



# NEWSLETTER

**SAW KILL WATERSHED  
COMMUNITY**

**Issue 1: April 1st, 2020**

*Protecting the Saw Kill watershed and its ecological, recreational, and historic resources through hands-on science, education, and advocacy.*



## **A NOTE FROM: SKWC LEADERSHIP TEAM**

We hope that you are doing well and managing in this difficult and unprecedented time. In times like these we feel it is important to lean on each other and support one another. In an attempt to keep our community informed and moving forward on relevant issues we have launched this weekly newsletter.

Please feel free to reply with questions or topics you would be interested in hearing about, or if you would like to contribute an article. We will be in touch with more updates about community meetings and volunteer opportunities in future issues of this newsletter.

We also wanted to inform you of a local initiative, [Red Hook Responds](#). If you want to help out or need any support, sign up on their website.

If you are looking for more content we are also posting updates on our website, Facebook page, and Instagram account. We look forward to seeing you all again soon. Be well and stay safe.



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# ENDOCRINE DISRUPTORS

Written By Julia Gloninger, Bard College '21 Saw Kill Watershed Community Intern

Thousands of chemicals are found in water bodies across the nation, and the extent to which these chemicals may cause harm to our health and the health of wildlife is still widely unknown. Scientists studying these chemicals call them “emerging contaminants.” Examples include pharmaceuticals, personal care products (PCPs), surfactants, and other industrial chemicals. However, the list is ever-increasing as new products are constantly being released into the market. The sheer number of chemicals, and the way they can combine in our water supplies make it particularly difficult to study the effects they have on our health. These factors also make it difficult to regulate the contaminants.. Most of these chemicals are not currently being treated by conventional water treatment plants.

Endocrine disruptors are a specific type of emerging contaminant. These chemicals have been found to disrupt the endocrine system, the hormones that regulate metabolism, growth and development, tissue function, sleep, mood, and other important bodily functions. Disruptions to this system may lead to health issues such as an increased risk of breast cancer, pregnancy complications, sex hormone imbalance, delayed brain development in children, and more. The effects on wildlife may be feminization, damage to male reproductivity, thinning of eggshells, and damage to the nervous system. Endocrine disruptors are found in medications (birth control pills, for example), cosmetics, pesticides, and many other types of everyday products. They enter our water supplies primarily through industrial and household waste water and agricultural run-off. Humans ingest them through drinking water or by eating animals that have consumed the chemicals.



Right now, most of these chemicals are found only in trace amounts that are unlikely to cause significant harm to humans in the short term. However, these chemicals can bioaccumulate and biomagnify in our bodies and long-term exposure will likely lead to increasing health impacts. The problem will only get worse if the chemicals continue to go unregulated. Many pharmaceuticals end up in our water systems when old and unused medicines are flushed down the toilet. This practice is increasingly being discouraged, and pharmaceuticals are being added to the list of toxic materials with more specific disposal procedures. Water treatment plants are also considering new methods and technologies for detecting and removing existing chemicals from our drinking water. Technologies like activated carbon, advanced oxidation, ultraviolet (UV) photolysis, ion-exchange and membrane filtration have proven to be effective for removing certain endocrine disruptors in preliminary studies.

The best method to tackle the issue is undoubtedly risk reduction. We can all do our part by reducing our usage of medications that aren't absolutely necessary for our health, by being wary of the types of products and chemicals we are using on our bodies and in our households, and disposing of unused products safely.

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# EEL PROJECT UPDATE, SAW KILL SITE

**Marco Spodek, Bard Environmental & Urban Studies Community Lab Technician & Saw Kill Watershed Community Leadership Team Member**

Spring has sprung! And it has brought its share of challenges, alright. The COVID-19 situation has forced all of us to sit with a bit of ambiguity as the world as we know it comes to a pause. However, you know what isn't ambiguous? You know what hasn't come to a pause? EELS! Those little guys are carrying on business as usual for their annual spring migration. For those who are unfamiliar, the American Eel is a migratory fish species whose recently-hatched juvenile members undergo an incredible migration each spring from the Sargasso sea up into freshwater tributaries along the Atlantic coast in search of lifelong habitat. This means that yes, we do have eels in the Saw Kill, and many more are on their way as you read this! In honor of the annual eel monitoring project hosted by the DEC, a net was installed at the mouth of the Saw Kill on Thursday, March 26. However, what is normally a community-based sampling project cannot occur as normal this year due to the current situation. Fear not! No eels will go uncounted! Thanks to the incredible generosity of the crew of the Sloop Clearwater, the eel net will be checked at its regular frequency, every day at low tide. The suspension of the Clearwater's operations as a result of the current pandemic has opened up a bit of extra time for the crew, and with good ol' Hudson River spirit, they will be taking their fishing and knot-tying expertise to the eel net. Unfortunately, to comply with social distancing protocols, no others will be permitted to check the net this year. However, we can all take solace in the fact that the eels will be accounted for and safely delivered upstream of their nearest barrier to migration as they are every year. The Hudson River Eel Project lives on!



