

Sept 2024 Newsletter

SEASONAL THEME: ACID RAIN



Welcome to the **September edition** of HNP Ontario's revamped newsletter, where the stories are compelling as ever!

Feature Article:

Delve into adaptation strategies to combat acid rain

NATURE NEWS REEL:

Explore the topic of flooding and its' current impacts in Bangladesh

Stay informed, engaged and empowered--- together, let's make a difference!

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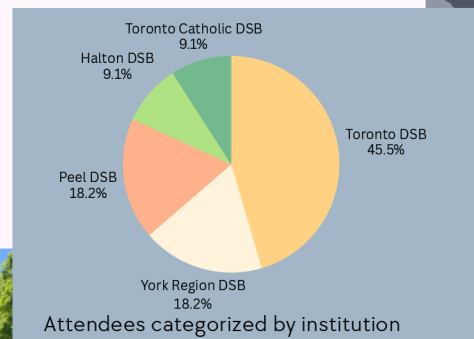
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SPOTLIGHTS

TOPHAM POND INVASIVE PLANT SPECIES REMOVAL JUNE 2024



Invasive species are amongst the greatest threats to Canada’s ecosystem, economics, and health (McClay et al.). To combat this issue, HNP Ontario collaborated with Toronto Nature Stewards (TNS) held an Invasive species removal event. On Saturday, June 15th 2024, volunteers gathered from various communities to remove such species from Topham Pond, in Toronto, Ontario.



A DAY OF ACTION

24

Participants

TNS is a community stewardship organization that assisted HNP Ontario with hosting the event by equipping volunteers with proper removal tools and further knowledge on the plant species that needed removing.

11

Schools Represented

Volunteers and HNP Ontario’s executive members were divided into four groups, with each group being led by at least one lead steward, a person who completed the TNS Lead Steward training program.

5

Schools Boards Reached

These four groups were spread out along the Topham Pond site and removed various invasive plant species, namely, Garlic Mustards, Hedge Parsleys, Burdocks, Motherworts, and Dog Strangling Vines.

~144

Volunteer Hours Earned

There was a lot of work to be done, but through the combined efforts of the volunteers, executive members and lead stewards, the spread of invasive plant species was significantly slowed in the Topham Pond ecosystem!

CLEAR SKIES AHEAD: STRATEGIES TO COMBAT ACID RAIN

INTRODUCTION

Acid rain has posed a severe environmental threat for the last century. Acid rain is a product of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) reacting with water vapor (Ahmadi, 2020). SO₂ and NO_x emissions come from natural sources such as volcanoes, or from human activities like burning coal and driving cars. To combat the issue of acid rain, some countries, specifically the US, have implemented strategies and programs to cut down the pollution. These strategies have been successful in reducing emissions and pollution (Ahmadi, 2020).

PAST EFFORTS TO MITIGATE ACID RAIN

According to the US Environmental Protection Agency's (EPA) 2013 report, major environmental issues like acid rain and ozone layer reduction are declining (Ahmadi, 2020). Programs like the Clean Air Interstate Rule and Acid Rain Program have significantly cut down SO₂ and NO_x emissions, reducing acid deposition by 85% from 1980 to 2012. However, emissions are still too high to fully restore affected ecosystems (Ahmadi, 2020).

UK is another place where there were efforts to mitigate acid rain (Ahmadi, 2020). Efforts to combat acid rain began in London in 1936 and increased after 1970 due to more coal use, raising SO₂ levels. The US passed the Acid Deposition Act in 1980, leading to studies on acid rain. By 1991, 5% of New England's lakes were acidic, affecting soil, water, and structures. The Clean Air Act of 1990 aimed to reduce SO₂ and NO_x emissions, significantly lowering them by 2006 (Ahmadi, 2020).

FUTURE EFFORTS TO MITIGATE ACID RAIN

Future efforts to reduce prevalence of acid rain includes switching to low-sulfur fuels or alternative energy sources like natural gas, nuclear, and renewables (Ahmadi, 2020). Programs like the EPA's Energy Star promote energy efficiency. Scrubbing methods, such as electrostatic precipitators and flue gas desulfurization, remove pollutants from emissions. The Clean Air Act of 1990 set limits on SO₂ and NO_x emissions, and continuous monitoring helps enforce these limits. Cap-and-trade programs also encourage emission reductions. Acid rain damages aquatic life, vegetation, buildings, and health. Bilateral agreements and regional programs aim to combat these effects (Ahmadi, 2020).



Figure 1. Downtown Los Angeles skyline covered in a layer of smog (Stein, 2016).

