PEST WASPS:
SURVEY 2025
REPORT

Moths and Butterflies of New Zealand Trust
Pūrerehua Aotearoa

Executive Summary

Invasive social wasps (German/common *Vespula* species and multiple paper wasp species) are a growing ecological, social, and health concern across Aotearoa New Zealand. This national survey, initiated by the Moths and Butterflies of New Zealand Trust (MBNZT) and completed by over 1,100 respondents between June and August 2025, captures the experiences, concerns, and recommendations of individuals and restoration groups from across the motu.

Scale of the Issue

- **Widespread presence:** 95% of respondents reported wasp activity in their habitat in the past year, with strong regional hotspots in Northland, Waikato, Bay of Plenty, Tasman, and Marlborough.
- **Rising pressure:** People consistently described more wasps, earlier seasonal emergence, longer persistence into winter, and high densities around food and water sources.
- **Biodiversity impacts:** Wasps were seen as a major driver of monarch butterfly decline, threatening other native butterflies, moths, and invertebrates, while also devastating beehives and undermining pollination services.
- **Broader disruption:** Respondents reported wasps preying on birds, reptiles, and other fauna, competing for nectar and honeydew, and creating localised ecological imbalances.

Human and Community Impacts

- **Health & safety risks:** Painful stings, severe allergic reactions, and hospitalisations were widely reported. Many respondents described wasps making outdoor life unpleasant or unsafe, disrupting recreation, school activities, and conservation volunteering.
- **Daily nuisance:** Households reported wasps entering homes, swarming gardens, and deterring outdoor eating and play. For some, this has meant withdrawing from once-regular activities like planting swan plants for monarchs.

Community Action and Willingness

- **Willing hands:** Many people are already destroying nests, setting traps, monitoring activity, and protecting caterpillars. Several have become the “go-to” wasp person in their neighbourhood, while others are training for Vespex use or contributing data via iNaturalist.
- **Restoration groups as anchors:** Groups are coordinating queen-trapping campaigns, Vespex baitlines, and community education, often with impressive results. They are widely seen as essential for scaling neighbourhood action.
- **Shared responsibility:** Respondents believe effective control requires councils, central government, iwi, industry, communities, and individuals working together. No single agency can address the scale of the problem alone.

Barriers to Effective Control

- **Knowledge gaps:** Many individuals are unsure how to identify species, find nests, or use the right control method safely. Restoration groups often seek consistent national guidance and best-practice protocols.
- **Cost and access:** Licensing, bait costs, and availability of Vespex were recurring frustrations, alongside the high cost of lures and traps.
- **Safety concerns:** Stings, allergies, and risky DIY methods (petrol, fire) remain common hazards.
- **Volunteer fatigue:** Many groups struggle with limited people power, remote terrain, and burnout, describing their efforts as “a drop in the ocean.”
- **Tool limitations:** Vespex is powerful in some ecosystems but ineffective in others; paper wasps are particularly resistant to current control tools.

Mandate and Calls to Action

Survey responses show overwhelming consensus:

- **96%** agree that wasp control should be a high priority for conservation.
- **94%** support increased funding and research into control methods.
- **~90%** favour a multi-agency response rather than leaving responsibility solely to councils.

Respondents call for:

- Subsidies and grants to reduce costs for households and groups.
- Easier access and training for effective tools like Vespex.
- Nationally consistent guidance and clearer roles across agencies.
- Investment in research for paper wasp solutions, biocontrol, and innovative technologies (e.g., drones, new lures).
- Stronger partnerships with beekeepers, schools, iwi, and local clubs to multiply community impact.

Conclusion

This survey paints a picture of **rising ecological and social pressure from wasps**, met by strong community willingness but constrained by fragmented support, uneven access to tools, and volunteer burnout. The evidence shows that **New Zealanders are ready to act**—from households to restoration groups—but that their efforts need to be connected, resourced, and underpinned by innovation. Without coordinated national leadership and investment, wasps risk further undermining biodiversity, pollination, and the everyday enjoyment of outdoor life.

Acknowledgement

“Special thanks to **Jacqui Knight, MZNM**, founding trustee of the **Moths and Butterflies of New Zealand Trust (MBNZT)**, whose leadership, outreach, and long-standing advocacy for Lepidoptera conservation made this survey possible. Jacqui’s drive to broaden public understanding—beyond monarchs to our wider native butterflies, moths, and ecosystems—has been central to this project.”

Our thanks also go to the wider MBNZT whānau—trustees, volunteers, and partner groups—who shared the survey through networks and community pages, and to educators and communicators who continue to promote careful species identification and safe, effective control practices.

How to Read This Report

This report presents the findings of the 2025 Pest Wasp Survey conducted by the Moths and Butterflies of New Zealand Trust (MBNZT). To support clarity and action, each section concludes with **Key Takeaways**. These summaries highlight the most important points raised by respondents and include **possible implications drawn from the analyst’s interpretation of the data**. These are intended to guide policy, community planning, and further research discussions.

Disclaimer

This report reflects the voices of 1,100+ survey respondents who chose to share their experiences. While the breadth of responses provides strong insight into community perspectives, the survey was **self-selecting** and should not be interpreted as a statistically representative sample of all New Zealanders. Some quotes are included verbatim to preserve authenticity, but they may not reflect wider consensus. Analyst commentary and implications are offered to help contextualise findings but should be considered alongside broader ecological research and stakeholder input.

Report prepared by Kiran Thodiyil Kanakambujan, September 2025.

Contents

Introduction

If you go outdoors in the summer, you'll know about pest wasps. They are not just a nuisance at picnics or in gardens—they are having a growing impact on New Zealand's biodiversity, people's wellbeing, and even our economy. Over the summer of 2024–25, concern about invasive wasps intensified. Community members across Aotearoa shared stories of monarch caterpillars disappearing, beehives being destroyed, and outdoor activities becoming unsafe. Videos circulated of wasps attacking wētā and stick insects, sparking questions about just how many other native species may be at risk.

The **Moths and Butterflies of New Zealand Trust (MBNZT)** initiated this survey to capture those experiences. For 20 years, the Trust has championed not just monarch butterflies, but also the conservation of all moth and butterfly species in New Zealand. While monarch-lovers were often the first to raise alarms—reporting how wasps were wiping out caterpillars on swan plants—the challenge is much broader. Of the 2,000+ wasp species in New Zealand, most are endemic and harmless. The real threat comes from five introduced species: the German wasp (*Vespula germanica*), common wasp (*Vespula vulgaris*), and three paper wasps (*Polistes chinensis, P. humilis,* and *P. dominula*). These predators feed their young on caterpillars and insects, threatening butterflies, moths, and other invertebrates that underpin our ecosystems.

The Department of Conservation has estimated that invasive wasps cost New Zealand at least $130 million each year, through losses in agriculture, forestry, beekeeping, human health, and recreation. Yet they are not currently part of the Predator Free 2050 target species list. This survey sought to ask a simple question: how widespread is the problem, and what do people know, experience, and need in order to help?

Survey Objective and Scope

The Pest Wasp Survey was designed to:

- Understand people's awareness of invasive wasps and their ability to distinguish them from harmless or native species.
- Document the impacts wasps are having on monarch butterflies, other native wildlife, beehives, and community wellbeing.
- Identify what control methods are currently being used, both in home gardens and at larger conservation or restoration sites.
- Capture the perspectives of individuals as well as restoration groups, so that both private and collective efforts can be understood.
- Inform future education, planning, and advocacy efforts, including recommendations for Predator Free 2050, councils, industry, and community partners.

Ultimately, the survey aimed to give voice to widespread community concerns, highlight the ecological urgency of the issue, and guide practical next steps in resourcing, education, and national strategy.

Survey Scope - How we listened (survey scope, timeframe, who responded)

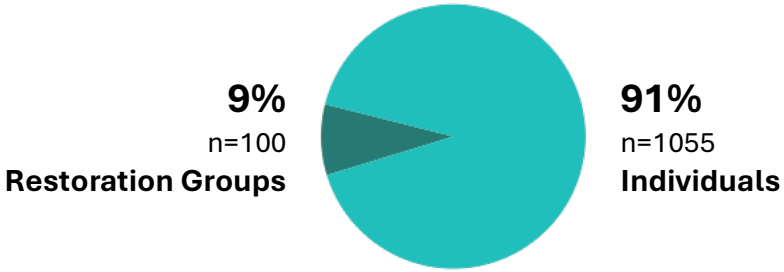
This survey was initiated by the **Moths and Butterflies of New Zealand Trust (MBNZT)**

Timeframe: From 26 June to August 2025

Medium of survey distribution: Online via a survey link in *Jotform,* distributed through social, online media channels.

Intended audience: Open to restoration groups and individuals.

This was an opt-in national survey.



The respondents were stratified into two groups for the purpose of the survey as -

Restoration groups: Includes restoration groups and schools — generally groups of around 20–30 people who come together in local communities to plant, beautify, or remove predators/pests.

Individuals: Includes respondents who have mentioned owning a home garden or property but have not answered for a restoration/volunteer group. This group may also include respondents from local government bodies, beekeepers, and other entities (e.g., R&T, professionals), which makes it a heterogeneous group.

People’s Observations and Awareness

Rising Wasp Pressure & Season Creep

Key Takeaways

National Picture:
95% reported wasp activity **at least occasionally** (67% *frequently*, 28% *occasionally*) in their habitat in the last 12 months.

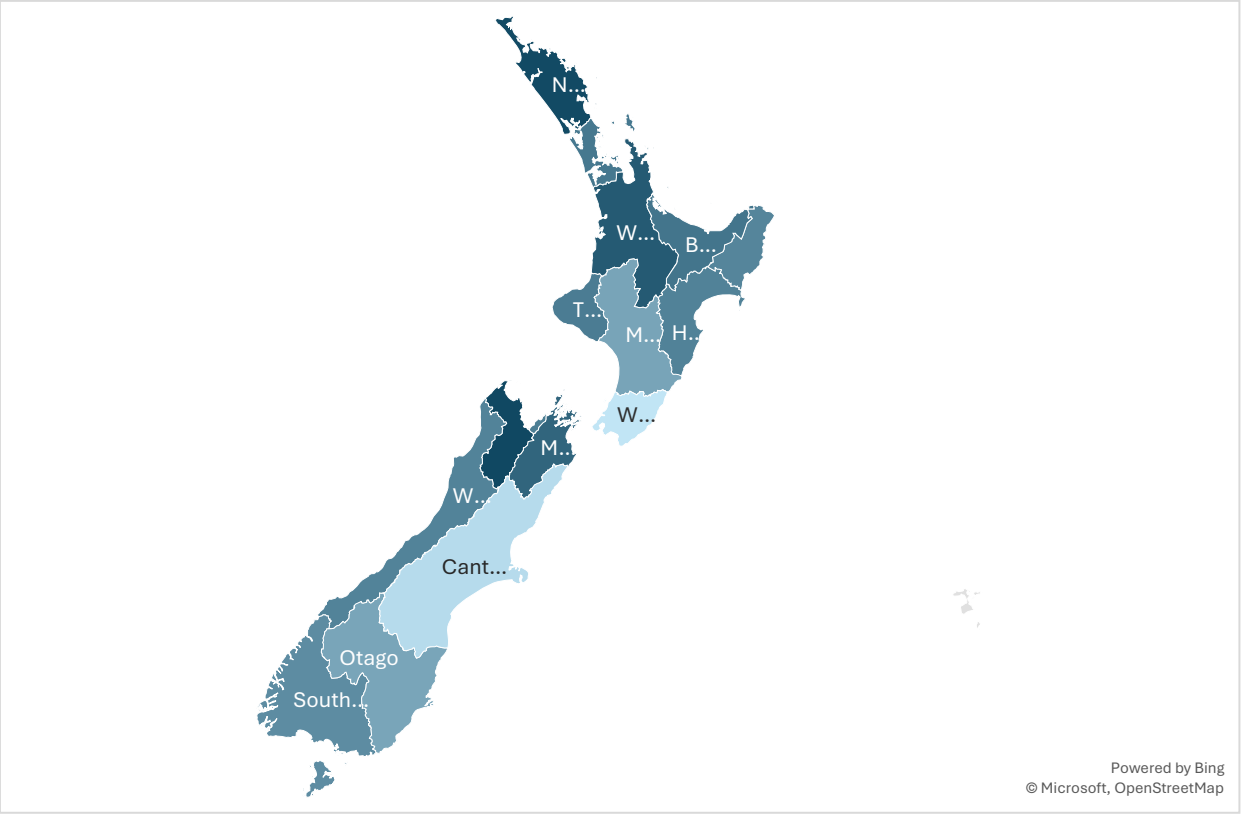
Trend: “Respondents commonly report a multi-year increase in wasp activity, strongest for paper wasps in suburban/urban settings, with persistent high pressure from German/common wasps in specific habitats.”

Seasonality: “Peak activity remains summer–autumn, but onset is earlier and persistence later; winter sightings and overwintering reports are increasing.”

Drivers: “Warm winters, local honeydew sources, fruit/ivy/nectar, and water features sustain populations; queen trapping and coordinated baiting reduce pressure locally.”

Anomalies: “Some local declines were noted following heavy rainfall or organised control, underscoring spatial patchiness and management leverage.”

People’s reports of wasp activity (nests or foraging) in their habitat in the past 12 months were combined into a single “pressure score” for each region. This shows where wasps are most commonly seen and how intense the problem feels locally. When mapped, clear hotspots appear in parts of the **North Island** and at the **top of the South Island**, while regions like **Canterbury, Wellington, and Otago** show patchier or lower activity.



Source: Q 4. Have you observed wasp activity (nests or foraging) in your habitat in the past 12 months?

