Jamie Nicholls:

Welcome everyone to our fourth webinar in Australia's Biosecurity Series, hosted by the Department of Agriculture, Water and the Environment on protecting Northern Australia from the risk of exotic fruit fly invasion. Hello, my name is Jamie Nicholls, and I'll be facilitating today's forum. Thank you for taking time out of your busy days and joining us today. I'd like to begin by acknowledging the traditional custodians of the various lands on which we all come together.

Jamie Nicholls:

Today I'm going to do this in the traditional language of the Ngunnawal people of the Canberra region. [Acknowledgement of country in Ngunnawal language]. This translates to this is Ngunnawal country. Today we meet on Ngunnawal country. We acknowledge and pay our respects to the elders. Now, I recognise that many of you are meeting on other traditional lands and I acknowledge the continuing connection of the traditional custodians to those lands, sea and community. I also extend that respect to their elders, past, present and emerging.

Jamie Nicholls:

It's important to connect like we are today by this Zoom webinar, so that we remember we are part of multiple and bigger communities. Today, we've got close to 300 people who are registered and we have attendees from all around the country, from a far field as Port Lincoln and Perth, up to Katherine across to Cairns, Townsville and all the way right up to Thursday Island. We have folks from private industry, including the cattle council. Welcome to you guys, Coles and also AUSVEG. There's a large contingent of attendees from federal governments as well as state governments, such as the New south Wales Department of Primary Industries, Western Australia and Queensland agriculture and industry portfolios. So welcome to you all.

Jamie Nicholls:

We have a great lineup of speakers today who are all involved with keeping Northern Australia free of devastating exotic fruit fly. We have native fruit flies, of course, but they do not damage fruit or our crops or food that the nonnative species inflict. In 1995, we had an incursion of the Oriental fruit fly around Cairns where it cost $33 million to eradicate. The three speakers we'll hear from today will talk about different challenges associated with keeping Northern Australia free from exotic fruit fly. We'll also hear about how we manage the risk of this pest arriving in the north and how we respond when detections are made.

Jamie Nicholls:

To start today's session, Darren Peck will talk about the countries all around us that have exotic fruit fly. He's had years of experience tracking risk pathways of this pest into Northern Australia and he will outline that for us. We'll then hear from Dr David Britton. Dave's an entomologist and will speak specifically about the pathways being monitored on the Torres Strait and Cape York peninsula. Then there'll be a prerecorded video by Rebecca Sapuppo, who works for the Queensland Department of Agriculture and Fisheries, QDAF. Rebecca is a policy manager on incident preparedness and she'll explain Australia's fruit fly eradication programs. Because Rebecca could not be with us today in person Mike Ashton, also from QDAF, will be available to take questions.

Jamie Nicholls:

Now to kick things off, we see a short video that explains why fruit fly is such a significant biosecurity threat for Northern Australia. It also shows a Northern most defence against this pest in the Torres Strait within sight of Papua New Guinea, a fruit fly trap on Boigu Island. So now we'll see that video and hope you enjoyed that. What a wonderful video. That was great to see.

Jamie Nicholls:

Let's start with our first speaker, Darren. Darren's going to be talking about the pathways being monitored on Torres Strait and Cape York peninsula. Over to you, please, Darren. Thank you.

Darren Peck:

Look, it's a pleasure to be here, Jamie. I really would like to thank the organisers for the invitation. Can I just say at the start of this, I'm really just the talking head for this program. This detection and response program for fruit flies in the Torres Strait is a long running program. It's a very collaborative venture. It's, to my knowledge, probably one of the most successful detection and eradication programs for a pest or disease in Australia.

Darren Peck:

Look, I will start by just presenting a little bit about the biosecurity risk profile that exists in Northern Queensland, up in the Torres Strait in particular. Then I'll talk a little bit about the actual pests and the risks that they pose before handing on to Dave Britton, who is eminently more qualified to talk about the details around the trapping program itself. Then Bec will follow up with the response part of it. So a very collaborative program.

Darren Peck:

I'll kick off just to set the scene, describing, I guess, the context in Northern Australia that makes it quite unique in terms of the biosecurity risk and then talk really about the pest and disease itself. There are three real key important aspects that we need to remember when we're thinking about biosecurity in Northern Australia and particularly up in the Torres Strait and they all intersect to create this biosecurity risk profile, as I call it.

Darren Peck:

The first thing is that Northern Australia is unique in terms of its high level weather patterns. Each year we have a monsoonal trough that comes down and it brings with it high level weather patterns, wind patterns in particular, that sweep across the Indonesian archipelago and the Papua New Guinea land mass, bringing with it exotic pests and diseases in the form of spores or small insects and of course fruit flies. So that's a unique situation that we have in Northern Australia and up in the Northern Peninsular area and Torres Strait in particular.

