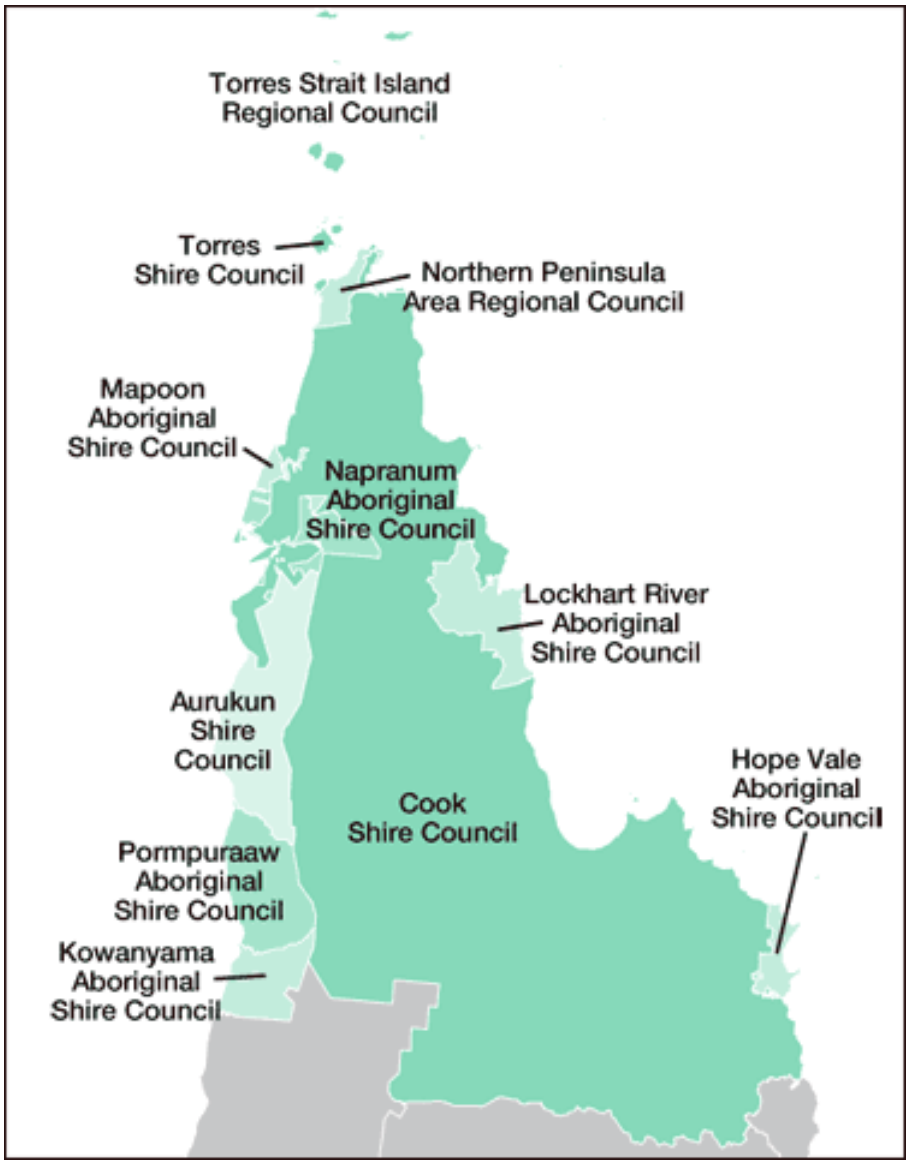
Cook Shire Local Area Biosecurity Plan 2017-2021



Cook Shire COUNCIL

Prepared by

Cathy Johnson and Darryn Higgins
Biosecurity Services
Cook Shire Council
10 Furneaux Street
Cooktown QLD 4895

and

Travis Sydes
FNQ Regional Organisation of Councils

Disclaimer

This document has been prepared with all due diligence and care and is based on the best information available at the time of approval. Council holds no responsibility for any errors or omissions within this document. Any decisions made by other parties based on this document are soley the responsibility of those parties. The information contained in this document is from a number of sources including input from the public and as such does not necessarily represent Council or Biosecurity Services opinion or policy.

Acknowledgements

This plan has been compiled by Biosecurity Services, Cook Shire Council with assistance from the Far North Queensland Regional Organisation of Councils with input from land managers and stakeholders of the Cook Shire Invasive Plants and Animals Advisory Committee.

Version control

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Executive Summary

The purpose of the Cook Shire Biosecurity Plan (CSBP) is to bring all sectors of the local community together to manage invasive plants and animals. It does this by outlining the key responsibilities, roles and desired outcomes required under the *Biosecurity Act 2014* for the whole of the Cook Shire local government area. This plan aims to benefit the community by preventing or reducing the impacts of pests and weeds on the economy, environment and people of the area by:

- Addressing the obligations of all stakeholders under the *Biosecurity Act 2014*.
- Prioritisation of invasive pests and identifying the roles and responsibilities of all stakeholders involved and providing direction on managing biosecurity risks
- Preventing the introduction and spread of invasive plants and animals within Cook Shire based on best practice.
- Building partnerships and enabling better use of resources available within the community and across all land managers
- Better coordination between all stakeholders, including integrated catchment management approaches, state-wide land management strategies and protection of key assets.

The term stakeholder is used throughout this plan to refer to a person, group or organisation that has an interest in or concern in weeds and pest animal management in Cook Shire, or an obligation under the legislation. Stakeholders can affect or be affected by biosecurity risks and include tourists, urban dwellers, hobby farmers, graziers, horticulturalists, Traditional Owners, community groups and government agencies.

Vision

To reduce the impact of invasive plants and animals on the environment, economy and community of the Cook Shire area by; preventing establishment and spread of new weeds and pests; reducing the impacts of established weeds and pests; and building programs and partnerships to address these challenges.

Key objectives

Awareness – development of processes that allow information relating to invasive plants and animals and their management to reach all relevant parties.

Surveillance – creation of an environment in which all interested participants are encouraged to engage in the collection and sharing of data relating to the distribution and impacts of invasive plants and animals, including the outcomes of management programs and activities.

Prevention – preventing the establishment or spread of invasive plants and pest animals is a task undertaken by as broad a range of individuals and organisations as possible.

Commitment – commitment to implementing and supporting effective biosecurity management is a value shared and actively promoted by all parties interested in biosecurity challenges.

Consultation and partnerships – all willing participants are working together to build and maintain partnerships, identify priorities, set strategic directions, develop coordinated programs and monitor outcomes.

Ongoing management of priority invasive biosecurity matter - targeted on ground actions to reduce the impact of invasive plants and animals on the environment, economy and community of the Cook Shire is undertaken by organisations and individuals in a collaborative and effective manner.

Abbreviations

APDS	Annual Pest Distribution Survey (via DAF)
BS Act	*Biosecurity Act 2014* (Queensland)
BQ	Biosecurity Queensland (DAF)
BP	Biosecurity Plan
CFOC	Caring For Our Country
CSBP	Cook Shire Local Area Biosecurity Plan
CSC	Cook Shire Council
CSLGA	Cook Shire Local Government Area
CSCPMP	Cook Shire Council Pest Management Plan
CYNHT	Cape York Natural Heritage Trust
CYNRM	Cape York Natural Resource Management Ltd.
CYPPMAG	Cape York Peninsula Pest Management Advisory Group
CYSF	Cape York Sustainable Futures
CYWAFAP	Cape York Weeds and Feral Animals Project/Program
CYWAFA Inc.	Cape York Weeds and Feral Animals Incorporated
DAF	Department of Agriculture and Fisheries (Qld)
DEHP	Department of Environment and Heritage Protection
DNRM	Department of Natural Resource & Mines
DOGIT	Deed of Grant in Trust
FNQROC	Far North Queensland Regional Organisation of Councils
IPAAC	Cook Shire Council Invasive Plants and Animals Advisory Committee
JCU/CSIRO	James Cook University / Commonwealth Scientific & Industrial Research Organisation
LPA 2002	Land Protection (Pest & Stock Route Management) Act 2002
MRWMG	Mitchell River Watershed Management Group Inc.
NAQS	Northern Australia Quarantine Strategy (DAF)
PPMP	Property Pest Management Plan
QHD	Queensland Health Department
QPWS	Queensland Parks & Wildlife Service (NPSR)
RTA	Rio Tinto / Alcan
SCYC	South Cape York Catchments
TMR	Department of Transport & Main Roads
USL	Unallocated State Lands
WTMA	Wet Tropics Management Authority

This plan was formally adopted at the ordinary Council meeting in July 2017.

Introduction

The Cook Shire Local Government Area (CSLGA) is the largest shire in terms of land area in Queensland, with a land mass of 106,169 square kilometres it is roughly half the size of Victoria and twice the size of Tasmania. The Shire stretches from Palmerville in the south to just north of the Jardine River containing over 2,750 kilometres of road network and encompassing numerous islands situated off the north east coast of Cape York Peninsula including Lizard Island.

Cook Shire occupies 80% of Cape York Peninsula, adjoins thirteen other local government authorities and includes two internationally significant world heritage areas; the Wet Tropics of Queensland and the Great Barrier Reef which forms the Shire's outer boundary. It has a range of land tenures supporting a variety of land uses including: grazing, horticulture, agriculture, conservation, mining, rural living, hobby farming, traditional living and urban development, with a significant number of National Parks along with other protected areas and conservation zones.

The 2016 census data showed Cook Shire has a population at 4,226, with males outnumbering females 53.8% to 46.2%, and 21.9% of the Shire's population identifying as Aboriginal or Torres Strait Islander.

The Shire's major township is Cooktown with a population of 2,631 (ABS 2016) with smaller population centres at Marton, Laura, Lakeland, Coen, Ayton, Rossville and Portland Roads and significant numbers of people living throughout the Bloomfield and Endeavour valleys.

The Shire is a key entry point into Australia for invasive plants and animals (pests) that pose biosecurity risks to human health, social amenity, the economy and the environment. It is also vulnerable to migration of invasive species present to the south and west that are not yet present in the Shire. With a low population density and vast tracks of land with minimal or intermittent monitoring the risk of a new pest establishing a viable population while undetected is a key threat.

Developing a biosecurity plan encourages the understanding of both legislative responsibilities and the need for integrated and coordinated pest management. It lays a framework for all stakeholders in the local government area to follow by establishing objectives developed through community consultation and identifies ways for all land managers to work cooperatively together. The plan also provides advice on best practice control techniques and outlines monitoring strategies to prevent new pests entering the Shire, or those existing spreading further or into adjoining shires.

Utilising current knowledge of biology, ecology and distribution, each pest plant and animal has been prioritised according to their potential threat to the key values of the Cook Shire. This rating reflects achievability (operational, technical, administrative, financial and social feasibility), potential impacts, strategic importance, and legislative requirements (if any).

It is only through the continuing engagement, vigilance and action of all Cook Shire stakeholders that our current pest problems can be reduced and new pests prevented from entering the Shire.

The Cook Shire Local Area Biosecurity Plan 2017-2021 (the Biosecurity Plan), follows on from the Cook Shire Council Pest Management Plan 2012-2016, but has been written in accordance with the new provisions of the *Biosecurity Act 2014*. The Biosecurity Plan is subject to a full review every four years, with an annual review to assess progress on actions and deliverables and to incorporate necessary updates to reflect changes in resources, pest threats, legislation or policy. The Cook Shire Council formally adopted this Biosecurity Plan through a resolution of council.

Background to the plan development

Cook Shire Council has had an approved pest management plan in place for its local government area since 1997. The original plan and subsequent revised versions were developed and administered under the *Land Protection (Pest and Stock Route Management) Act* 2002. Stakeholder workshops, pest specialists and public consultation provided input into the content, priority setting and objectives to be achieved within the life of each plan.

Development of this plan

The development of this plan has been driven by Cook Shire Council's Biosecurity Services unit with guidance and assistance from the Far North Queensland Regional Organisation of Council's (FNQROC). Planning framework materials developed by the FNQROC to assist member councils when developing pest management plans were modified to suit the Cape York environment and used as reference materials for a series of community workshops to explain the purpose and format of the new Biosecurity Plan for Cook Shire. Workshops were held during 2015 in Cooktown, Lakeland, Laura, Coen and Rossville, and additional consultations were undertaken with state government agencies in Cairns. Maps of currently available distribution data for high priority weeds from the previous Pest Management Plan were displayed and stakeholders were able to add observations of other infestations to the maps. Stakeholders were asked to complete a questionnaire ranking their top 10 weeds and top 3 pest animals, as well as identifying current issues of concern and what management issues they believed should be the focus of the new plan. Land managers were also invited to provide information on current control work and what obstacles were hindering effective pest management on their property or throughout Cook Shire.

The information gathered was used to prioritise the extensive list of invasive plants and animals occurring in the Cook Shire local government area.

Following this process Council established a community stakeholder group which is now known as the Cook Shire Council Invasive Plants and Animals Advisory Committee (IPAAC) to inform the development of the plan and oversee its implementation. At workshops of this committee prioritisation lists were discussed and refined, management objectives set and drafts of the plan reviewed.

Cook Shire Council Invasive Plants and Animals Advisory Committee (IPAAC)

The Cook Shire Council Invasive Plants and Animals Advisory Committee (IPAAC) was established in September 2016 to ensure the Cook Shire Local Area Biosecurity Plan is developed by, and for, the entire community. This group is open to all stakeholders with an interest in invasive plants and animals within Cook Shire and will be responsible for implementation of the Biosecurity Plan once adopted.

IPAAC's functions are to:

- Prioritise invasive plant and animal species for local area management planning purposes.
- Make recommendations to Council regarding local declarations of invasive species.
- Implement and assess the effectiveness of the Cook Shire Local area Biosecurity Plan.
- Review the Cook Shire Local Area Biosecurity Plan annually.
- Develop and review specific invasive species action plans.
- Provide input to the Invasive Plants and Animals Co-investment Model for Land Protection Fund investment proposals.
- Identify funding, resourcing and cost sharing opportunities.

- Provide a forum to discuss site specific issues.
- Make advisory recommendations on specific pest issues to Council and Biosecurity Queensland where appropriate.
- Promote partnerships.
- Identify and share knowledge on new technologies and management techniques.
- Lobby stakeholders where required.
- Spread knowledge and recognition of invasive plants and animals.
- Promote the implementation of sustainable environmental solutions including site rehabilitation, restoration and revegetation.

As it is a committee established under Cook Shire Council, Council's Biosecurity Services unit acts as secretariat for the Committee and is tasked with:

- Identifying and maintaining a database of all relevant stakeholders.
- Setting meeting dates, sending out agendas and taking and circulating minutes.
- Managing meeting logistics.
- Providing a chair person (a Councillor).
- Ensuring adequate consultation and input from key stakeholders in developing the draft Biosecurity Plan.
- Maintaining communication on weed and pest animal issues relevant to stakeholders.

Purpose

This Biosecurity Plan forms the key policy document to guide the management of invasive plants and animals within Cook Shire. It is designed as a guide for managing weeds and pest animals on all land tenures within Cook Shire's local government area. It forms the basis of the biosecurity operational works program conducted by Cook Shire Council, but equally applies to all people living, working or visiting the area.

When clear guidelines are not communicated it is difficult to track progress toward pest management outcomes. It is also more difficult for landowners and managers to understand what is required of them to deliver their responsibilities under the *Biosecurity Act 2014*. This plan forms the primary means of communicating the obligations and responsibilities of everyone within Cook Shire. More specific detail may be recorded or required in a property level biosecurity or land management plan.

Legal Requirements for Pest Management

On the 1st of July 2016 the *Biosecurity Act 2014* (the Act) superseded the *Land Protection (Pest and Stock Route Management) Act 2002*. The *Biosecurity Act 2014* (the Act) governs actions for the control and management of invasive plants and animals (referred to as invasive matter) in the state. It also provides local governments with the legal instruments they need to enforce the management of high-priority invasive plants and animals.

The Act imposes a legal responsibility on all individuals and organisations whose activities pose a biosecurity risk that impacts, or may impact our economy, agricultural or tourism industries, environment or lifestyle.

Invasive plants and animals, prohibited and restricted matter under the Act

The previous declared classes used under the *Land Protection (Pest and Stock Route) Act 2002* have been replaced with the terms "prohibited matter" and "restricted matter" and a series of categories (1-7) under the *Biosecurity Act 2014.*

Prohibited matter includes diseases, exotic fish, insects, pest animals or weeds that have the potential to significantly impact on our health, way of life, the economy or the environment and are currently not present or known to be present in Queensland. It is the responsibility of all Queenslanders, as well as visitors from interstate and overseas, to be aware and take steps to prevent prohibited matter from entering our state. You are expected to know about the prohibited matter that you may come across as part of your environment, business or hobby. If you find prohibited matter you must report it immediately to Biosecurity Queensland on 13 25 23. If in doubt call the Cook Shire Council's Biosecurity Services unit.

Restricted matter can be a disease, noxious fish, insect, pest animal or weed that is found in Queensland. Specific actions are required to be taken to limit the impact of restricted matter by reducing, controlling or containing it. You also have an obligation to report some restricted matter.

There are seven categories of restricted matter.

Category 1 includes insects such as red imported fire ants, electric ants and Asian honey bees, and certain animal and plant diseases, aquatic diseases and pathogens. This restricted matter must be reported to Biosecurity Queensland within 24 hours of you becoming aware of its presence.

Category 2 includes certain noxious fish, weeds and pest animals such as spotted gar, Miconia weed and red-eared slider turtle. This restricted matter must also be reported to an authorised person within 24 hours of you becoming aware of its presence.

Category 3 includes certain noxious fish, weeds, pest animals and insects. Examples of this category of restricted matter are gamba grass and yellow crazy ants. You must not supply to another person or release into the environment this category of restricted matter.

Category 4 includes specific noxious fish, weeds and pest animals such as the giant cichlid, bitou bush and feral pig. You must not move this restricted matter to ensure that it does not spread into other areas of the state.

Category 5 restricted matter includes certain noxious fish, weeds, pest animals such as carp, Mexican feather grass and rabbits. You must not possess or keep this restricted matter under your control. These pests have a high risk of negatively impacting on the environment.

Category 6 includes certain invasive animals such as feral deer, foxes, rabbits and wild dogs and noxious fish such as carp, gambusia and tilapia. You must not feed this category of restricted matter. With the exception of the fish species, feeding for the purpose of preparing for or undertaking a control program is exempted.

Category 7 restricted matter includes the noxious fish carp, weatherloach, climbing perch, gambusia and tilapia. If you have these noxious fish in your possession you must kill the restricted matter and dispose of it by burying the whole carcass (no parts removed) in the ground above the high tide water mark or placing it in a waste disposal receptacle.

Multiple categories may apply to restricted matter, and in such cases you would need to follow the requirements of all categories for these restricted matter listings. For example, the Act lists feral pigs as category 3, 4 and 6 restricted matter.

Refer to Schedule 1 and 2 of the *Biosecurity Act 2014* for a full list of Prohibited and Restricted Matter.

You may apply for a permit to deal with restricted matter for scientific research, commercial use or biological control purposes. Other legislation regulating the exhibited animal industry allows rabbits to be kept under permit for exhibition purposes including for use in magic acts and by zoos. You must comply with the requirements of each category for restricted matter unless otherwise authorised by a regulation or a permit.

The General Biosecurity Obligation relating to land management

The general biosecurity obligation (GBO) is one of the core principles of the *Biosecurity Act* and represents a major shift in thinking – from prescriptive to outcome based management.

The general biosecurity obligation (GBO) is an overarching obligation that requires all persons who deal with biosecurity matter or a carrier to take all reasonable and practical measures to prevent or minimise the risk. It means you need to ensure your activities do not spread a pest, disease or contaminant. Your responsibilities are:

- Take all reasonable and practical steps to prevent or minimise each biosecurity risk
- Minimise the likelihood of the risk causing a biosecurity event and limit the consequences of such an event, and
- Prevent or minimise the adverse effects the risk could have and refrain from doing anything that might exacerbate the adverse effects.

A biosecurity risk exists when you deal with any pest, disease or contaminant or with something that could carry one of these, such as moving hay off a property that contains weed seed. A biosecurity event is caused by a pest or disease or contaminant that is or is likely to become a significant problem to human health, social amenity, the economy or the environment.

However, the obligation only arises when the person knows or ought reasonably to know that the biosecurity matter, carrier or activity pose or is likely to pose a biosecurity risk. You are not expected to know about every biosecurity risk, but you are expected to know about those associated with your land management activities.

How is compliance with a GBO used to achieve local pest management outcomes?

The GBO imposes an obligation on all relevant persons – individuals, industry and government – to take an active role in preventing, managing and addressing biosecurity risks that relate to their activities. It provides a capacity for flexibility and ensures that the focus is on the management of biosecurity risk rather than following a prescribed process.

The Cook Shire Biosecurity Plan provides management outcomes for specific high priority invasive plants and animals. These management outcomes are outlined in the pest specific strategies and have been developed by the IPAAC based on priority, knowledge of distribution, feasibility, achievability and the existing and potential impacts on the biosecurity considerations (human health, social amenity, the economy or the environment) in the local area. The management outcomes set the standard for the actions and measures which are reasonable and practical for stakeholders to

undertake to address the biosecurity risk posed by these pests and achieve the desired local management objectives. However, there may be circumstances when a person fails to take the necessary actions to discharge their GBO to manage a biosecurity risk.

An authorised officer (appointed by the Council or State Government) determines, through risk-based decision-making (and following consultation with their manager/s), if the person has failed to take appropriate actions consistent with the management outcomes stated in the Cook Shire Biosecurity Plan to address that biosecurity risk.

The officer must be certain that the person responsible for the biosecurity matter understands the risk/s that must be mitigated. There may be a need for the officer to provide some education to the person. Following this, if the individual does not take steps to mitigate the risk, the officer would be in a position to consider issuing a biosecurity order.

Biosecurity Orders

A biosecurity order is an enforcement tool that may be given to a person if an authorised officer reasonably believes that a person has failed, or may fail, to discharge their GBO (s373).

A person fails to discharge their GBO if they do not take 'all reasonable and practical measures' to mitigate a biosecurity risk.

A biosecurity order can direct a person to treat, control, eradicate, destroy or dispose of biosecurity matter or a carrier in a particular way, clean or disinfect something, stop using the place or remove something from the place.

A biosecurity order **must** be directed at ensuring the recipient discharges their GBO at the place; and **may** relate to a specific biosecurity matter. In addition, the biosecurity order may propose stated times or intervals for re-entry to the place, a vehicle or another place, to check compliance with the order; or state how the recipient may show that the stated action has been taken.

Failure to follow the requirements in a biosecurity order without a reasonable excuse is an offence under the Act.

Biosecurity Programs

The *Biosecurity Act 2014* provides the Queensland Department of Agriculture and Fisheries and/or Cook Shire Council with the power to implement authorised biosecurity programs for surveillance or prevention and control programs, as required. These programs are designed to complement existing Government strategies used in weed and pest animal management and must be approved by the Chief Executive Officer (State) or Council (Local Government).

An authorised surveillance program is intended to provide a mechanism for undertaking proactive surveillance to determine the presence or absence of stated invasive biosecurity matter, monitoring compliance with the Act or assessing the effectiveness of measures taken to manage the biosecurity matter within the local government area.

An authorised prevention and control program/s is aimed at managing, reducing or eradicating a high priority pest that poses a significant and immediate biosecurity risk and is undertaken by or managed by government (e.g. electric ants in Cairns).

Main function of local government

The main function of local government under the *Biosecurity Act 2014* is to ensure that the following biosecurity matter (***invasive biosecurity matter*** for the local government's area) is managed within the local government's area in compliance with the Act:

(a) prohibited matter mentioned in schedule 1, parts 3 and 4;
(b) prohibited matter taken to be included in schedule 1, parts 3 and 4 under a prohibited matter regulation or emergency prohibited matter declaration;
(c) restricted matter mentioned in schedule 2, part 2;
(d) restricted matter taken to be included in schedule 2, part 2 under a restricted matter regulation.

To fulfill these responsibilities, Council is expected to:

(a) Control invasive biosecurity matter on land under its control.
(b) Inspect private property to determine the presence of invasive biosecurity matter.
(c) Provide advice to landholders on appropriate pest control options.
(d) Carry out procedures to ensure control of invasive biosecurity matter on private property.

The State government is responsible for:

(a) Providing technical and management information and staff training to Council personnel.
(b) Ensuring that invasive biosecurity matter controlled on land under the control of other Government Departments.

The Act allows the Cook Shire Council's Chief Executive Officer to appoint Authorised Officers to enforce the sections of the Act that apply to the Cook Shire local government area.

The *Biosecurity Act 2014* provides Authorised Officers a broad range of powers, and tools needed to ensure the level of response is appropriate to the level of biosecurity risk. These include powers of entry to check compliance or take action under a biosecurity program. There are a range of options for local government to promote compliance with this new law including raising awareness and providing educational material, through to issuing biosecurity orders, on the spot fines, prosecutions and injunctions.

Local government authorised officers can only enforce the GBO and other instruments under the Act that relate to restricted invasive biosecurity matter (invasive plants and animals). The state government is responsible for enforcing the GBO for other biosecurity matter (prohibited biosecurity matter, plant and animal diseases, noxious fish).

Locally declared pests

Councils may by resolution declare pests (weeds or animals) under local laws (*Queensland Local Government Act 1993*) if it is determined they are having/or have potential to pose a significant biosecurity risk or impact in the local government area. As of June 2017 two weed species have been declared in Cook Shire: *Calotropis procera* (Calotrope) and *Cyperus aromaticus* (Navua Sedge). The required actions for these locally declared pests within Cook Shire are identified within this plan and enforced under Cook Shire Council Local Law No. 3 (Community and Environment Management) 2016.

Biosecurity Plans

All local governments must have a Biosecurity Plan for invasive biosecurity matter under section 53 of the Act.

The plan may include:

(a) achievable objectives under the plan;
(b) strategies, activities and responsibilities for achieving the objectives;
(c) strategies to inform the local community about the content of the plan and achievement of its objectives;
(d) monitoring of the plan and evaluating its effectiveness; and
(e) other matters the local government considers appropriate for management of invasive biosecurity matter for its local government area.

This Cook Shire Biosecurity Plan 2017-2021 will guide the management of all invasive biosecurity matter and locally declared pests in the Cook Shire local government area and defines what Council expects of individuals to discharge their GBO regarding priority invasive species in specific locations.

What are reasonable and practical steps?

The steps that are considered 'reasonable and practical' will vary depending on the situation and the risks involved. Key factors include:

- *how likely an activity is to pose a risk—the more likely it is, the more action you are expected to take*
- *how harmful an activity could be (e.g. whether it could cause human deaths, extensive productivity losses or other significant economic or community losses) — the more potentially harmful it is, the more action you are expected to take*
- *how much the person managing the activity knows, or should reasonably be expected to know, about the risk (e.g. how dangerous it is and how it is spread) — the more you know, or should be expected to know, the more action you are expected to take*
- *what methods are available to minimise the risk (e.g. equipment and work practices)—the more readily available a method is, the more action you are expected to take.*

Information is widely available on reasonable and practical steps that can be taken to meet the GBO for many common pests and diseases (e.g. on government and industry websites).

Projects and Programs

The following is a brief snap shot of programs that are currently underway across the Cook Shire area.

Gamba grass management program

Goal: Reduce the impact of gamba grass on environmental, cultural, social and economic values of Far North Queensland and Cape York Peninsula.

Performance Indicator: Deliver the desired outcomes and goals of the Gamba grass management plan (Stage II): Cape York Peninsula and Far North Queensland 2016-2020.

Project partners: CSC, DTMR, SCYC, FNQROC, QPWS, Ranger Groups, landowners, South Endeavour Trust

Strategic Action:

- Continue roadside surveillance and determine distribution of the species outside of the road network.
- Implement catchment scale planning and control to reduce impacts and spread on a locality basis.
- Development of code of practice for the containment of infestations on bona-fide agricultural production systems on private land (established prior to declaration).
- Ensure risk of spread along key spread pathways is managed through local planning, industry and investment in local government biosecurity plans and roadside control programs.
- Raise awareness of risks of gamba grass to human life, infrastructure, production and biodiversity.
- Lobby federal and state agencies for additional funding to implement strategic actions.

Salvinia Eradication and Monitoring Program

Goal: Eradicate the single known infestation on Mt Poverty in the Normanby catchment and prevent new infestations in Cook Shire.

Performance Indicator: No viable plants detected in Mt Poverty dams for 3 year period. No new detections in Cook Shire.

Project partners: SCYC, Jabalbina Rangers, landowners, CYNRM, BQ, CSC, QPWS

Strategic Action:

- Continue scheduled survey and control works on Mt Poverty infestation.
- Monitor previous infestation in Honey Dam & Lakeland to ensure no new infestations establish.
- Monitor key environmental assets (Rinyirru NP and other wetland areas) for salvina.
- Target communication activities at high risk introduction pathways.

Calotrope and Navua sedge feasibility and management assessment

Goal: Determine the extent and management response required to prevent further spread and remove known infestations in the southern area of Cook Shire.

Performance Indicator: Distribution surveys completed within management areas, management response developed with agreed action plan.

Project partners: CSC, Mt Louis Station, landholders, Wujal Wujal Aboriginal Shire Council, CYNRM

Strategic Action:

- Progress local declaration of calotrope and Navua sedge.
- Survey and map distribution.
- Engage roadside vegetation managers in suitable management approaches.
- Assist or facilitate public awareness programs such as displays at local field days /talks with landholders in high risk areas.

Roadside network weed management program

Goal: Prevent the further spread of high priority invasive plants and the establishment of new infestations along the road network within Cook Shire.

Performance Indicator: Designated infestations contained and reduced; no new weed infestations established along road network.

Project partners: Cook Shire Council, DTMR, RoadTek, QPWS, Indigenous Ranger Groups, CYNRM

Strategic Action:

- Survey and map distribution of high priority weeds in areas that haven't been surveyed in last 3 years.
- Educate roadside vegetation managers and road maintenance/construction crews in suitable management approaches.
- Assist with or facilitate public awareness programs in weed seed hygiene with tourists and other road users, as well as landholders in high risk areas.
- Conduct regular control of high priority weeds in road reserve as per Action Plans.
- Conduct regular monitoring to assess effectiveness of control work and identify any new infestations.
- Define an agreed data collection and mapping methodology.

