



MACKAY WHITSUNDAY ISAAC  
**PLANTATION FORESTRY  
SUSTAINABILITY GUIDE 2018**



The Mackay Whitsunday Isaac Region Sustainable Forestry Guide provides relevant information and tools to assist producers in achieving sustainable management of their land, whilst maintaining or enhancing farm efficiency and productivity. It is designed to be a resource for finding information rather than a comprehensive manual on forestry management.

**This guide has been written for landholders interested in diversifying into forestry in the Mackay Whitsunday Isaac region. It links to the Mackay Whitsunday ABCD Management Practice Framework for Forestry: 2018 Update (Reef Catchments 2017)**

**'A' Class or innovative practices from the ABCD Framework are identified throughout this document.**

The Mackay Whitsunday region includes the catchments of the Pioneer, O'Connell and Proserpine River systems and covers an area of approximately 9,000 square kilometres. The climate is subtropical to tropical with a distinctive wet season. The average annual rainfall is 1,300 to 2,000 millimetres and over 50% of this falls in three months between January and March.

Forestry is a minor land use in the Mackay Whitsunday Isaac region, with sugarcane, grazing and natural areas being the most significant. However, this sector offers potential for value-adding. Reef Catchments is working with farmers to explore the possibility of using marginal land for forestry production purposes, to increase returns and deliver environmental benefits.

The Mackay Whitsunday Forestry Management Practices: ABCD Management Framework document has been designed to support the identification, validation, implementation and review of forestry practices that can improve both freshwater and marine water quality and ecosystem health as identified in the Mackay Whitsunday Isaac Water Quality Improvement Plan (WQIP) (Folkers et al. 2014).

The development of ABCD frameworks for a range of industries is pivotal to implementation, monitoring, measurement and continual improvement through the WQIP process. The ABCD frameworks are designed to highlight and facilitate communication about the different levels or standards of management practices (as opposed to resource condition) for different water quality parameters (i.e. sediment, nutrients and chemicals).

The classification provides a definition and scale of improvement from **Dated**, through **Conventional** and **Best Management Practice**, to future **Aspirational** cutting-edge practices. Over time, changes in knowledge, technology, costs and market conditions may validate **Aspirational** cutting-edge practices such that they eventually become **Best Management Practices**. If **Best Management Practices** are widely adopted and become the new industry standard, they may become **Conventional** practices, while **Conventional** practices may become dated.

**Plantation Forestry** is the planting of trees specifically for future timber or forest products.

## A Aspirational

- New and innovative practices adopted by land managers that require further validation to determine industry wide environmental, social and economic costs/benefits.
- Validation requires R&D and if appropriate, some validated practices will become recommended BMP.
- Development of Farm Management Plans and utilisation of new and innovative technology.

## B Best practices

- Currently promoted practices referred to as **Best Management Practices**.
- Widely promoted by industry to achieve current and future industry expectations and community standards.
- Development of Farm Management Plans and utilisation of common technology.

## C Conventional

- Common practices widely adopted by industry but meet only basic current industry expectations and community standards.

## D Dated

- Practices superseded or unacceptable by current industry expectations and community standards.

