

Health Benefits of Trees

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About me

- IDE
- Lyme Disease
- Research interest: how health and biodiversity interact



What I will talk about



TREES AND PHYSIOLOGICAL
HEALTH



TREES AS HABITATS, AND WHY
THESE HABITATS ARE IMPORTANT
FOR HUMAN HEALTH



A walk in the woods

EEG to monitor the effects of walking in a forest versus an urban area – brain signs of relaxation.

Meta-analysis of 20 trials - blood pressure lower in those walking in a forest versus a non-forest environment.



The smell of trees after rain

- Correlation between spending time amongst trees and increased activity of natural killer (NK) cells.
- One study showed that increased NK activity for one week after a day-long trip to a forest.
- It is suggested that this increased NK cell activity may be prompted by the release of volatile compounds called phytoncides from trees and other plants.
- Smell, visual, and sound stimuli from a forest or park reduce physical stress response



Living in an area with trees

A 2009 Dutch study: those living near a green area had a lower incidence of 15 diseases.

UK report: 25% decrease in all-cause mortality in residents of areas with lots of green space, compared to areas with low levels of green space.

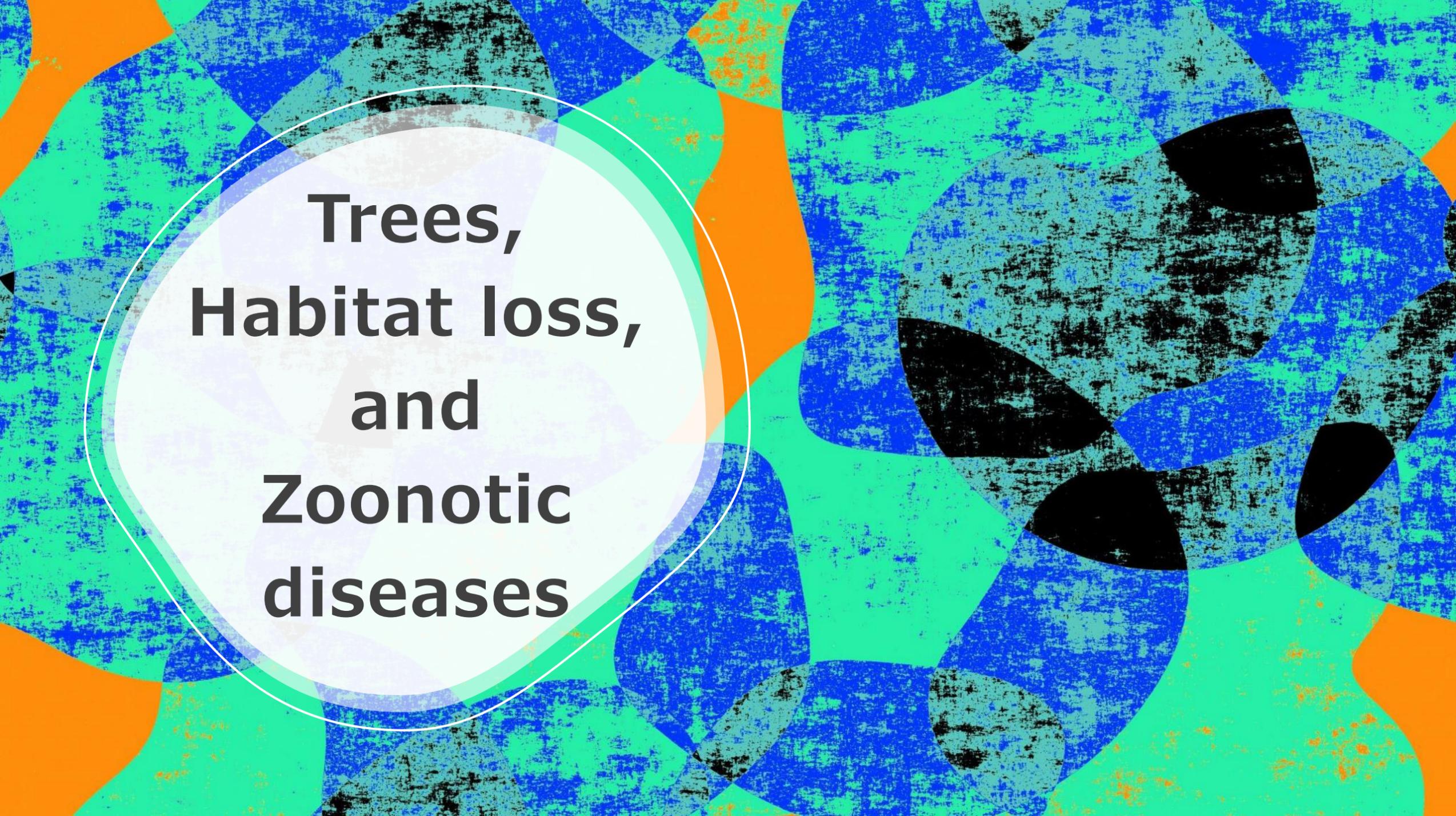


Looking at trees?