Darren Peck:

It's part of the overarching, I guess, risk profile that we're managing in terms of fruit flies. Of course, as I mentioned there, the things that I mentioned intersect to form I guess a risk profile. The next most obvious thing is that the Torres Strait Islands are very, very close to Papua New Guinea. That's Saibai Island there and you can see Papua New Guinea in the distance. It's only about four and a half kilometres from Saibai and Boigu is even closer. I thank Lisa Barella for this image. But you can see the proximity, the geographical proximity of Saibai and the other northwestern islands to Papua New Guinea represents a real opportunity for pests and disease to hop across, particularly if they're like fruit flies are, assisted by those wind patterns that I mentioned.

Darren Peck:

The third important thing, again, intersects with those two previous things, the wind patterns and the geographical proximity, is the cultural makeup and the familial ties that exist between the Torres Strait Island peoples and villages in the western province of Papua New Guinea. There's been a long history of connection, trade and familial ties that exist between the Torres Strait Islanders and the peoples that inhabit that area of Papua New Guinea. These have been ongoing for a long period of time, but it does mean that cultural aspects, it means that there's there's movement between the treaty villages and the Torres Strait Islanders. Then of course, people can then move further south into the Torres Strait and potentially onto the mainland.

Darren Peck:

What's important about this is that we're managing that in the Torres Strait through what's called the treaty and I won't go into the detail there. It does allow people to trade, maintain those cultural connections, maintain those familial ties whilst we manage the biosecurity risk through our offices up in the Torres Strait.

Darren Peck:

I just want to talk a little bit about the actual risks themselves, or the targets themselves. The fruit flies that we deal with up in the north here, the exotic ones that can come across from Papua New Guinea are listed as number four in the top 42 pests and diseases in terms of rankings. This includes the Oriental fruit fly, bacrtocera dorsalis, which we'll be mostly talking about in this presentation. But there's a number of other species as well, including the New Guinea fruit fly, which is native to Papua New Guinea.

Darren Peck:

All of these are pests and they're significant pests of horticultural industries in Australia broadly. So it's very important that this program continues to be vigilant in terms of detecting and eradicating these pests from the Torres Strait Islands. Because as I say, there is definitely a risk pathway for these things to move down further south onto the mainland and then even further south into Australia, the southern parts of Australia through human mediated movement and conveyances.

Darren Peck:

Oriental fruit fly, it's one of the world's most damaging agricultural pests and it's labelled as that because it has some key characteristics. Firstly, it's polyphagous which means it can lay its eggs and attack over 300 different types of plants and 250 of those are cultivated and then of horticultural importance. Obviously, there's an economic aspect to that as well.

Darren Peck:

Something that's quite important to recognise with this particular species is that females can lay their eggs in unripe fruit. What that means, in effect, is that it disallows the opportunity for growers to pick fruit early and then artificially ripen because they're already infested. So it negates that management tool.

Darren Peck:

On top of that, the pest can, if it lays its eggs early or in unripe fruit, that allows the eggs to persist in that fruit. And there's more opportunity for human mediated movement and conveyance of the infected fruit further afield. It's a characteristic that makes it very invasive and that's unique... well, not unique to this particular species, but it's something that makes this thing quite difficult and dangerous, I guess.

Darren Peck:

Of course, as I mentioned, is the actual movement of the adult flies. They're very agile. They can travel across. They're quite good fliers so they can travel across quite easily assisted, and do quite easily travel across each year into those Northern Torres Strait Islands and sometimes even further south.

Darren Peck:

Originally, this species is a native of Southeast Asia from India east to Taiwan. The Oriental fruit fly distribution, as you can see, it's quite widely spread, mostly in tropical, subtropical areas. You can see how close it is there. I think this slide gives you a good indication of the proximity, or the threat, how close it actually is to our doorstep. It clearly drives home what I was talking about in terms of the geographical aspect intersecting with the weather patterns and the cultural ties. So, it's very, very close, can easily, a hop, skip and jump, get into the country. That's why this program is so important.

Darren Peck:

You'll see that it's also listed on this map or indicated on this map as present in California. It's actually being eradicated in that state of the United States. This map, we may not know for sure that Oriental fruit flies are established there, but it's likely because... well, we either have no information or because it's in a neighbouring country it's highly likely to be present.

Darren Peck:

As Jamie mentioned, we did have a scare back in 1995. Back then the Oriental fruit fly was known as papaya fruit fly. It was detected from adults read outs in papaya fruit, so in paw-paw out at a Yarrabah property, which is across Trinity Inlet from Cairns here. It was successfully eradicated, but the cost to the community, well, the initial cost was about 34 million, 35 million. But there was an estimated cost of a hundred million all up when you look at the impact on producers, supply chains, supply chain operators, exporters, and communities broadly. So it's a significant impact.

