

Biodiversity & Global Health in the Digital Age: From MOOCs to Citizen Science & Crowdsourcing

Dr. Rafael Ruiz de Castañeda, PhD
Dr. Isabelle Bolon, VMD, PhD

Division on Health & Environment
Institute of Global Health
Faculty of Medicine, UNIGE

23-25 Oct., Helsinki, Finland
WHO-CBD Regional Workshop
on Biodiversity and Health



Source: [Keith Ewing](#)

FACULTY OF MEDICINE
Institute of Global Health



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The world is suffering a « *biological annihilation* »
due to the ongoing major sixth mass extinction event

Gerardo et al. (2017), PNAS

A blue-tinted photograph of a valley. In the foreground, there is a field of tall, thin plants, possibly a meadow. In the middle ground, a small village with several buildings is visible, surrounded by trees. In the background, there are mountains under a cloudy sky. The entire image has a strong blue color cast.

**« More than 75% decline over 27 years in
total flying insect biomass in protected areas »**

Hallmann et al. (2017), Plos One

Connecting Global Priorities: Biodiversity and Human Health

A State of Knowledge Review



Convention on
Biological Diversity



World Health
Organization

Innovation to take this opportunity and to tackle this global biodiversity and health crisis is needed now!



MOOC



Massive Open Online Course





Find
a Meetup Group

Start
a Meetup Group

Sign up

Log in

English ▼



Meetups are

neighbors getting together to learn something,
do something, share something...

Sign me up! >

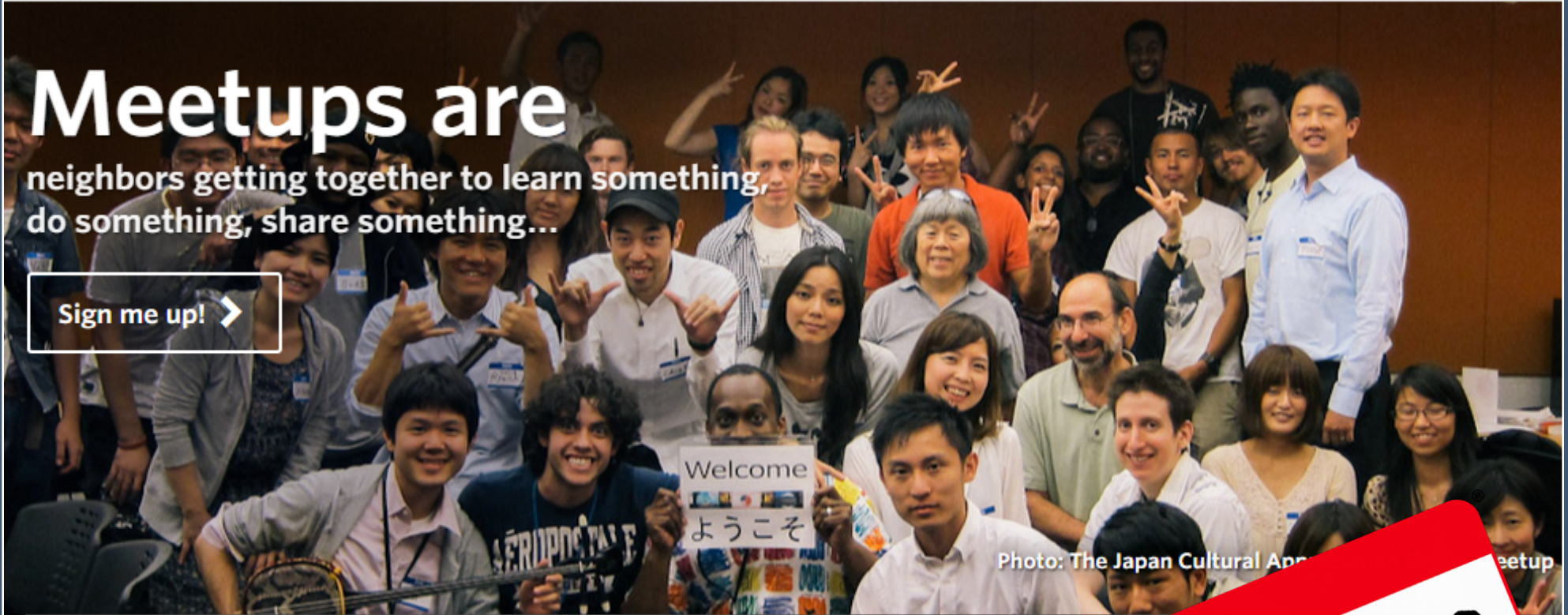


Photo: The Japan Cultural App Meetup

MOOC



within any distance of Geneva, CH



Source:

[Meetup - MOOCs Meetups](#)

[Meetup - Meetup logo](#)

Berlin Open edX Meetup

We're 68 Mitglieder



Code Collective

We're 552 Coders



MOOC Stammtisch (Coursera, edX, Udacity, etc.)

