

Susquehanna *Sierran* June 2022



Founded 1892

EXPLORE, ENJOY, PROTECT THE PLANET

Confluence Pollinator Garden–Spring Report

–Sarah Hodder, Project Leader & Master Gardener

Binghamton Parks & Recreation Commissioner Patrick McGinnis agreed to our request that Susquehanna Group take over 2 additional beds. Volunteers developed and executed a plan. Most of the existing daylilies and all the lemon mint were removed. We put in native Salvia (Mystic Spire Blue), Fothergilla (Mount Airy), Monarda (Bee-Happy), and Echinacea. Abutting the walkway we planted Begonia and Ageratum.

Parks & Recreation delivered 2 truckloads of mulch on May 6 just in time for us to apply it to all the pollinator garden beds. Wheelbarrows came in mighty handy. A huge “Thank You” to the Sierra Club Volunteers: Karen Crisafulli, Scott Lauffer, Bev Rainforth, Mark Couchman, Jim Taft, Karen MacKenzie.

The project could use more volunteers. Each of two groups are scheduled for 1-2 hours once per month during the growing season. It is easy, basic gardening work, and contributes to the environment and the community. Contact me at shaddow@stny.rr.com for more information.

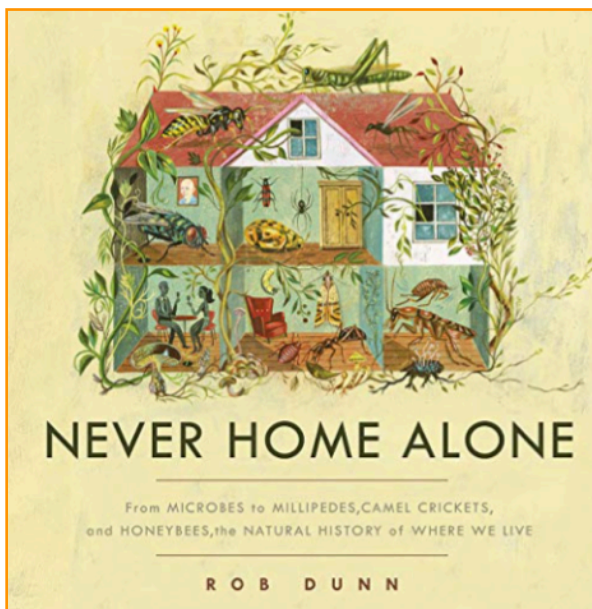


Review: “Cradle to Cradle” - Doug Gausman

Must human industry damage the natural world? This book by William McDonough and Michael Braungart is a manifesto for changes in design and manufacturing. Legacy production processes were developed during the industrial revolution and continue, in a linear "cradle to grave" system, to produce stuff to be used then thrown "away." Our thrown "away" stuff sits in landfills, oceans, landscapes and damages living systems. We can and really need to do better. The book challenges designers and manufacturers to make products of all types in such a way that at the end of their life they can be truly recycled, or "upcycled." Upcycling models nature in which things are made and continually reused. One example: trees produce blossoms and seeds for propagation which then fall, rot, and become a part of the earth nurturing new growth. Can we find ways to upcycle produced goods? The authors think so, and provide several examples. It's a great read and opens the mind to a possible cleaner future for the earth.



Never Home Alone: From Microbes to Millipedes, Camel Crickets, and Honeybees, The Natural History of Where We Live – by Rob Dunn – Colleen Wolpert



So why is a book about the natural history of our homes both entertaining and important? Because the more we understand about the creatures with whom we live (i.e., how they recycle our waste and improve our health), the more tolerant we become. This book provides so much information that is referred to as applied ecology as well as addresses conservation issues including water quality. Who knew that the gut of camel crickets could be the key to ridding ourselves of the horrid by-product of paper making called black liquor. Studies of the Amish

communities and their immune systems teach us that not all dust is created equally. Dunn provides a history of homes and their surroundings. Innovation has often come from the natural world (think dragonflies and helicopters) and our future depends on understanding the creatures around us instead of destroying them and their habitats. Dunn states that the problem with cockroaches is us and explains the evolutionary biology involved. He also explains how beneficial insects and spiders go beyond pollination and pest control. There are “tiny knives” on the wings of some insects that help them fight off harmful bacteria. Duplicating that on our surfaces is more beneficial than anti-bacterial substances that create resistance. And it goes on. There are so many examples in the book. And native plants benefit our health in more ways than I ever knew. We need diversity in our environment to stay healthy as it keeps things in balance at home, in hospitals, and in a baby’s nursery. This book exceeded my expectations and will be one of the few books I chose to reread.

Susquehanna Group

(All of Broome, & 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
Membership Chair	*Chris Harasta
Outings Chair	*Chris Harasta
Conservation Co-Chairs	*Doug Gausman, Mary Cronk
Alt. Chapter Delegate	*Joann Lettis
Unassigned	*Christina Fuller
	* Member Executive Committee

To become a candidate for the
Susquehanna Group's Executive
Committee, mail by November 1, 2022
a candidate statement of 150 words or
less 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

Note: Club general meetings during the pandemic continue online. To join a meeting use the Zoom app or website. Enter Zoom meeting number 364 466 5286.

