



Building One Healthy Planet

Episode Eight



This ten-part series is the result of a partnership between the Smithsonian Institution's Conservation Commons Earth Optimism Initiative, the Ministry of Education and Culture of the Republic of Indonesia, and the U.S. Embassy in Jakarta.

Episode Eight Summary:

Human Health is all our priority. So, why are veterinarians studying wildlife health so important to protecting us and preventing pandemics? Meet virus hunters and learn about the One Health approach.

Videos:



Meet the Investigator: José Loaiza

José Loaiza, Associate Investigator at the Smithsonian Tropical Research Institute, gives us a look into his research and how the Asian tiger mosquito colonized Panama so quickly.

Go Deeper: https://www.si.edu/object/meet-investigator-jose-loaiza:yt_R-d08YHFjzU



Field in Focus: Flying Foxes

Mapping the flight path of Indian flying foxes in Myanmar will help scientists learn more about where these megabats travel, and where they encounter humans and domestic animals. If scientists know where bats are interacting with humans and domestic animals, they can help prevent the spread of zoonotic diseases.

Go Deeper: <https://nationalzoo.si.edu/global-health-program/news/field-notes-myanmars-flying-foxes>



Field in Focus: Hlawga National Park

The first step to predicting the next pandemic is studying infectious diseases in places where humans and animals come into contact. Wildlife veterinarians with the Smithsonian Conservation Biology Institute are learning what types of infectious diseases animals carry to help humans interact with them safely.

Go Deeper: https://www.si.edu/es/object/yt_zrJvfFtH32U



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Videos:



Field in Focus: Kawgun Cave

Kawgun Cave in Myanmar is a research site for wildlife veterinarians with Smithsonian Conservation Biology Institute's Global Health Program. Wildlife veterinarians studying emerging infectious diseases that can be spread across species are focusing on a troop of macaques living at the cave. If scientists identify diseases the macaques may carry, their research can be used to help humans interact with the troop more safely.

Go Deeper: https://www.si.edu/es/object/yt_F2MuDmxg8zo



Field in Focus: Predicting Pandemics

Animal health and human health are connected. Seventy-five percent of emerging infectious diseases begin in wildlife species and jump to humans. Smithsonian Conservation Biology Institute veterinarians with the Global Health Program are studying infectious disease in different species to help prevent and predict pandemics.

Go Deeper: <https://nationalzoo.si.edu/news/predicting-next-pandemic>



How This School Prepares Orphan Orangutans for the Wild

In Borneo, orphan orangutans are sent to a unique school in Kalimantan. There, they'll be cared for in the early years of their life, and then later trained for a return to the wild.

Go Deeper: <https://www.youtube.com/watch?v=aUlicYFFhmE>



Field in Focus: Linno Cave

Wildlife veterinarians with Smithsonian Conservation Biology Institute's Global Health Program are trying to help humans and bats live together more safely. Linno Cave in Myanmar is home to more than 500,000 bats. Their guano is harvested and used as fertilizer. That is important for agriculture, but it also presents risks. Wildlife veterinarians have been collecting samples from bats in the cave to test for viruses.

Go Deeper: https://www.si.edu/es/object/yt_ZpB-xbFvP4I

Questions for Discussion:

- How does following the movement of bats help track diseases?
- Why is human interaction with wildlife both a conservation and public health concern?
- Why is it important to analyze viruses in macaques?
- How can humans reduce the spread of zoonotic diseases?

Episode 8 Vocabulary:

- Exposure
- Orphan
- Outbreak
- Zoonotic disease



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Students Ask a Wildlife Veterinarian About Protecting Animals

Dr. James Hassell's research combines ecology and epidemiology to study the connections between environmental change, wildlife and human health. As a Skorton Scholar to the Global Health Program, he leads and advances the program's work in Kenya, which looks to combine capacity building with cutting-edge research to mitigate risk at the interface between wildlife, livestock and human health. Through his work with GHP, Dr. Hassell aims to promote the conservation of species and their ecosystems, while protecting human and wildlife health.



Key Facts

- More than 200 zoonotic diseases have been identified.
- 60% of all human infectious diseases are considered zoonoses.
- 75% of emerging diseases are zoonotic diseases.
- Zoonotic diseases are categorized by their causative agent: bacteria, parasites, fungi and viruses.
- Mosquitoes are one of the deadliest animals in the world. Their ability to carry and spread disease to humans causes millions of deaths every year.
- There are over 1,400 species of bats worldwide. They range in size from weighing less than 2.5 grams to having a wingspan of 2 meters.

Educational Resources

The Global Health Program:

<https://nationalzoo.si.edu/global-health-program>

Emerging Infectious Disease Research:

<https://nationalzoo.si.edu/global-health-program/emerging-infectious-disease-research>

A Conversation with Dennis Carroll: Predicting Pandemics:

<https://naturalhistory.si.edu/education/after-hours/conversation-dennis-carroll-predicting-pandemics>

Outbreaks: Epidemics in a Connected World:

<https://naturalhistory.si.edu/exhibits/outbreak-epidemics-connected-world>

Primate Diary: Observing Orangutans in the Wild:

<https://nationalzoo.si.edu/animals/news/primate-diary-observing-orangutans-wild>

Find out more About Earth Optimism and how you can get involved

<https://earthoptimism.si.edu>

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Earth Optimism is an initiative led by the Smithsonian Institution's Conservation Commons Network, including Movement of Life and Working Land and Seascapes Actions Areas, including The Smithsonian Conservation Biology Institute, Smithsonian Environmental Research Center, Smithsonian Tropical Research Institute, Smithsonian National Museum of Natural History, Smithsonian Office of International Relations, Smithsonian National Zoological Park, Smithsonian Marine Station, Smithsonian Enterprises, Smithsonian Center for Folklife and Cultural Heritage, Smithsonian Science Education Center, Cooper Hewitt, Smithsonian Design Museum, and The Smithsonian Channel.

