

# Bijen Helpdesk

Meer over wilde bestuivers: bijles over hommelles

Theo Zeegers, EIS Kenniscentrum Insecten



# Bestuivers

Bijen

Vliegen

Kevers

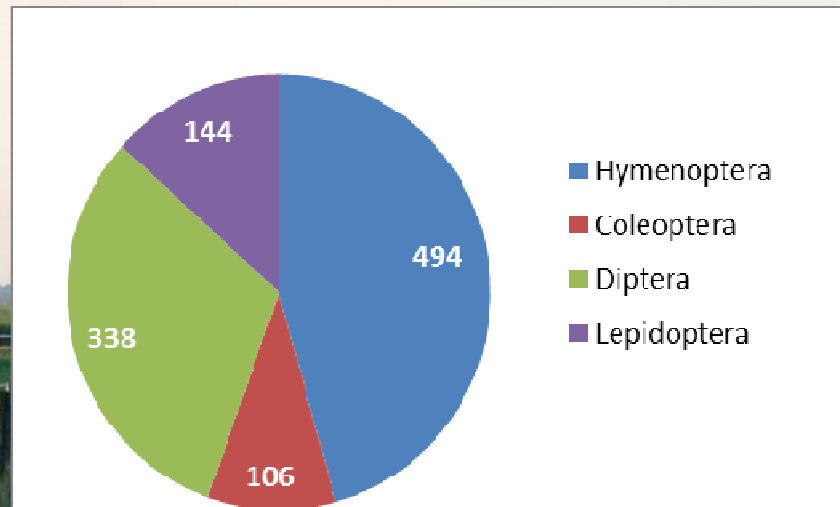
Vlinders



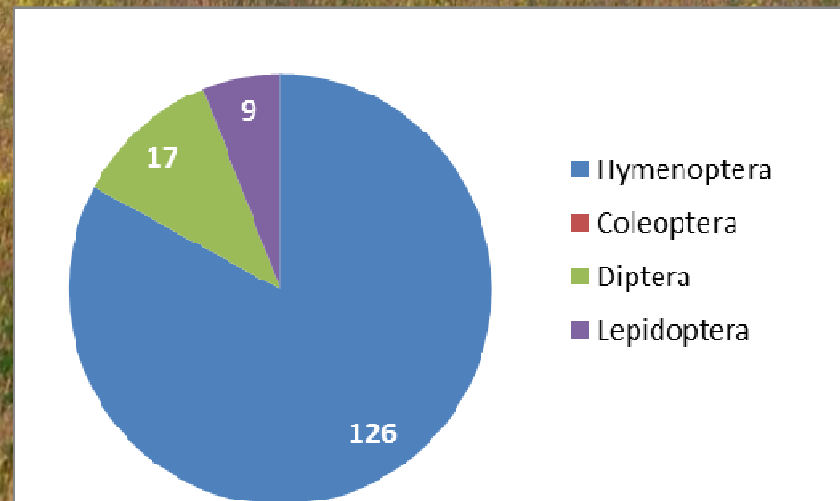
# Het belang van bestuivers



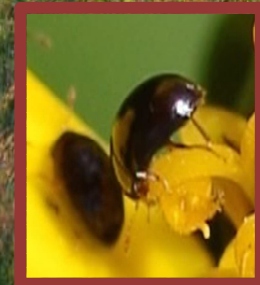
# Welke insecten bestuiven de NL plantensoorten ?



