LET'S RECYCLE RIGHT NEW YORK

BY LINDSAY EBERHART AND LISA RUGGERO

The origins of recycling date back as far as human records can be found. Ancient civilizations turned old hand axes into smaller flint tools, and ceramics were ground down into powder and remade into clay. Recycling as we know it today has been around since the 1970s, but despite its longevity it is still clouded with mystery.

As consumer demand and the movement towards lighter, easier-to-transport materials drive changes in our products and packaging, it is critical to also adapt the recycling infrastructure and processes to efficiently turn what's old into something renewed and valuable again. This ever evolving, decentralized system leads to complexity and variability that can make us feel overwhelmed by ever-fluctuating recycling guidelines. However, not all recyclables and systems are equal, and many people are justifiably concerned that the items they work diligently to clean and separate, are not actually being recycled.

"Sometimes I describe my job to my friends and family as being like a "recycling therapist" because it can, at times, be very difficult and emotional to teach people about the impacts of plastic pollution and consumerism, or people may get upset to learn certain items they use every day cannot actually be recycled," explained Angelina Brandt, RRNY stakeholder and Director of Sustainability at the Ulster County Resource Recovery Agency.

RECYCLING CONSCIENCE

The conversation around recycling is reasonably one that many people feel deeply and emotionally alert to. At a young age, we were introduced to the notorious Möbius loop, the symbol consisting of three arrows chasing each other in a triangular shape. Each arrow represents the three sustainable materials management essentials: "Reduce, Reuse, and Recycle." The ring of this phrase has been empowering all of us to be active participants in resource conservation and reuse.

The Recycle Right New York (RRNY) campaign aims to restore confidence in recyclers by pulling back the curtain on the systems and processes that make up recycling through a comprehensive outreach and education campaign that is informed by more than 140 recycling professionals. Recycle Right New York's goal is to increase participation and decrease contamination in recycling programs across the state by helping residents to "Know Before You Throw."

Originally created in 2018 by the New York State Department of Environmental Conservation, today, the RRNY campaign lives within the Center for Sustainable Materials Management, which is housed at the SUNY College of Environmental Science and Forestry and is led in collaboration with the Syracuse University Center for Sustainable Community Solutions.

Through tools such as the item specific "Recyclopedia" and the "Check Your Local Guidelines" database, residents can easily find the information they need to confidently recycle anywhere in the state. The campaign also works to revitalize and strengthen the connection to the broader concept of sustainable materials management, by advocating for and educating about more environmentally favorable actions, including reduction and reuse.

Consider the magazine you are holding in your hands made from trees, your cellphone that enables you to communicate with loved ones far and wide crafted of bauxite ore mined from overseas, and the plastic take-out container created with oil originating from marine plankton from millions of years ago. It is obvious, but not often acknowledged, that we encounter and connect with materials from all over the globe daily. These materials make our lives easier for the time being, but it eventually becomes our responsibility to choose an action that will keep these materials in use.

We are all a part of a web of moving materials, and choosing to reduce, reuse, and then recycle right is a small but potent way to be a steward of this Earth and its valuable resources.

↑ Recyclable materials are commonly sorted by hand at the beginning of the recycling process, in a step called "pre-sorting" or "manual sorting;" by Jon Simmons

↓ Bales of aluminum prepared to be sold on the commodities market; by Jon Simmons

↑Stacked cardboard bales ready to become a renewed product; by Jon Simmons

NOT ALL RECYCLABLES ARE CREATED EQUALLY

The material recovery facilities that sort paper from plastic, aluminum, glass, and metal use mechanical and manual sorting techniques. The level of purity the facilities can achieve for each material determines its economic value on the commodities market, as cleaner materials have higher value because they are more easily made into new things. Ensuring only the correct materials are recycled for each individual program is key to keeping a strong, healthy recycling system.

Additionally, different materials have varying levels of recyclability in the technical sense. Recycle Right New York promotes the concept of "material literacy" that can help guide us in the choices we make as consumers and recyclers.

Aluminum: Aluminum is infinitely recyclable and a very valuable material on the commodities market. Aluminum is unique in the way it can be recycled continuously without losing its integrity. Recycling aluminum is an excellent way to keep this resource in use and reduce the harmful social and environmental effects of mining.

Paper: Items such as cardboard, office paper, and brown paper bags are highly recyclable and valuable on the commodities market. Made from renewable trees, these items have long fibers which are necessary for recycling. In the paper recycling process, mesh screens are often used and the shorter fibers fall through, while the longer fibers stick to the screen. Each time the fibers are recycled, some of their bonding ability and strength is lost.

