

## **Consultation on Class Licence WML-CL22:**

To permit the release of non native subspecies of the bumblebee (*Bombus terrestris*) in commercial glass-houses or poly-tunnels for crop pollination and research

### **Summary of this consultation:**

Natural England wishes to reduce the environmental and disease risks posed by the release of commercially reared non native bumblebees imported into the country. Natural England will not renew class licence WML-CL22 under the Wildlife and Countryside Act 1981 (as amended) when it expires on 31<sup>st</sup> December 2014 to permit the release of non native bumblebees beyond this date. This consultation seeks views on Natural England's proposal to not renew the class licence. Proposals to release non native bumblebees would instead be considered on their own merit and if approved, would be subject to individual licences.

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#### **1. Scope of this consultation**

Natural England is proposing a change to the licensing regime relating to the release of commercially reared non native pollination bumblebees in England under section 16 of the Wildlife and Countryside Act 1981 (as amended). **This change will not affect or place any restrictions on the use of commercial native pollination bumblebees which are now being used by many English growers.**

Natural England wishes to reduce the environmental and disease risks posed by the release of commercially reared non native bumblebees which are being imported into the country.

The class licence WML-CL22 will expire on the 31<sup>st</sup> December 2014 and Natural England does not propose to issue another class licence for the release of non native bumblebees to the wild. Non native bumblebees may still be used in both greenhouses and permanent secure poly-tunnels where these structures (both greenhouses and poly-tunnels) are totally screened to prevent insects either entering or leaving the structures and do not provide habitat for non native bumblebee queens to hibernate over winter. No licence is required when non native bumblebees are used in this manner.

Growers who wish to release non native bumblebees in any other circumstances will need to apply to Natural England for an individual licence under the Wildlife and Countryside Act. Growers will need to demonstrate a clear need to release non native bumblebees, rather than native bumblebees, as part of the licensing process. There are no restrictions placed by Natural England on the release of the native British bumblebee *Bombus terrestris audax*.

The licensing regime only applies to England, although it is considered likely that, due to the nature of the commercial bumblebee industry, any changes may impact on businesses throughout the United Kingdom, the Republic of Ireland and the Isle of Man.

This change will bring England into line with the licensing policies in Scotland, Wales and Northern Ireland.

Natural England does not have any regulatory involvement in the importation of bees and bumblebees into England. Our only involvement relates to the release of non native species in England. Further information on the regulations relating to importing bees and bumblebees can be found at:

<https://secure.fera.defra.gov.uk/beebase/index.cfm?sectionid=47> .

## **2. Consultees**

This consultation has been sent directly to those growers and researchers who registered with Natural England to release non native bumblebees under the grower class licence in either 2013 or 2014, as well as a number of organisations who may have a particular interest in this licence. A list of these organisations is given in Appendix 2.

The consultation is not restricted to those we have contacted directly. We would also like to hear from conservation bodies, academics, researchers, farmers, honey bee keepers and members of the public interested in this subject.

The consultation aims to give individuals, businesses and groups the opportunity to comment on the proposed changes and to make us aware of particular circumstances that may need further consideration. We will consider all information before reaching our conclusions.

## **3. How to respond**

The consultation is open for six weeks from 6<sup>th</sup> August to 17<sup>th</sup> September 2014.

Enquiries about the content or the scope of the consultation should be sent to [wildlife.consultation@naturalengland.org.uk](mailto:wildlife.consultation@naturalengland.org.uk) or contact us on 0845 600 3078.

Please use the response form at Annex 3 to let us have your views. Responses to the consultation should be sent to [wildlife.consultation@naturalengland.org.uk](mailto:wildlife.consultation@naturalengland.org.uk) or in writing to "Bumblebee Consultation", Wildlife Licensing, Natural England, First Floor, Temple Quay House, 2 The Square, Bristol BS1 6EB. Please ensure that your answers reach us by the 17<sup>th</sup> September 2014.

## 4. Background

The Wildlife and Countryside Act 1981 makes it an offence to release into the wild any animal of a kind which is not ordinarily resident in, or a regular visitor to, Great Britain in a wild state. In England, as in other parts of the United Kingdom, commercially reared bumblebees are used to pollinate a range of horticultural and agricultural crops; particularly greenhouse tomatoes and poly-tunnel soft fruit (mainly strawberries and raspberries).

