Government of Western Australia

ORDGUARD
REGIONAL BIOSECURITY PLAN

PERPETUAL DRAFT

OCTOBER 2005

AGRICULTURE PROTECTION BOARD OF WA

KPIA KIMBERLEY PRIMARY INDUSTRIES ASSOCIATION

FOREWORD

Joint strategies by government and growers are essential, as is the importance of defining clear roles for all parties involved. Clearly established cost sharing arrangements and planning for high-risk threats will enable a more effective and coordinated response when outbreaks or incidents do occur and, will also reduce the risk of them occurring.

This plan represents a new approach in Western Australia, with a regional area taking a leading role in assessing their biosecurity priorities and establishing risk reduction strategies. This plan will deal with specific details in relation to biological threats to the community in the Ord River Irrigation Area (ORIA).

The initial development of a regional biosecurity industry plan has been made possible through the commitment of growers and Department of Agriculture staff, who are dedicated to minimising the introduction, establishment and negative impacts of biological threats in the ORIA region. With the expansion of the plan other members of the broader community have also assisted in the plans development.

The ORIA community and associated industry members are encouraged to familiarise themselves with the actions in this plan, and adopt where possible, measures to protect the future of the ORIA Region.

on behalf of

KCPCC

CHAIRPERSON
ORDGUARD STEERING COMMITTEE AND
KUNUNURRA PEST CONTROL COMMITTEE

SIGNATORIES TO THE ORDGUARD BIOSECURITY PLAN

Community associations and government departments have read and endorsed the development of a regional biosecurity plan for the Ord region of Western Australia. All have agreed to take an active part implementing actions to improve the current and future well-being of the area.

on behalf of

KCPCC

Name: Lachlan Dobson
Title: Chairman, OrdGuard Steering Committee
Kununurra Pest Control Committee
Citrus Industry

on behalf of

Acting District Manager
Department of Agriculture
Kununurra

Name: Noel Wilson
Title: Acting District Manager,
Kununurra
Department of Agriculture

on behalf of

Ord Cucurbit Growers

Name: David Menzel
Title: Grower

Cucurbit Industry

Name: Rob Delane
Title: Executive Director
Biosecurity and Research Services
Department of Agriculture

on behalf of

Nursery Rep of KNIX

Name: Judy Fairclough
Title: Owner; Flametree Nursery
Nursery Industry

Name: Chris Richardson
Title: Chairman
Agriculture Protection Board

Kimberley Primary Industries Association Inc.

on behalf of

Name: David McKerrell
Title: Executive Officer
Kimberly Primary Industry Association

This list of signatories to be extended as associations and departments endorse the OrdGuard biosecurity plan.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

Factsheets - Regional biological pest threats

- Black sigatoka.
- Bananas scab moth
- Spiralling whitefly
- Branched broomrape
- Queensland fruit fly
- Horsetail
- Salvinia
- Water lettuce

Farmnote.

- 35/2004 Silverleaf whitefly *Bemisia tabaci* (Biotype B) with reference to related whiteflies in Western Australia.

Garden Note.

- 24 Control of Mediterranean fruit fly (Medfly) in Backyards.

Threat data sheets - Regional biological pest threats

- Fruit flies, member of genus *Bacrocera* and *Dacus*
- Black sigatoka.
- Banana scab moth
- Spiralling whitefly

Factsheets - National biological pest threats

- Banana bunchy top virus
- Moko disease
- Banana blood disease
- Panama disease
- Yellow nut sedge

Threat data sheets - National biological pest threats

- Banana bunchy top virus
- Moko disease
- Banana blood disease
- Panama disease

Farmnote

- 41/2003 Practical farm biosecurity advice for keeping the plant industries safe from biological threats.

Please note that the biosecurity plans are evolving documents and as such, there may be changes made or actions underway since the plan was printed.

Glossary of terms

Acronyms

APC	Agricultural Produce Commission
DAWA	Department of Agriculture Western Australian
DoE	Department of Environment
KPCC	Kununurra Pest Control Committee
KPIA	Kimberley Primary Industries Association
ORIA	Ord River Irrigation Area
PHA	Plant Health Australia
AQIS	Australian Quarantine and Inspection Service
NAQS	Northern Australian Quarantine Strategy
OCPPO	Office of the Chief Plant Protection Officer
GIMP	Generic Incident Management Plan
WA	Western Australia
WAQIS	Western Australian Quarantine Inspection Service
Qld	Queensland
NSW	New South Wales
SA	South Australia
Vic	Victoria
NT	Northern Territory
Tas	Tasmania

BACKGROUND OF THE ORD RIVER IRRIGATION AREA

The Kimberley region of Western Australia has traditionally been associated with cattle grazing as the main form of agriculture for the region. However, by 1958 the WA government was convinced of the viability of an irrigation project on the Ord River. Stage 1 of the project was completed in 1963 with the construction of the diversion dam plus irrigation and associated works and the development of the Kununurra townsite. By 1966, 31 farms had been allocated. The Ord River dam was opened in 1972 and a further 200 ha of land in the Packsaddle Plain was developed and five farms were released in 1974. The area of Stage 1 of the development currently under production is 11,774 ha.

The area nominated as Stage 2 of the irrigation area consists of an additional gross area of 64,000 ha, which is expected to yield approximately 43,000 ha of irrigated farmland.

Since 1963 a range of crops have been grown in the Ord River Irrigation Area (ORIA). Through the 1960's and until 1974 cotton was the mainstay of the region's agriculture. However, the pressure of chemical resistant insects and the removal of Government subsidies made cotton production uneconomical and production ceased in 1974.

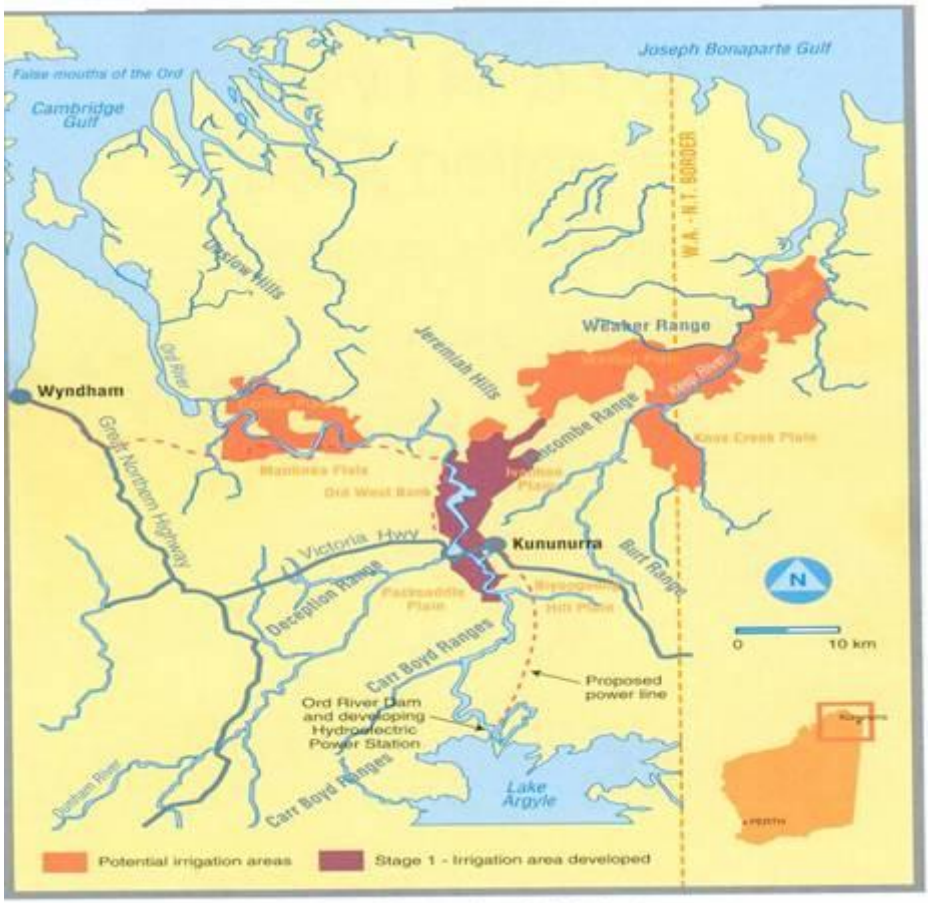
The first bananas were planted in 1968, and the first small-scale commercial plantings of mangoes, grapefruit and limes were also made at about the same time.

From the mid 1970s to the early 1980s field crops such as sorghum, sunflower, soybean, maize and rice, along with hybrid seed crops, peanuts and mung beans sustained the industry. In the early 1980s agricultural changes started to take place in the valleys and since 1985 this change has accelerated. Cucurbits (especially melons), bananas and mangoes are some of the main products now contributing to the economy in the ORIA. The main field crops grown are hybrid seed of sorghum, sunflower and maize.

Various problems have influenced crop production including insect and bird pests and a lack of suitable varieties for the environment. Sugar production has now been established using new milling technology and is a major crop of the area. Cotton is being re-examined as a potential crop for the area, using genetically modified cotton.

Successful development of the ORIA has relied on the production of high value commodities and diversity rather than a monoculture. The Ord is probably one of the most dynamic agricultural areas in Australia.

Additional background information on community development may be included by the community.



Map showing Kununurra, Wyndham, Lake Argyle and the irrigation areas

Map provided by the Department of Agriculture, Ord River Irrigation Area, Bulletin 4268 third edition 1993.

Background to biosecurity planning

OrdGuard, a regional bio-security plan was initiated by the agricultural sector in the Ord River region and the Department of Agriculture WA. (DAWA).

The plan has been developed in response to the fact that bio-security is a whole of community issue, and has now become *user pays.*

The irrigated agriculture industry as substantial stakeholders in bio-security have in the past, been charged with providing the majority of the funding required for bio-security.

Bio-security is a whole of community issue, and as such should be funded and managed by the community as a whole. To their credit, the Shire of Wynham / East Kimberley subscribe to this view and are raising $50,000 annually to assist in implementing and maintaining OrdGuard.

The OrdGuard Plan itself is a recognition of community support for bio-security, and outlines set procedures to be followed in the event of a bio-security incursion.

The OrdGuard Plan has been well received by industry, agencies and local government.

The plan has been developed in two parts:

1. ***Plan Development:***

This plan was in the concept / development phase from 2002 to 2005. At this time the Kununurra Pest Control Committee (KPCC) had taken up the responsibility to deal with all the biosecurity issues in the area, including raising funds for eradication programs, and developing and implementing the OrdGuard Biosecurity Plan

2. ***Plan Implementation:***

The plan was signed by all representatives on July 1st 2005 and the KPCC was replaced by a representative Board of Management drawn from the broader community to oversee the OrdGuard biosecurity plan, it is expected that the plan will be fully implemented over a longer period.

In October 2005 priority setting was undertaken by the Board of Management which included assigning responsibility for completing actions and determining the time frame required to implement the change.

