

Susquehanna Sierran March 2023



Founded 1892

EXPLORE, ENJOY, PROTECT THE PLANET



Binghamton Move-Out Project

– Christina Fuller

The Binghamton Move Out Project (**MOP**) is gearing up for its second year as an official project of the Susquehanna Group! MOP is a volunteer-run initiative diverting waste from the landfill and giving back to the community during Spring move out. Each May volunteers pick up unwanted but usable items from students moving out of their college housing. The items are then sorted and donated to organizations in the greater Binghamton area who in turn disperse them to community members. Last year the team was able to divert over 9,000 pounds of waste from the landfill, including clothes, food, books, electronics, and more!

This year MOP will significantly expand on-campus operations, and is in need of volunteers. We're looking for volunteers to pick up items from students and sort them at our sorting facility. Additionally, we're seeking folks to staff collection tents on the Binghamton University campus. The project spans about 3 weeks in May. Volunteer shifts are very flexible. If you can help or want to learn more, please email binghamtonmoveout@gmail.com.

New this year: MOP has a website! Visit moveoutproject.org to learn more about our mission, our volunteer opportunities, where our donations go, and more!

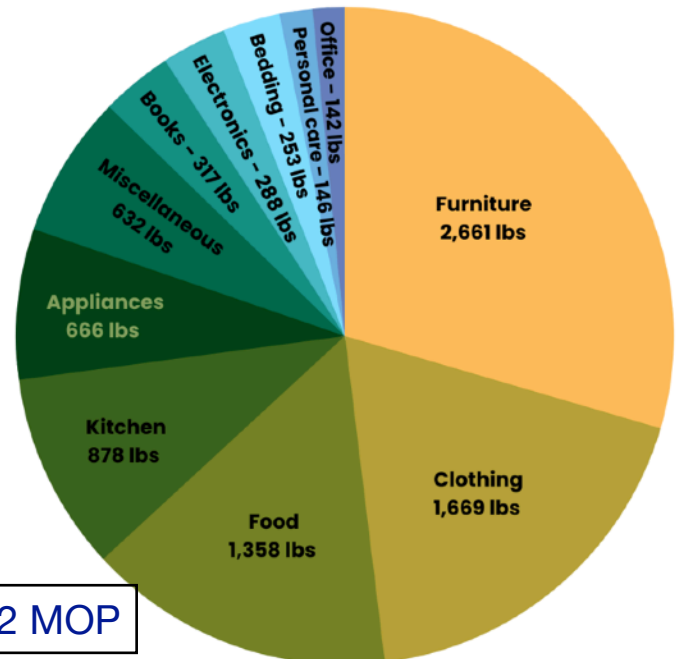
Other ways to connect with us:

Facebook: facebook.com/binghamtonmoveout

Instagram: instagram.com/bingmoveoutproject



2022 MOP



Susquehanna Group Recognizes Dr. Stanley Whittingham

– Valdi Weiderpass

At its virtual January 2023 meeting Susquehanna Group presented its Lynda Spickard Environmental Award to Dr. Stanley Whittingham, in recognition of his past and current development of lithium-ion batteries which help preserve a habitable climate. The meeting included a presentation by the honoree and is available for viewing at: [meeting recording and slides](#)



Dr. Whittingham was awarded the 2019 Nobel Prize in Chemistry for developing the first rechargeable lithium metal battery. He created the first working version in December 1972, just three months after being hired by Exxon, and his lithium-ion battery system was patented in 1977. Next, he worked to commercialize those batteries for small devices and electric vehicles. This was in the same decade that Exxon scientists analyzed data and accurately predicted how much global warming would likely occur with continued use of fossil fuels. To date he has published over 200 scientific papers and has 16 patents.

We are very fortunate that Dr. Whittingham chose in 1988 to teach at Binghamton University. He helped establish BU's Materials Science and Engineering Program. He continues to lead research on improving energy storage and in particular lithium-ion batteries. Continued progress in battery design will enable wider adoption of renewable energy and improve the range and affordability of electric vehicles. A spin-off of this research led to a new lithium-ion battery manufacturing enterprise, iM3NY, in Endicott NY.

