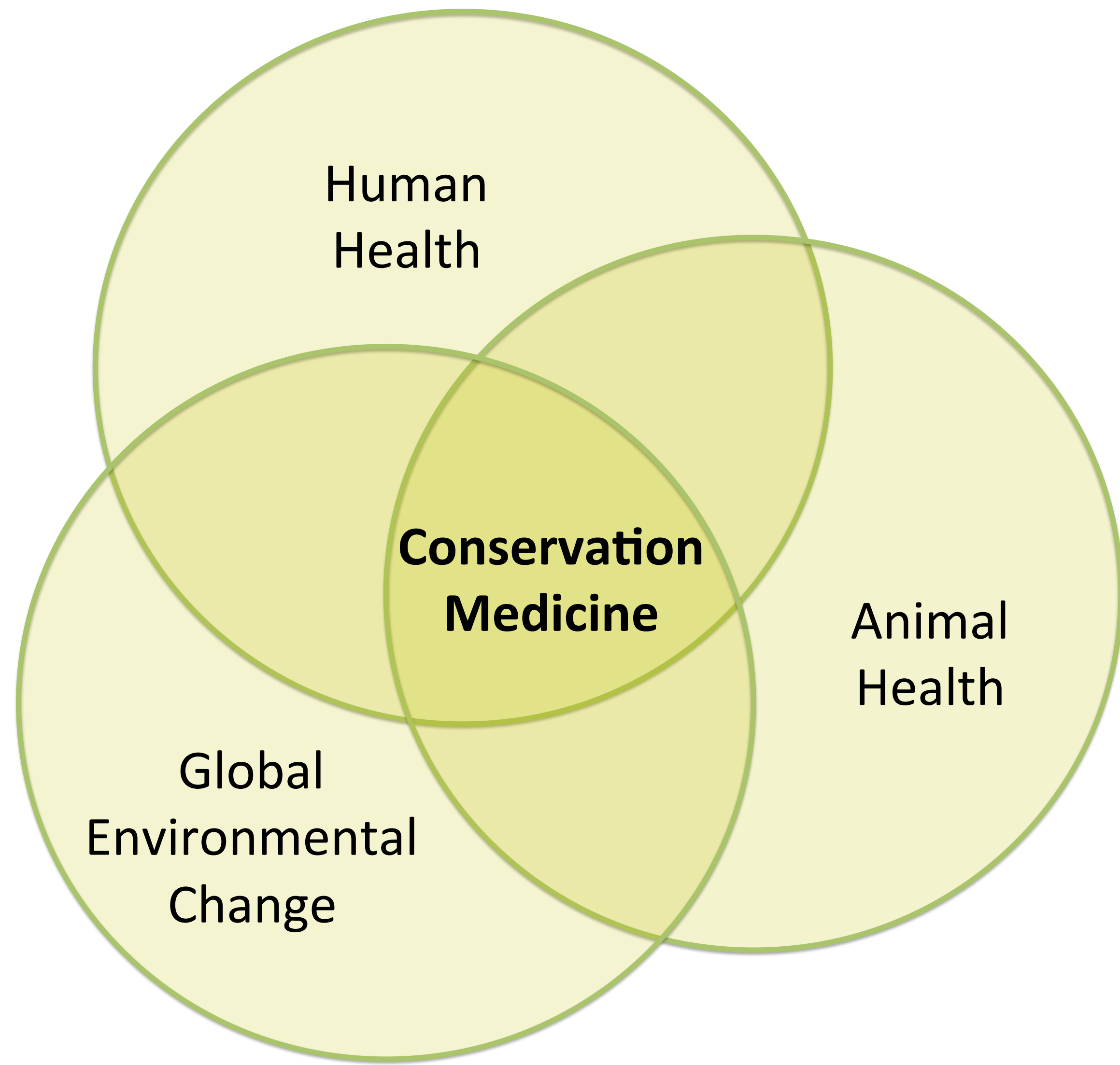




The Intersection of Human, Animal, and Environmental Health: A Collection of Educational Resources