The number of recent detection's of exotic plant pests in the Kimberley region is listed below:

Incident	Date
Apple Branch Rot	October 2005
Cane Toad	October 2004
Red rot of sugar cane	16 August 2004
Mango scab	28 July 2004
Mystery snail	16 July 2004
Tar spot of sorghum	31 March 2004
Brown rust of sugar cane	9 January 2004
Acacia nilotica	16 October 2003
Mediterranean fruit fly	10 July 2003
Coconut scale	8 July 2003
Sugarcane scale	8 July 2003
Melon Thrip	19 September 2001
Cane Toad	29 July 2001
Freckle	11 May 2001

PLAN OVERVIEW

Vision

To capitalise on community driven clean, green and biosecure ORIA for the present and future generations

Mission

To minimise the introduction, establishment and negative impact of biological threats in the ORIA region.

Aim/objectives

To keep the ORIA free of pests, diseases and weeds that pose a risk to the plant health and economy of the ORIA, by:

- Creating a regional biosecurity framework and operational structure to realise the vision.
- Clearly define tasks and allocate responsibilities.
- Provide training in key areas of pest incursion management.
- Enhancing awareness of regional biosecurity issues throughout the community.

Goals

- Action strategies to reduce further spread of established key pests, diseases and weeds
- Develop and implement programs to minimise the incursion of exotic pests, diseases and weeds.
- Monitor and manage the impact of established pests, disease and weeds.

Responsibilities

The whole community has a responsibility to play their part in ensuring that the area does not become infested with biological threats that would impact on agriculture, environment and economic health of the region.

Role of OrdGuard Board of Management

Management:

- The OrdGuard plan will be overseen by a Board of Management which will be a free standing sub-committee of the Kimberley Primary Industries Association (KPIA)
- The OrdGuard Board will comprise all Gazetted members of the Kununurra Crop Pest Control Committee, plus one Shire Council Representative, one DAWA Representative and KPIA Executive Officer.
- The OrdGuard Board of Management will have its own Bank account, and conduct its own independent financial activities under the Incorporation provided by KPIA.

Actions of the OrdGuard Committee:

1. To employ an appropriate person to develop a Community Education and Awareness program for the ORIA.
2. To raise and manage funds necessary to conduct the activities required to maintain the OrdGuard Plan.
3. Develop strategic alliances with industry, agency, indigenous and community bodies to support regional biosecurity through the OrdGuard Plan. *The need for across community representation has been identified, with considerable consultation having taken place, and considerable support forthcoming.* Group include:
    - Agriculture / Horticulture Industry Groups
    - Ord Catchment Reference Group comprising of:
        - Ord Land & Water
        - Ord Irrigation Co-op
        - Shire of Wyndham East Kimberley
        - Kimberley Land Council
        - DoE
        - DAWA
        - CALM
        - Water Corp.
        - LCDC – East Kimberly
        - CSIRO (Not represented in Kununurra)
    - Kununurra Tourist Information Centre
    - Kununurra Chamber of Commerce & Industry
    - Kununurra community members and organizations
4. In the event of an incursion: Co-ordinate an Incident Response Committee, who will assume responsibility for any eradication etc.
5. In the event of an incursion: Negotiate Cost Sharing arrangements with DAWA relative to:
    - Impact of the incursion on ORIA industry
    - Industry and community contributions spent on maintaining biosecurity

What is covered in the OrdGuard Biosecurity Plan?

This OrdGuard Regional Biosecurity Plan sets out how ORIA producers, members of the local community and the Western Australian Government, through government and other agencies, will cooperate to assess and respond to new pest, disease, weed, and chemical residue threats by prevention of entry, early detection and prompt incident response action to protect the economic health of the region.

REGIONAL BIOSECURITY PLANNING

Introduction

The Ord region has many unique features that include an isolated environment, which is relatively free of pests and diseases, proximity to Asian markets and a community with strong biosecurity concerns related to production, marketing, environment and well being of the region.

The OrdGuard plan has several advantages over existing industry biosecurity plans:

- A biosecurity plan for the region.
- Shared vision of all residents in the Ord valley.
- An opportunity to consult with all interest groups on biosecurity issues.
- Community involvement in effective surveillance for pest threats.
- Improved management of exotic pest incidents by effective community engagement.
- Action strategies for exotic pest incursion management at regional and farm levels.

Issues

A regional biosecurity plan will have additional concerns that must be addressed over an industry specific plan. Even though the ORIA is an isolated area with effective quarantine in place, there is still a chance that pests such as Mediterranean fruit fly will enter the area. The key issues that must be addressed by the OrdGuard Board of Management include:

- Determining funding allocation when dealing with industry pest threats that affect only one industry group.
- Communication and engagement of community in biosecurity issues.
- Considering a wider range of pest threats relevant to the region.
- Balancing contributions to the pest management fund by the various producer groups
- Establishing a framework to assess pests to determine a management, control or eradication response in the advent of an incursion.
- Considering market access issues when addressing control options for new pests in the region.
- The expansion of Ord Stage 2 across State and Territory borders and the implications for quarantine and produce movement.
- Tourism may contribute to biosecurity concerns by movement of people, produce and equipment from temperate and tropical areas.
- Introductions of pest threats from within the state that are absent from the ORIA.

Table 1. Summary of priority areas to be addressed by the OrdGuard Board of Management

The initial meeting of the OrdGuard Board of Management will be held to identify the priority areas of concern to the Ord Region.

Driving force	Area of concern	Key issues	Priority	Time Frame	Responsible Body
Process development	General	Develop a process for incident response activities.	Completed 2005	Completed 2005	Department of Agriculture
		Develop the process for reporting a new detection of a pest.	Completed 2005	Completed 2005	Department of Agriculture
		Employment and resources for the Executive Officer	Highest	December 2005	Board of Management
		Biosecurity policy for government agencies in Kimberly		November 2005	Executive Officer / Lachlan Dobson
	Surveillance	Develop a process for the identification of threats to the Ord region.	Ongoing	Ongoing	Board of Management on behalf of the community and Department of Agriculture to assist with technical and specialist advice
	Incident Response	Up to date contact list maintained	Ongoing	Completed 2005	Executive officer and DAWA.
		Media Spokesperson	Completed 2005	Completed 2005	Lachlan Dobson
		Trained Incident co-ordinator	Progressing		DAWA
Fund raising	• Fee for service	Disbanding the current APC levy in favour of other funding options.	Completed 2005	July 2005	Board of Management
		Equity between industries/community/ environment/local government/State government/Federal government.	Completed 2005	July 2005	Board of Management and Shire of Wyndham East Kimberly
	• Shire of Wyndham East Kimberly	Priority setting for the contribution of the Shire of Wyndham/East Kimberley.	Ongoing	November 2005	Board of Management and Shire of Wyndham East Kimberly
	• HAL	Application to HAL for specific projects	To be actioned	Before March	Executive Officer

		in biosecurity.		2006	
	• Envirofund	Next round of funding has not been identified.	To be actioned		Executive Officer
	• Regional Partnerships	Application for E.O position. 2 days per week for 2 years.	Application progressing	December 2005	Executive Officer
	• RIRDC	Application to RIRDC for specific projects in biosecurity.			Executive Officer
	• Kimberly NRM	Application to NRM for specific projects in biosecurity.			Executive Officer
	• CRC	Application for a PhD student to assess the biosecurity needs of the Kimberly.	Application progressing	February 2006	Lachlan Dobson
	• Agriculture Protection Board	Support funding for the OrdGuard biosecurity plan.		November 2005	Lachlan Dobson via ZCA
Biosecurity issues identified by the Committee	**Land**				
	Border Biosecurity	Silver leaf whitefly is present in Carnarvon and would impact upon melon production and marketing for the region if it were transported to the ORIA. Other quarantine pests to also be examined.	High	March / April 2006	Tim Croot
		Biosecurity signage on key roads and M1 channel.		December 2005	John Bucannan – Shire Judy Fairclough
	Surveillance	Awareness of pest issues maintained	High	Ongoing	Board of Management on behalf of the community and Department of Agriculture to assist with technical and specialist advice
		Resolve cost sharing in relation to surveillance, eradications and monitoring.	High	December 2005	Lachlan Dobson
			Medium		Board of Management on

					behalf of the community and Department of Agriculture
		Resource Centre for Biosecurity	Medium		Judy Fairclough
	Communications	Media articles as required			Executive Officer
		Biosecurity awareness package for new growers, to consider: 1. Biosecurity signage on farms 2. Surveillance kits for farming community. 3. General awareness information.	Low		Board of Management on behalf of the community and Department of Agriculture. Shire to notify OrdGuard of new growers.
		OrdGuard logo	Progressing	November 2005	Executive Officer
		Internet site for OrdGuard plan and list of key sites.	Medium	December 05	Executive Officer
		OrdGuard Launch	Medium	May 2006	Executive Officer
	Water and river systems	Water weed issues for major water ways and river systems.	Medium	Liaison ongoing with Ord Land & Water	Executive Officer
	Conservation/environment	Identification of biosecurity issues impact upon conservation values and activities.	Low	Liaison ongoing with NRM committees.	Executive Officer
	Town	Information distribution to tourist facilities and Charter operators travelling through ORIA	Highest. Information package to be developed	April 2006	David M to speak to OLW regarding date for discussions with tourists John Bucannan to speak to JJJ tours Lachlan Dobson / Noel Wilson to provide example information package.

		Backyard fruit trees. Annual media articles on control of fruit around town.	Low	Annual as required.	Executive Officer
		Additional fruit bins around town site	Low	December 2005. Fruit may be incorporated with Hospital waste.	Judy Fairclough
		Airport security. Issues of ease of access from the airport to be brought to airport attention	Medium	Completed 2005 Security to be upgraded and secure gates incorporated.	Judy Fairclough – Completed
	Cultural	Identification of biosecurity issues impact upon cultural values and activities.	Medium	June 2006	CRC student for Biosecurity. Executive Officer
	Chemical	Chemical movement in soil and water.	Low		OL&W to take primary responsibility. OrdGuard to keep informed of issues.

THREATS

A regional biosecurity plan has essentially a strong focus on the biological pest threats.

Biological threats

Insects, diseases and weeds are the main biological threats to the Ord Valley. It is likely that any list of priority threats developed by the committee will concentrate on these examples.

Biological threats are grouped into three categories:

- Endemic threats
- Regional threats
- National threats

Endemic threats are insects, diseases or weeds that are already present in an area and require action to be taken to reduce their impact, monitor their numbers or are under an area freedom protocol. A reference list of endemic pests of the Ord Region is included in Appendix 1.

Regional threats are those that are present in a part of Australia other than the area defined in the regional biosecurity plan. If these pests become established it is likely to result in a loss of area freedom for the region and growers may incur additional management or eradication costs if the pests were found. A reference list of the pests of regional significance for the Ord region is included in Appendix 2.

National threats are those that are not present in Australia and, if detected, would be the responsibility of Office of the Chief Plant Protection Officer (OCPPO). The OrdGuard Board of Management support the operations of OCPPO in relation to a national emergency response. A reference list of the threats of national significance for the Ord region is included in Appendix 3.

The OrdGuard Board of Management will asses the key threats to the region as they are identified. Future work will involve setting priorities and risk reduction strategies. The development of generic threat contingency plans will be a high priority.