Grader grass asset protection project

Goal: Determine the extent and management response required to prevent spread along corridors to identified key natural assets.

Performance Indicator: Distribution surveys completed within management areas, key assets identified and mapped and management response developed.

Project partners: CSC, QPWS, land owners, DTMR, Indigenous Traditional Owners & Ranger Groups

Strategic Action:

- Identify key natural assets to be protected.
- Survey and map distribution along identified road corridors and other movement pathways leading to identified key assets.
- Develop coordinated management plan to protect high value assets.
- Seek funding/committed resources to implement plan.

Pond apple survey and control

Goal: To further reduce the pond apple infestations around Cooktown and Amos Bay and continue monitoring and surveys of the east coast of Cook Shire to identify any new or reoccurring infestations.

Performance Indicator: reduction in current infestations at Amos Bay and Cooktown; no new infestations identified within Cook Shire**.**

Project partners: Jabalbina Rangers, Cook Shire Council, QPWS, CYNRM, CYWAFA Inc.

Strategic Action:

- Continue control work at Amos Bay and Cooktown to reduce infestations.
- Re-survey between Amos Bay and Cooktown for any new infestations.
- Develop a management plan for controlling pond apple infestations along the coastline of Cook Shire north of Cooktown.

Hymenachne containment/eradication

Goal: Contain and reduce further spread of established infestations in Annan catchment; eradicate within Normanby catchment.

Performance Indicator: Areas of infestations reduced or maintained at 2016/17 levels in Annan catchment; infestations within the Normanby catchment contains and reduced; no new infestations established in Cook Shire.

Hymenachne containment/eradication (continued)

Project partners: CYNRM, CYWAFA Inc., QPWS, CSC, landowners.

Strategic Action:

- Continue current control work to protect key assets in the Annan catchment.
- Eradicate within Rinyirru NP.
- Survey and map distribution of other known infestations not treated in 2016/17 or previously treated, even if thought to have been eradicated.
- Identify key assets and infestations within the Normanby and Annan catchment that require urgent control.
- Develop a coordinated management plan for control of infestations threatening key assets.
- Educate land managers in impacts caused by hymenachne and recommend management strategies.
- Seek funding/committed resources to implement the management plan.

Rubber vine containment program

Goal: To reduce the spread of rubber vine within Cook Shire and continue surveys to identify any new or reoccurring infestation.

Performance Indicator: Reduction in current infestations along the road network and along the Lukin and Palmer Rivers; no new infestations identified within Cook Shire

Project partners: CSC, QPWS, Indigenous Rangers, CYNRM, CYWAFA Inc., SCYC

Strategic Action:

- Continue control work along the roadside verges, in Normanby/Laura catchment, Annie River and surrounding areas to reduce infestations
- Survey and manage infestations in other key catchments in the southern part of the Shire
- Raise awareness of the importance of containing rubber vine to restrict the spread north of the Lukin River
- Identify areas suitable for fire as a control method
- Conduct regular monitoring for presence of rust and reintroduce to infestations as required

Feral Pig Management Program

Goal: To manage feral pig population to protect key assets and reduce population where strategic outcomes can be delivered.

Performance Indicator: A reduction in complaints received regarding feral pig damage occurring within the Shire, a reduction in the impact of feral pigs on key assets.

Project partners: CSC, Queensland Parks and Wildlife Service, Traditional Owner Ranger Groups, South Cape York Catchments, landowners, BQ, Landcare

Strategic Action:

- Continue the feral pig trapping program in and around urban areas.
- Provide access to 1080 baiting materials where appropriate.
- Continue and where possible expand the coordinated baiting program.

Feral Pig Management Program – Strategic actions (continued)

- Educate individual landholders and government agencies in best practice control techniques and the benefits of coordinated control programs.
- Encourage land managers to monitor populations and impacts of feral pigs.
- Share data with other groups managing feral pigs on the Cape.
- Investigate options for land managers capturing data using digital app.

Coordinated wild dog management program

Goal: To manage wild dog populations where they are having a negative impact on agricultural production and communities.

Performance Indicator: A reduction in economic losses attributed to wild dogs and a reduction in complaints to Council of wild dogs encroaching on urban areas.

Project partners: CSC, graziers, QPWS, Landcare, Indigenous Shire Councils and Traditional Owners.

Strategic Action:

- Continue the wild dog control program around urban areas
- Provide access to 1080 baiting materials where appropriate
- Continue and where possible expand the coordinated baiting program
- Educate individual landholders and government agencies in best practice control techniques, the benefits of coordinated control programs and good neighbour policies
- Assist and encourage graziers to monitor populations using trail cameras or sand plots to establish activity indexes
- Assist and encourage graziers to assess wild dog impacts by collecting data relating to predation losses and evidence of mauling
- Work with QPWS and other Shire Councils to develop agreed management protocols where wild dogs are causing an impact on adjacent land.

Tramp Ants surveillance and control

Goal: To keep declared tramp ants from establishing in the Shire and managing populations of other invasive ants where they are having an impact on social wellbeing.

Performance Indicator: No declared tramp ants or ant species listed in the national tramp ant Threat Abatement Plan established within Cook Shire.

Project partners: CSC, QPWS, BQ, WTMA

Strategic Action:

- Conduct sentinel monitoring for tramp ants at green waste sites.
- Provide education materials to residents and visitors on tramp ants.
- Continue and where possible eradicate existing invasive ant populations where they are having a social or environmental impact.
- Provide sampling and identification services to members of the public.

Key Objectives

The objectives proposed for this plan are consistent with those of the state weeds and pest animal strategies (developed in accordance with the requirements of the *Biosecurity Act 2014*) and are central to the success of biosecurity management activities.

The following part of the plan is presented as a series of tables, which outline six key objectives:

Awareness – the development of processes that allow information relating to invasive plants and animals and their management to reach all relevant parties.

Surveillance – the creation of an environment in which all interested participants are encouraged to engage in the collection and sharing of data relating to the distribution and impacts of invasive plants and animals, including the outcomes of management programs and activities.

Prevention – that preventing the establishment or spread of invasive plants and pest animals is a task undertaken by as broad a range of individuals and organisations as possible.

Commitment – that commitment to implementing and supporting effective biosecurity management is a value shared and actively promoted by all parties interested in biosecurity challenges.

Consultation and partnerships – all willing participants are working together to build and maintain partnerships, identify priorities, set strategic directions, develop coordinated programs and monitor outcomes

Ongoing management of priority invasive biosecurity matter - that targeted on ground action to reduce the impact of invasive plants and animals on the environment, economy and community of the Cook Shire is undertaken by organisations and individuals in a collaborative and effective manner.

Detailed in the tables below under each Key Objective are principles, actions or desired outcomes (what needs doing to achieve the objective), who is tasked with delivery of the action(s), the timeframe for delivery and the success indicator (KPI) for each deliverable. These tables will be reviewed annually to assess progress of the plan delivery/achievements.

Plan consultation workshop Laura 2015

Key Objective 1: Awareness

The development of processes that allow information relating to invasive plants and animals and their management to reach all relevant parties.

Principle	Strategic Action	By Whom	Timeframe	Success Indicator
Awareness of invasive plants and animals must be raised across community, industry and government to increase capacity and willingness of individuals to recognise potential impacts and manage biosecurity risks.	IPAAC works together to promote weed and pest animal awareness across all sectors and interest groups.	IPAAC	Ongoing	Stakeholders are more informed of weed and pest animal issues; IPAAC meetings well attended; stakeholders contribute to pest planning processes.
	Information on weeds and feral animal management is presented at field days and other opportunities (e.g. Agforce events, Reef guardian program, catchment meetings/events, IPPAC meetings, Council meetings).	CSC, DAF/BQ, weed and feral animal specialists	Ongoing	Number of presentations made.
	Ensure up to date and relevant information is available on invasive plants and animals and their management.	DAF, CSC, CYNRM, Landcare, SCYC	Ongoing	Pest Facts are current; Weed ID books available; BP easily accessible.
	Erect signage and posters at strategic locations throughout the Shire to inform residents, visitors and contractors.	CSC, DAF, CYNRM	By end of 2018	Signage and posters on display across Shire; invasive species information included in Lakeland Gateway Project.
	Hold weed identification training/workshops and provide identification service to stakeholders.	CSC, CYWAFA Inc., DAF	Ongoing	Weed Spotter workshops held. Weed identification provided when requested.
	Participate in projects and programs to raise awareness about weed and pest animal issues within Cook Shire (e.g. Thoughtful Travelling Cape York).	CSC, CYNRM, Landcare, CYWAFA Inc. SCYC, QPWS	Ongoing	Attendance at relevant meetings; pest project and program outcomes realised.

Key Objective 2: Surveillance

The creation of an environment in which all interested participants are encouraged to engage in the collection and sharing of data relating to the distribution and impacts of invasive plants and animals, including the outcomes of management programs and activities.

Principle	Strategic Action	By Whom	Timeframe	Success Indicator
Data collected from surveys and projects is available to all interested parties and surveillance activities are coordinated and planned to maximize the early detection of biosecurity risks.	Encourage stakeholders to undertake regular weed monitoring on their property and report possible biosecurity risks.	Stakeholders	Ongoing	New weed incursions reported in a timely manner by land owners/managers. Photo points (or other measuring methods) are established to monitor effectiveness of management actions.
	All land managers are encouraged to accurately map high priority weeds on their land.	Stakeholders	Ongoing	Accurate mapping is available across all land tenures for high priority weeds.
	Land managers share data with Council, Government and each other.	Stakeholders	Quarterly	Data and information shared at IPAAC meetings; GIS/mapping data incorporated into Council's database and sent to Pest Central.
	Coordinate surveillance activities to maximize the early detection of biosecurity risk.	CSC, DAF, NAQS	Annually	Priority survey plan developed and maintained.
	Collate and disseminate information on the presence, distribution and abundance of invasive plants and animals.	CSC, BQ/DAF, CYNRM, QPWS, EHP, DNRM	Ongoing	Up to date data is readily available and accessible.
	Ensure data and maps are provided to stakeholders in the region to assist with management of invasive species and support funding applications.	CSC, CYNRM, BQ	As required	Useful maps and shared information is provided to stakeholders across the region.

Key Objective 3: Prevention

Preventing the establishment or spread of invasive plants and pest animals is a task undertaken by as broad a range of individuals and organisations as possible.

Principle	Strategic Action	By Whom	Timeframe	Success Indicator
The introduction, spread and establishment of invasive plants and animals is prevented.	Ensure nurseries, land managers and the community are aware of declared species and the GBO.	CSC, DAF, Community groups	Ongoing	No new weed species introduced or established via plant sales or planting programs.
	Promote weed hygiene protocols for movement of soil and fodder; and machinery and vehicles.	CSC, DAF, TMR, Agforce, Landcare	Ongoing	Use of weed prevention declaration or some other form of record; evidence of machinery cleaning.
	Promote early reporting of pest problems and respond to landowners complaints promptly.	CSC, DAF	Ongoing	% of recurrence of target weeds
	Identify and prioritise potential invasive plants and animals and emerging threats to the region including fire, flood, mining activates, development, surveys etc.	CSC, IPAAC, DAF, FNQROC	Dec 2017	Potential invasive plants and animals listed in BP; threats to region identified.
	Promote and participate in Rapid Response protocol.	CSC,DAF	As required	All confirmed new weeds responded to in timely fashion. No incursions of new weeds established.
	Work with neighbouring shires to reduce potential for weed spread along the road network into Cook Shire.	CSC, FNQROC, DAF, CYP Indigenous Councils	Ongoing	No new weeds established on roadsides coming from neighbouring shires.

Key Objective 4: Commitment

Commitment to implementing and supporting effective biosecurity management is a value shared and actively promoted by all stakeholders.

Principle	Strategic Action	By Whom	Timeframe	Success Indicator
Effective management of invasive plants and animals requires long-term commitment by affected land managers, community, industry groups and government agencies to achieve a collaborative approach to biosecurity management	Maintain an advisory group of key stakeholders to develop and review management plans and actions.	CSC Lead; Stakeholders participate	Ongoing	Meetings held and updates provided. Continued working partnerships.
	Participate in delivery and hosting of taskforce operations under the regional taskforce MOU.	CSC, FNQROC	As required	Number of taskforces attended or hosted.
	Participate in regional advisory and governance of Biosecurity (NAMAC).	CSC, DAF, FNQROC	Quarterly	Attend and contribute to quarterly NAMAC meetings.
	Investigate people's attitudes to biosecurity and find ways to engage and motivate them to manage biosecurity risks.	CSC	Annually	Additional advocates for biosecurity in shire undertaking regular weed and pest animal control.
	Support State and Commonwealth pest management projects and research.	CSC, DAF, CYNRM, IPAAC	Ongoing	State/Commonwealth projects supported.
	Pursue funding options across all levels of the community and support stakeholder projects where they align with the BP.	CSC, Landcare, CYNRM	Ongoing	Stakeholder's projects receive support and resources.
	Utilise compliance where necessary in line with principals in the Strategic Action Plans.	CSC	As required	Compliance exercised when necessary to achieve outcomes within the BP.
	Liaise with Federal and Government agencies and research organisations on local pest issues and management objectives.	CSC, DAF, FNQROC, QPWS	As required	Meetings held; projects or programs established that align with objectives of BP.

Key Objective 5: Consultation and partnerships

All willing participants are working together to build and maintain partnerships, identify priorities, set strategic directions, develop coordinated programs and monitor outcomes

Principle	Strategic Action	By Whom	Timeframe	Success Indicator
Biosecurity planning needs to be consistent and integrated at local, regional, State and national levels to ensure resources target biosecurity priorities set at each level.	Ensure that the Biosecurity Plan is consistent with related Government and regional strategies and plans.	CSC, IPAAC	Annually	No inconsistencies between plans.
	Relay local information to representatives on the National and State weed and feral animals groups.	CSC, DAF, CYNRM	Ongoing	Information on Cook Shire pest issues included in National and State programs & information.
	Encourage consultation between interested stakeholders to form shared responsibilities and partnerships to undertake coordinated management.	All Stakeholders	Ongoing	Coordinated control programs planned and undertaken; regional based projects proposed for funding.
	Participate and contribute to regional planning and advisory groups and forums (i.e. NAMAC, CY Feral Pig group).	CSC, DAF, FNQROC	As required	Number of meetings and events hosted or attended.
	Annual review of BP action plans and management objectives.	IPAAC	Annually	Timely review of action plans completed.
	Identify and facilitate opportunities for engaging with Traditional Owners on weed and pest animal issues and management.	IPAAC	Ongoing	Participation by Traditional Owners in workshops/forums with IPAAC.

Key Objective 6: Ongoing management of priority invasive biosecurity matter

Stakeholders undertake effective and targeted on ground action to reduce the impact of invasive plants and animals on the environment, economy and community of Cook Shire.

Principle	Strategic Action	By Whom	Timeframe	Success Indicator
Best Practice Management is adopted by stakeholders/land managers	Consider timing, integrated, techniques, off-target damage, cost, animal welfare, workplace health and safety, monitoring, research, operational procedures and chemical registration requirements in planning pest control programs.	All stakeholders	Ongoing	Pest control program plans contain comprehensive coverage of issues.
	Publicise and educate stakeholders about duty of care when using herbicides and pesticides.	CSC, DAF, QHD	Ongoing	Stakeholders are aware of their responsibilities and licenced/trained in the safe use of chemicals.
	Promote the use, awareness and availability of Best Practice Manuals and Code of Practice.	CSC, DAF, FNQROC	As required	Best Practice Manuals distributed and Codes of Practice are adopted.
	Maintain and update pest management distribution data and record progress against key objectives.	CSC, DAF	Annually	Distribution mapping for priority pests and weeds presented to IPAAC during plan review workshop. Report on progress against key objectives is provided to stakeholders.

Pest assessment and prioritisation framework, and the regional context

A fundamental aspect of pest management planning is working out your priorities and understanding those of others. Priorities assist in distributing resources (people, vehicles, equipment or funds), aligning effort and communicating goals. Setting priorities allows all participants to establish and communicate the timelines and resources required to effectively manage pests and weeds with what is available.

A framework for development of a zoned and prioritised pest management plan, which can be reported on, was developed by FNQROC and adapted for use in the Cape York context. It guides the decision making process by asking key questions like: What weeds and pests do we have? Where are they? How much is there? How serious is it? Can we deal with it? When should we put effort into it? What should we do first with what we have available to us?

The pest assessment and prioritisation process was delivered in several face to face sessions delivered by the FNQROC and Cook Shire Council, with people who have knowledge of or are involved in managing weeds and pests within Cook Shire. Information on the known current extent and management effort for each species are provided as part of the process to make sure everyone involved has an understanding of work being done or impacts caused by pests and weeds.

Why use a system to make a decision?

Bringing together all the contributors (households, graziers, land trusts, rangers, hunters, service providers, road-makers, councils, government agencies etc.) to make collective decisions is a process of negotiation, collaboration and at times, compromise. In order for the decisions made in pest management planning to be supported it is important for the process to be open and fair so everyone can have a say. It should also be a process that can be used again to review an earlier decision if the situation changes or if a new pest or weed arrives on the scene. A structured process like this framework (sometimes called a decision support system) helps record the decision making process and in a way gives participants some rules to guide them.

Why is scale so important?

The scale of the area subject to the planning and prioritising process will determine both the level of detail required and to a large extent the type of priorities which are able to be determined. For example a pest management planning process should have relevance whether applied at a property (e.g. farm, land trust, block) scale or at the whole of Cook Shire scale. It may be that several consultations and implementation plans are required across a local government area to accommodate the key differences in land use, different groups of people in the area (e.g.- age groups, indigenous, non-indigenous, miners, cattlemen) and types of country.

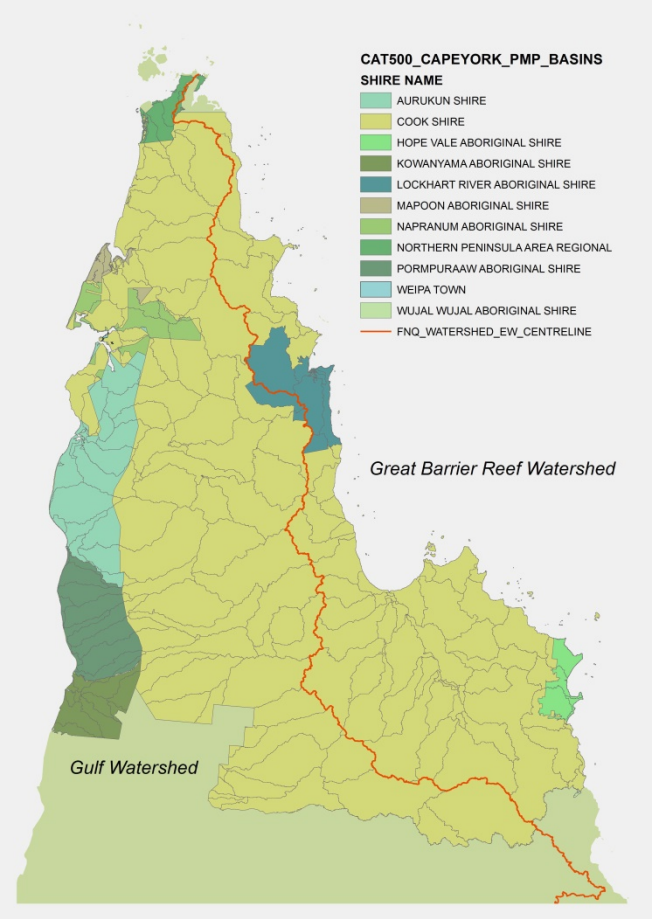
Sub-catchment planning units

The management areas used in this planning process are based on catchment and sub-catchment boundaries. These are useful units of management to use because they often relate to how weeds and pests move in the landscape (e.g. weeds often spread downstream along a watercourse). Often key features like roads, tracks and communities are built on the high ground between basins and help mark the boundaries. Rivers and creeks themselves are also useful boundary markers. If

required further divisions can be made within the sub-catchment boundaries to provide more detail in smaller council areas or to divide bigger sub-catchments into smaller planning units

Cape York has two major water sheds; one which drains to the east and the Great Barrier Reef and the other which runs to the Gulf of Carpentaria. The region can then be divided into 9 major land groups which contain around 450 sub-catchments (Figure 2).

Figure 1. Catchments of Cape York Peninsula



Who will determine priorities?

Talking with all the people involved in pest and weed management in a local government area is important in initiating and maintaining a pest planning and management program. Targets, goals and priorities determined through workshops will have much greater relevance if they are decided by those who will be implementing them. Establishing or utilising existing advisory groups and getting the community involved are fundamental to this process. It is likely the groups involved will vary from place to place and between shire councils.

What measures are used?

The priority setting process draws on existing processes and tools used elsewhere for determining priorities in pest and weed management. The determination of species listed in National (WONS) and State (*Biosecurity Act 2014*) are both examples of risk analysis and prioritisation processes. This strategy builds upon the foundations for pest management prioritisation within Werren 2004 and the methods used by councils in the Wet Tropics region. In order to assess newly arrived species, or species whose impact might be different in a local situation, a range of measures which consider existing priorities, impact and capacity to manage are used.

Can this process be applied to both pest animals and weeds?

The framework can be applied to both weeds and pest animals. The mapping of the distribution for pest animals may not be possible with the same accuracy as weeds as they move around in the landscape. For widespread pests like feral pigs it is sometimes easier not to map where the pest is but rather map the key areas where they are an issue e.g. where are the high value wetlands or cultural sites they may be damaging?

How does the process work?

The people who attend the priority setting workshops are asked to score each pest and weed against a range of categories. At the end of the process the pests and weeds are ranked according to their individual scores. Whilst ranking provides a relative scale of priority for individual weed/pest animals within a given area, it is ultimately used to determine the 'top' 10-20 issues which will be targeted for investment by people who manage pests and weeds within that local shire area.

The regional context

This assessment and prioritisation framework is a shared process between the Regional Pest Management Strategy and local government pest management plans (Figure 2). The framework has been applied across all the Far North Queensland and Cape York Councils, so provides a continuum at a land scape scale. It and creates management plans which are locally distinct but regionally consistent so they make sense to your neighbours as well.

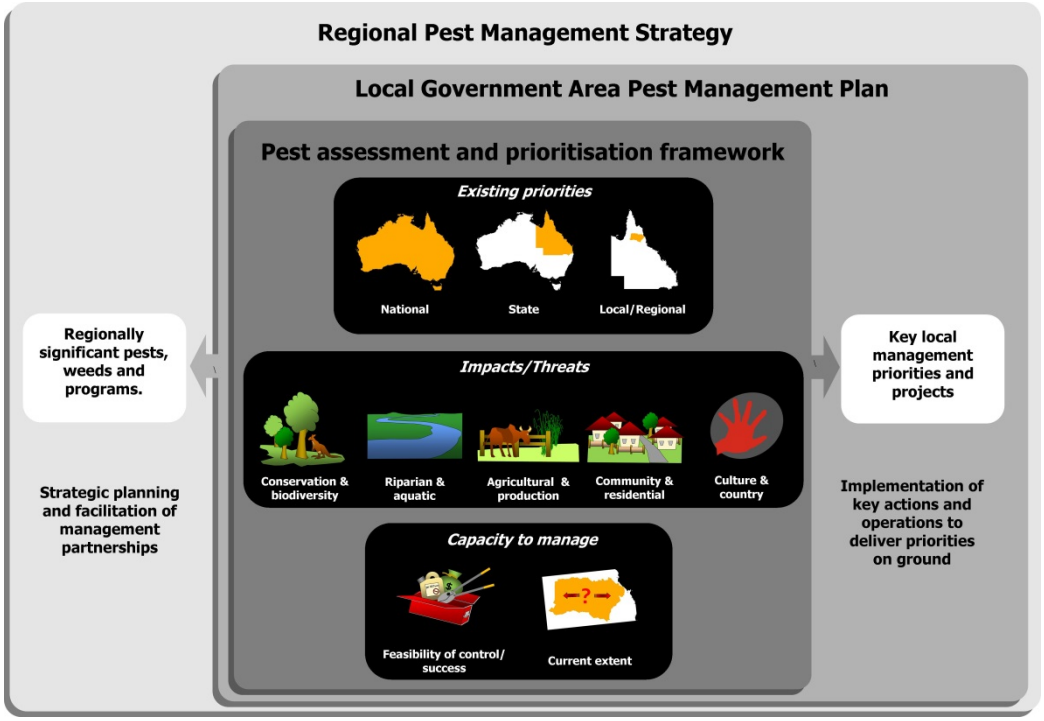


Figure 2 – Link between the pest assessment and prioritisation framework, and regional and local government pest management plans

Prioritisation of Pests in the Cook Shire Area

The framework above was utilised by the working group in assessing and assigning the priorities of pests within this plan. The process of determining priorities was conducted by members of the pest plan working group incorporating stakeholder responses to the prioritisation questionnaire, prior to going to wider consultation with the IPAAC. More details on the Local Government Pest Assessment, Prioritisation and Planning Framework can be found at www.fnqroc.qld.gov.au

The scores of the top priority weeds and pest animals are provided in Tables 1 and 2 on the next page. Specific action plans have been developed for these species and are included later in this plan.

Table 1 – High Priority invasive plants for Cook Shire

WEED NAME	NATIONAL	STATE	LOCAL								TOTAL SCORE
Salvinia	2.5	1.5	5	4	5	4	4	5	5	5	41
Bellyache Bush	2.5	1.5	5	5	4	5	4	5	3	3	38
Gamba Grass	2.5	1.5	5	5	4	3	5	5	3	3	37
Hymenachne	2.5	1.5	5	4	5	3	2	5	3	5	36
Pond Apple	2.5	1.5	5	5	5	3	3	4	2	4	35
Giant Rat's Tail Grass & other weedy Sporobolus spp.	0	1.5	5	4	4	4	4	3	4	4	33.5
Thunbergia spp.	0	1.5	5	4	4	2	4	4	3	5	32.5
Drooping tree pear	0	0	5	3	2	4	4	4	5	5	32
Rubber vine	2.5	1.5	5	4	4	4	2	4	3	2	32
Lantana	2.5	1.5	5	3	4	3	2	4	2	4	31
Calotrope	0	0	3	5	3	4	3	3	5	4	30
Navua sedge	0	0	4	4	4	4	3	3	3	5	30
Giant Sensitive Plant	1.5	0	5	2	3	3	2	3	5	5	29.5
Sicklepod	0	1.5	5	4	4	4	3	5	1	1	28.5
Grader Grass	0	0	4	5	4	5	4	4	1	1	28
Lion's Tail	0	0	5	3	3	4	3	3	3	4	28
Mother in Law's Tongue	0	0	4	4	3	2	4	3	2	5	27
Leucaena	0	0	4	3	3	2	4	4	2	4	26

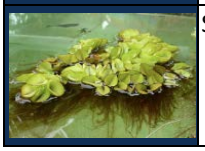
Table 2 – High Priority invasive animals for Cook Shire

ANIMAL NAME	NATIONAL	STATE	LOCAL								TOTAL SCORE
Tramp ants	0	1.5	0	5	3	5	5	5	5	5	34.5
Feral pigs	0	1.5	5	5	5	5	4	5	2	1	33.5
Feral deer	0	1.5	5	4	3	4	4	4	2	5	32.5
Tilapia	0	0	5	5	5	2	2	4	2	5	30
Feral cats	0	1.5	5	5	2	2	5	5	2	1	28.5
Feral horses	0	0	5	4	4	4	3	4	2	2	28
Wild dogs	0	1.5	5	2	1	5	5	5	2	1	27.5

For a full list of the invasive plants and animals that were included in the prioritisation process refer to Appendix 1.

Monitoring list

The following weeds are presumed eradicated from the location indicated and are currently under monitoring to ensure they do not reoccur. Any suspected sightings of these weeds should be reported to Biosecurity Services on 4069 5444.

MONITORING	Weed	*Biosecurity Act 2014* classification	Location	Where to watch out for it
	Bauhinia	Nil	Endeavour valley	River banks & waterways
	Parthenium	Restricted invasive plant, category 3	Cooktown rural areas, Endeavour Valley, Lakeland (present in Douglas and Mareeba Shires)	Poultry feeding areas, hay, machinery
	Salvinia	Restricted invasive plant, category 3	Lakeland/Honey Dam (present in Douglas Shire and Mareeba Shire at Rifle Creek)	Water features, gardens, nurseries, dams

Noxious fish

	Tilapia	Restricted noxious fish, category 3,5,6,7	Endeavour River, Tablelands, Mareeba, Cairns, Cassowary Coast	Aquarium, deliberate release, live bait

Noxious fish are managed by the Queensland Government, so this plan does not deal with their management. However they were raised during the consultation phase as they do occur in the area and it was felt they should be monitored for movement to other areas.

Additional weeds requiring assessment and prioritisation

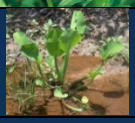
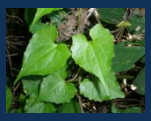
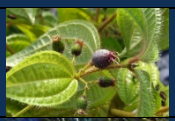
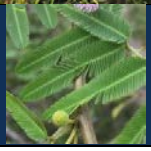
The following invasive plants that are present within Cook Shire were identified as of concern during the final consultation phase and should be assessed for their impacts with a view of deciding if they should be included in the list of high priory invasive plants in the next version of this plan. They will be assessed and rated during the coming 12 months by the IPAAC.

