements such as hot links, color and easier two-way communication with our members.

And are you enjoying the color? I hope so! In the interest of preserving our treasury, the upgrade to color printing is brought to you by the David Stolarz Fund, for the current issue. Please consider funding the color upgrade for our next issue.

Finally, a special "Thank You" to the Board of Directors for selecting me to perform this function. I look forward to fulfilling their confidence.

Society

By Nina Shah-Giannaris

NCC and Covanta Team Up

The 2nd Annual Campus Cleanup with Covanta was held during the Nassau Community College Day of Service on April 13, 2016. The Nassau Community College Construction Management Association of America (CMAA) student club teamed up with Covanta to collect garbage in and around the Hempstead Plains. This event allowed students, faculty and other volunteers to come together and provide a service to the community. The event began with an explanation by an engineer from Covanta to the volunteers describing the manner in which garbage is burned and turned into electricity. The students were amazed to learn that everyday garbage can be turned into useful energy to power residential homes. After the lecture was complete, the volunteers, geared in vests and gloves, proceeded to collect numerous boxes of garbage that were in turn taken back to Covanta to be turned into electricity. The entire area that was once covered with litter, was now clean. Great job CMAA and Covanta!!



Covanta Provided All The Equipment



NCC Volunteer Day Students Get The Message

Technology

Seeing The Heat

Computers have come a long way in a relatively short period of time. Phones have become a simple interface that everyone can use, while housing powerful electronics and memory.

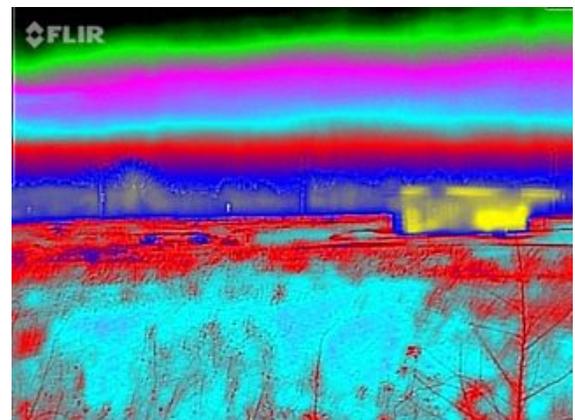
One innovation that we plan to use is the FLIR Thermal Imaging Camera attachment that senses the heat in a view and sends the image to the iPhone's storage. Notice in the two identically framed pictures to the right (an automatic feature of the FLIR One) how a landscape view takes on new meaning when viewed thermally. Our building is clearly visible emanating its stored solar energy, and even the sky is banded as layers of temperature. The colors are selected by the software, although it has a number of automatic alternatives in much the same way that Instagram does (BTW: #HempsteadPlains on Instagram).

We are looking for scientists and students who want to perform interesting and informative research using heat signatures. Locating warm blooded animals, looking at the difference between native and invasive plants, and examining the building's heat emanations are three ideas that come to mind.

Please contact us if you are interested.



The Hempstead Plains and Research Center.
Normal Photo (Above) and Thermal Image (Below).
Photo Credit: David Stolarz.





The Library



Rare Books

Reading

It Takes A Village: The New Natural History Library At The Plains

Last year we received a major donation of the natural history book collection from a generous member, Barbara Conolly, for the Hempstead Plains Education and Research Center. Barbara donated over 300 books that include field guides on plants, birds, insects and more, nature stories, biographies, children's books and plant lists. Coincidentally, the building had just acquired a lovely series of book shelves, made by Richard Liu for his Eagle Scout project. Over the summer another dedicated volunteer, Victoria Sferlazza, an English Professor at NCC, spent hours and hours cataloging and organizing the books for our new library. Thanks to their generous efforts, the Center now has a well-stocked library for research, investigation or just pure enjoyment.

In addition, David Stolarz has acquired a number of maps and books from online auctions and has kindly donated them to the library. Since we will be enjoying a history talk at the Prairie Benefit, come on by to take a look at what he's found!

Engineering

By David Stolarz

Aerospace Engineering! Who Knew?