## AMPHIBIAN MIGRATION UPDATE

**Karen Schneller-McDonald, Chair of the Saw Kill Watershed Community**

This year's season kicked off with the NYS Hudson River Estuary Program's amphibian migration training in Red Hook, on February 25, with more than 25 trainees. Salamander migrations this year started early; on March 3 we were already seeing salamanders and frogs on our roads. About 20 volunteers participated in this effort, and amphibians were still crossing in small numbers the last weekend in March. During past migration surveys, we've identified twelve sites in the watershed area as confirmed or likely amphibian crossings. This year, the SKWC has requested DEC data so we can confirm/ update this information. After we receive it we'll provide a summary of the information.

For now, thanks to Laura Heady and Emma Clements from DEC for putting on a great training event; to Laurie Husted for organizing volunteers and initiating an effective Groupme network to share information and alerts; and to all who volunteered (there were at least 20 of us!), venturing out at night in the chilly showers of early spring to collect data and help salamanders, frogs, and toads cross our roads safely.

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# PROS AND CONS OF TURF FIELDS

Steven Appenzeller, Saw Kill Watershed Leadership Team Member

America first learned about artificial turf fields back in the 1960's when the Houston Astros started playing in the indoor Houston Astrodome on a new surface known as Astro Turf. Today there are about 15,000 artificial turf fields in the US, with another 1,500 new installations per year according to the Synthetic Turf Council. These fields are installed at venues including schools, universities, municipal parks, and professional sports facilities. There are two turf field locations in the Red Hook community: a pair of athletic fields at Bard College and a new field being constructed at the Town Recreation Park.

Turf fields are a complex system consisting of multiple layers which can be several feet thick to provide its drainage and playing field qualities. Once the ground is prepared, there is typically one or more thick layers of compacted gravel that provide structural stability and contain perforated drainage pipes to divert water away from the field. There are also typically storm water management detention structures to slow the peak runoff rate. This is topped by drainage and shock attenuation pads that provide some of the cushioning needed for a field. This is then topped with an infill layer that provides more shock absorption and is usually comprised of crumb rubber from recycled tires, but other materials like cork, coconut shells or EDPM are sometimes used. Up top is the visible turf layer of the field, which is essentially a carpet of artificial grass.

Turf fields offer a number of advantages for playability, athlete injury reduction, and environmental footprint. But these advantages also come with some downsides and there are a number of issues requiring further study.

Potential advantages of turf fields include:

- Greater playability due to superior drainage characteristics and can be played upon in winter months
- Fields do not require rest between games or repairs to divots or other damage
- Turf fields are often easy to configure for multiple sports
- More consistent playing surface with greater shock absorption that can reduce frequency and severity of head, ankle and knee injuries
- Turf fields do not require application of fertilizer, pesticides, or herbicides
- No water required for irrigation of natural grass, potentially saving over 500,000 gallons per field per year
- Turf fields require no mowing which eliminates the associated carbon footprint

Potential disadvantages of turf fields include:

- High initial cost for installation
- Higher cost to repair the field if it is vandalized
- Turf fields hold heat and can cause athlete heat stress in warmer weather
- Potential for skin abrasions when athletes fall on the turf
- Environmental concerns about crumb rubber contaminating drainage runoff
- Potential for athletes to inhale small crumb rubber particles
- The turf layer must be replaced about every ten years and currently there are very limited recycling options

In summary, turf fields are widely used and have been studied extensively. There have been many environmental impact studies conducted by industry, government, and research organizations that point to turf fields being generally safe. But many of these same studies cite the need for additional research on the concerns with aspects of these fields, particularly the crumb rubber infill that has been anecdotally blamed for some health concerns. The new Rec Park field is located in the watershed of the Saw Kill and the Bard Water Lab has longitudinal data that provides a baseline to determine if the field impacts water quality from runoff.