Wild pigs invade Canadian provinces—an emerging crisis for agriculture and the environment

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A sounder of wild pigs roaming in Saskatchewan, Canada. The photo shows mature females and their litters of various ages feeding on harvested crop residue. The hybrid wild pigs -- a mix of wild boar and domestic pigs -- have lighter colored fur than true Eurasian wild boar. Credit: Dan Sakar

Wild pigs—a mix of wild boar and domestic swine—are spreading rapidly across Canada, threatening native species such as nesting birds, deer, agricultural crops, and farm livestock, research by the University of Saskatchewan (USask) shows.

The first-ever published survey of the wild pig distribution in Canada has found a rapid expansion in the invasive species' range, which is increasing by nine per cent a year.

"Wild pigs are ecological train wrecks. They are prolific breeders making them an extremely successful invasive species," said Ruth Aschim, a Ph.D. student who led the research published today in *Nature Scientific Reports*. "Wild pigs can cause soil erosion, degrade water quality, destroy crops, and prey on small mammals, amphibians and birds."

Wild boar were brought from Europe in the late 1980s and early 1990s to diversify Canadian livestock production. Others were imported as 'penned game' for shooting.

The hybrid wild pigs have rapidly multiplied and spread, making them the most prolific invasive mammal in Canada.

By 2017, they had spread exponentially across Canada, from British Columbia to Ontario and Quebec, with the majority in the south-central half of Saskatchewan. Their territory has increased by 88,000 square kilometres per year, on average, over the last decade.

A mature adult wild pig photographed at night in Saskatchewan, Canada. Both males and females have large tusks. The territory of a male wild pig can be as large as 300 square kilometers in the summer, with sows covering up to 230 kilometers. Credit: Klint Brownridge

Concentrated on the Canadian prairies, wild pigs currently have a range of over 750,000 square kilometres, the USask research found.

The researchers found the territory of a male wild pig can be as large as 300 square kilometres in the summer, with sows covering up to 230 kilometres.

The research team, based in USask's animal and poultry science department in the College of Agriculture and Bioresources, has mapped the pigs' range as it expands since their initial introduction onto the landscape in the early 1990s.

Their maps, published alongside the USask research, show that wild pigs are now firmly established in Saskatchewan, Alberta, and Manitoba, with populations scattered in B.C., Ontario and Quebec.

Newfoundland and Labrador, New Brunswick, Prince Edward Island, Nova Scotia, the North West Territories, the Yukon, and Nunavut do not currently host wild pig populations. A group of escaped wild pigs in the Yukon were removed last summer.

Wild pigs typically weigh between 120 and 250 pounds. They have around six piglets per litter, per year.

They are adapted to very cold temperatures, and can breed in any season, living in 'pigloos' burrowed into the snow. Sexually mature within four-to-eight months, they feed on all common types of farmers' crops, including corn, wheat and canola. They also eat insects, birds, reptiles and small mammals.

"The growing wild pig population is not an ecological disaster waiting to happen—it is already happening," said USask's Ryan Brook, lead researcher for the Canadian Wild Pig Project, a Canada-wide research program, and Ruth Aschim's supervisor.

"Wild pigs are so widespread that they are a major challenge to control in Canada and eradication is only possible with a comprehensive plan to deal with this highly efficient invasive species. In Saskatchewan they are already posing significant risks to agriculture and livestock production. Our mapping of their expanding territory shows just how quickly they

are spreading. This is a rapidly emerging crisis."

The USask research team surveyed the pig distribution using eight different complementary monitoring methods, including capturing and fitting tracking collars to wild pigs, trail cameras, surveying hunters, government staff, and farmers, and getting the public to report sightings. The team did not record wild pig numbers in this project.

"Wild pigs are able to survive and thrive in a wide range of environments and climates," said Aschim. "They are omnivores, very adaptable and are able to rapidly expand their range into unoccupied areas."

Farmers have reported wild swine raiding farms, scattering, frightening, and interacting with livestock, destroying crops and eating hay bales and grain. They can also be destructive and use their long noses and thick strong necks to root up soil and vegetation, degrading habitat, and tearing up ground set aside for conservation purposes.

Their main range is on agricultural areas south of Saskatchewan's boreal forest.

Wild pigs can adapt to almost any climate, from North Africa to Russia and Canada, and now have the widest distribution of any large mammal on earth. They thrive in the U.S. and Australia and have been documented in the Galapagos Islands. They cost U.S. agriculture more than one billion U.S. dollars per year.

More information: Ruth A. Aschim et al. Evaluating Cost-Effective Methods for Rapid and Repeatable National Scale Detection and Mapping of Invasive Species Spread, *Scientific Reports* (2019). DOI: 10.1038/s41598-019-43729-y

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