Tier	Region	Yes, frequently	Yes, occasionally	Not sure	No	Pressure score	n	Confidence-adjusted score
A (Very High)	Tasman	97.9%	2.1%	0.0%	0.0%	99	48	**88.67**
A (Very High)	Northland	88.2%	11.8%	0.0%	0.0%	94	85	**88.35**
A (Very High)	Waikato	79.4%	20.6%	0.0%	0.0%	89.5	102	**85.96**
B (High)	Marlborough	91.7%	8.3%	0.0%	0.0%	96	24	**84.34**
B (High)	Bay of Plenty	69.5%	28.6%	0.0%	1.9%	83.5	105	**81.97**
B (High)	Auckland	71.8%	23.8%	0.4%	4.0%	82	273	**81.5**
B (High)	Taranaki	70.8%	29.2%	0.0%	0.0%	85.5	24	**80.94**
B (High)	Nelson	69.2%	30.8%	0.0%	0.0%	84.5	26	**80.72**
B (High)	Hawke's Bay	72.4%	24.1%	0.0%	3.4%	82.5	29	**80.13**
C (Moderate)	West Coast	69.2%	30.8%	0.0%	0.0%	84.5	13	**79.94**
C (Moderate)	Gisborne	83.3%	8.3%	0.0%	8.3%	83	12	**79.57**
C (Moderate)	Southland	66.7%	25.0%	8.3%	0.0%	77.5	12	**78.51**
C (Moderate)	Manawatu-Wanganui	61.7%	27.7%	2.1%	8.5%	71	47	**74.99**
C (Moderate)	Otago	55.8%	37.7%	2.6%	3.9%	72.25	77	**74.81**
D (Lower)	Canterbury	46.5%	42.4%	0.7%	10.4%	62.75	144	**66.87**
D (Lower)	Wellington	42.9%	44.5%	2.5%	10.1%	59.75	119	**65.37**
	NZ Overall	67.28%	27.63%	0.79%	4.30%	78.75	1140	**78.75**

Island-level summary (weighted by sample size)

Island	% Yes, frequently	% Yes, occasionally	% Not sure	% No	Pressure score*
North Island	**69.6%**	26.3%	0.6%	3.9%	**80.6**
South Island	**62.5%**	31.3%	1.4%	5.1%	**75.2**

Pressure score (0–100) = `1.0×Frequent + 0.5×Occasional − 0.25×Not sure − 0.5×No`

Confidence-adjusted score = a shrinkage toward the NZ **Grand Total** score, weighted by n:
`Adjusted = (n/(n+50))×Score + (50/(n+50))×Grand-Total`.
(This keeps the ranking stable but avoids over-interpreting very small n.)

Observations

- **North Island** shows **higher activity overall**, with around 70% of respondents reporting frequent sightings compared to 62.5% in the South Island. This produces a higher average pressure score (80.6 vs 75.2).
- **South Island** skews more toward *occasional* sightings, alongside slightly higher "not sure" and "no" responses, which lowers its overall pressure score.

Geographic Nuances

- **Hotspots**
  - *Top of the South*: Tasman (98%), Marlborough (92%), Nelson (69%) record very high activity.
  - *Upper–mid North*: Northland (88%), Waikato (79%), Bay of Plenty (70%), Auckland (72%) also show strong pressure.
- **Cooler zones / patchier distribution**

- Wellington (43% frequent) and Canterbury (47%) sit notably lower, with higher “occasional” and “no” responses.
- Otago (56%) is mid-to-low relative to its island neighbours.

Caveats

- **Sample size effects**: Large samples in Auckland (n=273) and Canterbury (n=144) pull island averages upward, while very small samples (e.g. Gisborne, Southland, West Coast) should be interpreted cautiously.
- **Uncaptured factors**: The analysis does not separate seasonality or species mix, both of which can shift local patterns.

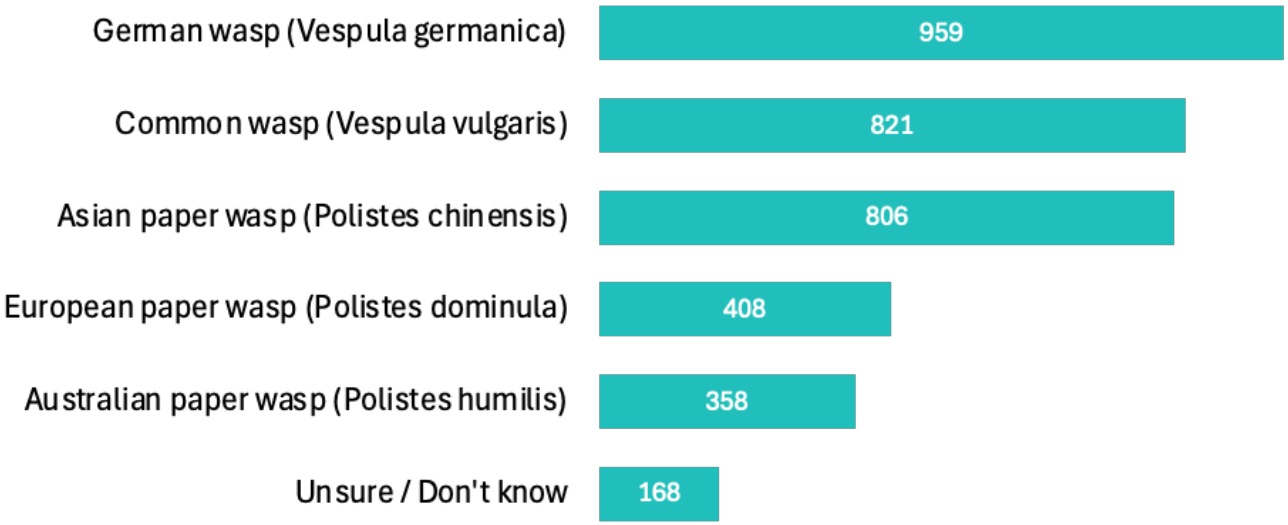
Note on Interpretation

The pressure index combines frequent and occasional sightings, while discounting uncertainty (“not sure”) and negative responses (“no”). This measure reflects **perceived encounter pressure** rather than direct ecological damage or impact. Actual consequences for biodiversity, agriculture, or human well-being will also depend on local habitat conditions, seasonality, species composition, and community vulnerability.

Sample sizes varied widely across regions, and smaller datasets may be less representative of overall conditions. These results should therefore be interpreted with caution, and further data collection is recommended to validate patterns in low-response regions.

Most frequently identified wasp species

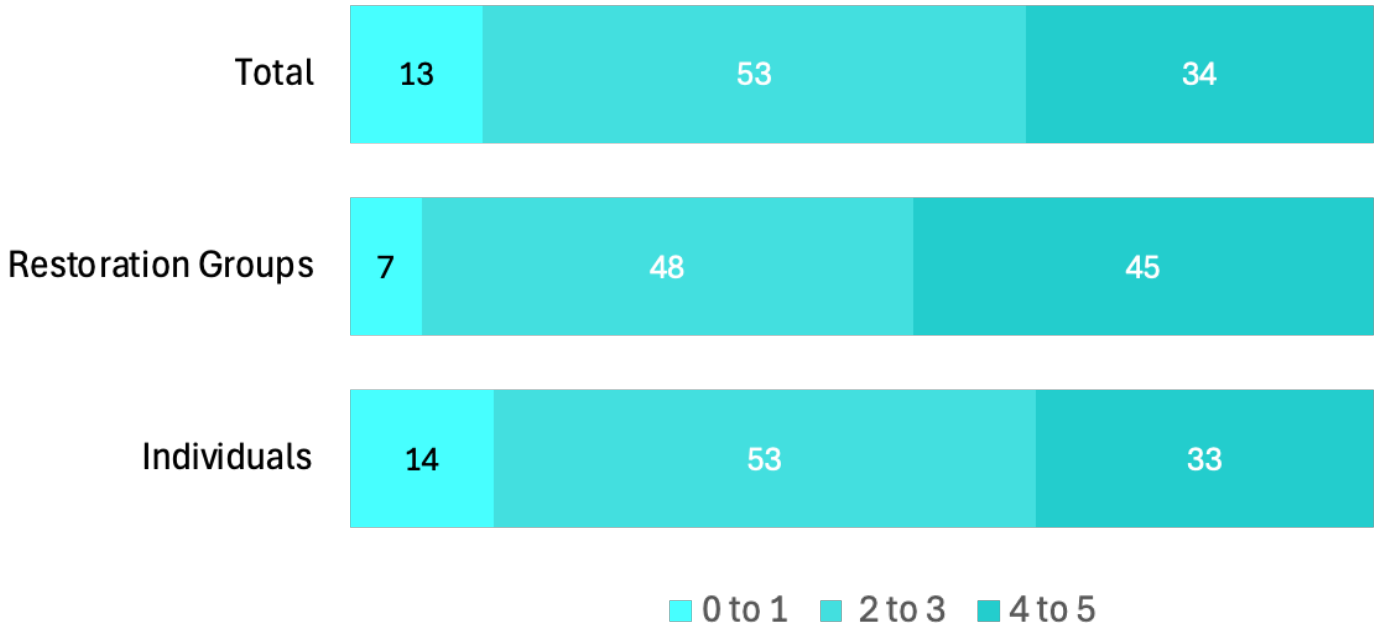
Survey respondents most frequently identified the **German wasp (Vespula germanica), Common wasp (Vespula vulgaris), and Asian paper wasp (Polistes chinensis)** as the pest species they were aware of. These three invasive wasps were consistently mentioned in comments and were the species most widely recognised as problematic across gardens, farms, and conservation areas.



Source: Q1. Which of the following wasp species are you aware are present in New Zealand? (Select all that apply)

Distribution in the number of species awareness (%)

Species identification skills appear stronger among restoration groups, where 45% could identify four to five wasp species, compared with 33% of individual respondents. Low identification (0–1 species) was roughly twice as common among individuals (14%) as among restoration groups (7%), suggesting that community groups may have higher baseline knowledge and more exposure to wasp identification.



Source: Q1. Which of the following wasp species are you aware are present in New Zealand? (Select all that apply)

Possible stakeholder implication: This points to an opportunity for targeted education and training—especially for individuals and householders—so that more people can confidently distinguish pest wasps from native species.

> Restoration groups could act as knowledge hubs, supporting wider community awareness and improving the effectiveness of collective control efforts.

Wasp Activity: Trends, Seasonality & Behavioural Patterns (interpreted from open-ended responses)

Rising Trend

Overall increase:

> *"Population of Asian paper wasps has significantly increased in recent years"* (A19).
>
> *"Im a tradie… the last few years the amount of wasps I've seen has increased but [at] plague amounts"* (A29).
>
> *"German wasp population is increasing significantly in this area even over winter months"* (A91).
>
> *"Paper wasps seem to be getting more prevalent in my garden year on year. There was one nest a few years ago compared to last year I destroyed over 10 in one season"* (A80).
>
> *"The wasps this last summer were the worst I have seen in years (potentially the worst I have ever seen in our neighbourhood)"* (A551).

Seasonality & Changing Patterns

- **Earlier emergence**:

> *“The 2024/25 monarch season has been dismal. Wasps appeared earlier in 2024 and remained active a little longer at the end of the season”* (A66).

- **Late persistence**

> *“We noticed this year that wasp populations were active for far longer, right into the winter months”* (A395).

- **Winter sightings**

> *“I frequently observe wasps foraging in the middle of winter more and more each year”*(A387); *“We have found quite a few of the hibernating German (I think) wasps in random places e.g. folded tarpaulin, outdoor umbrella”* (A577).

- **Weather dependence**

> *“Concern with rising temperatures that the problem may increase if we don't get that really cold dip mid-year in Winter”* (A38).
>
> *“Wasp numbers are getting much more obvious with the increase in sunshine hours and climate change impacts”*(A40).
>
> *“There are not many this year – probably because of the huge amount of rain. Dry years we seem to have heaps of wasps”* (A385).

- **Anomalies**

> *“This year was not bad”* (A20).
>
> *“There seemed to be fewer wasps in our area this past summer”* (A82).

> *"This last Summer not many around at all. This may be because bigger nests were found in bush areas close by and… destroyed"* (A1020).
>
> *"The Whakatane Kiwi Trust… trapping queen wasps… resulted in fewer reported wasp nests and wasp stings"*(A94).
>
> *"For the past 4-5 years our neighbours and us have all been baiting for wasps… the populations have definitely taken a hit"* (A211).

Behavioural Observations

Foraging & food:

> *"For several years now we have had numbers of German wasps attracted to the BlackWillow Aphids… They fed on the honey dew"* (A3).
>
> *"Lots of wasps here in summer killing monarch butterfly caterpillars… They also swarm the fruit I put out for native birds"* (A63).
>
> *"In my situation wasps come in large numbers in late summer/early autumn to eat my apples and attend the ivy flowering"* (A886).
>
> *"Paper wasps patrol my veggie garden in summer and autumn… prey on caterpillars"* (A494).

Predation:

> *“The paper wasps have been particularly bad the last 2 summers… only a few caterpillars survived”*(A22).
>
> *“We watched our caterpillars be eaten and not stand a chance… very sad” (A582).*
>
> *“German wasps killing and taking [monarch caterpillars]… killed over 30 nests… this summer” (A232).*
>
> *“To see my hives destroyed by wasps is heartbreaking… Once they are in the hive it is impossible to stop”*(A873).

Nesting behaviour:

> *“Paper wasps nests seem to be getting more prevalent… I destroyed over 10 in one season”(A80).*
>
> *“The European paper wasps nests are mostly in the open ends of corrugations of our iron roof… sometimes more than 100 wasps!!!” (A240).*
>
> *“Wasps like nesting inside plant covers of newly planted trees… Also in the tunnels used for rat traps”* (A189).

Aggression:

> *“We have had students, volunteers and an employee badly stung… one volunteer had to go to hospital” (A243).*
>
> *“Wasps are everywhere in summer here and it is both incredibly frustrating, as well as quite terrifying for some people” (A118).*
>
> *“During the 2024/25 summer we noted a significant increase in wasp activity… I saw at least 4 wasp nests last summer” (A437).*

People's adaptive behaviour

Shifting to protection: People have adapted to the rising wasp numbers and have come up with ways to adapt like netting or indoor rearing of monarchs (A217, A526, A663, A724, A727, A1082).

Effect of Wasp Activity on Ecosystem

Garden Biodiversity and Pollination at Risk

Too Many Wasps: Killing Monarchs and Beehives

Key Takeaways

Overwhelming recognition of the problem
Nearly all respondents (97%) see wasps as a significant ecological threat. Agreement was near universal (96.5%), with strong agreement from 72%. Neutrality and disagreement were negligible, showing clear consensus on the seriousness of the issue.

Monarch butterflies are in steep decline
The strongest and most consistent concern is the loss of monarchs. Eggs, caterpillars, and adults are attacked, and survival outdoors has become rare. Many respondents now rely on cages or indoor rearing to protect caterpillars: *"The only way they survive is to cover the plants with a very fine net"* (A727). Others have stopped planting swan plants entirely due to repeated losses.