Darren Peck:

Not only do we know that this pest can get across quite easily, but we also know the damage that it does and cost it actually imparts on the industry and communities more broadly. We're not sure, but we think it was likely due to movement of infested fruit from Papua New Guinea to Cairns.

Darren Peck:

Just a little bit of information in relation to how the trapping and response program evolved. Well, it was detected and eradicated in the Torres Strait in 1993, so this was obviously before the '95 incursion. In '96, a rapid response plan was developed and it evolved from there. In 1999 the plan was refined into a containment strategy. More recently, in 2015, it became a response plan under the EPPRD, so the Emergency Plan Pest Response Treaty. That's just a little bit of information in terms of how, I guess the governance and the legislative framework evolved over time.

Darren Peck:

What I'd like to say, if I may, just before I hand over to Dave, who works with me, is that this program, as I mentioned, long, long running, but there's a lot of different people involved in this. I'm just the talking head of the scientists that work with me, compliance staff and their inspectors and the guys up in the Torres Strait do all the hard work. The people in Queensland that work with Mike and Bec are working very hard in this program.

Darren Peck:

So I'd just like to take my hat off and thank them and acknowledge the efforts that they've made in terms of making this a very, very successful program. I'll stop talking now. Thanks for your time. I'll hand out to Dave to talk in more detail about the actual trapping program. Thanks, Jamie.

Jamie Nicholls:

Thank you very, very much for that. Absolutely fantastic and using your technology very, very well, indeed. Actually, what I got from that talk was that the female can lay even in unripe fruit, in up to 300 different produce, including a couple of hundred fruit species. Thank you so much for sharing that, Darren.

Jamie Nicholls:

Next up we have Dr David Britton and you'll see him next on our Zoom screen. Dave's usually based in Cairns, but with lockdown has found himself temporarily based in Sydney. Let's hear from Dave about the department's work monitoring some of the most isolated areas within Australia. Okay, over to you, please, David.

Dr David Britton:

Thanks for the intro, Jamie and good morning, everyone. Thanks for Darren for providing an excellent backdrop for my part in this morning's program. NAQS, so the Northern Australian Quarantine Strategy, maintains a network of 123 permanent monitoring traps in the Torres Strait and Northern Peninsula area of Cape York. We use Paton traps which are specifically designed to cope with the wet and hot human conditions there.

Dr David Britton:

We use two lure types. We use metal eugenol and Cuelure. Each of those lure types catches a distinct suite of fruit flight pests, including native ones as well. I'll just highlight that the metal eugenol ones, the ME traps here catch Oriental fruit fly, whereas the Cuelure traps are catching New Guinea fruit fly and melon fly, which Darren introduced briefly before. Now, all these lures catch male flies only and the lures are attractive to males because they use these compounds to assist in synthesising pheromones, which they then use to attract female flies.

Dr David Britton:

The lures that we use, we lace them insecticides so when they go into a trap and feed on them, they get poisoned and end up in the trap. Monitoring is continuous all year round in the Torres Strait. Traps are collected monthly during the drier time of year and then fortnightly during the wet.

Dr David Britton:

The key purpose of all this trap network is to detect exotic fruit pest fruit flies coming in, and to then inform what sort of a response we should take when that happens. Now, I think we're all familiar with the location of Torres Straits so I won't dwell on that. But this is where we've got the traps located in the Torres Strait and the NPA.

Dr David Britton:

Most of these are on inhabited islands in the Torres Strait, but we are also have a few on uninhabited islands, which are strategically located between PNG and the mainland and also those which have suitable host plants for the fruit flies to establish on. Then we've got the traps in the communities in the Northern Peninsula area there, to the bottom of the screen. We also have some traps in Weipa, which are not visible on this particular map.

Dr David Britton:

Traps are maintained by our north NAQS biosecurity officers who are drawn from communities on most of these islands. They're people who have a strong background in the culture and community in these places. They're very much the mainstay of this program and without it, we wouldn't be able to deliver so effectively and efficiently the way we do. So, as Darren's always mentioned, this is a collaborative response and the communities in the Torres Strait are a very, very big part of...

Dr David Britton:

NAQS Staff based on TI help manage the traps on the uninhabited islands as well. So most of these require helicopter access and we collaborate with border protection to get access to their helicopter. Once all the samples are collected from the traps, they're sent down Cairns where scientific stuff, there'd be identifications; again, another key part in this program.