For many years the companies producing bumblebees for the English market have supplied the non native insects *Bombus terrestris terrestris* or *Bombus terrestris dalmatinus* rather than the native British subspecies *Bombus terrestris audax*. In 2013, according to Natural England licence return data, non native bumblebees were released in England from at least 17,311 hives imported into the country. However, in recent years the native *B t audax* has also been produced for commercial use.

As the government's wildlife licensing authority, Natural England is responsible for issuing any licences that allow the release of non native bumblebees.

A risk assessment commissioned by the Great Britain Non-native Species Secretariat, originally undertaken between 2008 – 2011, is currently being updated, (<http://www.nonnativespecies.org/downloadDocument.cfm?id=866>). The assessment identifies a range of risks associated with the release of imported non native bumblebees, reflecting growing concerns about the potential ecological impacts and disease risks posed by the releases of these insects. Although the update has yet to be confirmed, it is likely that this will occur before the end of this consultation, and as drafted the overall assessment has not changed. The proposal not to renew class licence WML-CL22 is made on the premise that the assessment will not alter substantially from that consulted upon, and the overall risk assessment remains as "medium".

## 5. Need for commercially reared non native bumblebees

Natural England recognises the economic importance of commercial bumblebees for crop pollination. In response to the perceived continuing need for commercially reared non native bumblebees in 2013, Natural England issued a class licence to permit the release of these non native insects.

However, the companies who produce commercially reared bumblebees are now able to supply the British native *Bombus terrestris audax* to the English market and thus a viable alternative to non natives is now available.

## 6. Risks associated with non native bumblebees

If they escape from greenhouses and poly-tunnels non native bumblebees could become established in the wild and then become invasive. This could cause ecological damage to both insect and plant communities. As well as becoming established, non native bumblebees may hybridise with the native *Bombus terrestris audax*, which could result in the loss of this unique British and Irish subspecies.

Non native bumblebees imported into England could introduce disease, pathogens and parasites which could then infect wild pollinators and honey bees, potentially causing the loss of native species and a negative impact on food production if pollinators are adversely affected by these infections. Non native bumblebees may also introduce new, more virulent strains of the diseases and parasites already present in England.

## Evidence from published papers relating to the ecological risks posed by the release of non native bumblebees

The GB Non Native Species risk assessment notes:

“*Bombus terrestris* as a species is not considered invasive in its “native” range, although commercial sub-species have been suggested to be so. Recent genetic studies provide some evidence for establishment of commercial populations and admixture with native sub-species, which is a threat to their genetic integrity and potentially adaptation to local conditions (Murray, unpublished, Kraus et al, 2011).

Following recent establishment, *B. terrestris* commercially produced subspecies are invasive in Japan, Chile and Argentina (Montalva et al, 2008; Torreta et al, 2006; Inari et al, 2005) all of which have a native bumblebee fauna, and in Tasmania (which has no native bumblebees) (Winter et al, 2006; Schmid-Hempel et al, 2007; Hingston, 2006). In Japan, the invasive threat includes disruption of native bumblebee mating systems (Kondo et al, 2009) and disruption of plant pollinator interactions (Kenta et al, 2007). In Chile and Argentina, invasion has been associated with the rapid decline of a native bumblebee species, although causal data are lacking (Arbetman et al, 2013).”

The risk assessment also notes:

“Imported subspecies can have large colonies, nectar collecting efficiency and flexibility in food choice (Ings et al, 2005 a; Ings et al, 2006), so they are likely to be “competitive”. Research with captive but free-flying colonies in GB suggests that they could out compete our native *B.t.a.* subspecies (Ings et al, 2006).”

In relation to colony development, the assessment notes:

“Commercial bees produce larger colonies with more sexuals than native *B.t.a.* (Ings et al, 2006), but recorded differences may be due to commercial breeding methods rather than innate subspecies differences.”

The assessment also presents evidence that non native *Bombus terrestris* queens will mate with *Bombus terrestris audax* males (Ings et al, 2005 b). Lab based research has also shown that interspecific hybridisation will occur between *Bombus terrestris* and *Bombus ignites*, with the conclusion that this would have a negative impact of competition and genetic pollution of native bumblebees (Yoon et al, 2009)

Further research in Japan indicates that introduced and established *Bombus terrestris* competes with native bumblebees for nest sites and that this may cause local extinction of native species (Inoue et al, 2008).

