

Het belang van wilde bijen in antropogene landschappen

Jaco J.T.C. Visser



Gefinancierd door: FNRS-FRIA



BRUSSELS
BIOENGINEERING
SCHOOL



AGROECOLOGY lab

The ecology of food & wood

Het belang van goed ingerichte antropogene landschappen voor wilde bijen

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ULB



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Wat verstaan we onder “wilde bijen”?

Wat zijn GEEN wilde bijen?


Wildbienen
Ungezähmt und doch ganz nah

Vortrag von Andreas Müller, Wildbienenexperte, über die faszinierende Welt der Wildbienen

Freitag, 7. NOV. 2019
19.00 Uhr

Aula, Schule Laupen
Intravertikal Laupen, Erdbau und dem Natur- und Vogelschutz Laupen

BEES ARE DYING ALL OVER THE WORLD.

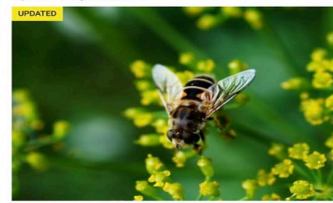


WHAT ARE THE CONSEQUENCES?

Beckenham Bee Killer: Suspect reported to authorities

15th September

By Liam McInerney | @LiamMcInerney
Reporter - Bromley & Lewisham



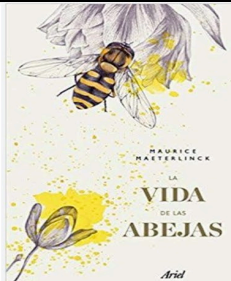
Ad closed by Google

Most read **Commented**

1 Life sentence for Plumstead teenager who murdered boy in Greenwich

LA VIDA DE LAS ABEJAS


Maurice Maeterlinck



One Little Company @OneLittleCompany · 23h


#WorldHoneyBeeDay

"If the bee disappears from the surface of the earth, man would have no more than four years to live" - Albert Einstein



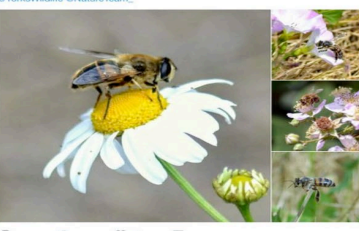
United F.S. @UnitedF.S. · Aug 18

Today is World Honey Bee Day! It's the official day to honor honey bees and beekeeping. Bees are among the most important creatures to humans. These amazing insects pollinate over 80% of all flowering plants including 70 of the top 100 human food crops. #WorldHoneyBeeDay



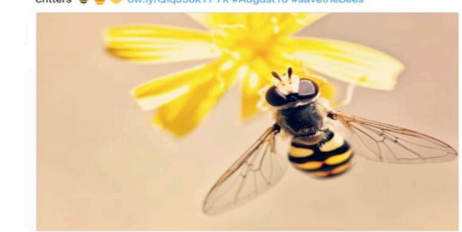
Carol Barrowclough @CarolnWilkie · Aug 18

#WorldHoneyBeeDay In celebration of all hardworking bees, a few summertime picnics taken while walking in a Yorkshire countryside @BumblebeeTrust @YorksWildlife @NatureTeam.




EYTC @EYTCahops · Aug 18

It's #WorldHoneyBeeDay! Check out what you can do to help these important critters 🐝🍯 [ow.ly/QiQj30kYF7k](#) #August18 #savebees




AZ Bible Guy @AZBible · 15h

A "Good News" thought for HONEY BEE DAY... Whose lips "dropped" Honey? Song of Solomon 4:11 #HoneyBeeDay




God Gives Us Bees, So We Can Have Honey




Katherine Jarzembek @jarzombrian · 19 Aug 2017

Happy #HoneyBeeDay!