Dr David Britton:

In terms of lab identifications, we do most of this using external morphology of the flies. We've got resources we've built up over a large number of years, got a very large and significant fruit fly collection we can refer to. Most of the time that's perfectly adequate. Occasionally we'll use the morphologic molecular methods to deal with some ambiguities or we'll get expert taxonomic opinion. Because sometimes we get some pretty weird flies coming in from PNG and no doubt some which are not yet described.

Dr David Britton:

However, there's significant challenges for dealing with fruit flies up the north there. Those who might be familiar with trapping further south would be a little bit taken aback by both the diversity and the abundance of flies and traps we get up there. We get about in excess of 75 species in traps in the Torres Strait and NPA, with the most recorded in a single trap being 18 species for one trap.

Dr David Britton:

Then there's the abundance as well. Just for the last financial year, we are looking at close on 690,000 flies identified by staff in our labs in Cairns. Since the program started, at least we've been collecting in our database, we've identified over 17 million flies. This figure here is an example of some of the diversity and abundance over the last five years in the Northern Peninsula area, which is our most diverse area in terms of fruit flies.

Dr David Britton:

So onto detections of our target, so back to Oriental fruit fly, which is bactrocera dorsalis here. We get quite a lot of variation between the different years. You'll notice that back before the containment strategy really kicked into place we had some pretty big years where we detected a lot of flies in the Torres Strait, but it varies quite a lot between years.

Dr David Britton:

I'd like to focus on perhaps where some of this variability comes from. I really should preface that it's really a bit of a mystery to us because we don't have easy access to where the flies are coming from on mainland PNG in West Papua. So it really is pretty much a lot of correlation and a lot of guesswork which goes into looking at this.

Dr David Britton:

I'm going to focus on the 2018/19 year where we got 492. That was quite a high pressure year. Most years Oriental fruit flies peak in detections around March, April, which is when the wet season's really kicked in. This one, it started to peak in January, February. Now the Torres Strait experience is quite strongly defined seasons and the Torres Strait Islanders recognise four seasons. The fruit fly season pretty much coincides with what's called Kuki, which is the monsoonal wet season, where strong north-westerlies blow across the PNG land mass.

Dr David Britton:

So through from January to April, that's pretty much prevalent. So our detections fell within that season so it's pretty normal in that respect. But if we have a look at some of the wind patterns in late January, we had some very significant tropical lows, which were drawing a large amount of air across from the PNG land mass, much more than normal. That's possibly been the cause of getting back those extra detections.

Dr David Britton:

The distribution of detections in the Torres Strait, the size of the circle represents the number of detections. So the bigger circles are more detections. It's a relative measure and to be honest, it doesn't look too different to pretty much every other year where we get a few detections in the Torres Strait. You can see the proximity to PNG seems to have strong relationship between the number of detections.Also, if you can imagine a north-westerly bowing diagonally across that image, that would also explain a lot of where the flies are turning up in the traps. So in terms of where the flies ended up, it's pretty much the same as what we get most years. It was just a greater number of flies. Anyway, that was just a bit of an insight into the variation we get between years.

Dr David Britton:

So just to briefly talk about this before we go to Bec's prerecorded talk, this is about how our clearance data informs responses. The type and level of response that we give depends on where the detections are and the number of detections that are occurring. If you've got a larger number of fruit fly over clearances, that then goes to the next step in the response. I'll leave it there, and we'll look at handing over to Jamie, who can introduce Bec there. Thanks, everyone.

Jamie Nicholls:

Thank you so much, David. A brilliant talk, breaking up just a little bit every now and then. But oh my word, I've got a comment during that, that you've got equal status with our New South Wales, premier, Gladys. So people have got you on one screen and Gladys on the other. I just thought I'd have to share that with you because you've got hundreds of thousands of viewers, potentially.

Jamie Nicholls:

What I really liked about that, David was you are talking about the taxonomic identification, so morphological or molecular, with 75 species you're dealing with in the traps. Just the numbers, hundreds of thousands, in fact, 689,000 detected last financial year, and was it 17 million since 1996? So look, thank you to you and your fellow entomologists for particularly engaging people; very important in this detection process. Thank you.

Jamie Nicholls:

Okay, now let's hear for I'm Rebecca Sapuppo. She's going to be doing it as a prerecorded video. She's talking about solutions to the eradication programs and incident mitigation plans being worked on collaboratively between governments and industry.

Rebecca Sapuppo:

Hi, everyone. Apologies that I can't be joining you live today and thanks to the webinar team for allowing me to prepare a presentation earlier. I understand that there'll be a representative of the Queensland Department of Agriculture and Fisheries online today to answer any questions after my presentation today. So thank you and just bear with me one moment while I start our presentation for this morning.