Chemical threats

Agricultural chemicals have a number of potentially adverse effects on the production and marketing of viticultural products and should be considered in any plan that aims to ensure continued production of safe produce.

The impacts include:

- Chemical residues in produce may limit market access.
- Chemicals used in management of pests may become unavailable for a variety of reasons, necessitating the development and registration of new products.
- Chemical resistance may develop in target pests, and management strategies to prevent resistance development are essential.
- Chemical spills associated with industry may have a secondary effect on biosecurity.
- Movement of agricultural chemicals into the Ord River.
- Pests developing chemical resistance.

Equally important, flood irrigation of agricultural areas results in pesticide movement through the soil. Over a period of time the accumulated build-up in the horticultural basin can cause considerable damage. The KPCC may consider monitoring and developing management strategies for this future risk.

There are local concerns regarding chemical use in the ORIA after fish kills in the Dunham river were reported from the use of endosulphan. There is a need to ensure that these chemicals are used properly. There is a local code of practice for the use of endosulphan in ORIA.

The code of conduct for use of endosulphan in the ORIA is listed in Appendix 6.

For all information regarding chemical registration and residue levels contact the responsible authority the Australian Pesticides and Veterinary Medicines Authority (NRA). Contact details: Telephone: (02) 6272 5158 or through their website at: http//www.apvma.gov.au.

Seek advice from the Department of Agriculture Plant Research and Development Services on what alternative chemicals or strategies can be used for controlling the pest or disease.

Table 2. Outcomes and agreed actions

Outcome	Responsible body	Time frame
Issues related to chemical threats are the responsibility of Ord Land & Water. OrdGuard to keep themselves informed of possible biosecurity issues.	Ord and & Water	Completed

FUND RAISING

The OrdGuard Board of Management must decide on a suitable fund raising mechanism that address the need of the community and ensure equity between the community groups.

Fund raising issues

The OrdGuard Management Committee will address funding issues.

The following funding applications have been undertaken by the OrdGuard Steering Committee:

1. ***Shire of Wyndham / East Kimberley:*** for community awareness $50,000 *received*
2. ***Horticulture Australia Limited (HAL):*** to fund specific projects for biosecurity.
3. ***Application to Envirofund:*** to develop an eduction and awareness campaign for the community.
4. ***Kimberley ACC Regional Partnerships Program:*** fund the services of an Executive Officer.
5. ***Application to RIRDC:*** to fund specific research projects in biosecurity.
6. ***Kimberley NRM Group of the Rangelands NRM:*** to fund specific projects for biosecurity.
7. ***Application to the CRC for Biosecurity :*** to engage a PhD student (Charles Darwin Uni) to develop and implement the education and awareness campaign.
8. ***Agriculture Protection Board (APB):*** to provide support funding for the OrdGuard Biosecurity Plan.

Fee for service

An example of a fund raising mechanism is the Agricultural Produce Commission Act. Contact details are included below.

The Agricultural Produce Commission Act (APC) was set up in 1988 to provide Australian agricultural producers with the legal framework to collect funds to develop their industry.

Details of the APC can be found at web-site: www.apcwa.org.au

For more information please email: apc@agric.wa.gov.au

Max Crake
Executive Officer
Department of Agriculture
Sort Bin 3
3 Baron Hay Court
SOUTH PERTH WA 6151

Lyn Scantlebury
Finance Officer
Department of Agriculture
Sort Bin 24
3 Baron Hay Court
SOUTH PERTH WA 6151

Table 3. Outcomes and agreed actions

Desired outcomes	Actions.	Responsible party	Time frame
The OrdGuard Board of Management must decide on a suitable fund rasing mechanism that address the need of the community and ensure equity between the community groups.	Arrange a workshop of all stakeholders to establish a formula for financial support	OrdGuard Board of Management and community	Completed October 2005
OrdGuard Board of Management to resolve use of Shire funds	OrdGuard Board of Management to attend Shire meeting and resolve.	Lachlan Dobson, David Menzel, Tim Croot and David McKerrell to discuss with the Shire of Wyndham East Kimberly	December 2005
Funding opportunities	Applications for funding to be addressed as they become available	Executive Officer	Update on progress, December 2005

BORDER BIOSECURITY

Border biosecurity involves national (between countries), State (between States) regional (within State) and farm level. The first two are subject to various international and national protocols and agreements that spell out where, when and how restrictions may be imposed.

There is a need for identifying further measures to reduce the risk of incursions at the borders of the ORIA. For example, better biosecurity measures at post office and freight companies, reduction in the risk of incursions from the south of the State.

Community biosecurity is seen as having the potential to be highly effective as entry pathways are limited and the grower can exert direct control. Good on-farm biosecurity, which includes early reporting of unusual pests and diseases, can prevent or greatly reduce the risk of pests and diseases establishing on the property. Examples of this include Clubroot disease of the Cauliflower industry. In this instance, growers through good farm biosecurity practice, have restricted the disease spread for more than a decade.

Farm biosecurity / hygiene.

General

- The greatest risk of spreading pests and diseases is when people, machinery and equipment move from farm to farm and region to region.
- It is the responsibility of the owner/manager to ensure biosecurity standards are undertaken on the property to reduce individual property risk.
- Each property to undertake a biosecurity/quarantine education and training program for their employees and related personnel.
- Each property to undertake an effective monitoring / pest management program.
- Each property to erect informative signs at the entrance of the property which outlines basic biosecurity requirements. (See Appendix 5.)
- Each property to report suspect plants/pests to Department of Agriculture for identification.
- Vehicle movement around the farm to be kept to a minimum (especially when the soil is wet).
- Include farm biosecurity in quality assurance systems.

People movement

- All persons entering the property should have a clear view of the informative signs to the entrance of the property which outline the property's basic biosecurity requirements (e.g. not to wander through crops without prior approval).
- All visitors, including consultants, entering the property should report directly to the office on arrival.
- All visitors to the farm should park their cars in an area designated specific for this purpose.
- All employees should have a designated parking area.

- All employees should be transported around the farm in vehicles based permanently on the property.
- All visitors and employees should be made aware of the importance of ensuring their footwear and clothing are free from any 'loose' dirt and vegetable matter if they have been amongst the plants before leaving the property.
- All properties should provide wash down facilities (e.g. scrubbing brushes and footbaths) for persons entering or exiting the property.
- The water and soil from this wash down facility should not go into the cultivated land or the irrigation water supply, but away from the cultivated land and irrigation water supply.

Machinery and equipment

Any machinery or equipment entering the State must be free from soil and plant material. It will be subject to inspection on arrival.

- All equipment and tools used on farm should be washed down with high pressure to remove soil and vegetative matter on a concrete or tarmac pad before the truck leaves the property. If there is no wash down facility on the property then it should be in close proximity to the property and definitely within the region from where the machinery and equipment is being moved.
- All farm owners / managers should visually inspect machinery and equipment before it comes onto their property to ensure it is in accordance with their hygiene standards. Access should be denied otherwise.

Table 4. Desired outcomes and agreed actions

Desired outcome	Actions	Responsible body	Time frame
Provide information to the community on biosecurity issues.	• All tourist outlets to have a package of information which outlines biosecurity responsibilities that is provided to all visitors. • Letter to charter operators asking that fruit restrictions be respected and that suspect fruit be disposed of before entering the ORIA	David Menzel Contact OL&W over date of community meeting. John Bucannan Lachlan Dobson & Noel Wilson Information package	March 2006 Update Dec 2005 Update Dec 2005. Completed April 2006
	• Letter to Government Departments informing them of the OrdGuard Plan and asking for information on biosecurity policy in the ORIA.	Executive Officer	December 2005
	• Additional fruit bins to be provided around town for the collection of suspect fruit.	Judy Fairclough. Incorporate fruit with Hospital waste	Update December 2005
	• Signage to be in place on key roads and irrigation channels asking visitors to respect biosecurity in the ORIA. 1. Ivanhoe Rd 2. Webber Plains Rd 3. Packsaddle Rd 4. Fish farm Rd 5. M1 Irrigation channel	John Bucannan Shire. Judy Fairclough	Update December 2005
Farm biosecurity information package:	• 50% of farms within 12 months • 90% of farms within 36 months.	Farming Community	Ongoing
Border controls / quarantine issues	• Review quarantine requirements for Silverleaf whitefly and other pests to prevent entry to the ORIA.	Tim Croot	March / April 2006

SURVEILLANCE

Surveillance to allow early detection of pests, diseases and weeds is important. In almost all cases, the earlier threats are detected the more likely eradication will be a cost-effective option. Once threats become established and have commenced spreading it is often not technically feasible to eradicate, or cost effective to do so. Surveillance is also used to maintain access to markets through area freedoms as required by other states or countries.

Surveillance can be targeted or non-targeted:

Non-targeted surveillance

In many instances good surveillance is based on growers and community members reporting symptoms at an early stage that are unusual. A sample should be submitted to the Department of Agriculture for identification. The Department has sample kits available which includes an accompanying form to enable growers to send samples free of charge.

Targeted surveillance

Targeted surveillance is an early warning system that is based on the targeting a specific threat. For example, Medfly traps may be used to attract flies to detect the level of infestation well in advance.

Another approach is to sample for disease at certain times of the year when it is most active. Samples can be sent to the Department's laboratory to confirm the presence of the disease.

Targeted surveillance requires the availability of adequate resources and funding. However, it is cost effective if a pest or disease can be detected early and reduce the cost of eradication activities.

Surveillance that is currently undertaken in the irrigation area is as follows:

- Medfly: A surveillance grid throughout the town and irrigation area to AQIS standards provides area freedom for Mediterranean fruit fly. This allows produce to be marketed in all states of Australia and New Zealand without treatment.
- Melon thrip: Monthly surveys and trial work is being carried out to provide data for some of the market access issues involved with this pest.
- Monitoring for exotic fruit fly throughout the irrigation area and in Wyndham.

Other surveillance carried out:

- Northern Australian Quarantine Strategy carries out two surveys of the Irrigation Area per year. A botanist, entomologist, and plant pathologist survey the region after the wet season and during the dry season for exotic plants, pests and diseases.
- Monitoring for *Rattus villossimus*, a native rat, in the irrigation area as an early warning of build up of this pest.
- Monitoring of the heliothis insect population throughout the irrigation area allows management decisions to control this pest.

The community plays a very important part of the non-targeted surveillance programs as they can regularly check their crops for signs of ill-health. Growers will also provide valuable input into targeted surveillance programs.

Surveillance participants

Industry representative group

- Implement surveillance on commercial properties.
- Liase with government departments.
- Report any suspect threats.
- Provide records of on-farm surveillance.
- Co-ordinate grower surveillance.
- Fund commercial surveillance activities.
- Develop with Department of Agriculture awareness, communication, training and extension programs.
- Carry out training.

Agri-business

- Distribute extension materials.
- Assist with training program.
- Act as receival points for suspect samples.
- Supply surveillance equipment(e.g. traps).
- Provide basic diagnostic service.

Growers

- Implement surveillance on properties where possible.
- Report any suspect threats.
- Provide records of on-farm surveillance.
- Attend training.
- Provide awareness and training to staff.
- Co-operate with Department of Agriculture and Industry surveillance requirements.
- Provide training to staff.
- Ensure identification material and sampling kit available for staff.

