

Announcer: Welcome to Tram Talks, a little taste of Deakin University here in the world's first mobile lecture theatre. You've chosen to listen to Podcast #8, Predators. Dr. Euan Ritchie will be discussing natural predators in the Australian wild and the valuable role they play in our ecosystem.

Dr. Ritchie: Did you know Australia has the worst record in the world for mammal extinctions in the last few hundred years? Roughly 30 Australia-native mammals have become extinct since Europeans arrived 200 years ago. In the same time, only one species has gone extinct in the U.S. Many more Australian species, such as numbats and northern hairy-nosed wombats are clinging to survival. Introduced predators like red foxes and cats are a real big part of the problem, gobbling up many of our native mammals, which leads to their extinction.

But in a twist, other predators such as dingoes could be part of the solution. That's a possibility that's fascinated me for nearly 10 years. And the importance of predators to our natural world goes way beyond just preventing extinctions.

But before we talk about how important predators are, I need to point out many top predators, like lions and wolves themselves, are in grave danger of disappearing forever. These top predators and others, including leopards and bears for example, have declined by 95% to 99% in many parts of the world. In our oceans, many shark species have declined by more than 90%.

Extinction is tragic, and rubbing salt into the wounds is the fact that when we lose one species, many other species are usually affected, too. This is because, in nature, everything tends to be connected. A little bit like a car, each part in the motor helps to keep the engine running. The same is true for species in our environment.

So just why are predators so important? What important roles do they play? Predators have two main and very important effects. Firstly, predators control grazing animals, such as deer or kangaroos, meaning the world is greener. There's more trees, grasses, flowers, berries, etc., and that means there's more food and shelter for other animals. Secondly, larger top predators such as dingoes control how many smaller predators like foxes and cats there are, indirectly protecting other species like bilbies that are often killed and eaten by foxes and cats.

But of course, predators can pose problems, too. Predators sometimes attack and kill livestock, and other predators like sharks or lions pose a danger to us. Because of this, we've gotten rid of many predators. We've trapped, shot,

poisoned or fenced them out to reduce the risks they pose. But does killing sharks, dingoes and other predators typically do us more harm than good?

In short, our work and that by many other scientists suggests the answer to this question is yes. In Africa, the loss of lions and leopards has led to increased olive baboon numbers. These baboons carry disease and raid people's crops, meaning people get sick more often because they're in contact with more baboons and people's food supply is put at risk. Some people are even forced to keep their children home from school to help defend their crops against the baboons.

In our oceans, we've learned that sea otters can help us in the fight against climate change. Otters like eating sea urchins, and that's a good thing, because when there are too many sea urchins, they destroy kelp forests. Kelp forests are home to many marine animals but are also very good at trapping and storing carbon. So more sea otters means less urchins, which means more kelp and more carbon taken out of the atmosphere.

So where-to from here? How should we manage predators? A big problem is that we currently tend to manage species and habitats one at a time. We kill dingoes because, sometimes, they harm livestock, but this might create other headaches, like more foxes, cats, and kangaroos, leading to fewer native animals and plants. We're ignoring the interactions and biodiversity at our own peril. And too often, we're working against, not with, nature. If managed carefully, predators can work for us 24 hours a day, 7 days a week for free, helping us to control pests, introduced species, and disease. Predators can help us fight climate change and ultimately contribute to a healthier planet.

So we need to begin rewilding. Rewilding means bringing back species to allow nature to do what nature does best. In Australia, we could simply stop killing or excluding dingoes from areas, and in other parts, we could reintroduce Tasmanian devils to places where they once lived. By doing this, our native predators might help put their clamps on destructive foxes and cats and give our native animals the help that they desperately need.

"But what about potential costs and risks?" you might ask. "How might farmers be affected?" Well, the good news is we have new solutions to protecting livestock. Perhaps the best example is guiding animals such as Maremma dogs, made famous by the movie *Oddball*. These dogs can protect livestock against predators. So we can have our top predators back in the wild, but farmers can also sleep easy at night knowing their animals are safe.

Bringing back top predators isn't the solution to all the environmental problems we face, but they do offer huge potential for helping us to tackle many of them. So let's celebrate our predators, give them the protection they need, and we'll all be grateful.

Announcer: Thanks to Dr. Euan Ritchie. This has been another Tram Talk from the world's first mobile lecture theatre, just a small sample of what's available at Deakin University. Visit study.deakin.edu.au to learn more.