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Overview

- More than half of human infectious diseases are caused by pathogens shared with wild or domesticated animals—called “zoonoses.”
- Zoonoses make up ~75% of human emerging infectious diseases from the past 70 years.
- Zoonotic disease spread is highly influenced by the ecology of both animal and human hosts as well as broader environmental conditions.
- Humans are changing the environment in three major ways:
 - How land is used
 - The way people and animals move across the globe
 - The climate
- Each of these environmental impacts is making it easier for pathogens to jump from animals to people.

Goals

- Develop innovative educational materials on health-environment linkages.
- Use the best available scientific literature to produce a CreatureCast video for the general public along with a module for high school educators comprised of three specific case studies.
- Produce the module so it is adaptable for diverse classrooms.

The Case Studies

Lyme Disease



- White-footed mice are especially good at transmitting the bacterium that causes Lyme disease to black-legged ticks, which can then infect humans.
- Suburbanization in the Northeastern U.S. has created many small patches of forest where these mice thrive, resulting in an increase in Lyme disease cases.

Why do you think some animal species are more successful in fragmented landscapes than others?

Wildlife Hunting and Virus Spread



- Hunting and butchering wild meat brings people into close contact with wildlife, which can increase the chance animal pathogens will evolve to cause disease in humans.
- The construction of logging roads in Cameroon allows wildlife hunting to extend deeper into the forest, potentially increasing human exposure to animal pathogens.

Compare and contrast the zoonotic disease risks associated with hunting wild animals for food and with livestock farming.

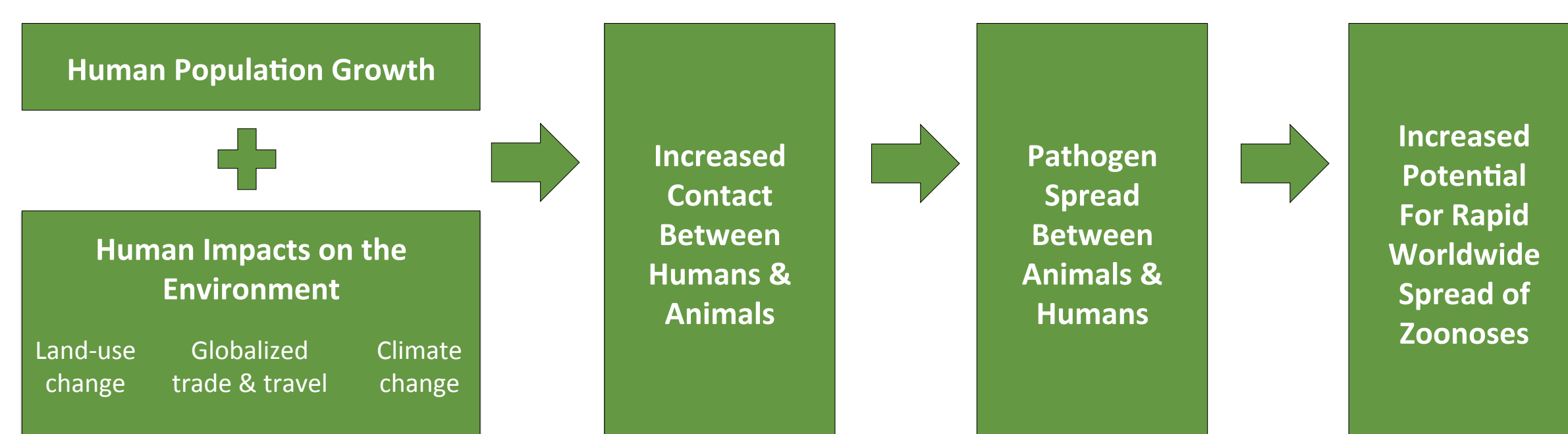
Nipah Virus



- In Malaysia, large-scale drought and deforestation in the 1990s forced fruit bats out of their forest habitat and into fruit orchards next to pig farms.
- The fruit bats carried Nipah virus, which then spread from the bat spit left on partially eaten fruit to pigs, and from pigs to the people who worked on the farms.