We're 530 Learners



MooC Up Portugal

We're 55 Members



Jamshedpur MOOCs Meetup

We're 10 Shishya...



Coursera meetup Northern Seoul

We're 36 Courserians



Shanghai MOOCers Meetup

We're 85 MOOCers



Fortaleza MOOC Meetup

We're 54 MOOCer



Beijing

We're 79 Me



Source:

[Meetup - MOOCs Meetups](#)

[Meetup - Meetup logo](#)

“Global Flipped Classroom & Hackathon on One Health” July 2017, Geneva



courseera

The logo for edX, featuring the letters 'e', 'd', and 'X' in a stylized, overlapping font. The 'e' is pink, the 'd' is grey, and the 'X' is blue.

Source:

[Coursera - Logo Coursera](#)
[edX - Logo edX](#)



miríada X



25 000 000
learners

2000 + courses
149 partners

29 countries



Berklee

Berklee



University of
Colorado System

Stanford
University

Université Stanford



École
polytechnique
fédérale de
Lausanne



Université Yonsei



Université de
Genève



THE UNIVERSITY OF



MACQUARIE
University



THE UNIVERSITY OF
MELBOURNE

Source:

[Coursera](#)

[Coursera - Cousera partners](#)



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Global Health: Interdisciplinary Overview

- 2013, 2015, 2016
- English
- > 6,000 enrolments



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coursera

Source: [Coursera - MOOC on Global health: an interdisciplinary overview](#)

Ebola: vaincre ensemble!

- 2014-2015
- French, English
- Close to 4,000 enrolments



Image © Bernard Genier / RTS



Source:

[FUN - MOOC Ebola: vaincre ensemble FUN](#)

[Coursera - MOOC Ebola: vaincre ensemble on Coursera](#)

*In the footsteps of Zika:
Approaching the unknown*

- July 2016
- English, French, Portuguese, Spanish
- > 1,000 enrolments

IN THE FOOTSTEPS OF ZIKA

APPROACHING THE UNKNOWN



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UQÀM



Institut Pasteur



Centre
Virchow-Villermé

coursera

Source:

[Coursera - MOOC Zika](#)

Global Health at the Human-Animal-Ecosystem Interface

- 20th March 2017
- Close to 2,000 enrolments
- English, French, Chinese



at the Human, Animal, Ecosystem Interface



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Institut Pasteur

Université
de Montréal



Centre
Virchow-Villermé

coursera

Source: [MOOC – Global Health at the Human-Animal-Ecosystem Interface](#)

Interdisciplinary, multi-expert
& international approach

37 experts from 20 institutions



Source: [MOOC – Global Health at the Human-Animal-Ecosystem Interface](#)

MOOC – *Global Health at the Human-Animal-Ecosystem Interface*
How to link Global Health Priorities with Biodiversity?



Source: [MOOC – Global Health at the Human-Animal-Ecosystem Interface](#)

Coming in Spring 2018 !

New module on “Biodiversity & Human Health” for policy makers

Connecting Global Priorities: Biodiversity and Human Health

A State of Knowledge Review



Convention on
Biological Diversity



World Health
Organization



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Institut Pasteur



Centre
Virchow-Villermé

**Université 
de Montréal**

Source: [MOOC Global Health at the Human-Animal-Ecosystem Interface](#)




citizen science
citizen cyberscience
volunteer computing
crowdsourcing
do-it-yourself (DIY) science
participatory action research
community based research
science 2.0
open science
*responsible research and
innovation*
amateur science

 OPEN ACCESS  PEER-REVIEWED

RESEARCH ARTICLE

More than 75 percent decline over 27 years in total flying insect biomass in protected areas

Caspar A. Hallmann , Martin Sorg, Eelke Jongejans, Henk Siepel, Nick Hofland, Heinz Schwan, Werner Stenmans, Andreas Müller, Hubert Sumser, Thomas Hörrn, Dave Goulson, Hans de Kroon

Published: October 18, 2017 • <https://doi.org/10.1371/journal.pone.0185809>

107
Save

0
Citation

263,901
View

1,379
Share

Old Weather

Help scientists recover Arctic and worldwide weather observations recorded in ship's logs since the mid-19th century.

