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Research paper opens lens on how much pollution may be affecting Canada’s endangered plants and animals

As threats to plant and animal species across Canada continue to escalate, a new study, led by University of Lethbridge plant ecologist Dr. Jenny McCune, has provided a baseline look at how sources of pollution overlap the known ranges of nearly 500 at-risk species.

The research paper, published recently in the journal *FACETS*, notes that of the nearly 500 at-risk species, on average, 57 per cent of the area inhabited by each species also contained at least one source of pollution. Yet, the official status reports for many species do not mention pollution as a potential threat, even for those with a high degree of coincidence with pollution sources.

“We probably expected the overlap to be high because Canada’s biodiversity is concentrated in the south as is our human population and therefore the bulk of our industrial activity,” says McCune, a professor in the U of L’s Department of Biological Sciences.

McCune is quick to note the difference between scope and severity. While McCune and her colleagues have mapped sources of pollution across Canada and calculated their spatial overlap with the species at risk, that work only translates to scope, in other words, what percentage of species might be affected by and is coming into contact with a threat.

“Many of these pollutants could be harmless to us and to the species we’re worried about, but our idea is that some of them could be, if not causing declines in species, potentially making it worse and adding stress to these species that are already on the edge,” she says.

McCune is a Liber Ero Fellow, a post-doctoral fellowship program that supports research and training of emerging conservation leaders during the early stages of their careers. The group, which was initiated in 2013, adds up to five fellows per year and has grown to nearly 30 representatives who are spread out across the country. This latest paper,

with McCune the lead author, is one of many ongoing projects with which the fellows are involved.

“In Canada, the biggest threats to species are loss of habitat to residential and commercial development, trampling and disturbance through recreation, and introduced invasive species,” says McCune. “Pollution in the form of invisible contaminants of the air, soil and water could be kicking species when they are already down. Most of the thousands of chemicals released to the environment are not tracked, nor their impact on plants and animals measured. The goal of our study was to quantify the potential for pollution to affect individual species at risk in Canada.”

She maintains that more work needs to be done but that her group’s paper can serve as a reference point for further research.

“We need more research into the impact of contaminants on species at risk in Canada to measure the degree to which pollution is adding to the problem,” she says. “We want this to be a tool where people can actually look up the species they are working on and see how much of their habitat is actually coincident with a source of pollution. They can then use that as a baseline for assessing severity.”

A link to the FACETS article can be found here: <https://medium.com/facets/pollution-might-be-a-bigger-threat-to-endangered-species-in-canada-than-we-think-15bcaae1831>.

To view online: <https://www.uleth.ca/unews/article/research-paper-opens-eyes-how-much-pollution-may-be-affecting-our-endangered-species>

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