

The Quarterly Newsletter of the Sierra Club Atlantic Chapter, Mid Hudson Group Summer 2018 | Vol. 50 | Issue 2 This newsletter will be posted to our website along with all previous newsletters.

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[Note: Because of differences in Email programs, the links above and "back to top" links below may not work.] **Chair's Corner** by Bob Heinemann

It has been fifty years since the amazing Earthrise photograph was taken by astronaut Bill Anders during NASA's Apollo 8 mission on December 24, 1968. Renowned photographer Galen Rowell declared it "the most influential environmental photograph ever taken". That was no exaggeration then, or now in 2018.

This photograph was the first time we truly realized that planet Earth is unique, fragile, and irreplaceable. Earth suddenly looked small. Fifty years later with a population approaching 8 billion humans our planet is increasingly limited in its resources of clean air and water. We have not done nearly enough to preserve our one and only human homeland. The blue marble Earthrise photograph of 1968, and the more recent high resolution composite Earthrise image taken by the Lunar Reconnaissance orbiter in 2015 continue to underline how much more we all must do to preserve our planet for present and future generations.

Earth Day is celebrated every April 22nd, but truly every day must be viewed as Earth Day from now on. We must not be silent when elected officials, by word or action, deny that climate change is real and negatively effected by human actions, or try to play semantics by saying the climate is always changing.

Environmental issues are always bipartisan. We must hold all elected officials accountable who refuse to enforce clean air, clean water and safe agricultural practices; to clean up toxic waste sites, and to work toward renewable forms of energy like



This photograph was taken by astronaut Bill Anders on December 24, 1968.



High resolution composite Earthrise NASA image from 2015.

wind, solar, and geothermal to replace the shortsighted continuation and expansion of coal, oil, gas, and yes, even nuclear, sources of energy.

We need active enforcement of all existing environmental laws and progressive enhancements to turn back the enormous tide of plastic and chemicals and pharmaceuticals that continue to expand and foul our oceans, rivers, streams, wetlands and soil. The Sierra Club, of necessity, has gotten more involved politically as the best means to work toward protecting the natural resources of our only planet, Earth.

This issue of *Fresh Air* continues to focus on Energy, Legislative, Political and Conservation matters which are profoundly urgent as we collectively do our best to make incremental improvements day by day to the quality of our local environment in the Hudson Valley.

Please join us in volunteering a few hours of your time each week to working toward preserving and protecting our one small, and still blue, planet.

Lincoln Park Peaker Plant

Conservation Corner by Joanne Steele

Sierrans, you can join the fight against the Lincoln Park Peaker Plant, a planned gasfired/diesel small 20 Megawatt plant, with battery back-up, located adjacent to the City of Kingston in the Town of Ulster neighborhood of Lincoln Park. The purpose of the plant is to feed the Grid to make up for shortages due to solar and wind power use "when the sun don't shine and the wind don't blow". Citizens for Local Power on March 19, reported their having submitted "scoping comments for the environmental impact review of the proposed Lincoln Park gas-diesel-battery power plant." CLP reports: "The State Environmental Quality Review Act (SEQRA), the law that governs review of proposed projects, requires that feasible alternatives that could reduce a project's environmental impacts be considered. CLP has requested an in-depth feasibility study of a battery-only or battery-plus-renewables project design. Eliminating the gas/diesel portion of the project would reduce or eliminate many of the most serious impacts, including air, water, noise, visual, and greenhouse gas pollution." Read more of their proposal at Citizens for Local Power. Join our Mid-Hudson Group's Energy Committee or Conservation Committee to get involved with the fight by contacting our Volunteer Chair, Marie Caruso at mariehvwdk@gmail.com to get started!

The Sierra Club is in its 17th year in a struggle to environmentally discipline the Crossroads Ventures (over) development at Belleayre. The Catskills Heritage Alliance has been doing the heavy lifting on the discipline for the last several years with a little support from your Mid-Hudson Sierra Club. I am asking for your support and assistance by joining our Conservation Committee! Contact me at sierraclubjoanne@gmail.com to get started!