US EPA - NJ,NY,PR,VI @EPARegion2 · 18 Aug 2017

Tomorrow is National #HoneyBeeDay! Check out how you can help protect our pollinators: [on.fb.com/ny/nyepa30beeenvy](#)




LO! agriculture : «Les sénateurs n'ont pas compris le rôle primordial de l'abeille»

Pendant que les abeilles disparaissent, les sénateurs éliminent du projet de loi agriculture les timides mesures cherchant à réduire l'utilisation de pesticides. Gilles Lanoie, président de l'Union nationale de l'apiculture française, lance un énigmatique cri de détresse.

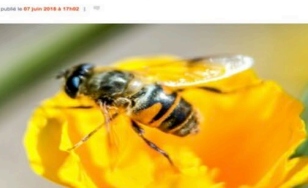


Honey bees ejaculate so forcefully that their penises explode; killing them shortly after.

@weirdworldinsta




Trois jours pour faire connaître le rôle des abeilles dans la pollinisation



EcoWatch

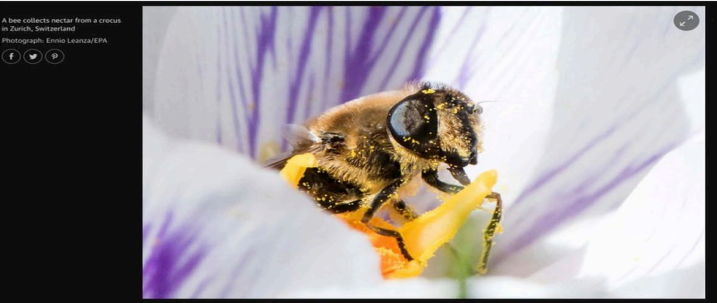
Honeybees Are Struggling to Get Enough Good Bacteria



The Boy Who Taught the Beekeeper to Read

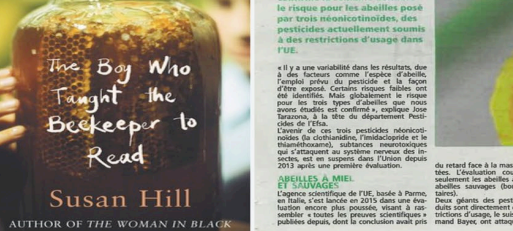
Susan Hill

AUTHOR OF THE WOMAN IN BLACK



Les néonicotinoïdes nuisent aux abeilles


L'Agence européenne pour la sécurité des aliments, l'Efsa, a confirmé la semaine dernière le risque pour les abeilles posé par trois néonicotinoïdes, des pesticides actuellement soumis à des restrictions d'usage dans l'UE.



WELSH BEEKEEPER


Spring 2017

Gwenynwr Cymru
Gwanwyn 2017




ONTARIO BEE JOURNAL

JANUARY / FEBRUARY 2018



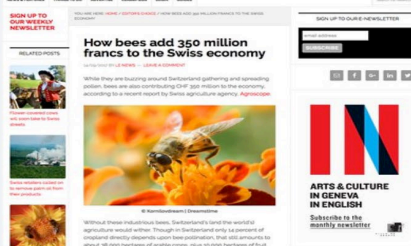
Horrible news again...

Local bee population increasingly threatened by growing number of alien Oriental Hornets - The Malta Independent




le News

How bees add 450 million francs to the Swiss economy




SILLONBELGE.be

Une réserve unique pour abeilles sauvages à Bertem



THE IRISH TIMES

Scientists accused of plotting to get pesticides banned



Wat zijn **GEEN** wilde bijen?