## Evidence from published papers relating to the disease risks posed by the release of non native bumblebees

The Non Native Risk assessment states the following in relation to the disease risks of non native bumblebees:

“Considered very important issue and more research is required. Imported bumblebees may host pathogens, parasites or pests of native bumblebee species such as *Nosema bombi*, *Crithidia bombi*, *Apicystis bombi*, and RNA viruses (review in Winter et al, 2006). There is evidence that pests and disease in commercial colonies can affect native bees in

Canada (Colla et al, 2006), Japan (Goka et al, 2001; Goka et al, 2006) and Ireland (Murray et al, 2013). Companies have extensive parasite and disease screening protocols (DEFRA, pers. comm.) but no independent screening has been done in GB. This is important because unpublished studies show high prevalence of parasites and pathogens in commercial colonies imported into GB, despite commercial screening protocols (- studies later published in Graystock et al, 2013).

This importation may also be a route of entry for the small hive beetle, *Aethina tumida* which can devastate honeybee populations and affect bumblebees (Spiewok & Neumann, 2006) although imported honeybees are a much more likely route of entry for this species.”

#### Reducing the ecological risks during 2014

In order to reduce these risks, the 2014 class licence WML-CL22 included the following licensing principles and conditions:

- Non native bumblebees to be released in England must be free from a number of diseases and parasites listed on the class licence.
- Non native bumblebees must be used in such a way that limits their interaction with other pollinators and their access to the environment to prevent:
  - a. disease and pathogen transfer,
  - b. escape and establishment in the environment; and
  - c. hybridisation with the native *B t audax*.

The relevant conditions to reduce these risks being:

- Non native bumblebees can only be used inside greenhouses and poly-tunnels and the grower must take all reasonable steps to prevent the escape of non native bumblebees beyond the confines of such structures.
- Non native bumblebee hives must be labelled with the identity of the subspecies and carry a warning that they can only be used inside poly-tunnels and greenhouses (this is to prevent growers accidentally using the non native bumblebees on external open field crops).
- Non native bumblebee hives must only be used with a “queen lock” in operation (this is to prevent new queens which are produced at the end of the colony life from escaping, mating and hibernating over winter to establish a new colony the next year in the wild).
- After being used for pollination the remaining bumblebees must all be killed at the latest by the 10th week (after introduction into the growing site) and the hive correctly disposed of (to prevent the development and escape of sexuals at the end of the colony life, and to limit the spread of disease).

#### **7. Evidence of the current problem**

During 2013 Natural England carried out visits to growers to establish how non native bumblebees were being used in England. In total 20 growers were visited and this represents 14 % of all those growers who had registered under the Grower class licence to release non

native bumblebees. This included 11 soft fruit growers, 7 tomato growers and 2 seed producers.

Growers were interviewed on a range of issues, including the scale and timing of bumblebee use, the guidance and information provided on how the bumblebees should be used, the use of queen locks, hive disposal, the relative cost of the hives and how essential the bumblebees were for pollination.

Other data has been established from the information provided by growers when they registered their sites for the Growers' class licence, and from information supplied by the industry.

These visits found:

- Over 90 % of high risk non native commercial bumblebee release sites<sup>1</sup> are within non native queen flying distance (12.5 km)<sup>2</sup> of European designated sites. The impact of the releases on these sites has not been evaluated. The impact of non native bumblebee releases on English section 41 priority bumblebee species (as identified by the NERC Act 2006) has also not yet been evaluated. It has been estimated that for one of the most endangered English section 41 priority species, *Bombus sylvarum*, over 72 % of all its recorded sites in England are within non native queen flight distance from high risk release sites. A transfer of a disease or pathogen from non native bumblebees to this priority species could have a devastating impact on this endangered population.
- 25 % of growers visited by NE who had registered to use non native bumblebees in 2013 were in fact releasing the native *B t audax* instead, indicating that these operations were viable without the need for non native bumblebees. Based on information from licence returns and further monitoring in 2014, Natural England estimates that at least 56.7 % of all sites registered for non native release in 2013 will not be using non natives in 2014. At 15 out of the 16 registered sites for seed production native bumblebees are being used in 2014.
- For many growers there currently appears to be no significant price difference between non native and native *B t audax* hives.
- The overall cost of pollination bumblebees as a proportion of the total production costs was very small, especially for soft fruit production.
- From interviews with growers there was no strong evidence to suggest that the native *B t audax* was any less efficient as a pollinator compared to non native bumblebees. Indeed, there was some suggestion that *B t audax* may be more efficient. In addition, information recently published by the industry also stated that *B t audax* hives are more efficient pollinators. Furthermore, in 2014 Natural England carried out a telephone survey of a sample of growers who had switched to using *B t audax* this year to see if there was any evidence in reduced pollination. Of the growers surveyed 79.2 % said that either there was no difference between natives and non natives, or that natives were better, while 20.8 % thought that natives performed less well (n: 24). (Pollination levels may also be influenced by the particular non native subspecies used, the degree of escape of the bumblebees from the target crop and the general condition of the bumblebees).

<sup>1</sup> Sites with high potential for non natives to escape to the external environment (ie highly permeable) and thus transfer disease or cause ecological damage

<sup>2</sup> Flying distance of 12.5 km being given in Buttermore, R.E. (1997) Australian Journal of Entomology, 36, 251-254

- 66 % (10 out of 15) of growers using non native bumblebees did not possess a copy of, and had not recently read, the growers' licence or associated guidance on how to use the bumblebees. It was not clear whether this was because the documents had not been supplied by the producer in all cases, had been lost somewhere down the supplier chain or lost in the "farm office". That many growers were operating unaware of the legal restrictions on non native bumblebee use is a major concern.
- Where non natives hives were being used on soft fruit crops in poly-tunnels it was clear that many growers, in order to achieve high pollination rates, were not complying with the licence condition of taking "all reasonable steps to prevent the escape of non native bees beyond the confines of such structures." Thus it is certain that non native bumblebees would have escaped into the external environment.
- On all but one of the farms where one particular design of non native hive was being used the growers were using hives which had their queen locks fully open, contrary to the licence condition for the queen locks to be set to prevent queens leaving the hive. This would have allowed new queens to exit from the hive at the end of the colony cycle and potentially mate, hibernate over winter and establish new non native populations the next spring.
- 60 % of visited growers using non native bumblebees were not actively killing the colonies at the end of use, thus potentially allowing queens and males to escape, mate and then the mated queens to hibernate to establish new populations in the wild the next year. It appears that some growers are in breach of the Animal By-Products Regulations in the manner in which the used hives were disposed of, with 47 % of growers putting used hives in the landfill waste system.
- It was also apparent that some growers (6 out of 15, or 40 %) were leaving the non native hives in the crops longer than permitted by the licence. This failure to remove can again result in the colony producing sexuals at the end of the cycle leading to mating and establishment of wild populations.
- Although not a licence breach, it was found that some growers were using native and non native hives in the same greenhouse / poly-tunnel. This is a major concern as this could facilitate hybridisation between the two subspecies.

## **8. The proposal on which we are seeking views**

Natural England will not re-issue a class licence for the release of non native bumblebees from 1<sup>st</sup> January 2015. Proposals to release non native bumblebees will be subject to individual licence applications and each case will be considered on its own merits. In considering whether to issue individual licences Natural England will take into account the availability of native commercial bumblebees. Individual licences are unlikely to be issued if alternative supplies of native commercial bumblebees are available.

## **9. References**

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- Winter et al (2006) [http://pollinator.org/Resources/BEEIMPORTATION\\_AUG2006.pdf](http://pollinator.org/Resources/BEEIMPORTATION_AUG2006.pdf)



Winter et al (2006) "Importation of Non-native bumble bees into North America: potential consequences of using *Bombus terrestris* and other non-native bumble bees for greenhouse crop pollination in Canada, Mexico and the United States" NAPPC report

Yoon et al (2009) "Interspecific hybridization of the bumblebees *Bombus ignitus* and *B. terrestris*." *Int J Industrial Entomology* 18, 1, 41 – 48.

