

People are a vital part of the Chesapeake Bay ecosystem. Actions we take today can revive the Bay's health tomorrow and into the future.

Reduce Use of Disposable Plastic Drink Bottles and Disposable Plastic To-Go Cups

In 2019, plastic bottles and bottle caps ranked as the third and fourth most collected plastic trash items during beach cleanups in more than 100 countries.¹ In addition, the U.S. Geological Survey has found microplastics (i.e., small pieces of plastic debris less than five millimeters in size resulting from the disposal and breakdown of consumer products and industrial waste) in all water samples taken at nontidal stations in the Chesapeake watershed.² This means that microplastics are not only in our bay, but they are also throughout our rivers and streams. One of the most distressing sources of plastic pollution is these single-use plastics, like water bottles and the to-go cups and lids provided at many fast-food restaurants.

Each year, more and more museums, universities, airports, and even cities are banning the sale of plastic water bottles and disposable plastic cups. This is part of a global movement to reduce plastic pollution in the ocean, cut carbon emissions and energy use, and reduce landfill waste.³

What You Can Do to Help

Three things you can do to reduce your use of disposable plastic drink bottles and to-go cups include⁴:

1. Carry a reusable bottle or coffee cup.
2. Choose aluminum cans or glass bottles, both of which are recyclable in most communities, over plastic when possible.
3. Recycle all plastic bottles.



Figure 1
<https://healthyhumanlife.com/blogs/news/10-stainless-steel-water-bottle-benefits>

¹ <https://oceanconservancy.org/wp-content/uploads/2019/09/Final-2019-ICC-Report.pdf>

² https://www.chesapeakebay.net/news/blog/small_plastics_are_a_big_problem

³ <https://www.nationalgeographic.com/environment/2019/08/plastic-bottles/>

⁴ <https://www.nationalgeographic.com/environment/2019/08/plastic-bottles/>

Studies show that concerted communication efforts to get people to stop or minimize using disposable plastic bottles and to-go cups work.

Here are some of the positive environmental benefits of reducing use of disposable plastic bottles and to-go cups.

1. Helps reduce climate change.

The energy required to produce bottled water, including the energy required to manufacture plastic, fabricate the plastic into bottles, process the water, fill and seal the bottles, transport the bottles, and chill the bottles for use is up to 2,000 times the energy used to treat and distribute tap water.



Figure 2 A sample of ocean microplastics is displayed during a 2015 trash trawl survey on the Chesapeake Bay. (Photo by Will Parson/Chesapeake Bay Program)

2. Avoids harming wildlife and marine life.

It takes at least 450 years for a plastic bottle to degrade.⁵ While degrading, tiny pieces break off (microplastics) and end up in the soil, oceans, and stomachs of wildlife and marine life. Birds, turtles, and other marine life mistake plastic pieces for food, which is harmful to them and contaminates the food chain. In recent years, a dead whale that washed ashore was found to have 13 pounds of plastic waste in its stomach. The United Nations envisions that there will be more plastic than fish in the world's oceans by 2050 unless people stop using single-use plastic items such as plastic bags and plastic bottles.⁶

3. Avoids harm to human health.

Most bottled water is sold in plastic #1, also known as polyethylene terephthalate (PET). Research shows that PET may be an endocrine disruptor, altering our hormonal systems. Phthalates in bottles can seep into your water, especially when exposed to high temperatures or stored for an extended period of time.⁷

Microplastics also end up in our food and water. Recent studies show bottled water containing excessive levels of microplastics.⁸ According to research conducted by Orb Media, 93% of the 11 bottled water

⁵ <https://www.wwf.org.au/news/blogs/the-lifecycle-of-plastics#gs.qqj6rt>

⁶ <https://news.un.org/en/story/2017/04/556132-feature-uns-mission-keep-plastics-out-oceans-and-marine-life>

⁷ <https://www.cleanwateraction.org/2020/07/29/bottled-water-human-health-consequences-drinking-plastic>

⁸ <https://www.forbes.com/sites/niallmccarthy/2018/03/16/study-finds-microplastics-in-93-percent-of-bottled-water-infographic/#2ff64b973fa0>

brands sampled showed traces of microplastics.⁹ The study included companies such as Aquafina and Evian, with Nestle Pure Life having one of the highest levels of contamination. Their research also showed bottled water contained about 50% more microplastics than tap water.



