# National Biosecurity Forum

Day 2 Session 3

10 November 2020

## Introduction

This is the transcript the National Biosecurity Forum, presented by the Department of Agriculture, Water and the Environment.

## Transcript

[Webinar begins]

Nicholas Housego: Okay. In this session, we're going to hear about the different ways detector dogs are used across Australia. You've probably seen the biosecurity dogs at airports, particularly in Tasmania where I go to a bit, but you might know that detector dogs are also used to assist with conservation efforts and even sniff out water leaks. First, we'll learn a little bit more about the Australian biosecurity dogs and how they help manage risks at the border. Then Jeff Smith assistant director of biosecurity Detector Dog Programme will introduce a range of speakers who will talk about how detector dogs are used across Australia for other important purposes. Okay. We're going to now go to a pre-record video. Away we go.

Video: Since 1992 biosecurity, detector dogs have actively contributed to Australia's frontline defence against damaging biosecurity risks. From just a pair of dogs in Sydney and Brisbane to dogs deployed across the country from Perth to Norfolk Island, the programme has grown considerably. Although the department initially used Beagles, Labradors now make up the entire canine workforce. Their extraordinary sense of smell and cooperative, gentle nature make them top-notch detectors. Our Labs are trying to detect over 200 items that may pose a biosecurity risk. The most common items being seeds, meat, live plants, and fruit. The dogs to take more than 65,000 biosecurity risk items each year with individual dogs making more than 9,000 detections in their working life. These detections provide critical protection for our $60 billion agricultural industries and the health of our communities, economy, environment, and unique wildlife.

Video: A single piece of undeclared fruit or a meat product can carry serious and devastating risk. The Detector Dog Programme works side-by-side with other government departments and officials, including their canine compatriots from the Australian Border Force. You can tell the difference by the bright red jackets, worn by our biosecurity detector dogs. At the international airport, passenger terminal, our dogs might sit beside a passenger or baggage. This is called a passive response. A correct passive response is given a food reward. Make sure you know, what's in your bags. As our labs will sniff out everything from large food items to the smallest of seeds.

Video: When screening objects in mail facilities, the dogs will dig at the source of a target odour. This is called an active response. A correct active response is given a play reward. We select our detector dogs from the Australian Border Force Breeding Programme. The puppies are fostered by volunteer families until they're around 18 months old when they are selected for work with the Australian Border Force, Australian Federal Police, or with us. Combating biosecurity threats. We put the young dogs through a rigorous eight-week training programme. From there, the dogs have a working life of about six to eight years. When they retire from their biosecurity role, they're placed into loving homes. In many cases with one of their former handlers. We continue to modernise and evolve our Detector Dog Programme as part of an integrated biosecurity system. Biosecurity it's everyone's responsibility.

Jeff Smith: Thanks, everyone. My name Jeff Smith, I'm the assistant director with the Department of Agriculture, Water and Environments, Detector Dog Programme. That short video provides a general overview about key activities at the Australian border. Many of you will be familiar with our work through our presence on TV, via border security, where you may have even had to suffer through one of my previous presentations where I've installed the virtue and value of the departments Detector Dog Programme. In a shift away from my usual agenda of self-promotion, today I'd like to spend less time talking about my own specific work, and instead talk to you more broadly about the contribution detector dogs make to securing our enviable biosecurity status. Indeed man's best friend contributes in more ways than most people could imagine. For example, anyone with family living interstate, will know only too well how state border closures have been utilised to limit the spread of coronavirus in recent times.

Jeff Smith: Well, this same methodoly has been utilised by the states for many years to prevent the spread of environmental pest and disease. And just like the national border, the state boarders are often protected by detector dogs. To speak more on this, I'd like to introduce you to some hardworking teams that do great work securing our state borders from biosecurity threats.

Daniel Jones: Hi, my names Daniel Jones and I'm a detector dog handler for Quarantine Western Australia. This is my detector dog Timmy . He's trained to find fruit, vegetables, seeds, honey and plant materials.

Rachel Wallace: Hi, my name is Rachel Wallace. I'm a detector dog handler for Quarantine WA. This is my detector dog, Roxy and she is trained to find fresh fruit, vegetables, plants, seed and honey.