When I speak to high school and college students, my favorite line is: "What do you want to do? - Now that you're all grown up." When I was that age, for a small period of time, I'd answer the question, "Aerospace Engineer!". Naysayers around me (there are just too many out there) would say, "What!? - You mean build rocket ships - that's silly - they've already built them - you'll never get a job doing that!". One of my favorite aspects about FHP is that encouragement abounds. We take an idea and encourage it until it becomes reality. As a result, we are encouraging an aerospace engineering project into existence with our good friend, Roy Mauritsen, who's a hobbyist drone flyer,



and Meagan Fastuca, who wants to get a GIS project off the ground. Roy owns a DJI Phantom 2 with an external gimbal that can house a GO PRO Hero 3 or 3+ that he manually flies along a prescribed path with a live video feed to a small monitor. The drone battery lasts about twenty minutes and obtains about 6 gigabytes of 1080 video at 60 frames per second. It can also take 12 megapixel photos at half second intervals. It is an amazing example of aerospace engineering. Adjusting the normal distortion of photographs into coordinated images (orthoimagery) and locating them in their proper place in our GIS model (georeferencing) are two aspects that require engineering level mathematics, but we hope to obtain software to accomplish that task over the summer. We have placed wooden stakes on the plains that will serve as points of known location to help in the georeferencing processing. The end goal is to define a straightforward process that will allow us to quickly obtain a detailed status of the vegetation on regular intervals to accomplish our comprehensive management plan.

Arts

“No Man Is An Island” ~ John Donne, 1624

Our environmental science perspective begins with human society. While we love the grasses, flowers, animals and fungi that grow here, these fit in a context of the surrounding suburban development, with an ultimate idea that a healthy environment equals healthy humans.

How do we accomplish that goal? We have fun, of course! We are just careful about how we define fun!

So what fun have we been having lately? An annual pleasure is Kidsfest at Old Westbury Gardens. Betsy and David set up the normal Hempstead Plains informational display, and encourage youngsters to create an artistic arrangement of natural elements on a sheet of colored paper. For the younger children, coloring Meagan's bookmarks from Endangered Species Day is a lot of fun.

In those moments of contact, we tell the story of the Hempstead Plains, and encourage people to take a role in the preservation of their environment. Do you like working with children and telling the story of environmental stewardship? Then we'd like to hear from you. We meet many people who care about the natural world, but don't know what to about it. It is all local! Care for your back yard, and your open spaces, and the earth will keep us here a little while longer.



Photo of Betsy at a table with budding artists and interested chaperones. Taken at the Old Westbury Gardens' Kidsfest on September 20, 2015. Photo Credit: David Stolarz.

Mathematics

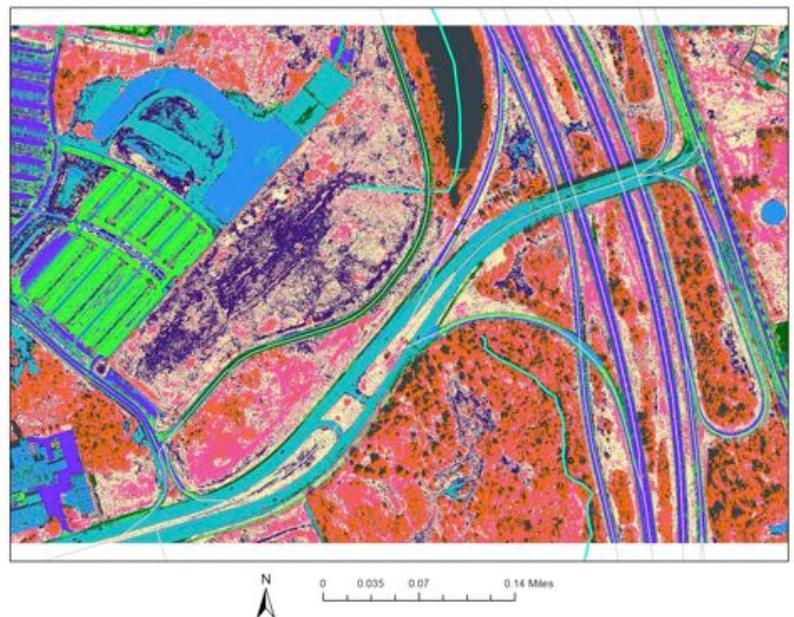
By Meagan Fastuca and David Stolarz

Using GIS to Classify Vegetation on the Hempstead Plains

Meagan Fastuca is building a Geographic Information System (GIS) to classify and map plant locations on the Hempstead Plains. This research will help everyone understand where different types of plants are growing and allow anyone to participate in research using a common mapping system based upon the North American Datum of 1983, State Plane Coordinate System of 1983, which flattens a curved surface so everyone can measure with simple Math.