Catskill Heritage Alliance v. Crossroads Ventures and NYS DEC

by Kathy Nolan On April 12, 2018, the Catskill Heritage Alliance received a disappointing, unanimous decision from the New York State Appellate Division, Third Department, denying our appeal in regards to the environmental review under New York's State Environmental Quality Review Act of the proposed Crossroads Resort.

The decision basically concluded that the judgment of the Commissioner of the Department of Environmental Conservation in 2015 to grant permits to Crossroads was justified as a "reconsideration of the non-final, 2006 interim decision" of a prior Acting Commissioner. Since the DEC, as the permitting agency, saw no barrier to approving permits for a modified design of the resort, the court, "mindful" that its role is not to reweigh the factors and substitute its judgment for that of the agency, decided that the Commissioner's decisions were not arbitrary or capricious and therefore could not be overturned. The Court also, in effect, decided that it was acceptable for DEC to ignore its own hearing regulations. The Alliance will be considering its remaining legal options.

This decision does not have any bearing on the Alliance's appeal in regard to planning and zoning issues raised in regard to the proposed resort, which is being heard separately at the same appellate court. A decision on the planning and zoning appeal is expected in the coming months.

Smart Grid and the 5G Network.

Heads up on these two issues! Look 'em up from activist sources. The CPV and the Cricket Valley gas plants. Heads up on them, too! Myself and guests will be presenting on these four issues in a *Conservation Report* in a couple of weeks. In the meantime, volunteer! Involve yourself!

Greenhouse Gases

If humans could find a way to prevent Greenhouse Gases (GHG) from accumulating in our atmosphere, we could avoid the sure and disastrous consequences of global warming. The obvious way to do this is to stop the production of GHGs. This is the strategy of the environmental movement of which we Sierrans are a staunch part. Our policy is to stop the production of fossil fuels (oil and gas) and their infrastructure (drilling, pipelines, "bomb" trains, oil barges, etc.) and to stop their use. Then there's geoengineering which, with terrible consequences (which can be hid and denied), will allow the continued use of fossil fuels.

According to the website, <u>www.geoengineeringwatch.org</u>, Geoengineering is the artificial modification of Earth's climate systems through two primary ideologies, Solar Radiation Management (SRM) and Carbon Dioxide Removal (CDR). Carbon Dioxide Removal (CDR) and sequestration, the website says, "is artificial trees, ocean fertilization etc.", and adds that those projects are declassified for the most part and not the subject the website deals with. What it does deal with is SRM which, apparently, is largely classified. You might have noticed airplanes leaving narrow "trails" in the sky which in time become broad, thin "clouds" and not disappearing as normal jet trails do. As for myself, I don't recall having ever been asked if I thought that Sulfur or Aluminum was OK for our breathing, but SRM might explain the woman's remark to her mate behind me at the Philadelphia Flower Show: "Is Aluminum in the soil OK for our plants?" As the website says: "What if you found out it [SRM] is affecting your health and that of people you know and love? What if you knew it was such an enormous problem that it has the potential to destroy our crops and trees, the soil they are grown in, our entire water supply, and whole ecosystems — and that if you didn't act, we could never turn back? We are not talking about fracking, nuclear energy, or the oil industry. We're not even talking about climate change. What if it came into use in an insidious way, just as GMO foods have come into our food supply without our knowledge? What if it appeared to be harmless, but it wasn't? It sounds like science fiction, but it's not. It's happening right above you, and it's called 'geoengineering'."

Better check out that website.

Rising Seas A 2017 study by Cornell University showed that rising seas could result in two billion refugees by 2100. That is one-fifth of the total projected global population of humans, which, very unfortunately, would be 11 billion by then. Moreover, that data is based on the current, lower sea level rise projections; predictions may well increase in the near future. The current, (probable under-prediction) is five feet. We here in the Hudson Valley (too few of us citizens and apparently none of our selected governments) are not planning for the resulting refugees from New York City. Ask your local governments: Where do you think those refugees are going to go ... swimming?