Louise Smith: Hi, my name is Louise Smith, quarantine manager for check points and surveillance at the Department of Primary Industries and Regional Development in Western Australia. With me today is detector dog Raz and he is two years old. He is the department's latest recruit and he is trained to find fresh fruit, vegetables, plants, plant material, honey and seeds. The departments Detector Dog Unit has four detector dogs. Who work seven days a week over four domestic airport terminals. The human composition is one supervising quarantine inspector, four detector dog handlers and one kennel hand. While regulatory actions are a part of the process of protecting the biosecurity in Western Australia, these detector dogs also provide a high level of publicity, general deterrence and also use many education and media purposes.

Louise Smith: However, due to COVID two dog handlers and two detector dogs have to be deployed to the freight house and Australian post outlets. This is especially important given the importance of postal items and freight items. This is one of those teams working now. This is detector dog Jasper and he's the departments oldest recruit. He is six years old. And Jasper knows that WA is relatively free from serving pets and diseases compared to other areas in Australia and he wants to keep it that way.

Louise Smith: Perth Domestic Airport could be a high risk entry point for the introduction of exotic pests, weeds and diseases. With increasing numbers of flights and passengers importing potential carriers into Western Australia. Exotic pests and diseases could have a significant impact on WA $8.6 billion agriculture and food industry. It was important for everyone to be aware of the quarantine restrictions and destroy any items when they visit the WA or return home. The departments quarantine inspectors work under the Biosecurity and Agricultural Management Act of 2007 and the associated regulations. These provide power to impose import conditions for plants and plant related products, bakery products and machinery, stop and inspect all vehicles entering Western Australia. And inspect all imported plants and plant related products, livestock, bakery products and machinery to ensure compliance with our import conditions.

Russell Hunter: Hi, I'm Russell Hunter. I'm the programme coordinator for Detector Dogs at Biosecurity Tasmania. Our 12 detector dog teams are deployed in border and post-border environments to help protect Tasmania's agricultural industries, environment and way of life. Our dogs which are mainly Beagle crosses, are looking for things that you might expect. Animal and plant material that is either prohibited, restricted or otherwise poses a risk to Tasmania's industries and environment. We've also got some capability to detect vertebrate pests like foxes, which are exotic to Tasmanian. Detector dogs are really important part of our overall risk mitigation tools here in Tasmania. A really good example of why they're important is the recent outbreak of Queensland fruit fly in 2018, which resulted in the biggest biosecurity response effort in Tasmania's history.

Russell Hunter: Although our detector dogs in border environments might only detect small amounts of risk material on passengers or in baggage or in freight, this is a really important step in making sure that we remain free of pests like Queensland fruitfly. All of these small volumes of things wouldn't typically go through other processes that might help us ensure that they're safe to enter the state. Things like complying with important requirements or undergoing manual inspection. The Detector Dog Programme is funded through the state budget as part of our core business, and is just one of the many ways that we help to mitigate risks or biosecurity in Tasmania.

Video: So, there you can see some dogs working at the state borders, performing a very similar function to their colleagues at the international border, preventing the entry and establishment of pest and disease is a crucial part of any biosecurity system. And detector dogs have made a critical contribution to this goal for many years. Another area that dogs often play a role in relates to the location and eradication of pests and disease that has already become established. Being able to reliably locate and identify established biosecurity concerns is crucial in the management of pest and disease post-border and dogs yet again showed their versatility and usefulness in meeting this challenge. From cane toads to weeds and disease or infected plants, we've been able to take advantage of the dog's keen sense of smell to assist in the ongoing management and hopefully the eventual eradication of unwanted pest and disease. Our next presentation highlights a real success story around rodents and the unique and fragile environment of Lord Howe Island.

Rachel: Hi, my name is Rachel and I'm one of the biosecurity dog handlers on Lord Howe Island. This is Sebbie. He is our English Springer Spaniel. We've had him now for about three and a half years, and we started training him back in late-2017 for the rodent eradication programme. We have two biosecurity dogs here that we've trained. As I said, we've got Sebbie and I also have his son who is three and a half. The five main species that we're on for Lord Howe are rodents, so we got rats, mice, frogs, snakes, and lizards. During the rodent eradication programme we commenced searching the island in about May. We had 22 and half thousand bates stations laying across the island, as well as aerial broadcasting. The dogs were responsible for searching the whole settlement area. That took us six months. We had our two dogs, we had Sebbie and Zuma, and then we also had three other dogs that came into assist during the search phase.