Meagan's main focus is to use GIS to analyze imagery taken from a drone or unmanned aerial vehicle. The drone captures high resolution pictures of every part of the preserve. Then these pictures are put together into a mosaic that will show an aerial image of the entire area. This image is then analyzed using the GIS software to show where the different types are located in a process called "classification".

How does classification work? The scientist can select areas in the image where a certain plant exists and then the software will figure out where this plant occurs elsewhere in the preserve. It does this by looking at the plant's spectral signature, which is the wavelengths of color that are being reflected by the plant. This project will be very helpful in determining if invasive plants are increasing or decreasing over time and will be a vital management tool over the coming years..



Classified Image of the Hempstead Plains and Surrounding Area. Copyright Meagan Fastuca, April 6, 2016.

Science

Sci 109 Students Take a Trip

Professor Doug Schmid, from the Physical Sciences department at NCC, recently took his students for a field trip onto the plains. Some notes from the class trip:

"We removed all the cypress spurge from a circle four meters across, marked by an orange stake in the center. By pulling by hand, we saw that the plants broke off at ground level - it will be worth observing how quickly they come back after this simple removal method at this time in their growth, as plants had expended energy in flowering, but had not yet produced seed."

"We did some soil profiles in three areas and noticed, as you would expect, that: the soil particles became smaller in the lower spots (more clay and silt) - the soils in general were pretty good - lower area was silty loam, with pretty thick topsoil layers, and then the higher area had thinner topsoil and considerable gravel and sand".

Science

Weather Station Up and Running

What's that poking out of the top of our green roof? A new invading weed? A piece of Skylab (look it up)? Perhaps a new time lapse camera? Nope, not yet!

It our very own Davis Instruments Vantage Pro2 Weather Station! Installed by Carole and Richard

Ryder, who also generously donated the tripod stand for it.

An LCD screen shows updates every 2.5 seconds via a solar powered data system featuring a rain collector, temperature and humidity sensors, along with an anemometer. Arrange a visit and check it out, or come volunteer to help fulfill the vision.



Our New Weather Station



Plains Management Report

By Scott Emmons

Ridding The Hempstead Plains Of Invasive Species, With Patience

Ridding the Hempstead Plains of invasive, non-native plant species is a long-term goal of Friends of Hempstead Plains. Very long-term. It will only be possible after many years of effort to reduce invasive populations to the point where it would be even thinkable to remove the very last noxious plant of even one unwanted species. Our efforts now are focused on this reduction phase.

Our efforts to reduce the population of mugwort (*Artemisia vulgaris*) are well underway and succeeding. For the past three seasons we have mowed dense patches, sometimes twice in the season. One advantage mugwort has over other plant species is it grows up quickly starting in early spring, shading out the new growth of other plants. We try to remove that advantage by mowing back the first growth, around one or two feet high, in late spring or early summer. A second advantage of mugwort is the toxic mixture of chemicals its leaves put into the soil. These chemicals have an *allelopathic* effect, inhibiting growth of other plant species. By preventing robust growth with our mower, we reduce the amount of leaf growth and hence the level of these toxins.

This approach is paying off. In patches where there was once only dense mugwort we now have interspersed native plants appearing, such as little bluestem, broomsedge bluestem, goldenrods, and Indian hemp. In the densest patches of mugwort the allelopathic poison in the soil is so great nothing at all grows in the first season. But gradually, nature recovers. Time will tell how well the natives can reestablish themselves.

While continuing mowing the mugwort, we can turn our attention to the next unwanted guest. A good candidate is Chinese bushclover, *Lespedeza cuneata*, a native of Asia and eastern Australia. Unlike mugwort, which spreads by its roots, Chinese bush clover spreads by seed. As a result, while there are some very dense stands, most of these plants are interspersed all over the plains. They are difficult to pull up and this should be avoided in any case as it disturbs the unbroken sod, creating opportunities for seeds, usually the unwanted kind, to sprout. Here we have an opportunity for volunteers to make a valuable contribution to conservation and restoration. Chinese bushclover is easy to spot and cut off near the soil with a pair of clippers. If we can do this across the plains before the plants go to seed in the fall, we can see a serious decline in the population.

Conservation Report

By Betsy Gulotta

Education and Research Center Update

The new Education and Research Center is open for classes, meetings, workshops and special events. Several Nassau Community College classes have made use of the building and the plains during the fall and spring semesters. Girl Scouts visited and students from East Meadow High School and The Wheatley School collected samples of plants and lichens for their barcoding research with Cold Spring Harbor Laboratory to verify identification genetically. Nassau County BOCES Center for Community Adjustment students have volunteered with habitat restoration all year on a weekly basis when the weather cooperated.

