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1 **Abstract**

2 Bumble bees are among the most ecologically and economically important pollinators
3 worldwide, yet many of their populations are being threatened by a suite of interrelated,
4 human-mediated environmental changes. Here, I discuss recent progress in our
5 understanding of bumble bee ecophysiology, including advances related to thermal
6 biology in light of global warming; nutritional biology in the context of declining food
7 resources; and the capacity for bumble bees to exhibit physiological plasticity or
8 adaptations to novel or extreme environments, with reference to their evolutionary
9 history and current biogeography.

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12 **Bumble bee ecophysiology: integrating the changing environment** 13 **and the organism**

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20 **Introduction**

21 The extant bumble bees (genus *Bombus*, family Apidae) are a group of ~250 largely
22 cold-adapted, relatively large-bodied bee species, with native species distributed widely

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