Paper wasps are a key driver
Paper wasps—especially Asian paper wasps—were repeatedly identified as aggressive and relentless. They patrol swan plants, attack caterpillars as soon as they hatch, and are perceived as even more destructive than vespula species.

Impacts extend to other native butterflies and moths
Respondents noted sharp declines in admirals, copper butterflies, and forest ringlet populations. *"There is an urgent*

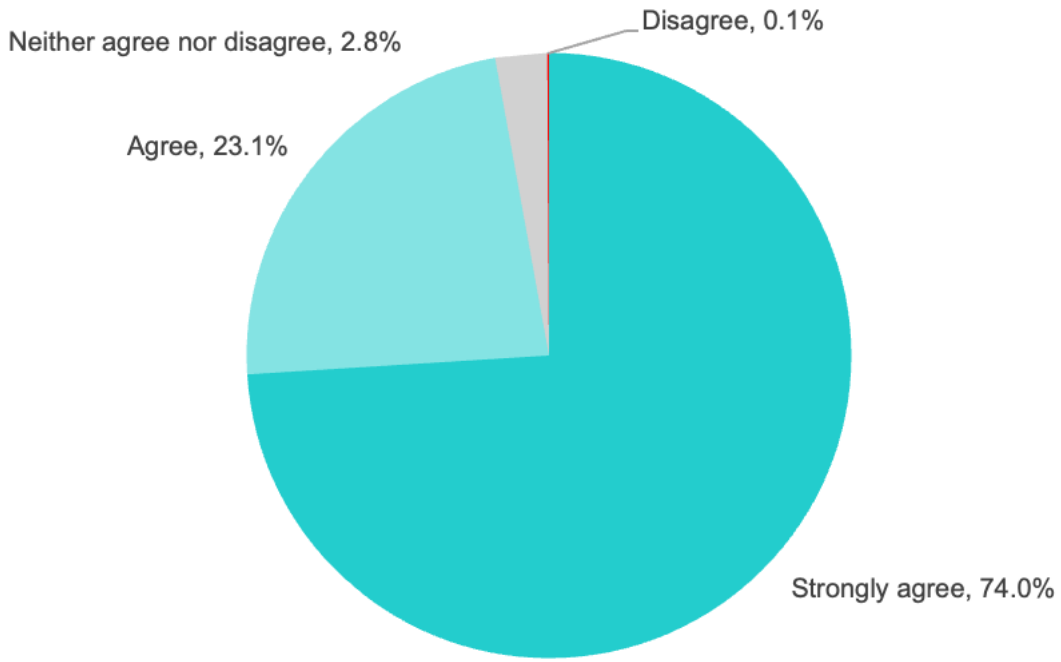
need for a safe landscape-scale wasp control tool" (A1108). Threatened moth species and common larvae like kawakawa loopers were also heavily predated.

Hive losses undermine pollination and livelihoods
Beekeepers reported devastating hive depredation, with some leaving the hobby or industry entirely: *"I have lost a number of bee hives to German wasps… I currently have de-registered and given up on beekeeping"* (A661). Wasp pressure on hives threatens not only livelihoods but also crop pollination.

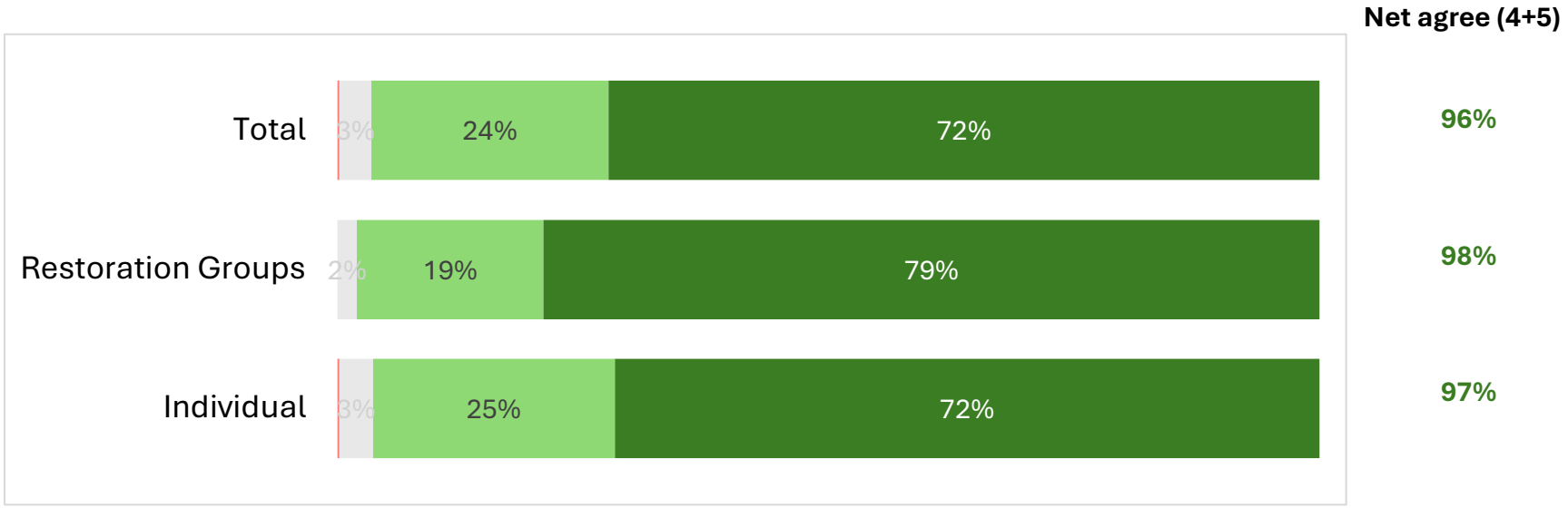
Broader ecosystem disruption is emerging
Though less widely observed, some respondents highlighted severe knock-on effects: wasps attacking stick insects, cicadas, and even fledgling birds and reptiles. They were also reported competing for nectar and honeydew at scale, with one respondent warning, *"Often we see no insects at all… we could have ecosystem collapse"* (A809).

Communication gaps remain
While butterflies and hives dominate awareness, the broader ecological footprint—on honeydew food webs, forest regeneration, and bird populations—is less top-of-mind. This indicates a need for stronger public education to connect the dots between wasps and wider ecosystem health.

A vast majority 97% of the respondents, perceive that wasps are a significant threat to the ecosystem.

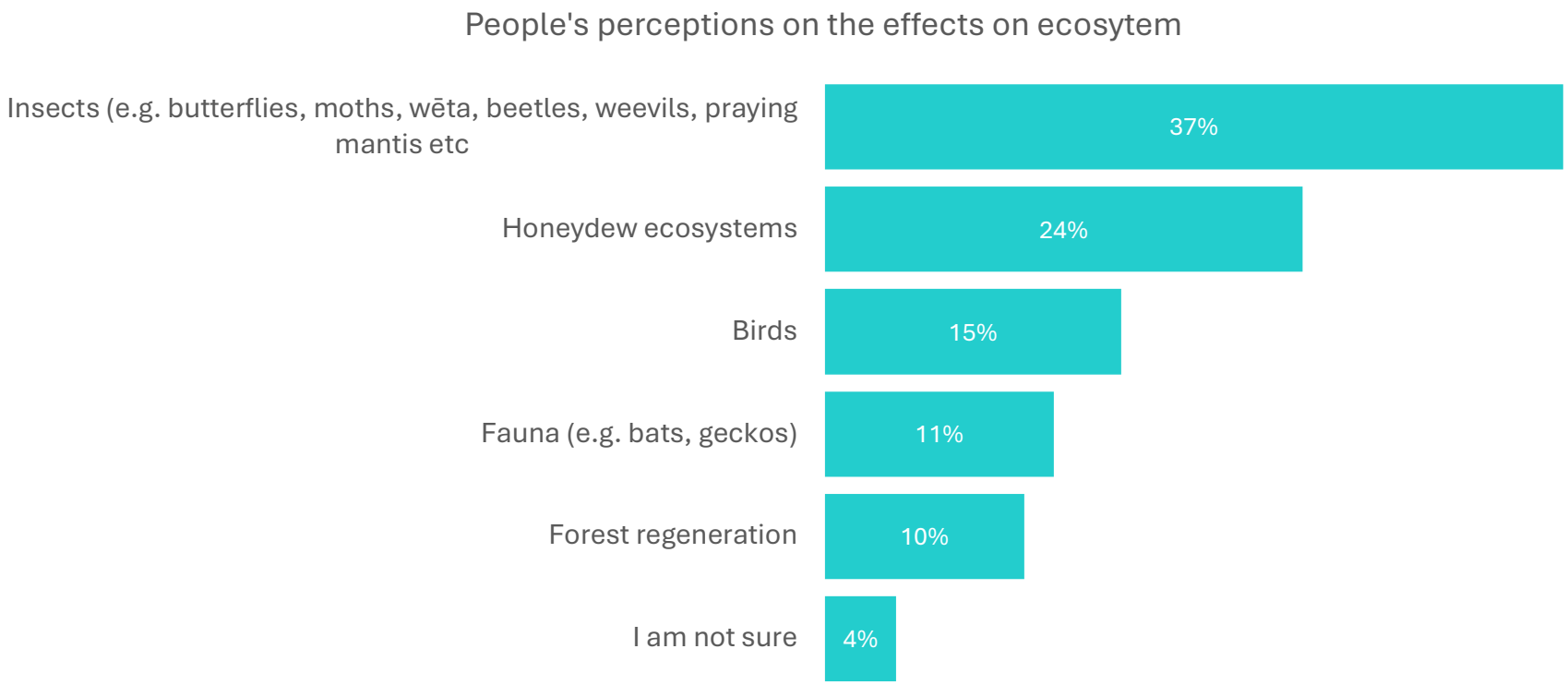


Source: Q5. Wasp species are a significant threat to NZ's ecosystems. (Select one response)



Source: Q.7 I am/we are concerned about the impact of wasps on invertebrate species such as moths and butterflies. (Select one response)

There was overwhelming agreement that wasps have a significant impact on invertebrates, with approximately **96.5% of respondents agreeing**, including **72% who strongly agreed**. Only a very small proportion expressed neutrality (around **3%**), and disagreement was negligible (around **0.2%**).



Source: Q 3. Which of the following do you believe are most affected by wasps?

Observation: Respondents reported widespread predation and disruption across multiple insect groups, with monarch butterflies and honeybee hives most frequently mentioned. Accounts described caterpillars, eggs, and adult butterflies being attacked, as well as hives being overrun and destroyed. There were also observations of wasps targeting other insects and placing pressure on birds and other fauna.

Interpretation: The ecological harm caused by wasps is most consistently and vividly perceived through their impact on monarchs and beehives. These are highly visible and personally significant species for many respondents, making them the most salient concerns. Broader ecosystem impacts—such as disruption of honeydew food webs or forest regeneration—were noted less often, likely reflecting that these effects are harder to observe directly. This suggests a potential communication gap, where the less visible but equally serious ecological consequences of wasp activity may not be widely recognised by the public.

Butterfly decline and survival challenges

Across the survey responses, people painted a vivid picture of how wasps are reshaping local biodiversity. The strongest and most consistent theme was the collapse of butterfly populations, especially monarchs. Survival outdoors has become increasingly difficult: wasps chase butterflies, feed on eggs, strip caterpillars from swan plants, and even attack adults.

One restoration group member from Manawatu-Wanganui explained, “I have seen wasps chasing NZ Yellow Admiral butterfly. I have photos of their interactions” *(A332).*

A respondent from Northland echoed the loss: “I used to have 120 or so monarch caterpillar chrysalis on swan plants or protected. Now I barely get any through. Wasps eat them all in summer” *(A759).*

Indoor rearing and netting as last resorts
The only way many people now see butterflies reach adulthood is by shielding them from wasps. Respondents described raising monarchs indoors or caging swan plants with netting.

“Paper wasps simply decimated the monarch caterpillars on my swan plants this year, I had to raise the eggs inside and then raise the monarchs in butterfly enclosures. Even then the paper wasps relentlessly tried to get in!” (A217, Canterbury).

Another Auckland respondent wrote, *"I remove the Caterpillars from the plants outside and raise them inside so they get a fighting chance"* (A724).

Paper wasps singled out
Paper wasps, and in particular the Asian paper wasp with its "dangly legs," were identified as relentless predators.

"Asian paper wasps (the ones with the dangly legs anyway!) are a major summer problem at our Mangawhai property"(A1023, Auckland).

Others judged them harsher than the common vespula: *"Paper wasps appear to be even worse than vespula wasps at destroying insects. My observation is that they will eat monarch caterpillars almost as soon as they hatch out"* (A1111, Auckland).

Withdrawing from butterfly planting
For some, the repeated losses were so disheartening that they abandoned butterfly-friendly plantings altogether.

"The last time we had a lot [of wasps] was when we planted swan plants for the monarchs. My partner decided that it was too upsetting, so we haven't planted them again" (A412, Auckland).

Another noted, *"I used to grow swan plants for the monarch butterflies every year, but… gave up. Haven't tried for the last five years at least"* (A600, Auckland).

Impacts on native butterflies and moths
Beyond monarchs, respondents also drew attention to native butterflies and moths. Red and yellow admirals, copper butterflies, and the nationally vulnerable forest ringlet were all noted as declining under wasp pressure.

"FOF has monitored forest ringlet butterflies in Kahurangi National Park for 3 years… there is an urgent need for a safe landscape scale wasp control tool" (A1108).

> Others reported *"locally… nesting populations of paper wasps, with a resultant diminution of the copper populations. We fear that extinction… will happen sooner rather than later"* (A688).

Beekeeping losses and pollination risks
Beekeepers described hive losses as both personal heartbreak and a threat to pollination.

> *"Wasps have killed my beehives in the past and made it impossible to enjoy the summer months outside"* (A25). Another noted, *"I have lost a number of bee hives to German wasps… I currently have de-registered and given up on beekeeping"* (A661).
>
> One beekeeper was blunt: *"Once they are in the hive it is impossible to stop… they rob the bees of all their honey and kill any on the way, especially the Queen"* (A873).

Broader Ecosystem Disruption

Although butterflies and beehives dominate community attention, respondents also pointed to wider ecological effects that are less visible but potentially just as severe. Wasps were seen patrolling plants, raiding flowers, and attacking a wide range of native insects. As one person described,

> *"Often we see no insects at all, and if we do, they're hounded and attacked by wasps… we could have ecosystem collapse"* (A809).
>
> Another shared a disturbing account: *"We have seen carnivorous activity by wasps attacking fledgling birds, reptiles and frogs, wasps attacking feeding tūī"* (A1088).