Dr Whittingham now spearheads New Energy New York (NENY) which recently received \$113,000,000 in grants to

accelerate innovation in battery technology. It could transform New York's Southern Tier into a global hub of energy storage manufacturing. NENY is a coalition led by SUNY's Binghamton University, and the New York Battery and Energy Storage Technology Consortium (NY-BEST). It will build a lithium-based battery development and manufacturing facility, the Battery-NY Center, which will provide testing, certification, and scale-up capacity for new products and companies. NENY will also develop an energy products supply chain, expand workforce training, and engage community organizations to ensure that related economic benefits are equitable, accessible and shared across the region. NENY is forecast to have a \$2 billion economic impact and create 8,000 jobs over ten years.

This Lynda Spickard award comes with huge, heartfelt appreciation. The stone plaque symbolizes our planet and where materials to make batteries come from, the deep green the life on Earth that his work is destined to protect, and the flame shape hope for a brighter future. The inscription: "Lynda Spickard Environmental Award, 2023, Recognizing Dr. Stanley Whittingham, Nobel Prize laureate, inspiring students to imagine and create, leading battery innovation, enabling the 'electrical century' to help save a habitable climate."



Susquehanna Group

(All of Broome & Sullivan, & most of Chenango, Delaware, Otsego, Tioga Counties)

Chair	*Valdi Weiderpass
Vice Chair	*Scott Lauffer
Secretary	*Karen Boba
Treasurer	*Joann Lettis
Political Chair	*Scott Lauffer
Chapter Delegate	*Jim Taft
Newsletter Editor	*Jim Taft
Conservation Co-Chairs	*Doug Gausman, Mary Cronk
Alt. Chapter Delegate	*Joann Lettis
Webmaster	Chris Harasta

*Christina Fuller *Laura Pangallozzi
* Member Executive Committee

To become a candidate for the Susquehanna Group's Executive Committee, mail by November 1, 2023 a candidate statement of up to 150 words to:

Susquehanna Group
PO Box 572
Endicott NY 13760

The Nominating Committee will create a slate of candidates, and ballots will be mailed with the December *Sierran*.

COMING EVENTS

General membership meetings are held the third Tuesday each month at 7:30pm. There are no meetings in July and August.

Tuesday, March 21, 7:30pm General Membership Meeting

Superintendent Elliott Wagner will provide an update on the much-troubled Binghamton-Johnson City Joint Sewage Treatment Plant. With Q&A. Join via Zoom at <https://uso2web.zoom.us/j/3644665286?pwd=VS9kUoNBaUttMnpRa3BSNngwci9TUTo9>

Tuesday, April 18, 7:30pm General Membership Meeting

Climate Change Impacts & Action in New York. Discussion with Ben Furnas, Executive Director, The 2030 Project, based at Cornell University. Ben will speak about his experience in NYC, what work is being done at the State level, some current research at Cornell, and insights on how climate change is already impacting New York State, including agricultural impacts. Join via Zoom at <https://uso2web.zoom.us/j/3644665286?pwd=VS9kUoNBaUttMnpRa3BSNngwci9TUTo9>

Friday, April 28 Town of Union's Arbor Day Celebration at Glendale Park, 400 Glendale Drive, Endicott. Attendance by our members would show thanks to the Town's Tree Committee, which we supported to come into existence when we advocated for the Town of Union to become a Tree City USA community.

Chapter and Group Nomenclature – Jim Taft

Here's some background for why our Chapter and Group names are poor fits for their territories. Sierra Club originated in California in 1892. Over time it created many chapters, one of which was the Atlantic Chapter covering the U.S. east coast. Over time new chapters were formed in east coast states, and 'Atlantic Chapter' shrank to mean only NYS. The Atlantic Chapter until recently was divided into 11 groups. The Ramapo-Catskill Group disbanded, and a chunk of it, Sullivan County, was absorbed by Susquehanna Group. Our Group now covers all of Broome and Sullivan, and most of Tioga, Chenango, Otsego and Delaware Counties. Complicating this, the national Sierra Club perforce designates groups by zip code rather than county, and some zip codes cross county lines.