Planten waarvoor de insecten specifiek genoemd zijn



Planten waarvoor slechts één enkele insectengroep genoemd is

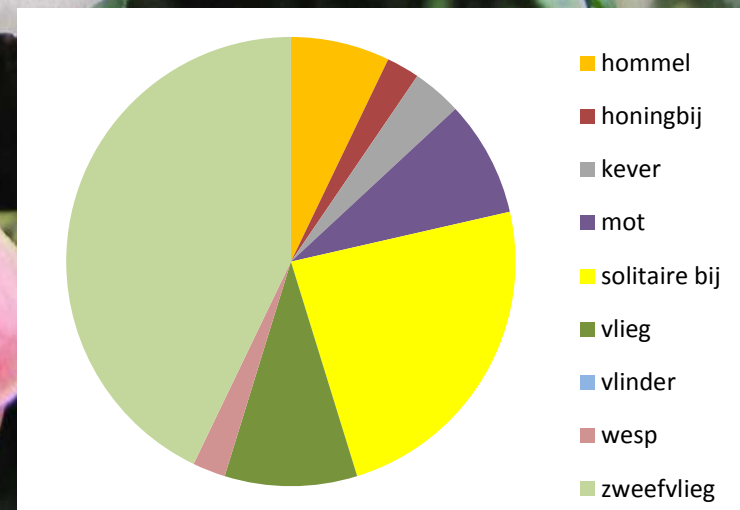


# Hoe klopt de bestuiving met het bezoek ?

Appel – *Malus sylvestris*

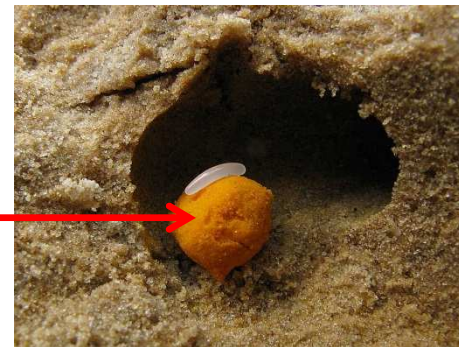
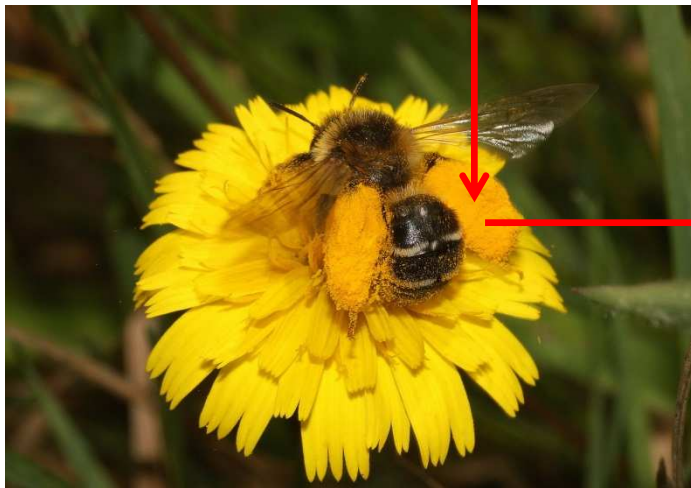
Bestuiving: *Insecten algemeen*