Choose a project and get started:

Old Weather: Whaling

Explore the Arctic of the past from the deck of a whaling ship

Old Weather: Arctic

Rediscover the historic Arctic voyages of the U.S. Navy and Coast Guard

Old Weather: Citizen S...



Why Scientists Need You

In this video scientists explain why your contributions are vital, and what they're doing with your results behind the scenes.



See where fishing is happening

Observe fishing patterns and activity determined by Global Fishing Watch based on vessel position, course and speed as derived from Automatic Identification System broadcasts.

 [EXPLORE THE MAP](#)





A close-up photograph of a Shark Eye Snail (Cyclophorus) resting on a sandy beach. The snail's shell is a mix of blue, purple, and brown tones, with a prominent, circular, eye-like pattern on its side. The background is a soft-focus view of the beach.

6,459,681
Observations to Date

SIGN UP ↗ EXPLORE ↗

BJ Stacey - Shark Eye Snail from Essex County, Massachusetts, USA





Medically Important Venomous Snakes

Stats

Totals

10396

Observations »


202


Species »


2882


People »


Most Observations

 **skystevens**
214 observations


 **catenatus**
209 observations


 **swanson**
206 observations


 **agua_dulce_snake_guy**
194 observations

 **sandboa**
171 observations

Most Species

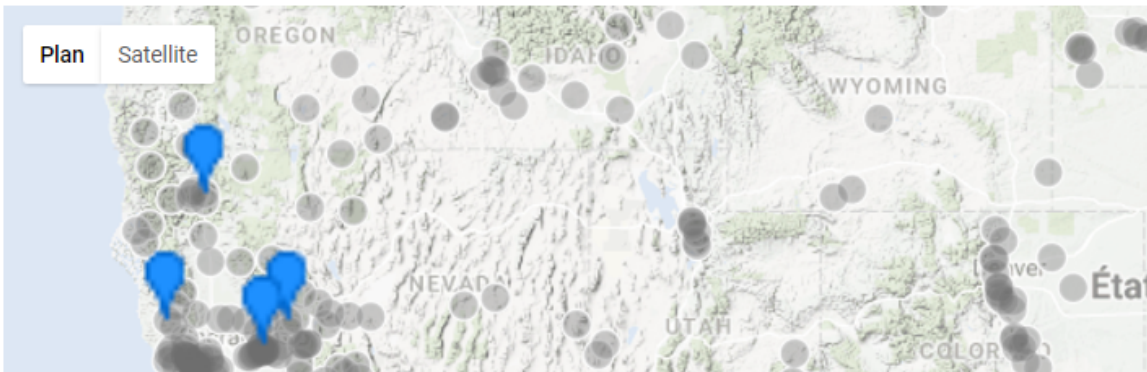
 **sullivan**
28 species

 **eligarciapadilla**
19 species

 **herpguy**
19 species






 **sandboa**
17 species

 **matthieberroneau**
17 species



Add observations to this project

Volunteer herpetologists shared their observations to build the first crowdsourced map of venomous snakes

-  1960 observations
-  Western Rattlesnake
1707 observations
-  Copperhead
1205 observations
-  Cottonmouth
1174 observations
-  Timber Rattlesnake
389 observations



