

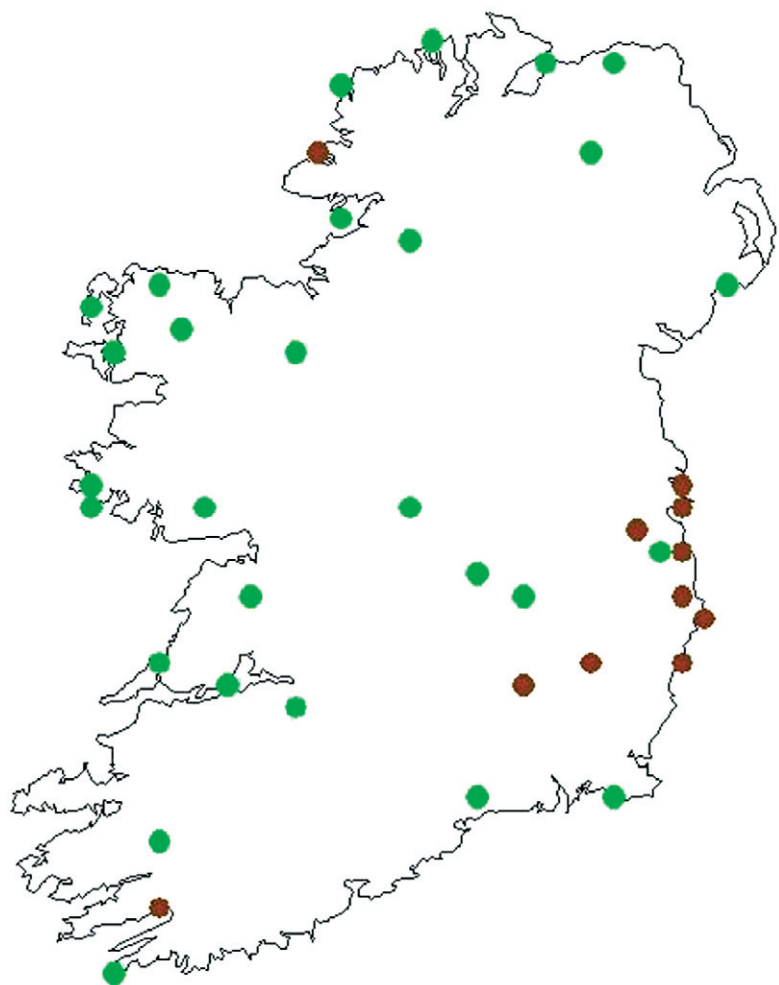
# A new pollinator initiative on the island of Ireland

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It is well recognized that bees are of immense importance to natural and agro-ecosystems for the pollination services they perform.<sup>1</sup> Like most of the world's biodiversity, bees are also increasingly under threat from a variety of causes, such as changes in land use, pesticides, habitat destruction, and invasive species (especially diseases), to name but a few. Credit must go to Buchmann & Nabham's 1996 book *The Forgotten Pollinators*<sup>2</sup> for raising awareness among politicians and the public of this major world problem and of the consequences of continued pollinator loss.

Honey bees (*Apis mellifera*) are the principal managed pollinators across the globe, as testified in standard pollination texts (e.g. Free<sup>6</sup>). Beekeeping with *A. mellifera* has, however, suffered numerous setbacks over the last 30 years (due precisely to those factors that threaten biodiversity generally) to the point that there is a perceived shortfall in colonies (for the USA, see Munn<sup>10</sup>; for France, see Rogers<sup>4</sup>). Moreover, research over the past few years has increasingly demonstrated the important role of wild, unmanaged bees, solitary and social, in the pollination of numerous fruit, nut and seed crops (for the clearest model study yet executed, see Kremen *et al.*<sup>9</sup>). Pollination texts increasingly highlight the value and, in some cases, management of alternative pollinators to honey bees (e.g. Delaplane & Mayer<sup>4</sup>).

These and other political and scientific developments, initiated by numerous groups and individuals, have led the Convention on Biological Diversity (a formalization and extension of the colloquially termed 'Rio' Earth Summit of 1992) to adopt an International Pollinator Initiative (IPI, see Kevan & Imperatriz-Fonseca<sup>8</sup> and Williams<sup>20</sup> for further details). Major aims of the IPI are to document the current distribution and abundance of bee species, quantify their role



**FIG. 1. Location of sites on the island of Ireland at which bees are being sampled in 2004. Green dots: Special Areas of Conservation (SAC), an EU-wide designation of habitats of high conservation priority; brown dots: sites of historical importance with good records of bees.**

in that important ecosystem service of pollination, and determine factors that currently seem to be driving bee populations down so that they can be addressed before it is too late. The most recent event under the auspices of the IPI was the workshop on 'Solitary bees: conservation, rearing and management for pollination'<sup>7</sup> in Ceará, Brazil this April 2004.

These are lots of words, but what about the action, and what of Ireland! The FAO of the UN are co-ordinating and facilitating regional initiatives in Africa, Brazil and the Himalayas that will address IPI aims in their respective locations.<sup>3</sup> In North America, the Coevolution Institute co-ordinates a North American Pollinator Protection Campaign.<sup>17</sup> And the EU has funded a project that will run



**FIG. 2.** *Bombus sylvarum*, a bumble bee on the verge of extinction in the UK (photo: Peter Harvey).

in many of its constituent countries (although not on the island of Ireland) that has overlapping aims (acronym ALARM,<sup>13</sup> see [http://www.rdg.ac.uk/caer/project\\_alarm.html](http://www.rdg.ac.uk/caer/project_alarm.html)).

Most recently, the Higher Education Authority of Ireland has funded our two research groups (at Queen's University Belfast and Trinity College Dublin) in a collaborative project to study the conservation biology and genetics of wild bees across Ireland (fig. 1). Entitled 'Conservation genetics of Irish bees – a whole island perspective', the project aims to document changes in the abundance of bees, drivers of those changes, and to develop habitat management recommendations to alleviate threats to bees. Complementary genetic analyses will document the degree of endemism of select bee taxa. And for those who consider Ireland to be a wind-swept and rainy pasture land at the far-flung north-west edge of Europe, seemingly most inhospitable bee terrain, 92 bee species have already been recorded from its shores (and mires and heathland, too) over the past century.<sup>12,15,16,18,19</sup> Within the first few months of our project, we have been able to add two new species to that list<sup>11</sup> and have located records for a third, *Andrena pilipes*, from historical material (location: Fermanagh; date: 1919) housed at the Ulster Museum in Belfast. We have also

recorded the high conservation priority bumble bee species *Bombus distinguendus* and *Bombus sylvarum* (so-called 'UK Biodiversity Action Plan' priority species,<sup>5</sup> fig. 2), from our field sampling this spring 2004.

The hope is to set up a European Pollinator Initiative (EPI) based around IBRA, ALARM, our Irish and related projects, and to involve apidologists and pollination biologists from across Europe.<sup>13</sup> The recent EUR-BEE conference (see <http://web.uniud.it/eurbee/>) that attracted bee researchers from across the continent was a timely springboard for the inauguration of the EPI (see <http://www.europeanpollinatorinitiative.org>). With the synergy of many united efforts, the welfare of bees can but be advanced.

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