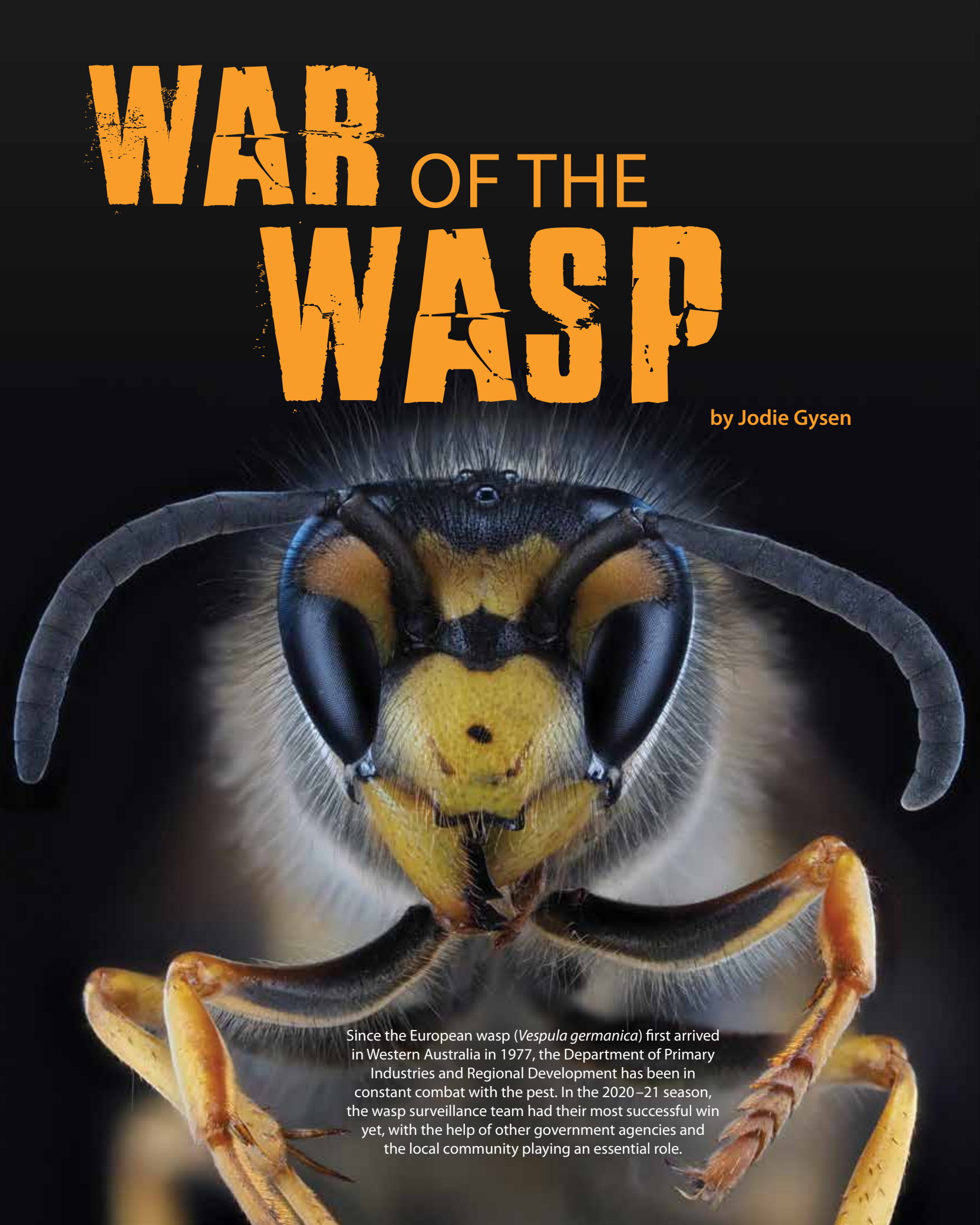
WAR OF THE WASP

by Jodie Gysen



Since the European wasp (*Vespula germanica*) first arrived in Western Australia in 1977, the Department of Primary Industries and Regional Development has been in constant combat with the pest. In the 2020–21 season, the wasp surveillance team had their most successful win yet, with the help of other government agencies and the local community playing an essential role.