» Members

35 members

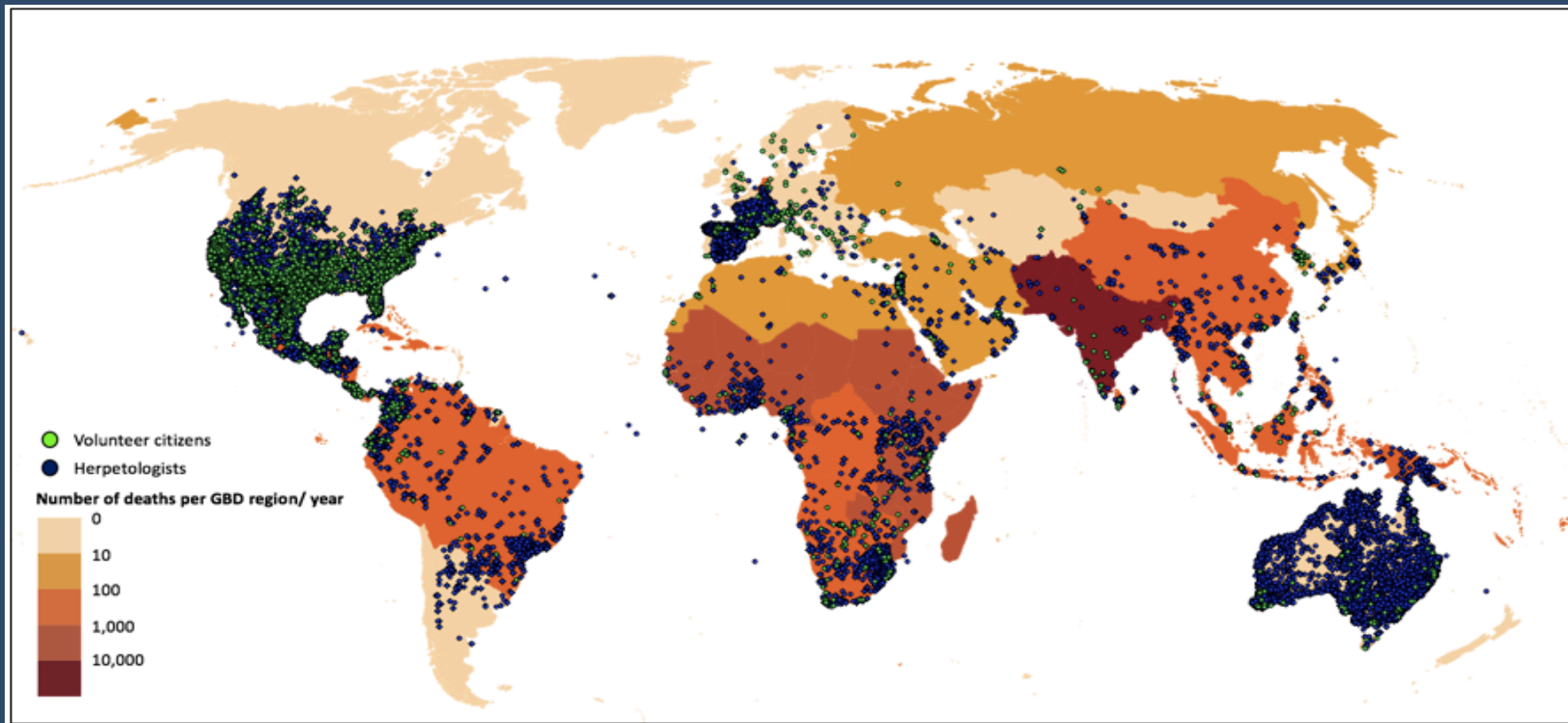


View all members »