BYO - The Right to Refill

– Yayoi Koizumi of Zero Waste Ithaca

BYO-US Reduces <https://usreduces.org> launched last month. It is a national network of BYO enthusiasts. BYO stands for Bring Your Own. The program normalizes new cultural behaviors for (1) customers to carry personal, reusable foodwares and, (2) restaurants and grocery stores to accept and refill them. We ask businesses to display a round green sticker at their storefronts to indicate they welcome customers' BYO foodwares.



Single-use plastic wastes are a climate accelerator and a menace to public health. We have microplastics in our bodies, and a recent Forbes magazine article <https://www.forbes.com/sites/mariannelehnis/2023/01/12/the-hidden-consequences-of-the-plastic-pollution-crisis/?sh=3e9762916e18> even warns us that toxic chemicals in plastics are threatening human survival by driving down male sperm counts—it is predicted that by 2045, the count may reach zero.

Zero Waste Ithaca <https://zerowasteithaca.org> is a grassroots organization with the campaign: 'BYO-Ithaca Reduces' to fight plastic pollution. We canvassed businesses, signed up 100 of them, and received positive local news coverage. Our social media channels became frequently visited. It was gratifying to see so much support for reducing waste and for our small local businesses.

The first BYO Reduces group was started in 2019 by Tina Soldovieri in a Toronto neighborhood. Her program spread in Canada and in two years there were a few dozen BYO groups comprising the Canada Reduces Network <https://www.canadareduces.ca>.

We are making history. Several BYO Reduces groups have sprung up in the U.S. and we now have our own U.S. Reduces network. Regrettably, U.S. laws often create barriers to BYO. In New York BYO is allowed only for food and beverages from dispensers, and for leftovers at restaurants. Some other states are even more restrictive. California is a great exception. BYO became allowable there in 2019 for food takeouts, beverages, leftovers, grocery store delis and salad bars.

Most EU countries, Singapore, Australia and New Zealand support BYO. South Australia even removed liability for retailers practicing BYO <https://www.abc.net.au/news/2022-07-05/sa-laws-changed-to-encourage-using-containers-at-shops/101208420>.



Zero Waste Ithaca, with our New York State allies, is currently working with the offices of Senators Brian Kavanagh and Liz Krueger on their aptly named 'Rights to Refill' bill, <https://www.nysenate.gov/legislation/bills/2023/S2079>. Though a good start the bill currently reaffirms current BYO regulations by NYSDOH and the NYS Department of Agriculture and Markets. We want a bill that will make a positive change rather than merely affirm the status quo. We are requesting them to amend the bill so that we will be legally able to BYO for food takeouts and food vendors, as well as at grocery store deli counters and salad bars.

Please support a better BYO bill by calling the offices of Senators Kavanagh 518-455-2625 and Krueger 518-455-2297. And please consider starting a local BYO program—see our Get Started guide <http://usreduces.org/get-started/> and fill out the form to get in touch!

Will Solar Farms Degrade Farming? – Valdi Weiderpass

New York's **Climate Action Council** estimated that NY would need **65GW** of solar power and 34GW of wind power by 2050 to meet the State's Climate Leadership and Community Protection Act (CLCPA) mandated goals. See Table 21 of Appendix G: [CAC Scoping Plan Appendix-G](#) The CLCPA requires electricity to be 100% from zero emission sources by 2040, and to cut state greenhouse gas emissions to net zero by 2050.

From the Solar Energy Industries Association: "Depending on the specific technology, a utility-scale solar power plant may require between **5 and 10 acres per megawatt (MW)** of generating capacity." See:

<https://www.seia.org/initiatives/land-use-solar-development>.

Let's do some arithmetic.

$$65\text{GW} \div 1\text{MW} = 65,000 \quad 65,000 \times 10 \text{ acres} = 650,000 \text{ acres needed (worst case)}$$
$$65,000 \times 5 \text{ acres} = 325,000 \text{ acres needed (best case)}$$

Total farmland area of NY State = 6.866 million acres (NY Farm Bureau, quoting USDA 2017 Ag Census <https://www.nyfb.org/about/about-ny-ag>).

$$650,000 \text{ acres needed} \div 6,866,000 \text{ NY farm acreage} = 9.5\%$$

Worst case 650,000 acres of solar needed for NY State in 2050 is less than 10% of total NY State farmland.