Government departments

- Planning surveillance systems.
- Co-ordination with industry and interstate.
- Providing diagnostic service (laboratory).
- Provide diagnostic field team for special field surveillance.
- Carry out surveillance of non-commercial sites.

- Co-ordinate surveillance equipment (e.g. traps).
- Liaise with industry.
- Audit surveillance systems.
- Fund planning, auditing and non-commercial surveillance.
- Develop communication, training and extension strategies with industry.
- Carry out training.
- Report to all interested parties (Australian Quarantine Inspection Service, national bodies, trading partners and industry).

Table 5. Desired outcomes and agreed actions

Desired outcome	Actions	Responsible body	Time frame
OrdGuard Board of Management to determine surveillance priorities in consultation with government departments and the community.	Maintain awareness of pest issues.	OrdGuard Board of Management and community.	Ongoing. Issues to be addressed as they arise.
Negotiation between the OrdGuard Board of Management and the Department of Agriculture on cost sharing in relation to surveillance.	OrdGuard Board of Management to write to Executive officer for Biosecurity and Research (Rob Delane) and liaise with DAWA	Lachlan Dobson.	December 2005
All primary producers to be provided with a surveillance kit from AGWEST plant labs and a letter asking producers to report any suspect pests for identification.	• Mailing list of producers to be identified.	Executive Officer	December 2005
	• Letter to be written from OrdGuard asking growers to report suspect pests.	Executive Officer	December 2005
	• DAWA, Agwest plant labs to consider a single report form for the Kimberly and reporting mechanism on pests identified.	DAWA – Andrew Reeves to contact AGWEST plant labs	December 2005
Resource centre for Biosecurity	• Biosecurity resources be identified and obtained for the community.	Judy Fairclough	Update December 2005

INCIDENT REPONSE

Introduction

The Department of Agriculture's Generic Incident Management Plan (GIMP) details the actions that need to occur following the detection of an exotic threat. The Department of Agriculture will manage the incident definition phase in consultation with industry. The Department's Emergency Response Plan defines the processes and procedures required and includes the agenda of the first incident meeting, procedures that will be followed by departmental staff, specifies communication systems and the addresses the redirection of the department's resources during an incident. The plan has been tested on real incursions over several years. Departmental staff are experienced in making the plan work efficiently and effectively.

The Department's GIMP has been refined over many incidents and is also linked to the various Industry Biosecurity Plans that have been developed for most of the State's major plant and animal industries.

Issues to be considered

Once the Department of Agriculture declares an incident an Incident Committee is formed consisting of key industry representatives and the Department's specialists. The committee meets as soon as practical after a serious threat has been confirmed. The committee's role is to utilise the best information available at the time to make decisions regarding the actions required.

While the Department of Agriculture will co-ordinate the incident definition phase, every grower and industry manager has a role during this phase. Figure 1 outlines the responsibilities and decision flow that occurs.

A survey is often required to quickly establish the extent of the infestation. This information is critical in making decisions regarding future actions.

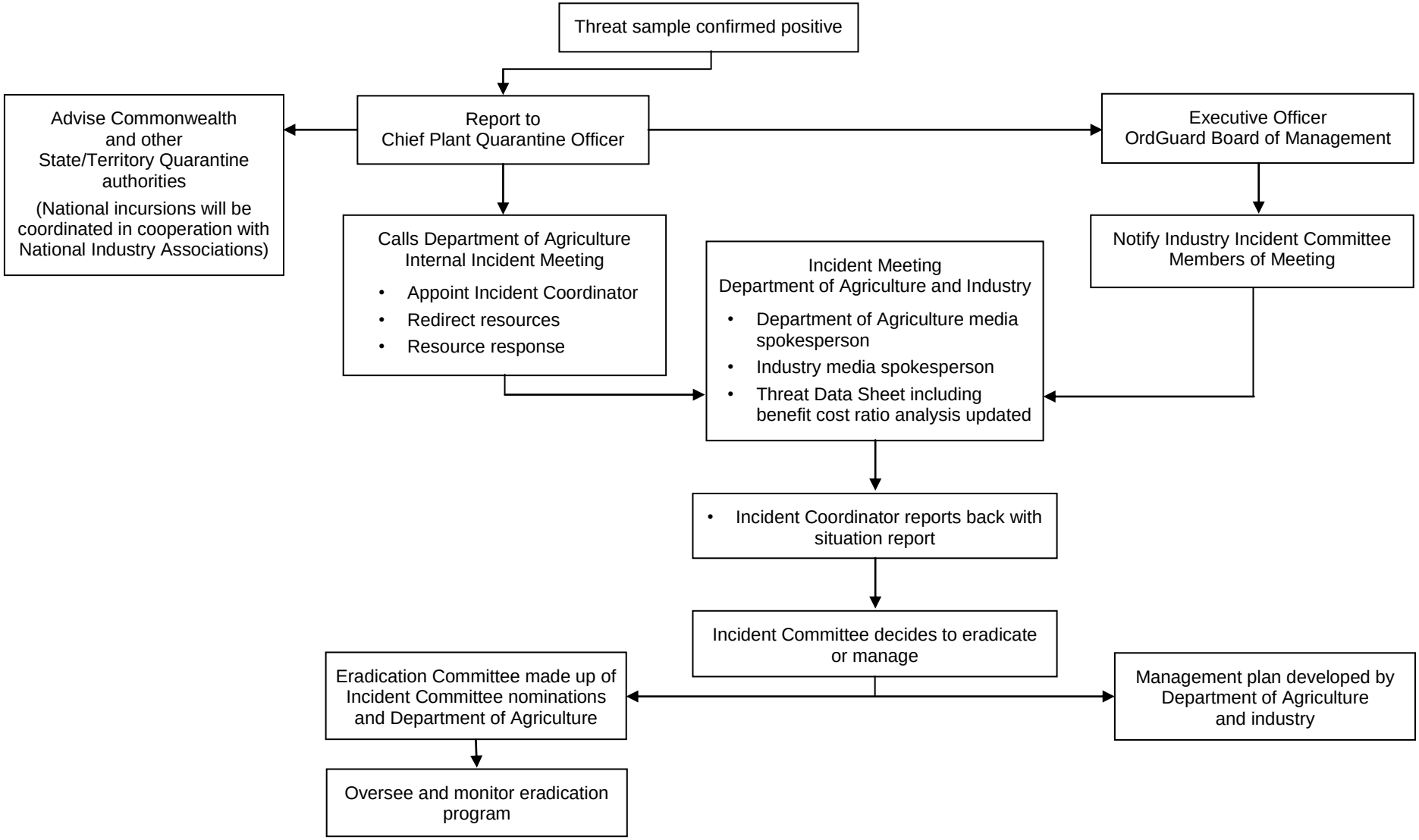
Experience with previous threat incursion responses has demonstrated the need for a single point of contact within the industry to facilitate effective communication flow between industry and the Department of Agriculture.

An industry media spokesperson is needed who can work in conjunction with the Department of Agriculture's media staff during major incidents.

A key issue requiring advance consideration is industry membership of initial incident meetings and the subsequent eradication committee. Developing an incident definition response plan was seen as an effective strategy to improve incident response efficiency. The industry's incident response plan should be integrated with the existing Department of Agriculture incident definition response plan.

The Department has provided training to specific staff in incident response management and through GrainGuard and HortGuard™ is also providing the opportunity for industry representatives to receive similar training.

An industry contact person must be identified in the ORIA Plan to enable the Department to notify industry promptly when an incident occurs and initiate a response plan.


Threat sample confirmed positive
Report to
Chief Plant Quarantine Officer
Advise Commonwealth
and other
State/Territory Quarantine
authorities
(National incursions will be coordinated in cooperation with National Industry Associations)
Executive Officer
OrdGuard Board of Management
Calls Department of Agriculture
Internal Incident Meeting
• Appoint Incident Coordinator
• Redirect resources
• Resource response
Notify Industry Incident Committee
Members of Meeting
Incident Meeting
Department of Agriculture and Industry
• Department of Agriculture media spokesperson
• Industry media spokesperson
• Threat Data Sheet including benefit cost ratio analysis updated
• Incident Coordinator reports back with situation report
Incident Committee decides to eradicate or manage
Eradication Committee made up of Incident Committee nominations and Department of Agriculture
Management plan developed by Department of Agriculture and industry
Oversee and monitor eradication program

First contact for industry in ORIA

The first point of contact for an incident in the Kununurra area is the Executive Officer of the OrdGuard Board of Management.

Name:	David McKerrell
Business phone:	(08) 9168 116
Mobile phone:	0427 401 459
Fax:	(08) 9168 1199
E-mail:	kimpia@bigpond.com
Postal address:	PO Box 1520 KUNUNURRA WA 6743

The current membership of this OrdGuard Management Committee is as follows:

Chairman:	Lachlan Dobson
Business phone:	(08) 9168 2022
Mobile phone:	0417 174 763
Fax:	(08) 9168 2251
E-mail:	kimproduce@bigpond.com
Postal address:	Weero Rd PO Box 1231 KUNUNURRA WA 6743

Secretary:	Vacant
Business phone:	
Mobile phone:	
Fax:	
E-mail:	
Postal address:	

Member:	David Menzel
Business phone:	(08) 9169 1386
Mobile phone:	0409 691 386
Fax:	
E-mail:	barradale@win.com.au
Postal address:	C/- Box 350 Weaber Plain Road KUNUNURRA WA 6743

Member:	Judy Fairclough
Business phone:	(08) 9168 1067
Mobile phone:	
Fax:	(08) 9168 2612
E-mail:	flametree@javelins.net / flametree@westnet.com.au
Postal address:	211 Riverfarm Road PO Box 269 KUNUNURRA WA 6743

Member:	Steffi Eppler
Business phone:	(08) 9168 1613
Mobile phone:	
Fax:	
E-mail:	ceres@wn.com.au
Postal address:	

Member:	Kirsten Stoldt
Business phone:	(08) 9168 2177
Mobile phone:	
Fax:	
E-mail:	blueysoutbackfarm@bigpond.com
Postal address:	

Member:	Tim Croot
Business phone:	9168 1520
Mobile phone:	0409 691 365
Fax:	
E-mail:	p.m.services@bigpond.com
Postal address:	

The KPIA will provide administrative support to the OrdGuard Board of Management.

The first point of contact in case of an incursion is the President and Regional/District Manager of each association and government department in the Kununurra. An example list is outlined below:

Department of Agriculture

District Manager:	Noel Wilson
Business phone:	(08) 9166 4000
Mobile phone:	0429 105 336
Fax:	(08) 9166 4066
E-mail:	nwilson@agric.wa.gov.au
Postal address:	PO Box 19 KUNUNURRA WA 6743

Horticulture industry:	Lachlan Dobson
Business phone:	(08) 9168 2022
Mobile phone:	
Fax:	(08) 9168 2251
E-mail:	kimproduce@ bigpond.com
Postal address:	PO Box 1231 KUNUNURRA WA 6743

Tourism:	Kununurra Tourism Centre – General Manager, Peter Grigg
Business phone:	(08) 9168 1177
Mobile phone:	0409 681 177
Fax:	
E-mail:	kununurratb@bigpond.com
Postal address:	

CALM:	Regional Manager, Gae MacKay	
Business phone:	(08) 9168 4205	
Mobile phone:	0418 919 384	
Fax:	(08) 9168 2179	
E-mail:	gaem@calm.wa.gov.au	
Postal address:	Lot 248 Ivanhoe Road KUNUNURRA WA 6743	PO Box 942 KUNUNURRA WA 6743

The Industry Incident Committee may decide to include other representatives depending upon the particular incident.