1980s hospital study – people recovering from an operation

patients recovering in a room with a natural view had a shorter recovery time and needed fewer strong painkillers than matched patients whose view was of an adjacent building wall.





**Trees,
Habitat loss,
and
Zoonotic
diseases**

Zoonoses

“Many of the same microbes infect animals and humans, as they share the eco-systems they live in” - WHO

Zoonosis

An infectious disease that has 'jumped' from an animal to human

Which of the following are Zoonoses?

HIV



Covid-19



Rabies



Swine Flu – H1N1



Ebola



Components of a zoonotic disease

Pathogen

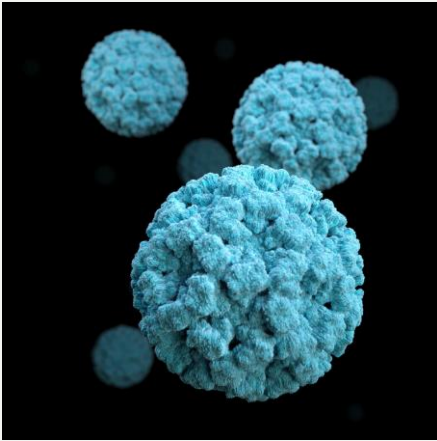


Photo by CDC on Unsplash, 2020

Reservoir host



Photo by Johannes Giez on Unsplash, 2020

+/- Vector

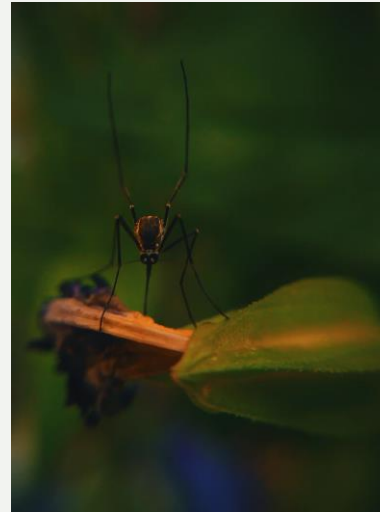


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End host

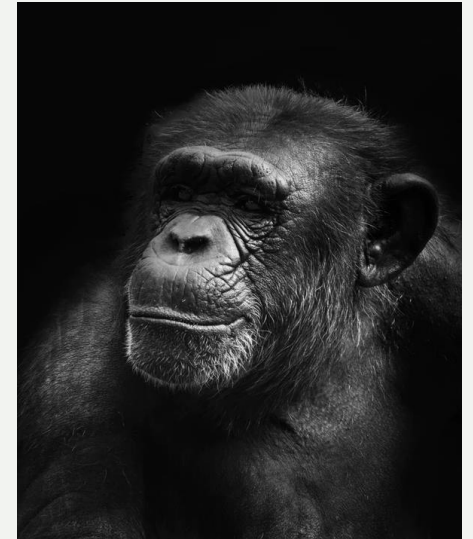


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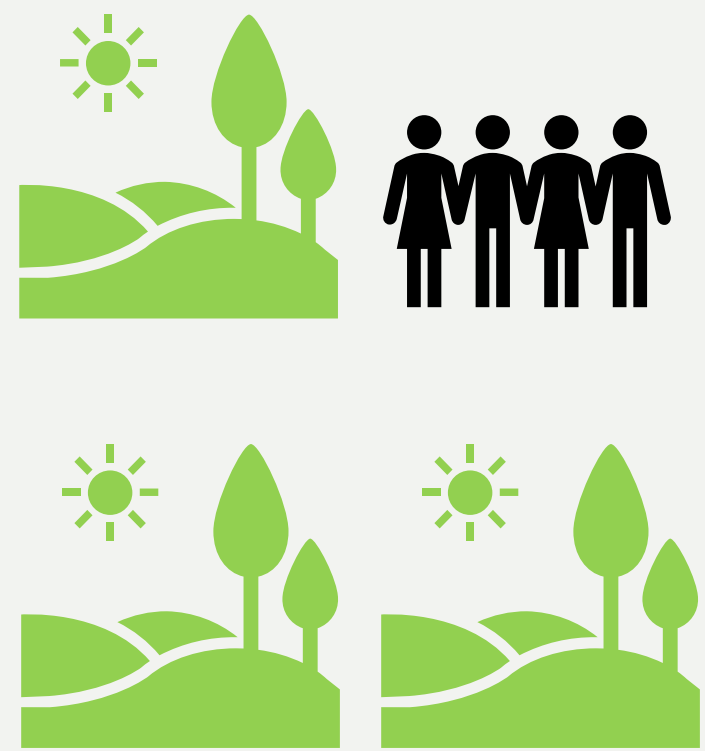
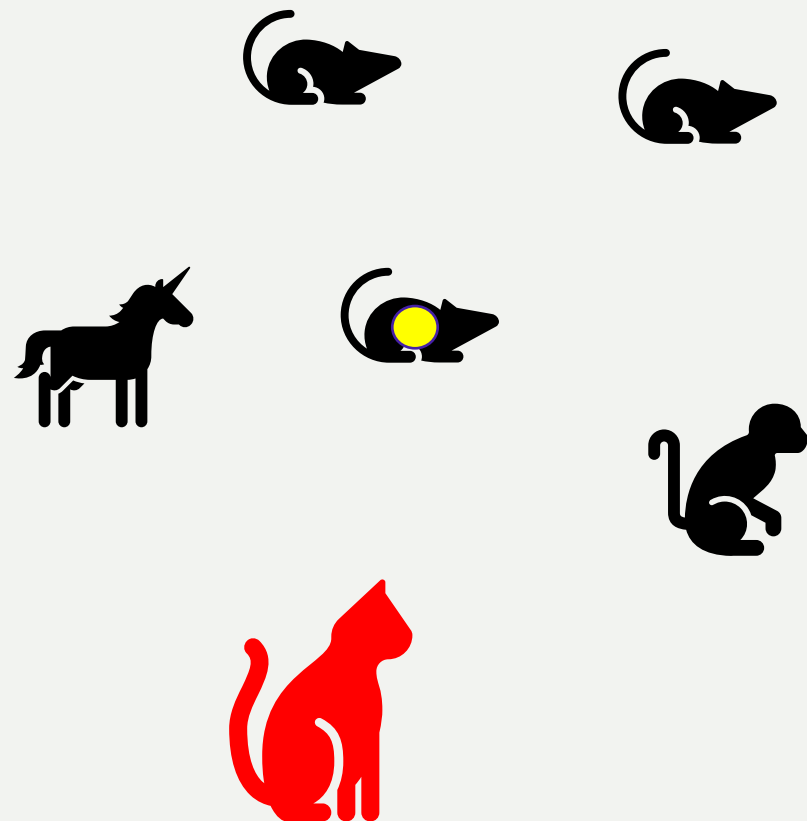
Animals in closer contact with humans

- Forest destruction and fragmentation
- Logging
- Roads through habitats
- Human population growth
- Urban spread
- More chances for human-wildlife contact and livestock-wildlife contact
- More opportunities for a disease to 'jump'

