

CASE STUDY

CUSTOMER

Defra and the Non-Native Species Secretariat

DELIVERABLE

Early-warning mechanism for invasive non-native species

OUTCOME

Informing rapid response to invasive non-native species



From the initiation of APHA's response to Asian hornet, we quickly realised that call handling and triaging of information from the public was vital. Having a mechanism in place through Defra's Non-Native Species Secretariat with CEH proved to be the perfect solution. This allowed our National Bee Unit technical staff and inspectors to concentrate their skills to deliver our on-the-ground response... Working with CEH proved to be a great partnership generating many synergies."

Dr Kelvin Hughes

Head of Plant & Bee Health,
APHA



Asian hornet

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Non-Native Species Alerts

Asian Hornet *Vespa velutina*

The challenge

There is a rapid increase in the number of non-native species arriving in Great Britain. Early-warning and rapid response are seen as effective ways to address the threat to biodiversity, the economy or society posed by about 15% of these new arrivals.

The research

The GB Non-Native Species Information Portal (GB-NNSIP) is an on-line information system (www.nonnativespecies.org) developed by the Biological Records Centre at the Centre for Ecology & Hydrology and funded by Defra. It involves a network of people, including the volunteer recording schemes and societies alongside CEH and other organisations such as the British Trust for Ornithology (BTO), the Botanical Society of Britain & Ireland (BSBI) and the Marine Biological Association (MBA), sharing information on non-native species (NNS).

The GB-NNSIP covers species within England, Scotland and Wales and comprises a register of NNS, together with supporting information including country of origin, arrival pathway, establishment status, occurrence within habitats, date of first record, human impact and environmental impact.

The GB-NNSIP is updated at least annually and is dynamically linked to the National Biodiversity Network (NBN) Gateway (<https://data.nbn.org.uk>) which provides maps of the distribution of the NNS within Great Britain.

The Alert System

The Alert System was established at an early stage of the GB-NNSIP in response to a need for rapid information flow to inform early warning and detection. In total 41 non-native species have been agreed by the GB-NNSIP steering group to be worthy of inclusion





The Centre for Ecology & Hydrology has helped to develop innovative methods in recording invasive non-native species, including the use of new technologies such as smartphone apps...

The data management support and mapping expertise provided by the Centre for Ecology & Hydrology staff is first class."

Dr Peter Brown

Anglia Ruskin University

on the Alert list. Five of these species are given additional profile within the Non-Native Species Secretariat (NNSS) website (www.nonnativespecies.org/alerts/index.cfm) because they are part of the GB rapid response protocol system. The Alert System comprises both an on-line component using iRecord and a dedicated email account (alert_nonnative@ceh.ac.uk) to receive information on alert species.

The Asian hornet

The Alert System includes species identified as high-risk through horizon scanning. The Asian hornet, *Vespa velutina*, is one such species, which arrived in France in 2005 and spread rapidly across the country and into Spain in 2010. It is a predator of various invertebrates including pollinating insects and so poses a threat to native biodiversity.

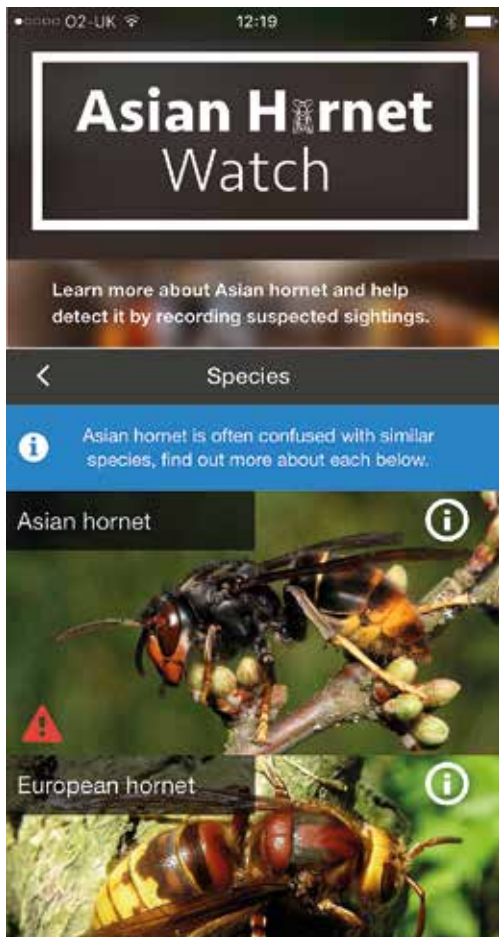
There has been considerable media publicity about this species and also targeted promotion on its early detection to the beekeeping community. Consequently many people have sent sightings through iRecord and a designated e-mail account for alert species. Most records were identified as European hornets, *Vespa crabro*, or other large flying insects that mimic wasps, but on 19th September 2016 the first Asian hornet record was confirmed from Tetbury, Gloucestershire.

CEH have been critical in providing information to Defra's National Bee Unit (NBU) and the NNSS arriving through the Alert system. Ecologists at the CEH (alongside the Bees Wasps and Ants Recording Society) have managed >2000 records over the four weeks following detection of the Asian hornet. Details and summaries of records received through the Alert System over the last year have been valuable to inform the rapid response team from the NBU.

Following the first sighting, Defra commissioned CEH to develop a smartphone app for submitting Asian Hornet records into the existing Alert System. This was achieved within less than three weeks and includes content on identification and ecology of the Asian hornet alongside detailed information on species that are commonly confused with it.

The outcomes

- Development of the Alert System for non-native species.
- Horizon scanning through a prioritisation workshop involving experts to determine non-native species for inclusion within the list of "Alert" species.
- Response to recorders (and transfer of information to stakeholders as appropriate) for observations submitted through the Alert System.
- Rapid development of a smartphone app "Asian Hornet Watch" in response to need from stakeholders, ready for release in 2017.



Smartphone app developed in under 3 weeks in response to the arrival of the Asian hornet

The CEH projects described here have multiple partners across the UK, Europe and worldwide that are too numerous to mention individually. Please visit our website for partner details.