Rachel: The dogs, part of their uniform is a GPS collar, this allows us to GPS track and grid search the whole Island. To give you an idea of the geographic layout of the island, we're about 11 kilometres long and two kilometres wide. You do have mountains at either end of the island. These were aerial broadcast and we didn't have the dog searching that area. We are in the process now we're just over one year of successfully no sightings of a rodent. And in a two-year programme, we'll be able to declare the island successfully eradicated of rodents. At this stage, we have got monitoring up in some of the large walking tracks and the dogs are now undergoing quite tight search patterns in those areas to get us ready for that success check in HQ.

Rachel: We've lost five endemic mouse species due to rats. It was our main target during this rodent eradication programme. The dogs are a passive alerter, so they don't attack the rodents in anyway, they signal. Our main targets now are a freight ship that comes in every fortnight. We go to Port Macquarie and we search all freight that comes to the island. Lord Howe Island trader carries everything from food to mail, to building supplies, to timber, you name it, anything you can think of in your everyday life is our main focus. There's no snakes on the island. That is something we don't want here. It will compete with our endemic species over here and invertebrates are a big thing on the island as well. The aircraft that we search come in everyday, we have Qantas servicing the island as well as a freight of aircraft. The freighter aircraft comes probably three times a week and the dogs meet 100% of those aircraft.

Jeff Smith: Thanks very much for that presentation, Rachel and Lord Howe Island Bio Security. No rodents citing's for two years, certainly sounds like a success to me. I can only imagine the challenges involved in grid searching an entire island. Certainly great to see that with the eradication programme being so successful, you've now been able to switch over and shift focus towards preventing re-entry through increased screening at the border. What a fantastic story. Now, it's not just identifying the nasties that dogs excel at. In addition to this, dogs are often used to locate and survey for populations of native species whose on going existence we actually want to support.

Jeff Smith: This work is largely carried out by private researchers and trainers who will often be looking at both the eradication of introduced pests, as well as conducting population surveys to understand the location and movements of endemic species. The primary representative organisation for this work is the Australasian Conservation Dog Network. And that's who we're about to hear from next.

Jeff Smith: So, you can see there we have dog teams throughout the country working exceptionally hard to locate unwanted pest and also to help us better understand about the location and population of our endemic species. This next presentation provides a closer look at two of the many groups contributing to our biosecurity and biodiversity in this fashion.

James Davis: Hi, I'm James Davis and I'm an animal behaviourist and conservation dog trainer with Padfoot here in Southeast Queensland. My current team includes two working Spaniels, Banjo and Scout who specialise in the detection of invasive species, including fox, cat, and cane toad. At the moment, most of our work is searching for natal Fox dens. European red foxes are a major predator of over 76 threatened species here in Australia. By locating natal dens, our dogs help us manage red Fox populations effectively, efficiently and humanely. Most of our field work is commissioned by local councils and landowners, but as professional working dog trainers, we also help other scientists, consultancies and agencies, both in Australia and abroad to select, train and deploy suitable candidates from rescue shelters as their own conservation dog teams for both invasive and native species.

Dennis Gannaway: Good afternoon. My name is Dennis Gannaway. I'm from Bellden Environmental Services. We're a small, independent consultancy working in Southeast Queensland. We run two dogs on two separate natural resource areas. This dog over here, she's Halo. Halo is a pure breed Springer Spaniel out of the Steve Austin Kennels. Halo's work is predominantly in the natural resource management area around invasive species, specifically fox and feral cat. She also has the ability to survey for koalas cat. This dog over here, Dan, come sit, in the black harness and his name is Danny. Danny's a two-year-old Springer Spaniel, and Danny's target is leaking water, specifically chlorinated water and he works extensively within the greater Southeast Queensland area, but he's also travelled through to Sydney and done work down there.