Bezoekers: *zweefvliegen, solitaire bijen, ....*



# Waarom zijn bijen zulke goede bestuivers ?

Voedsel = stuifmeel & nectar



Stuifmeel is het voedsel voor de larven

# Hoeveel soorten bijen komen er in Nederland voor?





**Meidoornzandbij (12-14 mm)**

Foto Menno Reemer





**Gewone dwergzandbij (5-7 mm)**

Foto Menno Reemer



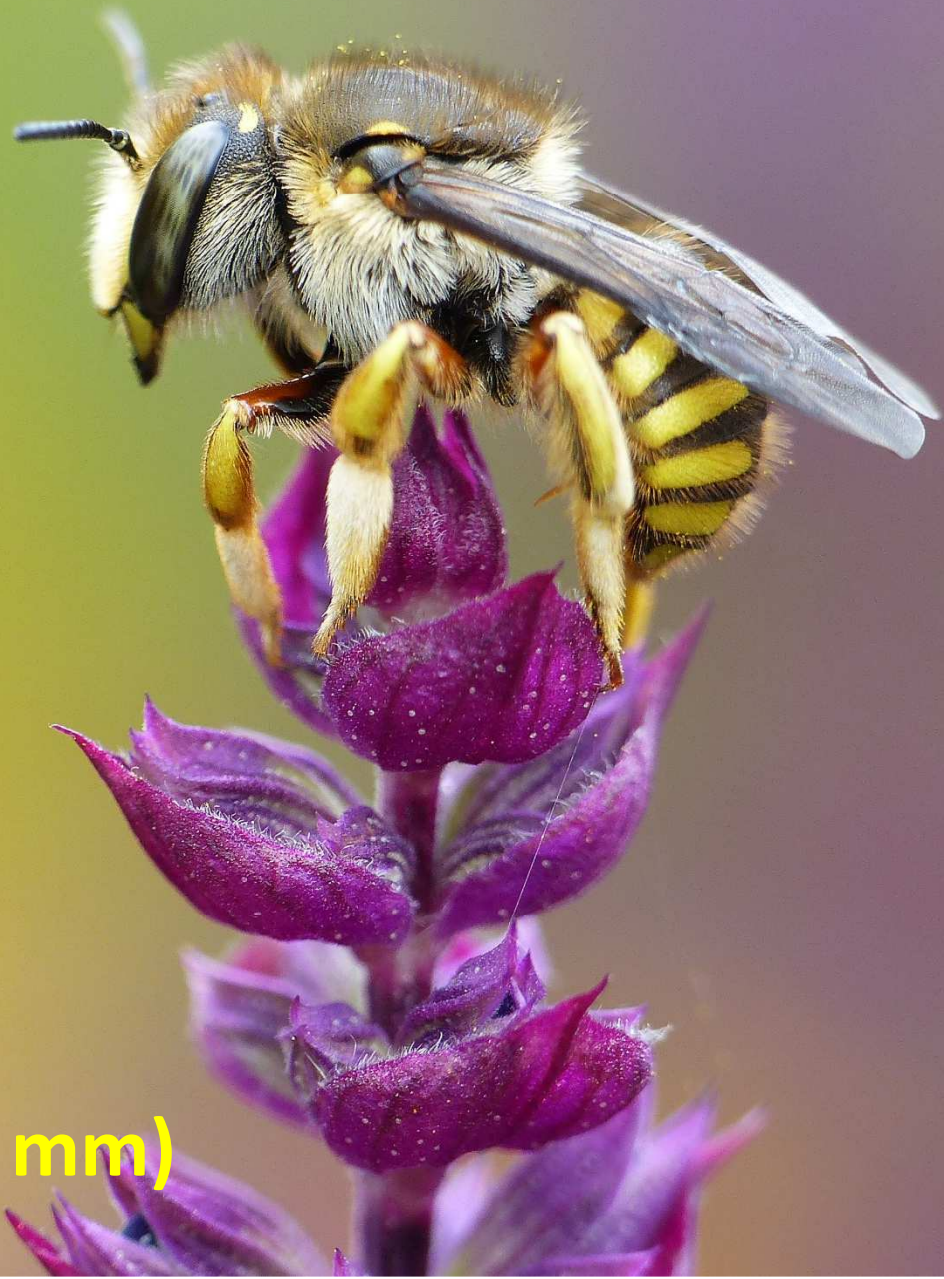
**Vosje (10-14 mm)**

Foto Menno Reemer



**Veldhommel (9-21 mm)**

Foto Menno Reemer



**Grote wolbij (10-16 mm)**



**Gewone wespbij (8-13 mm)**

Foto Mehno Reemer



**Grote bloedbij (9-15 mm)**

Foto Menno Reemer



**Gewone maskerbij (4,5-7 mm)**

Foto Menno Reemer



Honingbij





**Pluimvoetbij:** alleen stuifmeel van paardenbloemachtige planten



**Slobkousbij:** wederik



**Kattenstaartdikpoot:** kattenstaart



**Ranonkelbij:** boterbloem



**Grijze zandbij:** wilgenkatjes

## Diversiteit in nestelwijzen



### Zelfgegraven nesten in bodem

Pluimvoetbijen, zandbijen, groefbijen, roetbijen etc.



### Nesten in holle takjes

Maskerbijen, metselbijen, ertsbijen etc.



### Nesten in vraatgangen in dood hout

Metselbijen, behangersbijen, wolbijen, tronkenbijen etc.