Native butterflies and moths were frequently mentioned as casualties.

Admirals were reported in much lower numbers where wasps were abundant:

> *“We noted fewer red and yellow admirals last year, with more wasps present”* (A613). The copper butterfly was also flagged, with one respondent noting
>
> *“paper-wasp transects alongside copper butterfly surveys on Farewell Spit”* (A508). Perhaps most urgently, a group monitoring forest ringlet butterflies in Kahurangi warned,
>
> *“There is an urgent need for a safe landscape-scale wasp control tool”* (A1108). Several others described paper wasps as
>
> “murder on our butterflies” (A717, A999, A1040, A1077).

Rare moths were also under threat. A landholder managing a QEII covenant wrote of

> *“paper-wasp control to protect Kiwaia ‘Cloudy Bay’, Notoreas ‘Cape Campbell’, and Ericodesma aerodana”* (A39).
>
> Others observed attacks on more familiar species: *“Wasps attacked a local population of stick insects, killing about 20 in a day”* (A807); *“I have seen paper wasps attacking stick insects”* (A97).
>
> *Moth larvae such as kawakawa loopers and porina moths were also heavily targeted (A551, A807).*

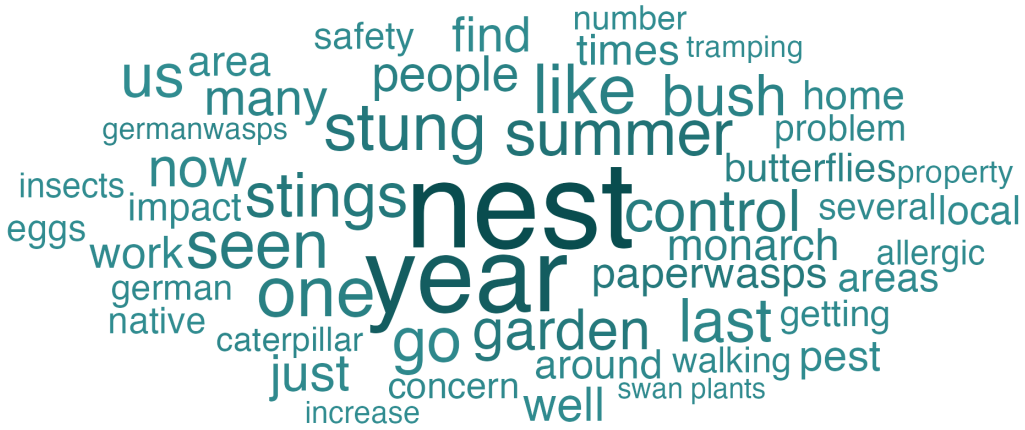
Competition for nectar and honeydew emerged as another critical pressure point. Wasps were seen feeding in huge numbers where honeydew was abundant:

> *“Giant willow aphid honeydew drove high Vespula levels; removing willows removed the wasp problem”* (A109). Another noted *“wasps massing under a weeping willow feeding on scale-insect honeydew”* (A388). Their presence at flowers was so intense that one observer said simply, *“Wasps are a major visitor to native flowers”* (A807). People even reported them swarming around sugar-water feeders meant for birds: *“We must limit wasp control around our Tūī*

> *feeder because of wasp activity there”* (A613). In some cases, this went beyond competition to direct predation, with *“wasps attacking feeding tūī as well as other vertebrates”* (A1088).

Taken together, these observations extend the picture beyond monarchs and beehives: wasps are altering the balance of entire ecosystems. They affect butterflies, moths, stick insects, and birds by both direct predation and by dominating key resources such as honeydew and nectar. While these effects are less visible to the general public, respondents who observe insects and forests closely see them as deeply concerning — signals that the ecological footprint of wasps is both wide and intensifying.

Human Safety & Outdoor Life Disrupted by Wasps



Observation: Note the highly co-occurring words – sting, walking

Although not asked as a direct survey question, health and safety issues featured strongly in open-ended responses. Wasps were frequently described as a hazard, with reports of painful stings, allergic reactions, and cases of anaphylaxis requiring hospital treatment. Beyond the immediate health risks, respondents noted that wasp activity disrupts daily life, deters outdoor recreation and tourism, and hampers volunteer work in restoration and conservation.

Stings, allergy, anaphylaxis, hospitalisations: multiple reports of severe reactions, epi-pens, and emergency care (A128, A389, A596, A661, A671, A777, A782, A784, A1124).

> *"I've ended up under observation in hospital due to multiple wasp stings."*
>
> *"After several individual wasp stings over a period of years I eventually ended up at the medical centre with an anaphylactic reaction to the last sting and now need to carry an epipen."*
>
> *"Wasp nests can be a major hazard when accessing outdoor areas. Wasps are a huge hinderance to being able to get into and enjoy certain areas in our natural environment."*

Outdoor recreation/tourism disrupted: tramping, biking, horse trekking, beaches/lakes, playgrounds and Great Walks affected; activities paused/cancelled due to nests (A12, A142, A283, A769, A780, A796, A809, A833, A861, A1152).

> *"Wasps are a concern for people doing tramping and being (potentially) stung is unpleasant. So wasps are also important for tourism/recreation as well as conservation and ecology."*
>
> *"We have huge influxes of German wasps in Summer around the lakes in the Rotorua area. For example, they are so bad that most of the beaches & forest areas close to the shore on the unpopulated parts of lake Tarawera become unusable in summer"*

Household & community nuisance: wasps entering houses/roofs, gardens, schools and markets; fear for kids and pets; avoidance of eating outdoors (A55, A126, A150, A565, A671, A779, A887, A899, A961, A1005).

> *"…We avoid walking the bush tracks with our small dog during the wasp "season" as we are worried she would get stung with serious consequences. Sitting outside for a meal is also been avoided when the wasps are about..."*

> *"..Caught them by the hundreds in traps over the summer. Started coming in the house and 3 family members got stung"*

> *"They seem to stick around for longer and longer now. The cold does not seem to get rid of them like it used to. It makes the playground unsafe for our students at times."*

Other/minor highlights (recurring but less central)

Workplace & volunteer H&S: conservation crews, gardeners, sanctuary staff and community groups stung; some activities halted (A41, A142, A243, A307, A527, A735, A959).

> *"…it is also a risk for those who work in the Sanctuary - there have been a number of cases of bad multiple stings."*

Animal safety: dogs/horses stung; riders unseated; vet visits (A55, A661, A576).

> *"…I am also an avid horse rider and trekker and have had various dangerous situations with wasps attacking horses and riders as we were passing too close to their nests…"*

Control Methods

Key Takeaways

Nest destruction is the backbone of control. It is the most common method across both households and groups. It works best when nests are found early and are accessible, but it is labour-intensive, risky, and often impractical when nests are hidden or on neighbouring land.

Traps are useful but mixed. Many people find traps disappointing for paper wasps or report catching other insects, but when used at the right time (such as spring queen trapping) they can be very effective. Groups that use pheromone-based lures report strong results, though traps alone are not enough to keep wasp numbers down.

Vespex is powerful but uneven. It is described as a breakthrough in areas where wasps are feeding on protein and when timing is right. However, access barriers, licensing, and cost limit its use. It is less effective in some ecosystems, and success often depends on neighbours or groups working together.

Most people use more than one method. Nest destruction is usually combined with traps or Vespex, showing that people rarely rely on a single approach. Small-scale DIY mixes, like combining sprays and powders, are common but raise safety and environmental concerns.

Groups and individuals differ in approach. Groups are more likely to use Vespex and manage coordinated programmes, while individuals often use simpler or DIY methods, or take no action at all. Both rely heavily on nest destruction.

Poison is seen as both necessary and concerning. Some people view poisons like Vespex or powders as essential, fast, and effective, especially for dangerous nests or busy public spaces. Others are cautious, worried

about harming bees, pollinators, pets, or the wider environment. Cost, licensing, and availability also frustrate many. A smaller group strongly prefers non-chemical approaches and would like safer, natural alternatives.

Community action opportunities:

Make Vespex easier to access safely through group training, grants, and coordinated distribution.

Share clear, safe guidelines for DIY nest destruction, and discourage dangerous practices like petrol or fire.

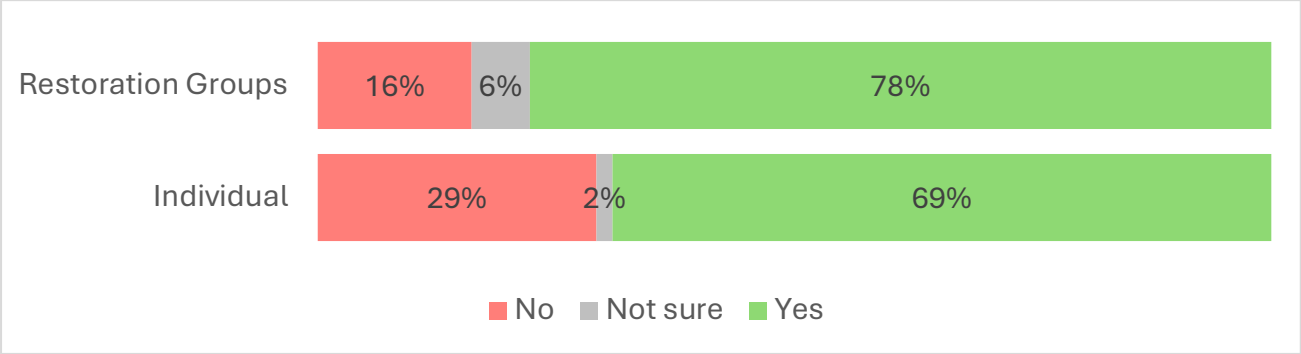
Promote effective queen trapping in spring to reduce wasp pressure early in the season.

Encourage knowledge sharing between restoration groups and individuals, so expertise can be spread more widely.

Provide balanced information about poison use: when it works, how to minimise risks, and what alternatives exist.

Support small trials to identify which methods give the best long-term results, so communities can focus effort and resources where they make the most difference.

Participation in control activities by respondent type (%)

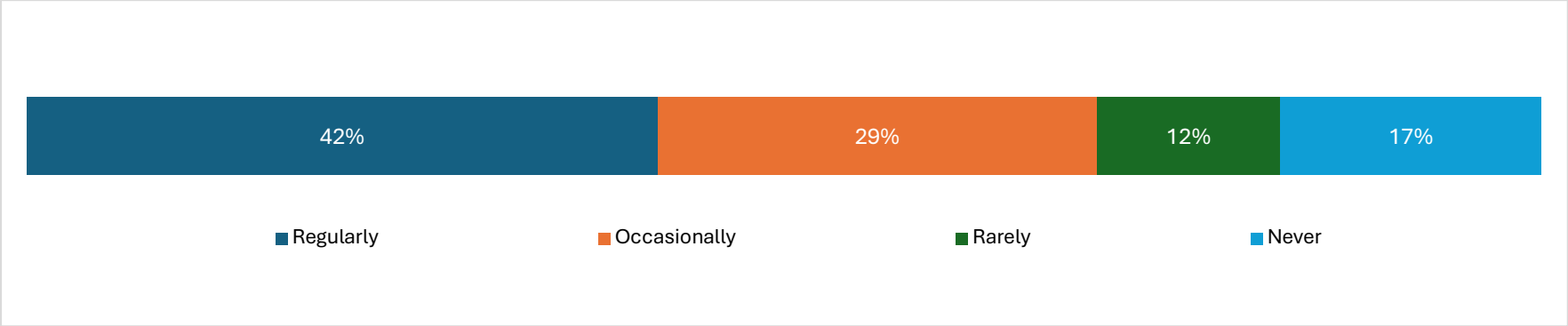


Source: Q12 Have you or your group conducted or participated in any wasp control in your habitat in the last five years?

Higher participation among restoration groups. Participation in wasp control is notably higher among restoration groups (78%) compared with individuals (69%), a gap of nine percentage points. Non-participation is almost half as common in groups (16%) as it is among individuals (29%), showing a clear 13-point difference.

Implications. Restoration groups appear to benefit from better access to know-how, equipment, and coordination, which translates into higher levels of action. Among individuals, the non-participating segment represents an important opportunity. With targeted support — such as access to clear information, simple training, starter kits, and connections to qualified applicators — many of these households could be converted into active participants.

Frequency of wasp control monitoring

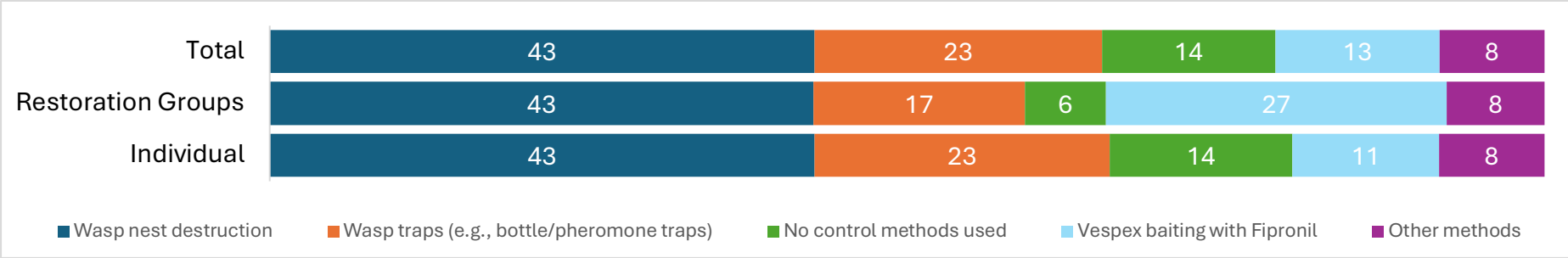


Source: Q14.How often is your habitat monitored for wasp activity?

Monitoring behaviour: Most respondents (71%) monitor wasp activity at least occasionally, providing a solid base of engagement. However, nearly one in three (29%) monitors rarely or never. This gap risks nests and peak foraging being missed, which reduces the effectiveness and timing of control.

Implications. While there is a culture of monitoring, it is not universal. Inconsistent surveillance at almost a third of sites means nests may go undetected and control may be poorly timed, leading to frustration and lower impact. Converting those who monitor only occasionally into regular monitors would deliver the greatest improvement in early detection and timely intervention. The group that never monitors is an important target for outreach through basic training, simple protocols, and low-cost prompts to get them started.