Dennis Gannaway: Principally our target use is in, for Halo, is working with councils and land managers around Queensland, specifically in the management of foxes. This time of year within now at the end of October is a very high season for den work. And she's invaluable in finding dens, finding maternal dens particularly where land managers can then undertake destruction management. Danny works extensively with the Urban utilities here in Queensland. His job, as we said was leaking water pipes. And he's a specialist at finding underground leaks, which are not visible to the naked eye. Think in an urban setting, leaking water hydrants, etc. that's his speciality. We're a self-funded group. These are my dogs. I worked with a handler, Ryan who's standing behind the camera today. And between the two of us we service and run these two dogs. Principally our clients are the bigger utilities for the water and the bigger landholders and land managers for the invasive species and Koala survey.

Dennis Gannaway: What do we contribute? Certainly within the invasive species area, Halo makes it a very large contribution in finding and aiding the distraction of foxes and cats within conservation areas. She works fast. She works hard and cover up to 20 odd kilometres in a day. Species conservation is her speciality. For Danny, the water dog over this side, his speciality is ensuring that we manage water leaks, find those water leaks that are running, that can be running for years and that go undetected, is able to smell that. His target odour is actually chlorine. What he's looking for is that signature gas sitting on the top of the soil, has permeated through the soil. And he's looking for those chemical signatures, what are used to clean water.

Dennis Gannaway: While Halo, she's looking at the odour of scat and the physical animal particularly the foxes, particularly their strong sense, but predominantly her target is scat. That's us, we work here in Southeast Queensland. We're building environmental services. I hope you enjoy the rest of your day.

Jeff Smith: A big thank you to both James and Dennis for that presentation. You will have heard Jerry Dennis', presentation that he may have mentioned of his dog being able to locate water leaks through detecting the chlorine smell associated with our treated water. Indeed with drought setting to form an ever increasing part of our landscape, securing our water supply has never been more important. Our next presenter is Andrew Blair from the West Australian Water Corporation. And he's going to show us not only how good his dog, Kep is at locating water leaks, but will also share the reason behind every detector dog handlers mantra of trust your dog.

Andrew Blair: It's 11th of August. We're here with Kep on Broad road in Three Springs, Western Australia, looking for lakes. Water. Find. Have had about 70 mm of rain in the last 48 hours, which makes Kep's job a little bit harder. And we have a known leak about 200 metres ahead, found last week. Hopefully Kep will pick it up. I just want to make sure that this is actually a lake. It does look like it. Here is that water there. Good girl.

Andrew Blair: This is one of those occasions where you learn to trust your dog. So, Kep indicated here at the red product. I can see a dig mark there. I assume that the leak was here where the shovel is because it was a bit of a puddle on the surface. After a bit of digging some small earth works here, tracing back the path of least resistance in the clay, the water had found some tree roots. You can kind of see there. We track the leak back to right here, right next to where Kep said. There's a pipe there anyway, you can't exactly hear the leak, but you can see the water moving here, rippling. The leak just, I could feel it with my finger. It's a very small leak. Might only be 500 mil a minute, so definitely worth repairing, but not very big. Kep found that out here. See that. Always trust your dog.

Jeff Smith: Thank you so much for that presentation, Andrew and Kep. I think we can all agree that Kep appears to enjoy his work at a level that we can all aspire to one day. As you can see, man's best friend really does make a significant contribution to Australia's biosecurity and bio diversity status. It's worth noting that there are many other teams deployed for biosecurity purposes around the country. And what we've seen today represents only a portion of the effort expended each and every day of the year. I've worked professionally with dogs for the best part of two decades. And I was still surprised at the variety of uses we've been able to make, to take dogs in this field, but also I'd like to take the opportunity to thank all of the contributors for today's presentation.

Jeff Smith: I won't read out all of your individual names, but you've done a fantastic job and very deserving of recognition. Thank you to everyone for joining today's session. We'll now open the floor for questions. We have myself, Russell Harris from Biosecurity Tasmania and Emma Bennett from the Australian Conservation Dog Network. Thanks again.