# Veeleisende beestjes



Nestelplek



Voedsel

← 500 m →

← 100 m →

← 200 m →

← 300 m →

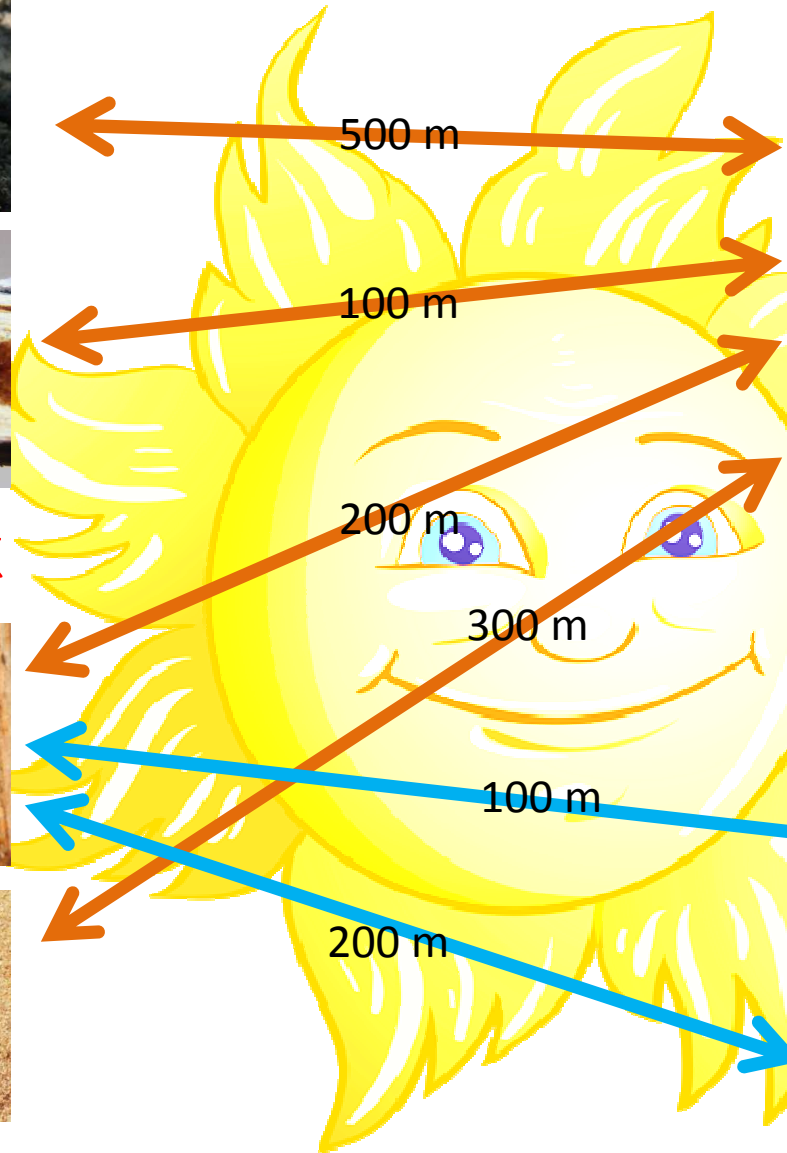
# Veeleisende beestjes



Nestelplek



Foto's Pieter van Breugel



Voedsel

Bouw materiaal



# Parallel Declines in Pollinators and Insect-Pollinated Plants in Britain and the Netherlands

J. C. Biesmeijer,<sup>2\*</sup> S. P. M. Roberts,<sup>2</sup> M. Reemer,<sup>3</sup> R. Ohlemüller,<sup>4</sup> M. Edwards,<sup>5</sup> T. Peeters,<sup>3,6</sup> A. P. Schaffers,<sup>7</sup> S. G. Potts,<sup>2</sup> R. Kleukers,<sup>3</sup> C. D. Thomas,<sup>8</sup> J. Settele,<sup>8</sup> W. E. Kunin<sup>1</sup>