Commonly used control practices (%)



Method	Overall %	Individuals %	Groups %	Difference (Groups – Individuals)
Wasp nest destruction	43%	43%	43%	0 pp
Traps	23%	23%	17%	–6 pp
Vespex baiting	13%	11%	27%	+16 pp
No control used	14%	14%	6%	–8 pp
Other methods	8%	8%	8%	0 pp

Wasp nest destruction is the most commonly used control method, followed by traps and vespex baiting with Fipronil. **Restoration groups** are **far more likely to use Vespex**, while Individuals are **more likely to report no control** and, to a lesser extent, to use **traps**. Nest destruction is **equally common** across both cohorts.

A chi-square test showed **a significant difference in method usage between Individuals and Restoration Groups** ($\chi^2(4)=35.22$, $p<0.001$, Cramér's $V=0.14$). Standardised residuals indicate Vespex is substantially over-represented among Groups (+5.44), while Individuals are more likely to report no control (+2.77) and slightly more likely to use traps (+1.89); nest destruction and 'other' methods are near expected levels.

Respondent perspectives on the major control methods.

Wasp Nest Destruction

Individuals — what works: Many individuals find that nest destruction works best when done at night, with sprays or by crushing nests directly.

> *One noted that spraying at night allowed them to "…squish the nest" effectively (A16), while another described going out at night with a gloved hand to crush paper wasp nests (A195). Petrol or powders applied to ground nests are often described as "simple, quick and effective" (A176, A470). Early intervention, before nests grow too large, is also seen as manageable (A131, A431).*

Individuals — what doesn't / cautions: However, nests are often hidden in foliage, roof cavities, or neighbouring properties, making control "impossible" in some cases (A1111, A1056). Several people raised concerns about harming bees and other non-target insects when using sprays or powders (A131, A285), while others highlighted safety risks, particularly for those with allergies or allergic family members (A107, A402).

Restoration groups — what works: Groups also report success when nests are accessible, often using sprays supplied for volunteers (A307, A424). Powdering nests encountered on bait lines is another effective method in field settings (A331).

Restoration groups — what doesn't / cautions: Yet groups emphasise that nest destruction is "extremely labour intensive" (A450) and unsustainable in remote or rugged environments (A367).

Traps

Individuals — what works: Some individuals report success with queen wasp trapping in spring, with one noting that “No Pests Wasp Lure” caught queens effectively (A657). Others described homemade bottle traps that caught “around 100 every few days” (A281), and another said hanging traps were “cheap & catch lots” (A891).

Individuals — what doesn’t / cautions: For many, however, traps proved disappointing, with reports that they “caught flies but no wasps” (A22, A130). Paper wasps in particular are often not attracted to traps (A534, A1030). Some worry about catching pollinators, raising concerns about unintended impacts (A74).

Restoration groups — what works: Groups report very high success rates with pheromone-based traps, sometimes catching 500–1,000 queens per season (A438, A659). These non-toxic spring lures are valued for reducing populations before they expand (A418).

Restoration groups — what doesn’t / cautions: Still, effectiveness varies by season and habitat (A266, A632), and groups echo concerns about trapping non-target insects (A74). Overall, traps are seen as useful but insufficient as a stand-alone tool.

Vespex Baiting

Individuals — what works: Vespex is described by some individuals as a “ground breaker” (A792). Others observed “truly amazing” knockdowns when using it correctly (A415), with neighbour coordination improving its impact (A211). Some households reported dramatic reductions in wasp numbers after its use.

Individuals — what doesn’t / cautions: At the same time, Vespex is not universally successful. Several respondents said wasps “ignored” Vespex in their area (A903), or found the baiting window too narrow and “fiddly” to get right (A418, A266). Others complained about limited access due to cost and licensing rules (A697, A601,

A1083). Ecological conditions also matter: one noted that Vespex was ineffective where wasps fed on sugar rather than protein (A792).

Restoration groups — what works: Groups highlight Vespex's "great success" in beech forests with high protein demand (A635, A669). It is also used to protect staff and the public in high-use recreation areas, reducing risks from stings (A790, A949).

Restoration groups — what doesn't / cautions: However, Vespex failed in sugar-limited ecosystems like Zealandia, where wasps showed no interest in the bait (A635). Groups also describe operational challenges such as weather-dependent baiting and 10-day collection requirements, which are "not really viable" in remote landscapes (A266, A1148). Funding and compliance costs are a persistent burden on volunteer programmes (A669).

Other methods used by the respondents

Responses tagged as '**Other methods'** cluster into clear, practical buckets:

Category	What it includes	Representative examples (verbatim fragments)
Aerosol/Liquid sprays	Fly/wasp/insect sprays, aerosols, jet sprays	*"Wasp spray"; "Fly spray on paper wasp nests at night"; "Raid… Black Flag; PestXpert; Permex"*
Powders/Dusts	Carbaryl/"carbrol", permethrin, Dust2Dust, DE	*"Carbaryl powder at nest entrance"; "Kiwicare No Wasps (powder)"; "dust into nest"*
Manual kill	Swat/squash/smack/stomp/bash	*"Swatting/killing in the garden"; "Smack 'em with a shoe"; "spray and bash"*
Capture/Net/Vacuum/Jars	Butterfly/hand nets, jars, vacuum	*"Catching with butterfly net"; "vacuum cleaner"; "catching and squashing"*
Electric swatter	Electric fly swat/tennis racquet	*"Electrified tennis bat"; "zapping with battery-operated bat"*
Protein baits/Bait stations	Hawkeye, "No Wasps" (non-powder), Vespex	*"Hawkeye bait stations"; "No Wasps eliminator" (if not powder)*
Barriers/Plant protection	Netting/covering, removing flowers	*"Netting plants"; "flowers removed"; "protect swan plants"*
Water-only actions	Water spray to down wasps	*"Spraying with water and trampling"*
Professional/Council	Specialist/technician/council/'bee man'	*"Pest Control Technician… in-ground wasp nests"; "Called council contractors"*
Combustibles/Non-recommended	Petrol, WD-40, flame/smoke	*"Cup of petrol down the hole"; "Flame and WD-40"; "Smoked the nest"*

Targeted queen control	Spring/overwintering queens	*“Killing overwintering queens in firewood stacks”*
General poison (unspecified)	“Poison”, “insecticides”, “chemical treatment”	*“Hardware store poison”; “Over the counter wasp poison”*
Unclear/Consideration	Not usage/unsure	*“Don’t know”; “would consider Vespex”; “removal for research”*

Do respondents use more than one method? Which control methods are used together?

method1	method2	n_both	p_B_given_A	p_A_given_B	jaccard	lift
Nest destruction	Traps	266	36.6%	69.1%	0.314	1.098
Nest destruction	Vespex baiting	146	20.1%	67.3%	0.183	1.069
Traps	Vespex baiting	89	23.1%	41.0%	0.173	1.230
Aerosol/Liquid sprays	Nest destruction	38	67.9%	5.2%	0.051	1.078
Manual kill	Nest destruction	20	55.6%	2.8%	0.027	0.883
Aerosol/Liquid sprays	Traps	18	32.1%	4.7%	0.043	0.964
Nest destruction	Powders/Dusts	13	1.8%	65.0%	0.018	1.033
Manual kill	Traps	12	33.3%	3.1%	0.029	1.000
Capture/Net/Vacuum/Jar	Nest destruction	11	78.6%	1.5%	0.015	1.248
Powders/Dusts	Traps	8	40.0%	2.1%	0.020	1.200
Capture/Net/Vacuum/Jar	Traps	7	50.0%	1.8%	0.018	1.500
Aerosol/Liquid sprays	Powders/Dusts	6	10.7%	30.0%	0.086	6.188
Aerosol/Liquid sprays	Manual kill	6	10.7%	16.7%	0.070	3.438
General poison (unspecified)	Nest destruction	6	75.0%	0.8%	0.008	1.192
Protein baits/Bait stations	Traps	5	55.6%	1.3%	0.013	1.667

Observations

- A **core bundle** dominates: **Nest destruction + Traps** (n=266, J=0.314, lift=1.10) and **Nest destruction + Vespex**(n=146, J=0.183, lift=1.07).

- **Traps + Vespex** also co-occur (n=89) with above-independence affinity (J=0.173, lift=1.23).
- "**Aerosol/Liquid** + **Manual/Powder**" looks like a **DIY micro-cluster**: small counts but very high **lift** (likely same-session, small-nest action).
- Several pairs are **highly asymmetric**: users of a niche/DIY method almost always also report **Nest destruction**, but not vice-versa.

What's most common (by counts) —

Nest destruction + Traps: **266** co-users; **69.1%** of Traps users also destroyed nests; **36.6%** of nest-destruction users also trapped (J=0.314).
Interpretation: Nest destruction is the **hub**, with Traps layered on top for many households.

Nest destruction + Vespex: **146**; **67.3%** of Vespex users also destroyed nests; **20.1%** of nest-destruction users used Vespex (J=0.183).
Interpretation: Vespex is typically part of a **multi-method strategy**, not a stand-alone.

Traps + Vespex: **89**; **41.0%** of Vespex users trapped; **23.1%** of Traps users used Vespex (J=0.173, lift=1.23).
Interpretation: Traps and Vespex often travel together among more engaged users.

What the patterns say

Multi-method is the norm among active users. The dominant bundles are **Nest destruction + Traps** (n=266; J=0.314) and **Nest destruction + Vespex** (n=146; J=0.183). **Vespex + Traps** also co-occur (n=89; J=0.173). In practice: **nest destruction is the backbone**, with trapping and, where available, Vespex layered on.

Niche "DIY micro-cluster." Small but tight pairings like **Aerosol + Powders** (lift ≈ 6.19) and **Aerosol + Manual**(lift ≈ 3.44) suggest some households tackle **small nests/spot wasps** with quick knock-down mixes. Low n → target with education, not broad programmes.

Context-specific add-ons. Capture/Net pairs with **Nest destruction** (P(Nest|Capture)=79%)—think **plant protection** (e.g., swan plants) plus occasional nest action.

Policy Implications

Our findings show how people *use* wasp control methods, but they don't yet tell us how *effective* those methods really are. Many households and groups use more than one approach — spraying nests, hanging traps, or trying Vespex — but it's not clear whether this means they are using smart combinations or simply compensating for weak tools, or if rising wasp numbers make one method alone insufficient.

What still needs to be investigated:

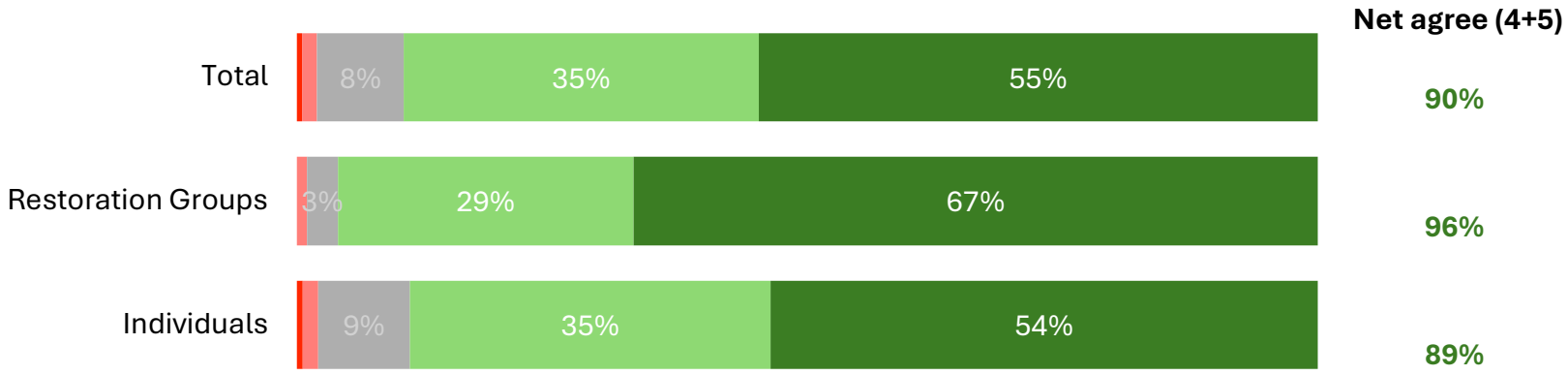
- Do these methods actually reduce wasp numbers in a lasting way?
- Are people using multiple methods because wasp problems are especially severe, or because no single method works well enough?
- Why do so many rely on DIY mixes (like spray plus powder) instead of professional tools?

Policy directions based on current behaviour patterns:

- **Make Vespex easier to access through organised channels.** Regulations requiring training should stay, but more training sessions, community grants, and simpler purchasing would help. We see Vespex working best when combined with other methods inside group efforts.
- **Discourage unsafe DIY practices.** Petrol, fire, and other hazardous methods are still being used. Clear public guidance should highlight the risks and point people to safer alternatives or local contractors.
- **Invest in testing what really works.** We need small trials that compare DIY control with professional approaches, and more follow-up with communities to understand barriers, risks, and access issues.

In short, the data tell us more about people's *behaviour and access* than about actual outcomes. The next step is to measure effectiveness directly — so we can learn which methods give the biggest and safest reductions in wasp pressure, and support communities with tools that truly work.

What are people's sentiments towards the use of poison?



Source: Q10. Using poisons for wasp control is acceptable when managed responsibly

Bottom line:

- Community sentiment is **not simply pro or anti** poison; it's **situational**. People are **pragmatic** when risk is high and tools work, but **cautious** about non-target harm and **frustrated** by cost and red tape.
- **Trust and uptake improve** when poison use is **targeted, timed, trained**, and **paired with clear guidance** and **safer alternatives** (queen trapping, nest targeting, netting, biocontrol).
- To move the needle: **maintain safety/qualification gates**, **lower friction** (training, access, cost), **publish non-target best-practice**, and **fund trials** that show where poison delivers **measurable biodiversity and safety gains** (A635, A669, A790, A949) versus where **other tools** are better.

The spectrum of views (from supportive → cautious → opposed)

Supportive/pragmatic when it works and risk is high. Some see poisons (incl. Vespex or powders) as necessary, fast, and effective—especially for ground nests or high-risk areas.
"*…truly amazing knockdown*" (A415); "*ground breaker*" (A792); "*simple, quick and effective*" at nest entry (A470); "*no wasp powder*" used in a roof (A144).
Used explicitly to **reduce public/staff risk** in busy places (A790, A949).