Common Name	Scientific name	Declaration and Category
Thatch Grass	*Hyparrhenia rufa*	Nil
Mission Grass	*Pennisetum polystachion*	Nil
Wing stem daisy	*Verbesina alata*	Nil
Malachra	*Malachra fascialta*	Nil

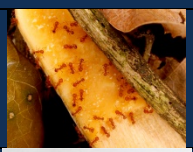
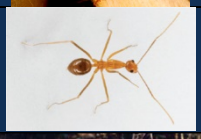
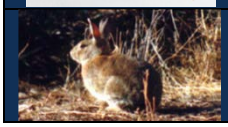
Pest and weed alerts

Some weeds and pests are not yet present within Cook Shire but are considered important due to their close proximity and potential to negatively impact natural or productive values in our region. The cost of keeping these pests out of the region must be taken into account. If you suspect you have seen any of these pests and weeds in the Cook Shire Area please report to the Biosecurity Services on 4069 5444 or BQ on 13 25 23. For further information go to www.daf.qld.gov.au/plants/weeds-pest-animals-ants

Weeds

ALERTS	Weed Name	*Biosecurity Act 2014* classification	Vicinity (State or Local Government Area)	Likely source and mode of spread
	Alligator Weed	Restricted invasive plant, category 3	Douglas Shire (eradicated)	Aquariums, water
	Limnocharis	Restricted invasive plant, category 2, 3, 4 & 5	Cairns, Cassowary Coast	Tourist and locals – vehicle, collected plants
	Cat's Claw Creeper	Restricted invasive plant, category 3	Hopevale, Tablelands	Spread by water and wind. Tuberous roots also spread by floods and humans.
	Mikania vine	Restricted invasive plant, category 2, 3, 4 & 5	Mareeba, Cassowary Coast, Hinchinbrook	Gardens, nurseries
	Siam Weed	Prohibited invasive plant	Douglas and Mareeba Shires	Machinery, stockfeed
	Miconia	Prohibited invasive plant	Douglas Shire, , Mareeba, Cairns, Cassowary Coast	Birds, contaminated machinery and soil
	Koster's curse	Restricted invasive plant, category 2, 3, 4 & 5	Mareeba (Julatten)	Spread by birds, contaminated machinery and soil
	Parkinsonia	Restricted invasive plant, category 3	Pormpuraaw	Vehicles, machinery
	*Mimosa pigra*	Restricted invasive plant category 2,3,4,5	Peter Faust Dam near Proserpine	Boats, fishing & camping gear

Pest Animals/Tramp Ants

ALERTS	Pest Name	*Biosecurity Act 2014* classification	Vicinity (State or Local Government Area)	Likely source and mode of spread
	Electric ants	*Restricted matter, category 1*	Cairns	Pot plants
	Yellow Crazy Ants	*Restricted matter, category 3*	Port Douglas, Cairns	Pot plants
	Rabbits	Restricted matter, category 3,4,5,6	Mareeba	Released/escaped pet or deliberate release

Environmental Weeds

The following invasive plants can have detrimental impacts in environmentally sensitive areas such as rainforest or riparian areas. They are often found in urban areas in Cook Shire. Land managers should ensure they adhere to any legislative requirement (if listed as Restricted matter (RM)) and ensure that they are not allowed to spread or establish outside of populated areas. Keeping of these plants should be discouraged to reduce the potential for spread.

Name	*Biosecurity Act 2014* classification	Name	*Biosecurity Act 2014* classification
African Tulip Tree	RM Category 3	Neem Tree	Nil
Barleria	Nil	Praxelis	Nil
Bauhinia	Nil	Singapore Daisy	RM Category 3
Mother of Millions	RM Category 3	Yellow Oleander (Cook's Tree)	RM Category 3

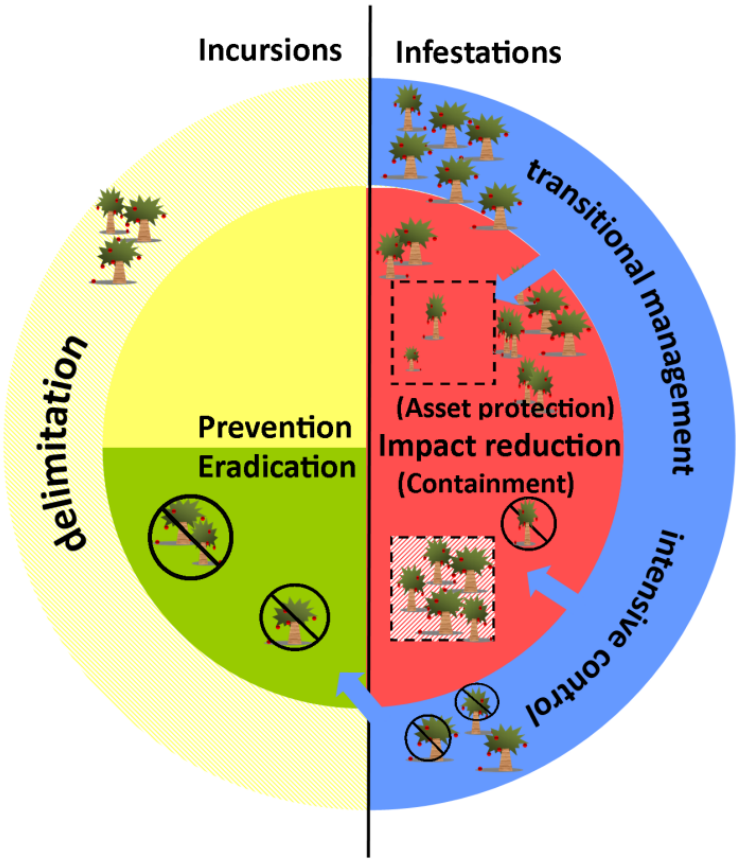
Mother of millions

Approach to developing the action plans

A management zoning approach has been adopted to communicate the management objectives of this plan across the whole range of stakeholders that need to be involved. The zoning approach is a graphics based hierarchy of actions that identifies the management and biological target for each management area. It is important that stakeholders understand both their role and their responsibilities in regard to the delivery of this biosecurity plan. These have been incorporated into action plans for priority weeds and pest animals.

The zones in detail

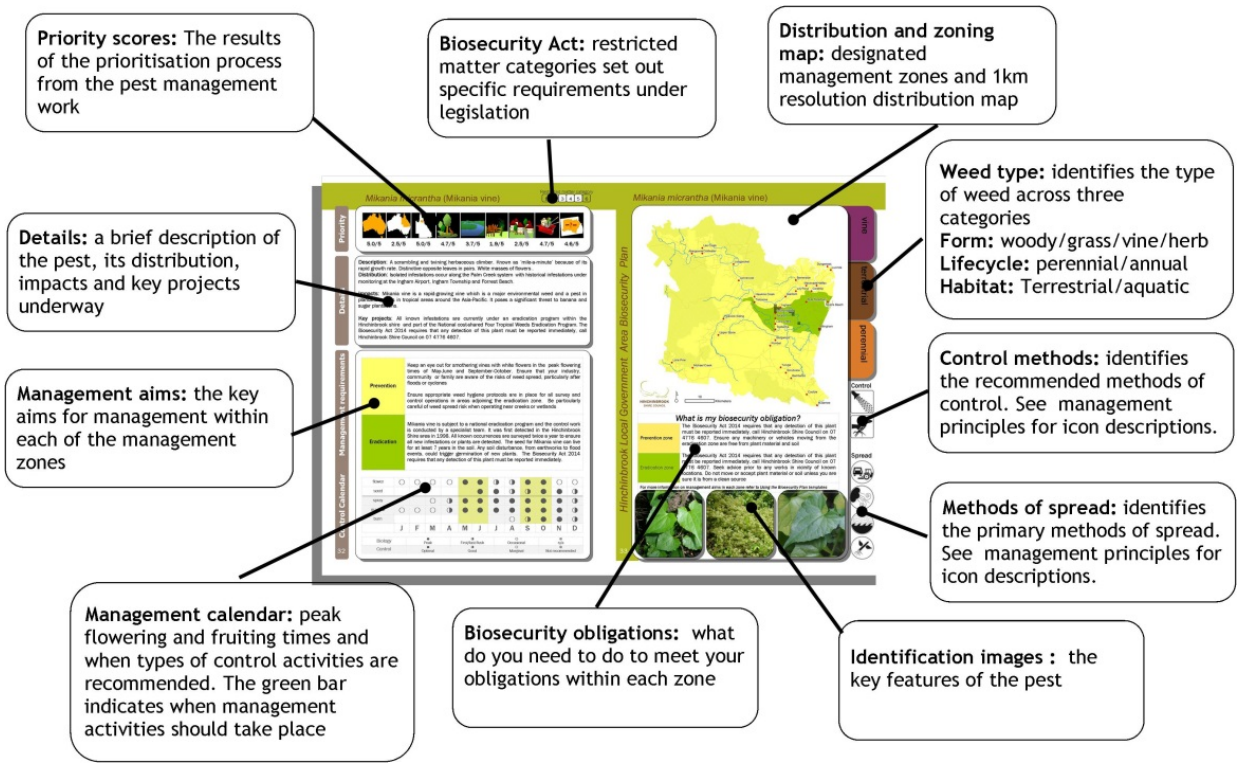
The management zoning approach identifies six management objectives. The objectives are assigned at a sub-catchment scale to guide both the management target (activities and actions) and biological target (the desired outcome). The first three objectives are grouped under the theme of ***incursions*** and aimed at detecting, preventing and eradicating the target pest from the designated zone and are specifically targeted at managing the seeds and seed bank (or reproductive capacity in animals). The final three identify the options for managing established ***infestations*** to reduce their impacts and limit opportunities for further spread. They are stylised in the diagram below and defined in more detail in the following table.



Management zone		Definition	Management target	Biological target
		Managing incursions and new introductions		
Delimitation - knowing where it is (and isn't)		Delimitation is a deliberate action taken to determine whether a species is present or absent in a predefined area	*Determine the extent of the pest before deciding what to do next*	*Stop introduction and reproduction*
Prevention - keeping clean areas clean		Prevention is a deliberate action taken to prevent species spreading to predefined areas where they do not currently occur.	*Come clean go clean – keep weed and pest animal free areas clean*	
Eradication - removing all plants, seeds and seedbank or all animals/insects and eggs		Eradication is a deliberate action taken to remove all individuals of a species including all propagules in the soil seed bank from within a predefined area	*Be vigilant – remove all seeds (seedbank) plants and pest animals from the zone*	
		Managing existing infestations and outbreaks		
Intensive control or transitional management		Intensive control is a deliberate action taken to move towards eradication from containment or asset protection to eradication, *or* Transitional management is deliberate action to move away from an eradication objective to an impact reduction objective in a predefined area	*Think big and plan for the long term – reduce infestations to a size that can be eradicated or transitioned to the appropriate impact reduction goal*	*Limit or reduce infestation growth, spread and impacts*
Impact reduction - protect important places and reduce the spread	*Containment*	Containment is a deliberate action taken to prevent establishment and reproduction of a species beyond or out of a predefined area	*Maintain buffers and protect important places – protect assets and minimise the risk of spread to new areas*	
	Asset protection	Asset protection is a deliberate action taken to reduce the impacts on important assets in a predefined area		

Using the pest plan template

The pest plan template summarises the key information on each of the priority pests for the local government area pest management plan. More information on each of the fields within the template is included within the *management principles* sections of this biosecurity plan or in the *further information and links* section



Control and biology calendar

The management calendar identifies the optimum periods of activity in the life cycle of the pest as well as the ideal times to implement/or avoid different management strategies.

symbol	biology	control
●	Peak	Optimal
◑	First/last flush	Good
○	Occasional	Marginal
⊗	n/a	Not recommended

Pest Management Principles and key to icons used in Action Plans

An understanding of management techniques and tools as well as the biology of the pest are important knowledge for all people involved in pest management. The following pages describe the key control methods and modes of dispersal which pest managers need to be aware of. The icons are included within the priority pest action plans in the following section.

Control Methods

(Text and icons adapted with kind permission from Matt Birch, Cairns Regional Council Pest Management Plan 2012)

Frill/Stem Injection

Herbicide may be directly applied to the vascular system of the plant by way of frilling or stem injection. Cuts are made in the bark of a tree or woody section of a vine so that access is opened to the cambium tissue and then herbicide is applied. Operators must be sure that the cuts are made low to the ground and that the cuts are made continuously around the perimeter of the trunk/ stem. It is common practice to stagger the cuts to maximise chemical application and to ensure that all of the vascular transport in the tree is disrupted. Cuts are made with an axe, or machete on a downward angle leaving a "frilly" scarf on the tree when done properly. The frilled notches aid in holding herbicide. In some applications, similar downward cuts can be made with a chainsaw. This technique is beneficial when trees are best left standing for follow up access, if felling is too complicated or restricted by resources. Note that dead trees and falling limbs can become a safety hazard during follow up work and during flood events. Chemical can be applied with an injection gun, low pressure spray pack or with a paint brush. Some trees that are known to sucker or coppice can be killed this way several weeks before felling, to kill the root system before felling.

Basal Bark

Basal Bark technique refers to the spraying of a lower truck (basal area) of a tree or vine with herbicide which is usually suspended in diesel. This mixture is suited to many weedy trees and is often a quick way of achieving a kill while leaving the tree standing.

This technique is not permitted in or close to water. When using basal bark technique, attention must be paid to manufacturer's recommendations with regard to chemical rates and the maximum basal diameter that the chemical can be applied to gain consistent kills. Operators commonly use low pressure "pump pack" type spray equipment to apply the chemicals.

Chainsaw/Cut stump

Felling trees and large woody weeds and vines is often the most thorough method to ensure consistent kills. Due to most plants' ability to coppice, regrow or sucker, this method requires the application of herbicide to the freshly cut stump. It is important to apply the chemical quickly to the stump (within 10 seconds) to ensure that the tissue does not close over and prevent penetration of the herbicide. This method is common with chainsaw felling of large trees but is equally successful when treating smaller woody weeds and vines where cutting with sharp knife, secateurs or machete is followed quickly with application of a suitable herbicide. Always check label for permitted herbicide use or contact your Local Government LMO for advice regarding chemical application, permits and best practice.

Chop/Grub

Due to its labour intensiveness, chopping or grubbing is often overlooked a weed management practice. However, it remains an effective way of selectively removing weeds without chemicals. Using machetes, cane knives or hoes, operators can remove seed, flowers or even kill entire woody weeds or grasses. Many vines require chopping to gain access to roots and tubers where other methods can be deployed such as stem injection.

Drill/Stem Injection

Herbicide may be directly applied to the vascular system of the plant by way of drilling or stem injection. Holes are drilled in the bark of a tree or woody section of a vine so that access is opened to the cambium tissue. This technique is also used with tuberous vines.

Operators must ensure that the holes are drilled low to the ground and there are sufficient number if holes to kill the target species. Generally holes are drilled 5-10 cm apart all the way around the trunk. As with frilling, holes are drilled downwards to hold the chemical and when used with a 5ml injection gun, this technique results in less wasted chemical. Conversely, the drill and inject method is more time consuming and requires access to cordless drills and spare batteries which may not always be appropriate.

Stem injection is beneficial when trees are best left standing for follow up access, if felling is too complicated or restricted by resources. Note that dead trees and falling limbs can become a safety hazard during follow up work and during flood events. Chemical can be applied with an injection gun or low-pressure spray pack. Some trees that are known to sucker after felling can be killed this way several weeks before felling to ensure that the entire plant is killed.

Always check label for permitted herbicide use or contact your Local Government LMO for advice regarding chemical application, permits and best practice.

Improved Grazing Practices

Overgrazing can lead to depletion of desirable species and create other issues like compaction, and bare ground which provide opportunities for weeds to establish. Where serious weeds invade pastures, often stock avoid these species leading to a dominance of woody weeds or unpalatable grasses. Continued intensive grazing or overgrazing can lead total destruction of pastures or complete domination by woody weeds i.e. Sicklepod. Careless weed hygiene practices can lead to movement of seeds with stock and trucks to other properties over long distances. Yarding stock for several days can minimise this problem when stock are exposed to major pastoral weeds. Washing down equipment is recommended prior to movement. Spelling paddocks and slashing weeds prior to seed set, spot spraying and grubbing can all be effective in controlling pastoral weeds. For property pest management planning contact your Local Government LMO or contact DEEDI for information regarding grazing and pasture management.

Hand Removal

Many weeds can be controlled by simple hand removal. This method can be used on small-scale infestations and/or in places where equipment cannot be accessed. Hand removal may be the only option where chemical use is not legal or appropriate i.e. Hand removing salvinia in small ponds, or hand pulling sicklepod seedlings. On removal, it is important to

dispose of the living plant material appropriately. This may involve bagging the waste, composting on site, or ensuring that the roots of the plants cannot access soil/water and re-shoot.

Foliar Spray

There are many herbicides registered for weeds and the most common method of application is spraying. Chemicals can be sprayed on the ground by hand, from a boom or from an aircraft or boat. Common methods of ground application include:

1) Low pressure application i.e. 20L pump up spray bottle.

2) 12v and petrol mechanised spray units i.e. PTO driven tractor spraying.

3) Controlled droplet application i.e. boom spraying.

The practice of spraying is complex and heavily regulated. Herbicides, target species and situations for spraying are controlled by permitted uses listed on product labels. There are also off-label permits available that operators may observe under particular qualification. The Australian Pesticides and Veterinarian Medicines Authority (APVMA) administer all permits that relate to pest management related herbicides, fungicides, adjuvants and toxins. Always check the label for permitted herbicide use or contact your Cook Shire's Biosecurity Services for advice regarding chemical application, permits and best practice.

Biocontrol

Biocontrol refers to the release of carefully selected natural pests of weeds and pest animals to assist in their management. They can be insects or diseases that target a certain part or lifecycle stage of the plant. Biocontrol can be a useful long term and low cost strategy to either control or reduce the vitality of a pest plant and is best used in conjunction with management techniques. Some common biocontrol agents present in the region include the salvinia weevil, rabbit calici-virus, rubber vine rust and the giant sensitive plant psyllid.

Slashing

Slashing can be an effective tool in pasture management. Woody weeds, herbs and some grasses may be prevented from seeding by slashing at opportune times. For example, slashing sicklepod may be effective before setting seed to manage the potential seed bank. Using blunt blades or chains will smash stems minimising regrowth or recovery of the plant. Following up with spot spraying will minimise the use of expensive chemical and stop the annual seed cycle. It must be noted that this method can potentially spread seeds, so always carry out weed hygiene practices when moving machinery i.e. always wash down machinery and slasher decks.

Mechanical/Machinery removal

Large-scale infestations sometimes call for mechanised removal or control. Excavators, backhoes, mulching bobcats, aquatic harvesters or even bulldozers may be employed where funding permits. With large tree species, machinery may be required to clean up after chainsaw work. Often, weeds infestations are associated with eroded creek and

riverbanks so best practice repair work often requires earthworks bank reinstatement, rock works and revegetation. Note: always wash down machinery to prevent the spread of seed and stem fragments.

Fire

Despite being labour, risk and planning intensive, fire can be a useful pest management tool. Fire can be used to:

1) Remove spoils from weed treatments including felled trees. Burn heaps may require attendance by earthworks machinery and fire crews.
2) Stimulate seed regeneration in certain seed banks.
3) Kill certain species where fuel loads allow a hot fire.
4) Kill dormant seeds.

Agricultural landholders and State Government land managers know the value of fire for broad acre weed control. There is generally a limited window of opportunity for use of fire. Site preparation, permits, public notification and resources may limit its widespread use.

Always ensure you contact your local rural fire brigade to determine if you require a burning permit before you plan a control burn.

Exclusion Fencing/netting

Fencing is used to exclude animal pests throughout world, particularly to mitigate pest damage to agriculture. Although often considered an expensive option, fencing is sometimes a sound investment to:

1) Contain livestock or exclude predators.
2) Protect Crops from terrestrial pests such as pigs and rabbits.
3) Protect fruit orchards with netting where it is not viable to control the birds/bats that may try to eat the fruit.

Increasingly urban landholders are fencing to exclude pests such as wild pigs and dogs. Residents are advised to utilise netting to exclude access to urban roosts by exotic birds. Eradication of most naturalised vertebrate pests is not viable or cost effective, so exclusion is considered a logical control option. There are many materials available- some have been in production for over 100 years e.g. chicken/bird wire, Pig wire/ring lock, barbed-wire, chain-wire, smooth wire, pickets, palings, colorbond and electric fences. An experienced agricultural fencer can advise and cost a suitable fence design that will exclude pests ranging from snails to horses.

Pesticides

There are special circumstances where pesticides may be approved for use on vertebrate pests. Commercial baits and poisons are available for rodents and insects at supermarkets. However, strict regulations control the distribution of poisons and toxins that may be used on larger pest animals. Dogs, cats, pigs, rabbits and foxes may be controlled under strict conditions with a toxin known as 1080 or sodium fluoroacetate. Use of 1080 is limited to lower density and agricultural areas and is distributed under regulation and guidance from local government, DAF and Queensland Health. A bait program must involve a community response, consultation, signage and observation of

all policy direction. Contact Council's Biosecurity Services if you require more information regarding baiting programs.

Trapping

Trapping is a widely used control method for feral pigs in the wet tropics and to a lesser extent to manage wild dogs in close proximity to settlement or homesteads. Trapping is done in accordance with well established guidelines relating to off target minimisation, firearms policy, humane treatment of animals, public/workplace health and safety and efficiency. Council can assist with trapping advice and the provision of loan pig traps.

All queries regarding management of native wildlife should be directed to Queensland Parks and Wildlife Service QPWS.3

Shooting/hunting

Hunting is a popular sporting pursuit in the region. Despite its recreational appeal and popularity, hunting has generally proved to be an ineffective and at times, a disruptive pest management practice. Hunting either with dogs or firearms can be an effective *complement* to an integrated property pest management strategy. Some landholders use hunting as their primary animal control option to good effect, but usually when a population is very small. However, hunting is best utilised after effective trapping/baiting programs to remove any remaining individuals. More often though, uninvited hunters will target the biggest pigs and/or scatter them throughout an area making the whole population nervous and unpredictable. Urban fringe areas where inexperienced hunters/dogs often visit, pose a great challenge to landholders and Councils as these pigs are usually the hardest to trap. Aerial shooting is noted to be very effective in dry savannah to open woodland country but it is not suited to areas with extensive cover and residential population. Sniper style shooting can be effective when used with a feed station on both dogs and on the occasional pig. Individual wild dogs can be singled out where foot trapping and baiting may be too indiscriminate.

Note: Council does not condone, practice or contract any form of dog based hunting, but recognises that it is a very common practice in agricultural and rural residential areas in the region.

Methods of Spread

(Text and icons adapted with kind permission from Matt Birch, Cairns Regional Council Pest Management Plan 2012)

Cuttings-Vegetative

Further to normal seed reproduction, many plants will reproduce from cuttings, stem or root fragments or even by leaf fragments. Some species reproduce only vegetatively.

Many aquatic and riparian weeds reproduce from cuttings washed downstream with flood water.

Irresponsible and illegal dumping

A common way for plants and animals to escape and colonise natural areas is by accidental or at times intentional release and cultivation by people. Often people will travel long distances to dump vegetation to avoid a small tipping fee. Others will throw exotic cuttings and weeds over their back fence and into creeks.

Machinery and vehicles

Machinery of many forms can move plant material and pest animals. Slashers and earthworks equipment are most commonly blamed, but cars, 4wds, motorcycles, boats and caravans are all capable of moving pest plants and animals great distances.

People/Animals

By sticking to either peoples' clothes or animals' fur, some plants have adapted seeds that can move long distances. Many of these seeds also find themselves attached to car radiators; livestock tails and can easily travel interstate and even overseas.

Droppings

Many seeds have evolved as a food source for animals with the advantage of being relocated and dispersed in droppings. This can result in very difficult to predict and often relatively long distance dispersal patterns as pigs, cassowaries, cockatoos and bats all move certain fruits in various directions.

Water

Cook shire is home to many aquatic species which are adapted to water based reproduction. Many weeds are adapted to benefit from annual floods to spread down a catchment. Seeds may float or they may send vegetative material and fragments with normal river flow or during annual flood events. Aquatic plants can also move across catchments attached to birds or boats.

Wind

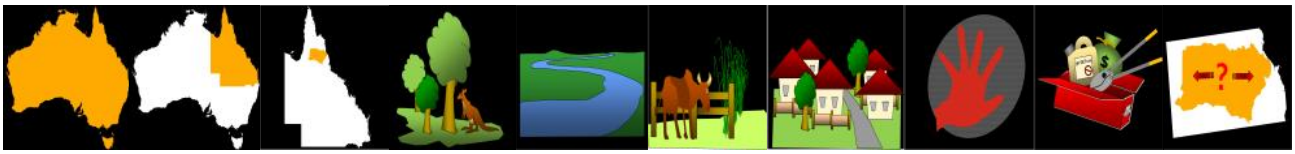
Many plant species use wind as a seed dispersal mechanism. Seeds are lightweight and either wing shaped or adorned with hairs to ensure that upon release they will travel away from the parent plant. Light weight seeds often get caught on vehicles.

Action Plans for High Priority invasive plants and animals

The following action plans provide information relating to invasive plants and animals found within the Cook Shire local government area, which were assigned a high priority during public consultation sessions held during development of the Cook Shire Local Area Biosecurity Plan 2017-2021. These action plans provide species descriptions, control options and management requirements with regard to management zones and are intended to assist land managers to meet their general biosecurity obligation.

Salvina molesta (Salvinia)

Priority



2.5/5	1.5/5	5.0/5	4.0/5	5.0/5	4.0/5	4.0/5	5.0/5	5.0/5	5.0/5

Details

Description: A floating fern with small, coarsely hairy oval leaves which repel water. As the plant matures it turns from bright green to brown and bunches up into tight rafts. Salvinia reproduces by rapidly dividing into smaller plants which will quickly cover waterways particularly in slow moving or ponded water.

Distribution: A single infestation in the upper Normanby catchment in the Mount Poverty area is under management toward eradication. An extensive infestation in Honey Dam was successfully eradicated and is now under monitoring to ensure re-introduction does not take place. Salvinia is a common weed in several Wet Tropics basins and re-introduction sources may include watercraft, aquariums or gardens.

Impacts: It floats on still or slow-moving water and can grow rapidly to cover the entire water surface with a thick mat of vegetation. This shades out any submerged plant life and impedes oxygen exchange impacting on fish and aquatic organisms.

Key projects: An eradication project is underway at Mount Poverty in the upper Normanby catchment . Report any suspect plants to Cook Shire Council on 07 4069 5444.

Management requirements

Prevention

Salvinia is most likely to grow in freshwater creeks and in wetlands but it may also be found in water features and aquariums. Salvinia is most likely to be moved by people in association with water plants, aquariums or watercraft. Salvinia does not produce seeds or spores and spreads by division and fragments of existing plants.

The extensive freshwater wetlands of Cape York, particularly places like Rinyirru are at significant risk to Salvinia which is difficult to control in natural systems. The best management strategy to protect Cape York is prevention.

Keep an eye out for Salvinia in any natural or man made freshwater ponds or features and report any suspect plants to Cook Shire Council on 07 4069 5444.

Eradication

South Cape York Catchments and Jabalbina are working on the complete eradication of Salvinia from the upper Normanby with support from Biosecurity Queensland and Cook Shire Council.

A community based program led by South Cape York Catchments successfully eradicated a significant infestation of Salvinia from Honey Dam. The infestation area is still under monitoring to ensure reintroduction does not occur. Report any suspect plants to Cook Shire Council on 07 4069 5444.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
vegetative	●	●	●	●	●	●	◑	○	◑	●	●	●
spray	●	●	●	●	●	●	◑	○	◑	●	●	●
manual	●	◑	○						○	◑	●	●
biocontrol	●	●	●	●	●	●	◑	○	◑	●	●	●

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Salvina molesta (Salvinia)

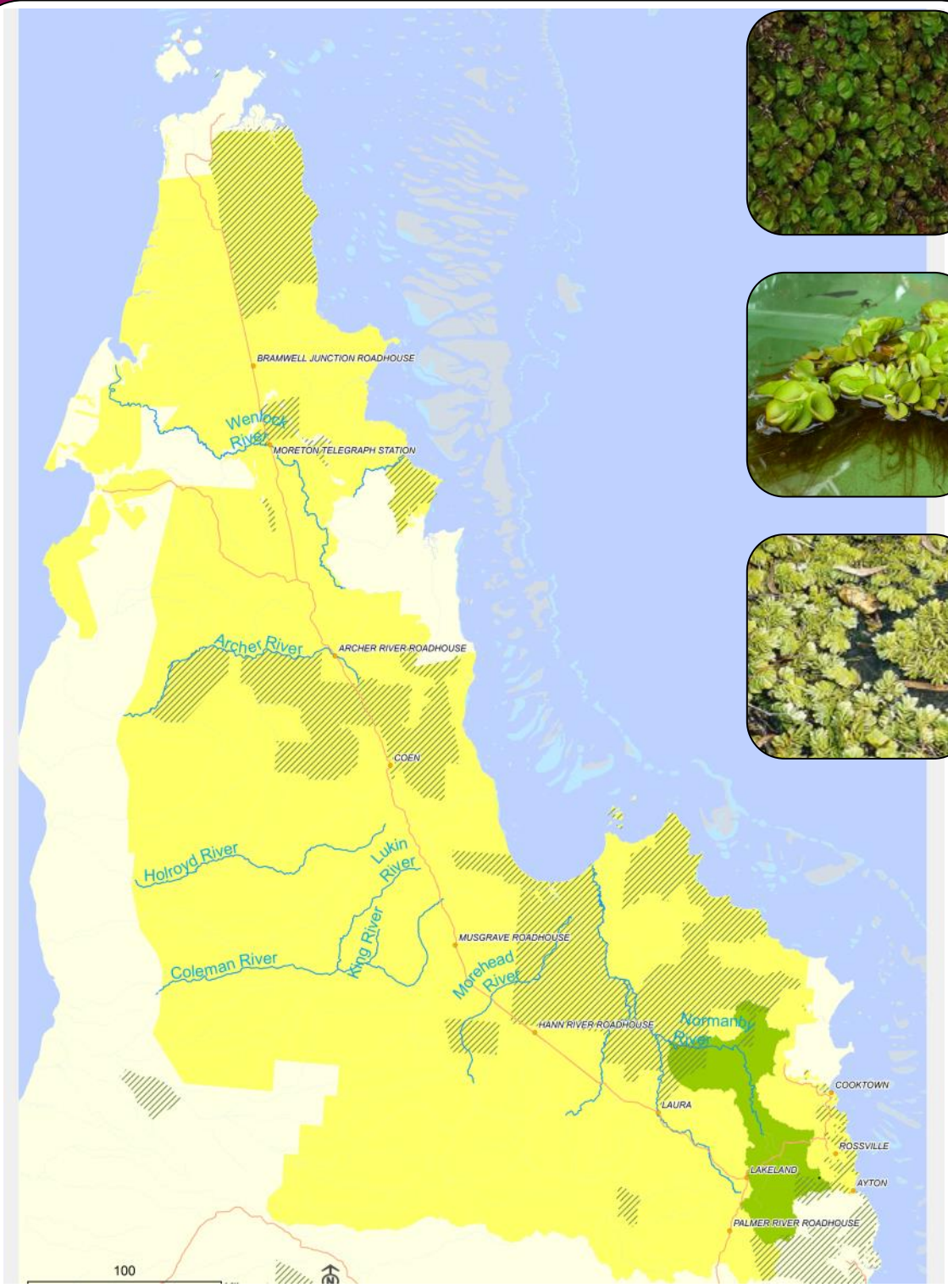
floating
aquatic
perennial

Category
2
3
4
5
6

Control

Spread





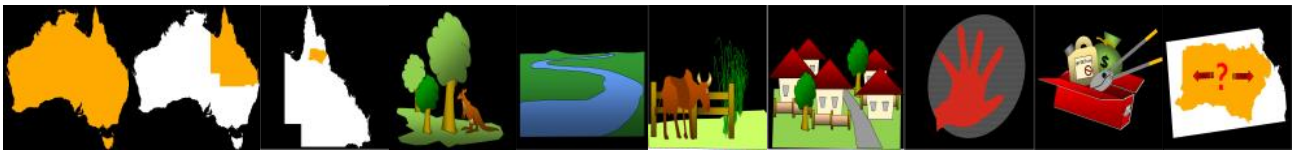
What is my biosecurity obligation?