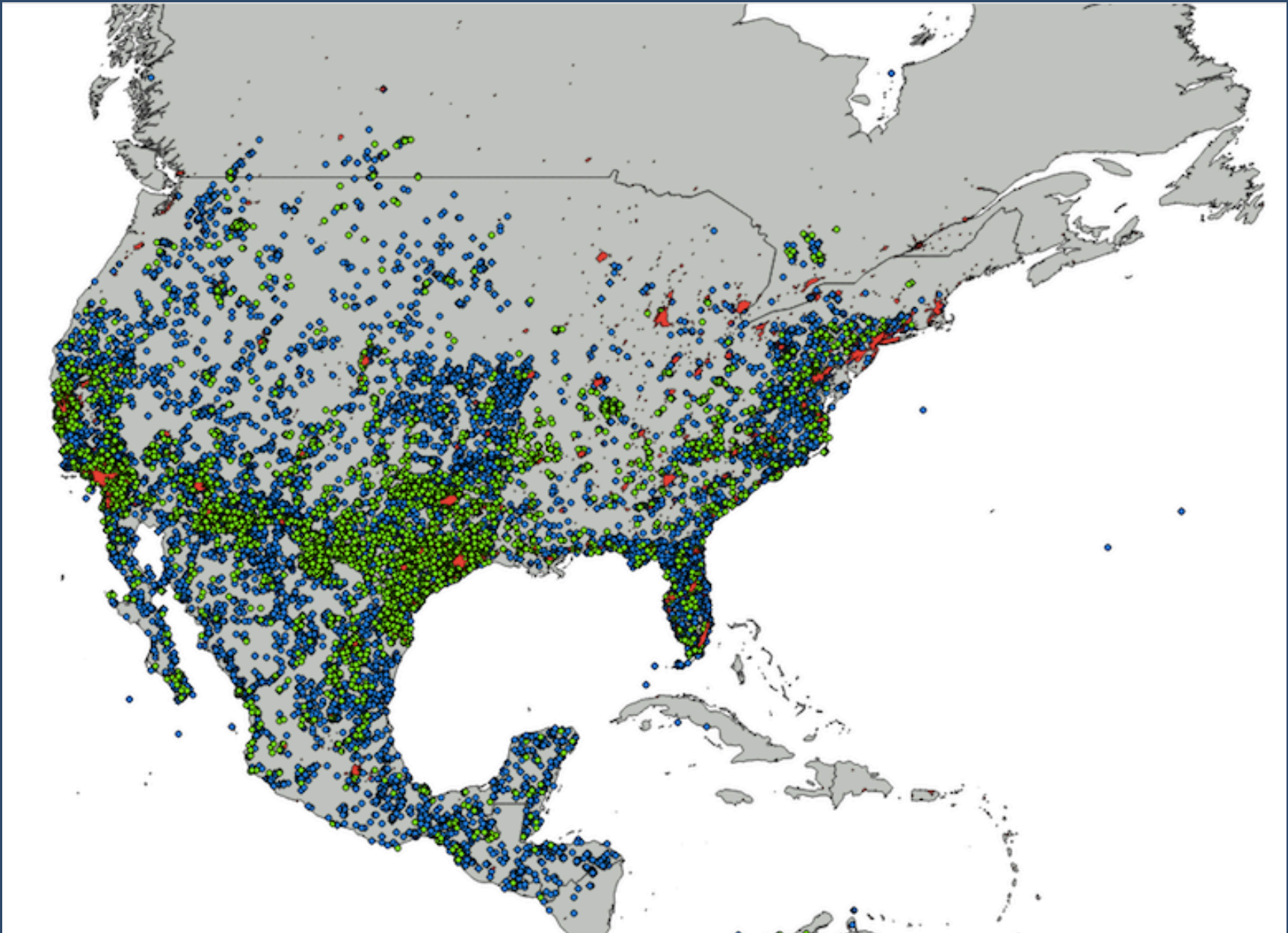
» Export observations

Atom / KML / CSV

First crowdsourced map of venomous snakes



Source: Genevieve et al. submitted *Plos NTDs*

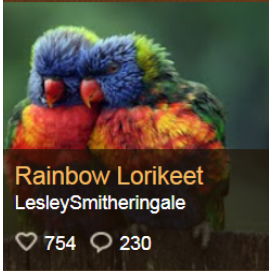


Source: Genevieve et al. submitted *Plos NTDs*



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Rainbow Lorikeet
LesleySmitheringale

♥ 754 💬 230



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♥ [Australian Terrestrial Flatworm](#) favorited by [maplemoth662](#)
Victoria, Australia ⌚ an hour ago

A dorso-ventrally flattened smooth worm which when first spotted looked like a piece of shiny plastic about 10 mm long (pic 3). When



📷 [Common Buckeye Butterfly](#) spotted by [maplemoth662](#)
Florida, USA ⌚ an hour ago

I went downstairs, at around 8:30 a.m. in the morning. My grandson told me, that there was a butterfly on the ceiling. I looked up, and yes,



♥ [Woolly Aphids](#) favorited by [SarahWhitt](#)
Connecticut, USA ⌚ an hour ago

These tiny aphids look like white fuzz balls! They were approximately



PRESS QUOTE [See more](#)

[Designing ecosystems for talent development](#)

Project Noah enables us to be part of a more focused online community where we can learn more about wildlife around us and contribute to scientific research. It pulls participants into deeper, more meaningful engagement by enabling people to go on "missions" to collectively map changes based on sightings.

The Economist

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Project Noah offers a unique opportunity to explore links between biodiversity and health from the local to national and global level

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LesleySmitheringale

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1. Health benefits for the community of naturalists

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Free course

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2. Missions focusing on health indicators (e.g. disease, sentinel species etc.): animals, plants, ecosystems etc

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organisms from around the world



mobile phone



ongoing research



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mission reports See more

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3. Biodiversity data and links with data on human health

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Join Project Noah Today

We need **your support** to bring health into *Project Noah*!

We are **open to discussions**, let's collaborate at your local, country or global levels!



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Florida, USA · 10 an hour ago

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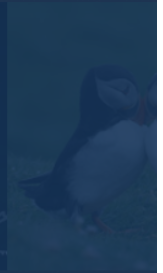
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Kiitos!

Thank you!



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