Conditional acceptance: okay if safe, targeted, and accessible. Many will use poison **if** timing/placement is right, products are available/affordable, and collateral harm is minimised. They ask for **easier access** and **training**.
"*Vespex needs to be more accessible… too expensive*" (A601); "*difficult to get Vespex…*" (A697); "*make Vespex readily available*" (A538); "*more training sessions*" implied across Vespex comments (e.g., A591).

Cautious/concerned about non-targets and environment. A strong theme is worry about **bees, pollinators, soil, waterways**, and general collateral impacts.
"*…worry about harming my bee population*" (A131); "*environmental impact… weighs on my mind*" (A977); "*don't like using any poison… in case it affects other wildlife or our cat*" (A285); "*concerns about the amounts of poisons being used…*" (A405); "*eco safe control… don't want toxins leaching into soil/waterways*" (A187).

Prefer natural/least-toxic or non-chemical methods. Some explicitly **oppose poison** or want it as a last resort; they favour trapping queens, physical removal, netting/plant protection, or biocontrol.
"*Would prefer natural controls over poison long term*" (A313); "*I am averse to chemical control… also any GE methods*" (A722); "*disagree with poison as the method*" (A867).
Calls for **better traps/biocontrol** options (A1098), and even **novel ideas** (A1044 water-based poisoning method for paper wasps).

Ethical tension: saving butterflies vs harming with poison. People wrestle with wanting to protect monarchs and natives while not harming other species.

"*Conscious that to really stop the wasps… I'll be harming the butterflies too*" (A883); "*balance… I don't use insecticides; want wasps on caterpillars so dahlias don't get eaten*" (A1130).

Practical barriers & mixed experiences that shape attitudes

- **Effectiveness depends on context.** Several note **Vespex can fail** when wasps aren't protein-seeking (sugar-limited systems), or timing is off.
  "*Not successful at Zealandia… sugar-limited*" (A635); "*not attracted…*" (A903); "*fiddly to get the timing right*" (A418, A266). Mixed outcomes weaken confidence in poison generally.
- **Rules, logistics, and cost dampen uptake.** Licensing, short collection windows, and price turn some away—even those willing in principle.
  "*Vespex collection within 10 days… not viable (remote)*" (A1148); "*cost… constraint*" (A1083); "*too expensive*" (A601).
- **Some still want easier access to strong poisons.** A minority explicitly call for **more available/stronger products** (including nostalgia for carbaryl), reflecting frustration with wasp pressure.
  "*Poisons should be easier to buy*" (A371); "*carbaryl… extremely effective… could an equally effective alternative be developed?*" (A426); similar sentiment (A365).

Control Barriers

Key Takeaways

Lack of knowledge is the biggest barrier. Many individuals are unsure how to identify wasp species, what tools work best, or how to find nests. They often rely on patchy sources like YouTube or word-of-mouth. Restoration groups, while more knowledgeable, still ask for consistent national guidance and simple best-practice tools for landowners and volunteers.

Time and people power matter. For individuals, control feels like a “losing battle” with one person carrying the load or giving up after years of effort. For restoration groups, volunteer numbers are stretched thin, remote sites are hard to service, and the work is physically demanding. Both groups highlight burnout as a real risk.

Costs limit action. Individuals see Vespex licensing and gear as too expensive and sometimes resort to DIY mixes. Groups note that projects often depend on limited funding for lures and baits, and call for sustained investment to make control viable at scale.

Safety is a shared concern. Individuals worry about stings, allergies, and the dangers of DIY nest removal, especially around homes and schools. Groups stress the importance of health and safety protocols for volunteers and see poison use (like Vespex) as a way to reduce risk in public areas.

Rules and red tape get in the way. Individuals express frustration with Vespex licensing, limited access to products, and inconsistent support from councils. Groups echo this, calling for a single national framework and clearer leadership so communities know who is responsible.

Mixed feelings about poisons. Some view them as necessary, fast, and effective, while others are uncomfortable about risks to bees, pollinators, pets, or the wider environment. A smaller number prefer natural or non-chemical methods and want safer alternatives.

Other barriers are practical and personal. These include difficulty finding nests in bush or on neighbouring land, mobility or age constraints, holiday-home absences, or seeing wasps as a low priority. Some also note that reinvasion from untreated areas makes their efforts feel futile.

Community action opportunities:

Provide **simple, accessible guides** to species ID, nest-finding, and safe control options.

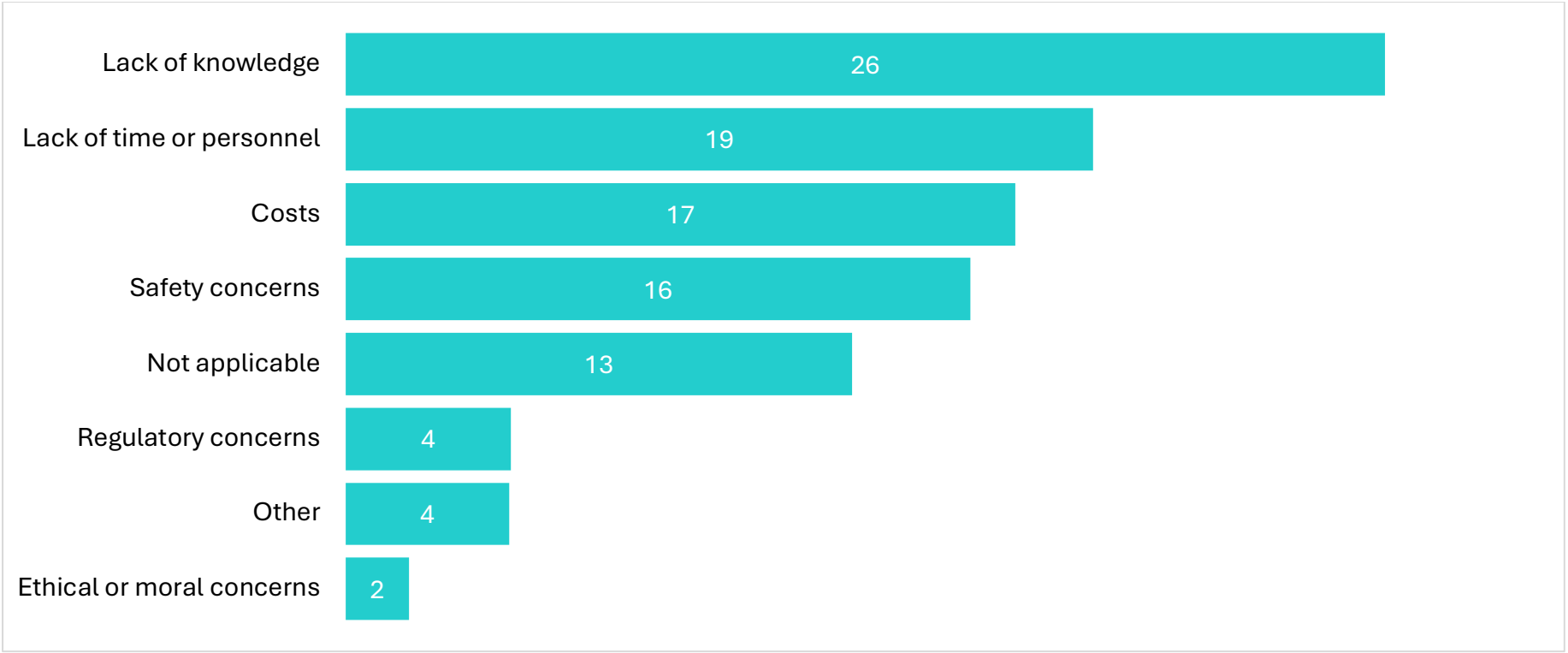
Support **volunteer and neighbour-led efforts** through blitz days, seasonal reminders, and burnout prevention.

Offer **subsidies, bulk-buying, or grants** to lower costs of effective products.

Maintain safety requirements but **streamline training and access** for products like Vespex.

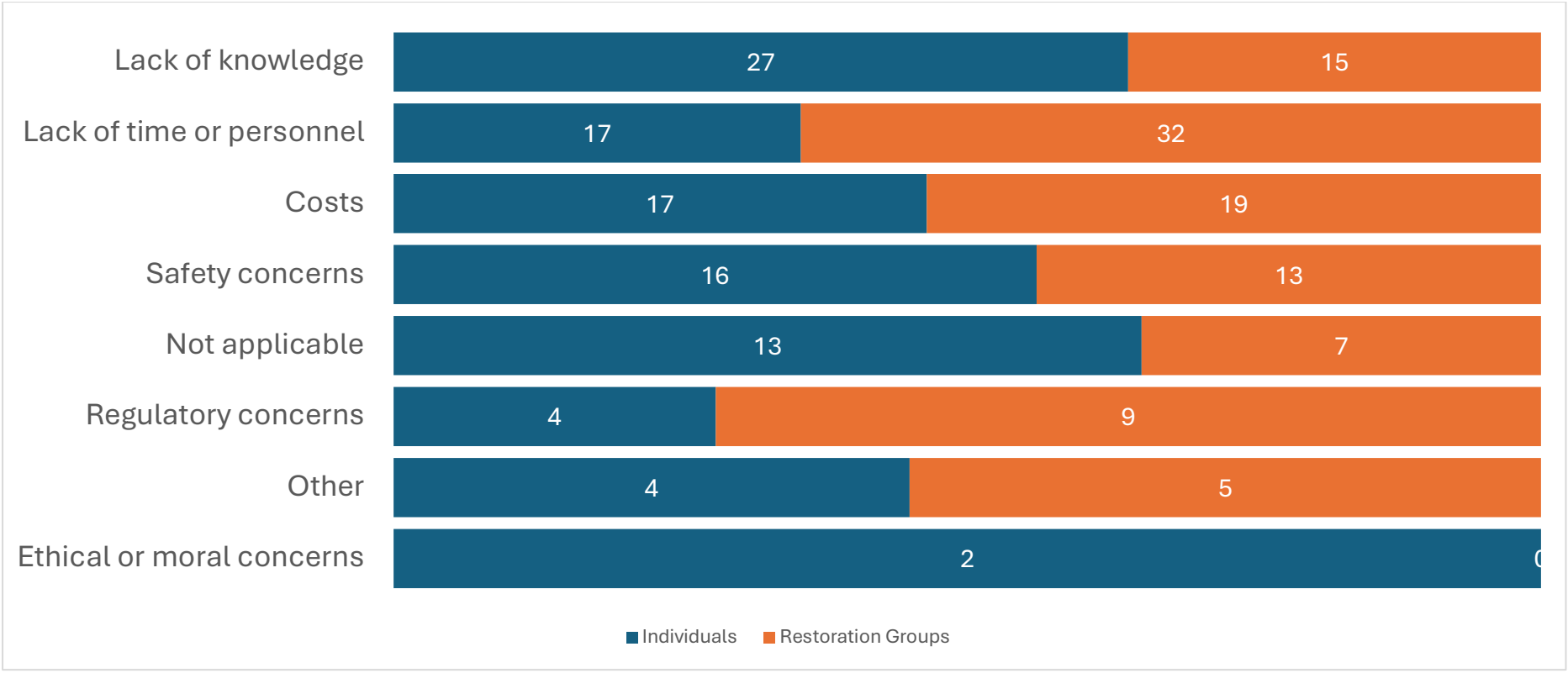
Share **clear information on safe vs. unsafe DIY practices**, discouraging petrol or fire.

Recognise that **one size does not fit all** — communities need a mix of safe, affordable, and practical options, alongside stronger national coordination.



Source: Q.15 What barriers (if any) prevent you or your group from implementing or participating in wasp control? (Select all that apply)

Lack of knowledge is the most cited barrier in implementing control measures, followed by lack of time or personnel and costs associated with implementing the measures.



Source: Q.15 What barriers (if any) prevent you or your group from implementing or participating in wasp control? (Select all that apply)

Q.

Lack of knowledge is the most cited barrier mainly among individuals (27% vs 15 % for restoration groups) – clearly something that they lack from the restoration groups.
On the other hand, restoration groups (32%) cited a lack of time or personnel in implementing control measures.

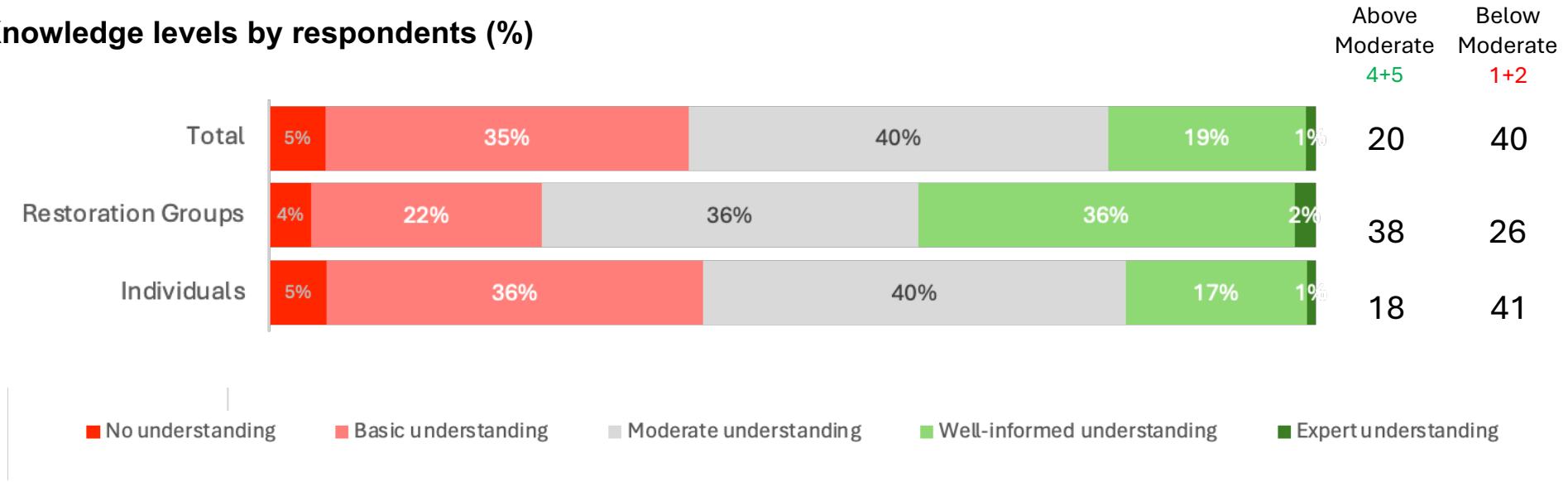
What do each group of respondents say about the different barriers they have when it comes to wasp control?

