

The ephemeral tennis ball: Addressing sustainability in sports

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Credit: Unsplash/CC0 Public Domain

Although I have played tennis my whole life, I found a special appreciation for it during the pandemic as it was one of the few outdoor, socially-distanced sports I could play with my classmates at Columbia

University. Our early morning casual games at the Riverside Park tennis courts were great, but I can't help but wish we had thrown out the old, dead tennis balls we were using and purchased new ones as it would have made our rallies much more exciting.

As students of environmental science and policy, we were very averse to throwing things in the garbage when we could still eke out some usefulness from them. Unlike us, most [tennis players](#) will always buy a new can of balls for every match and then discard the used [ball](#) after just a few hours of play with little regard for what happens to the ball after they leave the court.

Even though [major sporting events](#) have made great strides in improving their environmental-friendliness, such as this year's Tokyo Olympics making medals out of recycled electronics, using 100% renewable energy, and offsetting unavoidable greenhouse gas emissions, the sustainability of individual sports is still lacking.

For example, the pristine landscapes of golf courses infamously disrupt wildlife habitats and require an enormous amount of water and pesticides to maintain. Additionally, the [composite materials](#) in sports equipment, such as ski poles, bicycles, and archery bows, have large carbon footprints and are difficult to recycle.

And in tennis, the balls present an obstacle to making the sport truly sustainable.

Tennis ball production is not the most eco-friendly process. The high-visibility yellow felt coating on the ball is usually a blend of wool and nylon, which is a petroleum-based product. Plantations used to produce the rubber that's found in the core of the ball can threaten plant and animal biodiversity. And the supply chain associated with manufacturing can take the ball 50,000 miles and across 11 different countries from

start to finish.

Tennis balls are also essentially designed to be non-biodegradable, [single-use](#), disposable products, especially at the professional competition level.

During production, tennis balls are filled with pressurized air, which makes the balls bouncy, and then packaged in pressurized, plastic cans to keep the balls bouncy. Once the can is open and a ball starts getting knocked around, it slowly loses its pressurization, and therefore its bounce. The felt coating on the ball also gets fluffed up with each hit, which increases the drag and decreases the speed of the ball.

In professional matches, new balls are required after a certain number of games since they take a significant beating, occasionally getting hit faster than 140 miles per hour. At the US Open, one of tennis's grand slam events, this results in approximately 70,000 balls being used during the two-week competition.

Most recreational players can use the same set of balls for more than a few games before the ball degrades to the point where it affects the accuracy and speed of the shots. But even most novice players will be able to feel when a ball is dead and throw it away.

The end-of-life destination for the 125 million tennis balls sold and thrown away in the United States annually is sometimes pet shelters or the bottom of walkers, however, the majority end up in landfills. And while the disposable plastic tennis ball cans are technically recyclable, the odds of the can actually getting recycled in the US are not great.

So what can the waste-conscious tennis player do? And more importantly, what can tennis tournament organizers do to reduce the waste produced by tennis matches?

Wilson Sporting Goods is one company trying to address these sustainability and waste issues. In 2019 Wilson launched the Triniti tennis ball, which claims to be the "world's first eco-conscious, high-performance tennis ball." Triniti balls are made with a new type of rubber core that doesn't require pressurized air and are sold in an unpressurized paper sleeve. This new design means that the ball can stay fresh and bouncy four times longer than pressurized balls, and generally, the reviews are positive.

Apart from designing a better ball, other solutions to keep tennis balls out of the landfill a little longer include ball pressurizers, which can store used balls in a high-pressure tube so that they lose their pressure more slowly, or machines filled with gas that restore some of the bounce to the ball. There is even one company making tennis courts out of ground-up, recycled balls.

Although tennis balls physically amount to a tiny fraction of a percent of total landfill in the US, their environmental impact must still be addressed if event organizers, such as the International Olympic Committee, want to claim their competitions are environmentally sustainable. They need to think about every aspect of the event, all the way down to the tennis balls.

Professional tennis tournaments can lead the way when it comes to making this shift towards a low-waste sport. If waste-reduction policies, such as using longer-lasting balls and giving dead balls new life, can be adopted at the professional level, it has the potential to influence the behavior of players at all levels of competition and skill.

Such a trickle-down effect of using more sustainable and durable tennis balls might mean that one day I can stop by my local, family-owned sports store and buy a sleeve of Triniti balls that will realistically last me longer than a few pre-dawn rallies with my classmates.

Nothing beats the pop and hiss of opening a new can of tennis balls or the strong chemical smell that my mind now associates with neon yellow, but the short-lived nature of [tennis](#) balls means that the sport I and millions of others love just isn't environmentally sustainable. If innovations in sports technology and leaders who set the tone for professional sports can bring us to the point where we aren't harming the planet in the name of friendly competition, I would be glad to give up those sensations.

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