Nicholas Housego: Fantastic. Jeff, thank you very much for pulling that together. What a great assemblage of videos and insights into what those detector dogs can do. And they're just so lovable. Looked fantastic, especially those little puppies. How do you go about getting a chance to look after one of them? Okay, let's get into some questions. I've got one coming through. If we pass the first question to you, Jeff, and get you to tackle it and then handball that to the others in your grouping. I've got a question in here. I'm going to direct it to all three of you, but I'll get Jeff to lead off with it. Would the detector dog Programme be threatened by technology other than on Lord Howe Island initiatives, or is it seen as complimentary? Has any work been done on the value of detector dogs to also raise awareness with air travel passengers?

Jeff Smith: So definitely seen as complimentary. I'm not sure if everyone was in for the last session where the team talked about the algorithms for the 3D x-ray and detecting items we all actually work for the same team. We're definitely some friendly rivalry there, but all complimentary putting all your eggs in one basket, I guess, would never be the way to go. Detector dogs are one tool as part of a whole suite that we utilise to protect our biosecurity. And certainly we do use the dogs quite a lot as a PR or awareness raising tool at the airports. Many years back, we used to even go as far as going and visiting the departure halls and handing out leaflets. And we'd seen immediate increase in the rate of declarations when people were returning. Definitely works.

Nicholas Housego: Emma.

Emma Bennett: Yeah, I worked on a project in the Alpine region, which is looking for the invasive plant hawkweed. We have dogs out there searching for it. We also have mass teams of volunteers and we have drones on the same case and all of them actually work complimentary. And one of the things that's important about dogs is they use olfactory detection, which is not a method we use in any of our other systems. Being able to smell something is another way of looking for it. We can have all our visual scanners and all our other methods, but in terms of the olfactory looking, it's only the dogs that can do that.

Nicholas Housego: Russell, every time I come into Tasmania, which has been quite a bit over the recent years, I always get to see your dogs climbing over the baggage, being able to welcome people. And I've just being from the Department of Agriculture, you also hear the response from people when they see the dogs. It's not like, “Oh, they're loving pets. What are they looking for?” There's a real sense of they're there for a job.

Russell Harris: Yeah, indeed. Our dogs are present and a well-known public feature of life here in Tasmania. Most Tasmanians will travel quite frequently. And one of the differences, I suppose, at a state level as compared to a federal or international border level, is our dogs get seen by both sides of the travelling, public, those meeting and greeting, and also those travelling, because they're not tucked in behind the immigration barriers and things like that, which obviously is where the federal dogs or international barrier dogs need to work. We get a little bit of extra recognition from that, but we've also done a fair bit of a PR activity in Tasmania at a state level at agricultural conferences or festivals like Ag Fest in the North of the state that happens once a year, although not this year, of course. And our recent public information campaign has featured our dogs as a really iconic figure or feature of biosecurity in Tasmania.

Nicholas Housego: Yeah, it's imprinted on my brain. Quick question here, that's popped in, “What are the costs of training a dog, dollars and time?” So, start with the time. How long does the timing take?

Jeff Smith:

Certainly from our perspective, our dogs undertake between a six and an eight-week intensive full-time training course, so typically our dog's ready to deploy in the field. But then on top of that, we also have to invest approximately five weeks into training a handler as well.

Nicholas Housego: Okay. Tassie? Russell?

Russell Harris: Yeah, in terms of time, it varies our dogs are trained in cahoots with our handlers over a period of about three weeks to sort of three months initially. And it varies from intensive training for both the dog and the handler through to on-the-job training in skills and maintenance over that time. And of course, there's subsequent skills, maintenance and validation as time goes on too. It depends a little bit on the origins of the dog. We do currently adopt dogs for our programme and their sort of willingness or readiness to participate in the programme. Some dogs take a little bit of extra work to get up to the point where they're ready to be trained as detector dogs. And some of them are hot to trot, straight out of the gate, so to speak. It does vary, but our structured training programme for dogs and handlers is around three to four weeks

Nicholas Housego: And Emma in your space where you're sniffing out different things than just fruit, but you've got very unusual sort of odours that they're chasing. Is it any different for you in timing?