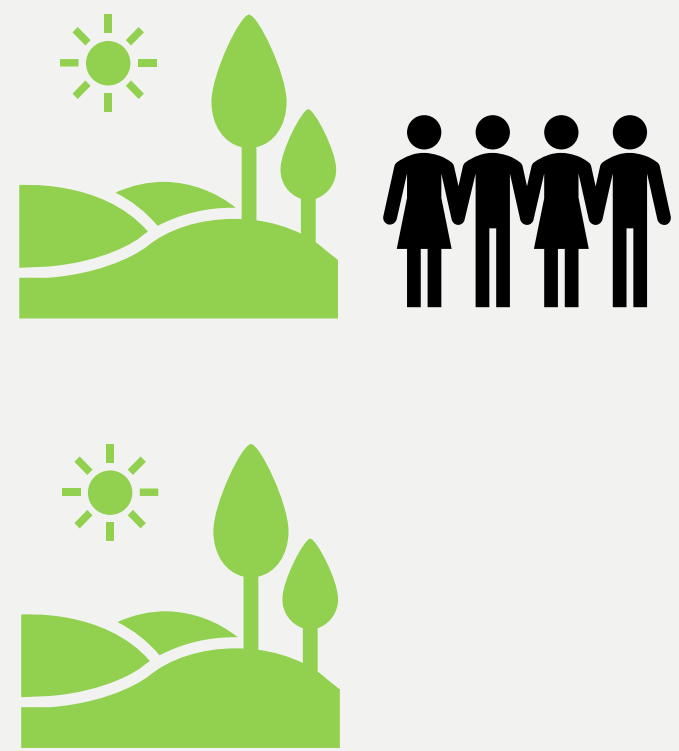
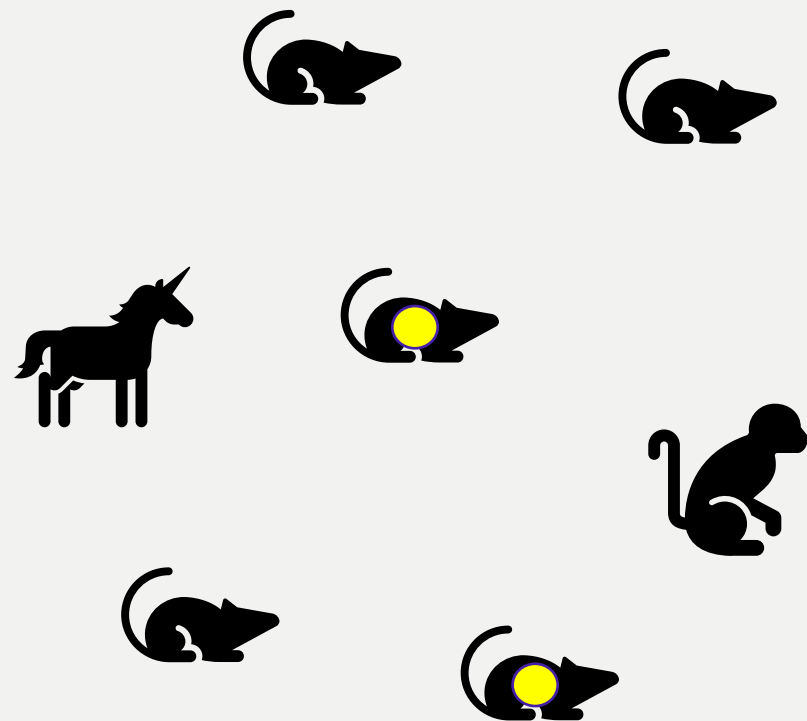


Image from rainforest rescue 2020

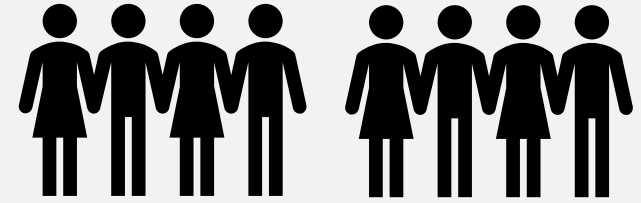
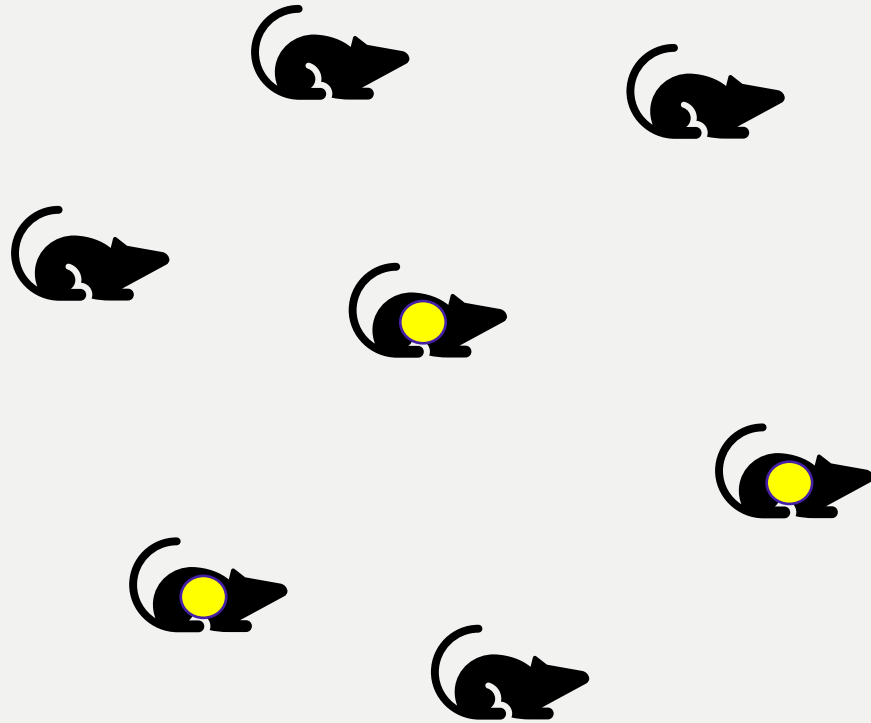
Intact ecosystem



Loss of predator



Encroachment, species loss



Trees and health: Summary

Immediate benefits for immune system, stress response

Preserving native trees could have future benefits in terms of protection against emerging infectious diseases



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