Despite widespread concern about declines in pollination services, little is known about the patterns of change in most pollinator assemblages. By studying bee and hoverfly assemblages in Britain and the Netherlands, we found evidence of declines (pre- versus post-1980) in local bee diversity in both countries; however, divergent trends were observed in hoverflies. Depending on the assemblage and location, pollinator declines were most frequent in habitat and flower specialists, in univoltine species, and/or in nonmigrants. In conjunction with this evidence, outcrossing plant species that are reliant on the declining pollinators have themselves declined relative to other plant species. Taken together, these findings strongly suggest a causal connection between local extinctions of functionally linked plant and pollinator species.

**A**nthropogenic changes in habitats and climates have resulted in substantial reductions in biodiversity among many vertebrate taxa (1), and evidence has been accumulating that insect biodiversity is at risk as well (2). Of particular concern is the possibility of community-level cascades of decline and extinction (3), whereby decline of some elements of the biota lead to the subsequent loss of other species that directly or indirectly rely upon them. Here we examine sets of pollinators and the plants that they pollinate to test (i) whether species that are linked to one another within communities show coincident declines and (ii) whether species with more links within communities are more robust to change because of

the availability of alternative links, if an interacting species is lost.

Any loss in biodiversity is a matter of public concern, but losses of pollinating insects may be particularly troubling because of the potential effects on plant reproduction. Many agricultural crops and natural plant populations are dependent on pollination and often on the services provided by wild, unmanaged, pollinator communities. Substantial concerns have been raised about the decline or loss of these services (4) but see (5)], culminating in formal recognition within the Convention on Biological Diversity (6) in the São Paulo Declaration (7) and the International Initiative for the Conservation and Sustainable Use of Pollinators (8).

However, the evidence for such declines remains scanty (5).

To adequately demonstrate a decline in pollinator services, one would need to document (i) overall declines in pollinator density; and/or (ii) reductions in species diversity or substantial shifts in the species composition of pollinator communities, combined with changes in the distribution of traits represented in those communities (thus indicating that the loss of some pollinators has not been compensated by the rise of functionally equivalent species); and (iii) declines in either the reproductive success or abundance of plant species dependent on these pollinators. No suitable data are available to address overall pollinator density, but here we provide evidence for the remaining points, using data for bees, hoverflies, and plants from Britain and the Netherlands.

We compiled almost 1 million records for bee (all native species except the largely

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## Britain bees

## Britain syrphids



## Netherlands bees

## Netherlands syrphids

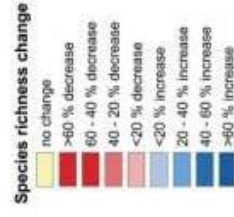
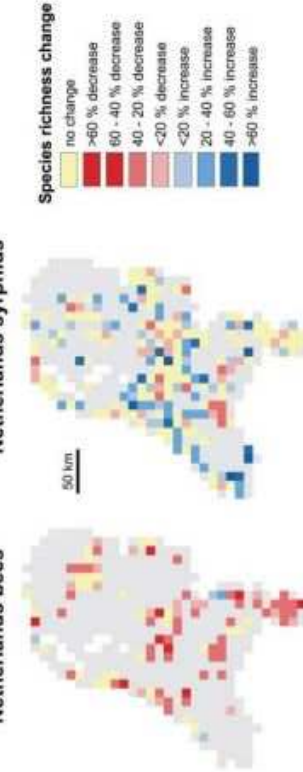
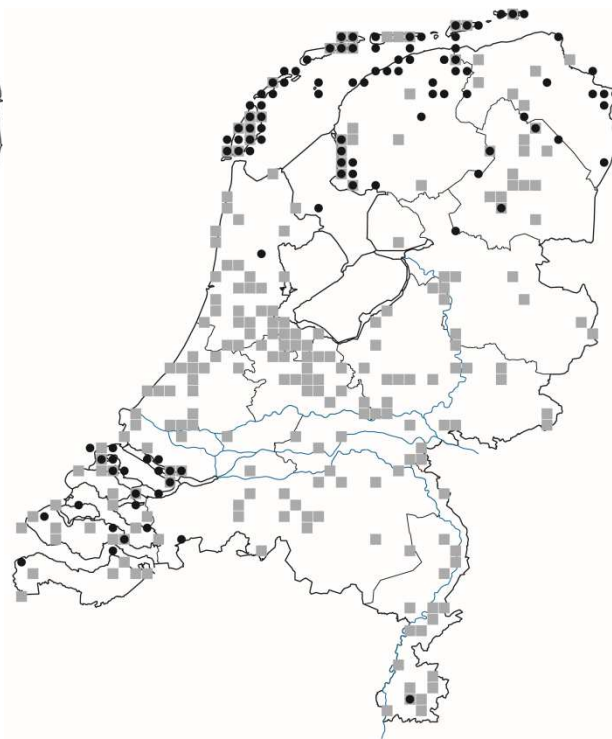