Prevention zone	Salvinia is most likely to be moved by people - The *General Biosecurity Obligation* requires that all people ensure they do not act in a way which increases the risk posed by biosecurity matter. Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444.
Eradication zone	South Cape York Catchments and Jabalbina are working on the complete eradication of Salvinia from the upper Normanby with support from Biosecurity Queensland and Cook Shire Council. Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444.

For more information on management aims in each zone refer to *Using the pest plan templates*

Jatropha spp. (Bellyache bush & Physic nut)

Priority



2.5/5	1.5/5	5.0/5	4.0/5	4.0/5	5.0/5	4.0/5	5.0/5	3.0/5	3.0/5

Details

Description: Squat, thick stemmed shrub 2.4-4m tall . Seedlings single stemmed with deeply divided purple leaves. Mature leaves brighter green with up to 5 lobes with coarse dark brown hairs on the margins. Small red flowers followed by green fleshy pods. *J. curcas* similar plant to *J. Gossiypiifolia* with large green leaves with pales veins and less deeply lobed.

Distribution: Bellyache bush (*J. gossypiifolia*) is currently restricted to riparian areas of the Palmer River where is widespread and abundant. Isolated occurrences of physic nut *(J. curcas)* have been collected near Cooktown and Weipa. Both are expected to be associated with older or abandoned settlements, camps or stock movement.

Impacts: The fruits are poisonous to humans and livestock which when eaten lead to symptoms of gastroenteritis and sometimes death. Bellyache bush has a devastating impact on rangeland river systems and pastures.

Key projects: A coordinated top-of-catchment down management program is continuing on Bellyache bush in the Palmer River district. Neighbouring programs in the Mareeba Shire area have removed Bellyache Bush from 70 kilometres of the upper Walsh and Mitchell River.

Management requirements

Prevention

Bellyache bush and physic nut will spread along watercourses growing into thick infestations on river flats and the beds of ephemeral creeks and rivers. Introductions of both theses plants are usually associated with houses, homesteads and gardens. Seeds are spread by birds, and on machinery and stock.

To prevent spread to new locations or introduction from known infestations ensure machinery, vehicles and raw materials are free from soil which may contain seed.

Spell stock in holding yards for 7 days prior to releasing to pasture/ rangeland to allow for seed to pass through the gut or fall from hooves and hide. Ensure quarry and raw materials are free of seed.

Belly ache bush is Sometimes confused with castor oil plant which is taller with more (7-9 lobes) which are pointed rather than rounded. Report any suspect plants to Cook Shire Council on 07 4069 5444.

Intensive control

Landholders downstream of the Palmer River infestations should be on the look out for new or established infestations to assist the management response.

Report any suspect plants outside of the Palmer River system to Cook Shire Council on 07 4069 5444.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
seed	◑	○	○	○	○	○	○	◑	◑	●	●	●
herbicide	◑	◑	◑	◑	◑	●	●	●	●	●	●	◑
mechanical	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Jatropha spp. (Bellyache bush & Physic nut)

terrestrial

herb

perennial

Category

2

3

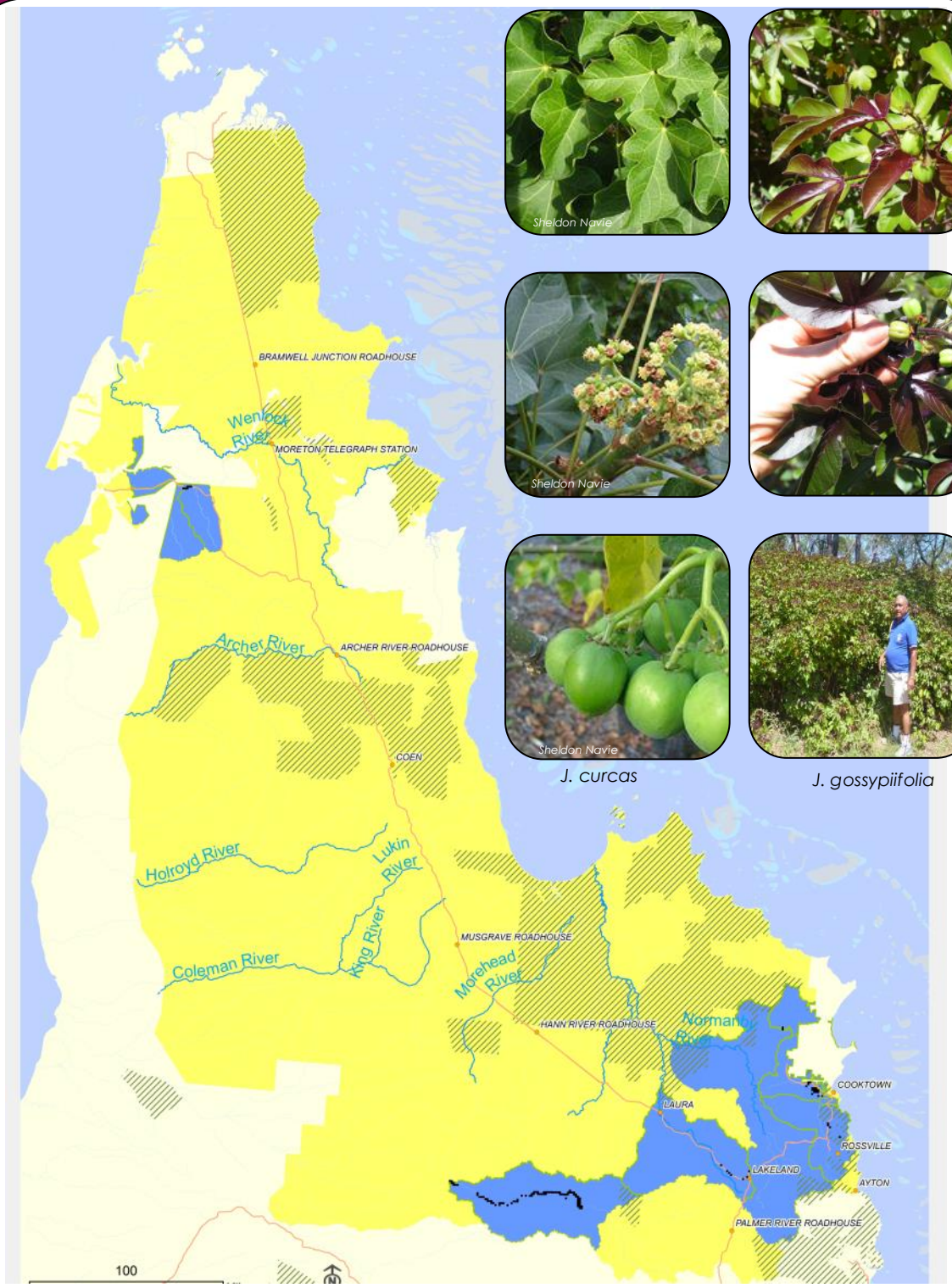
4

5

6

Control

Spread



J. curcas

J. gossypiifolia

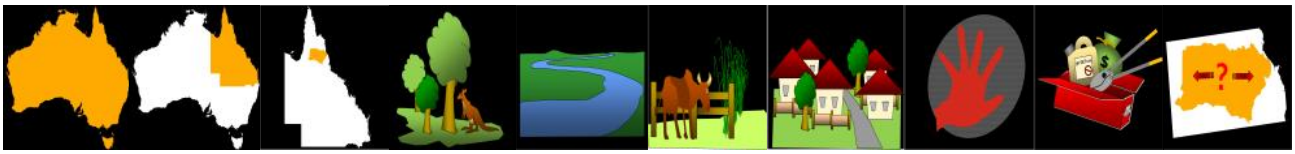
What is my biosecurity obligation?

Prevention zone	Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil.
Intensive control zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Assist in annual survey operations.

For more information on management aims in each zone refer to *Using the pest plan templates*

Andropogon gayanus (Gamba grass)

Priority



2.5/5	1.5/5	5.0/5	5.0/5	4.0/5	3.0/5	4.0/5	5.0/5	3.0/5	3.0/5

Details

Description: A robust, upright perennial grass that grows between 2-4 metres tall with distinctive plumed seed heads. Gamba grass forms a thick and strong tussock which remains upright even when fully cured in the dry season.

Distribution: Gamba grass was promoted and planted as a tropical pasture species up until it's declaration as a weed. It is now present on and around a variety of grazing properties throughout Cape York where it is still valued as a pasture and hay species. A targeted management program has concentrated efforts on the removal of outlier infestations along the road network. Major infestation areas which remain are located near Weipa, Coen, Poison Creek, and Silver Plains. Persistent smaller infestations occur at Lakeland and the Annan River.

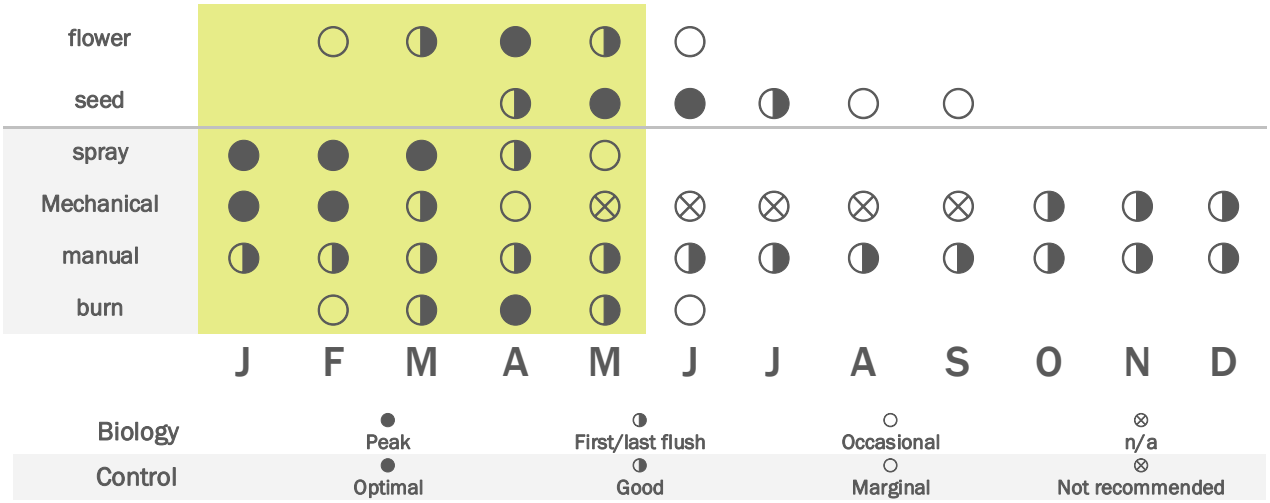
Impacts: Gamba grass was planted as a tropical pasture but has escaped from intensively managed grazing systems and outcompetes native pastures and fuels intense fires. Late season Gamba fires are very difficult to manage and pose a significant threat to life and property.

Key projects: A cross regional plan and management project is underway for gamba grass. A code of practice for containing gamba grass to grazing enterprises is in development.

Management requirements

Delimitation	Survey is required to establish the distribution of Gamba grass in Alice, Pretender, Stewart and Breakfast catchment areas .
Prevention	Spread via vehicles and contaminated hay needs to be addressed. Hay from clean sources should be sought to prevent accidental introduction. Roadsides should be monitored in growing season to detect any new outbreaks. Outside of the Cook Shire area major infestations are located north of the Jardine River and in the Hann Tablelands near Mareeba.
Eradication	Monitoring and follow up work is required to finalise current eradication objectives. Annual survey and rapid response to new incursions will be required to ensure the seedbank is eliminated from theses management areas.
Intensive control	Outlier infestations and recent introductions on roadsides are subject to an intensive control program to remove risk of establishment of dense infestations in the future.
Asset protection	Containment of planted sources and maintenance of buffers on access roads can reduce the spread and impact of Gamba grass. Ensure adequate stocking rates and fencing strategies to prevent seeding and rank growth. A code of practice for containing gamba grass to grazing enterprises is in development.

Control Calendar



Andropogon gayanus (Gamba grass)

terrestrial

grass

perennial

Category

2

3

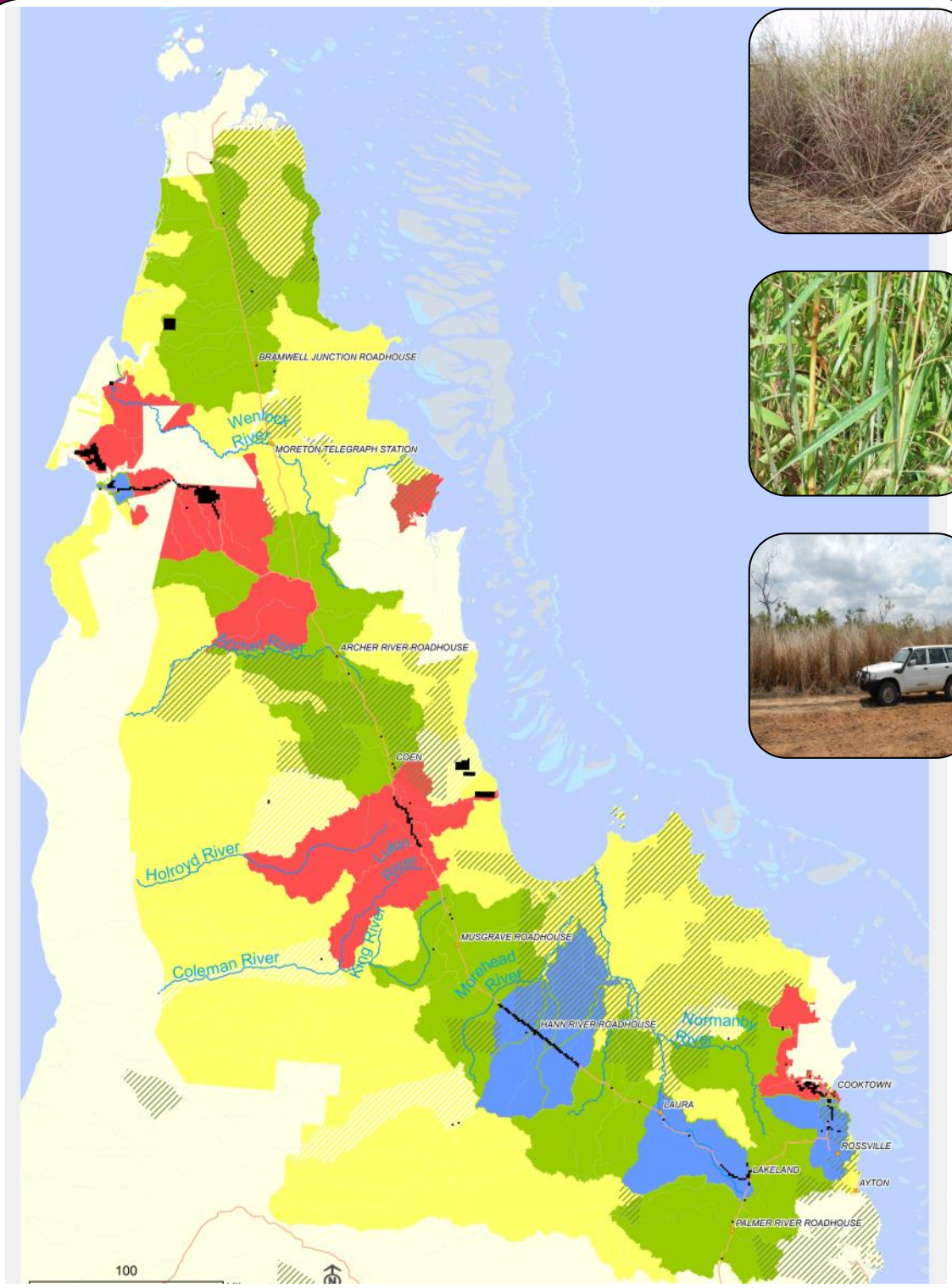
4

5

6

Control

Spread



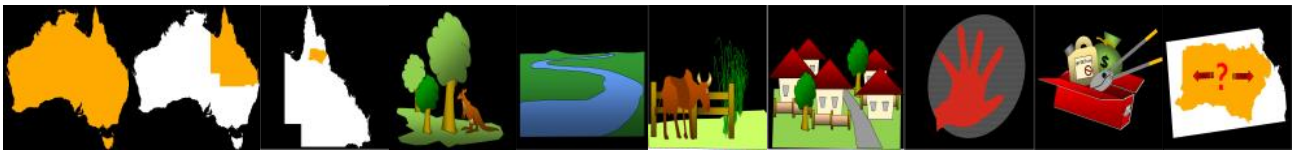
What is my biosecurity obligation?

Delimitation zone	Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Do not cart, introduce or transport contaminated hay or silage.
Prevention zone	
Eradication zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Assist in annual survey operations, control isolated plants before they seed.
Intensive control	
Asset protection	The Biosecurity Act requires landholders must act to prevent the spread of Gamba grass from their property and that it cannot be sold, spread or moved.

For more information on management aims in each zone refer to *Using the pest plan templates*

Calotropis procera (Calotrope)

Priority



0.05	0.0/5	5.0/5	5.0/5	3.0/5	4.0/5	3.0/5	3.0/5	5.0/5	4.0/5

Details

Description: A spreading shrub or small tree to 4 m with distinctive, cupped large grey/green leaves attached at the base to the stem. Small white and purple flowers produce a mango shaped fruit which splits open to release wind –borne seeds with long white silky hairs.

Distribution: Calotrope prefers semi-arid to dry tropical environments. Current infestations are located from Lakeland south into the ranges and the Normanby catchments. The full distribution within the Cook Shire area is not known.

Impacts: Calotrope readily invades water courses and grazing lands where it outcompetes native plants and pastures. It is poisonous to humans and may also poison stressed stock.

Key projects: A coordinated project is underway to determine the full extent of Calotrope within the Cook Shire area. When the extent is established the feasibility of initiating an intensive control or eradication program will be assessed. Report any suspect plants to Cook Shire Council on 07 4069 5444.

Management requirements

Delimitation

Although well adapted for wind-borne dispersal which is its main method of spread Calotrope will spread along watercourses and roads. Landholders should be on the lookout for plants in new locations especially following disturbance from events like floods or road works and the introduction of raw materials or stock.

Spelling stock in holding yards for 7 days prior to releasing to pasture/ rangeland will held them to shed seed if they have been in contaminated areas. Ensure quarry and raw materials are free of seed.

The full distribution of Calotrope in the Cook Shire area is not well understood at this point in time. A project is underway to map the extent and density of known infestations prior to formulating an appropriate management response.

Report any suspect plants to Cook Shire Council on 07 4069 5444.

Prevention

All known locations of plants on high risk pathways such as major roads are surveyed and treated annually. Maintaining healthy pastures, sustainable stocking rates and appropriate fire regimes may assist to reduce the likelihood of infestations. Report any suspect plants to Cook Shire Council on 07 4069 5444.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
seed	◑	○	○	○	○	○	○	◑	◑	●	●	●
herbicide	◑	◑	◑	◑	◑	●	●	●	●	●	●	◑
mechanical	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Calotropis procera (Calotrope)

terrestrial

shrub

perennial

Category

2

3

4

5

6

Control

Spread

What is my biosecurity obligation?

Delimitation zone

Work is underway to survey and map the full extent of Calotrope within the Cook Shire area. Mapping or assisting survey and mapping operations underway will help to develop the appropriate management response into the future. In the interim any isolated plants or plants which pose a high risk of spread to new locations should be controlled where possible.

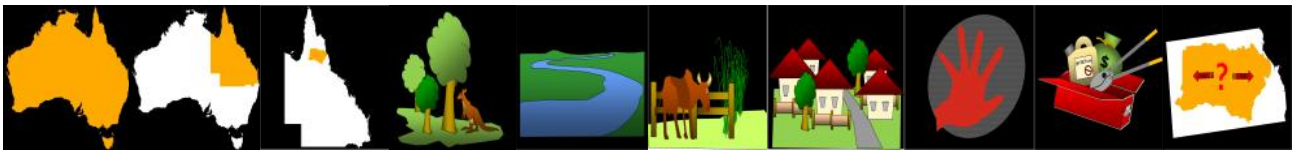
Prevention zone

Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from infested areas are free from plant material and soil.

For more information on management aims in each zone refer to *Using the pest plan templates*

Hymenachne amplexicaulis (Hymenachne)

Priority



2.5/5	1.5/5	5.0/5	4.0/5	5.0/5	3.0/5	2.0/5	5.0/5	3.0/5	5.0/5

Details

Description: A robust, upright perennial aquatic grass 1-2 metres with distinctive stem clasping leaves. Flowers and seeds are held on dense spikes at ends of stems. Stems are pithy inside and are able to float. An aquatic grass which develops roots at each node. The native hymenachne *(H. acutigluma)* is more slender, has reddish nodes, the leaves do not clasp around the stem and are held more upright.

Distribution: Currently locally abundant in several areas of the Endeavour Catchment south to Bloomfield River. An isolated outbreak in Rinyirru is under an active eradication program across several lagoons and wetlands.

Impacts: Hymenachne blocks drainage systems in farms. It readily invades and outcompetes native plants in wetlands and waterways. Prevents fish passage and breeding opportunity for key species like Barramundi. Hymenachne can also impede boat access and potentially damage infrastructure like bridges and weirs.

Key projects: Queensland Parks and Wildlife is currently managing a series of isolated outbreaks in the wetlands of Rinyirru. Report any suspected detections in the Rinyirru area to QPWS or Cook Shire Council on 07 4069 5444.

Management requirements

Delimitation	Survey is required to establish the distribution of Olive hymenachne across other localities in the Cook Shire area. Points of introduction are most likely to be on water courses or dams in grazing areas.
Prevention	Olive hymenachne seed can be spread via vehicles, machinery and stock. Waterways and dams should be monitored in growing season to detect any new outbreaks. Stock should be spelled for 7 days prior to being released to drop any ingested seed. Clean down boats and watercraft prior to moving between regions, particularly lowland rivers of the Wet Tropics where hymenachne can be abundant.
Eradication	Isolated outbreaks in the wetlands of Rinyirru are the target of an eradication program. Observe management signage and report any suspect plants to QPWS.
Intensive control	Isolated outbreaks in the Normanby and Hann catchment require removal to prevent spread downstream into Rinyirru. Localised surveys around known locations are required to ensure full distribution is known.
Asset protection	Management in the Endeavour and Annan Rivers is targeted toward protecting key assets, reducing spread to new areas and reducing impacts

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	◑	◑	○	○	◑	●	◑	○	○	◑	●	●
seed	●	●	◑	◑	○	◑	●	◑	○	○	◑	●
spray	○	○	○	◑	●	○	○	○	◑	●	●	●
mechanical	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗
burn							◑	○	◑	●	◑	○

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Hymenachne amplexicaulis (Hymenachne)

aquatic

grass

perennial

Category

2

3

4

5

6

Native hymenachne

Control

What is my biosecurity obligation?

Delimitation zone
Prevention zone
Eradication zone
Intensive control zone
Asset protection zone

It is an offence under the Biosecurity Act to move, share, give away or sell this plant. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Maintain weed free areas. Assist in annual survey operations. Control, plants before they set seed. Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444.

Check along water courses and in farm dams/wetlands for new outbreaks. Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444.

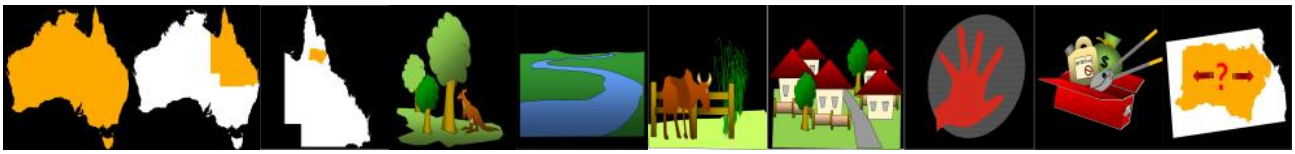
Protect key assets and reduce spread to new areas

For more information on management aims in each zone refer to *Using the pest plan templates*

Spread

Sporobolus spp. (Giant rats tail grass)

Priority



2.5/5	1.5/5	5.0/5	4.0/5	4.0/5	4.0/5	4.0/5	3.0/5	4.0/5	4.0/5

Details

Description: A group of robust, upright perennial grasses 0.6 –1.7 metres tall. Flower spikes are about 40 cm long and transform from a distinctive dark 'rats tail' shape when young to an open pyramid when mature. Leaves are narrow and tough and can be rasp like to touch. Identification of weedy *Sporobolus* grasses can be difficult. Outside of areas of know distribution a herbarium specimen should be collected to aid identification.

Distribution: Scattered across parts of the south eastern corner of Cook Shire but in higher densities in Cooktown and surrounds. Prefers a drier savannah climate.

Impacts: A large stature species which can drastically outcompete desirable pastures. Unpalatable to stock. Is a major problem in overgrazed or disturbed systems. Invades creek lines and woodlands in drier savannah environments. Rats tail grasses are well adapted to fire.

Key projects: Priority is to remove GRT from roads and accesses to prevent further spread. Individual properties should ensure property is kept clean and fence lines /access tracks are managed.

Management requirements

Delimitation

Survey is required to establish the distribution of giant rats tail grasses across the Cook Shire area. Points of introduction are most likely to be near roadways, stock handling areas, camping grounds and transport lay off areas.

Prevention

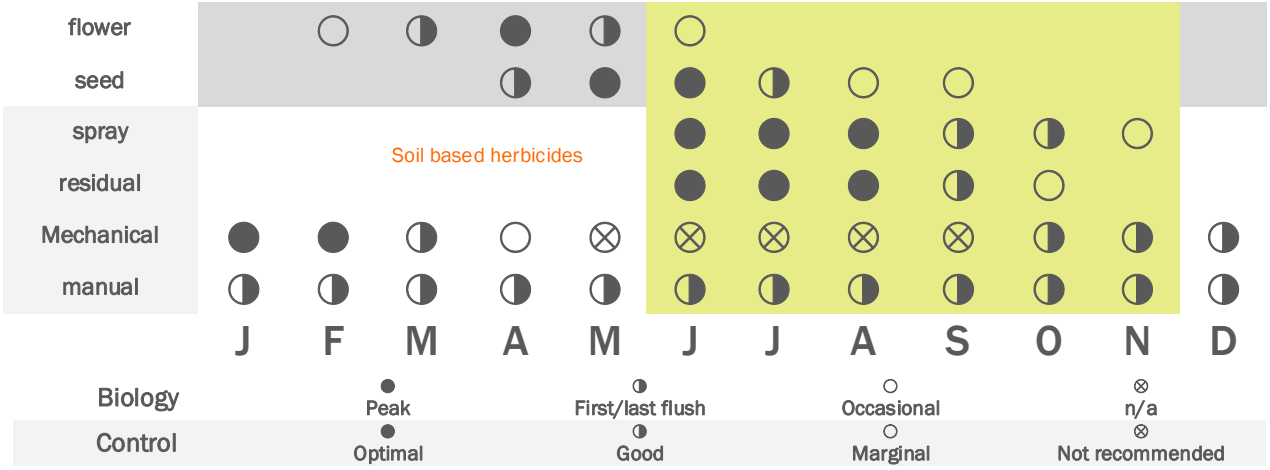
Rats tail grasses are spread via vehicles, machinery, stock and contaminated hay . Hay from clean sources should be sought to prevent accidental introduction. Roadsides should be monitored in growing season to detect any new outbreaks. Stock should be spelled for 7 days prior to be released to drop any ingested seed.

Taking care to brush down camping equipment, clean down vehicles and avoiding infested areas altogether are useful strategies to prevent spread.

Intensive control

Outlier infestations and recent introductions on roadsides are subject to an intensive control program to remove risk of establishment of dense infestations in the future. Reseeding with desirable native or pasture grasses will assist to increase completion and restore areas after control activities .

