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So today, I'm going to talk to you about an invasive species that's so successful and so destructive that it has the potential to change Australia's landscape forever. Fortunately for Australia, though, we have had a dedicated workforce that has been diligently working to extinguish fire ants, developing new technologies and refining techniques, proving it can be done. But let's imagine what it might be like without an eradication programme for fire ants here in Australia. The impacts would be felt across the nation. Without a national eradication programme, 21 different sectors of our economy and our way of life would be adversely affected.

As a primary producer, fire ants would destroy your livelihood through loss of stock. They kill newborns. They prevent animals from reaching water sources, making them stressed and dehydrated, basically having a reduction in quality and quantity of animals in your herd. They also create pasture losses, where entire areas of land would become unusable, because fire ants destroy grasses and, again, reduced productivity.

And without control and containment measures in place, long distance movement becomes a very real threat. Fire ants are extremely effective hitchhikers. And the current drought conditions being experienced by many parts of Australia are increasing the risk to animal industries through the potential importation of fire ants in feed for livestock.

Let's take the cattle industry, for example-- worth \$8.5 billion a year across Australia, and already facing many other pests and diseases, dealing with those losses. Fire ants could cost \$373 million extra for them a year. And if you work in agriculture, you need to understand how fire ants will destruct your livelihood. They like to live in disturbed soil, manure, and hay, making agriculture an obvious target. And they make it impossible to farm and treat ants at the same time.

In Australia, it's estimated more than 50 crops, as well as turf and nursery stock, will be affected by fire ants. They reduce yield. They kill plants. They damage equipment, including irrigation lines and infrastructure. They create medical and veterinary expenses. They increase labour costs, and limit market access.

Fire ants would increase the annual crop production costs for things like cereal grains, fruits and vegetables, and nuts by at least \$50 a hectare. And with 26 million hectares selling to crops in Australia, the cost of industry could be in the billions. And with no fire ant eradication programme, they would dramatically reduce the viable sustainability of industries and sectors, affecting not only generations of farmers, but the communities in which they live.

So why are they considered such a pest? They're one of the top 100 invasive species around the world, and they're adept travellers. Fire ants have established in the USA, China, Taiwan, Caribbean, and Mexico. And they're suspected but not confirmed in countries just on our doorstep, in the Philippines, Indonesia, and Thailand.

Because of their aggressive nature, they have the potential to spread over half the world's landmass. And they're slowed but they're not deterred by dry climates and freezing weather.

They are the ultimate pioneer. In fact, the genetic studies conducted by the National Eradication Programme show that the main source of infestations found in Australia are arriving from the southern United States, closely followed by China and South America.

It's this information that is critical to profiling risk of entry and intercepting them at the border. And there are key border security measures in place to prevent the entry of fire ants into Australia. However, they are the consummate traveller. There have been 16 reports of fire ants entering Australia year, six of which have resulted in established populations. And those include the port of Brisbane and Richlands in 2001, two incursions in Gladstone and Yarwun in 2006 and 2013, Port Botany in 2014, and most recently the Brisbane Airport in 2015. This figure also includes interceptions at the border in the Northern Territory, Western Australia, Victoria, South Australia, Queensland, and three post border detections in Queensland.

In fact, it was the quick thinking actions of the workers from the Schlumberger Oil Fields Australia plant in Roma to contain fire ants when they detected them in mining equipment that arrived from Houston, Texas that earned them Australian Biosecurity Award, and ultimately prevented the establishment of another foreign population. And the good news is that Australia agrees that these ants warrant a concerted national effort. Due to the broad ranging impacts of fire ants, Australia has developed threat abatement measures, such as listing them as a key threatening process under the Environment Protection and Biodiversity Conservation Act, due to their potential impact to our native Australian flora and fauna. Fire ants are also considered a pest of national significance due to the significant negative impacts they have on our economy, our environment, public health, and social amenity.

In consultation with states and territories and key stakeholders, the Australian government developed a tramp ant threat abatement plan, which provides a national framework detailing actions required to mitigate potential invasive species, which includes fire ants. And as Lynn has mentioned, introduced in 2013, the National Environment Biosecurity Response Agreement, or the NEBRA, which was the first deliverable under the intergovernmental agreement on biosecurity, provides a framework for dealing with invasive incursions, including cost sharing arrangements based on their impacts to environment, people, and business activity.

The first fire ant eradication programmes developed under the NEBRA was the Yarwun 2013 response, followed by Port Botany, and most recently the Brisbane Airport. The southeast Queensland fire ant eradication programme is Australia's largest eradication programme, and operates outside of the NEBRA. But it operates on the goodwill of national cost share partners, who have remained committed. However, over recent years, it has become increasingly difficult to secure a funding agreement.

But it has been the active eradication of fire ants from Australia that has prevented the impact seen in other countries, such as the United States, where there has been approximately 100 deaths since they were first detected. In the States, over 20 million people are stung annually. 200,000 of these require hospitalisation. With an active eradication programme in place in Australia, the impact of fire ants has been minimised.

However, the threat is real. Just over a month ago, an electrician working at a site in Brisbane was stung by fire ants. And he suffered a bad reaction, so bad that he had to be hospitalised.

