

3/3/16

Dear Committee Secretary,

I write in submission to the inquiry into **“The risks and opportunities associated with the use of the bumblebee population in Tasmania for commercial pollination purposes”**.

Given that feral large earth bumblebees (*Bombus terrestris*) now persist in the wild across most of Tasmania, it could seem reasonable to suggest that it would do no additional harm to take advantage of their presence and begin to actively manage them for use in glasshouse crop pollination. Bumblebees have been demonstrated to have significant positive effects on yield of tomatoes, and some other crops too, through pollination in glasshouses. As such, it is understandable that there is interest from Tasmanian glasshouse growers to lower their labour costs by using managed bumblebees in pollination. In my opinion, however, the significant aspects of this debate actually have little to do with Tasmania, and much more to do with the likelihood of a future introduction of bumblebees to the mainland. The introduction of bumblebees, either legally or illegally, pose a potential threat to mainland Australian pollinators, as well as to other components of Australian biodiversity. I will make some brief points on this here.

While there is a lot still to be found out about how introduced bumblebees interact with Tasmanian terrestrial ecosystems, there is some evidence demonstrating negative impacts of feral bumblebees have had on Tasmanian biodiversity. In addition, the large earth bumblebee has been introduced to a number of other places around the world, and much of what we know about the negative ecological effects of these bees is based in evidence from research in other parts of the world. Some of the specifics behind these more global concerns have not yet been investigated in Tasmania, but based on evidence from other similar cases elsewhere, are good topics for future research in the Tasmanian case. Broadly, the negative ecological impacts of introduced bumblebees include: their ability to increase the seed set of weed species and other exotic plants, which can lead to an increase in weed spread; displacement of native pollinators from floral resources; lowering the seed output of native plants

through both native pollinator competition and bumblebees propensity for ‘nectar robbing’; and general potential competition with native fauna for floral resources and nest sites. These are each though to be present in Tasmania, and are also to be likely outcomes of any future introduction of bumblebees to mainland Australia.

With these documented negative impacts on biodiversity in mind, I would ask the committee to investigate in depth the following key points during this inquiry:

- 1) The increased likelihood that the presence of commercially reared bumblebee queens in Tasmania will increase the chances of illegal importations of these bees to mainland Australia. There is much desire for bumblebees in glasshouse pollination on the mainland. How do we ensure that single mated queens (enough to start entire new generations) are not illegally taken to the mainland into the future.
- 2) The high probability that the negative affects that introduced bumblebees have been demonstrated to have on natural ecosystems in Tasmania (as well as the other likely but as yet undocumented negative biodiversity impacts) and elsewhere, will also be witnessed on the Australian mainland, albeit on a much larger scale, should bumblebees be introduced there.
- 3) The long-term negative effects of introduced bumblebees to the native pollinators of the Australian mainland. Australia’s native pollinators are not only vital for the persistence and resilience of natural ecosystems, but many of them also have a strong role in Australia’s food security through crop pollination.
- 4) The potential future costs associated with the management of any plant species that may become more ‘weedy’ on the Australian mainland as a result of the presence of bumblebees to pollinate them more efficiently than at present.
- 5) The Tasmanian glasshouse fruit growing industry is relatively small, in comparison to both the overall Australian glasshouse industry and the overall Tasmanian fruit growing industry. Are the economic benefits to this industry

(through labour savings at the time of pollination) worth the potential economic risks associated with potentially increased problems with weeds and additional negative pressures on native pollinators, if bumblebees become established on the mainland illegally.

I will go into a little more detail on point 3 here:

Australia has approximately 2,000 native bee species, hundreds to thousands of native fly species, and many more wasp, butterfly, moth, and beetle species that contribute to pollination in Australia. Many of these also contribute to crop pollination. In addition, Australia has some of the healthiest European honeybee populations in the world. At a time when there is global concern for populations of both wild and managed pollinators, I believe the legislated use of introduced bumblebees in Tasmania could actually be counter intuitive to the long-term conservation of Australia's existing pollinators into the future. I believe that while introduced bumblebees do offer pollination benefits to a small number of crops, in a small number of growing conditions, their potential negative effects on native pollinators, through potential competition for floral resources and other less direct means, have much greater implications for Australia's pollination security as a whole.

In concluding, I recommend that in any of the committee's potential outcomes or areas of investigation, the committee consider very strongly in each the likelihood that possible actions could have on increasing the chances of bumblebees being illegally or legally introduced the Australian mainland. I would recommend that the committee choose a path that most strongly avoids any chance that bumblebees will be introduced to the Australian mainland either illegally or legally into the future.

Thank you for the opportunity to submit to this committee.

Yours sincerely,

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