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Political Corner by *Alison White*

Special Elections

Special elections for 11 New York State legislative seats were held April 24. In Assembly district 102, which encompasses part of the Mid-Hudson Group area, Aidan O'Connor (D) ran against Christopher Tague (R) and Wesley Laraway (Reform) to replace Pete Lopez, who left the seat to take a job in the Trump administration as a regional EPA administrator. Sierra Club endorsed Aidan O'Connor because of his commitment to renewable energy, reducing plastics and pro-active measures to prevent floods such as those that occurred with super storms Irene, Lee and Sandy. Around 450 Sierrans live in Assembly District 102, and many of them went to the polls for Aidan O'Connor, but unfortunately, overall voter turnout was only around 20%! This race was incredibly close in a district where Trump won with a 23-point margin in 2016 - Mr. O'Connor lost the race to Mr. Tague by 161 votes.

Congressional District 19

Get ready to vote in the Federal primary on June 26! There are seven Democrats vying to be the candidate running against John Faso. Get to know them and be engaged in choosing a candidate to defeat John Faso in November. Faso, a career lobbyist from 2003 to 2015, has consistently voted along party lines in Washington, voting for things like the repeal of the stream protection rule, making pipeline construction easier, and permitting hunting in wildlife refuges, just to name a few of his antienvironment, antipublic health votes.

Information on the primary candidates' histories and positions can be found here: https://www.nyspotlight19.com/ny19-candidates

Opportunities to meet candidates and hear them speak can be found here: http://www.indivisibleny19.com/meet-the-ny19-congressional-candidates/

Watch a candidate forum online at: https://www.facebook.com/radiokingstonNY/videos/2071678186387809/

Acquaint yourself with the candidates for CD 19 and on June 26, make your voice heard and choose the one that you believe will best serve the interests of all citizens of this district!

2018 State and Local Races

State and local races as well as national congressional races take place this fall. Especially in these times, when the federal government is doing everything it can to remove bedrock environmental and public health protections, deny climate science, and refrain from dealing with climate disruption, it's important to elect representatives at the state and local level who will take action. In the Mid-Hudson Sierra Club region, Senate Districts 41, 42, 46 and 51 incumbents are all being challenged by worthy opponents. Kathy Marchione has declined to seek re-election in Senate District 43, so there are currently NO candidates for New York State Senate in District 43.

As you may know, the Sierra Club and your Mid-Hudson Group endorses candidates who agree with and will work towards the Sierra Club goals of ensuring clean air, clean water, and safe and healthy neighborhoods as well as wild lands and open spaces for people and wildlife. We need help and are looking for Sierrans who would like to help get our endorsed candidates elected! Would you like to participate in Sierra Club interviews of candidates for office? Would you be willing to help make phone calls to other Sierra Club members to help get out the vote and spread the word about Sierra Club endorsements? If you would like to volunteer, contact our Mid-Hudson Volunteer Coordinator Marie Caruso at mariehvwdk@gmail.com or (845) 684-7058, or the Mid-Hudson Political Chair Alison White at <u>abwsierra@gmail.com</u> or (914) 466-9685.

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Energy Corner by *Nivo Rovedo*

Geo-Thermal Heating and Cooling Are you interested in a heating and cooling technology that does not involve burning fossil fuels? (Hint: your answer should be "YES!", because in NYS heating needs are estimated to account for 33% of greenhouse gas emissions annually.) Geo-thermal systems could be a good solution. Their efficiency is generally 400% to 500% (meaning that for each unit of energy the user supplies to the system, 4 to 5 units of energy are delivered). Have you ever stood by your refrigerator as it was running and felt a warm breeze where its fan was blowing? This is an example of the physics at work in a geothermal system. The operation relies on circulating an antifreeze mix in tubes buried below the frost line, where this cold fluid picks up heat from the ground; there the temperature is generally 42F-52F degrees (alternatively, lakes and ponds of sufficient size could be used). The warmed fluid then goes into an evaporator unit that transfers the heat to a refrigerant mix; the antifreeze now has been cooled and is sent back through the underground loops to pick up more heat, while the refrigerant is compressed and sent through a condenser, where its heat is delivered to a home distribution system (forced air or hot water radiators). The refrigerant is further cooled and circulated back to the evaporator to pick up heat, continuing the heat transfer cycle to warm the home.