Barrier type	Individuals — what they say	Restoration groups — what they say
Lack of knowledge	Unsure of species ID and what works; mixed results with DIY traps/sprays; want clear guidance on tracking nests and homeowner responsibilities; rely on YouTube/word-of-mouth; say public info is patchy.	Public/volunteer knowledge is uneven; want stronger education, consistent national protocols, and simple best-practice guidance for communities and landowners.
Lack of time or personnel	Control feels like a “constant losing battle”; one person carrying the load; competing priorities; burnout and giving up after years of effort.	Volunteer numbers thin; programmes disrupted; remote sites and labour-intensive work stretch capacity; leader burnout; efforts feel like a “drop in the ocean.”
Costs	Vespex/licensing and gear feel expensive; ask for subsidies/training support; note rising product costs; some make DIY baits to save money.	Projects hinge on limited funding for lures/baits; request sustained investment/subsidies to make control viable at scale.
Safety concerns	Fear of stings/allergies; DIY nest control feels dangerous; worry about aggressive behaviour and hidden nests around homes, schools, tracks.	Emphasise H&S protocols for volunteers; use control (e.g., Vespex) to reduce risk around public areas and staff routes.
Regulatory concerns	Barriers around Vespex access (licensing, collection windows, availability); frustration with council/agency responsiveness and scope; loss of previously available tools; inconsistent DoC/council action.	Logistics and rules (e.g., Vespex handling in remote sites) limit operations; call for a single, consistent national framework and clearer agency leadership.

Ethical or moral concerns	Discomfort with poisons and non-target impacts (soil, water, beneficial insects); preference for natural/least-toxic methods; tension between saving butterflies and killing wasps.	Less frequently voiced than practical concerns; want safe, landscape-scale tools that minimise collateral impacts.

Lack of Knowledge as a Key Barrier

Knowledge levels by respondents (%)



Source: Q.2 Please rate your knowledge of the ecological or economic impacts of wasps on NZ's flora and fauna.

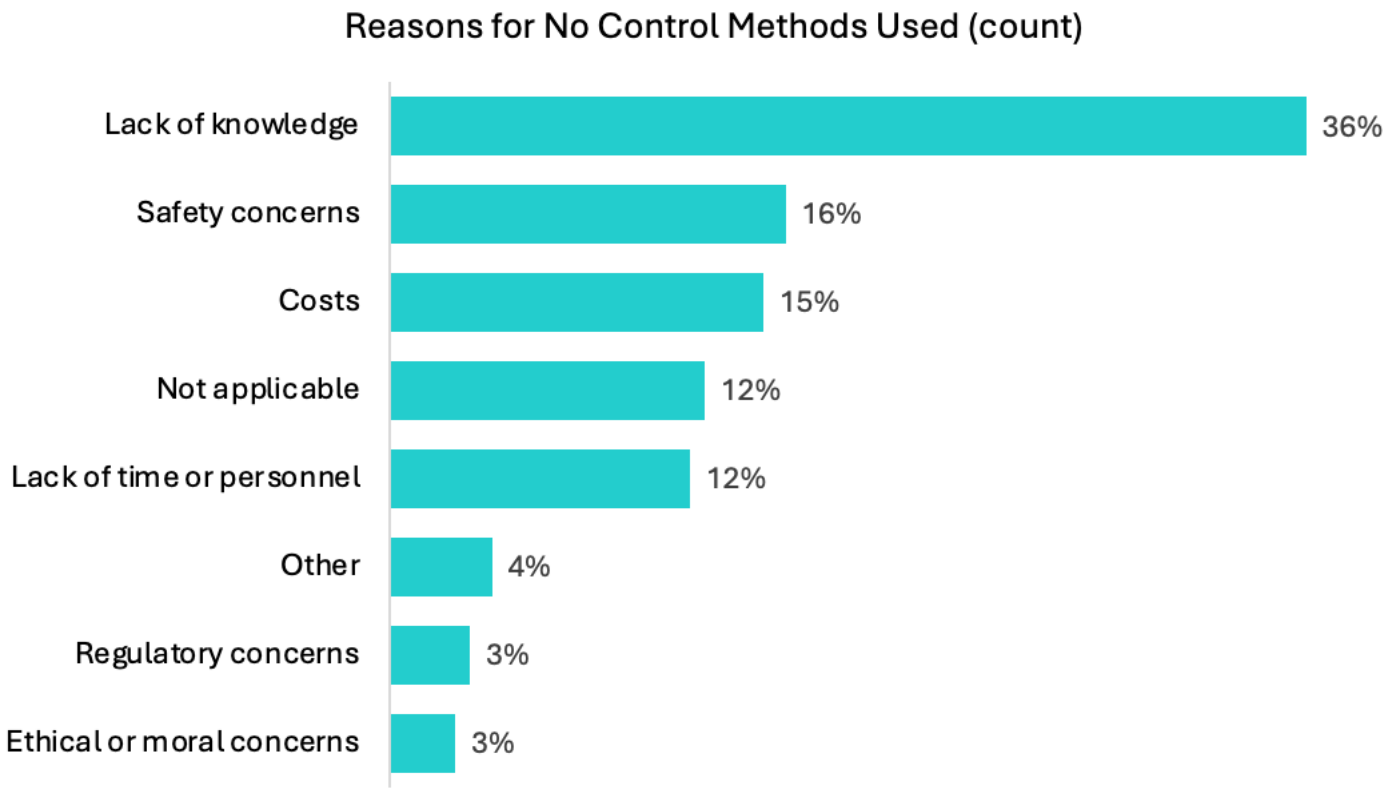
Overall, knowledge levels are weighted towards the **moderate and below-moderate range**, which together account for around 40% of responses. **Restoration groups stand out as being significantly more knowledgeable than individuals**. Among group respondents, 38% rate their knowledge as high (well-informed or expert), compared with only 18% of individuals — a gap of 20 percentage points, or roughly twice as high. Conversely, low knowledge levels (no knowledge or only basic) are much less common among restoration groups (26%) than among individuals (41%), showing a 15-point gap.

Responses tagged as **'Other'** cluster into clear, practical barriers:

Category	What it includes	Representative examples (verbatim fragments)
Finding/locating nests	Difficulty identifying or reaching nests (bushy areas, canopy, large properties, suburban access)	"Sometimes nests are difficult to find"; "I can't for the life of me find the bloody nests"; "Location of nests in tree canopy"; "Hard to find nests"
Species/tool mismatch (esp. paper wasps)	Baits/traps ineffective for paper wasps; lack of suitable species-specific solutions	"Bait doesn't work for paper wasps"; "No effective control for paper wasps"; "Paper wasps don't take bait. Flight radius unknown"
Personal constraints	Time limits, mobility/health issues, competing priorities, seasonal/holiday home presence	"Time"; "Old age"; "Mobility issues"; "Holiday home; not often there these days"
Low perceived need / awareness	Few wasps seen; not seen as a problem; low priority compared to other tasks	"I am not/was not aware that wasps were a problem"; "No significant presence in garden"; "Not a high priority and levels are low"
Permissions & property boundaries	Nests on neighbouring/private land; reliance on others; restricted to own property	"Nests being located on neighbouring land"; "Wasps on private property where owners don't care"; "Can only control on our own property"
Tool efficacy doubts (general)	Control methods don't work well; limited success; ineffective small-scale methods	"Didn't work"; "Limited success given… reinvasion"; "Effective control methods for small scale control"
Access to products/permits/logistics	Difficulty obtaining approved baits, traps, or permits; restrictions like Vespex qualifications	"Access to control powders"; "Inability to obtain fipronil bait station"; "Requirement for a

		Vespex qualification"; "Requirement to collect Vespex within 10 days is a major hurdle"
Scale, reinvasion & community uptake	Re-invasion from untreated areas; lack of large-scale or community-wide systems	"Neighbours not controlling their populations"; "No landscape scale wasp control tool suitable for rugged terrain"; "Lack of a system to empower community driven wasp control"
Risk/ethics/safety concerns	Fear of wasps; worries about poisons harming non-targets; belief wasps provide benefits	"Scared of them…"; "The impact of poisons on other insects"; "Belief that wasps kill other pest insects too"
Timing/seasonality/training	Difficulty applying Vespex at correct time; missed training or short implementation windows	"Hard to get the timing right with Vespex"; "Didn't hear Vespex course too late"
Expert support / groups / contacts	Lack of specialists, unclear contact points, no local group to join	"Unavailability of suitable, reliable pest control specialists"; "Not sure who to contact"; "No active group to join in my suburb"

Investigating reasons why no control methods were used



Key Takeaways

- **Four drivers explain ~77%** of non-use: **knowledge (36%)**, **safety (15%)**, **cost (14%)**, and **time/personnel (12%)**.
- Addressing these with **clear guidance**, **safer supported options**, **cost relief**, and **coordinated community effort** should yield the largest gains.

Barrier	Count	% of total (N=348)	What this could mean	Possible Implications / Next steps
Lack of knowledge	124	35.6%	Unsure which species they have; traps/baits confusing; don't know how to find nests or homeowner responsibilities.	Publish simple guides (species ID, nest-tracking, homeowner roles); create "how-to" one-pagers.
Safety concerns	53	15.2%	Fear of stings/allergies; DIY nest removal seen as dangerous; childcare concerns.	Provide safer options (qualified operators, community days); H&S checklists; when *not* to DIY.
Costs	49	14.1%	Vespex/licensing seen as expensive; cost of products rising.	Subsidised training/kits; bulk-buy programmes; highlight low-cost options.
Lack of time or personnel	41	11.8%	Overwhelming for one person; burnout; competing priorities.	Organise volunteer blitz days; neighbour sign-ups; seasonal reminders.
Not applicable	40	11.5%	"Not bad enough yet"; few/no wasps; monitoring only.	Target with early-season queen trapping prompts; readiness info.
Regulatory concerns	10	2.9%	Vespex licensing rules; restricted access; poor council response.	Streamline access rules; publish "who does what" map for councils/DoC/contractors.

Ethical or moral concerns	9	2.6%	Discomfort with poisons; fear of non-target impacts; preference for natural methods.	Provide least-toxic alternatives; guidance on non-target risk; promote trapping options.
Other specific blockers	19	5.5%	Rentals (landlords unwilling); low severity; no local group; lack of specialists; mobility/old age; missed training; access impractical; reinvasion discourages effort.	Develop tenant pathways; micro-hubs for local groups; provider directories; assisted service for elderly/mobility-limited; online Vespex training.

Opinion on Governance

Key Takeaways

Strong Community Willingness
Many residents, beekeepers, and local groups are already tackling wasps on their own—sometimes managing dozens of nests each season. People are eager to help further, with several ready to train, certify, or join organised control programmes.

Neighbourhood Action is Crucial
Respondents emphasise that starting in backyards and immediate neighbourhoods is both practical and necessary. Success depends on neighbours acting together, not just individuals working in isolation.

Restoration Groups as Anchors
Volunteer groups and trusts are already coordinating queen-trapping, Vespex lines, and monitoring. They are seen as essential connectors for wider community action, but they need sustainable support to prevent burnout and funding gaps.

Barriers Hold Willing People Back
Even the most committed helpers face hurdles:

- Tools like Vespex work in some ecosystems but not others.

- Paper wasps remain especially difficult to target.

- Access, safety, and costs make consistent control hard.

- Certification and compliance can be a barrier for volunteers.

Funding and Support are Key Enablers
People are calling for subsidies, equipment support, and easier access to safe tools. Without these, local action remains piecemeal and overly reliant on individual time and resources.

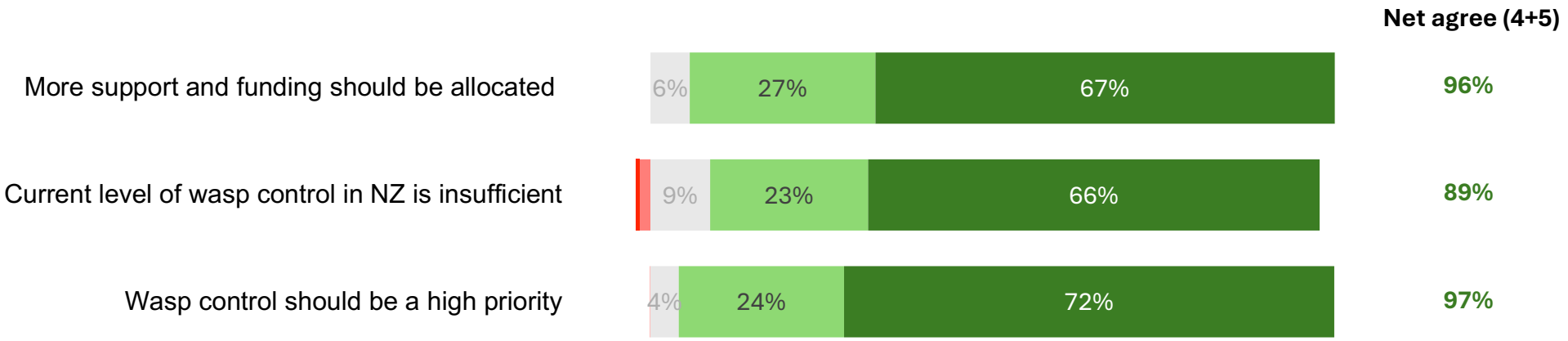
Knowledge and Training Gaps Persist
Many are motivated but unsure about the best methods for different wasp species. Clear, practical guidance and training opportunities would boost confidence and reduce wasted effort.

Partnerships Can Multiply Impact
Collaboration with beekeepers, schools, iwi, and local clubs can strengthen neighbourhood action. Stakeholders note that coordinated campaigns are more effective than scattered individual efforts.

Urgency is Growing
Respondents stress that wasp impacts on biodiversity, pollinators, and everyday life are accelerating. Without faster, coordinated, and well-supported action, the problem risks becoming unmanageable.

Perceptions on current levels of wasp control

Mandate to act: Very high support for prioritising wasp control (**96% agree**) and for **more funding** (**94% agree**).



Source: Q6. Wasp control should be a high priority for conservation efforts in NZ. (Select one response)
Q8.The current level of wasp control in NZ is insufficient to control wasp populations. (Select one response)
Q9. More support and funding should be allocated to wasp control and research. (Select one response)
(1 – Strongly Disagree, 2 – Disagree, 3 – Neither Agree nor Disagree, 4 – Agree, 5 – Strongly Agree)

Is the current level of wasp control sufficient?