June 15th, Wednesday Outing

5pm: Dylan Horvath will provide a guided nature walk at the BU Nature Preserve. Meet at the Nature Preserve entrance. Parking available.

6:15pm or thereabouts: ExCom member Chris Harasta will provide dinner at adjacent picnic tables. Please bring your own plates, utensils, drinks.

7:00pm: Julian Shepherd, Associate Professor, Biological Sciences, will provide a guided tour of the BU Greenhouses.

June 21st, Tuesday General Meeting

7:30pm: John Hroncich of BAE Systems-Endicott will discuss BAE's work on zero-emission-capable hybrids, EVs, hydrogen fuel cells, and battery-electric power and propulsion technologies. Enter Zoom meeting number 364 466 5286.

July 1, 2020, Friday – Comment Deadline

Newly extended deadline for public comments on how NYS will meet its greenhouse gas reduction goals and transition the State's economy to clean energy by 2050, as mandated by the nation-leading Climate Leadership and Community Protection Act. The Climate Action Council's Draft Scoping Plan is at: <https://climate.ny.gov/Draft-Scoping-Plan>.

Enter comments at: <https://nyscrda.seamlessdocs.com/f/DraftScopingComments>.

Ideas for comments can be found at this link and via your own internet search: <https://www.nyrenews.org/clcpa>.

Stats on the Move-out Project – Chris Harasta, Christina Fuller

The Susquehanna Group manages the Binghamton Move-Out Project. It collects unneeded items from University students moving out at the end of the school year, sorts and organizes them, and distributes them to charities in the community. The project reduces waste in landfills and helps students give back to the community. The University asked the Group to include on-campus dorms so that was done this year. Thanks to Binghamton University, John Patterson and Cecily O'Neil for providing receiving spaces.

Number of volunteers:	30	Donations from dormitories:	2780 lbs.
Number of off-campus pickups:	100+	Donations all sources:	9000 lbs.

Recipient Organizations:

Southern Tier AIDS Program
 Buffalo shooting victims
 United Presbyterian Church
 Broome County Dance Center
 The Children's Home
 St. Cyril's Church
 Urban League
 NoMa (North of Main, Binghamton)

Binghamton Food Rescue
 CARE (BU Office)
 CHOW
 RISE (formerly SOS Shelter)
 Lee Barta Community Center
 Truth Pharm
 Binghamton High School



Some items saved from landfill. photo C Fuller



On-campus collection. photo J Taft



Incoming. photo J Taft



Outgoing to charities. photo J Taft

Climate Change Inaction Estimated to Cost \$178 Trillion!

– Valdi Weiderpass

Deloitte, the prominent multinational accounting and professional services company, released on May 23 at the World Economic Forum (at Davos, Switzerland) "The Turning Point," its estimate of costs to various countries of a global temperature rise of 3°C. Globally, total costs are projected to be \$178T by 2070.. The cost for the U.S. to continue business as usual was projected to be \$14.5T.

<https://www2.deloitte.com/us/en/pages/about-deloitte/articles/press-releases/deloitte-report-inaction-on-climate-change-could-cost-the-us-economy-trillions-by-2070.html>.

The report cites the World Meteorological Organization's assessment that over the last 50 years, the US has suffered a total of \$1.4 trillion in economic losses due to weather, climate, and water extremes. It referenced the National Oceanic and Atmospheric Administration (NOAA) report that in 2021 there were 20 extreme weather and climate disasters in the US, each costing more than \$1B, and together costing \$148B. See [Billion-Dollar Weather and Climate Disasters | National Centers for Environmental Information \(NCEI\) \(noaa.gov\)](#). Losses are expected to increase. Deloitte's analysis indicates the US economy would lose almost 4% of Gross Domestic Product (GDP) or \$1.5 trillion in 2070 alone. Stated another way, the lifetime cost for a typical working American would be nearly \$70,000, or the equivalent of losing a year's income.

I note that allowing global warming to rise 3°C risks activating many self-reinforcing feedback loops and tipping points creating a 'hothouse Earth', as detailed in a May 2019 study "Existential Climate-Related Security Risk: A Scenario Approach" published by the Australian think tank National Centre for Climate Restoration. Its analysis indicates water scarcity affecting 2 billion people, a sharp decline in productivity of fisheries, and a one-fifth decline in crop yields—risking the collapse of human civilization. See <https://apo.org.au/node/239741>.

Risks are also discussed in the report "Re-framing the Threat of Global Warming: an empirical causal loop diagram of climate change, food insecurity and societal collapse," published February 19, 2021, available at this link: <https://link.springer.com/article/10.1007/s10584-021-02957-w>. Attempting to quantify costs of civilization collapse seems pointless.

Deloitte's analysis offers hope in that if we do the right things starting now, decarbonize the economy and move to clean energy systems, it could result in \$3 trillion gains for the US economy over the next 50 years. "In 2070 alone, the economic gain could amount to \$885 billion added to the economy annually." Decarbonizing the economy requires short term investments, but these would be overcome around 2048 (the turning point), after which there would be increasing economic gains. We have the technology and the economic means to make the needed transformation to reduce greenhouse gases to 'net zero' by 2050, so contact public officials and demand that they immediately take urgent, appropriately-scaled actions to save a habitable climate.