Spring is slowly emerging on the plains. Two killdeer nests have been sited, the tree swallows are back making their homes in nest boxes, milkweed and wild Indigo are popping out of the ground, and other spring wildflowers are slowly appearing along with a few invasives, like Cypress spurge and Wild Mustard.

The Friends are working to establish a schedule of regular open hours for the building and plains. Meanwhile the Center is open for walks and volunteer workdays according to our spring schedule. See www.friendsofhp.org for more info.

Additional access can be obtained by contacting the Conservation Project Manager, Betsy Gulotta, at 516-572-7575 x26531 or betsy.gulotta@ncc.edu.



The Hempstead Plains Education and Research Center. Students Gather To Learn and Participate. Photo Credit: David Stolarz.

Help Wanted

Video Production

Script Writers, Camera Operators
Sound Engineers

Web Development

Content Writers, Social Media Interns

Environmental Science

Botanists, Ornithologists, Zoologists
Bee Keepers, GIS Interns

Engineering

Building Managers
IR Engineers, Aerospace Engineers

Education Specialists

Museum Designers, Curriculum Experts
Tour Leaders, Lesson Planners

Fundraising

Advertising and Marketing Interns
Grant Writers, Cold Callers

General Help

Weed Pullers, Bush Cutters

Interested in Mentoring/Volunteering?

Please Contact: info@freindsofhp.org

Upcoming Events

The 11th Annual Prairie Benefit

May 19, 2016, 6:00 PM, Hofstra University Club

Poets on a Long Island Grassland

Saturday, May 21, 2016, 10 AM - 2 PM

Register with Tom Stock, Workshop leader,
naturalist, and poet. Tstock39@gmail.com

Sunset Talks on the Plains

June 17, 2016, 7 PM

Endangered Species Day Celebration

Facebook Photo Contest

Date To Be Announced

Inspiration from a Prairie

Ecological Landscape Alliance Workshop Meeting
Continuing Education Units Available for
Professionals

September 23 @ 8:30 am EST - 3:30 pm EST

Student Insight

By Nicole Ciccolella, NCC Graduating Senior
Associates in Adolescent Education

The Hempstead Plains- Anything But Plain!

Being an ambitious yet easily bored child my entire life, like others that grow up on Long Island, there was always a constant longing to find a new and exciting place to visit. Well, if you're adventurous like me, enjoy participating in rewarding activities, and admire being a part of something bigger than yourself, look no further than Friends of Hempstead Plains at Nassau Community College! Not only is it historically significant and beautiful to walk on- it presents many opportunities to discover and learn about things such as endangered and rare plants, flowers and grasses.

The plains once consisted of 40,000 acres of native grassland that flourished in central Nassau County. Now that we have so much commercial development, unfortunately, only a few acres remain today. The land contains many endangered plants amongst the 250 different type of plant species and vegetation found there. The land is one of the most quickly vanishing habitats in the world, along with some of the plants, animals, and insects that are sadly vanishing too. Some of the most commonly observed wildlife on the Plains includes (but are not limited to) Regal Fritillary, Monarch and Painted Lady Butterflies, Praying Mantis', Eastern Cottontail Bunnies, Eastern Meadowlark birds, and Red Milkweed Beetles. Many beautiful plants also exist on the Prairie such as Sandplain Gerardia, Bluestem, Birdsfoot Violet, Black-eyed Susans, to name a few.

So, how does such an alluring and appealing place exist in such a heavily populated and air polluted area? Answer: Mrs. Betsy Gulotta!

Thanks to all of her hard work with organizing projects, cooperating with schools and educators to create opportunities for people of all ages! Without Mrs. Gulotta, we couldn't use this beautiful land and it wouldn't serve as a way to contribute back to our community, schools, and the generations to come. Additionally, Mr. Dave Stolarz should also be recognized for all of the time and efforts he has dedicated to keeping the Plains up and running. Without their hard work, and everybody else's perseverance to keeping things shipshape, this land would be a littered eyesore. Friends of Hempstead Plains presents everybody with a chance to improve and observe their local environment. So, if you like to feel accomplished, help others, learn new things and enjoy being outdoors, don't hesitate to get involved!

A View From Above



See Our Engineering Section Inside for a Description of How We Obtained This Image

FRIENDS OF HEMPSTEAD PLAINS

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