How much NY farmland is devoted to hay production? 1,240,000 acres of hay was harvested in NY per USDA in 2022. See https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=NEW%20YORK The typical NY hay field is cut 3 times per year per: <https://www.haytalk.com/threads/newbie-selling-hay-ny.15565/>.

1,240,000 acres/ 3 cuttings = about 413,000 acres.

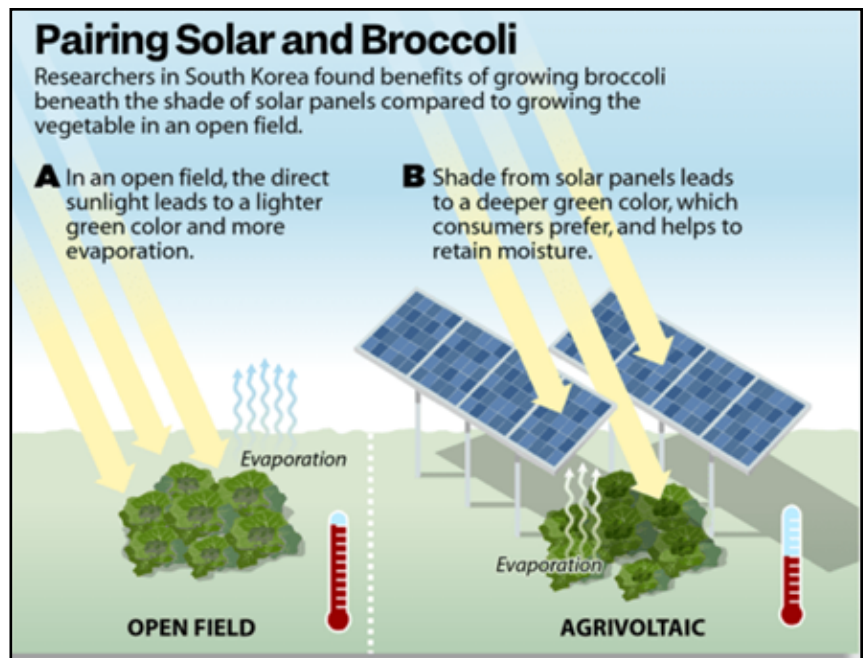
How much NY farmland is devoted to pasture for grazing? About 580,000 acres, according to the USDA. See https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/New_York/cp99036.pdf.

$$413,000 \text{ acres used for hay} + 580,000 \text{ acres used for pastureland} = 993,000 \text{ acres}$$

$$650,000 \text{ acres needed for solar} \div 993,000 \text{ acres hay/pasture farmland} \times 100 = 65.5\%$$

The 650,000 acres of solar needed for NY State in 2050 is less than 2/3 of NY farmland used for hay/pasture, so there is no real need to use prime farmland for solar farms. And the 66% estimate assumes all of the solar would be deployed on farms. This doesn't need to be the case. Much can be put on rooftops, on residential/business/school property, over parking lots, over municipal landfills, and in some cases on highway medians or along sides of highways. Some types of farming can be done under and among racks of solar panels.

Most farmland loss is from spreading cities and development of suburbs, or from selling off farmland to build rural homes, etc. <https://www.seia.org/sites/default/files/2019-11/>



[Solar%20Ag%20Land%20Usage%20FactSheet%202019-PRINT.pdf](#)

image: Agronomy Journal

Conclusion: Concerns about losing prime farmland should not hold up deployment of solar energy (or wind energy which has a much smaller footprint).

Preta Terra (Black Earth) – Douglas Gausman



photo: PermaWiki

'Agroforestry' The term means to grow trees alongside crops. Preta Terra means black earth and a team is promoting agroforestry by having farmers in the Timburi area of Brazil plant trees along with their crops. Past decades of burning and clearcutting the rain forest left a desolate landscape. The Preta Terra movement is a brainchild of Paula Costa and forestry engineer Valter Ziantoni. The aim is to return bare ravaged land that was formerly rain forest back to life and to maintain it. The trees provide shade and help preserve a wet, stable climate that enables crops to thrive. Trees store water in their roots and release it when the surrounding air is hot, helping to cool the landscape. Growing trees alongside crops is like having an air conditioner and sprinkler system in the fields. The Timburi results have been very positive. Agroforestry farms produce higher-yield crops, and the fruit trees provide extra income.

