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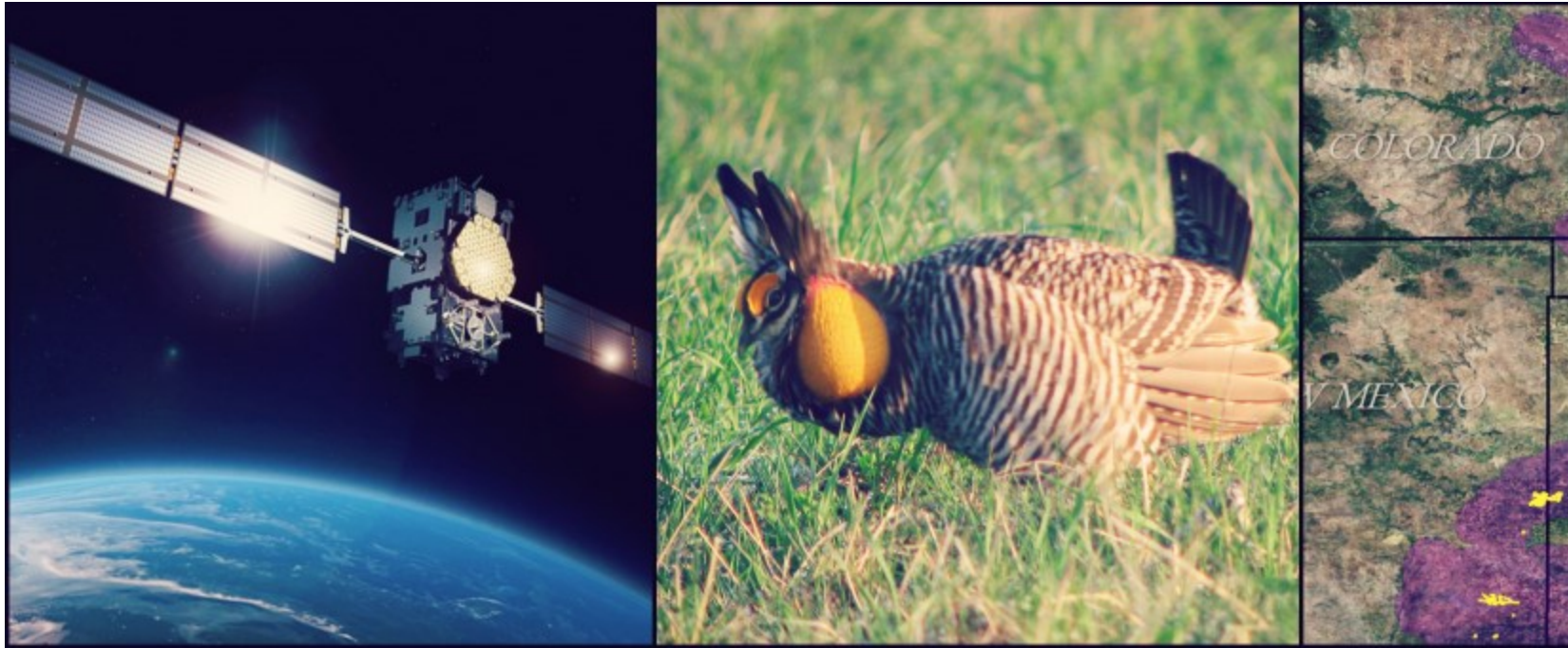Have an account? **Sign in**

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Defenders of Wildlife Announces New Satellite Data Program to Track Wildlife Habitat Loss

- bureau EnviroNews Nature
- by Julia Travers
- on August 11, 2017

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(EnviroNews Nature) — On Aug. 3, 2017, Defenders of Wildlife (Defenders) released a pilot report demonstrating how satellite dat[a] remote sensing and cloud computing can be used to monitor wildlife habitat loss. Defenders' Center for Conservation Innovation (CCI), which focuses on the use of technology and data in protecting endangered species, relied on figures from NASA and the European Space Agency along with Google Earth Engine to measure habitat disturbances in the range of the lesser prairie chicken (*Tympanuchus pallidicinctus*). Specifically, the new method detects three forms of habitat disturbance: oil and gas well pads, wind turbines and agricultural conversion.

"Using satellite data to document habitat loss can provide more accurate and up to date information, which is critical for making informed decisions about how to protect and recover these species," Defenders Conservation Data Specialist Michael Evans told *EnviroNews*. Evans co-authored the report with Ya-Wei Li.

In a press release, Jamie Rappaport Clark, Defenders President and CEO, states the technique "can even help determine whether developers are complying with their [Endangered Species Act] (ESA) permits, thereby increasing protections for imperiled species and their habitats." She also described the initiative as "a new and cost-effective way to monitor wildlife habitat."

In the study, *Monitoring Habitat Loss for Endangered Species Using Satellite Data: A Case Study of the Lesser Prairie Chicken*, Defenders used algorithms developed in-house to measure habitat disturbance of the lesser prairie chicken between September 2015, when ESA protections for the species were removed, and April 2017. It was determined that more than 258,000 acres of habitat were lost in the species' ranges within Colorado, Kansas, Oklahoma, New Mexico and Texas. The majority of this loss resulted from agricultural conversion, while the development of oil and well gas pads and wind farms also caused habitat disturbances.

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In the release, Defenders "encourages renewable energy developers to identify suitable, wildlife-friendly sites for wind and solar development through its 'Smart-from-the-Start' program." It also calls on the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) to embrace "open data and technology" by posting all ESA plans and permits online. Defenders says this transparency would empower it and other stakeholders to monitor the footprints of various projects impacting wildlife habitats and to in turn notify relevant government agencies of violations.

In the future, Defenders plans to launch an online search tool for the remote-sensing and satellite data. Evans explains:

> The idea is that someone can choose an area of interest – either a species' habitat or an area undergoing development – and get notifications in real time when habitat changes are detected… Given the large number of permits and agreements issued annually, a tool that can be used by both the Services and conservation partners to quickly and efficiently detect agreement violations by permittees would be an important step toward ensuring endangered species receive the full benefits of ESA protections.

He adds that making the tool available to the public will enable Defenders to "recruit the public to help the Services identify violations of ESA regulations, and fill important knowledge gaps about the status of habitat for imperiled species."

Evans says the CCI will be applying this technique to other endangered or imperiled species, including the greater sage grouse (*Centrocercus urophasianus*), which is threatened by "increasing attempts now to conduct oil and gas leasing in its habitat." In early August, Department of the Interior Secretary Zinke announced plans to revise the historic 2015 sage grouse conservation plan – a move that has conservationists and stakeholders across the board concerned.