## Appendix 1

### Business Engagement Assessment

<i>Title of Proposal</i>	<b>Proposal to not re-issue Class Licence WML-CL22:</b> <i>To permit the release of non native subspecies of the bumblebee (<i>Bombus terrestris</i>) in commercial glass-houses or poly-tunnels for crop pollination and research</i>
Lead Regulator	<i>Natural England</i>
Contact for enquiries	<i>Dr Ed Blane</i>

Date of assessment	<i>01/08/2014</i>
Which area of the UK will be affected by the change(s)?	<i>England</i>
Does this include implementation of Red Tape Challenge commitments?	<i>No</i>

Stage of assessment	<i>Draft</i>
Commencement date	<i>01/01/2015</i>
Is this directly applicable EU or other international legislation?	<i>No</i>

### 1 Brief outline of proposed change in regulatory action

Natural England is considering a change to the licensing regime relating to the release of commercially reared non native pollination bumblebees in England under section 16 of the Wildlife and Countryside Act 1981 (as amended). We do not intend to re-issue a class licence for the release of non native bumblebees, replacing this with a regime where growers may apply for individual licences to release non native bumblebees. As a result of this change growers will not be able to rely on a pre-issued annual licence to release non native bumblebees. **This change will not affect or place any restrictions on the use of commercial native pollination bumblebees which are now being used by many English growers.**

### 2 Summary of proposed change and who this may impact upon:

From 1<sup>st</sup> January 2015 there will be no class licence for the release of non native bumblebees to the wild. From 1<sup>st</sup> January 2015 non native bumblebees may still be used in greenhouses and permanent secure poly-tunnels that are totally screened to prevent insects either entering or leaving the structures and do not provide habitat for non native queens to hibernate over winter.

Growers who wish to release non native bumblebees in any other circumstances will need to apply to Natural England for an individual licence under the Wildlife and Countryside Act. Growers will need to demonstrate a clear need to release non native bumblebees, rather than native bumblebees, as a part of the licensing process. There will be no restrictions imposed by Natural England (in 2015) on the release of the native British bumblebee *Bombus terrestris audax*.

This change may impact on vegetable and fruit growers, as well as seed producers, in England and those companies which supply bumblebee hives to these businesses. Many growers in England have already voluntarily made the switch to using British bumblebees.

This change will bring England into line with the licensing policies in Scotland, Wales and Northern Ireland.

### 3 Why are the changes proposed?

The Wildlife and Countryside Act 1981 makes it an offence to release into the wild any animal of a kind which is not ordinarily resident in, or a regular visitor to, Great Britain in a wild state. In England, as in other parts of the United Kingdom, commercially reared bumblebees are used to pollinate a range of horticultural and agricultural crops; particularly greenhouse tomatoes and poly-tunnel soft fruit (mainly strawberries and raspberries).

For many years the companies producing bumblebees for the English market have supplied the non native insects *Bombus terrestris terrestris* or *Bombus terrestris dalmatinus* rather than the native English subspecies *Bombus terrestris audax*. In 2013, according to Natural England licence return data, non native bumblebees were released in England from at least 17,311 hives imported into the country. However, in recent years the native *B t audax* has also been produced for commercial use.

As the government's wildlife licensing authority, Natural England is responsible for issuing any licences to allow the release of non native bumblebees.

A risk assessment commissioned by the Great Britain Non-native Species Secretariat (<http://www.nonnativespecies.org/downloadDocument.cfm?id=866>) identified a range of risks associated with the release of imported non native bumblebees, reflecting growing concerns about the potential ecological impacts and disease risks posed by the releases of these insects.

The companies who produce commercially reared bumblebees are now able to supply the British native *B t audax* to the English market and thus a viable alternative to non natives is now available.

### 4 Which types of business will be affected? How many are affected?

#### Producers

Producers of commercial pollination bumblebees sold in England, of which there are two: one company based in Belgium and one in Holland but with production factories in Slovakia. Both companies produce non native and native (*B t audax*) bumblebees. The proposed change is likely to lead to a situation where the producers would need to rear more *B t audax* for the English market and fewer non native bumblebees, although the latter are produced for a much larger global market. The current licence conditions for the release of non native bumblebees require hives to be labelled with warning information on how the bumblebees should be used and destroyed. This labelling presents a cost for the producers and a switch to *B t audax* would remove this cost.

