

The risks and opportunities associated with the use of the bumblebee population in Tasmania for commercial pollination purposes.

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Senate Standing Committees on Environment and Communications
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Dear Sir or Madam

I oppose lifting the ban on the commercial use of the European bumblebee, *Bombus terrestris*, in Tasmania. It would increase the likelihood that this feral bee would become established on the Australian mainland, to the significant detriment of the Australian environment.

Bombus terrestris was introduced to Tasmania, accidentally or illegally, in 1992. It is a proven invasive species with a high dispersal ability (Dafni et al. 2010). It has escaped from greenhouses and established feral populations in Japan, Chile, Mexico and Uruguay (Hingston 2007). In Tasmania the feral population had already spread widely by 2002, through all of Tasmania's vegetation types and through ca. 30,000 km² (Hingston et al. 2002). If introduced to the Australian mainland, this exotic species could spread through much of Victoria, and into New South Wales, Queensland, South Australia and Western Australia (Hingston 2007)

Bombus terrestris poses multiple risks to the Australian environment and agriculture (see reviews and references in Hingston 2007 and Dafni et al. 2010):

- competition with native insects and birds for nectar and pollen
- spread of exotic weeds
- impact on pollination of native plants
- spread of parasites and pathogens.

These risks were reviewed and discussed in great detail in 2008 when the Federal Government rejected the application by the Australian Hydroponic and Greenhouse Association to add this bumblebee to Australia's list of legal imports. Contrary to some claims by the horticultural industry, further evidence of this bee's impact in Tasmania since that time has not been published simply because no further formal research has been done. The environmental and agricultural risks of *Bombus terrestris* were sufficient to prompt its listing as a key threatening process in New South Wales and a potentially threatening process in Victoria.

The existing *Bombus terrestris* population in Tasmania was introduced without Government approval. Giving permission now for the commercial use of this feral bee in Tasmania would provide a substantial incentive for the illegal introduction of bumblebees to the Australian mainland, in the hope that commercial use would also be permitted there, once established. The tomato industry in Tasmania is extremely small, hence there would be minimal productivity gain for Australian agriculture from the commercial use of exotic bumblebees in that state.

The existing *Bombus terrestris* population in Tasmania was probably derived from a single queen bee and is very inbred (Buttermore et al. 1997). If commercial use of this species were permitted in Tasmania, pressure would then be applied to allow legal introduction of fresh genetic material from overseas. It would also encourage illegal attempts to introduce new genetic stock of the species. A genetically strengthened Tasmanian population would become more capable of invading mainland Australia and becoming established there.

Native bee species, such as blue banded bees (*Ameigilla*), could be developed as alternative pollinators for the greenhouse tomato industry (Hogendoorn et al. 2006, Hogendoorn et al. 2007, Hogendoorn et al. 2010). Substantial progress was made in the development of husbandry systems for these bees before funding ceased in 2009. Focus and funding should be directed towards continuing to develop safe native pollinators for Australian agriculture, rather than importing an exotic bee species with known invasive characteristics.

Australia has a long history of introducing exotic species that in later years prove to have substantial negative impacts on the Australian environment. I urge the Senate Committee to protect the Australian environment, by recommending that the current ban be maintained on the commercial use of exotic *Bombus terrestris* in Tasmania.

References

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