"Destruction" from The Course of Empire, by Thomas Cole (1836)

A GREEN Valley of Opportunity! – Valdi Weiderpass

For much of the 20th Century Broome County's Binghamton, Johnson City and Endicott were collectively known as the "Valley of Opportunity." IBM, Endicott-Johnson Shoes, Agfa-Ansco, General Electric, Link Aviation (reputed originator of 'virtual reality'), and other firms formed a string of industrial plants with huge payrolls, and exceptional employee benefits including health care and generous recreational facilities. Most of this has faded, but has left behind durable infrastructure.



*Huron Campus, former IBM site, Endicott.
photo Binghamton Press & Sun-Bulletin*

Today's Climate Change crisis now brings a resurgence of industrial and employment opportunities. 'Green' jobs are growing with renewable energy, energy efficiency, electric vehicles, electric heat pumps, induction cooking, porous pavement, energy storage and many more emerging technologies.

ETM Solar Works (Endicott) has been installing solar electric systems for three decades, and now deals in air-source heat pumps, battery-based energy storage, and electric vehicle charging. Other local firms offer solar and geothermal heat pumps, weatherization, and energy audits. A large local firm traditionally known for defense-related employment is BAE Systems which has a unit that has been in the valley since 1948 when it was part of GE. Acquired by BAE in 2000 it is now located in the Huron (former IBM) Campus, employs 1300, about 15% of whom work on hybrid and all-electric drive systems for various vehicles. BAE engineers are currently developing electrified aircraft propulsion.

Ubiquity Solar, Inc. of Canada announced it will repurpose 800,000 square feet of space at the Huron Campus, Endicott, to manufacture solar cells for power generation. They will also produce high efficiency solar cells for aerospace. Production is expected to begin in late 2022. Ubiquity is now hiring and expects to employ over 150.



*Binghamton University's Innovative
Technologies Complex. photo YouTube BU
video tour*

The collaboration of Binghamton University and Koffman Southern Tier Incubator enables growth of existing and creation of new businesses. One is Imperium 3 New York (iM3NY) which will manufacture lithium-ion batteries at the Huron Campus. It is hiring and plans to employ 150 by 2023 and 2,500 within 8 years!

At Binghamton University's NYS Center of Excellence in Small Scale Systems Integration and Packaging (S3IP), research is improving electronics design and manufacturing, including work on 'green' technologies, such as the Center for Autonomous Solar Power (CASP), the Center for Energy-Smart Electronic Systems (ES2),

and the NorthEast Center for Chemical Energy Storage (NECCES), which with guidance from Nobel Laureate, Dr. Stanley Whittingham, is developing improved lithium-ion batteries.

With the rapidly expanding number of green jobs, the greater Binghamton region might now be thought of as the "Green Valley of Opportunity!"

Recent Activities



Outing to Rogers Environmental Center, Sherburne: spotted lanternfly tutorial, hike to Chenango River



Expanding pollinator garden, Confluence Park, Binghamton



Tabling at Arbor Day event, Endwell



Move-out Project accumulation, sorting, prepping for donations to charities

Binghamton University's Gannett facility, Johnson City



Sewage Sludge & PFAS

–Tracy Frisch of Atlantic Chapter Food & Farm Committee, and Scott Lauffer



Biosolids available to the public from the Endicott Sewage Treatment Plant lack hazard warning. photo S Lauffer

Sewage sludge (biosolids) used as a soil amendment or compost ingredient threatens the future of farmland and compromises the safety of crops, gardeners, and other members of the ecosystem.

Per- and polyfluoroalkyl substances (PFAS) are recognized as ubiquitous contaminants in sewage sludge. They are highly persistent in soil and water. Repeated applications of sewage sludge results in highly elevated concentration of PFAS compounds in soil.

PFAS compounds are toxic and strongly associated with a long list of health problems identified through numerous human epidemiological studies and lab animal studies.

According to the US EPA, more than half of the sewage sludge produced in the U.S. is applied to farmland as biosolids. Sewage sludge is also composted and sold to home gardeners as a bagged fertilizer/soil amendment. Whenever sewage sludge and sewage sludge products have been tested for PFAS compounds, many such compounds are detected at concerning concentrations. Biosolids in soil can leach into groundwater and run off into surface water.

In NY, the DEC has just begun testing sewage sludge for PFAS contamination. Wastewater treatment plants in NY are not required to have such tests conducted. There is also no requirement for companies that process/sell sewage-sludge-based soil amendments/fertilizers to test their products for PFAS.

The Ann Arbor Ecology Center recommends consumers refrain from using compost and potting soil products made from sewage sludge. Look for fine print on the bag indicating that the product is made from biosolids. The Center notes, “The federal government and most states have done little to study the issue, let alone address it.”



Susquehanna Group

PO Box 572

Endicott NY 13760

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