Companies such as Cargill (an agribusiness giant) and the Swiss investment bank UBS fund the project. Agroforestry is gaining popularity and a number of small scale projects are showing up across Europe and the United States. In many places, indigenous groups are leading the way. In 2022 Preta Terra started work on a larger 3,000-acre project in Mato Grosso on the Amazon's southwestern edge. More information: <https://time.com/6242262/brazil-drought-farming-rain-forests/>



Northern Shoveler, male
Boland Pond, Chenango Bridge NY
photo: Ray Cronk

MOTHER NATURE

by Bob Wright

Oh, the magnificent wonders of nature,
With beautiful scenes to see.
Rocks, trees, and creatures abound,
A blessing for you and me.

Scenes of serenity and grandeur
Provide us with wonder and awe,
With experiences almost mystical,
And feelings we'll long recall.

But the shame, of our human activities,
That destroy our precious inheritance.
We dig, chop, pollute and ruin
Just to make civilization advance.

Our wild world is called Mother Nature.
We revere her as no other,
Then heap our abuse upon her.

Hydropower in NY – Mary Cronk

“Hydropower is a renewable source of energy. The energy generated through hydropower relies on the water cycle, which is driven by the sun, making it renewable.” – U.S. Dept. of Energy <https://www.energy.gov/eere/water/benefits-hydropower>

Hydropower is key in NY's 2019 law requiring 70% renewable energy by 2030. Conventional hydropower generates nearly eight-tenths of NY's renewable energy. The New York Power Authority (NYPA) owns the largest plants, the Niagara River and St. Lawrence-FDR Power Projects which contribute the largest share of New York's hydroelectricity. The rest comes from numerous small plants, a few owned by NYPA or municipal governments, some owned by institutions or industries, and many others by private companies whose business is selling electricity.

Is hydropower a green option for NY?

- Dams generate a lot of power but are expensive to build and encounter licensing challenges.
- Hydropower requires extensive lands and water.
- Their reservoirs displace people and existing biota.
- Power produced is vulnerable to droughts.
- Reservoirs may produce the greenhouse gas methane.

With the above problems new large hydropower facilities seem unlikely within NY's borders.



*Robert Moses Niagara Hydroelectric Power Station
photo: Creative Commons*

In order to meet its climate goals NYS government appears willing to import new hydropower from outside the State. Construction has started on the longest stretch of the Champlain Hudson Power Express (CHPE)—a 339-mile transmission line to bring hydropower from Quebec to New York City. CHPE is expected to deliver 1,250 megawatts of energy, enough to power 1 million New York City homes and about 20% of the City's electricity demand. (New York City currently is 85% powered by fossil fuels.) Full operation of this transmission line is expected in 2026.

We should all be concerned with the growth of large scale hydroelectric power plants whether they occur in NY or in another jurisdiction. Negatives of hydroelectric power impact all of us. The cost of building these facilities insures they will be around for many years. Most hydropower dams in North America and Europe were built before 1975 and are

aging. Obsolescence will mean that some will be retired in 30 more years. Do we want to replace them with the new designs? Or do we want to build out solar and wind as quickly as possible to remove the need for hydropower?

Sources:

“Methane Quashes Green Credentials of Hydropower” Jim Giles, Nature Volume 444, Issue 7119 Nov. 30, 2006

“Benefits of Hydropower” <https://www.energy.gov/eere/water/benefits-hydropower>

“A New York power line divided environmentalists” Zoya Teirstein Grist May 11, 2022, <https://www.greentechmedia.com/articles/read/the-challenges-of-greening-new-yorks-power-grid>

“Dam Infrastructure: Understanding and Managing the Risks,” Office of New York State Comptroller <https://www.osc.state.ny.us/files/local-government/publications/pdf/dam-infrastructure-2018.pdf>



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<https://www.sierraclub.org/atlantic/susquehanna>