Incident Committee

Role

The Incident Committee will operate from the time of the incursion up to and including the decision to move to eradication or management. In the case of eradication, it will form an eradication committee to oversee the eradication program.

Arrange Incident Committee meeting

The chair of the OrdGuard Board of Management and the Chief Plant Quarantine Officer will arrange an Incident Committee meeting by notifying the Incident Committee and government representatives respectively, by phone, fax or email as soon as practical.

Agenda and confidentiality

The Department of Agriculture will initiate the Incident Response Plan that lays out the agenda and membership of this meeting.

Confidentiality is important until the first incident meeting is held and a briefing of the actual nature of the incident is known along with decisions regarding media releases. This prevents speculation and undue alarm by orchardists and the public.

Other actions

The Chief Plant Quarantine Officer may initiate an economic impact assessment. This will provide background to any cost sharing negotiations.

The community may engage an independent consultant to review the economic impact assessment conducted by the department by contacting the Manager of Economics and Marketing in the Department of Agriculture (Ph: 9368 3333) who will assist the community to find consultants with the necessary skills for the task.

Communication between industry and government

The relevant community and government bodies will be given 5 days in which to check their crops and report suspect finds of the threat and report to the Department of Agriculture.

The chairperson, OrdGuard Board of Management will arrange for a Situation Report to be sent out by fax or e-mail to presidents of all relevant associations known to the chairperson and government representatives.

The Incident Committee members will make decisions on behalf of the community based on the information available to them at that time.

A final decision on any issue lies with the Incident Committee.

Community media spokesperson

The chairperson, OrdGuard Board of Management is the single point of contact between community and the media, unless someone else is appointed by the Incident Committee.

Media strategy by industry

The media spokesperson, in liaison with the Department of Agriculture media liaison officer for the incident and the Incident Committee will determine the media strategy for the particular incident.

Table 9 lists the desired outcomes and agreed actions relating to incident response.

Table 6. Outcomes and agreed actions

Desire outcome	Actions	Responsible body	Time frame
Up-to-date community contact list for incident response	Contact list maintained	OrdGuard Board of Management.	Ongoing
Media spokesperson identified	Spokesperson identified	Lachlan Dobson.	Completed 2005
Staff trained in region as Incident Coordinator	Training under PLANTPLAN provided	Department of Agriculture	Ongoing. Will be provided as modules become available.

Funding for incident response in place	Funding mechanism in place	OrdGuard Board of Management.	**Completed.** APC in place and may be activated if required.
Negotiation between the OrdGuard Management Committee and the Department of Agriculture on cost sharing in relation to incursions	Letter to be sent from OrdGuard to DAWA on cost sharing for surveillance / incursions / monitoring.	Lachlan Dobson.	December 2005

CONTAINMENT, ERADICATION AND MANAGEMENT

Decision making criteria

Once a threat is detected and a survey carried out to establish the extent of spread, the incident committee needs to make a decision regarding eradication or management. The questions to be asked and answered are:

Is it technically feasible to eradicate?

If not, then threat management is the only option.

Is it economically justifiable?

Is the cost of eradication greater than managing/controlling the threat?

If the management cost is less, than it would normally be advisable not to proceed to eradication.

Is the community able to raise funds to support the eradication and if so how much?

Even if it is technically feasible and economically justifiable, the costs involved and disruption to other enterprises may still put eradication out of reach from a practical perspective.

The community may decide that they would prefer to live with the threat than contribute to the cost of eradication. Eradication costs may include compensating for loss, as well as helping to resource the eradication campaign itself.

ORIA producers will need to consider the fund raising mechanisms available for response and recovery after an incident outbreak. Some options are outlined below for consideration.

Triggers and limits

Criteria are required so that growers and the Department are aware of the **trigger** to commence an eradication response and the **limit** at which it becomes uneconomic to continue eradication activities. Triggers and limits criteria will assist the decision making process when an incident occurs. An informed decision based on previously agreed to criteria increases the chance of success during eradication or the application of management strategies.

The pests and diseases which most concern industry are those that:

- are difficult and/or expensive to control,
- cause large reduction in yield and quality, and
- prevent market access.

To achieve the optimal level of investment in protection growers, industry and government should only invest in a protection activity where it is economically justified.

Risk assessment can indicate those threats which pose the highest expected cost (probability x consequences). Cost benefit analysis and economic impact assessments can point to the level of response activities that may be justified. The Department can provide a cost benefit analysis and similarly, industry may wish to arrange for an independent crop/market loss assessment and determine the level of industry support for impacted growers.

Actions

Eradication Committee

The Eradication Committee will be required to deal with issues pertaining to finance along with physical and human resources. These include the following matters.

Budget and costs

Review the budget and costs of the program as it proceeds.

Arrange access to resources through local authorities, other government agencies and determine issues in relation to in kind support, cost sharing etc.

Deal with issues regarding funding and resourcing of the program to completion, including when and where payments will be made.

Loss assessment and support

Arrange for crop losses to be independently assessment by:

- A respected grower from another region; and
- A person from the Department of Agriculture's industry project.

Counselling

Financial and psychological support is available to growers and other directly affected people.

Engage a counselling service by contacting:

Rural Counseling Liaison Officer
Department of Agriculture
Tel: 9368 3160
Fax: 9367 4265

Community support

OrdGuard management committee to develop an community policy for support, example:

"Ideally, no member of the community shall be better or worse off as a result of the incident and support received"

Table 7. Outcomes and agreed actions

Desired outcome	Actions	Responsible body	Time frame
Criteria established to identify which threats to react to	No criteria to be set. OrdGuard committee wish to be notified of any threats.	OrdGuard Management Committee	**Not Required**
Trigger (start) and limits (stop) set out for eradication	No trigger or limits to be set. Ord-Guard committee wish to be notified of any incidents.	OrdGuard Management Committee	**Not Required**
Industry funding mechanism in place	APC levy set to nil until eradication required.	OrdGuard Management Committee	**Competed.**
Incident coordinator trained and available	HortGuard Co-ordinator or nominated staff.	Department of Agriculture	**Completed**
Negotiation between the OrdGuard Management Committee and the Department of Agriculture on cost sharing in relation to eradications	Letter to be sent from OrdGuard to DAWA on cost sharing for surveillance / incursions / monitoring.	Lachlan Dobson.	December 2005

RESEARCH AND DEVELOPMENT

In many instances, research may be the best approach to limiting the impact of threats and should be pro-active rather than reactive. Resistant varieties, early warning/detection surveillance systems, economic evaluation to assist decision making, new management and control techniques will reduce the impact of threats, often to manageable levels. Hence the community should look out for areas of research that will potentially provide large benefits.

Criteria to determine which research projects will be supported would be a useful tool to allow community to determine if the project should be supported or not.

Current work being carried out:

- Resistant varieties to sugar smut.
- The production of sterile Medfly for eradication programs.
- Trapping techniques for insect surveillance.
- Cane Toad management strategy.

Following industry's determination of priorities and beneficiaries, funds for research and development will be investigated.

Table 8. Outcomes and agreed actions

Outcome	Actions	Responsible body	Time frame
Monitor research interstate and overseas for benefits to the ORIA	Existing research to be identified.	Department of Agriculture and OrdGuard Board of Management	Ongoing
Establish a set of criteria for research projects that will be supported	OrdGuard is not a position for fund research projects with $, but may be able to contribute supervision or in kind support.	OrdGuard Board of Management	Ongoing.
Industry to identify key biosecurity research projects annually and pursue funding opportunities as they are available	Funding to be actively sought for OrdGuard	OrdGuard Board of Management / Executive officer	Ongoing

COMMUNICATION AND TRAINING

Communication and education is an important component of the OrdGuard Biosecurity Plan. A collaborative effort is required by community and the government to educate producers and the wider community about the importance of protecting the Ord River Irrigation Area from the introduction of pests, weeds and diseases. A simple act, such as carrying fruit from interstate in your luggage, can place at risk the biosecurity health of the region and impact upon the production and marketability of produce and the environment.

The following is a summary of the areas considered by the planning group when developing the present plan.

General

- The communication methods adopted should aim to address various sections of the industry and public (e.g. tourists, seasonal workers, full time employees, managers, owners, machinery and equipment suppliers, consultants, contractors, government employees and the general public).
- An education/awareness campaign needs to be designed and implemented and managed.
- All methods of communication should have a clear message, be timely and include coloured photographs (where appropriate).

Persons entering the Ord River Irrigation Area

- The community must pay attention to quarantine requirements when entering the region.
- Farming enterprises are a special case and each farm should erect informative signs at the property entrance to outline their biosecurity requirements. This includes; staff and visitors must park in designated areas; require visitors to report to the main house or shed and all machinery and equipment used elsewhere must be cleaned before use. The sign could explain why such measures are important (e.g. to ensure hygiene standards are met and incursions minimised). A sample farm gate sign appears in Appendix 5.
- Keep the public informed about specific threats through regular and timely media announcements.

Persons employed and associated in the industry

- Brochures/posters should be distributed to all farms and private businesses associated with the Ord River Irrigation Area to identify the basic biosecurity standards. The standards are best drawn up by a plant pathologist/ entomologist with industry input.
- Government and the ORIA horticulture industry should provide biosecurity displays at field days.
- All farm sheds should have posters and brochures outlining the farm's biosecurity standards.
- All farm staff should have access to an identification guide of key pests, diseases and weeds. This guide should have clear photos with life-size dimensions of 'normal' pests, as well as pests that may have quarantine implications.

- All tourist and accommodation operations should have access to an identification material.

Training

Each government department is responsible for providing its staff with biosecurity awareness and training. Training industry employees is primarily industry's responsibility, with departments providing direction and expertise, if required.

INDUSTRY

Owners/managers/permanent employees

- All personnel should to be trained and familiar with the key threats in the OrdGuard Plan.
- All employees require a protocol outlining the expected biosecurity standards when entering or exiting a property.

Casual employees

- Each farm should train casual employees on how to record and report suspect samples.
- Each property should undertake training in farm biosecurity standards.

Consultants

- All industry consultants should be aware of the threats of concern to OrdGuard.
- All industry consultants should know how to record and report suspect samples.
- All industry consultants require a farm visit protocol and training on the expected biosecurity standards when entering or exiting a property or region.

Contractors

- All contractors on properties in the Ord Irrigation Area need to be aware of the key threats in the OrdGuard Plan.
- All contractors require a farm visit protocol and training on the expected biosecurity standards when entering or exiting a property or region.

Machinery and equipment suppliers

- All machinery and equipment suppliers should be aware of the threats of the key threats in the OrdGuard Plan.
- All machinery and equipment suppliers to the industry require a farm visit protocol training on the expected biosecurity standards when entering or exiting a property or region.