Each year, fertilised European wasp (*Vespula germanica*) queens arrive in Western Australia aboard freight and cargo from the eastern states, where they are well established. For 45 years, the Department of Primary Industries and Regional Development (DPIRD) has been waging a war on the species in an effort to prevent it from establishing in WA.

If established, European wasps could potentially have a harmful impact on ecosystems, beehives, grape and stone fruit crops, and the enjoyment of an outdoor lifestyle.

In 2018–19, DPIRD's annual European wasp surveillance program faced its greatest challenge when the season ended with 166 nests detected. This was the largest number of nests found in one season during the life of the program.

Over three years, DPIRD's surveillance team deployed more than 9000 surveillance traps, and staff traversed thousands of hectares, resulting in just 14 European wasp nests detected and destroyed during the 2020–21 season —the lowest number in 12 years.

What is even more incredible was that all 14 nests were new wasp incursions, meaning the team had managed to find and kill every nest in 2019–20. Without detection and control, one European wasp nest can lead to 10 or more new nests in the next season.

This is a big win for the program.

"When we saw the huge spike of nests in early 2019, particularly in and close to bushland along the Darling Scarp, the department ramped up its surveillance program and committed three years of additional resourcing and sustained effort to detect, delineate and extinguish wasp hotspots," DPIRD technical manager John van Schagen said.

"This included strong collaboration from local government, other departments and the community, as well as increased reporting of suspected European wasp sightings from the public."

Additional resourcing in 2018–19 led to a 30 per cent reduction in nests. However the battle was not yet won, as European wasps continued to spread the next season into inaccessible bushland areas, making traditional lure, search and destroy methods almost impossible.

"It was for this reason we piloted a baiting program in 2019–20. Officers drew on information from the eastern states, New Zealand and Israel to implement the program, and installed 257 baiting stations across more than 2500 hectares of continuous bushland, ranging from Lesmurdie to Martin," Mr van Schagen said.

"The baiting program, which posed negligible risk to non-target species, contributed hugely to the success of the 2020–21 campaign."

The result was unprecedented. In 2020–21 there were no nests detected in the prior hotspot areas across the Perth Hills, including Martin, Orange Grove, Kalamunda, and Mundaring.

European wasps have been driven back from the brink of establishment.

"We will continue to carry out surveillance in these areas to ensure localised eradication.

"The effectiveness and application of the baiting program will be evaluated to determine future use as part of a European wasp integrated pest management strategy."

Previous page
Main European wasp (*Vespula germanica*).
Photo – Holger T.K./Adobe Stock

Above The Darling Scarp, free from European wasps after three years of intensive surveillance and control efforts.
Photo – Jiri Lochman

Ecological disaster

The ecological threat posed by European wasps is more severe than a lot of people realise. Being meat eaters, they actively predate on invertebrates such as spiders, caterpillars, bees and flies, and interrupt ecosystems by usurping and monopolising food resources. They have even been seen killing chicks in the nest.

"One wasp colony during a single 12-month season can collect up to 100kg of insect prey to feed the growing larvae. This equates to 3.5 million big blowflies or many more if they collect smaller insects—and this is one reason why they are such an ecological disaster when they become established in new localities." (Dr P Spradbery, Canberra Times *September 2012).*

European wasps can quickly and exponentially colonise new areas. For example, in 1945 an infestation of seven nests in New Zealand multiplied over six years to infest more than 80,000 square kilometres.

In WA, more than a million square kilometres have been infested in less than 50 years, now reduced by successful collaboration between government, industry and the public.

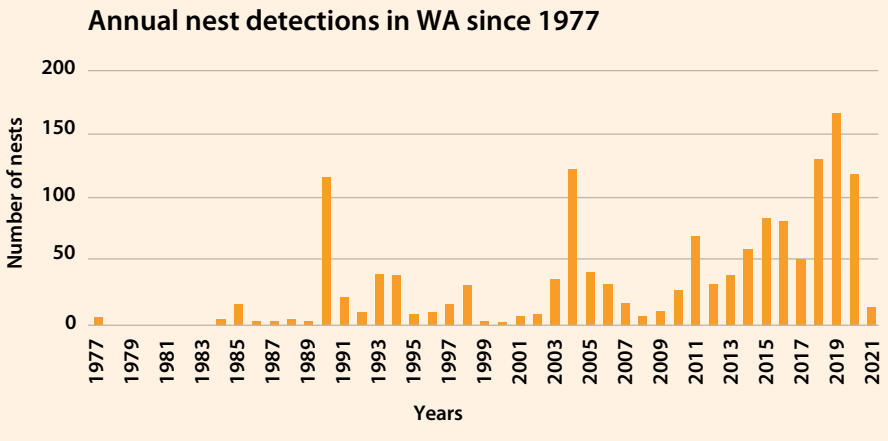
European wasp colonies commonly surpass 5000 wasps per nest, and if left unchecked one nest can lead to populations of more than 10 nests per hectare, equating to at least 50,000 hungry wasps per hectare. If European wasp became established in WA it is estimated that within ten years there could be tens of thousands of nests in metropolitan Perth alone.