The system can be run in reverse as well, and then the home is cooled instead of heated. In heating mode, since the heat is being extracted from the earth, which is an immense heat reservoir, the system is transferring heat, not generating it (and hence the high efficiency values). In cooling mode, the heat is taken from the home and sent back underground.

A very clear, short book on geo-thermal systems is *Geo Power* by Donal Blaise Lloyd. Although the author is an advocate for the technology, he presents its undesirable traits as well. One is cost (a large part of which is associated with installing the underground tubing), although federal and state tax credits greatly offset that. Another is that the homeowner's land must be suitable; there needs to be enough of it to provide room for the underground loop. Newer drilling technologies are making more properties suitable. Retrofits for geo-thermal cannot provide the cooling capability with an existing radiator heating system (duct work for air conditioning would be needed due to condensation in humid weather on the pipes to the radiator). You will use more electricity with geothermal systems, to run the circulators and compressors (but you are not paying for gas or heating oil).

The advantages are compelling:

-no fuel costs for natural gas, propane, or oil

- -no greenhouse gas emission -heating and cooling in one system
- -efficiencies of 400 500% produce long-term energy cost savings
- -lower maintenance costs, since there are no oil filters or nozzles to change, no flames to optimize, no carbon monoxide to worry about, no chimney, and no oil storage tank or sludge.
- -no fuel oil or propane delivery needed

-system life time of 20-25 years, quite superior to boilers, furnaces and hot water tanks.

New buildings would be especially advantaged with geo-thermal systems, since the systems can be designed into the construction plans from the start.

Some websites with information on this and on dealerships that offer installation: https://ny-geo.org/

http://www.dec.ny.gov/energy/83070.html https://dandelionenergy.com/

Other notes of interest:

• For an interesting look at what is involved in fabrication of state-of-the-art wind turbines, take a look at this link. The size of the structures is astounding, as is the engineering involved.

 Governor Cuomo had promised new energy efficiency standards by Earth Day this year. For a rundown of the announcement, check out this link.



• A term that may become increasingly common (we hope) is "beneficial electrification" in regard to our changing energy landscape. The term refers to powering everything by electricity that is generated by clean, renewable means. There would be no emissions, and our

environment would be much better for it.

• Folks around the new CPV power plant in Waywanda have been complaining about the

awful fumes generated there as diesel is used to power the plant during testing (it will eventually use natural gas). The air permits that were issued for the plant have been challenged due to the guilty verdict in the trial of Joseph Percoco; although the permitting process itself is not under a cloud, CPV's bribes are. It is doubtful that the plant can be stopped, but we salute those who are attempting it. It is regrettable that the plant was pushed through despite not being needed, as there is plenty of available power from up north.

• The NYS Independent System Operators (ISO) is considering eliminating zone G, where the Cricket Valley power plant is being constructed. The zone G designation allows suppliers to charge higher rates. NYS ISO has concluded that there is adequate electrical supply for the region, so the higher rates of zone G may not be justified. This could cause the investors paying for the plant to reconsider, as profits could be reduced substantially.

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Legislative Corner by Bob Heinemann

Plastic pollution is arguably one of the most difficult world wide environmental disasters creating enormous and growing damage to the health of our oceans, rivers and lakes; harming the aquatic life within those waters; and polluting the fish we consume with harmful carcinogens thereby damaging the health of people everywhere. It is imperative that we slow the increase of unnecessary plastic waste.

