



**United States Department of
Agriculture**

**NRCS Big Flats Plant Materials Center
3266 State Route 352
Corning, NY 14830
(607) 358-6009**

2023 Progress Report of Activities **January 2024**

The Big Flats Plant Materials Center (PMC) is one of the Plant Materials Centers operated by the United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). It serves the Northeastern U.S., from Maine to northern West Virginia. The PMC is in the southern Finger Lakes region of New York State. The mission of the program is to select conservation plants and develop innovative plant technology to address customer needs and natural resource concerns through on site research and studies.



View of seed barn, greenhouse and warm season grass fields in fall at the PMC.

This report is a summary of some 2023 activities at the PMC. The primary areas of focus at the PMC are soil health, erosion control, water quality and wildlife habitat improvement, and forest riparian buffers. For additional information on any of these topics, or other questions you may have, please contact us at the center (contact information on final page of report).



'Aroostook' cereal rye field plant for seed production.



Bumble bee entering white beard tongue flower.

Water Quality Monitoring for Pesticide Contamination in Upstate New York- Collaboration with Cornell University

Groundwater in some areas of New York State, notably Long Island, have been monitored for pesticides for decades when it was discovered that private wells had been contaminated by intensive, legal pesticide use. Even when pesticides and soil amendments are properly applied, they may still reach surface and groundwater through runoff and leaching. The sandy soils found throughout Long Island, make the area and its 3 million residents, vulnerable to contaminants in their drinking water. The findings emphasize the critical need to protect groundwater quality before it becomes impaired for use.

Soil and aquifer conditions in upstate New York are markedly different, and it has long been assumed that there is a lower likelihood of groundwater contamination than Long Island. The fate of the pesticide once applied, largely depends on its length of persistence and solubility within the soil.

The PMC is collaborating with Cornell University's Department of Biological and Environmental Engineering and installed 4 wells at the PMC. Water samples will be collected a few times a year to monitor and document the rate of pesticide leaching through the soils. Samples will also be tested for pesticides presence and other contaminants such as nitrate. Also, a portion of the sample will be scanned to measure pH, the range of pesticides or herbicides found as well as degradation by-products.

2023 Update – Preliminary analysis of common solutes and ions did not indicate any parameter of special note at the PMC, although there was a slight enrichment of sodium found in both the irrigation and railroad right-of-way samples.



Pesticide monitoring well along railroad tracks, at the PMC.



Pesticide monitoring well along north end of railroad tracks, at the PMC.

Effects of Seeding Rate, Date and Termination Timing on Biomass and other Attributes of Cool Season Legume and Grass Cover Crops for Production Agriculture

Planting regionally adapted cover crop species at optimal planting dates and seeding rates, will improve cover crops species performance and optimize biomass. With fall planted cover crops, seeding dates could be constrained by the harvest date of the subsequent cash crop. Additionally, cover crop seeding dates will affect the seeding rate. While high seeding rates have been shown to produce optimal biomass, they often reduce profit margins with the cost of the cover crop seed. On the other hand, low seeding rates may not produce enough biomass resulting in competition from weed species and reducing the many other benefits of cover crop seedings.

The PMC, 13 other PMC's, the Agricultural Research Service (ARS), and North Carolina State University are currently evaluating the effect of planting dates, seeding rates, and timing of termination on adapted varieties of cereal rye and legume species. In the fall of 2023, the PMC planted five different seeding rates of *Aroostook* cereal rye: 15, 30, 60, 90 and 120 lb/ac at 3 different seeding dates that coincide around the currently recommended dates. Photos will be taken at different growth stages and canopy cover will be measured using biomass applications, along with a final biomass harvest at termination.



Cereal rye was planted on different seeding dates, with different seeding rates, using a precision cone planter. The photo on the left shows the planting setup and the photo on the right is the field flagged and freshly planted.

Plant and Seed Production

Each year at the PMC, most of our conservation plant releases are harvested, cleaned, and prepared for shipment to growers and nurseries. Below is a list of released conservation plants potentially available for increase to growers or use in conservation plans. Releases highlighted in red are in limited or 0 supply due to 2023 environmental factors (no seed produced) and will be made available in the next few years as fields are being re-seeded and planted.

Seed:

- 'Aroostook' cereal rye
- 'Niagara' big bluestem
- 'Tioga' Deertongue
- 'Copper' chinquapin
- 'Keystone' buttonbush
- 'Catskill' dwarf sand cherry

Vegetative material:

- 'Streamco' purple osier willow
- 'Greenbank' sandbar willow
- 'Ruby' red osier dogwood
- 'Catskill' dwarf sand cherry
- Kingston Germplasm prairie cordgrass
- 'Spike' hybrid poplar

Any commercial grower or nursery interested in producing any of our plant releases or in need of information on our releases or sources of supply, can visit our website or contact the PMC directly. All Plant Materials Center's plant release brochures can be found here: <https://www.nrcs.usda.gov/plant-materials/cp/releases>

Non-PMC Plant Release Production

The PMC continues to maintain a small outdoor plot and an indoor potted population of Northeast collected sweetgrass, since the early 2000's. Plugs are shipped to interested tribal members through requests from field office personnel, tribal liaisons or directly to the PMC. This past year, over 1000 plugs were provided to Tribal Nations in New York, Massachusetts, Maine, Vermont, New Hampshire, South Dakota, California, Oklahoma and Rhode Island.

Technical Assistance and Publications

- Provided technical assistance to Canisteo-Greenwood School District's Superintendent for a potential pollinator habitat planting and People's Garden.
- Assisted in the updates to NRCS Pollinator Habitat Establishment Guide and Seed Mixes as well as ID guides for trainings.
- Assisted in the update of the NRCS NY's Cover Crop Seeding Calculator and IR, 512 seed mixes, and produced a technical note for Seed Quality Standards for NY (supplement to National PMC published guide).

Trainings

Tree and Shrub Establishment Training for Buffers



On May 3rd and 4th, the PMC hosted a Tree & Shrub Establishment Training for 40 NRCS, FSA, and SWCD staff. Speakers from NRCS NY State Office, USC and FSA presented multiple topics including NRCS Conservation Planning Process, Tree and Shrub Establishment Design Elements, Preparing Planting Plans and CRP Programs regarding Buffer and Tree plantings. Eric Antosh, PMC Agronomist, talked to the group about the NRCS Plant Materials Program, PM Collections, PM Handling and Storage, and gave a tour of the PMC Fields and Equipment. The participants completed a hands-on exercise that entailed proper planting techniques of live stakes, seedlings and rooted cuttings of various ages, and installing different protection methods for successful establishment.



Top left: Establishing live stakes in the field for buffer plantings. Bottom left: Participants installing trees in the field. Bottom right: Speaking on the fundamentals of tree & shrub establishment.

Wildflowers and Grass Plant Identification

On June 28, NRCS field office staff participated in a wildflower and grass ID course. Topics included Common Pollinator Plant ID, Review of NY Pollinator Seed Mix (Dry & Wet Site) and Invasive Species List. The group then went out to the PMC warm season grass demo area and pollinator field study plots. 45 different species of wildflowers and grasses were identified and increased staff knowledge on many commonly used species in pollinator habitat conservation plans and how to identify species when not in bloom.



Participants identifying wildflowers in the field.

Big Flats PMC Staff

- **Manager** - Shawwna Clark shawwna.clark@usda.gov
- **Study Leader** - Eric Antosh eric.antosh@usda.gov
- **Biological Science Technician (temp)** - Tony Denardo anthony.denardo@usda.gov

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA IS AN EQUAL OPPORTUNITY PROVIDER, EMPLOYER AND LENDER