

NH Envirothon 2022 Current Issue

Waste to Resources: Focus on Plastics

Background

The U. S. Environmental Protection Agency (EPA) estimates that in 2018 each person in the United States generated an average of 4.9 pounds of municipal solid waste (MSW) daily, of which 55% was landfilled, 24% was recycled, 13% was burned for energy, and 8% was composted. Plastic accounted for around 12% of the solid waste generated in 2018 with only around 9% of that plastic waste recycled (EPA, 2021). Plastic pollution is present in all corners of the world, from the deepest ocean depths to the most remote regions of the globe. Since plastic recycling rates have become stagnant, it is necessary to increase the rate at which we *reduce and reuse* plastics to decrease their environmental impacts.

The concept of a circular economy for plastics has great potential for reducing the amount of plastics manufactured, and thereby reducing the amount impacting our environment. The circular economy includes incentives and ideas to promote re-use and eco-design, increase the recycled content of plastics, deposit return schemes, eliminate unnecessary plastic packaging, and decoupling plastic production from the consumption of finite resources (MacArthur, 2021).

The Challenge

One of the objectives of this year's *Current Issue* is to investigate how your community manages solid waste, and how effective your community recycles. Another objective is for your team to investigate the life cycle of a plastic product that you use in school or at home. You will need to find out what natural resources were used in its production, what environmental impacts are associated with its manufacturing and transport, and where it will go after its usefulness expires. Lastly, your team will suggest ways in which this product can be used as a resource, and how its environmental impacts can be reduced.

Questions to guide your work

How does your town manage MSW and where does it ultimately go?

What percentage of your town's MSW gets recycled, burned for energy, composted or landfilled?

What percent of plastics gets recycled in your town?

What challenges or obstacles may prevent your town from recycling more plastics?

How can your school eliminate unnecessary plastics?

What are some of the ways that demand for plastics can be decreased?

What are some renewable alternatives to plastic?

References

EPA, 2021. *Facts and Figures about Materials, Waste and Recycling*, U.S. Environmental Protection Agency, <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials>, accessed October, 2021

MacArthur, 2021. Ellen MacArthur Foundation, “*Our Vision for a Circular Economy for Plastics*” [Our vision for a circular economy for plastics \(ellenmacarthurfoundation.org\)](https://ellenmacarthurfoundation.org/our-vision-for-a-circular-economy-for-plastics), accessed October, 2021

Resources

New Hampshire The Beautiful
[Education Initiatives – New Hampshire the Beautiful \(nhthebeautiful.org\)](https://nhthebeautiful.org)

Northeast Resource Recovery Association, [Northeast Resource Recovery Association \(nrrarecycles.org\)](https://nrrarecycles.org)

University of New Hampshire, Marine Debris
[Marine Debris | New Hampshire Sea Grant \(unh.edu\)](https://unh.edu/marine-debris)

World Wildlife Fund, Plastics
[Plastics | Initiatives | WWF \(worldwildlife.org\)](https://worldwildlife.org/initiatives/plastics)

NH Envirothon 2022 Current Issue Team:

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This guide applies to face-to-face competitions only.

- 1) Students are encouraged use *PowerPoint* or other presentation software to present their solution to the Current Issue Challenge.

- 2) Teams must bring their own laptop computer. The NH ENVIROTHON will supply a projector and screen in each presentation room.

- 3) Any embedded videos in the presentation must be produced by the NH ENVIROTHON team making the presentation. In other words, no videos downloaded or streamed from the Web can be used in your presentation. **Videos should be no longer than two minutes.**

- 4) All five team members must participate in the presentation. Your team will have exactly 15 minutes to make your presentation, followed by 5 minutes of questions by the judges. Plan and rehearse your presentation accordingly.

- 5) Work on the challenge is restricted to the five team members and two alternates. You may seek additional information from any source, but you are not permitted to get help on your solution to the challenge (your analysis, proposed project, the proposal itself, or any handouts or displays) from parents, teachers, advisors, consultants, professionals or anyone else. You may, and should, get help and guidance in rehearsing your presentation.