Government departments

- All government field staff should be made aware of the key threats in the OrdGuard Plan and assist by reporting any suspect finds.
- All local government officers require a general understanding of how the Ord horticulture industry functions, the 'high risk' times for incursions and an understanding of the 'Incident (Emergency) Management Plan'.

- Government staff that enter a property need to respect farm biosecurity provisions where appropriate and lead by example about how to apply biosecurity measures.

Table 9. Outcomes and agreed actions

Desired outcome	Action	Responsible body	Time frame
Media articles on key issues identified by the Committee to raise community awareness.	Media opportunities to promote OrdGuard to be actioned where ever possible.	Executive officer	Ongoing
Develop a biosecurity awareness information pack for new growers to the ORIA.	Existing biosecurity information to be collated and provided to new growers.	OrdGuard Board of Management and Department of Agriculture	December 2005
Logo for OrdGuard to be developed.	Local business (Liz Manera) to be contacted for design	Executive Officer	November 2005
Establish an internet site where the OrdGuard plan is available and a list of key internet sites, e.g. Plant Health Australia, HortGuard, AQIS, etc.	Executive officer to establish internet site via KPIA.	Executive Officer	December 2005
Launch of OrdGuard Biosecurity Plan	Launch of OrdGuard plan to be co-ordinated.	Executive Officer	May 2006

APPENDIX 1. KEY ISSUES FOR THE ORIA OF WESTERN AUSTRALIA

The OrdGuard Management Committee will identify a short list (6) of the established land threats considered to be of highest importance to the Ord River Irrigation Area.

'Land threats' refers to pest organisms and chemical issues in the ORIA region of Western Australia.

EXAMPLE: *(Threats selected by the community as top threats)*

Common name	Scientific name	Issue - land	Action
Native rats	*Rattus villossimus*	If numbers increase due to ideal conditions provided, extensive damage to crops can occur	Trapping carried out to monitor rat numbers Trials carried out for best control
Native birds Magpie Geese, etc.		Large numbers of birds cause damage to various crops, sorghum, sunflower, melons	Monitoring of bird numbers. Bird scaring devices used where needed. Netting of some crops to prevent damage
Melon thrips	*Thrips palmi*	Market access issue for trade to the south of WA and to SA	Monthly surveys carried out to monitor thrip numbers Thresholds implemented for certain crops where trials have proven that a certain number of thrips will not mean thrips in produce
Heliothis	*Heliothis armiger & Heliothis punctigera.*	High levels can result in crop damage	Monitoring carried out throughout irrigation area to monitor levels Control carried out when numbers reach certain thresholds
Silverleaf whitefly	*Bemisia tabaci* (Biotype B)	Potential loss of production and market access	Review border biosecurity from Carnarvon and interstate.
Mango pulp weevil	*Sternochetus frigidus*	Mango	

The OrdGuard Management Committee will identify a short list (6) of the established Water threats considered to be of highest importance to the Ord River Irrigation Area.

'Water threats' refers to pest organisms and issues associated with water use in the ORIA region of Western Australia.

EXAMPLE: *(Threats selected by the community as top threats)*

Common name	Scientific name	Issue - water	Action
Water weeds	Various i.e. Salvinia	Blocking waterways and river systems Depletion of oxygen in waterways.	Treatment of water areas with Aerolien®
Chemical contamination of water systems	n/a	Pollution of waterways with chemicals.	

The OrdGuard Management Committee will identify a short list (6) of the established Environmental threats considered to be of highest importance to the Ord River Irrigation Area.

'Environmental threats' refers to pest organisms and issues associated with the environment in the ORIA region of Western Australia

EXAMPLE: *(Threats selected by the community as top threats)*

Common name	Scientific name	Issue - environment	Action
Donkeys		Over-grazing of native plants	Shooting, remote tracking, trapping.
Cane toads		Loss of diversity	Trapping, monitoring

The OrdGuard Management Committee will identify a short list (6) of the Town threats considered to be of highest importance to the Ord River Irrigation Area.

'Town threats' refers to pest organisms and issues associated with the town of Kununurra in the ORIA region of Western Australia

EXAMPLE: *(Threats selected by the community as top threats)*

Common name	Scientific name	Issue - town	Action
Fruit fly		Importation of fruit fly infected fruit from the south of the State or interstate.	Fruit fly monitoring.

The OrdGuard Management Committee will identify a short list (6) of the cultural threats considered to be of highest importance to the Ord River Irrigation Area.

'Cultural threats' refers to pest organisms and issues that have the capacity to impact upon the capability to impact upon the cultural land use of the ORIA region of Western Australia.

EXAMPLE: *(Threats selected by the community as top threats)*

Common name	Scientific name	Issue - culture	Action
Mesquite		Restriction of access to waterways and loss of cultural hunting grounds by exclusion.	Spraying, biological control, early reporting of new finds.
Cane toads		Death of native animals for hunting and of spiritual significance to the indigenous people.	Monitoring, trapping, early reporting.

APPENDIX 2. ESTABLISHED DISEASES (CURRENTLY FOUND IN THE ORIA OF WESTERN AUSTRALIA)

In conjunction with the Department's specialists, the OrdGuard Management Committee should identify the highest priority established diseases.

Scientific name	Host	Host common	Disease	References?
Aspergillus niger	*Allium cepa* L.	Onion, Shallot	Black mould	S
Pestalotiopsis palmarum	*Anacardium occidentale* L.	Cashew	Associated with leaf spot	S
Aspergillus niger	*Arachis hypogaea* L.	Peanut	Crown rot	S
Botryodiplodia theobromae	*Arachis hypogaea* L.	Peanut	Collar rot	S
Colletotrichum capsici	*Arachis hypogaea* L.	Peanut	Leaf spot	S
Cercosporidium personatum	*Arachis hypogaea* L.	Peanut	Deighton late leaf spot	S
Macrophomina phaeseolina	*Arachis hypogaea* L.	Peanut	Stem rot	S
Puccinia arachidis	*Arachis hypogaea* L.	Peanut	Rust	S
Rhizoctonia sp.	*Arachis hypogaea* L.	Peanut	Root rot	S
Sclerotium rolfsii	*Arachis hypogaea* L.	Peanut	Stem rot	S
Rhizopus stolonifer	*Artocarpus heterophyllus Lam*	Jackfruit	Lind fruit rot	S
Curvularia sp.	*Asparagus officinalis* L.	Asparagus	S. Associated with stem blight	SK
Rhizoctonia sp.	*Brassica nigra*	Mustard	Root and collar rot	S
Xanthomonas campestris pv. Campestris	*Brassica nigra*	Mustard	Black rot	S
Macrophomina phaseolina	*Carthamus tinctorius* L.	Safflower	Stem rot	S
Phytophthora nicotianae	*Carthamus tinctorius* L.	Safflower	Water house root & Stem rot	S
Rhizoctonia sp.	*Carthamus tinctorius* L.	Safflower	Damping-off	S

Scientific name	Host	Host common	Disease	References?
Sorosporium brefeldianum	*Cenchrus elymoides* F. Muell.	Pasture plant	Floral smut	SK
Rhizoctonia sp.	*Cicer arientinum* L.	Chickpea	Root rot	S
Cercospora citrullina	*Citrullus lanatus*	Watermelon	Leaf spot	S
Oidium sp.	*Citrullus lanatus*	Watermelon	Powdery mildew	S
Fusarium oxysporum	*Citrullus lanatus*	Watermelon	Wilt	S
Botryodiplodia theobromae	*Citrus sinensis (*L.*)* Osb	Sweet orange	Dieback	SK
Pestalotiopsis palmarum	*Cocus Nucifera* L.	Palm	Frond spot	SK
Ascochyta cucumis	*Cucumis melo* L.	Rockmelon/Cantaloup	Gummy stem blight	S
Botryosphaeria ribis	*Cucumis melo* L.	Rockmelon/Cantaloup	Fruit rot	S
Macrophomina phaseolina	*Cucumis melo* L.	Rockmelon/Cantaloup	Fruit rot	S
Oidium sp.	*Cucumis melo* L.	Rockmelon/Cantaloup	Powdery mildew	S
Pseudocercospora cubensis	*Cucumis melo* L.	Rockmelon/Cantaloup	Downy mildew	S
Fusarium solani	*Cucumis melo* L.	Rockmelon/Cantaloup	Root rot	S
Pseudocercospora sp.	*Glycine Albicans* Tind & Cravn		Leaf spot	SK
Cercospora canescens	*Glycine max*	soybean	Leaf spot	S
Xanthomonas campestris pv. glycines	*Glycine max*	soybean	Bacterial pustule	S
Rhizoctonia solani	*Glycine max*	soybean	Root rot	S
Colletotrichum capsici	*Glycine max*	soybean		S
Macrophomina phaseolina	*Glycine max*	soybean	Charcoal rot	S
Phakopsora pachyrhizi	*Glycine max*	soybean	Rust	S
Pseudomonas syringae pv.phaseolicola	*Glycine max*	soybean	Halo blight	S

Scientific name	Host	Host common	Disease	References?
Potyvirus	*Glycine max*	soybean		M&P
Xanthomonas campestris pv. *malvacearum*	*Gossypium barbadense*	sea island cotton	Bacterial blight	S
Alternaria gossypina	*Gossypium hirsutum*	cotton	Leaf and boll spotting	S
Botryosphaeria ribis	*Gossypium hirsutum*	cotton	Root rot	S
Colletotrichum gloeosporioides	*Gossypium hirsutum*	cotton	Anthracnose	S
Fusarium solani	*Gossypium hirsutum*	cotton	Root rot	S
Macrophomina phaseolina	*Gossypium hirsutum*	cotton	Root rot	S
Phoma sorghina	*Gossypium hirsutum*	cotton	Petiole lesion	S
Rhizoctonia solani	*Gossypium hirsutum*	cotton	Root rot	S
Xanthomonas campestris pv. malvacearum	*Gossypium hirsutum*	cotton	Bacterial blight	S
Ramularia gossypii	*Gossypium hirsutum*	cotton	Grey mildew	S
Pseudocercospora abelmoschi	*Gossypium hirsutum* L.	cotton	Leaf spot	SK
Alternaria helianthi	*Helianthus annus*	sunflower	Leaf spot	S
Macrophomina phaseolina	*Helianthus annus*	sunflower	Root and stem rot	S
Puccinia helianthi	*Helianthus annus*	sunflower	Rust	S
Rhizopus sp.	*Helianthus annus*	sunflower	Head rot	S
Macrophomina phaseolina	*Lablab purpueus*	lablab bean	Stem rot	S
Cercospora canescens	*Lablab Purpureus* (L.) Sweet.	Pasture crop	Leaf spot	SK
Xanthomonas campestris pv. mangiferaeindicae	*Mangifera indica*	Mango	Black spot	S
Colletotrichum gloeosporioides	*Mangifera indica*	Mango	Anthracnose	S