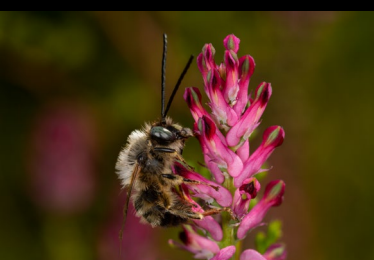
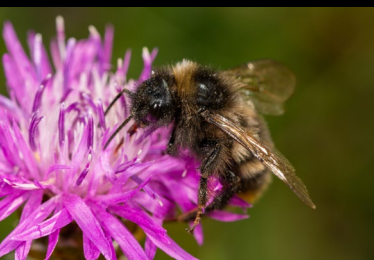
“Raising honeybees
to save pollinators
is like raising chickens
to help birds”

Before you can
#SaveTheBees
you need to get to
#KnowTheBees



Wat ZIJN wilde bijen?

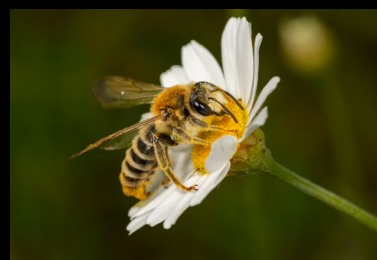
Apidae



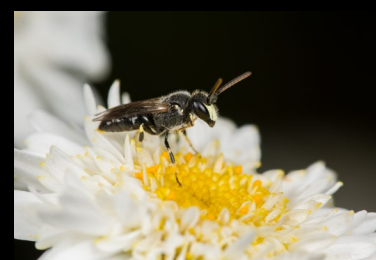
Megachilidae



Andrenidae



Colletidae



Melittidae



Halictidae





Dasypoda hirtipes



Bombus rupestris



Nomada rufipes



Anthophora plumipes



Megachile willughbiella



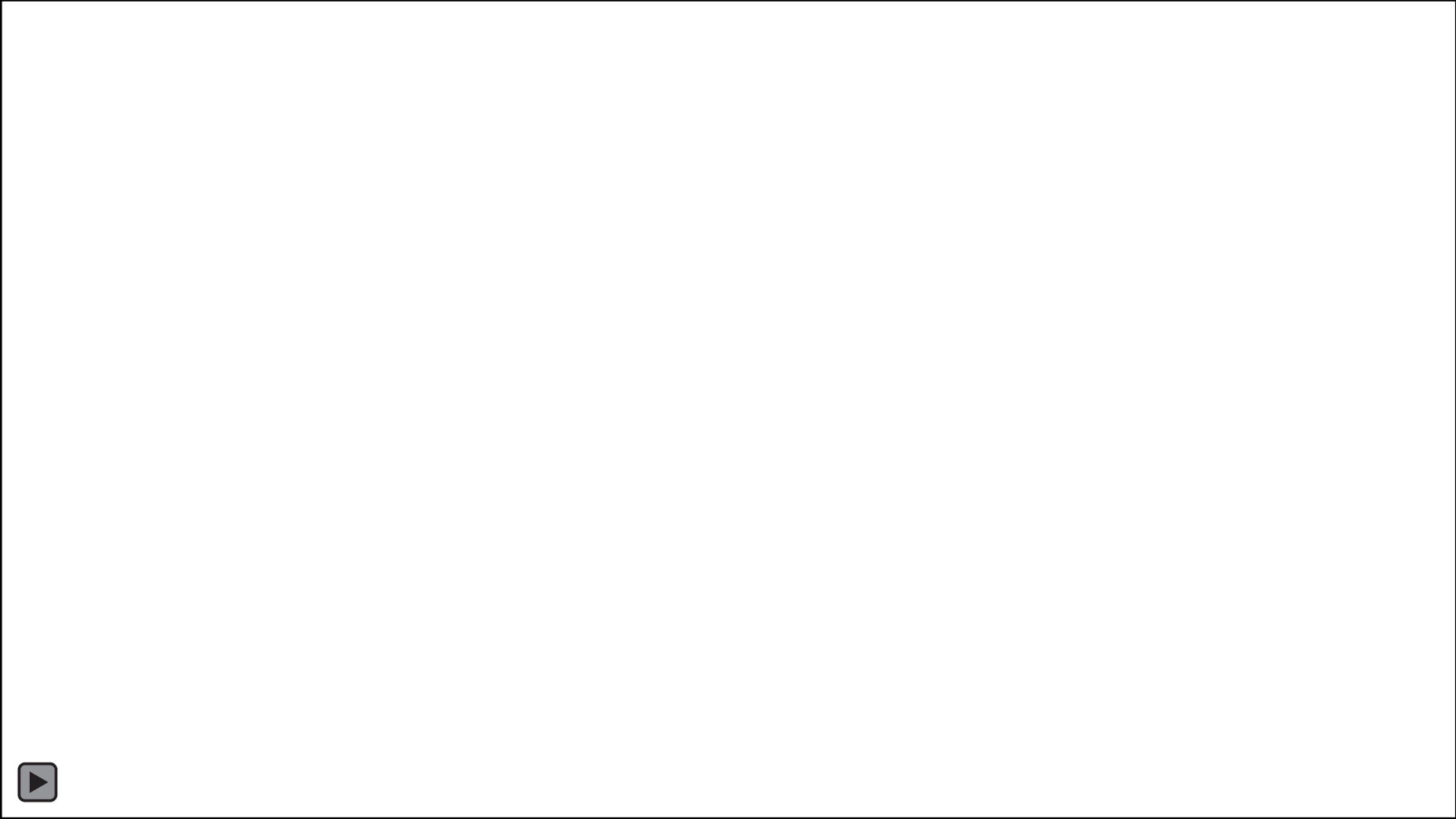
Anthidiellum strigatum



Photos © A Krebs

Hoplitis papaveris





Osmia (Allosmia) sybarita

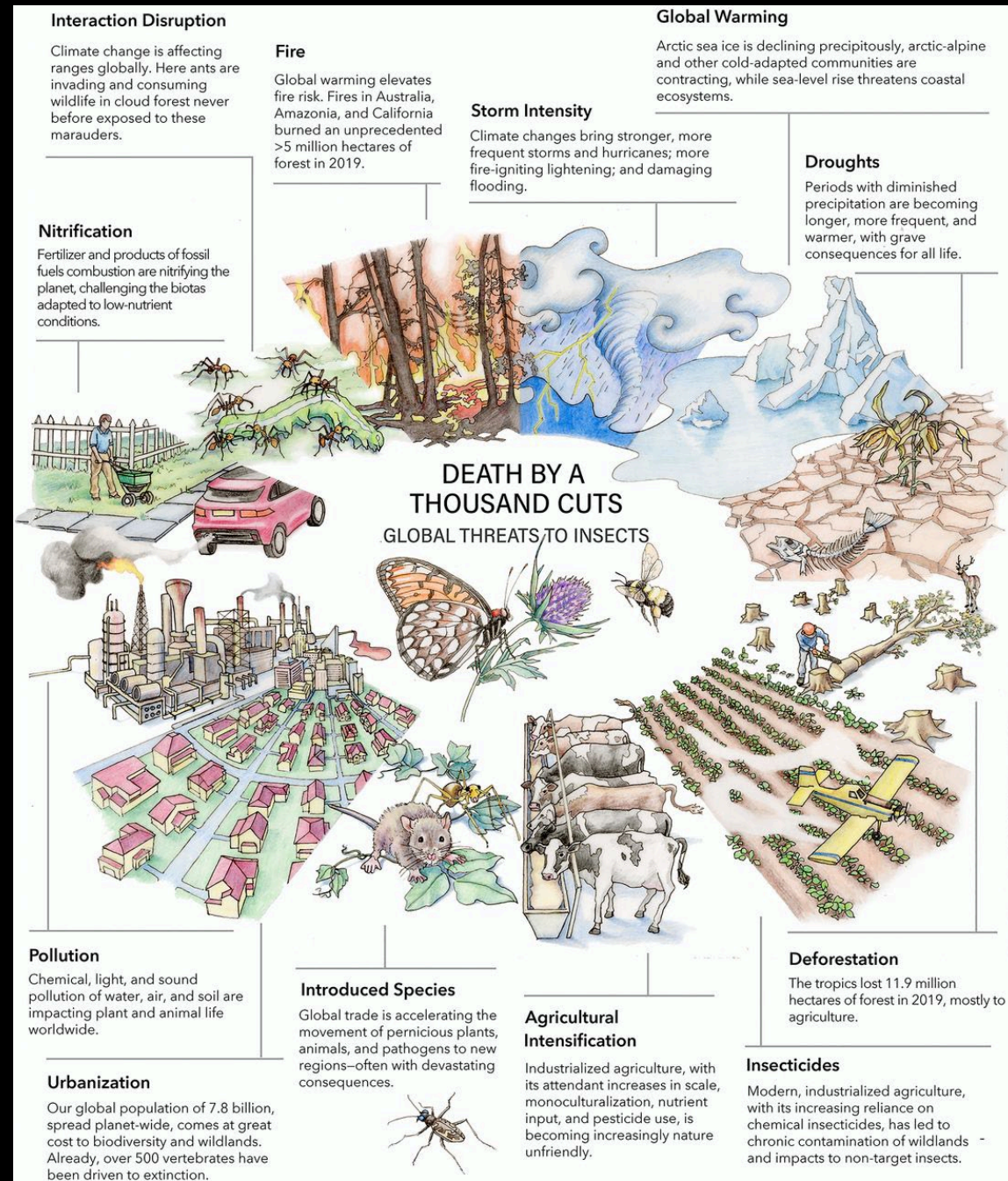