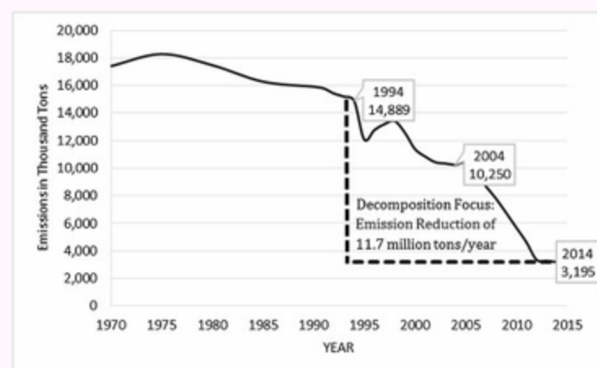
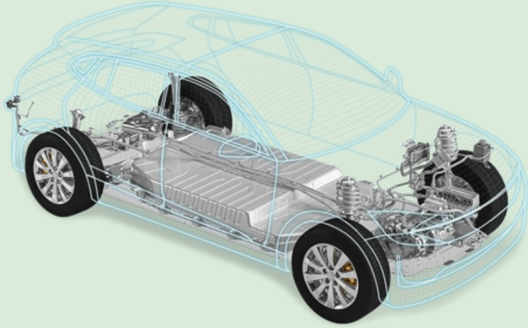


Figure 2. Decrease in US SO₂ emissions from 1970-2015 (1970-2014 SO₂ Emissions From Electric Utilities, 2017).

HNP Ontario's Electric Vehicles Webinar



Presented
By:
Kenneth Bokor



On Friday, June 28th, HNP Ontario hosted its first Electric Vehicles webinar, presented by Kenneth Bokor, the host, producer, and creator of the EV Revolutions show and an electric vehicles expert.

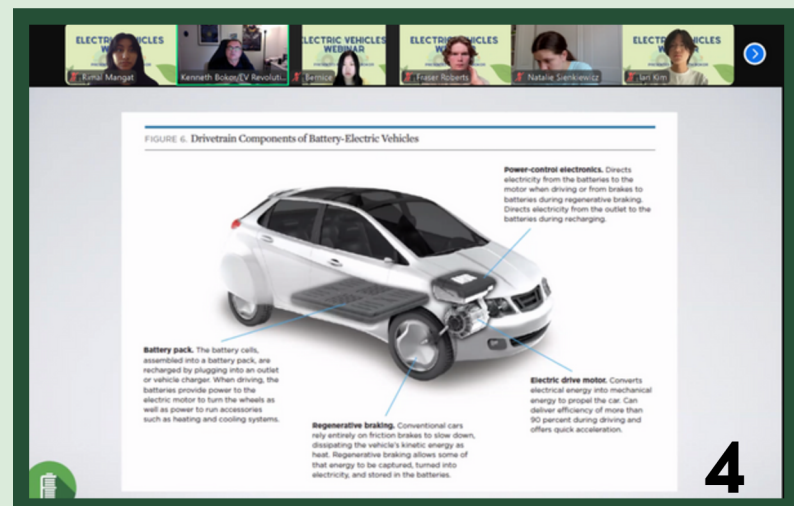
The webinar began with Kenneth's presentation on electric vehicles, which discussed their various advantages, dispelled common misinformation surrounding them, and explained their positive environmental impact.

Next, the event opened the floor our various student participants to ask any questions they had for Kenneth on electric vehicles. With 80+ participants, the event was a great success!

A great thank you to Kenneth Bokor for his role as the webinar's presenter, as well as all our amazing participants!

83
Engaged Participants

48
Schools Reached



NATURE'S OVERFLOW: FLOODS

INTRODUCTION

The idiom "too much of a good thing," meaning even something usually known to be good, when presented in excess, can be viewed as harmful and undesirable, is well suited for the natural disaster known as flooding (Aldardasawi, 2021). Vital resources for the survival of biological life are present in the ecosystem, such as water. However, a minor disruption can result in excess of them, resulting in catastrophic calamities. Calamities become activated when the atmosphere changes over time or suddenly. One of these catastrophic calamities is floods. Floods are becoming increasingly frequent across the globe, claiming human lives but also resulting in long-term destruction to the economy and environment (Aldardasawi, 2021).

CAUSES OF FLOODS

Floods are natural disasters or calamities that have occurred since ancient times, caused by water overflowing into a dry region (Aldardasawi, 2021). A change in a geographical area's climate and precipitation cycles results in heavy rainfall, leading to floods. Human activities such as over-urbanization, deforestation, and poor drainage systems can accelerate these calamities. Although many floods are present, urban floods remain more destructive as they impact densely populated areas and thus result in soaring mortality rates (Aldardasawi, 2021).

EFFECTS ON AGRICULTURE

Many countries depend on agriculture as a primary source of income and employment. The majority of the population relies on the food produced through agriculture. Two aspects of agriculture mainly threatened by flooding are soil fertility and crop growth (Aldardasawi, 2021). Soil erosion is the aftermath of flooding. Soil erosion strips away the top fertile layer of the soil, compromising soil productivity by only 60%. Moreover, the force of floods can weaken the roots of crops. Weakened soil fertility combined with weakened plant stature stunts crop growth (Aldardasawi, 2021).