Emma Bennett: It is. It's a little bit longer for a conservation dog. If you think about the Lord Howe example, the dogs have got a lot of area to cover. There's quite a lot of work in getting their fitness up to be able to cover the sort of hectarage that they're doing. And certainly our dogs also have to be well-trained, not to engage with native animals that they might come across. There's a lot of more varied environment when you're working in a natural setting. There's a lot more distractions that we need to be a bit more rock solid on with our dogs

Nicholas Housego: And dollar-wise, what's the cost?

Emma Bennett: Well, I guess it depends on the target as well. Some targets are a little bit easier in our field and some are a bit harder. Certainly when you've got a biosecurity it's with the hawk weed, trying to get the actual samples and have them available to train the dog raises the prices. It can be quite varied, but it certainly is cost comparable to other search methods that we have.

Nicholas Housego: Okay. Jeff, in your experience, what makes a dog suitable rather than not? Because not all dogs would qualify, I would take it, so things must knock them back.

Jeff Smith: Certainly, there's a lot of things. The dog has to be physically well put together and able to complete the tasks that we're asking for, of course. If you think back to watching those videos, the number one criteria is that the dog loves doing that job. You can see him, we saw certainly with them, the last video with Kep, there's nothing that dog would rather do than go out, searching for its target item. That motivation is really the overriding factor, but we also take into consideration the dog's physical conformity, that it's physically capable of doing the job, that we're not putting it in a position that it's going to exacerbate a preexisting injury and that it's safe to take places. A dog that's scared of loud noises might not necessarily be able to work on a busy wharf. So, all those environmental factors as well.

Nicholas Housego: Come into it. Another question's popped in here. “Are dogs necessarily assigned to only one handler or can they be readily used by any number handlers?”

Jeff Smith: I can speak to this, but I'm a little bit different to most. Generally around the world, mostly dogs are assigned to an individual handler because they do build that bond and that relationship. We heard Andrew speak about trusting your dog and being able to read the dogs indications to see whether they're fair dinkum about their indication or not. The department's probably a little bit of an exception in that, in that we do multi-handle our dogs. Our dogs will work with several different handlers, even within the same week. The benefit of that is that the dog gets to work more often than it would otherwise. The challenge of that is we require a more skilled handler. We need to invest more training in our handlers.

Jeff Smith: And also it's very important that they behave or interact with the dog all in a similar fashion. If you think about kids with two separate sets of rules from their different parents, they get stressed out and don't know what to do, and our dogs would be exactly the same. In general dogs are usually teamed up with individual handlers, but it's not the only thing that happens. We certainly are very successful with multiple handlers.

Nicholas Housego: Russell?

Russell Harris: Yeah. In Tasmania, we do tend to stick to the single dog with a single handler teaming. We do find that, as Jeff has said, that there's a bond that's formed in the quirks, I suppose, because dogs are just as individual as all of us. The quirks of the dog are known and the different techniques for getting the best out of the dog are able to be identified and worked with. I think that as Jeff said that there's probably some benefit to considering multi-handler dogs particularly in circumstances where dogs may have a significant amount of downtime. But we do also in Tasmania, as I'm sure in other places, keep in mind that we can transfer dogs, but we tend to do that slowly. If there's some reason that a dog gets pulled off duty, either for illness, retirement, or something like that, and an existing working dog needs to shift to a different handler, we have a nice gentle process to make that transition effective.

Nicholas Housego: Right. Emma, your insights for those different dogs of yours?

Emma Bennett: Well, there has been some literature done on this recently and if you want to look it up, it's called 'That's Not My Handler,' it's the title of the paper. And I think what they found is a good dog with a poor handler will perform poorly and a poor dog with a good handler will do the same thing. I'd just like to reiterate that loss. We can have a bunch of good dogs out there, the importance of having a good handler with that dog can't be understated. That bond is important or that familiarity with the way they're trained and the experience of the handler for sure.

Nicholas Housego: Okay. I've got a question in here from Jeff Mellon, who's asked, “Should an incursion occur, how long would it be to have dogs and handlers in the field?” So, let's say something breaks out in the citrus products up in the river land, and I'm not saying it will, but I'm just putting it out there, would the dogs, be useful to do anything in that space? Can they be moved that quickly?