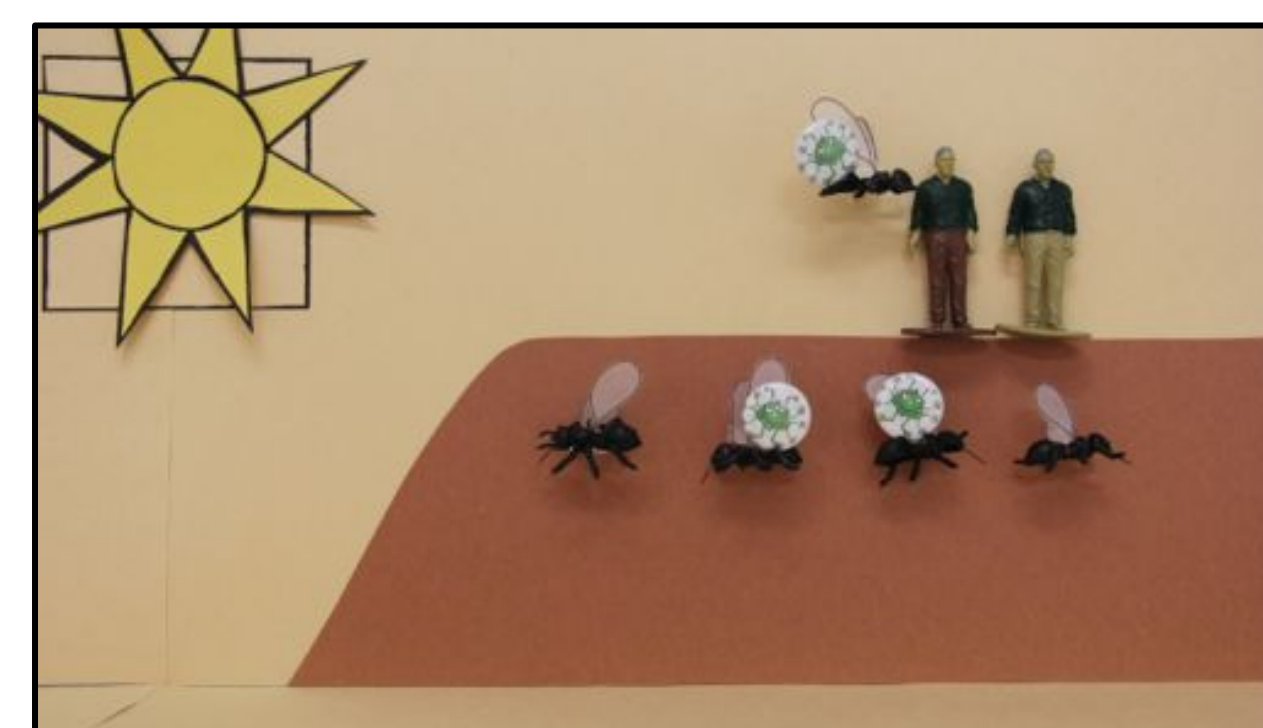
Which aspects of modern animal farming and trade might increase/decrease zoonotic disease risk? Why?

One Way These Topics Are Related



CREATURECAST.ORG

- Created a short stop-motion animation video for the Dunn Lab’s collaborative blog CreatureCast.org about key themes of Conservation Medicine.
- CreatureCast episodes are geared towards a general audience and serve to build an appreciation of zoology in the broad sense as both interesting and beautiful.



35 Toys + 40 Hours + 850 Photos = One 3-minute animation

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