

The Good and the Bad of the AI Environmental Tradeoff

By Claire Nichols

Artificial intelligence has many applications in today's world, including image generation, problem solving, and predicting patterns, just to name a few. Though AI can do all of this, it comes at a big price: harming the environment. The debate over AI is heated. Are its rapid, potentially lifesaving breakthroughs worth causing damage to the Earth? Is AI to be prioritized, or should the planet's wellbeing be put first? Is a bridge between AI and sustainability even possible?

AI has the potential to become a worldwide asset for predicting weather with increased accuracy. People living in Kenya, for example, already use AI to predict droughts, enabling them to manage livestock, prepare food, and save hours looking for green pastures. The ability to predict accurately is invaluable for helping people prepare for all sorts of situations or even get to safety in severe weather.

Additionally, AI can aid waste management and conservation efforts. AI connected to sensors can identify waste streams and sort them quickly. It can predict waste trends and help the people collecting it to prepare accordingly. It can also optimize waste collection routes by analyzing and predicting traffic conditions, thus reducing carbon emissions.



Recently, there have been breakthroughs in a new application of AI known as geo-mapping. AI makes it possible to quickly generate overlayed, detailed maps of ecosystems, biodiversity, fires, floods, and roads. It is so powerful that it has the capacity to count the number of trees on the planet or tell mapmakers the direction that even small creeks flow.

So, AI can make our lives and *preserving the environment* easier. But the question is, do the potential positive uses outweigh the negatives? Altamont Computer Science teacher and Robotics Team coach Joseph McKinley says, "It could be too early to tell." He adds, "You *do* need to consider the environmental impacts." There are many of those:

As AI has surged in power and popularity, more large, resource-sucking "server-farms" are being built across the globe. These farms come at a big cost: they consume an incredible amount of water per year (six times that of Greenland), produce hazardous substances like lead and mercury, need rare-earth elements that are often unethically mined, and consume a concerning amount of electricity.

“Water is a very valuable resource that is shrinking. Its economic value will only rise,” warns Altamont Earth Science and Environmental Science teacher Julie Camp. The use of massive amounts of water to cool down large server-farms will not help this global situation, as it consumes more and more of a critical and finite resource.

And according to the International Science Council’s report, [*Navigating New Horizons*](#), AI could soon consume 35 percent of Ireland's energy per year. The report says any request to Chat GPT consumes *ten times* the electricity of a Google search, or the equivalent of running a low-lumen LED light bulb for an hour.

“We can use AI in simplistic ways,” McKinley says. “It only saves seconds. Do things without AI if you have the time or energy to.” He adds that “public uses of AI are more on the trivial side, though there are use cases where it is beneficial.” McKinley’s takeaway: AI is not a necessity, but an extra tool that should be used when *necessary*.

Large amounts of electricity are required for AI. The skyrocketing demands for AI will almost certainly increase the amount of climate-changing fossil fuels burned, pumping pollution into the air. The need for large-scale data centers is only growing, but at the same time, old coal plants are retiring, ushering in the use of more natural gas, which – though cleaner than coal – still leads to massive releases of greenhouse gas.

According to *North American Clean Energy* magazine, Muah AI, a chatbot system, is leading in trying to create a balance between energy-hungry AI and sustainable electricity: the company is building solar-powered servers in California and parts of Asia to counteract the energy demands of its servers.

Mr. McKinley and other experts point out that “Industry is the main driver of AI usage.” For just two well-known examples, Google has incorporated AI into its online searches. Snapchat has as well, offering all users an AI chatbot. While it’s best to eliminate *unnecessary* use of AI, and AI *can* be used for many positive things – environmentally and otherwise – it remains to be seen whether industry, consumers, and governments will minimize its potentially devastating effects on our living planet.