Figure 1. An image of a submerged agricultural land (Aldardasawi, 2021).

NATURE'S OVERFLOW: FLOODS

EFFECTS ON GROUNDWATER

Groundwater is a primary source of drinking water. However, floods are a substantial cause of groundwater contamination. Contaminated water is prone to waterborne diseases like cholera. Thus, contaminated water poses severe health risks to humans and biodiversity (Aldardasawi, 2021).



BANGLADESH 2024 FLOODS

Floods have been affecting various countries around the world. The citizens of Bangladesh are currently navigating through the chest-high floodwaters (Wright et al., 2024). Approximately five million people are said to be affected in total. Feni City, with a population of 1.5 million, is gravely submerged due to flooding (Wright et al., 2024).



Bangladesh is a country that heavily depends on waterways. Waterways are crucial for fishing and agriculture (Paul, 2024). Extreme weather changes driven by human causes have worsened the intensity and frequency of floods. The September 2024 floods in Bangladesh are claimed to be unexpected. The population requires dry clothing, shelter, and water. Authorities are primarily concerned with the rise of waterborne diseases and ensuring the availability of clean drinking water (Paul, 2024).



Figure 2. Rescuers helping people reach higher grounds during Bangladesh 2024 floods (Wright et al., 2024).

CARBON REDUCTION CHALLENGE: JUNE 2024

About

Between June 13th – 24th HNP Ontario held a carbon footprint-based event alongside Commit2Act: the Carbon Reduction Challenge. Commit2Act is a site where those willing can track the eco-friendly activities they participate to reduce their carbon footprint. This event was created in order to educate students on the impacts of their carbon footprints, and to help them take charge of this problem. **Students got together to reduce their school's overall footprint, by engaging in eco-friendly challenges.** Students could choose to use a reusable water bottle rather than plastic, wash their clothes or shower in cold water instead of hot, walk or carpool to school, and such.



Statistics

Thanks to the Carbon Reduction Challenge, **269,710+ kg of CO₂ was saved.** This event reached **10 school boards, 61 schools,** and included **over 120 participants. Over 1,100 eco-friendly actions** were logged, averaging about **9.2 activities per participant.**



Testimonial

“I greatly enjoyed participating and working with both HNP as well as Commit2Act in the fight against climate change. HNP created a welcoming and informative space throughout my experience in the Earth Day competition 2024 and I plan to continue to work with HNP in the future.”

– **Scythe Jayamohanaraja** (1st place winner of the Carbon Reduction Challenge, with approximately 29119.54kg of CO₂ saved)

HNP ONTARIO IS RECRUITING!

WHY JOIN?

- Earn Volunteer Hours!
- Develop Soft Skills!
- Build Networks!
- Make Change!
- So Much More!

REQUIREMENTS

- Either enrolled in university or college (for grant writers) or in the last two years of high school.
- Fulfill a **minimum** 3 hour per week time commitment.
- Be able to work proficiently both independently and in teams.

AVAILABLE POSITIONS:

WEBSITE MANAGER

Manage HNP Ontario's official website for usability and accessibility.

SOCIAL MEDIA MANAGER

Manage HNP Ontario's social media presence on our various platforms for promotion and outreach.

CONTENT CREATOR

Create and edit videos for HNP Ontario's official YouTube channel and podcasts.

GRANT WRITER

Research, write, and apply to various grants that HNP Ontario is eligible to receive funding from.

VICE PRESIDENT OF MARKETING

Lead and supervise HNP Ontario's marketing team to promote our various events, and initiatives.

APPLICANTS CAN APPLY AND FIND MORE INFORMATION WITH THIS [LINK](#). THE APPLICATION IS DUE ON OCTOBER 21ST, 11:59PM. GOOD LUCK!

Social Media

STAY CONNECTED WITH US!



[@HNPONTARIO](#)



WWW.HNPONTARIO.ORG



[HNP ONTARIO](#)



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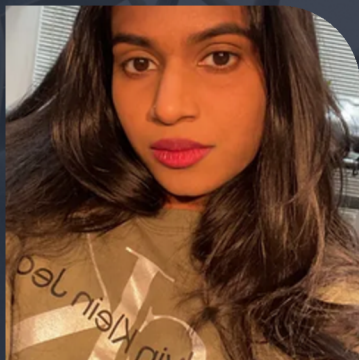


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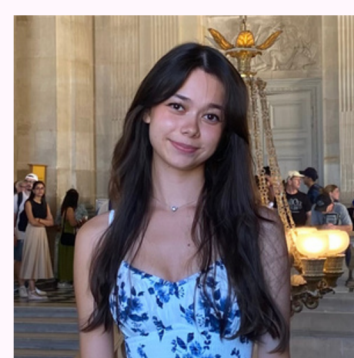
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