Colletes cunicularius



Colletes halophilus

Afname van insecten in het Antropoceen: "death by a thousand cuts"



Invasieve soorten



Wilde bijen en landbouw

<https://www.maasheggenunesco.com>



Wilde bijen en landbouw



75% van alle bloeiende planten wordt bestoven door insecten



EMBARGOED UNTIL 2:00 PM US ET THURSDAY, 28 FEBRUARY 2013

Wild Pollinators Enhance Fruit Set of Crops Regardless of Honey Bee Abundance

Lucas A. Garibaldi,^{1*} Ingolf Steffan-Dewenter,² Rachael Winfree,³ Marcelo A. Aizen,⁴ Riccardo Bommarco,⁵ Saul A. Cunningham,⁶ Claire Kremen,⁷ Luísa G. Carvalheiro,^{8,9} Lawrence D. Harder,¹⁰ Ohad Afik,¹¹ Ignasi Bartomeus,¹² Faye Benjamin,³ Virginie Boreux,^{13,14} Daniel Cariveau,³ Natacha P. Chacoff,¹⁵ Jan H. Dudenhöffer,¹⁶ Breno M. Freitas,¹⁷ Jaboury Ghazoul,¹⁴ Sarah Greenleaf,⁷ Juliana Hipólito,¹⁸ Andrea Holzschuh,² Brad Howlett,¹⁹ Rufus Isaacs,²⁰ Steven K. Javorek,²¹ Christina M. Kennedy,²² Kristin Krewenka,²³ Smitha Krishnan,¹⁴ Yael Mandelik,¹¹ Margaret M. Mayfield,²⁴ Iris Motzke,^{13,23} Theodore Munyuli,²⁵ Brian A. Nault,²⁶ Mark Otieno,²⁷ Jessica Petersen,²⁶ Gideon Pisanty,¹¹ Simon G. Potts,²⁷ Romina Rader,²⁸ Taylor H. Ricketts,²⁹ Maj Rundlöf,^{5,30} Colleen L. Seymour,³¹ Christof Schüepp,^{32,33} Hajnalka Szentgyörgyi,³⁴ Hisatomo Taki,³⁵ Teja Tschardt,²³ Carlos H. Vergara,³⁶ Blandina F. Viana,¹⁸ Thomas C. Wanger,²³ Catrin Westphal,²³ Neal Williams,³⁷ Alexandra M. Klein¹³