Rebecca Sapuppo:

So following on from the information that Darren and Dave have provided you about the NAQS surveillance and monitoring in Torres Strait and the special role that Torres Strait plays in the Australian biosecurity system, I'm going to talk to you about the exotic fruit flies in Torres Strait eradication program. This program has been operating for 25 years this year and is a really great success story of the Australian government, the state government in Queensland, and a range of local stakeholders, all working together to deliver really strong biosecurity benefit for Australian horticulture.

Rebecca Sapuppo:

So introductions, my name is Rebecca Sapuppo and I am the manager of Incident Response and Preparedness with Biosecurity Queensland. I work in our plant biosecurity and product integrity program. I've been involved in the exotic fruit flies in Torres Strait eradication program on and off for the past 18 years. I'm really proud to be part of something that is such a long running program, but also something that's so important and providing really strong benefit to Australian horticulture.

Rebecca Sapuppo:

Today, I'm going to talk to you from the angle of how NAQS surveillance data in Torres Strait leads to eradication success. So, as Dave may have mentioned, each year, the NARQS surveillance data detect the presence of exotic fruit fly species in Torres Strait and they blow into the region on monsoonal winds during the summer months.

Rebecca Sapuppo:

The target species that we're interested in from an eradication perspective are Oriental fruit fly, New Guinea fruit fly and melon fly. Each of these fruit flies in their own right could have significant consequences for Australian horticulture. Oriental fruit fly, then known as the Asian papaya fruit fly, was detected in Cairns in 1995. That resulted in a four year eradication program that cost around $34 million for government to eradicate, and the cost and disruption to industry was far greater.

Rebecca Sapuppo:

Since the mid '90s, 1996, an annual eradication program has been operating in Torres Strait as a way to further safeguard against future mainland incursions. For the last 25 years, we've been successful in eradicating these exotic fruit flies in Torres Strait without any further mainland incursions of these exotic species. So with an annual program cost for the Torres Strait program of about half a million dollars per year, this is a great investment compared to the impact a mainland incursion may have, but how do we do it?

Rebecca Sapuppo:

I'm going just take you quickly back to basics and explain a little bit about the Australian biosecurity system. In Australia, we're really fortunate to be are supported by something called the Emergency Plant Pest Response Deed. That document provides a framework for government and industry on how they need to cost share emergency risk... oh, sorry, eradication responses. But importantly, it also provides guidance about clear roles and responsibilities and how those responses should be managed. It's a really cornerstone document for the Australian biosecurity system.

Rebecca Sapuppo:

So under the response deed, any responses that are managed under that document need to be documented and agreed to in a response plan. Since 2015, the work in Torres Strait has been managed under the Emergency Plant Pest Response Deed. So we do have a plan in place with pre-defined actions so that everybody's very clear. All stakeholders are very clear about what's going to happen and how it's going to be delivered.

Rebecca Sapuppo:

We also have a technical advisory group that supports the Torres Strait program . Every year they review the operations and the scientific aspects of the program, making sure that technical changes can be made in real time to bolster the response effort and ensure that it remains robust.

Rebecca Sapuppo:

So what's in our response plan. Generally, the response plan covers a range of proactive activities that we will do every year in anticipation of fruit flying incursion into Torres Strait. It also explains a range of reactive response actions that will occur in direct response to the NAQS monitoring and surveillance results. This response plan, and the fact that everybody knows it exactly what needs to do at certain trigger points ensures a swift and efficient delivery of eradication.

Rebecca Sapuppo:

Eradication at the end of every season is then proven through evidence of absence of these target species, again through the NAQS surveillance. NAQS and the Department of Agriculture and Fisheries in Queensland work very, very closely in this response. Although the Queensland government is the lead agency for this response, it would simply not be possible to roll out the response with such efficiency as we do now without NAQS involvement.

Rebecca Sapuppo:

I'd really like to take this opportunity to acknowledge the significant role that NAQS and the broader Department of Agriculture, Water and Environment have played in the delivery of this program and management of it over the last 25 years. Partnership really is key to the success and longevity of this response.

Rebecca Sapuppo:

I won't talk too much about the surveillance because I think that's probably been covered by now. What I'd like to let you know is, as well as the NAQS routine monitoring network across Torres Strait, under our response plan, we can bolster that response monitoring network by installing additional traps as required by the response plan.

Rebecca Sapuppo:

These images just show that on the left, there's a Paton trap, which you might already be familiar with from Dave's presentation, which is part of the routine monitoring network. On the right is something called a Steiner trap. These are quickly able to be installed. They can be installed quickly so that we can gather additional information and ensure the increased sensitivity of the monitoring network in times of response. So that's a really key part of the strategy and results from both kinds of traps will inform our response actions.

