

IoM Invasive Species Action Plan: Asian Hornet *Vespa velutina*

Aim

To plan the response to arrival of the Asian hornet *Vespa velutina* on the Isle of Man and promote early detection.

Objectives

To protect as far as possible the honey bee population from the Asian hornet by:

1. early detection through raised awareness, particularly amongst beekeepers and pest control operatives;
2. intercepting and preventing its establishment by nest destruction, eradicating localised outbreaks; and
3. establishing long term management if eradication becomes impracticable.

The issues

The Asian hornet is an exotic introduction to Europe and is an aggressive predator of honey bees, which provide by far the most concentrated food source for these wasps, but they also take a wide range of other (beneficial) invertebrates. This hornet is therefore mainly a concern to beekeepers to protect their colonies from being destroyed. There is also an increasing interest in native 'black bees' on the IoM, with a local breeding programme. This is aided by the restriction on the importation of bees as protection against parasites and diseases, but an incursion of Asian hornets could greatly disrupt this work which is now of wider British interest.

Horticulturalists and farmers who rely on insect pollination (rape seed oil, fruit, cider) could also be affected by a reduction in pollinating insects and in particular the honey bee population. Although this is only a small proportion of farmers on the IoM currently, the establishment of this species could restrict the potential of agriculture and horticulture in the future (eg. linseed, new orchards) and could also affect those producing their own food or selling small quantities, which may be of greater public interest currently than large scale horticulture.

Asian hornets can establish colonies in urban and suburban environments (eg. parks and gardens), potentially bringing them into contact the large numbers of people. Those who are susceptible to anaphylactic shock may be at risk from an aggressively defensive species such as this (see notes on nest destruction).

The Government is therefore keen to prevent this species from establishing itself on the Isle of Man.

Status, spread and routes

This is a large wasp native to parts of eastern Asia and was accidentally introduced to south-west France in 2004 on ceramic pots containing bonsai trees. It spread rapidly in France, and reached Spain, Belgium, Portugal and Italy by 2013 and has been found in the UK in 2016 and 2017, where eradications have been activated. Vigilance is therefore necessary on the IoM. If queens are present, spread in the British Isles could be rapid. A single, mated queen can found a new colony but only the queen survives the winter. Molecular evidence suggests that the entire French population was founded by a single mated queen.

Any occurrence in Lancashire or Merseyside would be of particular concern due to the two regular passenger ferry routes (Heysham and Liverpool/Birkenhead to Douglas) and the Heysham freight connection, but mated queens could also fly over themselves. Mated hibernating queens could also hitch with transported products (wood and wood products, goods such as garden ceramics, soils, fruit and freight), as was believed to be the original route of invasion into Europe, or on other craft, so sources anywhere in the UK, or even internationally, could directly transmit wasps (invertebrates occasionally arrive on the Isle of Man from across the world with fruit, and other products). There are also flight connections to many airports in the British Isles and occasionally elsewhere in Europe, which could potentially provide direct carriage. Marine development proposals may increase the risk of future cross-sea movements, providing stepping stones.

Risk assessment

The GB Non-Native Species Programme Board (NNSPB) commissioned the National Bee Unit (NBU) to undertake a Non-Native Organism Risk Assessment for the Asian hornet for the UK (see Resources) which is summarised as follows.

- Entry: very likely
- Establishment: very likely
- Spread: rapid
- Impacts: moderate
- Conclusion: medium risk

The NNSPB concluded that it was unlikely that methods could be deployed to reduce the risk of entry to the UK and recommended that measures be put in place to initially intercept and prevent establishment, moving to longer term management if this is no longer possible.

Action plan

1. Early detection through raised awareness

It will be imperative to identify possible Asian hornets quickly and to find all queens and nest sites as soon as possible. The species is distinctive (see identification sheet). They are likely to be found close to bee hives and at water sources. Beekeepers are most likely to notice Asian hornets.

Asian hornets produce large paper nests, mostly in the crown of trees and sometimes high up. Forest edges near water sources are favoured as nesting sites, but in Aquitaine about 30% have been found in buildings and 12% in hedgerows. It is not practical to fully prevent the species from arriving on the IoM, but areas close to ports and airports are the most likely areas for the first nests. Particular vigilance is recommended in these areas, by beekeepers, and by importers, transporters and handlers. Overwintering queens conceal themselves in woodpiles, under tree bark, in soil (occasionally), in garden furniture, outbuildings, etc.

If this species establishes itself in the British Isles, identification and awareness materials (eg. links to the identification sheet and alert poster, see Resources) will be distributed by the Department of Environment Food and Agriculture to relevant stakeholders on the Isle of Man (those involved in apiculture, agriculture, horticulture, fruit, plant and timber importation, and transportation into the Isle of Man). Articles have already appeared in the newsletter of the British Beekeepers' Association, of which a large proportion of Manx beekeepers are members (102 in November 2013). The Nature Conservation Forum set up by the Department of Environment Food and Agriculture (DEFA) will be informed, thereby reaching most local nature conservation and countryside NGOs and public awareness will be raised via press release, leaflets and posters. Local pest control companies will be notified.

Records, properly identified or otherwise, should be sent immediately to DEFA (the Senior Biodiversity Officer (Zoologist), if available) or the Bee Inspector, to minimise delay. Other organisations likely to receive natural history records will be notified of this request (Manx National Heritage, Manx Wildlife Trust, Beekeepers Groups and the IoM Beekeepers Federation) though there is no legal requirement to report.

Note there are no sentinel apiaries on the Isle of Man.

2. Intercepting and preventing its establishment by nest destruction, eradicating localised outbreaks

On suspicion (report) identification will be made by the Bee Inspector or the DEFA Senior Biodiversity Officer (Zoologist).