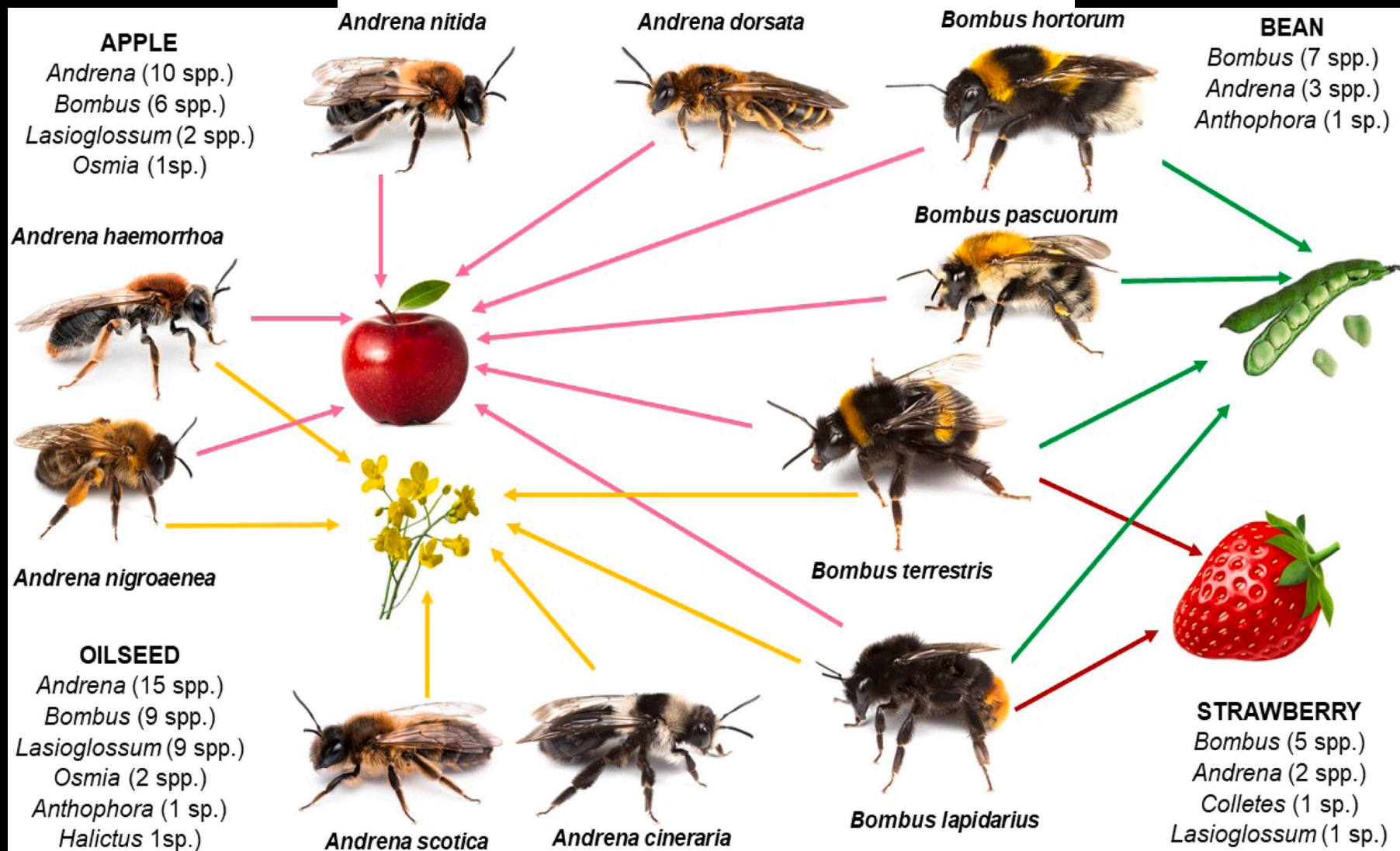
*To whom correspondence should be addressed. E-mail: lgaribaldi@unrn.edu.ar

