



To: Public Works and Transportation Committee

Date: January 28, 2025

From: Chad Paulin
Director, Climate and Environment

File: 10-6160-07-01/2025-
Vol 01

Re: **Provincial Invasive Species Monitoring Update: Northern Giant Hornet**

Staff Recommendation

That the staff report titled “Provincial Invasive Species Monitoring Update: Northern Giant Hornet” dated January 28, 2025 from the Director, Climate and Environment be received for information.

Chad Paulin, M.Sc P.Ag
Director, Climate and Environment
(604-247-4672)

Att. 1

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER 	
SENIOR STAFF REPORT REVIEW	INITIALS:
APPROVED BY CAO 	

Staff Report

Origin

Northern giant hornets (*Vespa mandarinia*) are native to South and East Asia. The first reports of these species on the Pacific Coast began in 2019 and it is estimated that they were likely introduced via shipping containers. Permanent populations of these insects in BC pose a significant risk to local ecology and the local agricultural sector.

This report summarizes the local and regional response to the detection of this species in BC, which has led to the recent provincial statement that the province has been deemed “Northern giant hornet-free.”

This report supports Council’s Strategic Plan 2022-2026 Focus Area #3 A Safe and Prepared Community:

3.4 Ensure civic infrastructure, assets and resources are effectively maintained and continue to meet the needs of the community as it grows.

This report supports Council’s Strategic Plan 2022-2026 Focus Area #5 A Leader in Environmental Sustainability:

5.2 Support the preservation and enhancement of Richmond’s natural environment.

This report supports Council’s Strategic Plan 2022-2026 Focus Area #6 A Vibrant, Resilient and Active Community:

6.2 Enhance the City’s network of parks, trails and open spaces.

Analysis

Northern giant hornets were first detected on the Pacific Coast in Nanaimo, BC mid-2019 and in Washington State U.S.A. in late-2019. Northern giant hornets (the hornets) are the world’s largest species of hornet. They range in size between 2.5 cm to 5 cm and possess distinctive characteristics including a bright orange head, large jaw and black eyes (Attachment 1). The hornets prefer to nest underground or above ground in tree stumps. The hornets primarily feed on other insect colonies and their aggressive hunting strategy poses a significant risk to local, native insect populations that have not developed evolutionary defense mechanisms to protect themselves. It’s estimated that 40 hornets have the ability to destroy up to 30,000 North American bee species within just a few hours, which also poses a significant risk to the region’s agricultural sectors that depend on pollination for food production. Despite these threats, the hornets do not exhibit aggressive behavior towards humans but will sting to defend their nest.

Invasive species in Canada are managed by all three levels of government. The federal government is responsible, in part, for monitoring and managing pests that pose a threat to Canada’s ecosystems and economy through the federal Plant Protection Act. Invasive species in BC are managed by the province through provisions under the Weed Control Act and Forest and Range Practices Act. The

provincial Community Charter Act allows Local Governments to manage invasive species with bylaws and policies. Richmond developed its Invasive Action Plan in 2016 to guide the management of invasive species based on threats to human health and infrastructure in the community. Due to its recent introduction to BC, the hornet is not currently listed in the Invasive Action Plan.

Summary of Early Detection and Rapid Response Activities for Hornets

The framework for responding to the introduction of invasive species is based on Early Detection Rapid Response (EDRR) principles. To determine if an invasive species requires an EDRR the province assesses its potential impacts to the environment, the economy, and human health. During the EDRR screening process, the province will also work with federal agencies to determine inter-governmental management responsibilities. To support the EDRR response, the province maintained responsibility and sought to work closely with officials in Washington State to coordinate efforts.

In September 2019, Canadian beekeepers identified and destroyed a colony of the hornets in Nanaimo, BC. Concurrently, a local beekeeper in Blaine, Washington also reported hornet attacks on private bee colonies. These reports prompted the Province and Washington State to issue public pest alerts and established a coordinated management approach. Survey efforts began in bordering jurisdiction between the Fraser Valley and Whatcom County that focused on surveillance, trapping and public awareness. Traps were baited with sap, designed to attract Queen Hornets emerging in early spring. Support from the local community was also quick to develop which lead to a public campaign in Washington that installed and monitored over 700 additional traps.

In 2020 and 2021, both BC and Washington had confirmed additional sightings of the hornet within jurisdictions between the Fraser Valley and Whatcom County. Although a few individual sightings were confirmed in areas between White Rock and Abbotsford between 2019 and 2021, no nests were discovered in the Fraser Valley or the Lower Mainland. In 2021, the Washington State Department of Agriculture successfully tagged a live hornet with a radio tracker that led to the discovery of the first nest in a cavity of a tree. U.S officials destroyed the nest with a combination of equipment and carbon dioxide. A total of 98 hornets and 190 larvae were recorded and a total of four nests were identified and destroyed in Washington between 2020 and 2021.

After 3 consecutive years of surveillance with no detections of the hornets in BC, the province declared BC “Northern giant hornet-free” in December 2024. Although the surveillance and monitoring program has concluded for the hornet, the Province and Washington will continue to pursue any potential sightings of the pest through their respective online platforms. Staff are also preparing communications for Richmond residents and the City’s 24 hour hotline remains activated to respond to any community questions on invasive species.

Financial Impact

None.

Conclusion

The Northern giant hornet is an invasive pest that was detected within bordering jurisdictions between BC and Washington State. With a prompt coordinated approach, community awareness and innovative management tactics, both BC and Washington has had no sightings of the pest for 3 years. As a result the province has declared BC “Northern giant hornet-free.”



Taryn Hesketh
Environmental Coordinator
(604-276-4216)

Att. 1: Northern giant hornet identification Poster

Northern giant hornet

Vespa mandarinia



Photo: Hanna Royals, Museum Collections: Hymenoptera, USDA APHIS PPQ Bugwood.org

Northern giant hornets have been in the news lately. Luckily, there have been no confirmed sightings of this invasive species recorded in Richmond.

Here's what you need to know:

Identify

Northern giant hornets:

- Have an enlarged head
- Have large black eyes
- Can be different shades of orange
- Have yellow and brown abdominal stripes

The worker hornets are approximately 3.5 cm in length and queens can be up to 4 to 5 cm in length with a wingspan of 4 to 7 cm.

Avoid

If you come across a hornet nest:

- Avoid, if possible
- Contact a professional to remove it if it's on your property

Report

If you've seen a northern giant hornet, please report it to the Invasive Species Council of BC:

- 1-888-933-3722
- <https://bcinvasives.ca/report>
- Download app:



App for **Android**



App for **Apple**

For more information about the northern giant hornet or invasive species in Richmond:

604-276-4316 | invasiveplants@richmond.ca