#### Marketers

Marketers of commercial pollination bumblebees, these being companies who buy both non native and native bumblebee hives from the producers and then label the hives as being their own product, selling them either directly to the grower or a secondary supplier. There are at least three of these marketer companies operating in England. The proposed change is likely to lead to these companies having to supply more *B t audax* for the English market and fewer non native bumblebees. There is also believed to be at least one company that "markets" native British *B t audax* hives only. The current licence conditions for the release of non native bumblebees require hives to be labelled with warning information on how the bumblebees should be used and destroyed. This labelling presents a cost for the marketers and a switch to *B t audax* would remove this cost.

Under the grower class licence there are strict conditions relating to how the non native bumblebees can be used. There is a responsibility on marketers to ensure that growers using their products are aware of how the bumblebees can be legally used. If a grower misused the bumblebees, thus committing an offence under the Wildlife and Countryside Act, and it was established that this was due to a failure of the marketer to supply the appropriate guidance then the marketer could face prosecution for “aiding and abetting” the offence. A move to just selling *B t audax* would remove this potential risk for the marketer and the costs associated with any prosecution.

## **Secondary suppliers**

Secondary suppliers of commercial pollination bumblebees, these being companies that will buy both non native and native hives from either producers or marketers and then sell on to the growers. Most of these are likely to be agronomy companies or similar, many operating on a regional basis. It is estimated that there may be between 20 to 30 such businesses operating in England. The proposed changes may result in them selling more *B t audax* for the English market and less non native bumblebees. There are also an estimated 30 companies selling native hives to the amateur market, sourcing these hives from the one marketer selling native hives.

Under the grower class licence there are strict conditions relating to how the non native bumblebees can be used. The same issues that affect marketers (see above) would also apply to secondary suppliers.

## **Growers**

Growers who use commercial bumblebees for crop pollination. From the class licence registration data there were approximately 140 growers in England who registered in 2013 to release non native bumblebees. These growers were approximately split 76 % soft fruit production, 18 % tomato and other greenhouse vegetable production and 5 % seed production.

There will be other growers in both the soft fruit and tomato sectors who did not register as they have already made the decision to use the native British *B t audax*. The number of growers that fall into this category is not known. There are also a considerable number of soft fruit growers who do not use bumblebees at all for pollination and still rely on natural pollinators, honey bees or other commercial pollinator species (such as red mason bees or blow flies). Many of these farmers will be growing fruit externally and not targeting the premium prices for early produce. It is unlikely that growers in this category will be affected by these changes.

It is noted that a switch to using British bumblebees for pollination does offer the grower the opportunity of selling a premium product as many consumers would potentially be willing to pay more for food produced using British bumblebees and would have concerns about buying food produced by non native bumblebees whose use has environmental risks.

## **5 How will the proposed change impact growers?**

Growers use pollination hives in two distinct ways. Firstly, as encountered predominantly in the protected fruit and seed production industries, growers order and pay for individual hives (described in this assessment as “Direct Buy”). Here the quantity of hives and the timing of their use are at the grower’s discretion, often assisted by agronomy advice. Secondly, as encountered in medium and large scale tomato production, growers purchase a pollination service from a specialist company (either a producer or marketer). In this system (described as “Pollination Service”) the grower pays a set amount per m<sup>2</sup> of crop per month and the supply and timing of the introduction of the hives into the crop is largely determined by the pollination

service provider. The impact on these two different systems will be considered separately. Small tomato growers are considered likely to following the “Direct Buy” pattern.

### Direct Buy

Although when purchased individually commercial hives of *B t audax* are approximately 33 % more expensive than hives containing non natives bumblebees (one supplier charging £ 33.90 per hive of native bumblebees and £25.40 for non natives), information published by the industry states that *B t audax* hives are at least 15 % more efficient in pollinating crops than non native hives (Koppert leaflet 2014). Information from industry also states that native hives will pollinate greater crop areas compared to non native hives (Agrovista leaflet 2014). A native hive will pollinate 50 % more of a strawberry crop and 33 % more of a raspberry crop compared to the same size non native hive (Agrovista leaflet 2014).

Thus while native hives may be more expensive, their higher pollination efficiency and the larger crop areas they can service compared to non native hives indicate that their use should not have any negative financial impact on growers in England.