To that end, countries around the world have passed laws to change behavior by banning single-use plastic bags, the flimsy carryout plastic bags that are given away in grocery stores. A New York Plastic Bag Task Force was created in March 2017 by Governor Cuomo, and a comprehensive report was issued by the Task Force on January 13, 2018 providing details on the various laws that ban single-use plastic bags in many states and cities within the United States and in many countries around the world. The Report noted that some of the most effective bans imposed a fee on the use of plastic bags after a set starting date. The fee proved absolutely necessary to change behavior, and it also provided funds to improve the local environment. Ireland, in particular, imposed a significant fee of 70 cents per violation and the result in less than a year was about 90 percent compliance.

The NY Task Force was led by the State's DEC Commissioner Basil Seggos along with co-chairs Senator Thomas O'Mara and Assemblyman Steve Englebright. Earlier this year, Senator Liz Krueger and Assemblyman Steve Englebright proposed stand-alone legislation to ban all single-use plastic bags distributed to consumers in New York and has a 10-cent fee on all paper bags and reusable grocery bags with most of the revenue directed to the Environmental Protection Fund (EPF). An exemption on the fee was provided for those using SNAP or WIC as full or partial payment.

Neither the Senate nor the Assembly acted on any of the recommendations from the Governor's Plastic Bag Task Force Report, even after overriding NYC's plastic bag abatement law last year. The Krueger / Englebright bill, S.7760/A.9953 was introduced to follow the recommendations of the Task Force Report. One of the sponsors of this bill, Steve Englebright, was co-chair of the Task Force appointed by Governor Cuomo. Recently, the Governor introduced a separate Program Bill banning single-use plastic bags in New York State but surprisingly did not push for passage of the Krueger/Englebright bill.

The Governor's preferred bill is a mixed bag, no pun intended, which is positive in proposing a state wide single-use plastic bag ban effective on January 1, 2019, but the Governor's bill not only avoids requiring any fee to effect compliance but, more important, preempts any "fees or other measures associated with single-use plastic bags" previously enacted by any town or city within New York State. More effective bills will be abrogated, and funding now collected and being put to good use for local environmental purposes would end. The City of Long Beach has a fee in place, and Suffolk County has a fee since January 1, 2018.

The 10 cent fee in the Krueger/Englebright bill is not going to industry as did the earlier 5 cent return charge on bottles and cans, but would be used to keep a continuing revenue flow into the EPF fund. This modest fee will offset diminished federal cuts to funding for environmental protection at present and in the future. The Governor's Task Force Report also describes in detail how effective even a small fee, as small as 10 cents, becomes toward actually changing behavior.

However, even necessary and sensible fees are often mischaracterized as "taxes" by the likes of the current climate deniers in appointed and elected office in Washington, DC.

An environmentally progressive Governor, like Andrew Cuomo, must be willing to take some political risks and ignore the slings and arrows that will be directed at him for setting a modest fee both to ensure better compliance and to provide a revenue stream for the EPF. This issue is too important for partial measures, or be used to preempt other noble experiments within New York.

One must hope that a sensible melding of the Governor's plastic bag ban with the Krueger/Englebright bill's modest 10 cent fee, which follows more closely to the facts in the Governor's New York Plastic Bag Task Force Report, will happen for the benefit of all New Yorkers health before the end of the legislature's current session.

by JoyAnn Savino

Caving in the Hudson Valley

May 17th, 7pm

To find the hidden secrets of the Hudson Valley, you have to go deep beyond your imagination, deep into the unknown! Our area is rich with geological treasures, like caverns, cavities and caves. Caving exploration can reveal a new level of wonderment for nature lovers.

Come to our exciting program on cave exploration, geology, and ecology presented by Cara Gentry, President of Shawangunk-Catskill Area Grotto.

Visit our Group's Meetup page for details.