Scientific name	Host	Host common	Disease	References?
Asterina sp.	*Mangifera indica* L.	Mango	On leaves.	SK
Cercospora zebrina	*Medicago sativa* L.	Pasture crop	Leaf spot	SK
Colletotrichum musae	*Musa acuminata*	Banana (Cavendi/Goldn)	Anthracnose	SK
Deightoniella torulosa	*Musa acuminata*	Banana (Cavendi/Goldn)	Black leaf spot	SK
Fusarium sambucinum	*Musa acuminata*	Banana (Cavendi/Goldn)	Associated with root rot	SK
Fusarium semitectum	*Musa acuminata*	Banana (Cavendi/Goldn)	Associated with root rot	SK
Fusarium solani	*Musa acuminata*	Banana (Cavendi/Goldn)	Associated with root rot	SK
Pythium myriotylum	*Musa acuminata*	Banana (Cavendi/Goldn)		SK
Phyllosticta musarum	*Musa acuminata*	Banana (Cavendi/Goldn)	Associated with root rot	SK
Cucumber mosaic virus	*Musa acuminata Colla*	Banana	Infectious leaf streak	SK
Guignardia musae	*Musa x cult. Cavendish*	Banana		QDB
Pseudocercospora musae	*Musa x cult. Cavendish*	Banana		QDB
Bipolaris oryzae	*Oryza australiensis*	Australian rice	Browm spot	S
Entyloma oryzae	*Oryza australiensis*	Australian rice	Leaf smut	S
Alternaria padwickii	*Oryza sativa*	Rice	Leaf spot	S
Alternaria sp.	*Oryza sativa*	Rice	Browning of glumes	S
Aspergillus sp.	*Oryza sativa*	Rice	Seed infection	S
Bipolaris oryzae	*Oryza sativa*	Rice	Brown spot	S
Exserohilum rostratum	*Oryza sativa*	Rice	Leaf spot	S
Cercospora oryzae	*Oryza sativa*	Rice	Brown leaf spot	S
Curvularia sp.	*Oryza sativa*	Rice	Leaf spot & discoloured grain	S
Entyloma oryzae	*Oryza sativa*	Rice	Leaf smut	S

Scientific name	Host	Host common	Disease	References?
Gibberella zeae	*Oryza sativa*	Rice	Foot and root rot	S
Nicrospora oryzae	*Oryza sativa*	Rice	Leaf spot & discoloured grain	S
Phyllosticta oryzina	*Oryza sativa*	Rice	Associated with leaf spot	S
Sclerotium sp.	*Oryza sativa*	Rice	Leaf sheath stem rot	S
Colletotrichum lindemuthianum	*Phaseolus vulgaris*	Butter bean	Anthracnose	S
Botrytis cinerea	*Phaseolus vulgaris*	Butter bean	Grey mould	S
Periconia saraswatipurensis	*Phaseolus vulgaris*	Butter bean	Associated with leaf spot	S
Graphiola phoenicis	*Phoenix dactylifera*	Date palm	False smut	S
Pseudocercospora sawadae	*Psidium guajava* L.	Guava	Leaf spot	SK
Fusarium moniliforme	*Saccharum officinarum*	Sugarcane		S
Phyllosticta sp.	*Saccharum officinarum*	Sugarcane	Leaf spot	S
Pseudomonas rubrilineans	*Saccharum officinarum*	Sugarcane	Red stripe	S
Xanthomonas campestris	*Saccharum officinarum*	Sugarcane	Associated with red stripe	S
Curvularia brachyspora	*Saccharum officinarum*	Sugarcane		S
Nigrospora sacchari	*Saccharum officinarum*	Sugarcane		QDB
Colletotrichum gloeosporioides	*Santalum lanceloatum* R. Br.	Sandalwood	Leaf spot	S
Pseudocercospora sp. Aff. *Cercospora santalacea*	*Santalum lanceloatum* R. Br.	Sandalwood	Leaf spot	SK
Alternaria sp.	*Sesamum indicum*	Sesame	Leaf spot	S
Rhizoctonia sp.	*Solanum melongena* L.	Eggplant/ Aubergine	Root rot	S
Bipolaris papendorfii	*Sorghum bicolor*	Grain/sweet sorghum	Leaf spot	S
Bipolaris sorghicola	*Sorghum bicolor*	Grain/sweet sorghum	Leaf spot	S

Scientific name	Host	Host common	Disease	References?
Botryodiplodia theobromae	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Cercospora sorghi	*Sorghum bicolor*	Grain/sweet sorghum	Grey leaf spot	S
Colletotrichum graminicola	*Sorghum bicolor*	Grain/sweet sorghum	Anthracnose	S
Curvularia clavata Jain	*Sorghum bicolor*	Grain/sweet sorghum	On seeds	S
Curvularia eragrostidis	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Curvularia geniculata	*Sorghum bicolor*	Grain/sweet sorghum	Associated with stem rot	S
Curvularia lunata	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Curvularia lunata var *aeria*	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Curvularia pallescens	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Curvularia penniseti	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Curvularia sorghina	*Sorghum bicolor*	Grain/sweet sorghum	Hypersensitive flecking	S
Curvularia verruculosa	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Exeserohilum rostratum	*Sorghum bicolor*	Grain/sweet sorghum	Assoc with grain & leaf spot	S
Exserohilum turicum	*Sorghum bicolor*	Grain/sweet sorghum	Leaf blight	S
Fusarium culmorum	*Sorghum bicolor*	Grain/sweet sorghum	Associated with root rot	S
Fusarium dimerum	*Sorghum bicolor*	Grain/sweet sorghum	Associated with root rot	S
Fusarium moniliforme	*Sorghum bicolor*	Grain/sweet sorghum	Root rot stem rot	S
Fusarium moniliforme var. *subglutinans*	*Sorghum bicolor*	Grain/sweet sorghum	Root rot	S
Fusarium oxysporum	*Sorghum bicolor*	Grain/sweet sorghum	Root rot	S
Gloeocercospora sorghi	*Sorghum bicolor*	Grain/sweet sorghum	Zonate leaf spot	S
Macrophomina phaseolina	*Sorghum bicolor*	Grain/sweet sorghum	Charcoal rot	S

Scientific name	Host	Host common	Disease	References?
Periconia circinata	*Sorghum bicolor*	Grain/sweet sorghum	On roots	S
Periconia macrospinosa	*Sorghum bicolor*	Grain/sweet sorghum	On roots	S
Phoma sorghina	*Sorghum bicolor*	Grain/sweet sorghum	Assoc with grain & leaf spot	S
Pleospora infectoria	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Rhizoctonia solani	*Sorghum bicolor*	Grain/sweet sorghum	Root rot	S
Sphaeronaema macrorostratum	*Sorghum bicolor*	Grain/sweet sorghum	Associated with leaf spot	S
Sporisorium sorghi	*Sorghum bicolor*	Grain/sweet sorghum	Covered smut	S
Ustilago ewartii	*Sorghum interjectum Lazarides*		Floret smut	SK
Ustilago ewartii	*Sorghum plumosum*	Plume sorghum	Floret smut	SK
Puccinia levis	*Sorghum plumosum*	Plume sorghum	Rust	S
Uredo sp.	*Sorghum* spp.		Leaf rust	SK
Ustilago ewartii	*Sorghum* spp.		Floret smut	SK
Ustilago porosa	*Sorghum* spp.		Inflorescence smut	SK
Puccinia levis	*Sorghum stipoideum*	Annual native sorghum	Leaf rust	SK
Pseudomonas rubrilineans	*Sorghum stipoideum*	Annual native sorghum	Red Stripe	SK
Sclerophthora macrospora	*Sorghum stipoideum*	Annual native sorghum	Crazy top	SK
Sporisorium sorghi	*Sorghum stipoideum*	Annual native sorghum	Covered smut	SK
Uredo sp.	*Sorghum stipoideum*	Annual native sorghum	Leaf rust	SK
Ustilago ewartii	*Sorghum stipoideum*	Annual native sorghum	Floret smut	SK
Ustilago porosa	*Sorghum stipoideum*	Annual native sorghum	Floret smut	SK
Cercospora sorghi	*Sorghum sudanense*	Sudan grass	Grey leaf spot	S
Colletotrichum sp.	*Sorghum sudanense*	Sudan grass	Anthracnose	S

Scientific name	Host	Host common	Disease	References?
Exserohilium turcicum	*Sorghum sudanense*	Sudan grass	Leaf blight	S
Ustilago porosa	*Sorghum timorense*	Sorghum	Smut	S
Ustilago ewartii	*Sorghum timorense*	Sorghum	Floret smut	SK
Colletotrichum graminicola	*Sorghum x almum* L. Parodi	Sorghum	Red leaf spot.	SK
Gloeocercospora sorghi	*Sorghum x almum* L. Parodi	Sorghum	Zonate leaf spot	SK
Phyllachora andropogonis	*Sorghum x almum* L. Parodi	Sorghum	Tar spot	SK
Sugarcane moasic virus	*Sorghum vulgare*	Sorghum		M&P
Sphaeotheca fuligenea	*Vigna mungo*	Mung bean		QDB
Sphaeotheca fuligenea	*Vigna radiata* (L.) Wilczek	Mung bean		QDB
Oidium sp.	*Vigna radiata* (L.) Wilczek	Mung bean	Powerdy mildew	S
Cercospora canescens	*Vigna radiata* (L.) Wilczek	Mung bean	Leaf spot	SK
Xanthomonas campestris pv. phaseoli	*Vigna radiata* (L.) Wilczek	Mung bean	Common blight	S
Peronospora trifoliorum	*Vigna radiata* (L.) Wilczek	Mung bean	Downy Mildew	SK
Colletotrichum gloeosporioides	*Vitis vinifera* L.	Wine grape	Fruit spot	SK
Sphaceloma ampelinum	*Vitis vinifera* L.	Wine grape	Anthracnose	S
Phytophthora megasperma	*Vitis vinifera* L.	Wine grape	Root rot	S
Oidium sp.	*Vitis vinifera* L.	Wine grape		QDB
Cercospora	*Vitis vinifera* L.	Wine grape		QDB
Triposporium sp.	*Vitis vinifera* L.	Wine grape	Sooty mould	SK
Peronosclerospora maydis	*Zea mays*	Corn	Downy Mildew	S
Puccinia sorghi	*Zea mays*	Corn	Leaf rust	S

Scientific name	Host	Host common	Disease	References?
Pyrenochaeta terrestris	*Zea mays*	Corn	Stem lesions	S
Virus	*Zea mays*	Corn		M&P

References

S: Shivas R, G 1989

SK: Shivas R, G 1995

M&P: Mclean & Price 1984

QDB: Quarantine data base

Still waiting on unpublished diseases isolated from Ord APL

APPENDIX 3. REGIONAL BIOLOGICAL THREATS TO THE ORD REGION OF WESTERN AUSTRALIA

The OrdGuard Management Committee will identify a short list (6) of regional threats considered to be of the highest importance to the region.

Key regional threats to the Ord Region of Western Australia (selected by the community as top threats) can be found in Table 3.