Control Calendar



Sporobolus spp. (Giant rats tail grass)

terrestrial

grass

perennial

Category

2

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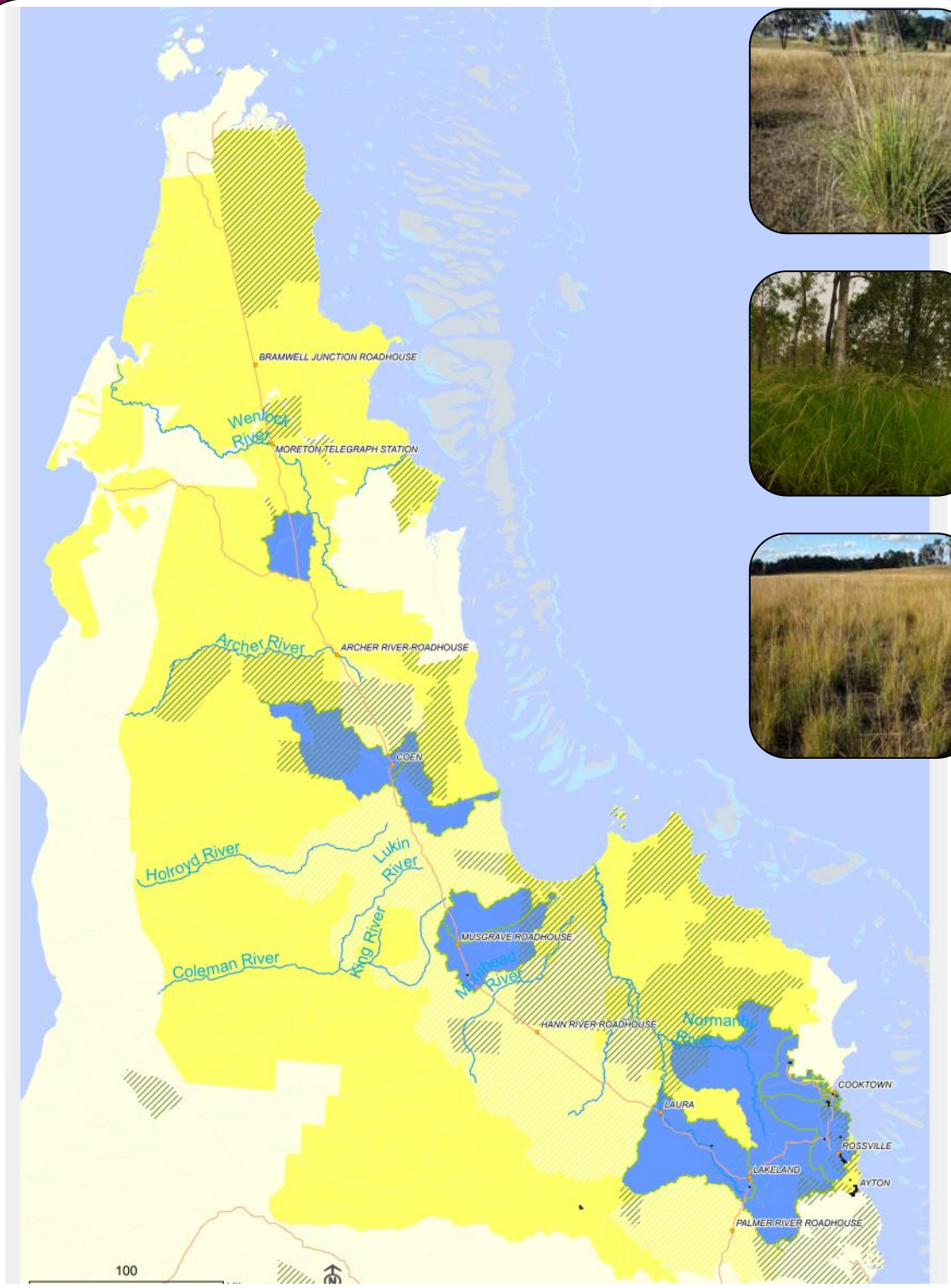
Control

Spread



What is my biosecurity obligation?

Delimitation zone

Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Do not cart, introduce or transport contaminated hay or silage.

Prevention zone

Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain sustainable stocking levels and healthy pastures.

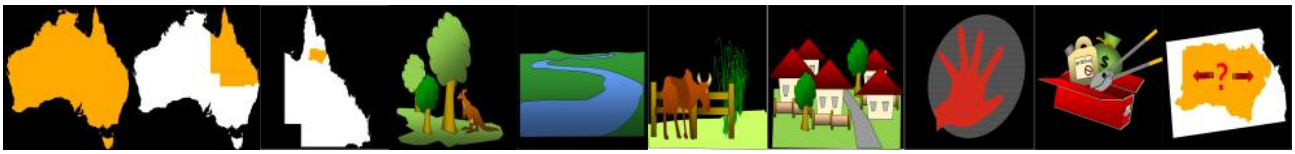
Intensive control

Maintain weed free areas. Assist in annual survey operations. Control, plants before they set seed. Check along property roads and fence lines for new outbreaks .

For more information on management aims in each zone refer to *Using the pest plan templates*

Thunbergia spp. (Thunbergia vine)

Priority



0.0/5	1.5/5	5.0/5	4.0/5	4.0/5	2.0/5	4.0/5	4.0/5	3.0/5	5.0/5

Details

Description: A rapidly growing vine which forms significant underground tubers. Thunbergia climbs and smothers native vegetation. The separate species of *T. laurifolia* and *T. grandiflora* have been merged into a single species. The lavender-blue trumpet shaped flowers are identical but the leaves may vary leaves from a choko-like shape to an oval shape with a narrow pointed tip. Both form large underground tubers which need to be destroyed to control the above-ground vines.

Distribution: Several isolated outbreaks within the Cook Shire concentrated in the Rossville and Coen. Historical records exist from Cooktown, Ayton and the Endeavour Valley.

Impacts: Thunbergia vine climbs and smothers native vegetation, killing and often pulling down mature trees with the weight of the vine.

Key projects: Report any suspected outbreaks or detections to Cook Shire on 07 4069 5444.

Management requirements

Delimitation

Extended survey is required for areas of suitable habitat in Cooktown, Endeavour Valley and Ayton to ensure infestations have been successfully removed.

Prevention

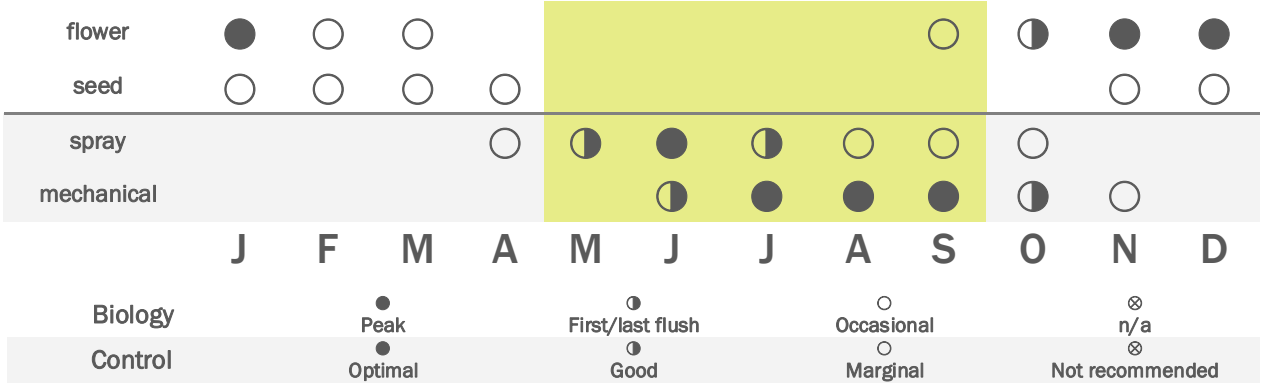
The main method of spread for Thunbergia vine is through the sharing plants between gardeners. It is an offence under the Biosecurity Act to move, share, give away or sell this plant. Thunbergia produces very few if any viable seeds so the main method of spread is vegetative. Dumping of garden waste is often the culprit in the establishment of new infestations in natural areas.

Because it often grows on the banks of creeks and rivers. Thunbergia may be spread during floods and cyclones, or during clean up work afterwards. You can reduce the risk of spread by reporting any suspect vines with purple or mauve flowers to council and by making sure machinery used is clean before arriving to do any work.

Eradication

If your property has an active infestation make sure your green waste does not contain live plant material and is not disposed of in areas where the plant might establish like creeks and bushland.

Control Calendar



Thunbergia spp. (Thunbergia vine)

Cook Shire COUNCIL

vine

terrestrial

perennial

Category

2

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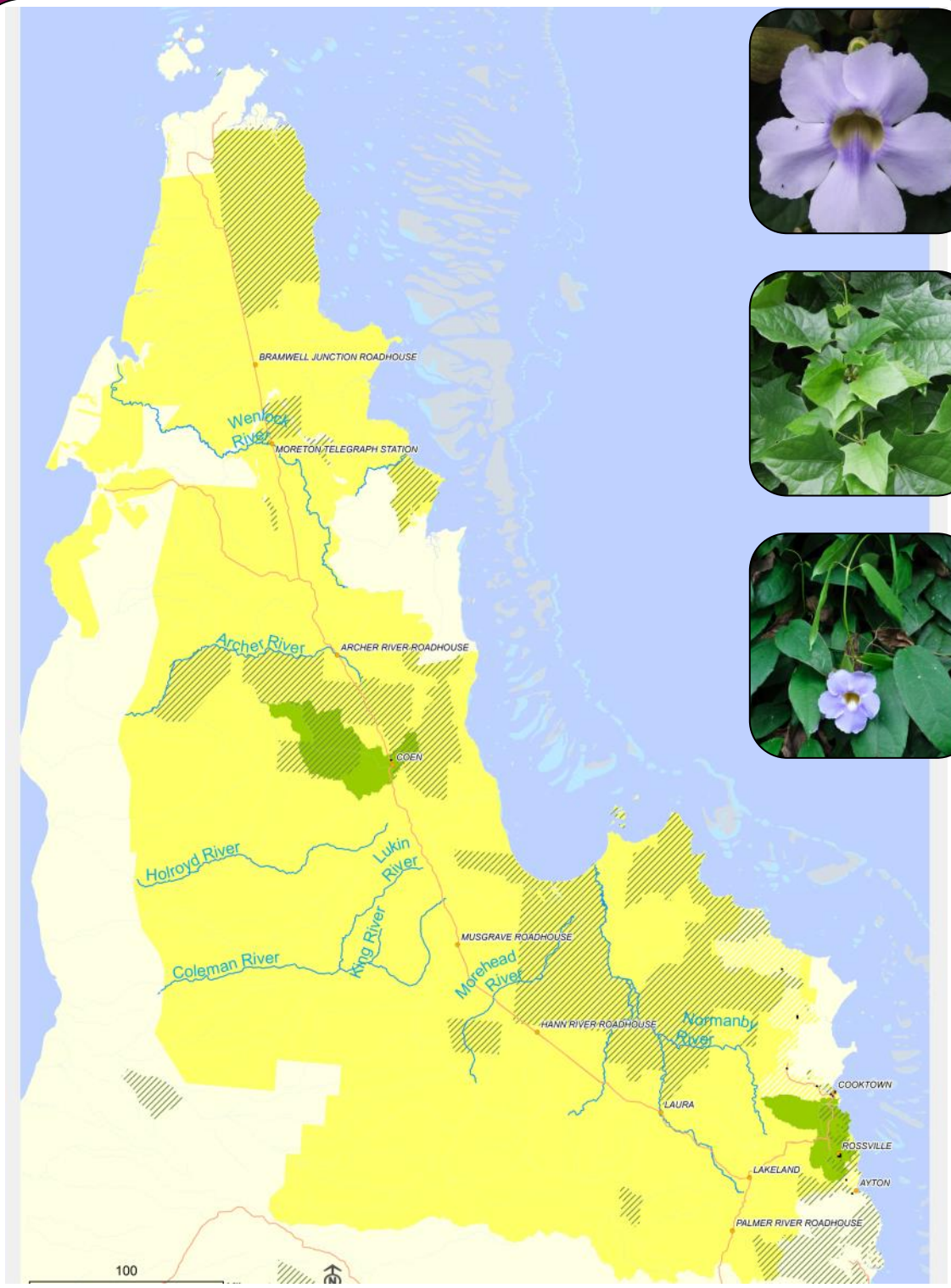
Control



What is my biosecurity obligation?

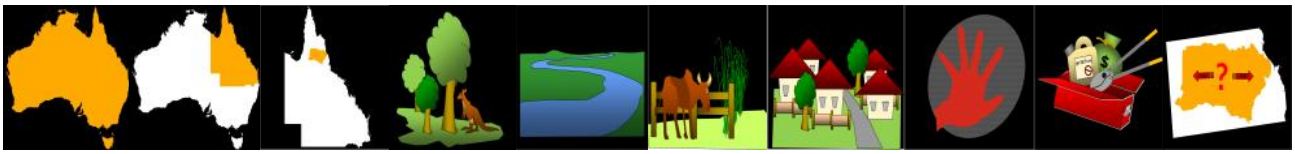
Delimitation zone	Report any suspected outbreaks or detections to Cook Shire on 07 4069 5444. Seek advice prior to works in vicinity of known locations. Do not move or accept plant material or soil unless you are sure it is from a clean source. Ensure any machinery or vehicles moving from the eradication zone are free from plant material and soil.
Prevention zone	
Eradication zone	Report any suspected outbreaks or detections to Cook Shire on 07 4069 5444 Seek advice prior to works in vicinity of known locations. Do not move or accept plant material or soil unless you are sure it is from a clean source. Dispose of garden waste responsibly.

For more information on management aims in each zone refer to *Using the pest plan templates*

Spread

Themeda quadrivalvis (Grader grass)

Priority



0.0/5	0.0/5	5.0/5	5.0/5	4.0/5	5.0/5	4.0/5	4.0/5	1.0/5	1.0/5

Details

Description: Upright tufted annual grass to 1-2.5m. Flower stalks are stiff and cane-like with red-brown flower spikes bent downwards. A tropical and sub tropical grass which forms dense swards and stands on roadsides and savannah woodlands. A similar common native species, kangaroo grass, is shorter in stature, perennial and lacks tufts near the seed.

Distribution: An established weed across many areas of Cape York, particularly in savannah woodlands and open country.

Impacts: Can invade native and improved pastures, woodlands and roadsides. Grader grass is a significant weed of roadsides where it increases management requirements and impacts on safety because of its tall stature. It can significantly outcompete pastures, reducing productivity of grazing lands. Grader grass produces much higher fuel loads than native grasses increasing fire risk.

Key projects: The protection of important environmental and agricultural assets is a high priority. Protection of infrastructure and rural assets from fires fuelled by grader grass should be included in property fire plans.

Management requirements

Prevention	Avoid driving through, moving soil or moving stock from infested areas in adjoining regions. Spell cattle in holding yards for at least 7 days if moving from areas within the asset protection zone. Ensure machinery and vehicles are free from plants material and soil. Monitor woodlands and native pastures after fire and disturbance for outbreaks.
Asset protection	Grader grass can be complex to manage once established as it responds well to fire and soil disturbance and there are limited selective control techniques available. It germinates earlier and grows faster than many native grasses and can quickly outcompete pastures and grassy woodlands. The seed is easily transported on machinery, raw materials, recreational vehicles and animals. Because it is an annual it leaves soil uncovered when dead. Grader grass is most suited to monsoonal savannah woodlands and grassland where it can form monocultures well over 1 metre tall. These dense stands can outcompete native grasses when living and then fuel hot fires when hayed-off.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	●	●	◑	◑	◑	◑	◑	◑	◑	◑	●	●
seed	●	●	◑	◑	◑	◑	◑	◑	◑	◑	●	●
spray	○	○	○	◑	●	○	○	○	◑	●	●	●
mechanical	●	◑	⊗	⊗	⊗	⊗	⊗	⊗	◑	◑	○	○

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

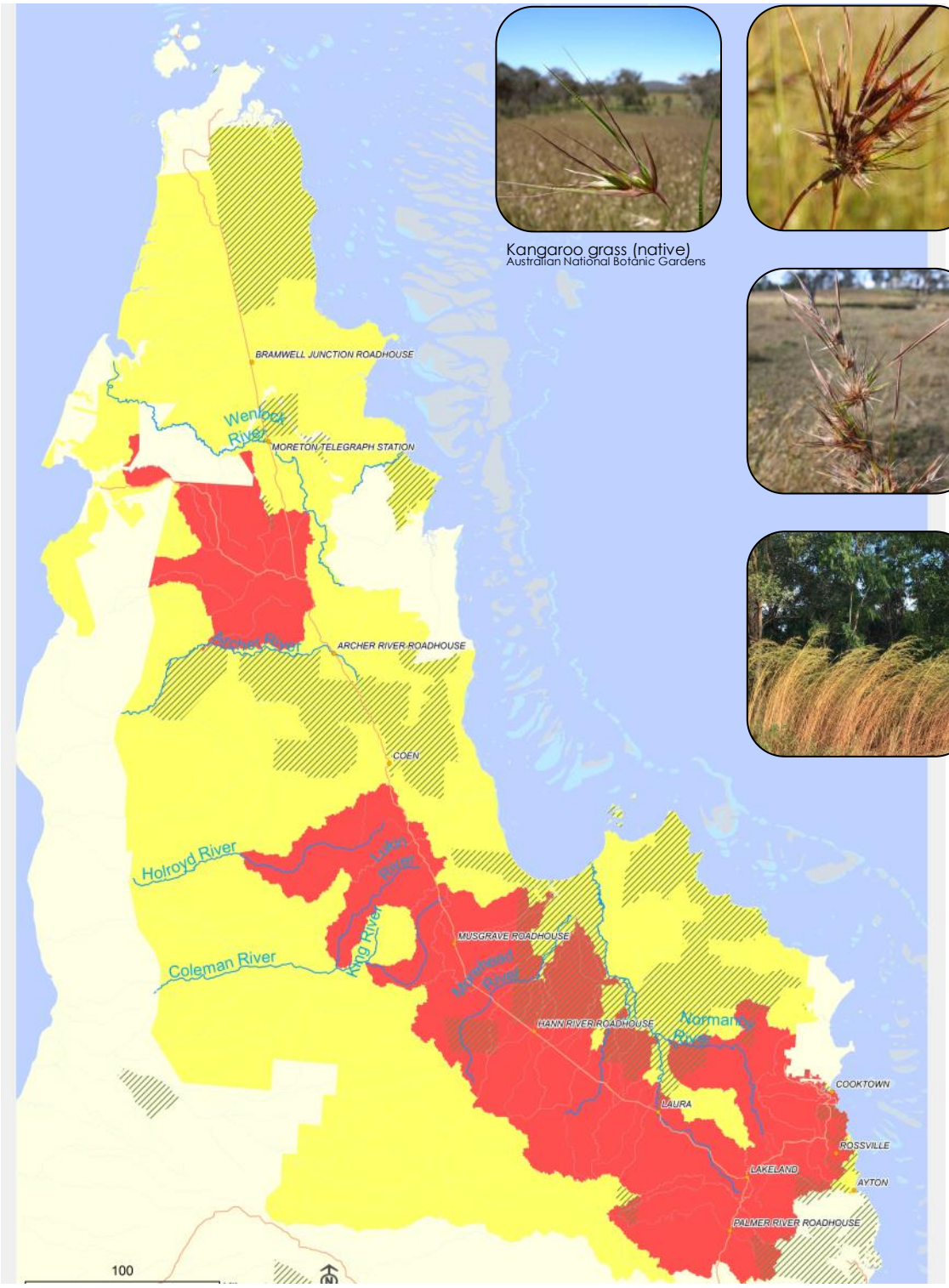
Themeda quadrivalvis (Grader grass)

terrestrial

grass

perennial

Kangaroo grass (native)
Australian National Botanic Gardens



What is my biosecurity obligation?

Prevention zone	Report any suspected outbreaks or detections to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Do not cart, introduce or transport contaminated hay or silage.
Asset protection zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Identify high value assets and protect them from impacts where possible.

For more information on management aims in each zone refer to *Using the pest plan templates*

Category

2

3

4

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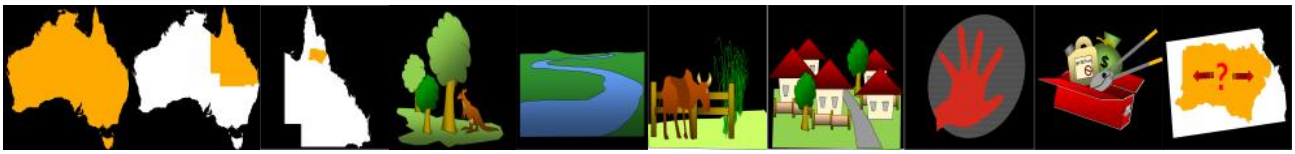
6

Control

Spread

Annona glabra (Pond Apple)

Priority



2.5/5	1.5/5	5.0/5	5.0/5	5.0/5	3.0/5	3.0/5	4.0/5	2.0/5	4.0/5

Details

Description: Tall semi-deciduous shrub or tree reaching around 15m but typically 3-6 m. Pond apple is most likely to occur in wetlands and along stream margins but it may occur along beaches as well. Leaves are lighter below than above and have a green apple scent when crushed. The Large fruit is similar to a custard apple and are filled with floating seeds similar in size and shape to a pumpkin seed.

Distribution: Along the east coast of Cape York Peninsula core infestation occur in Temple Bay, Lockhart River and Amos Bay. Outliers occur scattered along the coast particularly on the south facing coastline as far north as the mouth of the Jardine River. Outside of the Cook Shire core infestations occur in the Daintree, Russell/Mulgrave, Johnson and Murray river catchments. Seeds can float on river and ocean currents.

Impacts: Pond apple is a highly invasive tree/shrub that can colonise and take over a wide range of aquatic habitats. It forms dense thickets that exclude most native ground and shrub layer plants and prevents regeneration of trees.

Key projects: Long term projects are continuing along the east coast catchments.

Management requirements

Prevention

Pond apple is most likely to grow along creeks and in wetlands. It may also be found in old orchards where it was used as graft stock for custard apple in the past or appear along beaches and beach swales where it is arrives as floating seeds. Along the east coast of Cape York Peninsula pond apple has been detected as isolated plants or scattered infestations on south facing beaches. The distinctive seeds (similar to pumpkin seed) may be found at high tide mark on coastal beaches. Pond apple seed requires fresh water to germinate. Plants may be confused with some mangrove species particularly blind-your-eye or milky mangrove (*Excoecaria agallocha*).

Keep an eye out for pond apple in swamps, mangroves, estuaries or islands and report any suspect plants to Cook Shire on 07 4069 5444.

Eradication

The northern infestation in Temple Bay has been the subject of ongoing control and is progressing to eradication. Infestations in the Endeavour River basin have been removed and are subject to monitoring. Management of the infestation in Amos Bay is underway which is essential work to prevent reinfestation to the north.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	○								○	◑	●	◑
seed	●	◑	○							○	◑	●
spray							○	◑	◑	◑	○	
mechanical							○	◑	●	◑	◑	○
manual	○	○	○	○	○	○	◑	●	●	●	●	●
burn							○	◑	◑	●	●	●

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Annona glabra (Pond Apple)

tree

aquatic

perennial

Category

2

3

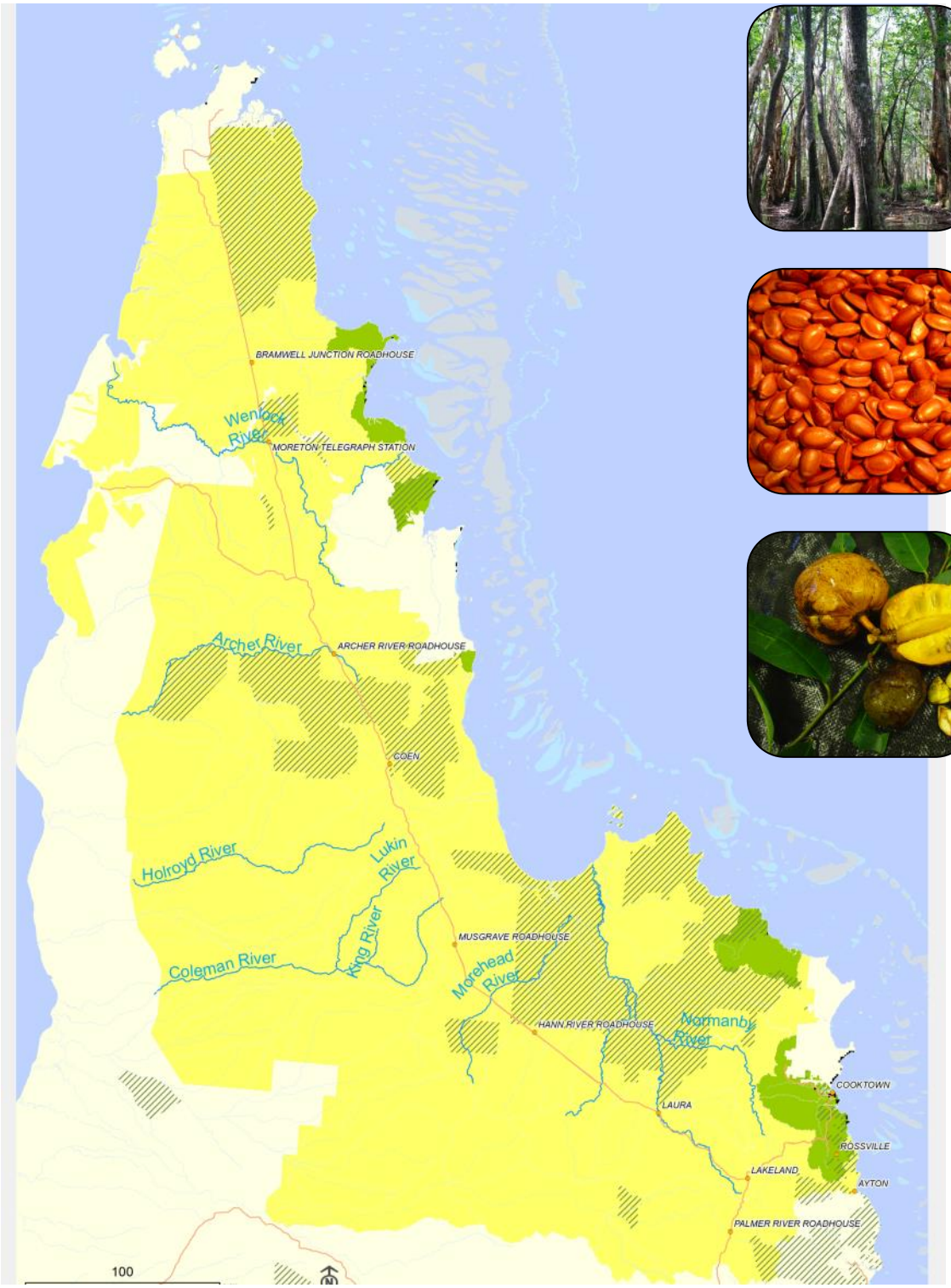
4

5

6

Control

Spread



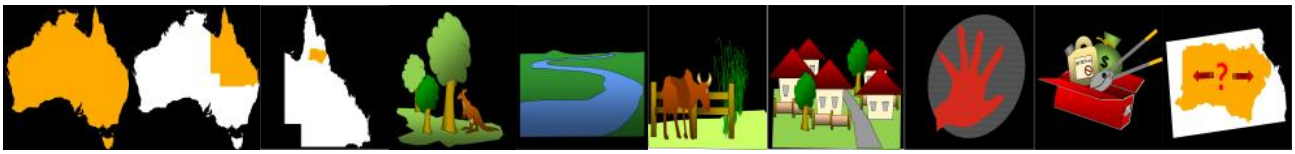
What is my biosecurity obligation?

Prevention zone	Originally introduced as a water tolerant root-stock for custard apple pond apple is no longer in use on the horticultural industry. Pond apple is a restricted plant under the Biosecurity Act, it is an offence to sell, give away or distribute this plant.
Eradication zone	Keep an eye out for pond apple when fishing or visiting beaches, estuaries and wetlands. Report any suspected outbreaks or detections to Cook Shire on 07 4069 5444.

For more information on management aims in each zone refer to *Using the pest plan templates*

Cryptostegia grandiflora (Rubber vine)

Priority



2.5/5	1.5/5	5.0/5	4.0/5	4.0/5	4.0/5	2.0/5	4.0/5	3.0/5	2.0/5

Details

Description: A vigorous twining climber which begins as a multi-stem shrub with long whip like shoots. Can form low shrubs or canopy of vines. Distinctive glossy, paired leaves and large white to purple funnel shaped flowers. Produces paired rigid seedpods which split to release fine cotton like seed.

Distribution: Widespread ranging from sparse to common in southern and central Cape York largely associated with waterways and roads. More prevalent in areas protected from fire like riparian zones, vine forests and rocky outcrops. The wind borne seeds are also spread by vehicles along road sides.

Impacts: Rubber vine smothers native vegetation and pasture and can impede stock movement. The dense vine thickets shade out grasses which alters fire regimes and vegetation composition. It is poisonous to stock. Rubber vine has particularly high impacts in areas sheltered from fire like river banks and rocky escarpments.

Key projects: A successful rust bio-control agent seasonally suppresses outbreaks. Healthy rangeland pastures and appropriate fire regimes are key tools in broad acre management.

Management requirements

Prevention

Rubber vine has very light, wind-borne seeds which can be carried by wind, vehicles and water. Ensuring stock, machinery and materials are free from seed from infested areas will reduce the likelihood of assisting the spread of rubber vine. Maintaining a lookout for the trumpet shaped flowers over the wet season can help in identifying new introductions before they can spread.

A healthy native pasture and fire regime in rangelands will assist in reducing the likelihood of rubber vine establishing.

Asset protection

The rubber vine rust biocontrol is successful at reducing the vigour of rubber vine and when combined with fire in native pastures it can reduce the size of infestations and destroy seedlings. The effectiveness of the rust will vary from season-to season.