Fortunately for him, he was treated and able to be released, but he may not be so lucky next time.

It's the ongoing investment in eradicating fire ants from Australia that will prevent us from ending up like the US, where fire ants have spread across 122 million hectares, and where an estimated \$7 billion is spent annually in damage repairs, medical costs, and control. There are many reasons why a sustained ongoing investment in eradicating fire ants is highly beneficial.

And having a programme in place has not only contained and suppressed the southeast Queensland fire ant infestation, but it has allowed us to develop an arsenal of traditional and innovative techniques to eradicate fire ants. And it's this investment that represents substantial and practical returns on investment for cost share partners. And it has enabled rapid responses to new incursions and supported other eradications in Australia, such as the recently declared browsing ant response in the Northern Territory, and also the Port Botany response to fire ants.

Of the six known established incursions of fire ant in Australia, the good news is two of them have been eradicated-- in the Port of Brisbane, which was 8,300 hectares, the world's largest ant eradication, and also from Yarwun, the first incursion that was detected in 2006. And there are two that are on the verge of being declared eradicated, from Port Botany and again a second incursion, a different incursion this time, in Yarwun in 2013. This success has been contingent on the existence of a fire ant eradication programme, providing a centre of excellence for fire ants in Australia and internationally.

We know that our techniques are effective. We know that they work. And if given the right amount of funding, we can certainly get rid of them. So let's talk a bit about these innovative technologies.

The southeast Queensland fire ant eradication programme was the first eradication programme in the world to use odour detection dogs to detect fire ants. An effective force multiplier, they can smell a single ant from over 30 metres away. They can smell them up to 1 metre underground, and they can distinguish them from over 60 species of ants that might be walking around on the ground at the same time. They offer us surveillance sensitivity of a minimum of 99%. And the programme is lucky enough to currently have nine operational detection dogs, and is using the proven training technology to train dogs to detect other invasive species, such as the browsing ant, so that they can provide a key role in the proof of freedom [? fires ?] for these eradications.

The southeast Queensland programme has also made world first advances in remote sensing surveillance techniques using military grade helicopter mounted cameras. These cameras capture images in three frequency bands-- visible, infrared, and thermal. The images are then assessed by an algorithm to generate potential fire ant mound targets. And review of these targets creates points of interest, which are then ground truth.

The programme uses effective baiting techniques. And these have been proven through the eradication of fire ants from those locations I mentioned earlier, from Yarwun and the Port of Brisbane. The bait contains an insect growth regulator, which is naturally occurring and eventually sends the queen sterile. And we've refined our application techniques to the point where we only need to apply bait at one teaspoon per square metre to get a good result.

And one of the programme's most valuable tools is genetic testing, which we use for a variety of purposes. We use population assignment to determine whether a colony belongs to a population that's already present in Australia or whether or not it's a new incursion. This has proven invaluable in determining origin of incursions, and provided proof that fire ants haven't moved from southeast Queensland, or that the second incursion of fire ants in Yarwun, for instance, was not the result of a treatment failure.

Our analysis has also shown that there is genetic instability in the southeast Queensland population. They are becoming weak and inbred, and the proportion of sterile males is steadily increasing. This hasn't been seen in any other country invaded by fire ants. And we can attribute it to the pressure that has been exerted by the eradication programme.

And our communications and stakeholder engagement-- this is a valuable and cost effective tool when incorporated into control efforts for far rates. It reduces total programme costs and contributes to the effectiveness of our structured surveillance, allowing us to better target our searches. The fact that 15 years after the first fire ants, 90% of people in Brisbane are aware that fire ants are a problem and almost 70% of new detections are reported by the public, is testimony to the effectiveness of engagement strategies utilised by the programme. And it allows us to take quick decisive action to existing and new incursions.

But a future with fire ants is one that we don't wish to entertain. And the decision on whether or not funding eradication of fire ants from Australia is a worthwhile investment seems simple. Their eradication remains highly feasible, and we have the tools and skills to achieve it. But we need to have adequate continuous funding so that these tools can be applied in a timely way with sufficient intensity to remove the last colonies.

It well and truly remains in the national interest to eradicate fire ants, and has been demonstrated through many external scientific and technical reviews of the programme that have acknowledged we are closer than any other country to achieving eradication. And ongoing investment far outweighs the costs of the future with fire ants. However, as with any long term campaign, our struggle has been securing ongoing funding. And its most likely due to the fact that the impacts of fire ants are yet to be realised in Australia. And as world leaders in the eradication of fire ants, we don't want to lose the advantage that we've gained and see those impacts realised.

There's a current independent review of the programme underway, and this review has shown that there is a compelling case for a strong and continued national approach. Scenario modelling that we completed later this month will provide recommendations on estimated costs and time frame that will achieve eradication. And it's critical that the most suitable funding recommendations are supported by all cost share partners. We owe it to the future generations of Australian by continuing to invest in preventing the entry of and eradicating what is arguably the worst pest to ever hit our shores.

And, finally, I'd just like to acknowledge our partners and the key people who contribute to the success of our programme. Thank you.