

Northern Australia Quarantine Strategy survey of Cocos (Keeling) Islands and Christmas Island 21 May to 3 June 2000

Abstract

AQIS scientists from the Northern Australian Quarantine Strategy (NAQS) surveyed the Cocos (Keeling) Islands and Christmas Island from the 21 May to the 3 June on behalf of the Department of Transport and Regional Services. The survey was undertaken by G. Bellis (entomologist), J. Curran (veterinary officer), A. Mitchell (botanist and survey leader) and M. Weinert (plant pathologist).

Animal Health

Cocos (Keeling) Islands and Christmas Island

On Cocos (Keeling), blood samples were collected from 42 wild birds and poultry, and on Christmas Island from 49 wild birds and poultry for serological disease testing. Samples tested negative for Newcastle disease, avian influenza and Japanese encephalitis. A significant number of poultry samples were positive to infectious bursal disease (IBD), but there were no indications that the hypervirulent strain of IBD is present at these localities.

The risk of entry and establishment of serious animal diseases to these islands is considered to be low, given the low number and variety of animals present (with the exception of seabirds) and the isolation of these islands. From the small number of seabird samples collected it appears that they have had minimal exposure to many of the viruses that are fairly ubiquitous in other terrestrial bird populations.

Plant Health

Cocos (Keeling) Islands

A survey of these islands was conducted between 21 and 27 May 2000. The team visited all the major islands in this group.

Botany

A total of 40 plant specimens were collected on these islands. Siam weed was found in dense stands on Home and West Islands. It has been there since before 1986 and is well established. It is recommended that consideration be given to eradicating this weed. A less well known NAQS target weed *Striga angustifolia* had been recorded from West Island but could not be found. Coffee bush (*Leucaena leucocephala*) was found on Home Island from where it is recommended it be eradicated. The old quarantine station has 10 new grass weeds that are starting to spread out from its boundary. The Cocos Shire and Environment Australia are encouraging AQIS to control their spread.

Entomology

A total of 65 collections were made of insects either attacking crops, in fruit fly lure traps or in light traps. Only 1 NAQS target species, the coconut rhinoceros beetle (*Oryctes*

rhinoceros) and 2 NAQS non-targeted species, the Asian tiger mosquito (*Aedes albopictus*) and crazy ant (*Anoplolepis gracilipes*) were present. The latter 2 are regarded as important quarantine pests to mainland Australia because they would likely impact Australia's agriculture industries or human health should they become established there. (Crazy ant is present in Australia, but is believed to be confined to a limited area of Northern Territory). No *Culicoides* sp. or fruit flies were collected in the traps. The larvae of a species of pyralid moth were collected defoliating Siam weed (*Chromolaena odorata*) and may be a potential biocontrol agent for this weed.

Plant Pathology

Thirty-one suspected plant disease samples were collected from the Cocos (Keeling) Islands. Thirteen of the specimens have been positively identified, 14 identifications are pending and 4 samples were of indeterminate cause. None of the samples collected are believed to be of quarantine significance.

Quarantine

There is very little commercial horticulture on these islands but the accidental importation of pests, diseases and weeds, particularly from Christmas Island, would reduce the chance of one developing. The introduction of weeds would also threaten the ecology of these islands, especially Pulu Keeling National Park. Importation of fresh fruit and vegetables and personal affects from either Christmas Island or Perth should be subject to full quarantine inspection as some could have come from Java. This was not imposed on the survey team on their arrival at West Island. The quarantine procedure as regards the visiting yachts is in need of review. Siam weed poses a threat to both Christmas Island and in particular the mainland, as personal affects returning to the mainland could easily harbour Siam weed seed.

Christmas Island

The survey of this island was conducted between the 28 May and 3 June 2000.

Botany

A total of 55 collections were made on Christmas Island. For such a relatively small island, Christmas Island has a large number of NAQS target weeds. There are seven of these species, mile a minute (*Mikania micrantha*), fringed spider flower (*Cleome rutidosperma*), cow itch (*Mucuna pruriens*), lesser Malaysian stinkwort (*Paederia foetida*), *Piper aduncum*, erect tar vine (*Boerhavia erecta*) and amaranth (*Amaranthus dubius*). The worst of these are the mile a minute, stinking Malaysian stinkwort and cow itch. The Flora of Australia had listed all of the above as present on Christmas Island except erect tar vine that is a new record for the island. Siam weed was not seen on the island. There are three weed species on the island; Madras thorn (*Pithecellobium dulce*), *Cordia curassavica* and *Clausena excavata* that should be considered for inclusion on the NAQS weeds target list at its next revision. It is recommended that consideration be given to eradicating erect tar vine, cow itch, itch grass, physic nut, *Piper aduncum* and Madras thorn. Coffee bush is a serious weed on the island and consideration should be given to introducing biocontrol agents to reduce the prevalence of this weed.

Entomology

A collection of 73 species of insects attacking crops or in fruit fly lure or light traps was made on this island. Included amongst the collection were 5 NAQS targeted pests; papaya fruit fly (*Bactrocera papayae*), *B. albistrigata*, melon fly (*B. cucurbitae*), jackfruit fly (*B.*

umbrosa), and citrus black fly (*Aleurocanthus woglumi*). A further 5 non-targeted species, *Anoplolepis gracilipes*, *Amrasca devastans*, *Empoasca* sp., *Bactrocera arecae* and *Achatina fulica* are regarded as important quarantine pests to mainland Australia because they would likely impact agriculture industries or human health should they become established there. An undescribed species of *Culicoides* was collected in the light traps set near the poultry farm and at the Research Station. The larvae of a species of pyralid moth were collected defoliating the serious weed mile a minute (*Mikania micrantha*). Larvae of this species were successfully reared to adult and may have potential as a biocontrol agent for this weed.

Plant pathology

Forty suspected plant disease samples were collected. Thirty of the specimens have been positively identified, 8 are pending and 2 samples were of indeterminate cause. Four samples have been identified as citrus canker caused by the pathogen *Xanthomonas axonopodis* pv. *citri*. The pathogen is regarded as one of the most serious diseases of citrus and, although not a new record for the island, indicates that attempts to eradicate the disease after the original detection were unsuccessful. Hosts were widespread so eradication would be difficult. None of the other samples is suspected of being of quarantine significance.

Quarantine

Christmas Island has limited and, given the suite of recently imported pests, inadequate quarantine restrictions on the importation of fresh fruit and vegetables from Indonesia. This island still does not have some of the serious pests that are found in Indonesia so the situation could get worse. As a result, a pathway exists for many Indonesian fruit pests and some have indeed hitchhiked to Christmas Island, the principle of which is papaya fruit fly. The locals dislike the “dirty port” tag applied to the island by quarantine but this is largely a result of the importation of relatively cheap fruit from Indonesia. The Department of Territories and Regional Services would like to facilitate the development of a horticulture industry on the island but the pest situation has marginalised fruit growing as a possible development. If a horticulture industry were to be developed, we recommend that stringent quarantine restrictions be imposed to stop the importation of any more pests. The main pests would then have to be controlled or eradicated. This would be expensive and whether the Christmas Island community would be prepared to bear the cost is uncertain. Christmas Island also is at risk from Siam weed on the Cocos (Keeling) Islands and travellers from there to Christmas Is should be made aware of this and appropriate quarantine measures taken.