

The global trade in bumblebee colonies for crop pollination, most notably of the European species *Bombus terrestris* and the North American species *Bombus impatiens*, has resulted in the establishment of bumblebee species far from their native ranges, for example in Japan, parts of Australasia, Chile and Argentina. Invasive, non-native bumblebee species pose multiple risks to native species, including: competition, hybridization resulting in loss of locally adapted ecotypes, and introduction of non-native bee diseases. There is evidence that parasites from commercial bumblebees may have been irreversibly introduced or spread in Japan, North America and South America, with potentially profound impacts on native bumblebees.

The IUCN BBSG considers that the commercial movement and deployment of bumblebees for pollination should be governed by the precautionary principle to prevent unintended harm. Only local bumblebee species and subspecies should be grown for commercial development and employed within their native ranges. All commercial bumblebees should be thoroughly screened for parasites by both producers and independent regulators. If commercial bumblebees, as opposed to (or in combination with) habitat management to support wild pollinator assemblages, are to be used in open field settings, only native species (or geographically appropriate sub-species) of commercial bumblebees should be used. All use within greenhouses should be controlled to eliminate risk of escape.

为了满足农作物的授粉需求，商品化的熊蜂蜂群通过全球贸易扩散至世界各地，尤其是欧洲蜂种 *Bombus terrestris* 和北美蜂种 *Bombus impatiens*。这种商品化扩散，导致一些蜂种在远离其自然分布区域的地区建立了营巢场所，例如在日本、澳大利亚局部地区、智利和阿根廷等地均已造成了外来熊蜂物种生物入侵现象。外来熊蜂物种会对本土熊蜂资源造成多重威胁，主要包括食物资源竞争、营巢场所竞争、物种间的杂交等，这些都有可能导导致本土熊蜂资源适应生态型的消失，而且外来熊蜂物种还会引入外来的病虫害。目前已有证据显示，商品化熊蜂已经将寄生性病原物不可逆转的引入或传播到了日本、北美及南美地区，对当地的熊蜂资源造成了极大影响。

为了避免熊蜂在授粉服务过程中造成的无意识危害，国际自然保护联盟-熊蜂专家组认为商品化熊蜂蜂群在世界范围内的扩散及部署应该谨慎遵循一定的原则。只有在本土有自然分布的熊蜂物种或亚种才能进行商品化生产及使用。所有商品化熊蜂都需要经过生产者和独立的监管部门的双重检查，检测蜂群所携带的寄生物情况。商品化熊蜂与当地野生传粉昆虫不同，我们通常采用保护栖息地的方式来保护野生传粉昆虫资源，但对于商品化熊蜂，当其在在大田作物授粉中使用，须严格限制该蜂种为本土物种或地理亚种；当商品化熊蜂在温室内使用时，须做好防护措施防止其逃逸出温室。