Common name	Scientific name	Primary host crop	Alternate hot crop	Presence in Australia	Threat category
Sliverleaf whitefly	*Bemisia tabaci* B type	Poinsettia	Pph	WA (not ORD) and NT, Qld and NSW	A
Mediterrnean fruit fly	*Ceratitis capitata*	Peach	Pph	WA (not ORD) and SA	A

APPENDIX 4. REGIONAL/INTERSTATE KEY PESTS [THREATENING THE ORIA WITHIN AUSTRALIA (NOT PRESENT IN WESTERN AUSTRALIA)]

The OrdGuard Management Committee will identify a short list (6) of regional threats considered to be of the highest importance to the region.

Common name	Scientific name	Primary host crop	Alternate hot crop	Presence in Australia	Threat category
Whitefly, Spiralling	*Aleurodicus disperses*	Banana	Pph	Qld	A
Scale, transparent	Aspidiotus destructor	Coconut	Pph	NT, Qld	B
Lesser Qld Fruit fly	*Bactrocera neohumeralis*	All fleshy fruits	Pph	NT, Qld	B
Queensland Fruit fly	*Bactrocera tryoni*	All fleshy fruits	Pph	NT, Qld, NSW, Vic, SA	A
Red banded mango caterpillar	*Deanolis sublimalis*	Mango	-	Torres Strait	B
Banana scab moth	*Nacoleia octasema*	Plantain, banana	Selected palms	Qld	B
Mango seed weevil	*Sternochetus mangiferae*	Mango	-	NT, Qld, NSW	B
Crimson spider mite	*Tetranychus limbardinii*	Cotton	Pph	NSW	B

APPENDIX 5. NATIONAL/INTERNATIONAL PESTS (THREATENING THE ORIA FROM OUTSIDE AUSTRALIA)

The OrdGuard Management Committee will identify a short list (6) of regional threats considered to be of the highest importance to the region.

Common name	Scientific name	Primary host crop	Alternate host crops	Presence in Australia.	Threat category
Cucumber beetles (various species)	*Acalymma vittatum* *Diabrotica* spp.	Cucumber	Melon, pumpkin, watermelon	No	B
Giant African snail	*Achatina fulica*	Cucurbits	Pph; breadfruit, papaya, peanut	No	B
Citrus blackfly	*Aleurocanthus woglumi*	Citrus	Pph	No	B
Coconut leaf moth	*Artona catoxantha*	Coconut	Sago palm, banana	No	C
Melon fly	*Bactrocera cucurbitae*	Cucurbits	Pph	No (Torres Strait)	A
Oriental fruit fly (complex)	*Bactrocera dorsalis*	All fleshy fruits	Pph	No	A
Papaya fruit fly	*Bactrocera papayae*	Papaya	Pph	No (Torres Strait)	B
Lesser cucurbit fly	*Didacus ciliatus*	Squash	Small fruit	No	B
Peel feeding caterpillar	*Platynota rostrana*	Beans	Winged bean	No	C
Comstock mealy bug	*Pseudococcus comstocki*	Stone fruit	Banana, pears, lemon	No	B
Mango pulp weevil	*Sternochetus frigidus*	Mango	Bachang	No	B

APPENDIX 6. FARM GATE SIGNAGE

FARM NAME

VISITORS

VEHICLES & PEOPLE CARRY WEEDS, PESTS & DISEASES

PLEASE

STOP AT THE HOUSE

RESPECT OUR FARM BIOSECURITY

APPENDIX 7. SAFEGUARDS FOR ENDOSULFAN USE

AERIAL AND GROUND APPLICATION

(1) Apply only to crops that have 100% ground cover present unless band spraying tops of beds only.

(2) Do not irrigate before three days after application (furrow and flood only).

(3) Do not apply where large percentage of bare soil exists

(4) Use coarse droplets < 150 microns

(5) Do not over fly channels and drains

(6) Avoid boundary clean up runs where wind will drift chemical onto head or tail ditches

(7) All soil in the field must be dry including tail drain

ULV not to be used with wind blowing towards the Ord or Dunham River or D4 drain, or any field within 500

APPENDIX 8. CONTACTS IN THE ORD RIVER

The current list of biosecurity contacts within the Ord region is as follows:

Shire

Chief Executive Officer: Peter Stubbs
Business phone/fax (08) 9168 4100
Mobile phone:
E-mail: ceo@the lastfrontier.com.au
Postal address:

Kununurra Tourism Centre

General Manager: Peter Grigg
Business phone: (08) 9168 1177
Mobile phone: 0409 681 177
E-mail: kununurratb@bigpond.com
Postal address:

Kununurra Chamber of Commerce

Name Frank Rodrigeuz
Business phone: (08) 9168 1118
Mobile phone: 0417 941 550
E-mail:
Postal address:

Department of Agriculture

District Manager: Noel Wilson
Business phone: (08) 9168 4100 Fax: (08) 9166 4066
Mobile phone: 0429 105 336
E-mail: nwilson@agric.wa.gov.au
Postal address:

Conservation and Land Management

Regional Manager: Gae MacKay
Business phone: (08) 9168 4205 Fax: (08) 9168 2179
Mobile phone: 0418 919 384
E-mail: gaem@calm.wa.gov.au
Postal address: PO Box 942
KUNUNURRA WA 6743

Ord Land and Water

Coordinator:	Dick Pasfield	
Business phone:	(08) 9169 2222	Fax: (08) 9169 2683
Mobile phone:	0418 959 832	
E-mail:	olw@nits.net.au	dick@olw.com.au
Postal address:		

Department of Indigenous Affairs

Regional Manager:	Jim Lewis	
Business phone:	(08) 9168 2550	Fax: (08) 9168 2435
Mobile phone:	0407 990 198	
E-mail:	Jim.lewis@dia.wa.gov.au	
Postal address:	Lot 2250 Coolibah Drive KUNUNURRA WA 6743	PO Box 672 KUNUNURRA WA 6743

Department of Environment

Regional Manager	Leith Bowyer
Business phone:	(08) 9166 4100
Mobile phone:	
E-mail:	Leith.boywer@environment.wa.gov.au
Postal address:	

Kimberley Primary Industry Association

Executive Officer:	David McKerrell	
Business phone	(08) 9168 1166	Fax: (08) 9168 1199
Mobile phone:	0427 401 459	
E-mail:	kimpia@bigpond.com	
Postal address:	PO Box 1520 KUNUNURRA WA 6743	

Water Corporation

Regional Manager:	
Business phone:	(08) 9168 0777
Mobile phone:	
E-mail:	
Postal address:	

Cucurbit industry

Name:	David Menzel
Business phone:	(08) 9169 1386
Mobile phone:	0409 691 386
E-mail:	barradale@win.com.au
Postal address:	C/- Box 350 Weaber Plain Road KUNUNURRA WA 6743

Nursery industry

Name:	Judy Fairclough	
Business phone:	(08) 9168 1067	Fax: (08) 9168 2612
Mobile phone:		
E-mail:	flametree@javelins.net	flametree@westnet.com.au
Postal address:	211 Riverfarm Road KUNUNURRA WA 6743	PO Box 269 KUNUNURRA WA 6743

Seed industry

Manager:	Chris Watson, Pacific Seeds
Business phone:	(08) 9168 1172 / 9168 1037
Mobile phone:	
E-mail:	Bhris.watson@pacseeds.com.au
Postal address:	
	Lot 289 Weaber plains Rd

Mango growers

Name:	Geoff Warnock
Business phone:	(08) 9169 1220
Mobile phone:	0438 884 842
E-mail:	gullivers@wn.com.au
Postal address:	447 Jabiru Rd. P.O.Box 629

Sugar industry

Name:	Paul Mock
Business phone:	(08) 9169 1548 fax 9168 2539
Mobile phone:	0417 098 238
E-mail:	
Postal address:	P.O. Box 593

Sugar industry

Name:	Chairman of the sugar industry – Robert Boshammer
Business phone:	
Mobile phone:	
E-mail:	
Postal address:	

Citrus industry

Name:	Lanchlan Dobson	
Business phone:	(08) 9168 2022	Fax: (08) 9168 2251
Mobile phone:		
E-mail:	kimproduce@bigpond.com	

Postal address:	PO Box 1231 KUNUNURRA WA 6743

Kimberley Land Council

Name:	Des Hill
Business phone:	(08) 9168 2298
Mobile phone:	
E-mail:	
Postal address:	Speargrass Rd

Halls Creek/East Kimberley Land Conservation Committee

Name:	Mike Shaw
Business phone:	(08) 9168 7381
Mobile phone:	
E-mail:	
Postal address:	

	Department of Agriculture			Government of Western Australia		
Ord River Irrigation Area	**- FINAL CROP RETURN 2003/2004 Wet & 2004 Dry Season**					
Crop	**Total Area Planted** (ha)	**Area Harvested** (ha)	**Average yield** (units/ha)	**Total Yield** (unit)	**Average Price** ($)	**Value** ($)
2003/2004 WET SEASON						
Cover crops/Hay (t)[i]	478	40				$ 9,200
2004 DRY SEASON						
FIELD CROPS						
Cotton (research)	17	0				$ -
Sugar – Cane (tonnes)	4031	3695	122	450754		
– Raw (tonnes)[i]				50351	297	$ 14,954,247
– Molasses (tonnes)				18000	71	$ 1,444,000
Chickpea (tonnes)	421	421		795	$ 1,085	$ 862,271
Other[iii]	457	457				$ 1,059,423
Total Field Crops (includes wet season crops)						**$ 18,329,141**
HYBRID SEED	**ha planted**	**ha harvested**	**Yield/ha**	**total production**	**price/unit**	
Sorghum Grain & Forage	686	686		2068	941.08	$ 1,945,950
Other[iv]	775	775		586		$ 1,025,638
Total Seeds						**$ 2,971,588**
HORTICULTURE	**ha planted**	**ha harvested**	**Yield/ha**	**total production**	**price/unit**	
Rockmelons (trays)	476	456	964	439,680	$ 13.14	$ 5,778,012
Honeydews (trays)	163	139	1,002	139,220	$ 13.39	$ 1,863,650
Watermelons (tonnes) (seeded and seedless)	326	264	21	5,489	$ 516.70	$ 2,836,359
Jarrahdale (tonnes)	98	98	24	2,319	$ 309.99	$ 718,864
Butternuts (cartons)	138	120	595	71,385	$ 13.41	$ 957,077
Jap pumpkin (tonnes)	151	141	16	2,309	$ 394.48	$ 910,845
Mangoes (trays)	647	324	646	208,925	$ 15.74	$ 3,288,336
Banana (cartons)	66	37	1,855	68,529	$ 18.80	$ 1,288,328
Citrus (tonnes)	186	31	4	125	$ 2,515	$ 314,162
Other[v]	169	142				$ 5,961,408
Total Horticulture						**$ 23,917,040**
OTHER	**ha planted**	**Used**				
Leucaena/Irrig Pasture	1175	1000				$ 1,380,000
Sandalwood[vi]	1553	0				$ -
ESTIMATED TOTAL	**12012**	**hectares**				**$ 46,597,769**

NB: figures are rounded throughout document hence minor discrepancies

[i] Only some of area harvested

[ii] Gross value

[iii] Includes culinary beans

[iv] Includes maize, sweetcorn, and other seed crops

[v] Includes vegetables, herbs, exotic tropical fruit and nursery production. Citrus is now separate.

[vi] includes private production and research trials