Rebecca Sapuppo:

One of our response or active eradication tools is bait spraying. Bait spraying is used in fruit fly control programs and it consists of a protein attractant mixed with a toxicant. The bait spray attracts female fruit flies to it because they need protein that's in the bait spray for their eggs to develop. But once they feed on it, it will kill them and we use an organic formulation. That's safe to apply in community areas and it's safe for our offices to handle as well.

Rebecca Sapuppo:

That's really important because during the fruit fly season, they might be applying bait spray on an island at least one once a week, if not more often, depending on the response plan guidance. Bait spray is applied proactively on northern islands in Torres Strait in anticipation of incursions of exotic fruit flies, but it can also be deployed on other islands in response to monitoring data.

Rebecca Sapuppo:

Although bait spraying is highly effective in controlling female fruit flies, we complement that with something called male annihilation technique or blocking. This involves the use of a high density of bait stations or blocks that are placed across the islands. Each block contains a male lure and an insecticide. It attracts the male fruit flies to it and then kills them after they've landed on the block and become exposed to that insecticide.

Rebecca Sapuppo:

We try and concentrate the blocking on areas where we know that fruit flies might occur or would prefer to occur, so in community areas, remote community gardens and as you can see there, in some fairly rugged bushland as well. It's a tough job. So the northern islands, like bait spraying, are proactively blocked with methal eugenol blocks from November each year. Where bait spraying occurs weekly, blocks are replaced every eight to 10 weeks throughout the season until the fruit fly detections in the NAQS monitoring traps indicate that we've effectively eradicated the fruit flies.

Rebecca Sapuppo:

We try and take a light touch with the blocking. We do access some sensitive areas with the consent of community members. But we also make sure that as many of the blocks as possible are returned to us at the end of the season. We don't want any blocks left in the environment, so we start with a clean slate every year.

Rebecca Sapuppo:

As well as our active response activities, we're also supported by both state and federal biosecurity legislation that applies to Torres Strait. I won't go into too much detail about the specifics other than to say that the legislation maintained by Queensland and the Commonwealth Government aims to compliment each other. But it also achieves the same aim in that it aims to restrict the movement, the human assisted movement of exotic biosecurity threats and any host material. So there's just another layer that we have in our toolkit to make sure that the risk presented by exotic fruit flying incursion into Torres Strait doesn't reach the mainland.

Rebecca Sapuppo:

I guess last but not least in this program is the community engagement and local support that we receive. Education and meaningful partnership in any biosecurity program is key, but is very, very important in Torres Strait. NAQS play a very active role in engaging the Torres Strait community and visitors to the region about a whole range of biosecurity risks, but including the fruit fly response program. And encouraging people to abide by biosecurity regulation while they're in the area.

Rebecca Sapuppo:

We also receive strong support for the program from local contractors, traditional owners, local community members and other agencies like the Torres Strait Regional Authority who've recently become involved in supporting us with the blocking program. I'd like to take this opportunity to acknowledge all the stakeholders to this response, particularly the Torres Strait Island communities, for supporting us over the last 25 years and achieving really... well, supporting the achievement of really key biosecurity benefit to the Australian horticulture industry. We're all working together as a collective to protect the Torres Strait way of life and Australian horticulture. I thank everybody that's been involved in the program over the past 25 years.

Rebecca Sapuppo:

So where to from here, I suppose? Twenty-five years of annual incursion eradication behind us is a success story in anybody's book. We haven't had any new mainland incursions because during that time and as a response manager, it's my sincere hope that we never will. Without the Torres Strait eradication program, it's generally considered that an incursion on mainland Australia would likely occur within 12 to 18 months. So the threat from Torres Strait, as an incursion pathway for these exotic species is that are present in countries to our north, is very real. We need to maintain our vigilance and engagement of community to make sure that the risk doesn't increase.

Rebecca Sapuppo:

Should a mainland incursion of one of these three target species occur, there are likely to be severe implications for domestic and international trade, including the need to revise, replace, or add to some existing systems for controlling fruit fly and maintaining market access. Not to mention the disruption that an eradication program or a containment program might cause to communities on the mainland, as well as Australian horticulture businesses. It's really something we want to avoid at all costs.

Rebecca Sapuppo:

A recent cost benefit analysis considered the full range of horticulture industries potentially affected by exotic fruit fly incursion entering Australia via Torres Strait. They demonstrated very clear, positive cost benefit analysis to us continuing with our eradication program. But I think their broader benefits, not just the financial benefits, are not lost on anybody involved in this project, because it is just so important to keep these fruit flies out of Queensland and the rest of Australia.

Rebecca Sapuppo:

On the good news front, we've just received endorsement from the national management group for a new response plan, which will support our activity in Torres Strait for the next five years. So we're really well positioned to respond to annual incursions of fruit flies during that time. I think everybody involved in the project is really pleased to be able to continue our efforts in serving Australian horticulture in the region.

