



Canine Conservationists

OVERVIEW

Canine Conservationists follows teams in Australia training dogs to find invasive and endangered species. Dogs are sniffing out invasive foxes that devastate native sea turtle populations. They are also helping scientists locate dwindling populations of koalas, whose habitat is fragmented by urbanization and bushfires. Additional information can be found on [this episode's webpage](#).

KEY CONCEPTS

- Human activities, such as those associated with urbanization and climate change, have far-reaching direct and indirect impacts.
- Controlling invasive species can help native ecosystems recover.
- Connecting habitat fragments can increase biodiversity.
- Similar solutions may apply to different conservation problems.

BACKGROUND

Australia has lost more than 10% of its endemic terrestrial mammal species in the last 200 years. Much of this decline is due to predation by invasive species, such as feral cats and red foxes (*Vulpes vulpes*). Red foxes in particular kill an estimated 300 million native Australian animals a year. They were introduced by colonizing Europeans for recreational hunting and now prey on a wide range of species. One of these species is the endangered loggerhead sea turtle (*Caretta caretta*). Foxes have decimated the loggerhead population in Queensland by eating their eggs and hatchlings.

The first part of the film shows how domestic dogs (*Canis familiaris*), which have an exceptional sense of smell, have been trained to sniff out fox dens on and near the beaches. People can then fill in the fox dens and euthanize the foxes with carbon monoxide. These efforts are helping populations of loggerheads and other native animals rebound.

Another major threat to Australian biodiversity is habitat loss, largely due to urbanization and increased bushfire frequency/intensity (driven by climate change). Habitat loss can lead to **habitat fragmentation**, which is when habitats are broken into smaller, separated pieces (called “fragments”). Koalas (*Phascolarctos cinereus*), one of the many species affected by habitat fragmentation, are an important “flagship species” that can be used as indicators of ecosystem health. They are also globally popular and attract support for conservation.

The second half of the film highlights how conservationists are using dogs to locate koala scat (“poop”), which can be analyzed to gain insights into the koalas’ health and genealogy. As more data is gathered, scientists can determine the locations of koala populations and how genetically distinct they are. This information helps them identify which habitat fragments are most vital to restore and reconnect. Connecting fragments (e.g., with wildlife overpasses over roads) can reduce population isolation and increase genetic diversity, making the koala populations more resistant to environmental changes and disease.

People/groups highlighted in the film include:

- Animal handlers who train dogs for conservation purposes.
- Aboriginal rangers and community members who are helping sea turtle populations.
- Environmental experts working on conservation projects and educational outreach.

BIODIVERSITY THREATS

Five of the biggest threats to biodiversity are represented by the acronym **HIPPO**: **h**abitat loss, **i**nvasive species, **p**ollution, **p**opulation growth (of humans), and **o**verharvesting. The HIPPO threats shown in this film include:

- **Habitat loss:** Urbanization and fires in Australia led to habitat loss and fragmentation.
- **Invasive species:** Red foxes, which were intentionally introduced for recreational hunting, are an invasive species that kills native Australian animals. Other invasive species mentioned in the film are rabbits, feral cats, and cane toads.
- **Population growth:** Human population growth contributes to urbanization. It may also increase the frequency of human-caused fires and animals being hit by cars.

DISCUSSION QUESTIONS

- (*Before the film*) List five endangered species and come up with ideas for why each species is endangered. Identify any similarities among the causes you identified.
- What are some characteristics that would allow a species to become invasive?
- How does habitat fragmentation threaten species like the koala?
- How might conserving specific species, such as loggerheads and koalas, increase overall ecosystem health or stability?
- What are some characteristics of dogs that make them such effective conservation partners?

REFERENCES

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CREDITS

Written by Paul Strode, Fairview High School, CO

Edited by Mark Nielsen, Esther Shyu, HHMI