Natural England estimates from our licence returns and industry pricing data that a switch from non native to native hives could cost the protected fruit and seed production industries nationally an extra £81,703 (based on 9,445 on native hives used for fruit and 167 hives for seeds, total: 9,612).

Cost for 9,612 native hives @ £33.90 = £325,847

Cost for 9,612 non native hives @ £25.40 = £244,144

The majority of growers use relatively few hives. At 57 % of all 2013 class licence registered sites 25 or fewer hives are used. So for a grower using 8 hives a year the extra cost of using native hives would be likely to be around £68.

However, as identified by Natural England’s data collection during 2013, there is a great range in the prices that growers pay for both native and non native hives. Many other factors impact on the price. Individual growers are able to negotiate considerable savings on hives, especially if large quantities are being ordered and other services and materials are being purchased from the supplier or marketer. Prices (excluding VAT and delivery) for native bumblebee hives ranged from £20 to £65. Further savings can be achieved by purchasing larger, triple hives (which are basically three single hives contained within one cardboard box). Hive prices may also drop in future due to the introduction of native bumblebee hives which lack the inner cage boxes, with one producer claiming that this reduces packing by 85 % (the inner hive cages are required in non native hives to prevent the queens from escaping). Savings can also be obtained when growers buy collectively via farmer buying groups.

Conversely growers may also pay higher prices when only a few hives are required, regardless of whether native or non native bumblebees are ordered, as the delivery costs can be proportionally higher with small deliveries. Small growers can also be penalised as they are often unable to purchase hives directly from the producers and marketers, but have to buy via an intermediary supplier.

It should also be noted that using *B t audax* provides the grower with a more flexible hive as this can be used on both internal protected crops and external crops. The working life of a hive is usually considerably longer than the flowering period of a soft fruit crop. This allows *B t audax* hives to pollinate later flowering adjoining external crops. The use of *B t audax* bumblebees does present the farmer with a higher premium product as the fruit can be marketed as being

pollinated by British bees. From NE's farm visits during 2013 it was evident that many growers were acutely aware of this marketing advantage.

### Pollination Service

When using a pollination service a grower pays the company providing the bumblebees an agreed amount per m<sup>2</sup> of crop per month. The company then determines and supplies the required number of hives for the needs of the crop and usually new hives are introduced at 2 weekly intervals between February and October. From feedback from growers Natural England estimates that these pollination service fees range from 2p to 3.1p / m<sup>2</sup> / month. There seems to be little influence on the size of the pollination fee in regards to whether native or non native bumblebees are used. The major factors that appear to influence the fee are the variety of tomato grown and the other services (such as agronomy advice and similar) supplied as part of the contract. Varieties such as cherry and baby plum tomatoes demand higher pollination fees as these have a higher flower density and therefore require more hives per m<sup>2</sup> to ensure successful pollination.

The same "economics of scale" and individual grower negotiation factors outlined above in relation to the fruit and seed sectors will also apply to the tomato sector.

Natural England licence return data indicates that of the 26 medium to large tomato sites (those using ≤ 50 hives per year) registered in 2013, at 12 of these only native bumblebees were used in 2013 and at 8 sites only non native were used (and at 3 of these sites it was confirmed that non natives would not be used in 2014). At other sites a mixture of both native and non native bumblebees were used.

In light of the switch of the majority of medium and large tomato grower sites to using native bumblebees and the lack of strong evidence of a significant price difference for the grower between pollination services using native and non native bumblebees, Natural England concludes that a move to a default situation of just using native bumblebees will have no significant detrimental financial impact on growers.

### Other impacts

One major impact on businesses of the proposed change of moving to more use of native British *B t audax* would be a very significant reduction in the regulatory burden on growers. Those using only *B t audax* would:

- not have to register to use non native bumblebees,
- not have to comply with the licence conditions relating to the use and disposal of the hives,
- not have to return annual reports on the use of non native bumblebees,
- not have to comply with any Natural England monitoring inspections.