Visit our <u>website</u> or <u>Meetup site</u> for news about our next program scheduled for June 21st. Program TBA.

Outings by Andy Moss

There is still time to sign up for a 2018 wilderness vacation on the <u>Sierra Club website</u>. I want to let you know about two trips, with spots still open, that I will be participating in. The first is Natural and Geologic Wonders of the Eastern Sierra, California. This is a week-long basecamp trip, so we will be in a campground with facilities and enjoy outings each day. It is a fantastic area of lakes and mountains in the eastern Sierra Nevada.



Our trip will center in the Bridgeport Valley of the Humboldt-Toiyabe National Forest. Volcanic forces followed by glaciation were the prime forces shaping the region. Mother Nature has since used its magic to carve out the scenic beauty we see today. One salient feature is Mono Lake, formed only 760,000 years ago but part of a 5-million-year history of tectonics and volcanism. <u>Visit the webpage for all the details and photos</u>

The second trip is called: "Hut-to-Hut Traverse of the Presidential Range, New **Hampshire.**" This trip centers on the Presidential Range around Mount Washington and includes hiking above tree line and staying in the comfort of AMC Huts.



We will spend our first night at the Appalachian Mountain Club (AMC) Highland Center Lodge and then four nights enjoying the comfort, cuisine, views, and camaraderie of three AMC high mountain huts: Mizpah Spring, Lakes of the Clouds, and Madison Spring. Visit the webpage for all the details and photos

Fundraising by David Friedman

Make A Gift - Make A Difference Our local group depends on the support of volunteers and the generosity of our membership. The work of the group takes Sierra Club volunteer effort, and of course funds. We hope that you will consider making a gift to the Mid-Hudson group of the Sierra Club. In these turbulent times it's vital that we all do what we can to speak out and work for the protection of our environment and the future of our world. We welcome and appreciate your support, and encourage you to consider providing financial support for our efforts. Our mailing address is at the bottom of this newsletter.

To speak about specific opportunities, or with any questions, please contact David Friedman, Friedman_David@msn.com or our Treasurer at ralphpollard@verizon.net.

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As Spring Arrives, Black Bears Are on the Move

Environmental Tips

New York's black bears emerge from the winter denning period and need to replenish their nutrients and body fat. To do so, they may travel long distances to preferred habitats that vary from season to season.

Once a bear learns to obtain food from people or certain structures, it is very difficult to change the animal's behavior. These bears are more vulnerable to motor vehicle collisions in populated areas, more likely to be illegally killed, or may become a threat to public safety.

It is dangerous and illegal to intentionally feed bears. The incidental, indirect feeding of black bears, such as with bird feeders or garbage, is also unlawful after a written warning has been issued by DEC.

To reduce the chance of negative black bear encounters around your home, DEC recommends these simple precautions:

- Never feed bears! It is illegal,
- dangerous and detrimental to bears. • If you believe bears are being fed in your area, or suspect a nuisance bear situation, report it to DEC
- immediately. • Take down bird feeders after April 1. Birds do not need supplemental food in the spring and summer, when natural foods are most abundant (even if you believe your birdfeeder to be inaccessible to bears, the birds will drop seed on the ground, which attracts bears to your yard).
- Clean off barbeque grills before night fall (don't forget the grease trap), and if possible, store grills inside when not in use.
- Store garbage in a secure building or location, secure can lids with ropes/bungees/chains, never over-fill cans, and dispose of garbage as frequently as possible.
- If you live in an area where bears may occur, put garbage containers out by the
- If you live in a densely populated bear area, consider using a certified bearresistant garbage container.
- Clean garbage cans frequently with ammonia products.
- Do not burn garbage: it is illegal and can attract bears. • Do not add meat scraps, bones or melon rinds to your compost pile.
- Feed pets indoors and store pet food indoors. If pets must be fed outside, immediately remove all uneaten food and dishes.

