

Business Engagement Assessment

Title of Proposal	Proposal to amend Class Licence WML-CL22: 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
Lead Regulator	Natural England
Contact for enquiries	Dr Ed Blane

Date of assessment	22/10/2014
Which area of the UK will be affected by the change(s)?	England
Does this include implementation of Red Tape Challenge commitments?	No

Stage of assessment	Final
Commencement date	01/01/2015
Is this directly applicable EU or other international legislation?	No

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 class licence WML-CL 22, which permits the release of non native bumblebees, in its current form. Instead we will issue an amended class licence which will only permit the release of these non native insects in circumstances where growers, researchers and pollination service providers can not source commercial native bumblebees in sufficient quantities and at the appropriate times to ensure crop pollination. The use of native commercial bumblebees, *Bombus terrestris audax*, will therefore become the default situation for growers, researchers and pollination service providers.

As a result of this change growers will not be able to rely on a pre-issued annual class licence to release non native bumblebees in the normal course of business, but only in emergency situations. **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:

Growers and researchers 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 and researchers 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. Researchers using commercial bumblebees may also be impacted.

This change will bring England closer 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. From information we have received from the industry we believe that in 2014 the number of non native hives that will be used in England is approximately 9,250 and the bulk of these have been sold by one marketer.

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. One producer has now switched virtually all its production and sales for the English market to native bumblebees and at least two marketing companies have also made this switch in 2014.

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

lead to a situation where the producers will 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 the switch to *B t audax* removes this cost.

Some respondents to the consultation on our draft BEA noted that production costs for native bumblebees will be higher than non natives as the latter are produced for a larger, global market and therefore the economies of scale will make non native production cheaper. The production of native bumblebees may also be more expensive as surplus hives need to be produced to cater for seasonal extremes (such as very early / very late springs which can impact on the timing of fruit crop flowering). However, Natural England notes that production costs for native bumblebees are likely to be reduced due to potential further growth in this market, thus lowering the economies of scale impact. The following points are relevant:

- Native *B t audax* can be sold in other areas of the UK and S Ireland. We understand that in previous years non native hives have been sold in other parts of the UK even though no licences permitting the release of these insects have ever been issued in these countries. We understand that this practice has now stopped and this will provide a bigger market for *B t audax*.
- The market for *B t audax* hives in the amateur market is rapidly expanding, with one marketer reporting a 21 % increase in sales in 2014 compared to the previous year.
- There is a potential for expansion of the market for external open field / orchard use of *B t audax*.
- There is also the opportunity for *B t audax* to be sold in other counties outside the UK, such as on continental Europe. Although it would be a “non native” insect itself in these countries, many European countries are still permitting the release of other non natives and therefore there is potential for a market for *B t audax* in these counties.

Further product development by producers can also lead to a reduction in the production costs of *B t audax* hives. Native hives are not restrained in their design by the need to keep queens inside the structure. This has allowed one producer to introduce a new design of *B t audax* hive with 85 % less packaging.

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 this change.

It is noted that a switch to using British bumblebees for pollination does offer the fruit grower the opportunity of promoting his fruit as 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 m² 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

There is a considerable range in the prices that growers pay for commercial hives. In the past, native hives have been more expensive, often up to 33 % more than non native hives. However, this year the cost difference appears to have reduced, with one stakeholder noting the cost difference between natives and non natives was between 8 % and 12.5 %. Another stakeholder reported paying the same regardless of whether the hives were native or non native, and one trade association which responded to the consultation stated that native hives were now 16 % cheaper than non natives.

Working from a “worst case scenario” baseline of native hives still being 33 % more expensive and using the figures from one supplier of native hives retailing at £33.90 and non natives hives at £25.40, it is possible to estimate the cost of switching predominantly to using native hives for the fruit and seed production industries nationally. Natural England estimates from our licence returns and industry pricing data that this switch could cost these 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 eight 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 an opportunity to promote his produce as a high premium product as the fruit can be marketed as being pollinated by British bees. From our farm visits during 2013 it was evident that some growers were aware of this marketing advantage.

Natural England concludes that for the majority of growers any price difference between native and non native hives will have minimum impact. This conclusion is supported by the fact that many growers have all ready made this conversion during 2014. In addition, from interviews

with growers it was established that, as part of the overall crop production costs, the cost of bumblebees were an extremely small proportion of the total costs.

Some stakeholders have stated that native bumblebees are not as efficient when pollinating as non native bumblebees. Natural England is not aware of any findings published in peer reviewed journals that support this view. Publications from the industry in 2014 are contradictory on this issue. Syngenta claims that native hives were less efficient, requiring the grower to use 20 % more hives compared to pollination using non native hives. Koppert, on the other hand, claims that non native hives were 15 % less efficient due to the requirement for these hives to be fitted with a queen lock. Although queen locks prevent queens from escaping from the hives many growers have reported that the locks also prevent larger worker bumblebees from leaving the hive and thus are not available to pollinate the crop.

In 2014 we also surveyed growers who had been previously using non natives but this year had used natives to see if there was any clear difference in pollination efficiency between the two types. We found that 82 % of growers stated that pollination with natives was just as good or better compared to when non native hives had been used previously.

Natural England concludes that there is no convincing evidence that suggests that non native bumblebee hives are more efficient pollinators and therefore a switch to using native hives should have no impact on crop pollination.

Pollination Service

When using a pollination service a grower pays the company providing the bumblebees an agreed amount per m² 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 two weekly intervals between February and October. From feedback from growers Natural England estimates that these pollination service fees range from 2p to 3.1p / m² / 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 m² 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 eight sites only non native were used (and at three 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 applications¹, and specifically the “admin overhead” of applying for a licence. It is estimated that, in terms of admin time, it currently costs 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 eight hives the potential admin costs alone of using non natives would be more than the extra cost of using native hives.

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 annual 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 Impacts on small businesses and researchers

It is considered that the impacts on small businesses and researchers 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.

¹ General and Class Licence Consultation – February 2014 Annex C: Assessment of Regulatory Impact