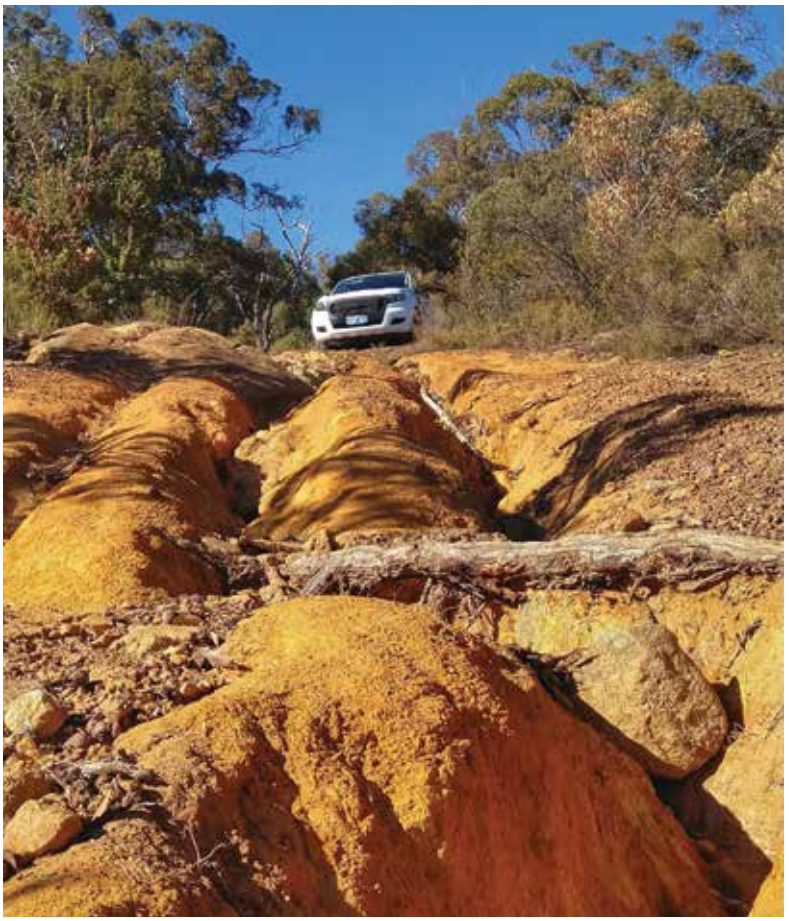
"If established, European wasps could potentially have a devastating impact, disrupting whole ecosystems..."

Top European wasps are attracted to human food, including meat.
Photo – DPIRD

Above European wasp has put its 'stamp' on many Australian states, but not WA. Featured here on an Australian stamp in 2014 as part of the 'things that sting' collection.
Photo – Peregrine/Alamy

Right European wasp nests can be large and house thousands of wasps.
Photo – DPIRD





MANY HANDS

Mr van Schagen thanked local governments, the Department of Biodiversity, Conservation and Attractions (DBCA), the Water Corporation, and community groups and residents for their continued support and assistance.

"This included deploying and maintaining traps and helping the team get access to bushland areas," Mr van Schagen said.

"In particular, the support of the City of Kalamunda 'firies' was crucial, as they joined us in the hunt for nests in areas we would never have been able to access alone."

The public has also played an important role. Over the years there have been thousands of public enquiries and reports leading to the discovery of nests, and sometimes even pinpointing the exact location.