From the DEC: Lawn Fertilizer (NYS Nutrient Runoff Law)

Look for the Zero! Before buying lawn fertilizer, check the bag for a set of three numbers showing the percentage of nitrogen, phosphorus and potassium. Buy a bag with a "0" in the middle. Zero in the middle means phosphorus free and that means:

Zero pollution - Phosphorus is one of the leading causes of water pollution. Even if you live far from a water body, excess phosphorus from your lawn can wash off and pollute lakes and streams, harming fish and ruining boating and swimming. More than 100 water bodies in New York State cannot be used for drinking, fishing or swimming because they contain too much phosphorus.

Zero waste - Why pay for a chemical your lawn doesn't need? Generally, only newly established lawns or those with poor soil need phosphorus. Phosphorus applied to a lawn that doesn't need it won't be used and can cause water pollution.

Zero hassle - It's against the law to use phosphorus on lawns that don't need it. (New York State Environmental Conservation Law, article 17, title 21 and Agriculture and Markets Law § 146-g) Check local laws, too-some municipalities have stricter laws about selling and using lawn fertilizers.

When fertilizing your lawn follow the requirements of the law. Do not:

- Use lawn fertilizer that contains phosphorus unless you are establishing a new lawn, or a soil test shows that your lawn does not have enough phosphorus.
- Apply any lawn fertilizer December 1 April 1. • Apply fertilizer on sidewalks, driveways or other impervious surfaces. If fertilizer spills onto these surfaces, you MUST sweep it up to prevent it from washing into
- drains or waterways. Do not hose if off. • Apply lawn fertilizer within 20 feet of any water body unless there is at least a 10foot buffer of shrubs, trees or other plants between the area you are fertilizing and the water, or fertilizer can be applied no closer than 3 feet from the water using a device with a spreader guard, deflector shield or drop spreader.

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Tips on Pesticides from Ulster County Integrated Pest Management

Definition of a Pesticide: A pesticide is any material (natural, organic, or synthetic) used to control, prevent, kill, suppress, or repel pests. "Pesticide" is a broad term that includes insecticides (insect killers), herbicides (weed or plant killers), fungicides (fungus killers), rodenticides (rodent killers), growth regulators, and other materials like miticides, which are used for mite control, or products that kill snails and slugs (molluscicides).

Can you change the conditions which have caused the pest to become a problem? Prevention is always the best way to manage a pest problem. Will the conditions change due to the weather or other environmental factors? Is the problem due to gardening practices that can be changed? Each specific pest organism has optimum environmental conditions for causing damage. For instance, powdery mildew in many plants is favored by shade and conditions that favor off-season growth. Sometimes providing plants with a sunny location, opening up canopies to provide air circulation, and avoiding excessive fertilizing will keep the disease from becoming serious. Overhead sprinkling may also reduce powdery mildew problems on some plants.

Other than a pesticide, what else might work?

There are many ways to manage pests other than pesticides including:

- Cultural control (using the right pruning, fertilizing or watering regime, or
- selecting pest-resistant varieties or species)
- Physical control (for example, using mulches to keep weeds from growing, or solarization for soilborne pathogens or weed seeds)
- Mechanical control (hoeing weeds, spraying leaves forcefully with water to remove insects, or using traps or creating barriers to exclude pests) • Biological control (using beneficial organisms such as insects that eat or parasitize
 - other insects)
- Replant (in extreme cases, where a plant requires regular pesticide treatment, consider replanting with a more pest-resistant species or variety) If you decide to use a pesticide, use it in an integrated pest management (IPM) program that includes use of nonchemical methods. In almost all cases, a combination of measures will provide the most satisfactory and long-term pest control.

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Visit our Mid-Hudson Group Website

Visit our Facebook Page Visit our Meetup website for Programs and Outings

Contact us:

Email: midhudsonsierra@twc.com

Mail: Mid-Hudson Sierra Club, PO Box 1012, Poughkeepsie, NY 12602 You can find the names of our Executive Committee members on our website:

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curb just before the scheduled pick-up - never the night before.