

Bee farmland activity research gives academics a buzz

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(PhysOrg.com) -- Certain crops influence the number of bees in farmland habitats, according to groundbreaking new research by the University of Plymouth.

And the findings could have major implications in helping shape future agricultural policies around crop growing to ensure [bees](#) – which play a vital role in human food supply – survive.

Ecologists and students found that the cultivation of field beans, which attract large numbers of bees to their flowers, resulted in higher bee numbers in nearby hedgerows.

While biologists have previously demonstrated that mass flowering crops like beans can attract increased numbers of bees to the local area, until this new study, little was known about whether there was any benefit to native plant communities.

Working on over 20 farms located near Saltash, Okehampton and in the South Hams, a team led by Dr. Mick Hanley and Dr. Mairi Knight recorded bee activity along hedgerows situated next to field bean and wheat crops. They recorded which bee species were present and which native hedgerow plants the bees were visiting for pollen and nectar to determine whether the presence of a large-scale floral resource affected bee-foraging behavior.

They found that where hedgerows were situated next to beans, native

plants like foxgloves and red campion received over twice as many bee visits as did plants growing next to wheat fields, which are wind pollinated and don't attract pollinating insects.

“This is important, as a low number of pollinator visits may severely limit the ability of the plant to produce viable seeds and so reproduce successfully,” said Dr. Hanley.

The recent dramatic decline of many pollinators, including bees, has caused widespread alarm amongst conservationists.

Bees provide an invaluable ecosystem service to agriculture as they pollinate many of the crop species upon which we rely.

And the loss of a suitable pollinator like bees may mean the disappearance of many common hedgerow plants in the British countryside.

Dr. Hanley, from the School of Biomedical and Biological Sciences, said: “Many of the plant species in our field margins are strongly dependent on bees for cross-pollination.

“By helping understand how modern farming practice affects pollinator numbers, ecologists can better predict how climate change or fluctuations in world food prices will influence pollinator numbers by virtue of dictating which types of crops farmers grow.

“Government and EU subsidies for different [crops](#) can then be determined not simply on the basis of their value in food terms, but also with regards to their potential role in sustaining pollinator communities and the essential ecosystem service these insects provide.”

Provided by University of Plymouth

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