Regular survey of at-risk areas and the control of new introductions on roadsides will assist prevent spread to adjoining areas. Mapping infestations on your property will help plan a coordinated management program. Targeting seed source sites which pose a high risk of spread will help to slow the rate of spread.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	●	●	●	◑	○	⊗	⊗	○	◑	●	●	●
seed	●	●	●	◑	○				○	◑	●	●
herbicide				◑	◑	◑	◑	◑	●	●	●	●
cut	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
burn				○	◑	◑	●	●	●	◑		

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Cryptostegia grandiflora (Rubber vine)

vine

terrestrial

perennial

Category

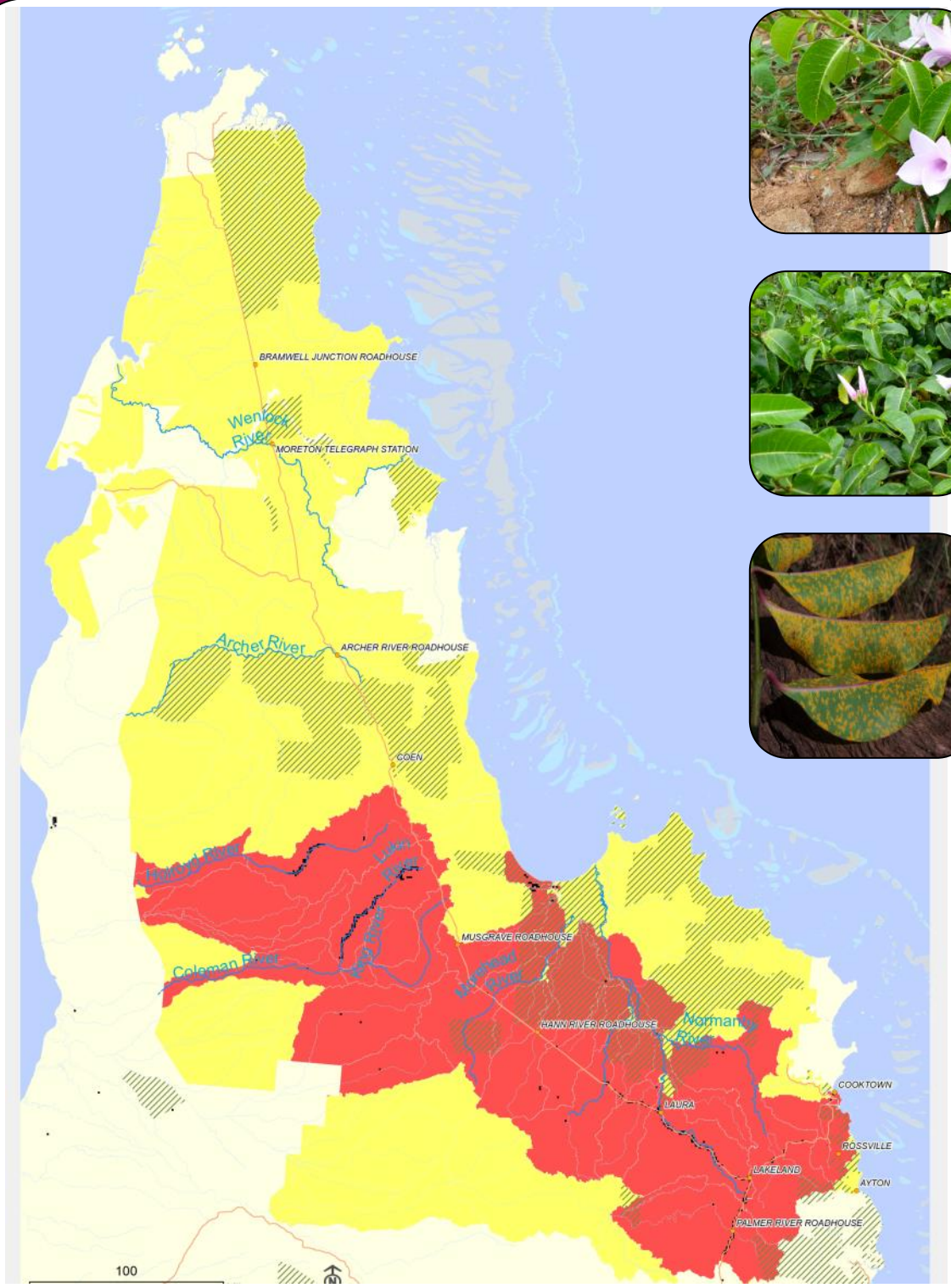
2

3

4

5

6



What is my biosecurity obligation?

Prevention zone	Ensure that machinery, stock and materials are from weed free areas or subject to a detailed hygiene to reduce the risk of spread. maintaining healthy fire regimes and pastures will improve the ability of your property to rubber vine. Report any suspected outbreaks or detections within the prevention zone to Cook Shire on 07 4069 5444.
Asset protection zone	Control plants along waterways and roadsides from the top-down or in a east-west direction. Assist management programs by assisting with access and maintaining healthy rangelands. Report new infestations.

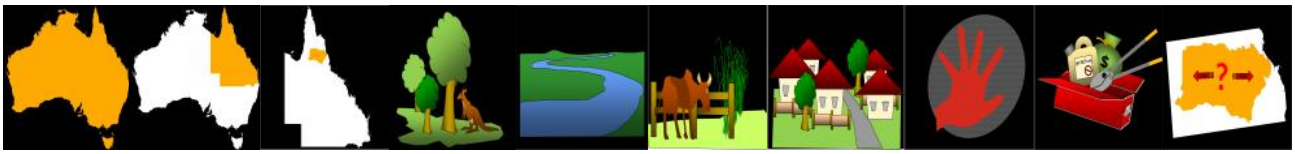
For more information on management aims in each zone refer to *Using the pest plan templates*

Control

Spread

Lantana camara (Lantana)

Priority



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Details

Description: Lantana is a heavily branched shrub that can grow in compact clumps, dense thickets or as a climbing vine. The stems of lantana are square with small, re-curved prickles. The small leaves (6cm) are covered in fine hairs, bright green above, paler underneath and have round-toothed edges . Flowers are variable ranging from purple to orange.

Distribution: Common and widespread across the Wet Tropics ranges less abundant in drier districts where it is often restricted to monsoon scrubs and waterways. Isolated outbreak near Iron and McIlwraith Ranges.

Impacts: a significant weed of natural systems and grazing areas. Lantana displaces understorey species and alters fire regimes. Lantana can cause poisoning in stock not familiar with it.

Key projects: Lantana is one a suite of widespread weeds managed in key area environmental areas. It is also a serious weed of management for graziers.

Management requirements

Prevention

Lantana produces small fruit which are eaten and spread by birds. It may also spread along waterways. It is widespread and common in the Wet Tropics and occupies most suitable habitat to the south of Hope Vale. Outbreaks north of the Moorhead River are the northern most infestations in Queensland. Ensuring establishment is prevented outside of the know distribution is essential to protect the east coast rainforests and waterways from Lantana. Report any suspect plants within the prevention zone to Cook Shire Council on 07 4069 5444.

Eradication

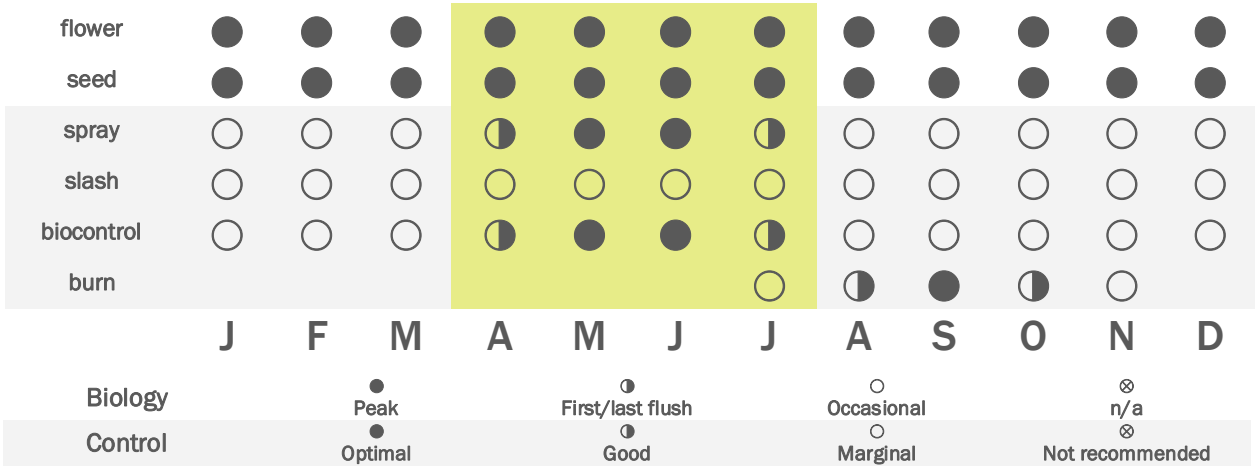
All know locations are required to be surveyed and treated annually. Report any suspect plants to Cook Shire Council on 07 4069 5444.

Asset protection

Lantana is well established in the Wet Tropics and south east Cape York Ranges where it can be found in most suitable habitat. Maintaining healthy pastures and watercourses with appropriate fire regimes can assist in reducing the impact of Lantana.

Mapping infestations on your property and key assets which need to be protected from the impacts of Lantana will assist in prioritising management.

Control Calendar



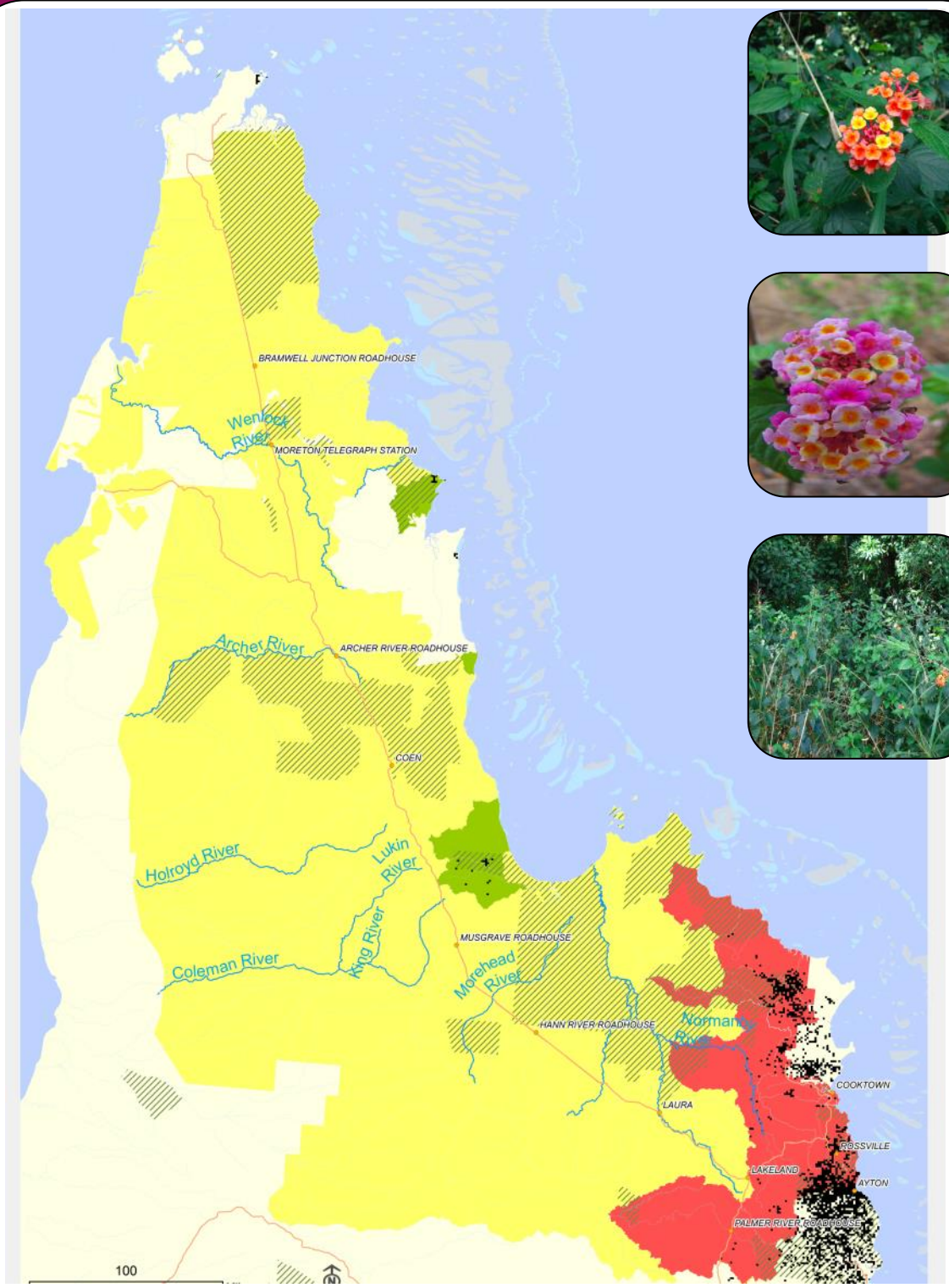
Lantana camara (Lantana)

terrestrial
shrub
perennial

Category
2
3
4
5
6

Control

Spread



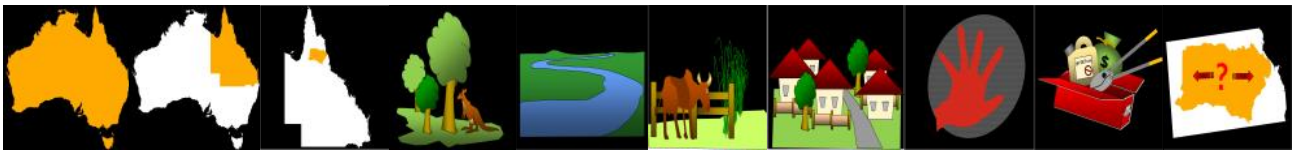
What is my biosecurity obligation?

Prevention zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Assist in annual survey operations.
Eradication zone	
Asset protection zone	Protect key assets from the impacts of lantana through routine maintenance or by using appropriate fire and grazing management.

For more information on management aims in each zone refer to *Using the pest plan templates*

Cyperus aromaticus (Navua sedge)

Priority



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Details

Description: A robust, upright perennial sedge from 10-60 centimetres tall with distinctive button like flower with three large and three small bracts. Leaves are long narrow and glossy green, when stressed the plant turns light yellow. Leaves have a distinctive aroma when crushed.

Distribution: Scattered to dense infestations occur in the southern Cook Shire area from Wujal Wujal to Rossville. Isolated occurrences around reported from Lakeland and Cooktown. Also reported from Northern Peninsula Area, Torres Strait. Generally widespread and common in the Wet Tropics.

Impacts: Navua sedge outcompetes pastures and displaces native grasses and sedges. It is difficult to control selectively and can decrease productivity significantly. Navua sedge spreads easily on roadsides and vehicles.

Key projects: Landholders should manage any new outbreaks and keep pastures in good condition. Weed hygiene practices on farm will assist in reducing the opportunities for introduction .

Management requirements

Delimitation

The distribution of Navua sedge in the Cook Shire is currently not well understood. A detailed analysis and delimitation across the south eastern catchments is required to gather essential information on the location and density of infestations. This information will be used in the determining the next stages of management and the most effective management response.

Prevention

Hygiene requirements for roadside management operators and public places are in development. Ongoing communication of identified clean catchments within this plan is important to prevent spread to new areas . Spelling pastures and careful management of stock can assist reduce the spread in grazing lands. Cleaning down machinery and plant between movements between properties will assist to reduce spread.

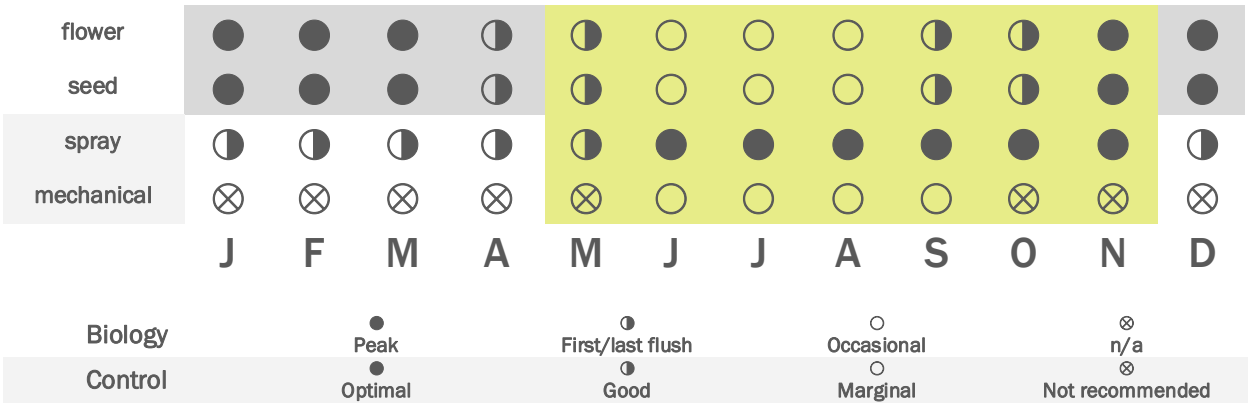
The level of risk and likelihood of establishment in wetlands areas like Rinyirru are not well established but the best response is to prevent the introduction in the first place through weed hygiene and education of park users.

Intensive control

Manage roadside and pastures to prevent spread to adjoining paddocks and properties. Integrated control in grazing areas including pasture management, herbicide control and weed hygiene activities will assist to keep pasture healthy.

Spot spraying isolated outbreaks as they occur and prior to slashing or grazing will assist to prevent development and spread of seed.

Control Calendar



Cyperus aromaticus (Navua sedge)

terrestrial

sedge

perennial

Category

2

3

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Control

What is my biosecurity obligation?

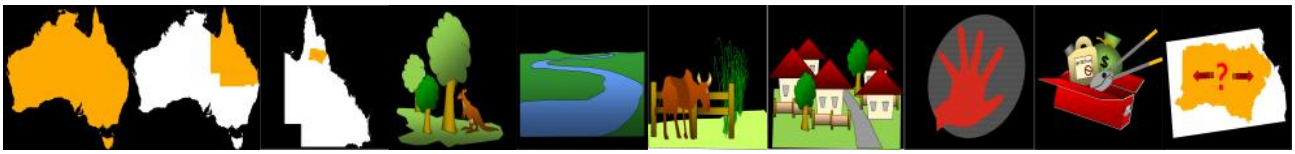
Delimitation zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Assist in annual survey operations.
Prevention zone	
Intensive control zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Work from top down and areas of high risk to low risk.

For more information on management aims in each zone refer to *Using the pest plan templates*

Spread

Mimosa diplotricha (Giant sensitive plant)

Priority



0.0/5 1.5/5 4.0/5 2.0/5 3.0/5 3.0/5 2.0/5 3.0/5 5.0/5 5.0/5

Details

Description: A shrubby or sprawling annual that has four angled branches with a line of sharp, hooked prickles along the angles. Similar to the common sensitive weed but grows as a small shrub rather than a ground cover. Seed is very long-lived and remain dormant for out to 30+ years.

Distribution: Isolated to several small outbreaks on rural properties in Starke and Cooktown areas.

Impacts: GSP chokes pastures and crops causing lost productivity and contaminating produce. The long seed life means soils in infested areas may contain seed long after plants have been controlled.

Key projects: A successful bio-control agent is present in the Wet Tropics which significantly impacts developing seeds. It is not know how effective the biocontrol is on populations of GSP in southern Cape York. Selective herbicide or grubbing of individual plants prior to flowering is essential to prevent further seed development.

Management requirements

Delimitation

The distribution of GSP beyond the know infestations will be required to determine the most effective next steps in management. Report any occurrences within the delimitation zone to Cooks Shire Council on 07 4069 5444.

Prevention

Because the seed of GSP is so long lived maintenance of detailed hygiene is required to prevent spread to new locations in soil, materials or on vehicles, stock and machinery. The Spelling pastures and careful management of stock can assist reduce the spread in of GSP grazing lands. Cleaning down machinery and plant between movements between properties will assist to reduce spread. Spelling stock in a holding paddock for at least 7 days prior to turnout or movement will ensure any ingested seed is passed before moving .

Intensive control

Manage roadside and pastures to prevent spread to adjoining paddocks and properties. Integrated control in grazing areas including pasture management, herbicide control and weed hygiene activities will assist to keep pasture healthy. Spot spraying isolated outbreaks as they occur and prior to slashing or grazing will assist to prevent development and spread of seed.
The biocontrol agent for GSP is a small psyllid which attacks the flowers and seeds. The biocontrol will reduce new seed input but does not reduce the seed stored in the soil. Careful management and mapping of old and new infestation will assist to ensure spread to new locations does not occur.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
flower	◑	○	●	●	●	○						
seed		◑	○	●	●	●	○					
spray	◑	●	●	●	◑	○						
mechanical	◑	◑					○	◑	●	◑	◑	○
manual	●	●	●	◑	○	○						
biocontrol	◑	●	●	●	●	◑	○	○	◑	●	●	●

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Mimosa diplotricha (Giant sensitive plant)

Cook Shire COUNCIL

terrestrial

herb

annual

Category

2

3

4

5

6

Control

Spread

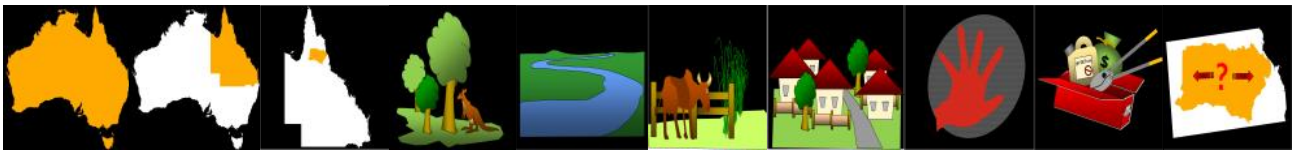
What is my biosecurity obligation?

Delimitation zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations.
Prevention zone	
Intensive control zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Minimise or prevent soil disturbance in known infestations.

For more information on management aims in each zone refer to *Using the pest plan templates*

Senna obtusifolia (Sicklepod)

Priority



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Details

Description: Sicklepod is a vigorously growing, very competitive woody shrub to 1.5-2m tall and 1m wide with yellow senna flowers and long curved seed pods. Normally an annual though plants that have been slashed or survive chemical application often re-shoot and survive another year.

Distribution: Sicklepod is widespread and occasional across Cape York up to the Wenlock River. In some river systems and in the wetter coastal districts sickelpod is abundant and forms dense thickets which die back annually.

Impacts: Sicklepod can invade and completely dominate pastures, grasslands, river beds and wetland margins. It becomes a major weed of crops within 2 or 3 seasons. Sicklepod will invade natural areas especially following disturbance. It is a problem weed of roadsides.

Key projects: Asset protection and spread prevention programs are underway in outliers, weed hygiene measures are in pace to protect clean areas and properties.

Management requirements

Prevention

Sickleopd seed is easily spread on machinery, vehicles, stock and in raw materials. Detailed hygiene is required to prevent spread to new locations.

Cleaning down machinery and plant between movements between properties will assist to reduce spread. Spelling stock in a holding paddock for at least 7 days prior to turnout or movement will ensure any ingested seed is passed before moving . Ensuring raw materials like quarry products are sourced from a clean site will assist to prevent the introduction of sicklepod.

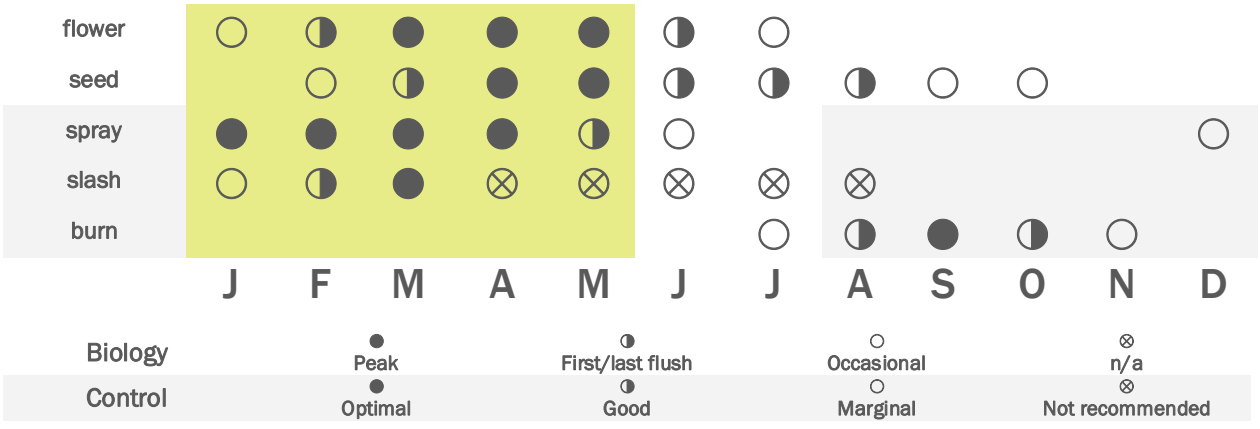
Asset protection

Manage roadside and pastures to prevent spread to adjoining paddocks and properties. Integrated control in grazing areas including pasture management, herbicide control and weed hygiene activities will assist to keep pasture healthy. Spot spraying isolated outbreaks as they occur and prior to slashing or grazing will assist to prevent development and spread of seed. Slashing prior to flowering may prevent seed formation in some situations.

Ensuring adequate buffers are maintained between active (growing) and dormant (seeds in soil) infestations will reduce likelihood of spread along watercourses and road ways.

Mapping infestations will help to identify key assets at risk and steps which might be taken to manage the impact of sickle pod. Careful follow up after disturbance such as movement of soil, fire or heavy grazing will limit the establishment of dense infestations .

Control Calendar



Senna obtusifolia (Sicklepod)

terrestrial

herb

annual

Category

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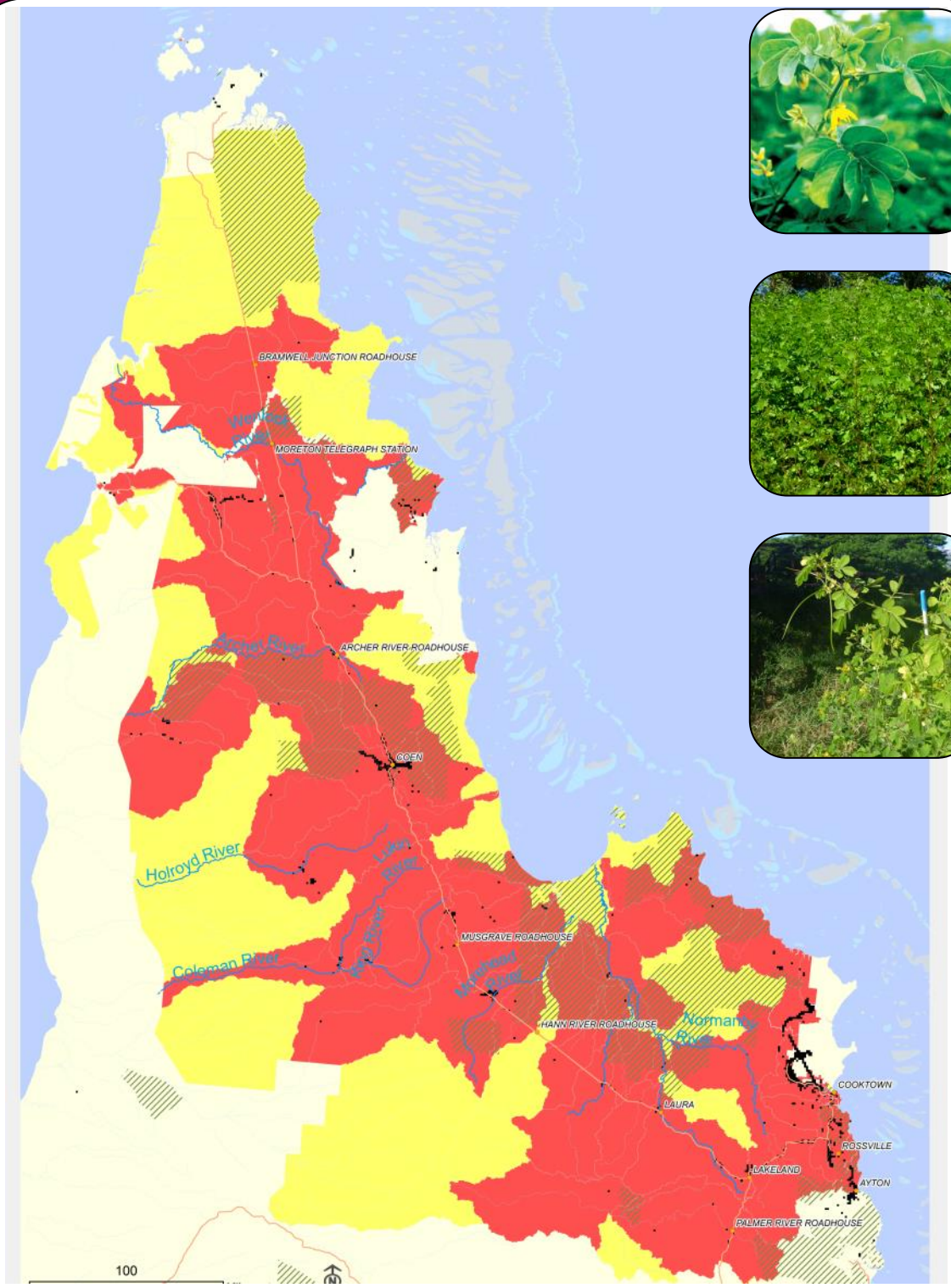


What is my biosecurity obligation?

Prevention zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations.
Asset protection zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Minimise or prevent soil disturbance in known infestations.

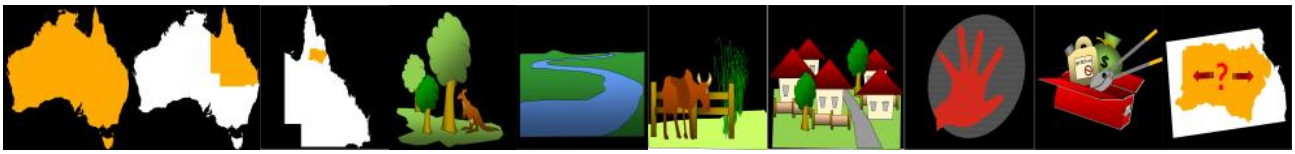
For more information on management aims in each zone refer to *Using the pest plan templates*

Control

Spread

Leonotis nepetifolia (Lion's tail)

Priority



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Details

Description: Lions tail is an erect, sparsely branched annual herb to 1-2m with four angled stems with opposite leaves and round compound orange flowers. Spherical seed pods are held long into the dry season.

Distribution: A series of large to major infestations exist in localised areas within Rinyirru. Scattered outliers have been detected at a range of other locations . Most outbreak of lions tail are associated with gardens, particularly around older or historical settlements. In adjoining regions lions tail occurs in Mareeba Shire where it isolated to one paddock and Tablelands where it is progressing to monitoring toward eradication.

Impacts: A weed of environment and production Lions tail can outcompete native grasses and pastures. It can form dense stands in open savannah and grasslands and along watercourses.