Natural England has produced estimates of the financial costs placed on customers as a result of licence applications<sup>3</sup>, and specifically the "admin overhead" of applying for a licence. It is estimated that, in terms of admin time, it would cost a grower £37 to register to release non native bumblebees and then report annually under the class licence. Additionally, it is estimated that to host a Natural England compliance monitoring visit would cost £42, making this a total cost of £79. Thus for an inspected grower using 8 hives the potential admin costs alone of using non natives would be more than the extra cost of using native hives.

<sup>3</sup>General and Class Licence Consultation – February 2014 Annex C: Assessment of Regulatory Impact

Growers will still have the option of applying for an individual licence to release non native bumblebees where, for some reason, the use of native bumblebees is not viable. These applications will be dealt with on a case by case basis. These growers will have a choice between complying with the licence conditions and administration (registering and annual reporting), of still using non native bumblebees under an individual licence, or using *B t audax* where no licence is required and there is currently no administration. It is estimated that, in terms of admin time, it would cost a grower £137 to apply for an individual licence to release non native bumblebees and then submit annually reports. Additionally, it is estimated that to host a Natural England compliance monitoring visit would cost £42, making the total cost of £179.

It is noted that for many growers, especially in the soft fruit sector, the cost of pollination bumblebees is incredibly small when compared to other costs such as labour.

## **6 Impact on small businesses**

It is considered that the impact on small businesses will be similar to those noted above for growers. However, it is noted that both the tomato and soft fruit sectors are distinct from many other areas of English agriculture in that they employ large numbers of staff, often in the 100's when seasonal staff are employed on the large fruit farms, and therefore labour costs are frequently the biggest concern for businesses.

## **Annex 2 – List of stakeholders who were directly invited to respond**

### **Growers**

Growers / researchers who registered with NE in 2013 & 2014 to release non native bumblebees

### **Industry contacts**

#### Producers:

- Koppert
- Biobest

#### Marketers:

- Syngenta
- BCP Certis
- Dragonfli
- Agralan

#### Agronomy firms / secondary suppliers:

- Hutchinsons
- Agrii
- LS Systems
- BHGS
- Hortech
- Agrovista
- JFC Monro
- Royal Brinkman
- FAST

#### Grower groups / trade associations:

- National Farmers' Union
- British Tomato Growers' Association
- British Growers Association
- Horticultural Development Company
- English Apples and Pears

#### Non Government Organisations

- Bumblebee Conservation Trust
- Buglife
- RSPB
- Wildlife Trusts
- British Beekeepers Association
- CIEEM
- FoE
- Co-Op
- Countryside Alliance
- Wildlife and Countryside Link



## Others

- Devolved administrations & wildlife licensing departments in RoI and Isle of Man
- Bumblebee research group
- Pollinator Advisory Expert Group
- Joint Nature Conservation Committee
- Members of the Great Britain Non Native Species non natives forum

### Appendix 3 – Consultation Response Form

#### Response form to Natural England’s Consultation on Class licence WML-CL22:

To permit the release of non native sub-species of the bumblebee (*Bombus terrestris*) in commercial glass-houses or poly-tunnels for crop pollination and research

Responses should be sent by the 17<sup>th</sup> September 2014 to:

[wildlife.consultation@naturalengland.org.uk](mailto:wildlife.consultation@naturalengland.org.uk) or in writing to “Bumblebee Consultation”, Wildlife Licensing, Natural England, First Floor, Temple Quay House, 2 The Square, Bristol BS1 6EB.

**Question 1:** Do you agree with Natural England’s proposal to make the release of non-native bumblebees subject to individual licence applications from 1<sup>st</sup> January 2015, rather than being covered by a class licence? **(This will have no impact on the use of native commercial bumblebees: for these pollinators, which are being increasingly used on English farms, no licence is required).**

**Response:**

**Question 2:** Natural England has produced a Business Engagement Assessment (BEA). The BEA is included as Annex 1 of the consultation document and describes how we think this change will impact on businesses in England. Do you have any comments on the BEA?

**Response:**

Please describe your interest in commercial bumblebees by ticking one of the following boxes:

- Grower / farmer who uses commercial bumblebees
- Grower / farmer who does not use commercial bumblebees
- Producer of commercial bumblebees
- Marketer / supplier / agronomist
- Honey bee keeper
- Researcher / academic
- Conservation body
- Interested member of the public
- Other (please describe)

Name:

Organisation (if appropriate):