Figure 3 <https://www.cleanwateraction.org/2020/07/29/bottled-water-human-health-consequences-drinking-plastic>

4. Reduces landfill waste and saves your community money.

In the U.S. only 30% of plastic bottles are recycled, and the other 70% of plastic bottles end up in the landfill.¹⁰ While the number of plastic water bottles Americans purchase each week could circle the globe five times, roughly 94% of the US population has access to safe drinking water through their tap.^{11,12} In addition to many plastic bottles ending up in landfills, the vast majority of disposable drink

⁹ <https://www.cbc.ca/news/technology/bottled-water-microplastics-1.4575045>

¹⁰ <https://www.nationalgeographic.com/environment/2019/08/plastic-bottles/>

¹¹ <https://www.upworthy.com/see-what-researchers-found-when-they-tested-a-bottle-of-fiji-water-against-a-glass-of-tap-water>

¹² http://uswateralliance.org/sites/uswateralliance.org/files/publications/Closing%20the%20Water%20Access%20Gap%20in%20the%20United%20States_DIGITAL.pdf

cups and lids sold are sent to landfills. Most to-go drink cups are not recyclable because of the plastic liner and coffee contamination.¹³

Websites for More Information

- National Geographic – [The Story of Plastic: How the Plastic Bottle Went from Miracle Container to Garbage](#)
- Plastic Pollution Coalition – [Get Started Living Plastic Free Campaign](#)
- [Trash Free Maryland](#)

Behavior Change Campaign Examples

It is common to find it challenging to adapt to using reusable bottles or cups. Common barriers to change include:¹⁴

- **Cues.** Forgetting the reusable bottle or cup at home.
- **Convenience.** Reusable bottles and cups might be less convenient for some people because there might not be enough filling stations and it can feel like a hassle to carry them.
- **Values, beliefs and motivation.** Believing this single action matters and has an impact on protecting the environment is motivating.

❖ National Geographic's *Planet or Plastic* – Pledge and Social Media Campaign

¹³ <http://www.recyclingadvocates.org/single-use-coffee-cup-reduction/>

¹⁴ <https://pub-data.diver.orr.noaa.gov/marine-debris/greatlakes/2017%20marinedebrisFinal.pdf>

National Geographic’s [Planet or Plastic?](#) is a multiyear initiative aimed at raising awareness of the impacts of single-use plastics and reducing the amount of single-use plastics that enter the world’s oceans. These efforts include the following:

- [Planet or Plastic? Pledge](#): a commitment to reduce their use of single-use plastic. When people fill in the pledge, it calculates a number demonstrating the impact of their actions. (**Commitment**)
- Social Media Campaign: a three-day campaign to spread the word about the pledge and the issue on social media. (**Social Diffusion**)
- Article: [The Story of Plastic: How the Plastic Bottle Went from Miracle Container to Garbage](#) reviews the environmental impacts of disposable plastic bottles.

THE STORY OF PLASTIC | PLASTIC BOTTLES

Engineer Nathaniel Wyeth patented polyethylene terephthalate (PET) bottles in 1973. The first plastic bottles able to withstand the pressure of carbonated liquids, they were a much cheaper alternative to glass bottles.



It takes at least **450 years** for a plastic bottle to completely degrade.



Usage

Globally, more than a million plastic bottles are sold every single minute.



Recycling

In the U.S., only 30% of these bottles are recycled; Norway recycles 97%.



Did You Know?

Bottled water requires up to 2,000 times the energy used to produce tap water.

MONICA SERRANO, NGM STAFF; KELSEY NOWAKOWSKI
SOURCES: EUROMONITOR; LEMELSON-MIT; PETER GLEICK AND HEATHER COOLEY, PACIFIC INSTITUTE; NOAA; INFINITUM; EPA

❖ **Recycling Advocates, Portland, OR – Single Use Coffee Cup Reduction Campaign**

Recycling Advocates, Oregon’s oldest grassroots nonprofit organization, kicked off the [#BYOC campaign](#), which stands for Bring Your Own Cup. Their goal is to create a change in behavior in the Portland metro region where disposable cups are no longer the standard method for drinking coffee. (**Social Norm**)

- The campaign included these messages on their website:



- Take the Pledge! By signing this pledge, you agree to “Bring Your Own Cup (BYOC)” and reduce your use of disposable coffee cups. (**Commitment**)
- Plan to bring your coffee cup everywhere you go! Try it for one week, then one month... make it a habit to bring it every day! (**Convenience**)
- Find coffee shops and stores that offer discounts for using reusable cups, or that provide “for here” cups. (**Incentives**)
- Encourage your friends and co-workers to do the same! (**Social Norm**)
- Help us spread the word on social media by using the hashtag #BYOC or directing people to <http://www.recyclingadvocates.org/single-use-coffee-cup-reduction/> (**Social Diffusion**)

❖ Plastic Pollution Coalition – Get Started Living Plastic Free Campaign

The [Plastic Pollution Coalition](#) is a global alliance of more than 1,200 organizations, businesses, and thought leaders in 75 countries working toward a world free of plastic pollution and its toxic impact on humans, animals, waterways, oceans, and the environment. Through the [Get Started Living Plastic Free Campaign](#), the [Plastic Free Guides project](#), and clear case studies - together with the work of its member organizations - PPC is a leading voice on providing individuals and businesses with a clear road map for how to make these changes. The coalition aims to make change reasonable, accessible, and affordable for all individuals and businesses, to better achieve our vision of a world free from plastic pollution.

- Pledge: A [pledge to say ‘no’ to single-use plastic](#) aims to help individuals commit to refusing disposable plastic, reducing plastic footprint, reusing durable containers instead of using plastic, and recycling if you can’t refuse, reduce or reuse. (**Commitment**)
- Guides: The [Plastic Free Guides](#) provide step by step actions to help schools, towns, and individuals go plastic free. (**Social Diffusion**)



Example Messages

These messages about reducing the use of disposable plastic bottles and to-go cups could be used in congregational outreach campaigns:

1. **Bring Your Own! Join the growing movement of people who already make the daily choice to B.Y.O.** By bringing your own reusable water bottle and reusable mug you can save money, reduce waste and help the planet. It's simple! (social norm, convenience)
2. **Spread the word: refill, don't landfill!** Use refillable containers, especially aluminum or glass bottles, both of which are recycled at higher rates. (social diffusion)
3. **Join your neighbors in helping save the environment by committing to recycle plastic water bottles.** Right now, less than 1 in 3 plastic water bottles is recycled. Let's change that. If you find that you need to purchase a disposable bottle, take care to dispose of it in a recycling bin. (commitment, social norm)
4. **Hold a workshop with your local water department.** Invite members to learn about the safety of your local water supply and ways you and others can help protect it.

Tips for Reducing the Use of Disposable Bottles and To-Go Cups in Your Congregation:¹⁵

- **Provide Reusable Glasses and Cups in Your Congregation's Kitchen** – Provide glasses and cups for your kitchen that can be washed rather than thrown away. Members could bring in glasses and cups from home that they no longer use, or they could be purchased at a community thrift store.
 - Consider creating a volunteer sign up for a kitchen crew member clean up after each coffee hour. Make it fun for the volunteers or provide an “incentive” to participate (close parking space, mention in the bulletin).
- **Display Signage** – Post easy to understand signs informing the congregation's members about the new cups and reminding them to wash after use.
- **Remove Disposables** – Once stocked with reusables, consider removing disposables or post signage saying, “Disposables for Guests Only.”
- **Encourage the Congregation to “BYO” Bottles and Cups** – Encourage congregational members to keep their own bottles and cups in their purse or car so that they can use them at congregational events as well as on-the-go.
 - Consider installing water bottle re-filling stations (e.g., water fountains) at your congregation. Some denominations may have grant funds available.
 - Magnets or removable stickers could also help to remind members of the congregation to bring their own water bottles every time they leave their home. These could be placed in eyesight near the door of their home they use to exit. For example, it could have a catchy phrase to help make the water bottle part of their habit of items to grab before they leave, e.g., “phone, keys, wallet, water.”

¹⁵ https://www.sustainability.upenn.edu/sites/default/files/pdf/Staff%20%26%20Faculty%20Eco-Reps_Group%20Goals%20Resource%20Guides.pdf

- **Pledge to give up plastic bottles during a religious fast** – Make this a community commitment. For example, during Lent, some Christian congregations encourage their churchgoers to forgo commonly discarded single-use plastics.¹⁶

¹⁶ <https://www.washingtonpost.com/religion/2019/03/05/latest-lent-challenge-churches-give-up-plastic/>