Key projects: An ongoing management program is in place in Rinyirru to reduce the risk of spread and systematically remove outlier infestations and protect key assets.

Management requirements

Delimitation

Report any occurrences and survey sites where previous records have been collected.

Prevention

Lions tail seed is easily spread on machinery, vehicles, stock and in raw materials. Detailed hygiene is required to prevent spread to new locations. Cleaning down machinery and making sure raw materials are sourced from a clean site will assist to prevent the introduction of lions tail. Avoiding areas of infestation with vehicles and camping gear and keeping to defined tracks will assist to reduce spread to new locations.

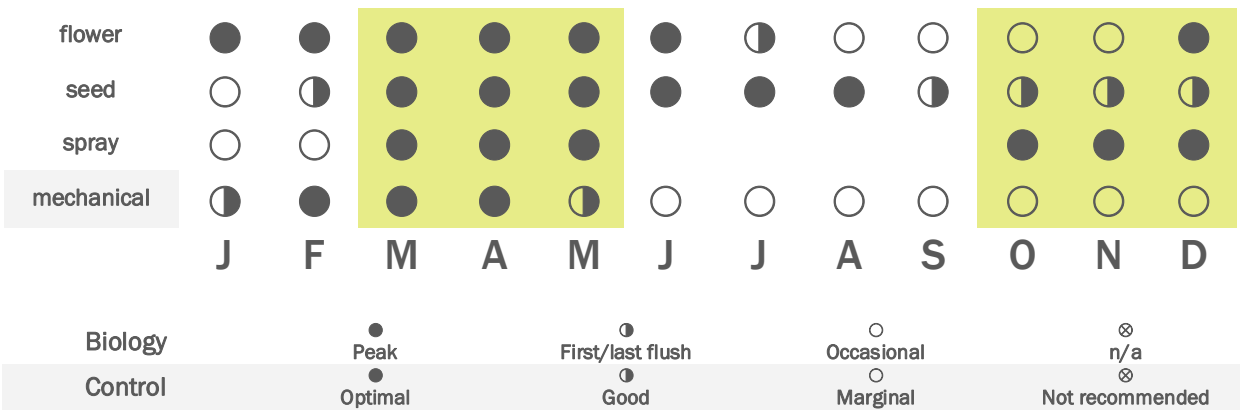
Asset protection

Manage roadsides, access tracks and camping areas and pastures to prevent spread to adjoining paddocks and properties. Spot spraying isolated outbreaks as they occur will assist to prevent development and spread of seed.

Ensuring adequate buffers are maintained between active (growing) and dormant (seeds in soil) infestations will reduce likelihood of spread along watercourses and road ways.

Mapping infestations will help to identify key assets at risk and steps which might be taken to manage lions tail infestations. Careful follow up after disturbance such as movement of soil, fire or heavy grazing will limit the establishment of dense infestations and spread to new areas.

Control Calendar



Leonotis nepetifolia (Lion's tail)

terrestrial

herb

annual

Category

2

3

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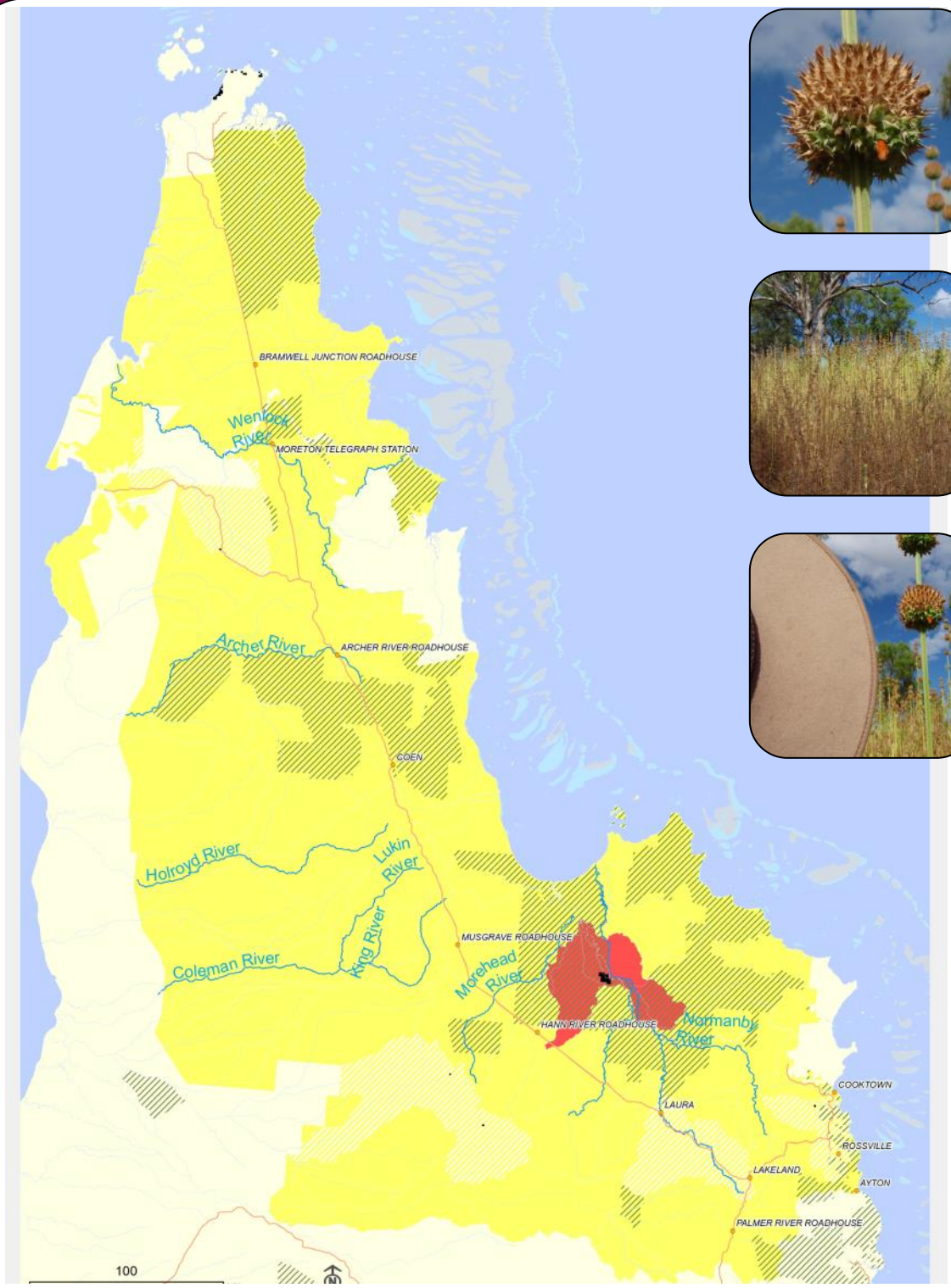
Control



What is my biosecurity obligation?

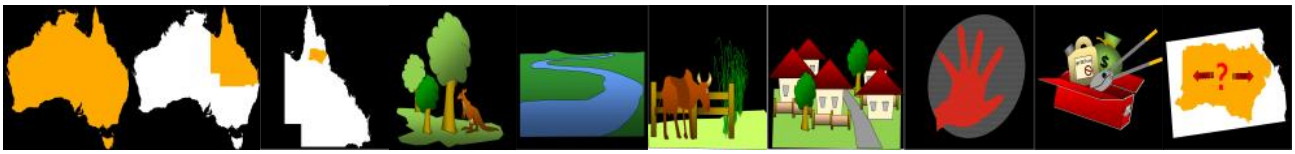
Delimitation zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444. Ensure any machinery or vehicles moving from the infested areas are free from plant material and soil. Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations.
Prevention zone	
Asset protection zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Minimise or prevent soil disturbance in known infestations.

For more information on management aims in each zone refer to *Using the pest plan templates*

Spread

Sansiviera trifasciata (Mother-in-laws tongue)

Priority



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Details

Description: Mother-in-laws tongue is an upright, variegated succulent that spreads from leaf fragments, runners and seeds. Although quite variable in colour the leaves usually have a defined yellow to white margin and a sharp, pointed tip. Sansiviera can occur as small clumps or as a dominant understorey plant in older infestations. It produces small orange berries on upright flower spikes.

Distribution: Sansiviera is almost always associated with people and gardens and may be present in bushland where it has spread from neighbouring gardens or has been dumped in green waste. In the Cook Shire it is primarily only naturalised in the Cooktown area.

Impacts: A weed of the environment particularly of sandy and well drained soils in coastal areas. Sansivera forms a dense, thick ground cover which smothers native plants.

Key projects: Control works have occurred on several large infestations around Cooktown.

Management requirements

Delimitation

Several intensive control projects have removed large infestations of mother-in–laws tongue in the Cooktown area. More information is needed on the full distribution of this weed in natural areas.

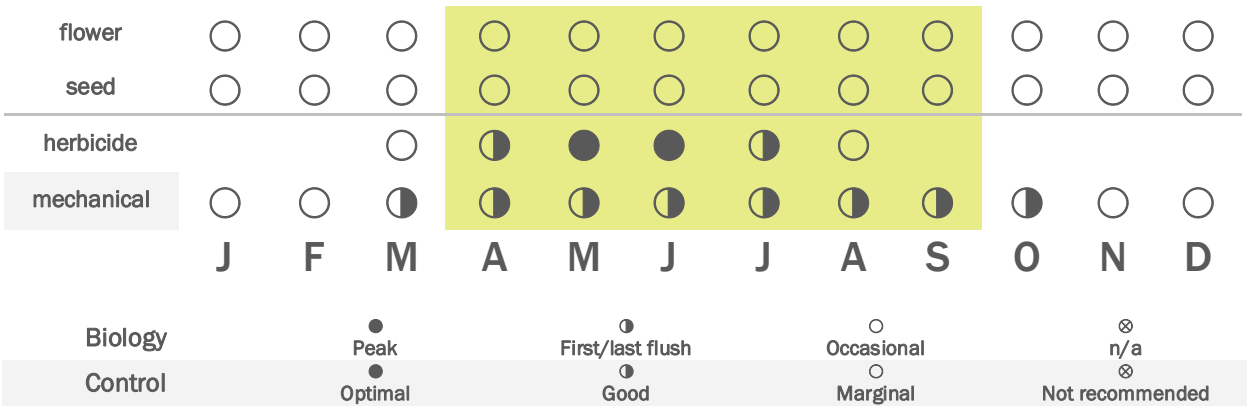
Prevention

Mother in laws tongue is a weed of gardens and adjoining bushland. It is spread by dumping of garden waste and by seed which is eaten by birds.
Ensuring that garden materials do not include Sansiviera or other succulents is the most effective means of reducing the risk of spread in the Cook Shire.

Asset protection

Mother in laws tongue requires repeat applications of manual removal to carefully dig runners from the soil. Any small fragments which remain can form new plants so follow up and persistence is essential to successful control. A range of herbicides are available to manage this weed in natural areas but there application may be restricted in infestations in close proximity to watercourses and desirable native vegetation.

Control Calendar



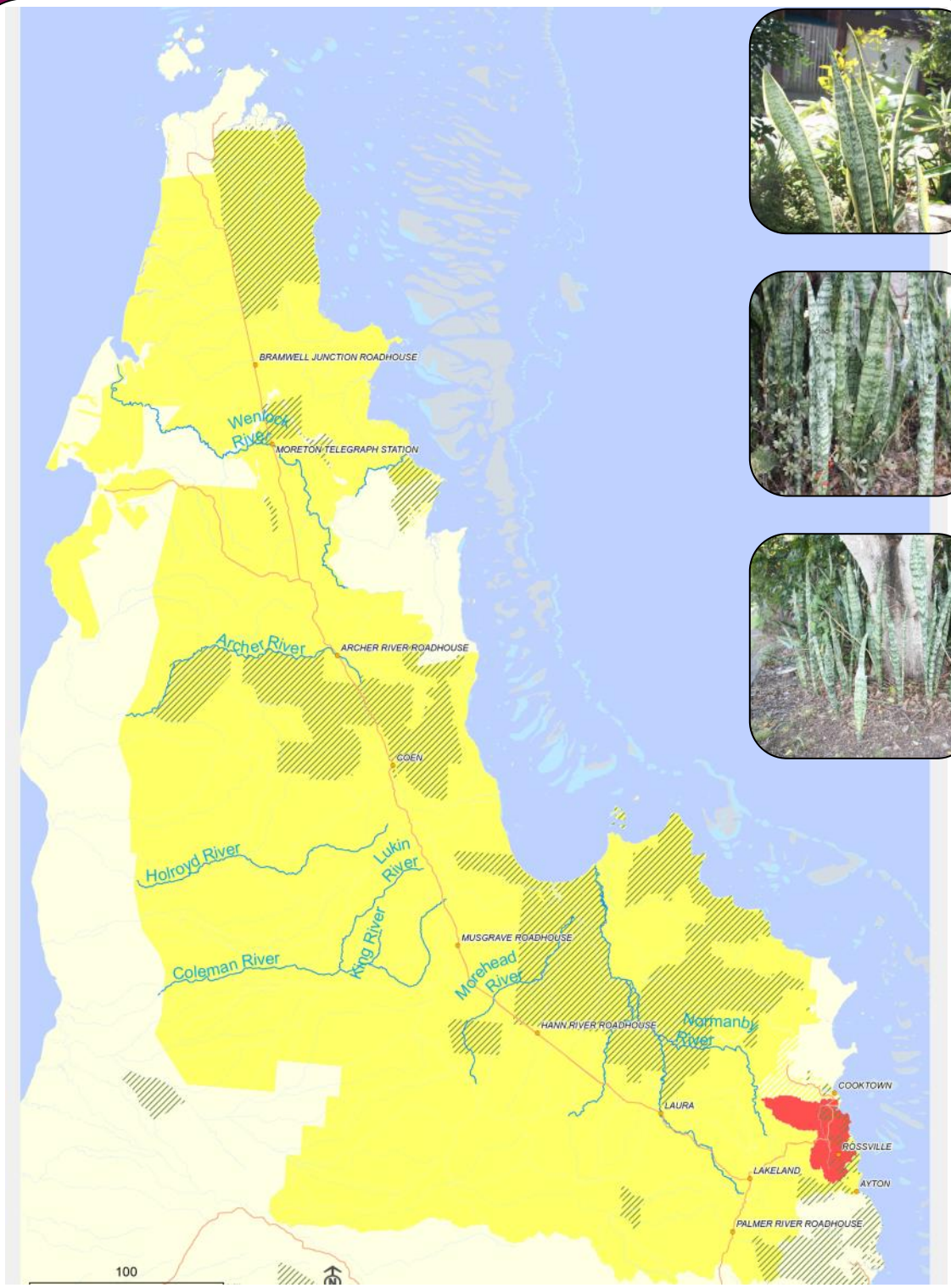
Sansiviera trifasciata (Mother-in-laws tongue)

terrestrial
succulent
perennial

Category
2
3
4
5
6

Control

Spread



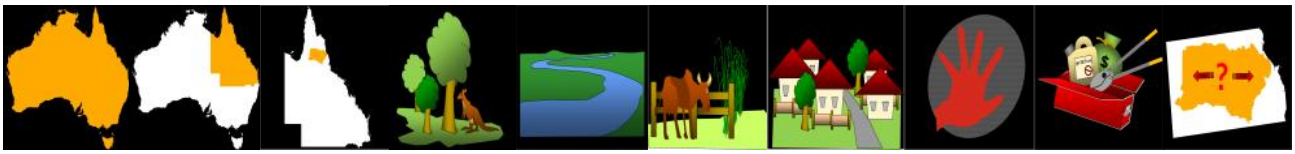
What is my biosecurity obligation?

Delimitation zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444. Ensure garden waste is disposed of responsibly and that Mother in laws tongue is not given away, sold or introduced from other regions.
Prevention zone	
Asset protection zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Minimise or prevent soil disturbance in known infestations.

For more information on management aims in each zone refer to *Using the pest plan templates*

Opuntia spp. (Drooping tree-pear)

Priority



0.0/5	1.5/5	4.0/5	3.0/5	2.0/5	4.0/5	4.0/5	4.0/5	5.0/5	5.0/5

Details

Description: Drooping tree pear is a perennial succulent 1-2.5m tall. Stems are broad, thick flattened, leafless paddles which are segmented to form branches which are covered in short, evenly spaced spines. Forms a branching, squat multi-trunked plant. Large flowers (many different colours depending on variety) form on edges of stems followed by distinctive reddish fruit.

Distribution: Drooping tree pear is restricted to a single location/population at Finch Bay near Cooktown.

Impacts: A weed of the environment and rangelands where it competes with pasture and native plants and restricts access.

Key projects: Treatment of the infestation at Finch Bay works were undertaken in February 2017 and annual follow ups are scheduled to ensure the species is eradicated.

Management requirements

Prevention

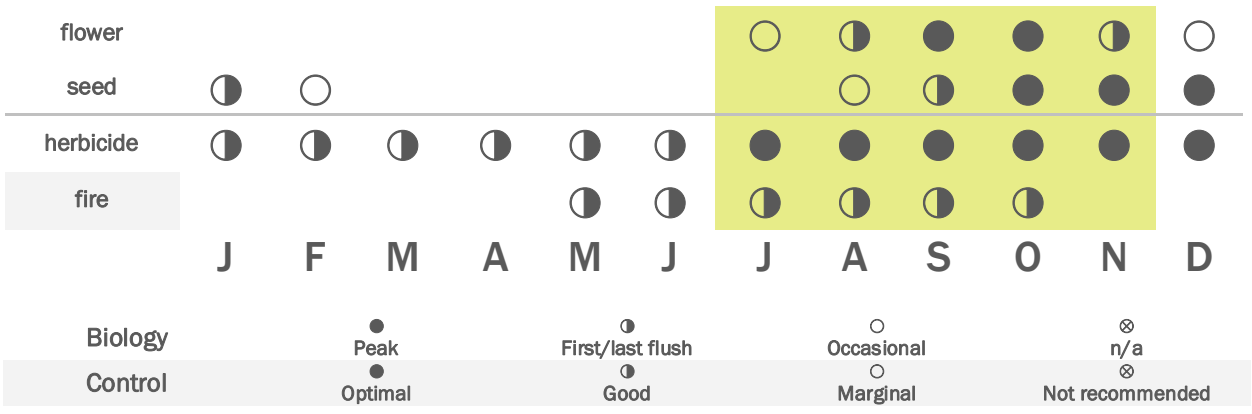
General surveys have not revealed the presence of drooping tree pear in any other locations within the Cook Shire . The purpose of inclusion of the species within the *Cook Shire Biosecurity Plan 2017-2021* was to raise awareness and increase the probability that additional infestations are identified and treated. Should this species, or any other resembling those belonging to the genus *Opuntia* be observed, individuals are encouraged to contact Cook Shire Council's Biosecurity Services team on 4069 5444.

The introduction of drooping tree-pear is usually human assisted so will be most likely to occur in the vicinities of existing townships or historic settlements.

Eradication

An isolated infestation is currently located on Council Reserve at Finch Bay, Cooktown. Limited distribution has resulted in the infestation being targeted for eradication. Treatment works were undertaken in February 2017 and annual follow ups are scheduled to ensure the species is eradicated.

Control Calendar



Opuntia spp. (Drooping tree-pear)

terrestrial
succulent
perennial

Category

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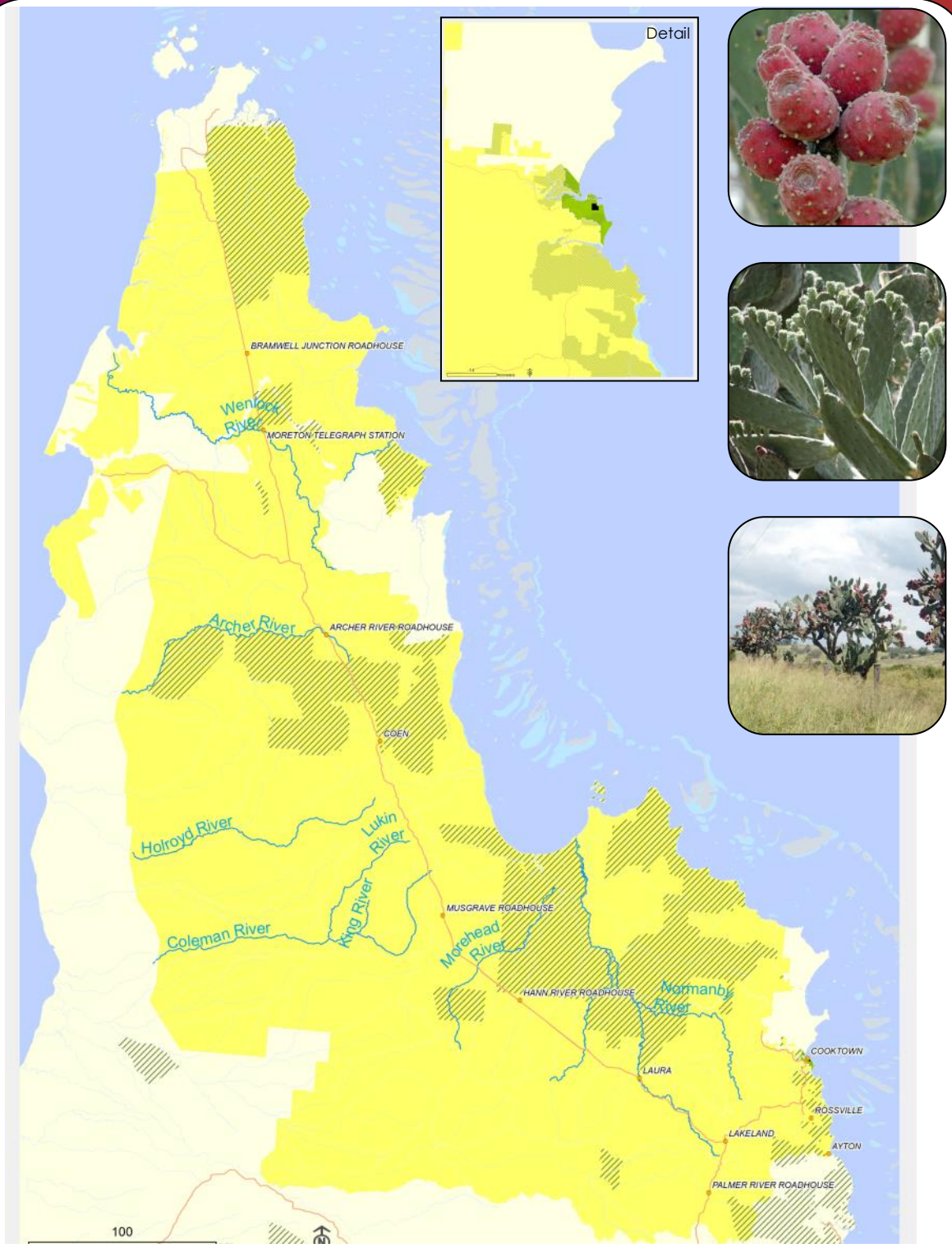


Control

Spread

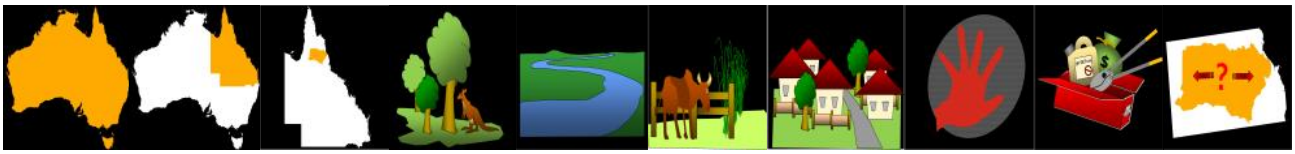
What is my biosecurity obligation?

Prevention zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444. Ensure garden waste is disposed of responsibly and that Opuntia species are not given away, sold or introduced from other regions.
Eradication zone	Ensure best practice weed hygiene measures are in place to reduce risk of spread to new locations. Maintain weed free areas. Minimise or prevent soil disturbance in known infestations.

For more information on management aims in each zone refer to *Using the pest plan templates*

Leucaena leucocephala (Leacaena)

Priority



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Details

Description: Leucaena is an upright, often straggly small tree or large shrub with acacia like leaves. It produces cream coloured pom-pom like flowers on short stalks before developing distinctive flat pods with conspicuous ribs. The pods dry to a deep brown prior to splitting to release small hard seeds.

Distribution: Leucaena is scattered in around settled areas and some roadside locations. It may have been introduced in grazing systems where it has been promoted as a fodder plant fo intensive production systems.

Impacts: A weed of environmental areas, industrial sites, townships, urban creek-lines and roadsides. Leucaena can form dense thickets which outcompete other vegetation.

Key projects: There is an industry code of practice for the management of Leucaena in grazing systems. A more detailed survey is required to establish distribution outside of these areas.

Management requirements

Delimitation

The region-wide distribution of Leucaena is not well documented. It is known from a range of locations in the south east of the Cook Shire from Laura, Lakeland and Cooktown.

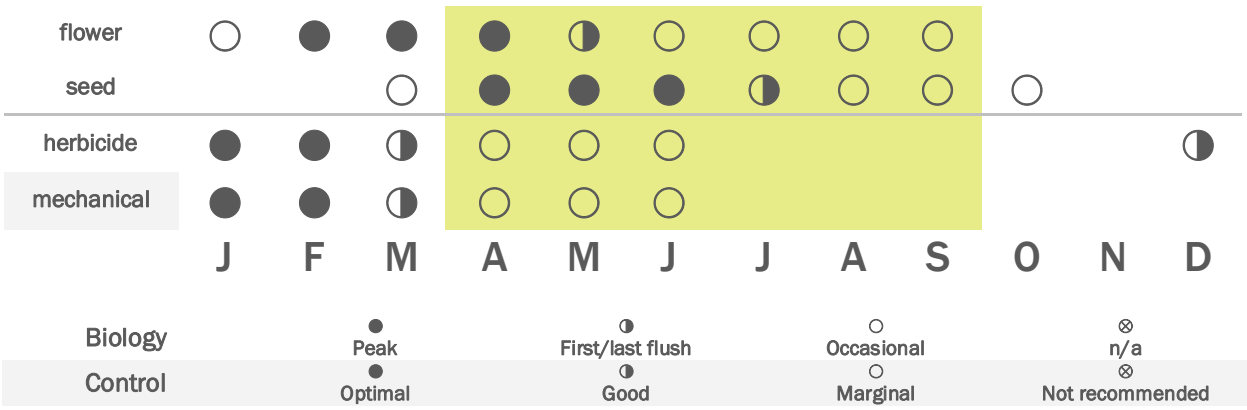
It is likely to occur in areas associated with cattle movement or road works in other regions through the Cape York area.

Prevention

Leucaena has tough seed which can be spread by cattle, machinery, vehicles or in raw materials for road construction. Unless it is intensively grazed it readily moves from production systems into adjoining areas. An industry code of practice outlines the essential steps required to prevent spread to non-production areas. Spelling stock for at least 7 days to allow seed to pass though the gut is required to reduce spread.

Leucaena can spread long distance and establish along watercourses where it can form dense thickets. Controlling and removing plants from road sidings and camping areas will reduce risk of longer distance dispersal in soil on vehicles and machinery.

Control Calendar



Leucaena leucocephala (Leacaena)

terrestrial

shrub

perrenial

Category

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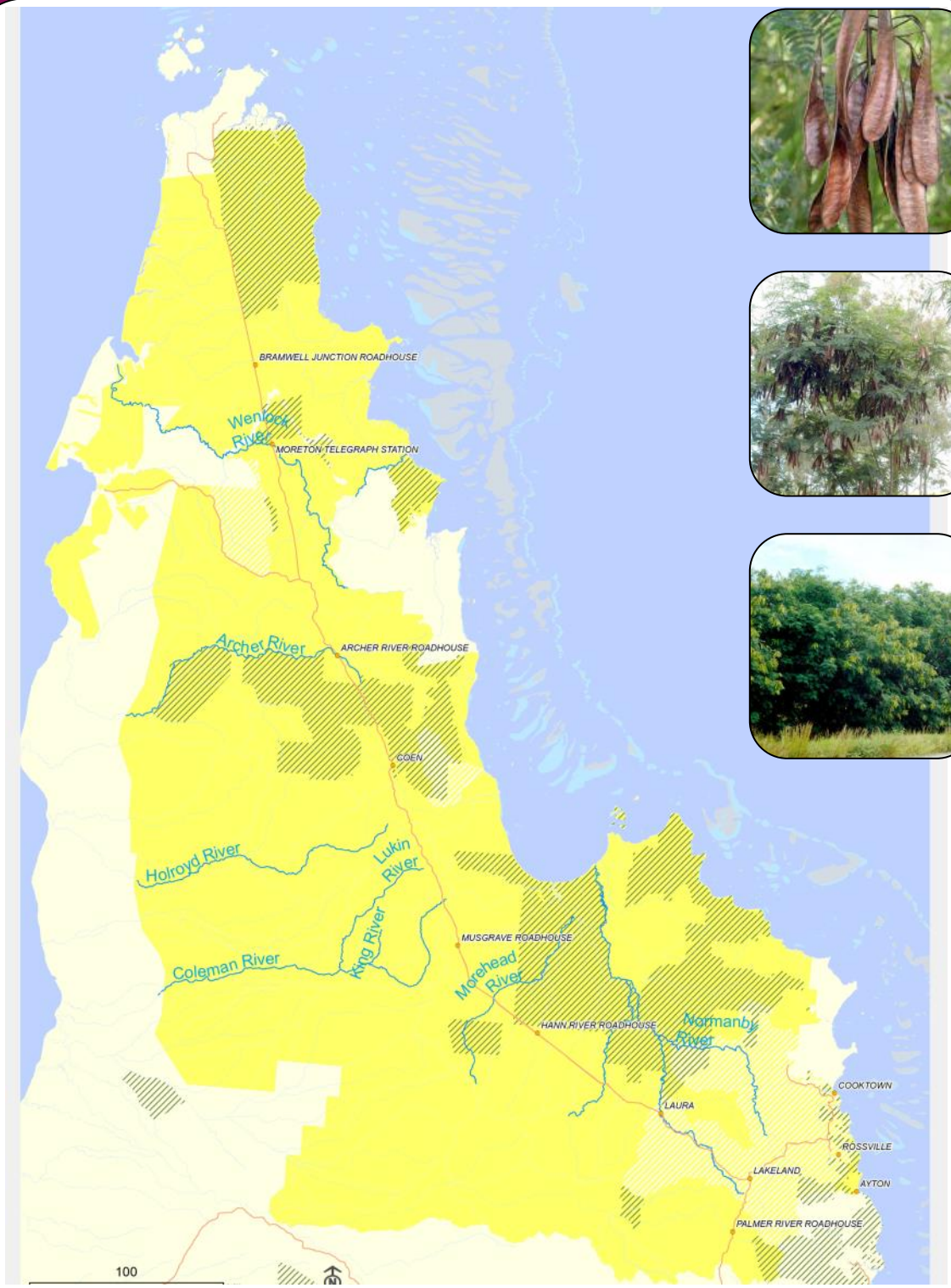


What is my biosecurity obligation?