Most agreed it is **far from sufficient**. Councils were often criticised for slow or limited responses:

> *"It is impossible to get local government to assist with wasp pest control in my experience resulting in individuals having to undertake dangerous control steps." (A40)*
>
> *"I have reported nests when on council land and was told that they won't do anything unless it is in an urban area or on well-used pathways." (A170)*

Others described **practical barriers** such as limited access to effective tools:

> *"Vespex is effective for wasps, but difficult to find somebody with the training and registration to use." (A74)*
>
> *"Vespex needs to be more accessible to general public. It is too expensive." (A601)*
>
> *"There are lots of gimmick-type traps that simply don't work… is there somewhere to get information about traps that work and how to best operate them?" (A146)*

Even with personal effort, people often felt overwhelmed:

> *"It's a constant losing battle and very hard to keep up with… there must be nests in every garden all around." (A157)*
> *"No matter how much we trap, spray and look for nests to destroy, we find it overwhelming as there are just too many and they keep multiplying!" (A967)*

Some noted that even when community programmes began well, they faltered due to external disruptions:

> *"The pest-free programme has been interrupted by the cyclone, Covid and the falling off of volunteers… the first time they did it, the difference was noticeable, but now the wasps seem to be back to how it was before." (A55)*

Should wasp control be a high priority for conservation efforts?

The overwhelming sentiment was **yes**. People described tangible impacts on both biodiversity and daily life. For some, it was the absence of once-common species:

> *"We haven't seen any monarch butterflies at all this past year in our garden – used to be lots." (A55)*

For others, it was the way wasps altered access to the outdoors:

> *"Definitely need more done, particularly in our forests – there seems to have been an increase over the past few years when out tramping in the bush." (A312)*

Some had adapted their behaviour entirely:

> *"More control in native forests is needed, I avoid beech forests when wasps are about." (A547)*

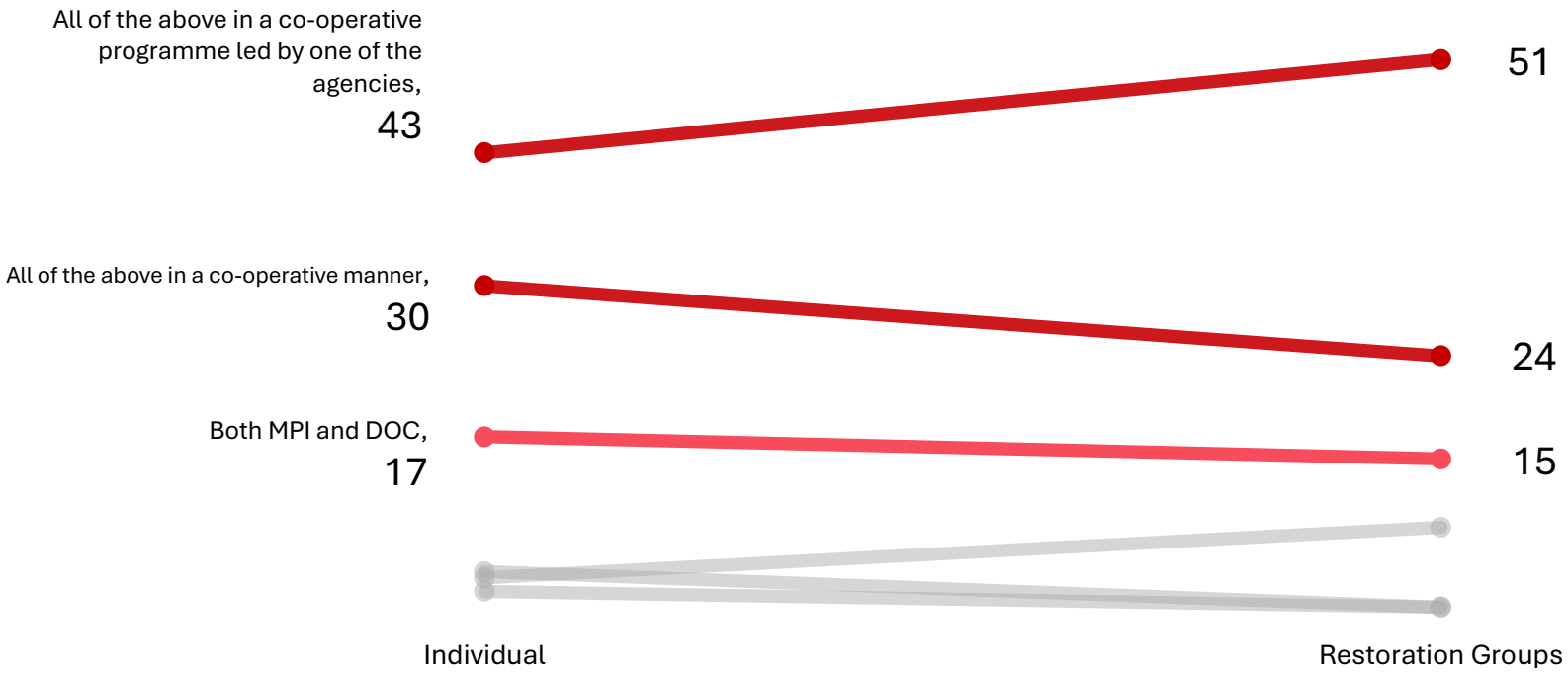
The issue of human safety surfaced repeatedly, intertwined with conservation concerns:

> *"They also made being outdoors very unpleasant… hiking is horrible when there are lots of wasps, and our local conservation group stumbled across multiple nests over summer with people getting stings." (A551)*

For a few, the ecological urgency bordered on existential:

> *“Wasps are so abundant… we are constantly horrified at the damage wasps cause in the ecosystems… it’s likely if we don’t have widespread control in place, we could have ecosystem collapse at any stage.” (A809)*

Whose responsibility should it be to provide funding and support where needed for wasp control?



Approximately **90% favour a multi-agency response**, which signals people see wasps as a **nation-scale problem** rather than something councils should shoulder alone. Single-agency solutions have little support (**~10%**)

Respondents emphasised that wasp control cannot be left to any one actor. **Government and councils were frequently named as needing to step up**, particularly where public safety or public land is concerned. As one person put it:

> *"I recently brought up the issue with the Howick pest free zone people… the council definitely needs to get on board as it isn't safe for the general public to try and eradicate them, nor is it practical." (A25)*

Others expressed frustration when councils declined to act:

> *"When I rang the council I was told they are not allowed to come on to my property to help… had to ring a guy and there was a cost not everyone can afford." (A28)*

Yet many saw this as a **shared responsibility**. Individuals and communities also have a role to play:

> *"Not just Govt/ Council responsibility, all of us need to contribute." (A23)*

Several respondents **explicitly emphasised the importance of starting control at the neighbourhood or backyard level**. They see it as the most realistic starting point, but also highlight challenges.

Neighbourhood Responsibility & Empowerment

Some wanted clearer ownership at the local level:

> *“Landowners need to take responsibility for pests on their land – all pests. Nobody wants to put their hand in their pocket but expects the taxpayer to solve their local problems.” (A436)*
>
> “I’d like to see more empowerment of individuals – like with rat traps, where everyone is encouraged to look after their own backyard.” (A948)
>
> “Everyone needs to be proactive in controlling the introduced species… hard to manage but killed 4 nests of Germans, numerous paper…” (A342)

Neighbour Cooperation & Gaps

Respondents pointed out that **success depends on neighbours acting too**:

> “Very hard to eliminate them as we rely on neighbors being vigilant as well. Some neighbors are better than others at destroying nests when found.” (A167)
>
> “The neighbours did have a German wasp nest tho. Communication with neighbours located many wasp nests in a vacant lot on the fence and even on tin sheds. Lack of knowledge in some neighbours was sad but most are aware of paper wasps.” (A204)
>
> “We’ve removed several nests over the 12 years we’ve been at this property but they still come, from neighbouring properties.” (A656)

Backyard Action but Feeling Overwhelmed

People described actively taking action themselves but feeling limited:

> *“As I am on a town section, it is only within my boundary that I am able to destroy any nests I find. I don’t know what is happening on neighboring properties.” (A823)*
>
> *“No matter how much we trap, spray and look for nests to destroy, we find it overwhelming as there are just too many and they keep multiplying!” (A967)*
>
> *“It’s a constant losing battle and very hard to keep up with, I might be the only person doing this on my street… there must be nests in every garden all around.” (A157)*

Calls for Support & Coordination at Local Scale

Some suggested that **councils, groups, or coordinated networks could help neighbourhood-level action**:

> *“Here in the Rai Area we need a more coordinated effort to involve the community in a widespread drive… more groups such as local garden club, school children etc.” (A419)*
>
> *“The Kiwi Trust have a good wasp control programme and encourage home owners to put wasp traps up where the numbers are high… funding for volunteers to service this area would be great.” (A625)*
>
> *“Regular wasp control traps should be set in as many areas as possible across New Zealand, community groups could assist with this too.” (A590)*

Restoration and volunteer groups were considered vital, though currently under-supported:

> *“We are part of a group in Penzance Bay Marlborough who monitor & place Vespex bait for wasps. What we are doing is just a ‘drop in the ocean.’ So much more needs to be done!!” (A64)*

Some respondents broadened the net further, pointing to **industry and iwi roles**:

> *“Wasp control research should also be funded by the honey industry – hives are directly killed by wasps, and wasps and honey bees together compound food resource competition.” (A807)*
>
> *“Iwi and mana whenua input is also valuable.” (A452)*

Should more support and funding be allocated to wasp control and research?

This question elicited strong calls for **increased investment**, directed both at households and community groups. Subsidies and training were a common request:

> *"It would be good to provide households with some insight and subsidised costs to assist in reducing wasps." (A127)*
> *"Councils could subsidise training with Vespex for restoration groups… until an effective method of control is found for paper wasps, they will continue to be an issue, so research needs to be invested in." (A593)*

Respondents also stressed the importance of **developing new control tools**:

> *"Investment in wasp control is lacking… one area which could be beneficial is more funding into research of control methods including the use of biocontrol." (A96)*
> *"Research is needed around potential methods for landscape-scale paper wasp control." (A450)*
> *"It would be great if they could research traps for Asian paper wasps. Have not found anything that works." (A1098)*

Some looked ahead to innovative technologies:

> *"I am hoping with new technology small drones will be able to track down nests and destroy [them] in the not too distant future." (A1149)*

Underlying these requests was frustration at cost:

> *"The cost of wasp control baits etc. are starting to get too costly." (A137)*

Should restoration groups be actively involved in wasp control initiatives?

There was **widespread support for restoration and community groups** playing an active role. Many pointed to current examples as proof of what can work:

> *"The Whakatane Kiwi Trust has been using a pheromone-based trapping system… this has resulted in fewer reported wasp nests and wasp stings." (A94)*
> *"We live on the edge of Kahurangi NP… for the past 4–5 years our neighbours and us have all been baiting for wasps and when necessary poison nests and the wasp populations have definitely taken a hit." (A211)*
> *"GWRC provides volunteers with spray to destroy nests. Their sting is horrific." (A307)*

But challenges were equally visible. Volunteers described burnout and resource gaps:

> *"The pest free programme… has been interrupted by the cyclone, Covid and the falling off of volunteers." (A55)*
> *"I got volunteer burn out after 4 years running the group." (A1130)*
>
> *"The landscape (steep valley) and resources (mostly volunteers) makes this difficult. We may have to cease control efforts completely going forward." (A1148)*

Still, respondents saw **community involvement as indispensable** if backed by training, resources, and coordination:

> *“We released a wasp biocontrol, and many parties, including tangata whenua, were involved. In partnership with Landcare Trust, we offered free Vespex training to the community… I think community needs some buy in and participation, even if the ‘official’ agencies are involved.” (A524)*

> *“Here in the Rai Area we need a more coordinated effort to involve the community… more groups such as local garden club, school children etc.” (A419)*

> *“Regular wasp control traps should be set in as many areas as possible across New Zealand, community groups could assist with this too.” (A590)*

Others who are offering to help

Across backyards, farms, sanctuaries and parks, people are stepping up on their own time—and often at personal risk. Some have become the unofficial “wasp person” for their street or district, documenting dozens of nests a season and fielding calls from neighbours:

> *“This season I dealt to 40 Paper wasp nests… and 24 German wasp nests… **Community relies on me** to deal to the German wasps!” (A88)*

Beekeepers and restoration volunteers are especially active, motivated by hive protection and public use of outdoor spaces:

> *“As a beekeeper… a constant battle… to stop hives being invaded by German Wasps.” (A199)*
> *“Manage a VESPEX baitline at Kaitoke Regional Park campground… public can be upset—**primary reason we control**.” (A790)*

Many want to **skill up** and formalise their contribution:

> *“I’m happy to get certified to try Vespex.” (A100)*
> *“I plan to get Vespex certified this winter… **will also offer help to the community**.” (A226)*

Others bring **specialist knowledge**—or even offer to share playbooks:

> *“I did eradication for a few years… It started as a hobby… **Message me. I can give you first-hand experience.**” (A203)*
> *“I upload wasp sightings to **iNaturalist** so scientists and local pest control can react.” (A654)*

Groups are organising lines and seasonal campaigns where they can:

> *“We have **one of our 45 volunteers** Vespex-qualified… a local beekeeper is also certified.” (A641)*
> *“Kiwi Trust… **encourage homeowners** to put traps up where numbers are high.” (A625)*
> *“Since 2020 we’ve been **queen-trapping in Spring**… removing **500–1000 queens per season**.” (A659)*

There’s also a strong **advocacy current**—from public comms and engagement to calls for sector partnerships:

> “As a community organisation, our biggest value is **engaging the public** with common, cheap fixes.” (A926)
> “**Need to get alongside the bee industry**—they’re light years ahead of you on this.” (A498)

Some carry long memories of hard-won control:

> *“Average of **10 nests destroyed each summer** within 2 km of home… things have slowed down now.” (A104)*
> *“**20 years** at Nelson Lakes and Rotoroa.” (A453)*

And the motivation is visceral—protecting monarchs, native invertebrates, and people:

> *“If I hadn’t protected my caterpillars and chrysalises, **wasps would have taken them all out**.” (A1024)*
> *“The pest wasps simply **must be obliterated**… **I shall do anything I can to help**.” (A1001)*