NO MEAN FEAT

Mr van Schagen said finding nests involved some adventuring and detective work by personnel, who trekked through thick bushland and over rough terrain on foot and in four-wheel-drives.

"Locating nests is more difficult than most people realise. Once the wasps are detected through traps and lures, they must be tracked back to their nest, which are usually underground and hidden, with entrances the size of a 20-cent piece.

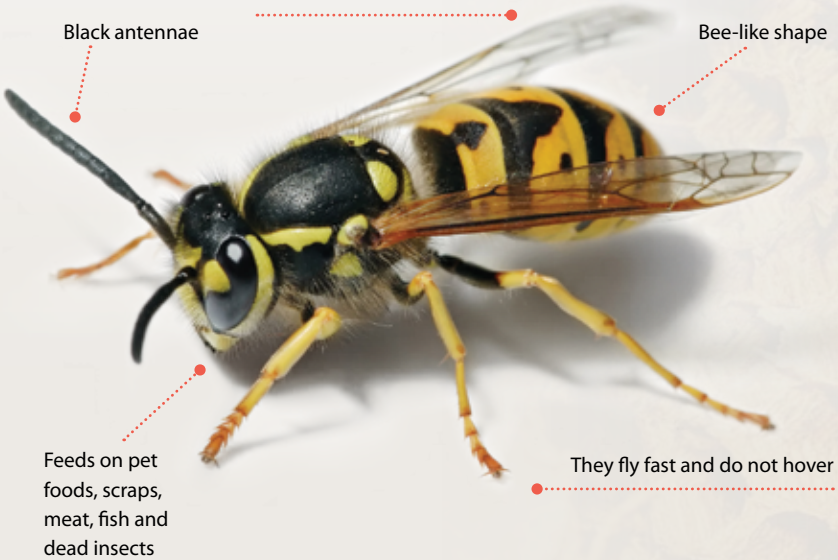
"Finding these nests in dense scrub is a real achievement."

Above European wasps have tell-tale black antennae and are attracted to crops with sweet, soft flesh like stone fruit.
Photo – Paul Zborowski/Lochman Transparencies

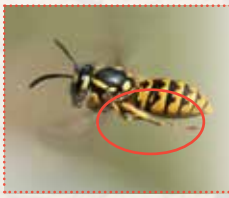
Above right Searching for nests in the Perth hills was challenging.

Left European wasp nest entrances appear as a hole in the ground.
Photos – DPIRD

How to spot a European wasp



Nests are usually underground, but can also be found in roof or wall cavities, or hollow trees, and can be basketball-sized or bigger.



European wasp

Raises its legs during flight.

European wasp	Yellow paper wasp
	
15mm long bee-like shape.	15-19mm long slender body.

Reports of suspect European wasp sightings can be made via DPIRD's **MyPestGuide™ Reporter** app, **mypestguide.agric.wa.gov.au** or by contacting the Pest and Disease Information Service on **08 9368 3080** or **padis@dpird.wa.gov.au**.

THE BATTLE CONTINUES

While the battle over the past few years had been won, the war would never be over.

European wasp queens will continue to arrive in WA during the warmer months from the Eastern States, mainly on vehicles and freight, and will continue to seed new nests.

"This season, as of the beginning of March 2022, we have found 40 nests which is already higher than the 14 nests found in 2020–21."

Maintaining an effective surveillance program will ensure the continued detection and eradication of these new incursions.

European wasps look like yellow paper wasps but are distinguished by their completely black antennae and they don't dangle their rear legs when they fly.

They also have distinct behaviours such as scavenging on dead insects or animals, human and pet food, and drinks, and build underground nests.

Identification guide
Above European wasp.
Photo – Fir0002/Flagstaffotos
Background Abandoned European wasp nest.
Photo – rdonar /Adobe Stock
Inset top Legs up in flight.
Inset middle European and paper wasps.

Above Wasp nests are difficult to identify among ground vegetation.

Right Once nests are detected they are sprayed by DPIRD officers.
Photos – DPIRD

Jodie Gysen is a strategic communications advisor with DPIRD, with experience in communicating the biosecurity risks of plant and environmental pests and diseases, and the work being undertaken to protect WA from their impacts. She can be contacted at jodie.gysen@dpird.wa.gov.au or (08) 9368 3194.

For more information on European wasps visit agric.wa.gov.au/wasps.