Rebecca Sapuppo:

That concludes my formal presentation. I'd just like to thank everybody for your participation today and once again, I apologise for not being able to join you directly.

Jamie Nicholls:

Thank you very much, Rebecca, for that video. We've got Mike Ashton here to answer some questions from Rebecca's brilliant video. I know, just hearing that about the legislation and the active control they've got at reducing the movement of exotic fruit fly into Australia is just amazing. So great effort, Rebecca, to your team as well.

Jamie Nicholls:

Okay, now we start the Q and A session. We can see one up there on the screen already. Given that family connections extend from Torres Strait into PNG, is there an opportunity to extend monitoring activities into PNG to create a buffer zone? If so, how far into PNG could these monitoring activities extend? I think that's a question for Dave. Dave, I'll flick to you and see if you can give that an answer, please.

Dr David Britton:

Yeah, it's something that's definitely been considered. The issues are mostly around access. It's a lot of logistical issues. So basically, those treaty villages on mainland PNG western province are only accessible by sea, or presumably you could probably access some of them by helicopter. The other issue too is more around making it so that it's beneficial for those people to be engaged in that program. It's also, you are working in another country. So at the moment, DFAT does certainly have some interests in improving food security and improving conditions in those villages.

Dr David Britton:

If eradication and monitoring of fruit fly was thought to help that situation, there might be some possibilities. But just getting the materials there and getting specimens in and out of there is a major, major challenge. There's been some initial discussions about whether or not indigenous ranger groups in PNG could support that work, but it's certainly, at this stage, very much an idea rather than something we could do.

Jamie Nicholls:

Great. Thank you. Thank you, David. I've got a couple of questions. Two questions here for Mike up, submitted earlier. Mike, if the exotic fruit flies in Torres Strait Eradication Program didn't exist or didn't operate, how long would it be before the pest reached the mainland? I saw a slide there about 12 to 18 months.

Mike Ashton:

Yeah, thanks Jamie. Yeah, that's right, around 12 to 18 months it's estimated that without the program, we would've a mainland incursion.

Jamie Nicholls:

Good. Don't go too far. Of course, I know you can't cause we're all in lockdown. What would happen if Oriental fruit fly or one or the other target pests were to reach the mainland? What would be the consequences of that?

Mike Ashton:

Well, again, as you can see from Rebecca's presentation, there's two impacts that it would've had. One would be on market access for fruit, host fruit. As you can see, there's about 300 host species for our annual fruit fly. So if we had an outbreak in Queensland, for example, the outbreak areas, we would have restrictions placed on us in terms of domestic movement of host fruit into other states and territories.

Mike Ashton:

It would also likely have significant impacts on exports of fruit fly hosts from those areas. You can see again from Rebecca's presentation, the estimated benefit. It doesn't give a timeframe, but I believe it's probably over the five years of the current response plan, the benefits are estimated around a billion dollars.

Mike Ashton:

The other impacts, obviously, is on production. Pest fly, Oriental fruit fly attack fruit at an earlier stage. They can attack green fruit so there would be additional production costs associated with trying to manage these fruit fly species, as opposed to native species like Queensland fruit fly.

Jamie Nicholls:

Thank you, Mike. That's tremendous. Now, before you go, because your flags telling me that your backdrop is somewhere overseas, is it?

Mike Ashton:

It's Kotor in Montenegro.

Jamie Nicholls:

Thanks. Thanks Mike. Okay. Question from Chris O'Connor. I know that response plan is publicly available. Could one of you please tell us where they could easily find the response plan?

Mike Ashton:

Well, I'm not sure of that it is published. Any documents considered by the consultative committee on emergency plan pests and the national management group, which are national committees formed under the Emergency Plan Pest Response Deed are treated as confidential. People can access these documents with the agreement of the CCEPP, but I don't think that the plan is actually published on a website anywhere at this point.

Jamie Nicholls:

Okay. Thank you, Mike. George Nunes has got a comment here. A few years ago, back in 2013/14, it was attempted to put traps, especially carbon dioxide traps I think it, is in the treaty village of Mabadauan and Sigabadaru. They had issues where the traps were stolen and some were damaged. Mike, do you want to comment on that while I can see your face on the screen?

Mike Ashton:

Look, that's probably something more for Dave Britton and Darren Peck because I'm assuming that that's in PNG.

Darren Peck:

Look, that really just goes to what Dave was saying in terms of the logistical issues associated with trying to do some work in a sovereign country that has its own priorities and jurisdictional sort of requirements. It is difficult to operate in the western province, as Dave's explained. That doesn't surprise me that that's the case. That's just one of those logistical challenges that we have if we were ever to do any further work up there. The ranger group that Dave referred to, or rangers broadly are certainly part of a solution if we can ever get to the point where we can do some of that work. As I say, in a sovereign country, with all of the logistical constraints I've mentioned. Thank you.

