The next big thing for biodiversity? Drones

We will need to restore billions of hectares of land over the coming years. Luckily, new AI and drone technology works ten times faster than planting trees by hand.

Temps de lecture : minute

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After decades of exploitation, much of the Earth's land is barren, deforested monoculture. Around a quarter has been degraded by farming, mining, logging and other practices.

Our 'take, take, take' approach to agricultural and industrial land use has seen biodiversity take a hit. Ironically, as these fragile and complex ecosystems are damaged, yields often also decrease.

Likewise, when land is degraded, soil carbon and nitrous oxide are released into the atmosphere – contributing to climate change. The issues of global warming and biodiversity loss go hand in hand, and land and wildlife restoration is a key part of the solution.

> *If current trends continue, 95% of the Earth's land mass could be degraded by 2050. But how do you go about restoring billions of hectares of land?*

Regeneration techniques can be inefficient and expensive. Monitoring the behaviour of an endangered species is a complex process; so too is developing a detailed understanding of a land mass that needs to be

reforested.

However, in recent years, the use of drones for land restoration has become viable. Drones are basically remote-controlled flying robots – more commonly associated with shady military practice and <u>causing carnage at Gatwick Airport</u>.

The use of drones almost always carries <u>social implications</u> - tied up with privacy and safety. These will need to be resolved if their use in the conservation sector is to become more widespread. But initial results look very promising indeed.

One company, which has just launched the third iteration of its 'sky tractor' environmental tech platform, is restoring land 11 times faster than traditional methods. Dendra Systems has developed a process a third cheaper than hand-planting trees, which could cover around 85 football pitches worth of land a day.

Founded by Dr Susan Graham, Dendra is working with the world's leading natural resources companies to observe land, and plan and enact its restoration. It uses drones to collect high-res data on the vegetation,

species, condition, and erosion characteristics of each and every square metre of land. The technology can identify 120 species from the sky.

Then, Dendra's proprietary AI software shows what needs to be done, and an aerial seeding process is undertaken to rewild quickly and effectively. Conservation managers are given accurate data to assist their stewardship work going forward.

"The natural world needs our help more than many other industries where automation and AI can be applied", Dr Graham comments.

> *"Technology, with the possibility to make exponential change to our world, is needed if we are to restore the truly staggering amount of land that has to be remediated."*

She concludes:

"For hundreds of years we automated and industrialised the destruction of wildlife habitats, now we are starting to put right our mistakes on a large scale and for a much reduced cost."

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