Jeff Smith: I'll run with the citrus as an example. We had an outbreak of citrus canker. We don't currently have any of our dogs trained to detect citrus canker, although that has been done quite successfully overseas. If we decided we needed to train our dogs on that, the difficulty and I think Emma touched on it before is getting access to the target material to actually train with. In order to teach our dogs to find something, we need to actually present it to them so they can smell it and go, “Ah, that's what brings my reward. I need to go out and find that.” We recently went through a process where we trained our dogs to find Brown Marmorated stink bug. And to do that, we had to actually develop a solvent extract, which actually replicated the odour of a live Brown Marmorated stink bug, because clearly we couldn't just bring a heap over to Australia to train with. We're trying to keep them out.

Jeff Smith: The difficulty in deploying dogs rapidly for a new target material isn't necessarily in training the dogs, with an existing dog, we could have it across that new odour very quickly within a week. The challenge lies in having that odour to train the dog with, if that makes sense. I know that's not a real clear answer, but if it was an existing odour, we needed to run really quickly the only real delay would be in developing an odour to train with. Or for a fresh dog, then of course we're looking at six to eight weeks on average to train a new dog.

Nicholas Housego: Emma?

Emma Bennett: Yeah, I think he nailed it quite goodly there. The only thing to say is that dogs can have new sense. They've shown that a good dog will add a new scent really quickly and they can go up to 10 and more scents. Again, it's just adding a new odour is quite a simple process and a good working dog will be able to move across quickly, but getting that target scent is always the problem.

Nicholas Housego: Do we have enough dogs, Russell all trained up?

Russell Harris: In life? Look, the answer is always-

Nicholas Housego: In biosecurity, mate.

Russell Harris: The answer is always no, I think. I think Emma and Jeff are probably going to nod in agreement. We could always do much more exciting things with more dogs, but we live in the real world and there are limits to what we can achieve and of course our resources are limited particularly in government agencies and I suppose even more so in private agencies. We can only do so much with the number of people that we've got and the number of dogs that we've got.

Nicholas Housego: Give us a bit of an example, if you could, of what's happened with the fruit fly, that Queensland fruit fly in Tasmania. Give us a bit more insight into how you used your dogs in that situation?

Russell Harris: Sure. Well, our dogs are trained to detect the range of normal things that you might expect. Particularly during that time of the fruit fly outbreak in late 2018, early 2019, there was heightened attention towards incoming passengers with high risk fruit and vegetable material. We also deployed a couple of dog teams, I think on rotation, but a little bit before my time in this role, off to some distinct areas of Tasmania, Flinders Island from memory to do some work in relation to the fruit fly response there. Really what it meant for the dogs in that context was a heightened awareness and heightened levels of detection of high risk fruit and vegetable material coming through passenger ports like seaports and airports.

Nicholas Housego: Okay. Emma, noticing how many different breeds there were, at first we see the Labradors run by the federal system, and then we saw the Springer Spaniels and the variety of dogs there. Is there anything in particular that makes a species of dog better suited to that conservation area that you're working in rather than just purely in the industrial, semi-industrial landscapes of ports and things?

Emma Bennett: I think the main thing that people need in their dog is a good working dog with the right motivation. Traditional working breeds like the Labrador or the Spaniel that you saw, or the Border Collie, which was getting more and more using conservation, the traditional working dogs, things like the Springer Spaniels usually do really well on road and eradication and rapid eradication because they're a hunting breed and they love finding those sorts of things. The Border Collies are working a little bit better on sensitive environmental spaces, where they might have to live detect a threatened animal, for instance, that's a native.

Emma Bennett: What you don't want is to frighten them, scare them, chase them, and you want to teach them to be able to alert at a distance, so they're not actually going in and interrupting. Traditionally we need a working breed, that's got the stamina and the work ethic to do it. In terms of detection, they can all smell it, they can all find it. It's about the controls that you need around that as well.

Nicholas Housego: Okay. Jeff, in the area of COVID, it's been emerging with us for the last nine, 10 months. Are dog's playing any role in that? Is there any smell or scent that they give off that someone who's got COVID is easily identified by a dog?