They will report positive identifications to DEFA staff and political members and stakeholders as appropriate (see list above). The GB Non-native Species Secretariat will be informed to raise awareness in the UK adjacent areas and a record will be logged on the DEFA Recorder database. The IoM Beekeepers Federation and the Bees, Wasps and Ants Recording Scheme (BWARS) will be notified.

A committee will be formed, of the Senior Biodiversity Officer (Zoologist), Environmental Health Officer, Government Veterinary Officer and Bee Inspector. This will be responsible for implementing this plan and agreeing necessary details, reporting to the DEFA Senior Managers Committee. DEFA hold a register of all apiaries, therefore all beekeepers can be informed whether members of the IoM Beekeepers' Federation or local groups, or neither. It is important that they are all made aware of the arrival of this species and what to do about it. There should be liaison with FERA to ensure up-to-date and effective methods.

Nests in the vicinity of confirmed sightings will be sought and identified by the Bee Inspector or Senior Biodiversity Officer (Zoologist) and other DEFA officers, where necessary (see NBU 2012a).

DEFA Environmental Health will destroy any Asian hornet nests. Each nest will be assessed on an individual basis, based on height, location and risk to the technician prior to treatment. Consideration will be given to the most up to date NBU guidance on control methods (see NBU, 2012b). In addition to the usual protection against bees and wasps, appropriate PPE includes heavy clothing beneath the bee-suit and goggles to protect against venom splashing through the mesh visor. Never work alone. Note that DEFA Pest Control officers do not undertake tree climbing, nor are they trained trainers. There are trained tree climbers in DEFA, but they don't undertake pest control. The use of a cherry-picker or long-handled injection techniques will be taken into consideration if the nest is not readily accessible. There are a small number of UK operatives (Animal and Plant Health Agency) who have received specialist training in France on the use of long-pole injection techniques using specialised equipment, to about 13m height. Treatment at night ensures that the wasps are all present, to remove the whole colony, but note that low temperatures can reduce the effectiveness of the pesticides. Nests have only one entrance, 2 to 3cm wide.

Nests that have been killed will be burnt within 48 hours wherever possible because the larvae can survive and reform the colony. This also allows the identification of new colonies and avoids secondary poisoning of predators and scavengers, such as birds.

The Committee will undertake any other appropriate measures, such as advice to beekeepers on the creation and use of traps to protect their apiaries, and will consider trapping in the area of confirmed records (see NBU 2012c, 2012d)

Where a likelihood of presence remains, the Committee will encourage early spring trapping of mated queens (late February/March), noting that well designed traps can reduce the numbers of hornet nests by more than 90% in areas where they are established.

The Committee will monitor the situation and consider whether to move to step 3, if establishment can no longer be prevented, for whatever reason.

3. Establishing long term management if eradication becomes impracticable

In the event of a decision by DEFA to change the response from interception and eradication to long-term management, Government's role will be to advise and provide information to beekeepers, land owners and other stakeholders on how to manage and control this species.

Beekeepers will be advised to introduce traps (including spring trapping) into their apiaries, restrict access points to hives, to 5.5mm (traditional metal strips are ineffective at Asian hornet exclusion) and consider allowing tall grass in front of hives to disrupt predation. The destruction of any nests will become the responsibility of the land/property owner or other responsible body. The cost of further

Environmental Health control will be a matter for consideration at this stage. As the destruction of Asian hornet nests is a potentially dangerous activity due to their size and location (often some distance from the ground), it should only be undertaken by a trained professional. Chemical destruction is considered to be the preferred method as other options such as fire or rifle shooting are potentially hazardous to the operator and the environment and are also less effective and will cause surviving hornets to move to a new site requiring a further eradication attempt.

Legislation

There is no statutory requirement to report this species or control it, nor is there any power to require control or to access land for monitoring or control. It is therefore important that people are aware of the issue and watching for the occurrence of this species and for landowners to understand the necessity of providing or allowing monitoring and control.

References

NBU (2012a). How to locate an Asian hornet nest site. Guidance note. Fera, National Bee Unit, York, Feb 2012.

NBU (2012b). Chemical control for the Asian hornet. Guidance note. Fera, National Bee Unit, York, Feb 2012.

NBU (2012c). Monitoring for Asian hornets in sentinel apiaries. Fera, National Bee Unit, York., March 2012.

NBU (2012d). A monitoring trap for the Asian hornet. Factsheet. Fera, National Bee Unit, York, June 2017. <http://www.nationalbeeunit.com/index.cfm?pageId=167> Accessed 27/3/2018.

Resources

GB Non-native Species Secretariat website

<https://secure.fera.defra.gov.uk/nonnativespecies/alerts/index.cfm?id=4>

The Asian hornet alert page includes: identification and information sheets, UK records email, peer-reviewed risk assessment for non-native species, alert poster.

National Bee Unit's BeeBase website

<https://secure.fera.defra.gov.uk/beebase/index.cfm?pageId=208>

A key source of information in the event of an outbreak, to disseminate information, and be updated when there are significant developments to report. It will include:

- the location of the outbreak area(s)
- advisory and technical information on the Asian hornet
- detection and control methods.
- general advice for interested parties, e.g. press.
- links to relevant websites for further technical information.

BWARS <http://www.bwars.com/> and

Hymettus Ltd <http://hymettus.org.uk/> Joint information sheet BWARS/Hym/MNHN.

IoM Contacts

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IoM Beekeepers' Federation <http://www.iombeekeepers.com/>.

This plan is based on the UK Asian Hornet Response Plan and related guidance and the advice of DEFRA and the National Bee Unit. It has been written by liaison between DEFA Forestry Amenity and Lands Directorate (Biodiversity), DEFA Environmental Health, DEFA Animal Health and the IoM Bee Inspector.