Robot dog sniffs out methane at California landfill

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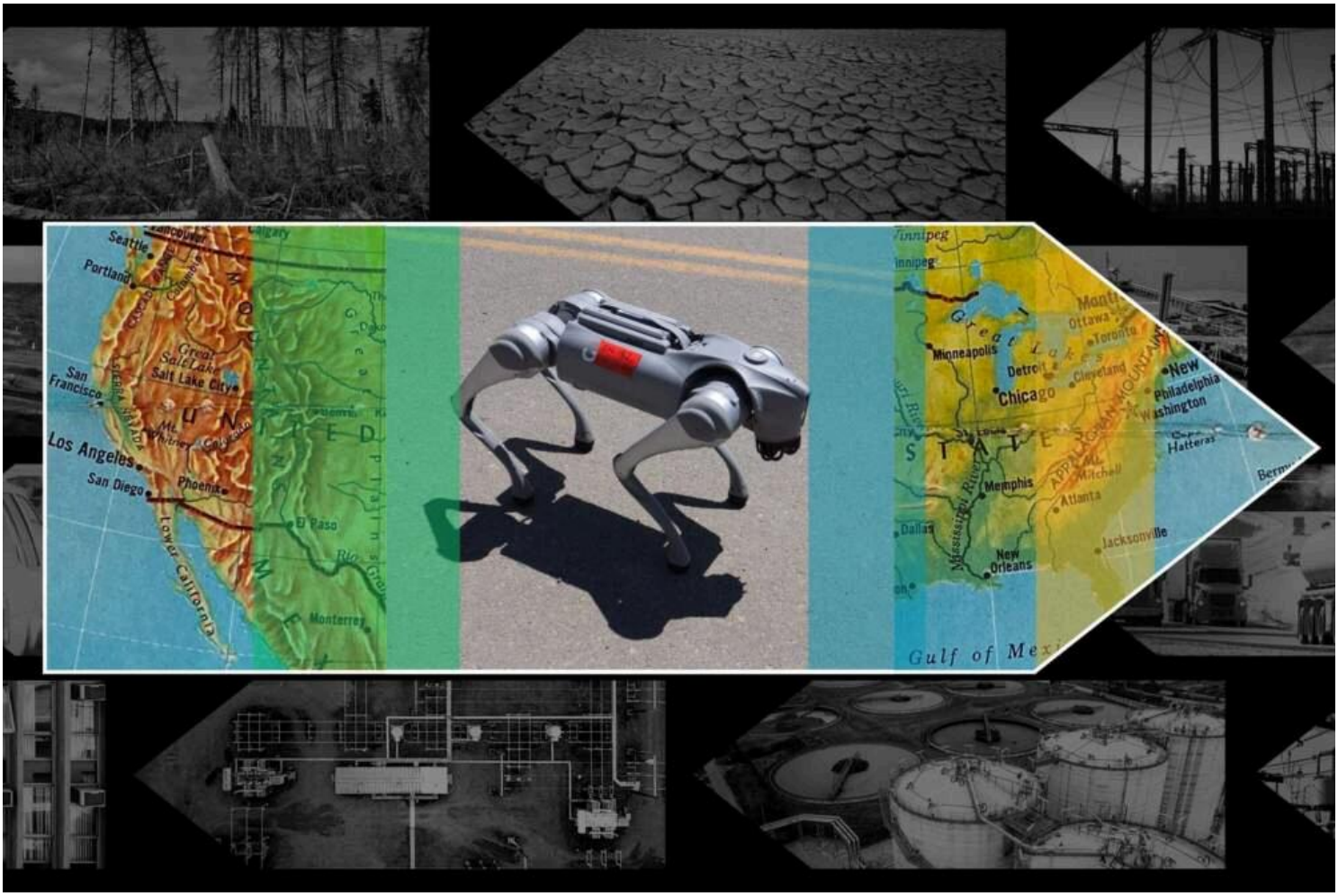
By Peter O'Dowd and Chris Bentley



Meet this trash-sniffing robo-dog. (Courtesy Orange County Waste & Recycling)

A mechanical dog unleashed at a California landfill can scamper over mountains of trash in hot pursuit of methane leaks.

The four-legged robot is part of a pilot project that Orange County Waste & Recycling has been testing to help it find the planet-warming gas leaks that are common at landfills worldwide.

“This is some of the best available technology that we're trying out today in order to protect public health and the environment,” landfill director Tom Koutroulis said.

Methane doesn’t last as long in the atmosphere as carbon dioxide, but it’s a much more powerful greenhouse gas. According to the Environmental Protection Agency, landfills are the biggest producer of methane pollution in the U.S. after oil and gas production and agriculture.

They create the equivalent of 24 million gasoline-powered cars driving for one year, the EPA said.

Large landfills are required to capture methane that naturally occurs when garbage decomposes. Koutroulis said landfill operators cover layers of trash with dirt to keep the gas contained, but a process known as differential settlement causes the landfill to shift and eventually leak.

"RoboDog" is part of the SCS Remote Monitoring and Control Resources at SCS Engineers.

https://www.scsengineers.com/scs-articles/ai-takes-on-trash-transforming-landfills-for-a-sustainable-future/

Continued

Wood piles at the Western Disposal transfer station in Boulder, Colorado. (Peter O'Dowd/Here & Now)

The technology makes the job of finding those leaks much easier. Koutroulis said that a human team walking a 500-acre landfill with handheld methane detectors could get the inspection done in three days to a week but “with a drone, we can manage that in just a couple of hours.”

Before leaving office, the Biden administration took steps to hold landfill operators more accountable for mishandling methane leaks. Satellite data in recent years also revealed landfill emissions are likely much larger than reported.

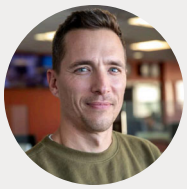
The new Trump administration will likely take a “less aggressive stance” on emissions monitoring, said Bryan Staley, president of the Environmental Research and Education Foundation.

But there are still “quite a few” companies that are still motivated to manage their emissions to meet sustainability goals and to “add to their potential profit over time as they convert that gas to energy,” Staley said.

Certain types of garbage create methane much faster as it decomposes. Gas from food waste can be tougher to capture because it breaks down so quickly, Staley said. However, composting efforts in some U.S. cities have struggled to reach large-scale production because food scraps are often contaminated with glass, plastic and harmful “forever” chemicals.

“The single most important factor has to do with how aware are we as a society regarding what we throw away and, quite frankly, what we purchase,” Staley said. “What we purchase ultimately dictates what ends up in the trash can.”

This segment aired on January 27, 2025. Audio will be available soon.



Peter O'Dowd Senior Editor, Here & Now

Peter O’Dowd has a hand in most parts of Here & Now — producing and overseeing segments, reporting stories and occasionally filling in as host. He came to Boston from KJZZ in Phoenix.

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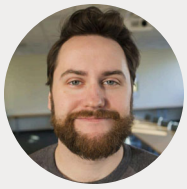

Chris Bentley Producer, Here & Now

Chris Bentley is a producer for Here & Now, where he has produced daily news and features since 2015. Chris came to the show from Chicago.

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