Delimitation zone	Report any suspected outbreaks or detections in the prevention or eradication zones to Cook Shire Council on 07 4069 5444.
Prevention zone	Ensure stock are spelled for 7 days when introduced or moved from your property to allow time for seeds to pass though the gut. Follow industry code of practice in production areas .

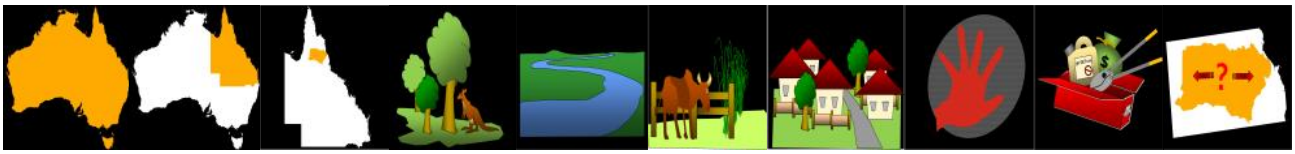
For more information on management aims in each zone refer to *Using the pest plan templates*

Control

Spread

Sus scrofa (Feral Pig)

Priority



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Details

Description: Feral pigs include all pigs ranging from typical black wild pigs to buff or spotted black or white which may resemble a typical farmed pig. By definition a feral pig is any pig which is not domesticated and is living in a wild state. They are generally nocturnal, and camp in thick cover during the day. Feral pigs are omnivorous and can range from 5 to 50 square kilometres. Feral pigs breed throughout the year often producing two weaned litters per year.

Distribution: Common and widespread across the Cook Shire in all suitable habitat. May be seasonal in range and preferred habitat.

Impacts: Feral pigs damage crops, stock, property and the natural environment. They transmit disease and could spread exotic diseases such as foot and mouth if this was introduced to the country. They have a significant impact on nesting sea turtles and wetlands across the Cape .

Key projects: Several coordinated project target annual control to protect key assets.

Management requirements

Asset protection

Feral pigs are considered to number around 24 million in Queensland and are one the most widespread and destructive invasive animals in the State. Areas of Cape York Peninsula support the highest number of feral pigs in Australia.

A series of programs run across key areas of the Cape York Region to reduce the impacts of feral pigs on the natural environment by targeting bating programs and aerial shooting in the wetland systems on the coastal margin These programs are designed to for the ongoing protection of marine turtle nesting sites on the beaches.

Integrated management including weed control and prescribed fire is being used to assist the restoration and recovery of the wetlands when feral pigs numbers have been reduced.

Fencing of significant environmental and visitor assets like Keatings Lagoon near Cooktown can protect specific locations from feral pig impacts.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
breed	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
young	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
trap	○	○	◑	●	●	●	●	●	●	●	●	●
shoot	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
bait				○	◑	●	●	●	●	●	◑	○
fence	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Sus scrofa (Feral Pig)

Vertebrate pest

omnivore

Category

2

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What is my biosecurity obligation?

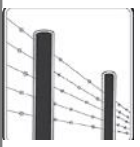
Asset protection zone

Ensure best practice management actions are in place to reduce opportunities for feral pigs .

Identify high value assets and protect them from impacts where possible. Get involved in coordinated management project in your area.
Smaller valuable assets like ornamental and market gardens or individual wetlands can be readily protected using exclusion fencing.

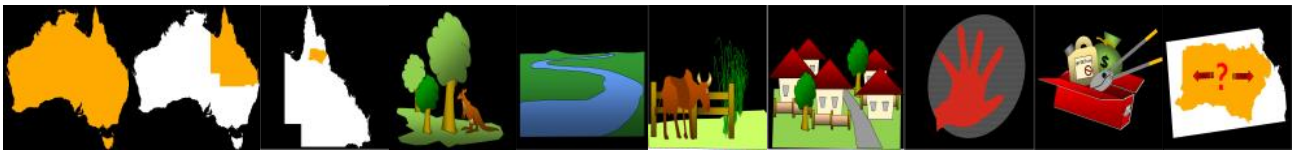
For more information on management aims in each zone refer to *Using the pest plan templates*

Control



Canis lupus familiaris (Wild dog)

Priority



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Details

Description: Wild dogs include dingoes, wild domestic dogs and hybrids. Dingo are classified as wildlife under the Nature Conservation Act 1992 and are protected within National Parks.

Distribution: Wild dogs are widespread in both the agricultural and natural landscape. They also frequently exist on the outskirts of towns and even within urban areas.

Impacts: Wild dogs can cause stock losses in calving season. They also often carry parasites and pathogens. Near towns they can cause nuisance and impact on domestic animals.

Key projects: A coordinated wild dog baiting program is conducted each year. Other management actions respond to specific circumstances on a case by case basis.
Landholders wishing to participate in the annual baiting program should contact Cook Shire Council on 07 4069 5444.

Management requirements

Asset protection

An annual coordinated baiting and control program is in place to assist graziers manage wild dog populations. Wild dogs do have defined home territories but are able to cover large distances when moving to new areas either through competition for resources or by being pushed out of areas by more dominant animals.

In urban and settled areas Cook Shire Council will respond to individual issues as they arise on a case by case basis. Whilst wild dogs are generally not aggressive to people they may display threatening behaviour in urban areas such as attacking domestic dogs, scavenging or stalking. Domestic pets and poultry are best protected by dog mesh fencing. Fencing also restrains your domestic animals and may assist in preventing other animals such as wallabies or pigs entering your property.
QPWS response to wild dog management will be consistent with its *Operational Policy for the Management of Wild Dogs on QPWS Estate* and the *Queensland Wild Dog Management Strategy*.

The coordinated wild dog management program does not include management of straying or problematic domestic dogs (including hunting dogs). These animals are domestic animals and are managed in accordance with Cook Shire Councils Local Laws. For domestic dog queries contact Cook Shire Council on 07 4069 5444.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
breed	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
young	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
trap	○	○	◑	●	●	●	●	●	●	●	●	●
shoot	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
bait				○	◑	●	●	●	●	●	◑	○
fence	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑

Biology	● Peak	◑ First/last flush	○ Occasional	⊗ n/a
Control	● Optimal	◑ Good	○ Marginal	⊗ Not recommended

Canis lupis familiaris (Wild dog)

Cook Shire COUNCIL

Vertebrate pest

carnivore

Category

2

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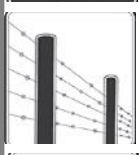
What is my biosecurity obligation?

Asset protection zone

Ensure best practice control measures are in place to reduce impacts before they occur. Survey for signs of dog activity and get an idea of the density of animals prior o calving season so control can be targeted effectively. Maintain fencing. Identify high value assets and protect them from impacts where possible. Landholders wishing to participate in the annual baiting program should contact Cook Shire Council on 07 4069 5444.
Dingo are classified as wildlife under the Nature Conservation Act 1992 and are protected within National Parks.

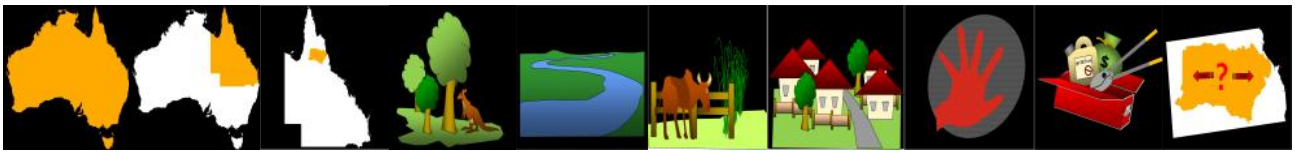
For more information on management aims in each zone refer to *Using the pest plan templates*

Control



Equus caballus (Feral horse)

Priority



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Details

Description: Feral horses originate from domestic stock which have been released or escaped from use as work animals. They were first recognised as a pest in the 1860's and have gone on to number between 300,000 - 400,000 animals, mainly in the tropical north of WA, NT and QLD.

Distribution: Feral horses are widespread in the gulf plains and western Cape York Regions preferring the open grasslands and floodplains. Feral horses form social groups with a stallion and a small groups of mares and their offspring, or groups of bachelor stallions without mares. Feral horses are highly mobile and may cover up to 50km a day in search of feed and water. Home ranges can be broad and even with large parcel sizes across the Cape may include multiple properties.

Impacts: Feral horses cause erosion, damage to vegetation, and waterways. Waterholes, springs and wetlands can be severely damaged resulting in a decline of native species . In ideal conditions populations can increase by 20 percent per year. Feral horses damage fences and compete with stock for feed and water. Feral horses pose a serious safety threat to motorists.

Management requirements

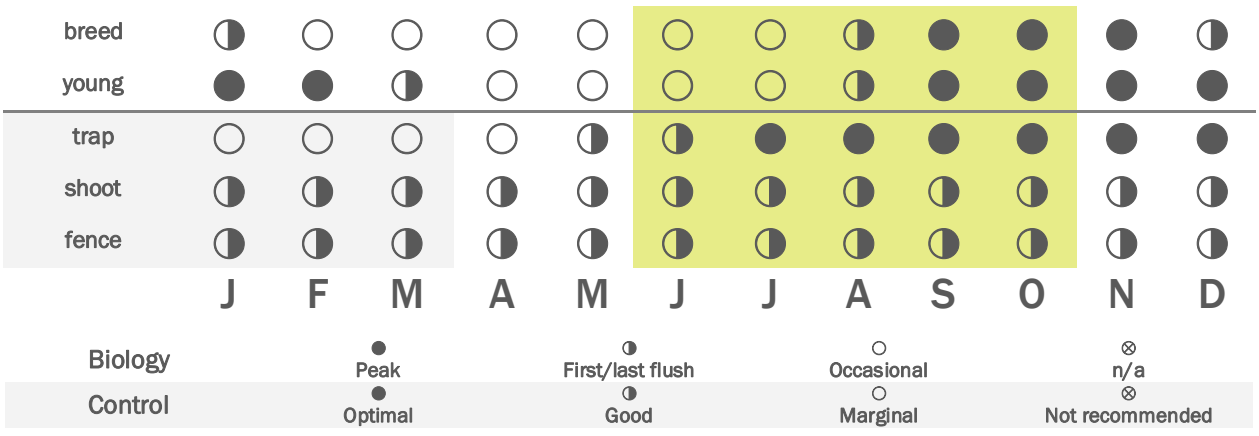
Asset protection

Feral horses are widespread across Cape York Peninsula and their categorisation as a pest animal is dependent on context such as land tenure, land use and the cultural perceptions of landholders.

In general horse management programs are in place to protect areas of high environmental value, such as National Parks, and control measures are undertaken by landholders. In areas where horses are regarded as a pest animal management options include capture and removal, aerial culling and ground based shooting.

Should private landholders believe that feral horses are having a detrimental impact on the environmental character of their holding, or are responsible for economic losses to agricultural production, and the scale of the problem excludes ground based controls, assistance may be sought from regional organisations such as Landcare and Cape York NRM with access to funding streams aimed at pest animal management.

Control Calendar



Equus caballus (Feral horse)

Vertebrate pest

herbivore

Category

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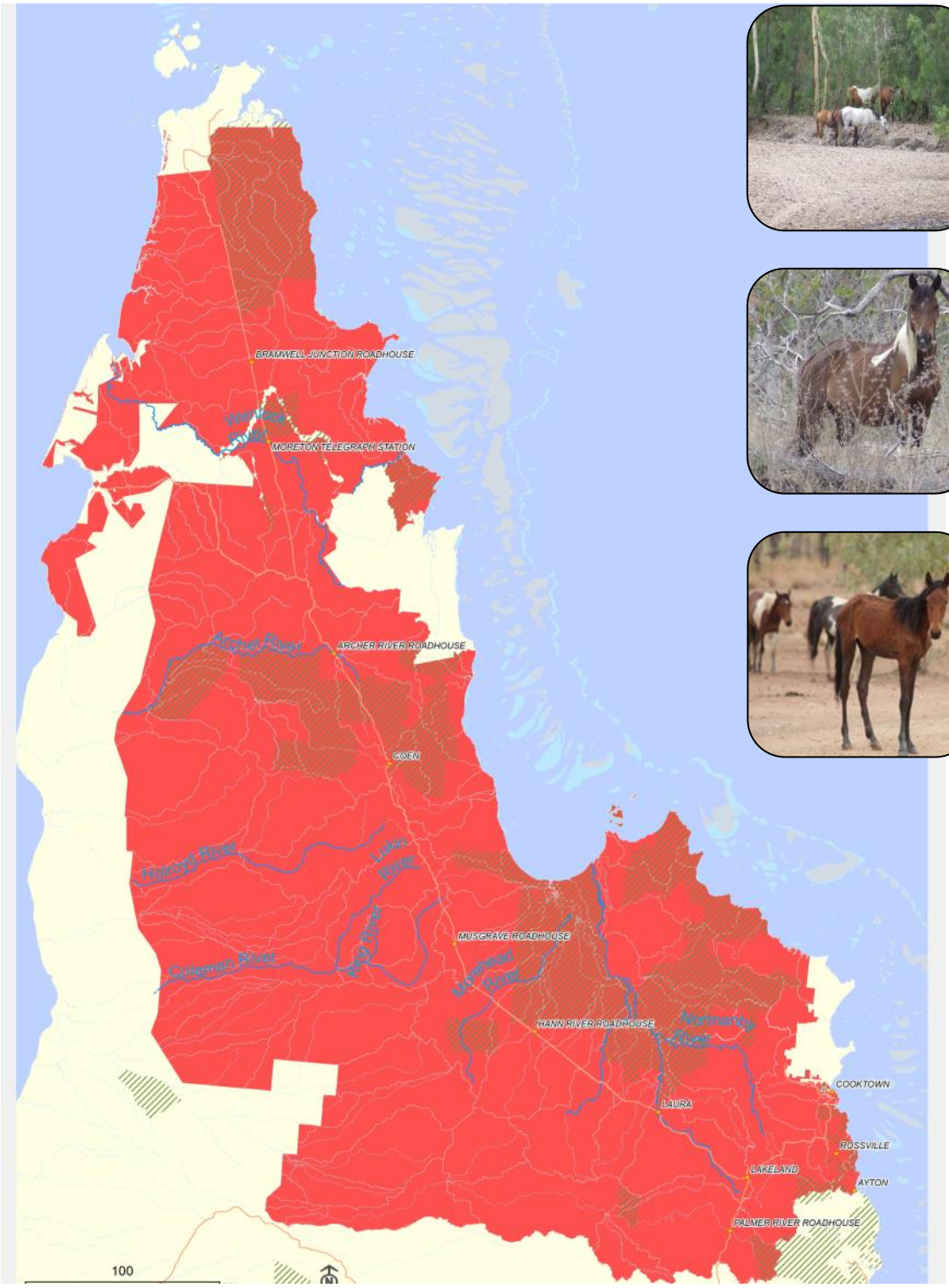


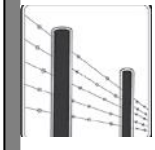
What is my biosecurity obligation?

Asset protection zone

As the feral horse is not a prohibited or restricted invasive animal under the Biosecurity Act 2014 there are currently no prescriptive management activities that landholders are obliged to take.
Maintaining fencing will assist to reduce the movement of feral horses.

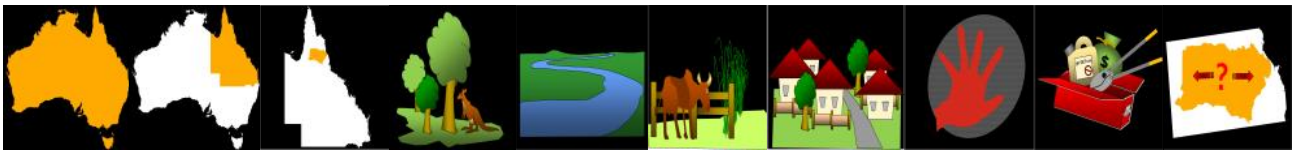
For more information on management aims in each zone refer to *Using the pest plan templates*

Control



Axis axis & Rusa timorensis (Chital & Rusa deer)

Priority



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Details

Description: Feral deer originate from domestic stock which have been released or escaped from farms. Both Chital and Rusa deer are tropical/sub-tropical species. Any deer not within a deer-proof enclosure is considered a feral animal in the State of Queensland.

Distribution: Rusa deer where introduced to the Torres Strait in the early 1900's. A range of anecdotal reports indicate Rusa may be present in the gulf, north eastern and eastern Cape York. Chital deer where introduced near Charters Towers in the late 1900's. Their distribution is expanding up the inside of Great Divide and records exist from the eastern Palmer/Mitchell area.

Impacts: Feral deer compete with native animals and impact on native plants through grazing and browsing. Rutting stags may be aggressive to people, stock and domestic animals. Deer may damage fences, water points and compete with stock. Deer are susceptible to a range livestock disease including foot-and-mouth, rinderpest, vesicular stomatis, rabies and blue tongue.
Key projects: The current range and density of feral deer is poorly mapped across Cook Shire.

Management requirements

Delimitation

At present the distribution of feral deer within the Cook Shire local government area is largely unknown preventing development of a coordinated management program. A future delimitation survey will determine the extent of the problem and inform a suitable regional response.

As the keeping of many deer species is not prohibited it is critical that husbandry practices are of a standard that will prevent deer escaping from enclosures and supplementing or creating new feral deer populations.

In areas where land managers are currently aware of impacts to the environment or primary production caused by feral deer management options include capture and removal, aerial culling and ground based shooting and fencing of environmentally and/or culturally significant areas.

Similar to feral pigs, on extensive holdings land managers may also consider utilising recreational hunters however it is important to be aware of local government restrictions on land use, public liability and animal welfare legislation.

Control Calendar

	J	F	M	A	M	J	J	A	S	O	N	D
rutting	○	○	○	○	○	◑	●	●	●	●	◑	○
breed	◑	○	○	○	○	○	○	◑	●	●	●	◑
young	●	●	◑	○	○	○	○	◑	●	●	●	●
trap	○	○	○	○	◑	◑	●	●	●	●	●	●
shoot	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
fence	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
Biology			● Peak		◑ First/last flush			○ Occasional			⊗ n/a	
Control			● Optimal		◑ Good			○ Marginal			⊗ Not recommended	

Axis axis & Rusa timorensis

Vertebrate pest

herbivore

Category

2

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6

Rusa doe

Chital doe

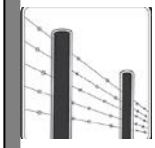
Rusa herd

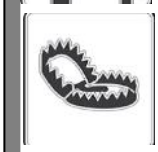
Chital herd

Rusa stag

Chital stag

Control





What is my biosecurity obligation?

Delimitation zone

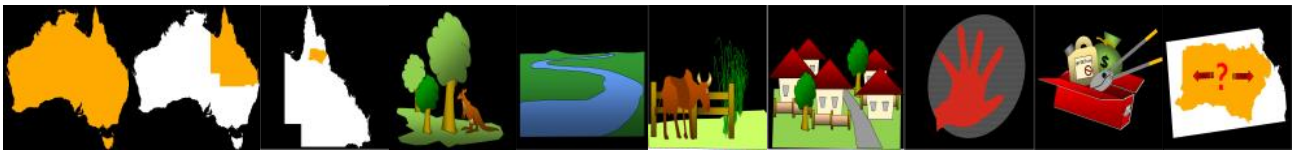
Both Chital and Rusa deer are restricted matter under the Biosecurity Act 2014. They must not be moved, fed, given away, sold, or released into the environment without a permit. Fencing and enclosures of farmed deer must be secure.

Report any suspected outbreaks or detections to Cook Shire on 07 4069 5444.

For more information on management aims in each zone refer to *Using the pest plan templates*

Felis catus (Feral cat)

Priority



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Details

Description: Feral cats are derived from domestic cats which have a long history of naturalisation in Australia. They are similar in appearance to domestic cats but are generally larger in size particularly around the head and shoulders. Fur is generally short and they may be any colour. Males may weigh up to 6 kg, females up to 4 kg. They are usually most active at night.

Distribution: Feral cats are present in all areas of mainland Australia and many islands.

Impacts: Feral cats eat any small to medium prey item they can catch including birds, reptiles, amphibians, mammals, fish and insects. They compete directly with native carnivores and carry toxoplasmosis which is harmful to marsupials. Feral cats scavenge around towns and may prey on domestic pets and poultry. They are potential carriers of the rabies virus if it were to enter Australia.

Key projects: Feral cats are usually not managed on a landscape scale but are targeted in species recovery programs and protection of key environmental assets.

Management requirements

Asset protection

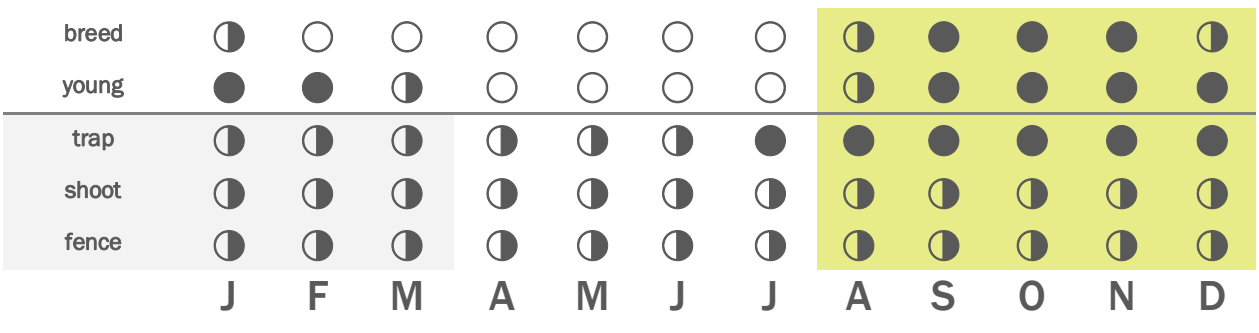
As a result of the lack of broad scale management options for the control of feral cats (i.e. baiting programs) there is currently no coordinated management program active within the Cook Shire local government area.

Despite this a range of management options that can be applied at a local level do exist and these include shooting, trapping using both cage and leg hold traps, restricting access to potential food sources such as dump points and responsible domestic cat ownership (de-sexing, keeping cats confined etc.). Integrated management utilising a number of these methods is recommended.

While feral cats pose a threat to all native wildlife particular attention to management is required in areas of central Cape York Peninsula inhabited by the golden shouldered parrot given its endangered species status and susceptibility to feral cat predation.

Domestic cats are managed in accordance with local laws. For domestic cat enquires contact Cook Shire on 07 4069 5444.

Control Calendar



Felis catus (Feral cat)

Vertebrate pest

carnivore

Category

2

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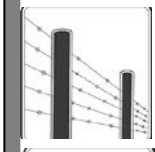
What is my biosecurity obligation?

Asset protection zone

Feral cats are restricted matter under the Biosecurity Act 2014. They must not be moved, fed, given away, sold, or released into the environment without a permit. This includes releasing or dumping of domestic cats. The description of feral cat includes Bengal cat hybrids derived from *Prionailurus bengalensis* x *Felis catus*. Any other species of cat is prohibited in Queensland and must be reported within 24 hours to Biosecurity Queensland on 13 25 23.

Domestic cats are managed in accordance with Cook Shire Councils local laws.

Control



For more information on management aims in each zone refer to *Using the pest plan templates*

References

Werren 2004 - Werren, G. L. (2004) *FNQROC Regional Pest Management Plan Integration: Stage 4 – Regional Pest Management Plan: the Strategy.* Report to the Far North Queensland Pest Plan Advisory Committee, ACTFR/School of Tropical Biology, James Cook University.

ABS 2016 – Australian Bureau of Statistics (2016) *2016 Census QuikStats* – http://www.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA32500?opendocument

Biosecurity Act 2014 - https://www.legislation.qld.gov.au/LEGISLTN/CURRENT/B/BiosecurityA14.pdf

Appendix 1 – List of weeds and pest animals assessed and prioritised for Cook Shire during 2016/17

Prioritised list of invasive plants for Cook Shire Biosecurity Plan 2017 - 2021 (based on stakeholder input)*

		Scores for impacts, threats and capacity to manage									
Weed name	**Priority in CSC PMPO 2012-16**	**Biodiversity & conservation**	**Aquatic & Riparian**	**Agriculture & production**	**Community & residential**	**Culture & country**	**Current extent**	**Feasibility of control/success**	**Total score**	Comments/Notes	**Identified for Strategic Pest Action Plan**
Salvinia	HIGH	4	5	4	4	5	5	5	32	Restricted infestation; successful eradication in Lakeland	Yes
Bellyache Bush	HIGH	5	4	5	4	5	3	3	29	Eradication goal in last plan	Yes
Gamba Grass	HIGH	5	4	3	5	5	3	3	28		Yes
Calotrope	LOW	5	3	4	3	3	4	5	27	Restricted infestation	Yes
Drooping tree pear	HIGH	3	2	4	4	4	5	5	27	Only occurs at one site	Yes
Sporobolus spp. (incl Giant Rat's Tail Grass)	HIGH	4	4	4	4	3	4	4	27	Need to determine what spp. In Shire & which are having having the greatest impact	Yes
Hymenachne	HIGH	4	5	3	2	5	5	3	27		Yes
Navua sedge	MED	4	4	4	3	3	5	3	26	Restricted distribution	Yes
Pond Apple	HIGH	5	5	3	3	4	4	2	26		Yes
Thunbergias (*T. laurifolia & T. grandiflora*).	HIGH	4	4	2	4	4	5	3	26		Yes
Cat's Claw Creeper	MED	4	4	2	3	3	5	5	26	Any active infestations in CS?	Yes
Grader Grass	MED	5	4	5	4	4	1	1	24	Extensive; but asset protection valuable in some areas	Yes
Mother of millions	MED	4	3	3	4	3	5	2	24		Yes
Neem Tree	MED	3	3	3	3	3	5	4	24		Yes
Yellow Oleander (Cook's Tree)	MED	4	4	3	3	3	4	3	24		Yes

Giant Sensitive Plant	HIGH	2	3	3	2	3	5	5	23	Should be able to eradicate and then monitor	Yes
Lion's Tail	HIGH	3	3	4	3	3	4	3	23		Yes
Mother in Law's Tongue	MED	4	3	2	4	3	5	2	23	Urban areas/rural res?	Yes
Rubber vines (*Cryptostegia madagascariensis & C. grandiflora*)	HIGH	4	4	4	2	4	2	3	23		Yes
Lantana	HIGH	3	4	3	2	4	4	2	22		Yes
Leucaena	MED	3	3	2	4	4	4	2	22		Yes
Sicklepod	HIGH	4	4	4	3	5	1	1	22		Yes
Mossman River grass	MED	3	2	2	3	3	4	4	21	Need to survey islands	No
Noogoora Burr	MED	4	4	3	1	3	3	2	20		No
Castor Oil Plant	LOW	3	4	3	2	2	3	2	19		No
Candle Bush	LOW	3	3	2	1	2	5	2	18		No
Khaki weed	MED	2	2	3	4	2	3	2	18		No
Common Sensitive Plant	MED	2	2	3	4	2	1	3	17		No
Caltrop	LOW	2	2	4	3	2	2	1	16		No
Coffee Senna	LOW	2	3	2	2	2	2	2	15		No
Knobweed	LOW	3	3	3	2	1	1	1	14		No

Environmental Weeds	
Weed name	**Priority in CSC PMP 2012-16**
African Tulip Tree	Low
Barlaria	Medium
Cassia	Low
Praxelis	Low
Singapore Daisy	Medium

Weed Alerts - not presently in Cook Shire, but have the potential to establish.	
Water Hyacinth	Mimosa pigra
Water Lettuce	Cabomba
Siam Weed	Miconia
Limnocharis	Parkinsonia

Monitoring

The following weeds are presumed eradicated from the Shire or region where causing an impact, and require monitoring of known infestation areas to ensure they do not reoccur

Name	Location	Where to watch out for it	Notes
Bauhinia	Endeaviour River	River banks	Although not totally eradicated from Shire , has been removed from environmental areas where it was causing an impact
Cat's Claw Creeper			
Malachra	Scherger		
Parthenium		Chook pens	

Prioritised list of invasive animals for Cook Shire Biosecurity Plan 2017 - 2021 (based on stakeholder input)*

		Scores for impacts, threats and capacity to manage									
Pest name	**Priority in CSC PMPO 2012-16**	**Biodiversity & conservation**	**Aquatic & Riparian**	**Agriculture & production**	**Community & residential**	**Culture & country**	**Current extent**	**Feasibility of control/success**	**Total score**	Comments/Notes	**Identified for Strategic Pest Action Plan**
Feral pigs	HIGH	5	5	5	4	5	1	2	27		Yes
Wild dogs	HIGH	2	1	5	5	5	1	2	21		Yes
Feral deer	HIGH	4	3	4	4	4	5	2	26	Further investigation	Yes
Feral horses	HIGH	4	4	4	3	4	2	2	23		Yes
Feral cattle	HIGH	4	4	4	3	4	2	2	23		Yes
Cats	HIGH	5	2	2	5	5	1	2	22		Yes

Pest animal Alerts

Tilapia	HIGH	5	5	2	2	4	5	2	25	Alert	No
Tramp Ants	NA	5	3	5	5	5	5	5	33	Alert (specify species* and actions)	No

Tramp Ants = Electric Ants and Yellow Crazy Ants

* above scores do not include the National (WONS) and State declarations.