

Japanese beetles could spread throughout Washington state in 20 years

July 18 2023



Credit: Washington State Department of Agriculture

Without intervention, the colorful but devastating Japanese beetle could make its way across the evergreen state within two decades, according to a study of their potential dispersion.

The iridescent, green-and-copper beetles damage plants by "skeletonizing" their leaves, chewing up all the soft green parts between

the veins. They eat over 300 plants and pose a serious threat to Washington agriculture as some of their favorite crops include grapes, hops and cherries.

Once established, Japanese beetles are tough to eradicate, but it may be possible to keep them under control, said David Crowder, a Washington State University entomologist.

"These coordinated, intense efforts early in the invasion are really critical because if we wait too long, it just becomes an endemic problem," said Crowder, senior author on the study published in the *Journal of Economic Entomology*. "Hopefully, we can prevent the beetles from expanding beyond the quarantine areas, at least in the near future."

The study found that Japanese beetles would most likely thrive in the dry, agriculture-rich southeastern part of the state, where the first individuals were found three years ago. If they were to escape the quarantines in place in those areas, modeling shows they would likely spread throughout the region from Yakima to the Tri-Cities and north past Moses Lake. While the Cascades are a barrier, there are large areas of western Washington that also have highly suitable habitat for Japanese beetles.

Japanese beetles have already spread through much of the United States. They are believed to have arrived first on the East Coast in 1916 but are just now reaching Western states. The first beetles detected in Washington were found in a [parking lot](#) in the town of Sunnyside in 2020. Two years later Washington State Department of Agriculture trapped more than 20,000 in Sunnyside and Grandview. So far in 2023, trapping has shown the beetles mostly remain in those areas, though there has been one report just outside of Seattle.

This evidence shows that quarantine zones can be effective, the

researchers said. Quarantines provide guidelines such as making sure residential yard waste does not go out of the area and agricultural trucks are thoroughly cleaned.

While the beetles can fly, it is often humans who help them reach new areas.

"People can notice the adult Japanese beetles very easily, but it's very hard to notice them in the earliest stage of life, the eggs and larvae, so people might unintentionally help with their dispersal," said Gengping Zhu, WSU research assistant professor and the study's first author.

Japanese beetles lay their eggs near the [soil surface](#) and spend a lot of their life cycle underground as grubs feeding on roots and other organic material in the soil. When they turn into beetles, they emerge to feed on plants. Some of their favorite plants are grapes, hops and cherries, which may partially explain their appearance first in southeastern Washington.

When they were first found in southeastern Washington, the state department of agriculture, working with [federal agencies](#), took the lead on setting up quarantines there. WSU scientists have joined in the effort to help understand where the bugs might move next.

The effort to control the spread needs the help of the agriculture industry and residents to report where the beetles are found and take appropriate measures, Crowder said.

"Having an engaged citizenry is really important to preventing the spread of [invasive species](#) in general, even beyond the Japanese beetle," he said. "Problems with invasive species are going to get worse and worse with [climate change](#) and increased human connectivity. The more coordinated we are, and the more we can identify the early stages of these invasions, the better."

More information on how to spot Japanese beetles and help prevent their spread can be found at: agr.wa.gov/beetles.

More information: Gengping Zhu et al, Potential distribution and spread of Japanese beetle in Washington State, *Journal of Economic Entomology* (2023). [DOI: 10.1093/jee/toad116](https://doi.org/10.1093/jee/toad116)

Provided by Washington State University

Citation: Japanese beetles could spread throughout Washington state in 20 years (2023, July 18)
retrieved 29 April 2024 from
<https://phys.org/news/2023-07-japanese-beetles-washington-state-years.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.