complementary pollination among species (14, 15), facilitation (16, 17), or “sampling effects” (18), among other mechanisms (19, 20). Pollinator evenness may enhance fruit set via complementarity, or diminish it if a dominant species (e.g., honey bee) is the most effective pollinator (21). To date, the few studies on the importance of pollinator richness for crop pollination have revealed mixed results (22), the effects of evenness on pollination services remain largely unknown, and the impact of wild-insect loss on fruit set has not been evaluated globally for animal-pollinated crops.

We tested four predictions arising from the assumption that wild insects effectively pollinate a broad range of crops, and that their role can be replaced by increasing the abundance of honey bees in agricultural fields: (1) for most crops, wild-insect and

- Diversiteit van wilde bijen is een van de belangrijkste factoren voor landbouwproductie, los van de hoeveelheid honingbijen in de omgeving

Louise A. Hutchinson ^a, Tom H. Oliver ^b, Tom D. Breeze ^a, Emily J. Bailes ^{c, ad, ae}, Lisa Brünjes ^d, Alistair J. Campbell ^e, Andreas Erhardt ^f, G. Arjen de Groot ^g, Rita Földesi ^h, Daniel García ⁱ, Dave Goulson ^j, Hélène Hainaut ^k, Peter A. Hambäck ^l, Andrea Holzschuh ^m, Frank Jauker ⁿ, Björn K. Klatt ^{o, p}, Alexandra-Maria Klein ^q, David Kleijn ^r, Anikó Kovács-Hostyánszki ^s, Elena Krimmer ^m, Megan Mc Kerchar ^t, Marcos Miñarro ^u, Benjamin B. Phillips ^v, Simon G. Potts ^a, Gesine Pufal ^q, Rita Radzevičiūtė ^{w, x, y}, Stuart P.M. Roberts ^a, Ulrika Samnegård ^{h, o}, Jürg Schulze ^z, Rosalind F. Shaw ^y, Teja Tscharntke ^{aa}, Nicolas J. Vereecken ^k, Duncan B. Westbury ^t, Catrin Westphal ^p, Alexander Wietzke ^{ab}, Ben A. Woodcock ^{ac}, Michael P.D. Garratt ^a



Wilde bijen en verstedelijking




Kunnen steden een bijenparadijs zijn?

In all, 1,706 specimens representing 61 bee species were collected in our study sites (Appendix 3). The most abundant wild bees were *Lasioglossum pauxillum* (359 individuals), *L. morio* (223 individuals), *Dasygaster hirtipes* (141 individuals), and *Andrena flavipes* (66 individuals). The European honey bee (*Apis mellifera*), which we excluded from the analyses, had 430 specimens. These specimens were distributed among all sites, with 14 specimens on average per site (Appendix 3). We found eleven Red-Listed species with *Anthidium punctatum* and *Anthophora aestivalis* being critically endangered, and *Halictus quadricinctus*, *Lasioglossum quadrinotatum* and *Osmia mustelina* being endangered. These Red-Listed species represented 18% of all species and 5% of all individuals.


Urban Wastelands Can Be Amazing Reservoirs of Biodiversity for Cities

[Nathalie Machon](#) 


Five years of citizen science and standardised field surveys in an informal urban green space reveal a threatened Eden for wild bees in Brussels, Belgium

[Nicolas J. Vereecken](#) , [Timothy Weekers](#), [Leon Marshall](#), [Jens D'Haeseleer](#), [Maarten Cuypers](#), [Alain Pauly](#), [Bernard Pasau](#), [Nicolas Leclercq](#), [Alain Tshibungu](#), [Jean-Marc Molenberg](#), [Stéphane De Greef](#)

Buzzing on top: Linking wild bee diversity, abundance and traits with green roof qualities

[Sophie Kratschmer](#)¹  · [Monika Kriechbaum](#)¹ · [Bärbel Pachinger](#)¹

Wastelands: their attractiveness and importance for preserving the diversity of wild bees in urban areas

[Lucyna Twerd](#)¹  · [Weronika Banaszak-Cibicka](#)²

Kunnen steden een bijenparadijs zijn?