Jeff Smith: There is certainly a great deal of work going on all over the globe at the moment into dogs identifying COVID positive people. Generally what they're identifying isn't necessarily the disease itself, it's changes in our body odour or bodily function that are brought on by the illness. There's studies going on at the moment, looking at detecting positive patients through dogs sampling saliva, breath and sweat. Sweat seems to be the predominant one. Rated as not infectious. It's a little bit easier to handle and there is some work going on in Australia at the moment that's still very early stages and we're involved in, but just in research stage at this point in time.

Nicholas Housego: Okay. I've just got one, another questions just rolled in. Emma, this is particularly back to you, with the breeds being used in your space, is there any difference in the training for a conservation workload than there is for just detector dogs that we see doing this stuff at biosecurity spaces?

Emma Bennett: There's just a little bit more in terms of, as I said, that outdoor management. So, making sure that they can stop on command is a big one for us. If they're working, you saw that video of Kep where he was 20, 30, 40 metres in front.

Nicholas Housego: Yes, he really was.

Emma Bennett: If a native animal or stock animal ran out in front of him, what you want to be able to do is instantly stop your dog and have them fall into a drop. That's one of the things we always work on in conservation so that we know we've got that really good control. I guess that would be the main thing. There's a little bit more work in stamina because they do cover much larger areas. And just working in that outdoor environment is a little bit different to work in indoor, but a lot of the scent work is quite similar.

Nicholas Housego: I was reading recently about dogs up in the Northern part of Australia who have been trained to sniff out fire ants or jumping ants or that type of, and they were able to do it at a rate far faster than a team of humans could do. Any insights into that process? I think the dog's name was Jet, but I might be wrong.

Emma Bennett: Yes. Ants have been really successful. In New Zealand, they've done a lot of island eradication of their ants as well. There's the fire ant dogs, the yellow ant dogs, crazy ant dogs. And I do know, I think after a bit of a while the dogs get a little bit fed up with that job, but I think that's related to how many stings they get throughout the course of their working life. If you think about the size of an ant, it's really needle in a haystack stuff. And I don't know how many people listening can think back to what an ant smells like, but I can certainly smell some ants myself, not at the rate a dog can obviously. When a dog's working in those big environments, the owner must be quite strong because they do a fantastic job on ants all across the world.

Nicholas Housego: Okay. In terms of the boundaries with dogs and people seeing them and the natural instincts to sort of want to get out there and pat the dog or whatever, what are the cardinal rules around working with these dogs and what should we as the audience or the participants or the passengers not do?

Russell Harris: Look, I think look, but don't touch is probably the cardinal rule, much like a guide dog. I think most people around the country consider or understand that the guide dogs in training, you should look but not touch mainly because that's what their little vests say as they get around. But our handlers, particularly in crowded environments are very skilled at managing their dogs. They keep them close. They're able to engage directly with people and encourage them not to do something if they do happen to start to do something that might affect the dog or interfere with the way that they're working. That's probably, look, but don't touch and listen to the person handling the dog. That's what I'd suggest

Nicholas Housego: Anything from you Emma, on that one?

Emma Bennett: Our dogs are typically not working where there's people around. And when they are, it's a great way to get people to talk about conservation. In that sitting we are bringing them in for a pat, so we can discuss the animal that's at risk or the innovation that we're trying to eradicate.

Nicholas Housego: Jeff, in all that work that you do with dogs and sire them, what are some-

Jeff Smith: I agree with Russell. If the dogs are working treat them like anyone else that's doing a job and leave them alone. If you wouldn't go up and interrupt anyone else that was working at the airport, treat the dogs the same. Most of our people are pretty friendly if they're not working and you say, hello, they'll let you say hello to the dog. You probably won't get a pat though. They guard them quite jealously.

Nicholas Housego: That's a good insight. Alright. Well look, thank you very much for setting the time aside and also Jeff for coordinating all those videos. It's been a wonderful insight to be able to see just what those dogs do rather than the depth of the work, that insight into the age of the puppies, that sense that you Sheppard them out to a family, then they come back in for training. Then they go with the handlers. They've got a very interesting life as working dogs. It's quite fascinating to learn that. And I'd like to say on behalf of the 200 plus people who are listening in today, thank you very, very much. You dog handlers, it's been wonderful. Much appreciated. We'll sign off here from Canberra.

[Webinar ends]