

Introduction

Since the mid-1980s, pollination ecologists have sounded the alarm about declines in abundance and species richness of bees and other pollinators (Williams 1986, Buchmann and Nabhan 1996, Matheson et al. 1996, Allen-Wardell et al. 1998, Kearns et al. 1998). By 1993, three bee species were listed in the World Conservation Union list as being threatened with extinction (Gommbridge 1993), and many other native species were present at very low abundance throughout Europe (Day 1991, O'Toole 1994). Recently, declines in certain types of pollinators have been reported for all continents except Antarctica (Kearns et al. 1998). Declines in bee abundance and diversity should be of concern to everyone (Nabhan and Buchmann 1997). Seventy-one of the 103-107 crops that feed most of the world are pollinated by bees (Prescott-Allen and Prescott-Allen 1994), and at least 72 percent of the 1330 cultivated crops surveyed by Roubik (1995) are bee pollinated (Nabhan and Buchmann 1997).

Among the greatest threats to bee abundance and diversity are 'chemical' and physical fragmentation of the landscape (Buchmann and Nabhan 1996), which has resulted in a decline of adequate bee forage within proximity to nesting and mating sites (Steffan-Dewenter and Tschamtker 1999, Banaszak 2000), and insecticide poisoning. In addition, the last half decade of the 1990s has witnessed the decline of the U.S. honey bee industry due to a diversity of threats (Hubbell 1997): (1) introduction of two parasitic mite species; (2) viral, bacterial, and fungal diseases including an antibiotic resistant strain of the bacterium, which causes American foulbrood; (3) insecticide poisoning; (4) hybridization with the African subspecies of honey bee; and (5) economic threats from loss of honey price supports and global honey competition. This crisis in pollination is a global, as well as local problem. It is not a problem solely for agriculture. It is a problem for most terrestrial ecosystems because insect-mediated pollination is a fundamental ecosystem process. Pollinators maintain the biodiversity of angiosperms, which form the basis of almost all terrestrial ecosystem food webs.

It was, interestingly, a local (regional) crop pollination crisis that provided the stimulus for this Proceedings. As we are well aware, crises are generally what it takes to get action. Threats to the supply of out-of-state honey bee