Number of species	Chao	Jackknife 1	Jackknife 2	Bootstrap
114	134 ± 9	147 ± 21	156	130 ± 13

Location	Abundance (number of specimens)	Species richness (number of species)	Number of unique species
Koning Albertpark	224	32	0
Den Botaniek	577	42	4
Natuurpark Zuid	766	76	15
Park Spoor Noord	579	55	4
Schoytestraat	184	20	0
Stadspark	784	68	16

Kunnen steden een bijenparadijs zijn?

Number of species	Chao
114	134 ± 9

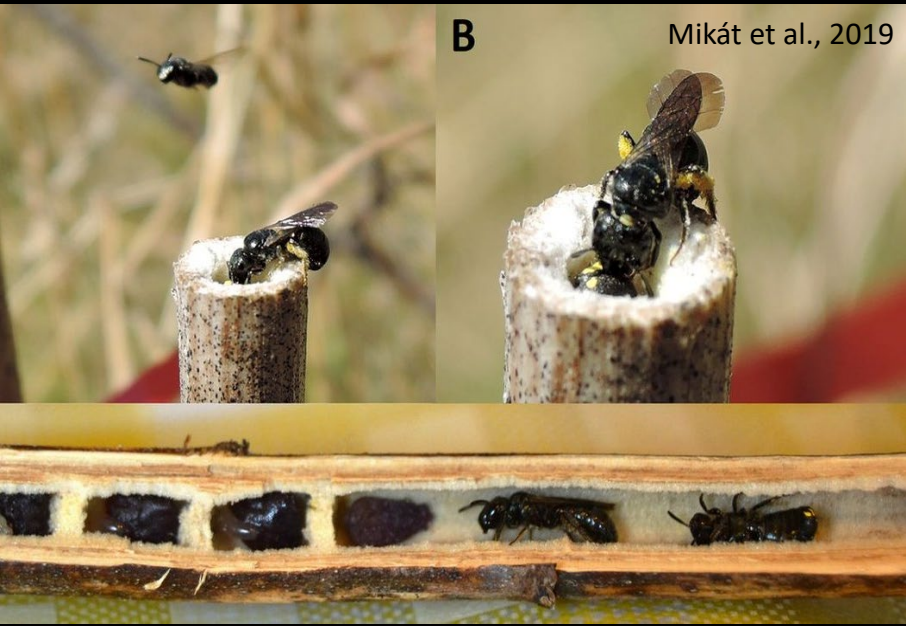
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Schoytestraat	184
Stadspark	784



Welke bijen leven in welk landschap en welke eigenschappen hebben ze?



Hoe kunnen we wilde bijen helpen: nest locaties



Hoe kunnen we wilde bijen helpen: bloeiende planten



Hoe kunnen we wilde bijen helpen: bloeiende planten



Hoe kunnen we wilde bijen helpen: “urban wastelands”




Take home message

Wilde bijen hebben nestgelegenheden en bloeiende planten nodig.

Door te onderzoeken welke soorten(groepen) aanwezig wel of niet zijn **en welke eigenschappen ze hebben**, kunnen we ons landschap beter inrichten om de diversiteit te maximaliseren

Daarnaast moeten we ons bewust zijn van het feit dat we niet alle bijen tegelijk kunnen beschermen, dus we zullen keuzes moeten maken!





Bedankt voor het luisteren!