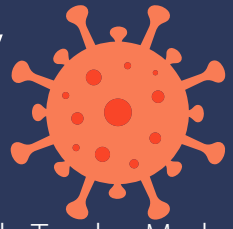


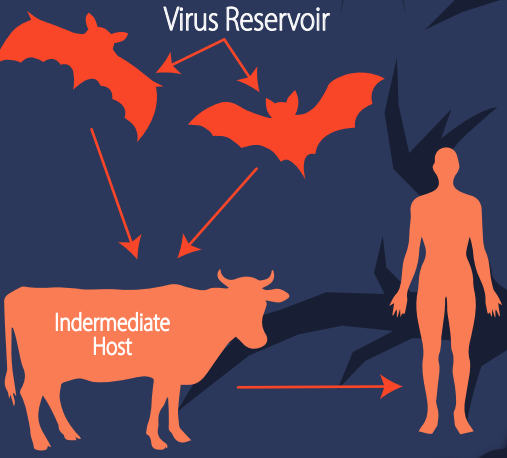
**60** Zoonotic Diseases

are carried by **BATS** including



Ebola, MERS, Nipah, Tendra, Marburg, SARS and Coronaviruses.

**54%** of enveloped, single-stranded RNA Coronaviruses are associated with bats



**The only flying mammal**

Bats have an extremely high metabolic rate due to their flying ability. This may be why they can produce enough energy to keep their interferon systems activated, unlike other mammals which only activate it when infections occur.

# BATS Friend or Foe?

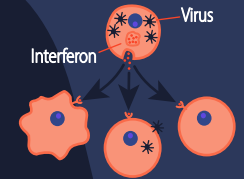
Spreading happens through human encroachment on wildlife habitats. As we have expanded our farm lands, bats can infect our farm animals which can then infect us. Wildlife trade and animal markets can also create spill over events.

**37%** of land is agriculture, increasing human contact with bats

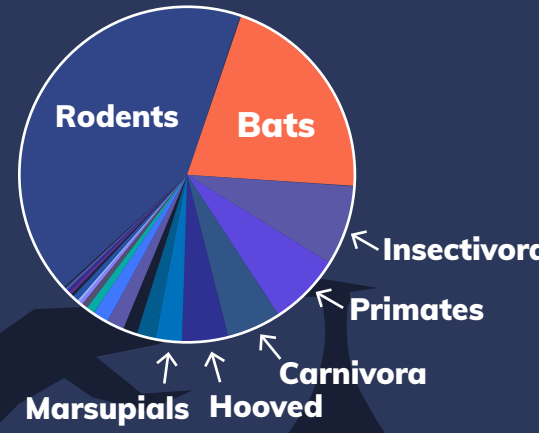


## Why don't bats get sick?

Their **Unique Immune Systems** have dampened inflammatory responses and hypervigilant interferons (protein released in response to virus), preventing virus reproduction. They evolved to protect themselves against DNA damage, and they lack genes for inflammation triggering proteins.



**22%** of mammals are Bats



Only 3 of over 1400 species of bats are vampire bats

## What can we learn?

The answer is to love bats, not hate them. They are pollinators and an important **keystone species** and can likely be studied for the development of more anti-viral drugs.

**Bats Live 3.5x longer than** other similarly sized mammals, indicating they may hold clues to our own longevity