Plastic: Plastic is made from oil, a non-renewable resource. Since there are many different types of plastic, expensive equipment (called an optical sorter) is needed to sort the material. The optical sorter uses infrared light to detect different types of plastic and separates them into compartments using jets of air. It's an impressive piece of technology, but not without its challenges. For example, black plastic is often indistinguishable from the dark conveyer belt and ends up in the residual stream. The sheer number and variability of plastic products makes it a challenging material to achieve circularity with. Another factor contributing to the low recycling rate for plastic is that recycled plastic costs more to produce than virgin plastic, due to the high costs of collecting, sorting, transporting, and reprocessing plastic waste.

Glass: Glass is extremely recyclable but needs to be separated from other materials in order to have a clean enough stream to make into new glass products. The glass items covered under New York's Bottle Bill and recycled through redemption centers and reverse vending machines are effectively recycled into highly useful and marketable glass cullet (glass that is ready to be remelted).

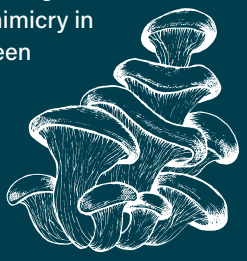
"Residents often want to be able to recycle everything—from the largest items to the smallest and most unusual plastic packaging

BIOMIMICRY AND RECYCLING

Biomimicry is an approach to innovation that draws its inspiration from nature. We see biomimicry in the way that airplanes were designed as the same shape of birds in flight, and we see it in Velcro that was inspired by the way burrs stick to an animal's fur.

When it comes to sustainable materials management, we can look to many different organisms that play a vital role in their ecosystems by decomposing materials to keep them in harmonious use. For example, oyster mushrooms, a delicious and powerful fungi, can break down a tough organic compound, called lignin, that other rot fungi cannot. Lignin is a crucial polymer that gives wood and bark its rigidity and resistance to rot, making it fairly stubborn to decomposition. However, oyster mushrooms have special digestive enzymes that can do it. Equipped with the superpower to break down lignin, these fungi help to recycle and supply a vital source of carbon to the ecosystem that would otherwise be inaccessible to other organisms.

When we look closely, all organisms, humans included, play a role in the interconnected web of all other species. How can we, like the oyster mushroom, be active participants in the web of materials management? Read more about biomimicry in the February 2015 "Green Chemistry" issue of *Conservationist for Kids*, available online at **www.dec.ny.gov/education/100637.html**.



and objects—and sometimes things just aren't viable to recycle," explained Dan Lilkas-Rain, RRNY Stakeholder, and Recycling Coordinator and head of the new Recycling and Composting Department at the Town of Bethlehem. "That's where creative reuse, refusing to acquire certain things in the first place, repair, and the other "Rs" come in."

KNOW BEFORE YOU THROW

According to a study conducted by the University at Buffalo in January 2021 that assessed recycling behaviors, 65 percent of recyclers in New York State never or only sometimes checked their local guidelines when unsure if something is recyclable. Despite good intentions, recycling based on what you believe should be recyclable, or what you remember was recyclable when you were growing up, is not as helpful as you may think, and can actually be disruptive to the success of recycling.

In New York State, recycling rules vary from place to place and, over time, can change within a specific location. Local guidelines vary for several reasons, including access to recycling technology and machinery, shifting material management contracts, varying local decision-making processes, and fluctuating market demand. Since rules differ across New York State, the "Check Your Local Guidelines" tool on the RRNY website can be a great help in keeping recycling streams clean and of quality to be turned into new products once again.

The current reality is that recycling is made up of a complex web of diverse people, new and old machines, and countless types of material. Proper recycling requires adaptability, focus, effort, and intention. It requires the continued focus of the men and women sorting the materials alongside the conveyor belts at recycling facilities, and of the engineers who design the grand machines with magnificent capabilities.

A beautiful thing about recycling is that there is opportunity to improve, change, and evolve as our economy and society does. As a recycling campaign, Recycle Right New York understands these complexities and, at the end of the day, still advocates that we recycle. But more importantly, that we reduce, reuse, and recycle right.

You can question, probe, and even sometimes get lost in the mystery of material management, but still feel pride when you choose to recycle right to keep our recycling streams clean and strong. While our current recycling system certainly has its flaws, there are thoughtful, creative, and caring people working very hard to maintain and improve the system.

If you would like to learn more about the ins and outs of recycling, visit **RecycleRightNY.org** where you can search the New York State Recyclopedia for item-specific information, including tips on reduction and reuse, and you can find your local recycling guidelines in just a few clicks. You can ask your pressing questions when you visit our social media accounts, website, or contact us directly at **info@recyclerightny.org**.

Recycle Right New York is here to remove the guesswork from recycling by providing the information and resources you need to recycle right.

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