Jamie Nicholls:

Thanks Darren. A Question here, what progress is there around sterile insect technology for these particular target species of fruit fly? Is there possibilities of implementing it in PNG as part of the international partnership and support for the region? Who shall I put that question to?

Dr David Britton:

I saw those presentations last week as well, Jamie, on sterile insect technology. It certainly looks like it could be useful, but again, a lot of it would come down to access and the cost of it. I think what was highlighted in some of those sterile insect technologies is transporting your sterile insects to where you want them to be used is actually quite a tricky thing to do. And we already know we've got logistical issues there.

Jamie Nicholls:

David, just on that, was that part of the ACBO series of webinars last week?

Dr David Britton:

Yes. Yeah. Yeah.

Jamie Nicholls:

Look, they also do webinars. Do you want to maybe just raise a point, a little bit of a point on that distribution or some of the limitations that might have been discussed, just briefly please, David?

Dr David Britton:

Well, in that particular presentation, they were talking about it with their own indigenous fruit fly pest, the Queensland fruit fly. The rearing facilities are in, I think it's near Port Augusta in South Australia and they're targeting areas in the river land in Victoria and New South Wales. So getting your flies from the rearing facilities to there, and in tacked and competitive with wild flies is quite a challenge.

Jamie Nicholls:

Thanks David. Another question... Yes.

Mike Ashton:

Sorry, I've just got a comment, and that is that SIT is generally used for two purposes. One is for suppression and the other one is for eradication. So it depends on what purpose you'd be using SIT for because if these flies are established in PNG, if you were using them in PNG, they'd be being used for suppression. You'd have to look at the costs and benefits because these flies are established, and why it's spread in PNG. You'd have ongoing pressure of the fly into any areas where you were trying to suppress so you'd have to look at the cost and benefits. Setting up and managing a SIT facility is very expensive.

Mike Ashton:

You may want to use SIT in an eradication program and it would have to be something that would be looked at as part of the response to an outbreak, as to whether use of SIT as part of an eradication, again, was cost beneficial. I just point out that we were successful in eradicating the papaya fruit fly outbreak in Cairns in the late '90s without the use of SIT.

Mike Ashton:

We may not be able to use some of the techniques that we used in the papaya fruit fly outbreak if we had an Oriental fruit fly outbreak in Queensland, being the same thing now because of restrictions around use of the male annihilation blocking, particularly in urban areas, for example. So SIT might be an option, but you'd have to look at all the costs and benefits of establishing a facility and whether it was necessary to achieve eradication. Thanks.

Jamie Nicholls:

Thanks, Mike. The last question I think we have time for, I think this one's for Darren, because he touched on the wind movements around the islands. Why didn't exotic pest fruit flies reach Australia before we started eradicating them in the Torres Strait? Was that purely the weather pattern you spoke about or is that something to do with other changes to our climate? Darren, was that something to do with the climate thing or is it the wind movements you touched on in your talk?

Darren Peck:

Possibly. I mean, Dave might be able to pass some comment, but they probably did, but weren't able to establish the change in the land use as well. The host density has an impact on receptivity and establishment. There's a whole range of environmental and human factors that could be involved. Dave, did you want to pass any comment in relation to that question?

Dr David Britton:

I did kind of answer it as text already, but one of the key reasons for Oriental fruit flies, that it only arrived in 1993. So it's literally a year after it was detected in PNG had turned up in the Torres Strait. It's thought to have arrived in the region through movement of Indonesian settlers into west Papua, bringing fruit and vegetables into that area.

Jamie Nicholls:

Thanks, David.

Jamie Nicholls:

Look, just a big shout out and thank you to everyone for joining us today. On the screen now you can see some other channels. You can contact this for the websites where you can get additional information as well. I do want to thank our panellists. It takes a lot of time to prepare this material, and particularly, as you've been hearing, they talk in different forums, so it's not just this forum.

Jamie Nicholls:

I'd like to thank Darren Peck and Dr David Britton from DAWE, Department of Agriculture, Water and Environment and Mike Ashton from QDAF. Thank you also to you, the attendees, for making this interesting and possible. Without your passion for knowledge and interest and connectivity, we wouldn't have these.

Jamie Nicholls:

I do want to thank the production team indoor, Shane Faulkner, Katrina Iffland and Jessica Allia and of course, for contentgroup for making this webinar run so smoothly. Thank you once again for joining. It's a good afternoon from here in Canberra. Thanks from all of us for joining today and again, thank you for your passion for learning. See you next time. Good afternoon and bye.