Fig. 1. Bee and hoverfly richness has changed in many of the 10 km by 10 km cells analyzed for Britain and the Netherlands. Some British cells contained adequate data only on eusocial or only on solitary bees (10). Changes in species richness were calculated from rarefaction analyses (10).

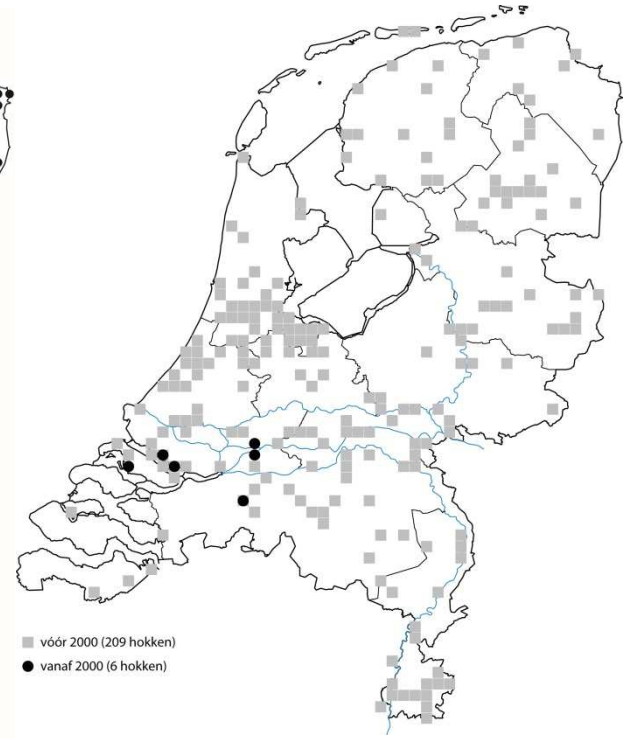
# Hommels hollen het hardst achteruit



Heidehommel



Moshommel



Zandhommel

■ vóór 2000 (209 hokken)  
● vanaf 2000 (6 hokken)



riverbed

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# New study suggests insect populations have declined by 75% over 3 decades



By **Euan McKirdy**, CNN

🕒 Updated 0543 GMT (1343 HKT) October 20, 2017



News & buzz

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**Maak onderscheid tussen:**

**enthousiast maar  
onderdoordacht ....**



**.... en goed & structureel**

## Vlinderstichting

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## NIEUWS



**Kom naar de Bestuiversdag!**  
13 november 2017. -  
Op 27 januari 2018 organiseert...  
[Lees verder...]



**Bijencursus hoveniers en groenbeheerders**  
13 november 2017. -  
Het Wellantcollege biedt een C...  
[Lees verder...]

## BIJEN HERKENNEN



Tips en informatie voor beginners en gevorderden voor het herkennen en op naam brengen van bijen.

## BIJENHOTELS



Leuk en leerzaam: hang een bijenhotel in de tuin. Maar doe het wel goed, anders vliegen de bijen er aan voorbij.

## BIJENPORTRETTELEN



Portretten van enkele bijen die iedereen in de tuin kan zien. Hoe zien ze er uit en hoe leven ze?

Vragen?