PRINCIPLE	MANAGEMENT PRACTICE CATEGORY
1. Business Planning	Detailed business planning is expected to validate recognition of the value of a planted forest resource, and support appropriate allocation of funds and resources for planted forest management.
2. Site suitability/ species selection	Site capability characterisation and selection of species suitable for site climatic conditions, target products and/or services and each land capability class is essential to achieve a healthy, productive plantation, shelterbelt, carbon forest or environmental planting, warranting management input over the life of a rotation or planting.
3. Property Planning	Property planning assists in the process of matching land-use to land capability, overall farm economic return, consideration of on-site and off-site environmental influences, ecosystem benefits and capacity to maintain an appropriate level of management and resource inputs.
4. Site Preparation	Site preparation is a key point of soil disturbance in the cycle of a forest plantation, shelterbelt, carbon forest or environmental planting. Management practices that balance the requirements of soil cultivation and grass competition with soil conservation are critical to preserving both productive potential and environmental values.
5. Establishment	The establishment phase of a forest plantation, shelterbelt, carbon forest or environmental planting is critical to achieving high survival and rapid early growth. In turn, this is critical to a site being "captured" by the planted species, and transitioning from a paddock of individual trees to a forest. Production benefits are served by high survival and rapid early growth.
6. Nutrition management	Nutrient management of a forest plantation, shelterbelt, carbon forest or environmental planting is necessary to ensure establishment success, realise the growth potential and maximise economic returns and/or environmental service benefits.
7. Silviculture	Appropriate silvicultural management throughout the cycle of a forest is necessary to preserve the asset value and optimise economic return and/or environmental service benefit.
8. Site Access Tracks	Planted forest roads and access tracks must provide safe access for routine forest management and protection activities, and heavy equipment required for specific operations. Access track design standards and location should aim to minimise overall construction cost and be suitable for use in key operational activities (particularly harvesting) while maintaining environmental values.
9. Biodiversity and ecosystem management	Management of significant environmental values, including protected plants, regulated native vegetation, breeding sites of protected animals and koala habitat is required under legislation.
10. Weed and pest management	Minimisation of damaging agents (pests and diseases) to a forest plantation, shelterbelt, carbon forest or environmental planting will maintain its productive potential, vigour and economic value and capacity to deliver environmental services. Some elements of weed management, such as noxious weed control, are required by legislation.
11. Stock management	Managed appropriately, stock grazing in planted forests offers a number of silvicultural, economic and environmental benefits including control or weed growth, improved access, reduction of fuel loads and returns from cattle grazing.
12. Fire management	Management to minimise the risk of uncontrolled wildfires in forest plantations, shelterbelts, carbon forests or environmental plantings will maintain productive potential, vigour and economic value and capacity to deliver environmental services. Some elements of fire management are stipulated by legislation.
13. Harvesting	Harvesting operations necessarily remove vegetation cover, create disturbance to soil and require active use of access tracks. Harvesting operations should be planned and managed to minimise soil disturbance.
14. Irrigation management	The economic returns from timber production seldom justify the cost of irrigation. However, irrigated forest plantations, shelterbelts, carbon forests or environmental plantings can play an important role for the environmental service they provide in beneficial use of waste or recycled waters, particularly sewage effluent.
15. Drainage management	Planted forests established over shallow watertables or areas prone to seasonal inundation can benefit in terms of growth productivity and vigour through access to moisture greater than available through ambient rainfall. However, careful site and species selection is required to ensure planted forests do not suffer from waterlogging, excessive erosion due to flood flows, wind-throw due to saturated soil conditions.
16. On-going monitoring and review	Routine monitoring of forest plantations, shelterbelts, carbon forests or environmental plantings is necessary for early identification of issues and implementation of appropriate interventions.

D DATED	C CONVENTIONAL
Practices that are superceded or unacceptable.	Practices that meet minimum requirements
No planning undertaken. No defined markets for products, and no consideration of secondary products, agricultural or environmental services.	Basic plan that takes into consideration immediate financial costs and any legislative requirements (Development Application, Forest Practice Area) as per local or State Government regulations/guidelines (1). Limited consideration of markets for products or services from planted forest. Recognition of returns from secondary products but not estimated.
No consideration of site attributes or land capability for chosen application. No evaluation of species suited to site, climate or end products, and no consideration of weed potential of planted species.	Minimal evaluation of site attributes, land capability, and species selection (e.g. fact sheets consulted). Compliance with any local or State Government regulation/guideline for Pest plants.
Lack of Property Plan and fire management infrastructure. Watercourses not identified and classified. No consideration of natural topography for siting of maintenance, access and harvesting/ snigging tracks.	Aerial photograph of farm with basic site access based on ease/existing tracks. Watercourse buffer widths identified on plan and marked in the field prior to harvesting and silvicultural activities.
Site preparation unsuitable for site attributes. Season not considered. No consideration for ground cover during establishment phase. Non-compliance with the Timber Plantation Operations COP Section	Site preparation takes some site attributes into consideration and meets any state or local guidelines. Season taken into account, planting time considers position in landscape/time of year (e.g. frost/wet season onset etc.). Minimal groundcover during establishment phase. Compliance with the Timber Plantation Operations COP Section 2.4.
No grass competition management to assist with seedling establishment. Herbicides not approved. Excessive burning of woody debris. Boundary of planting zone not marked in the field. Non-compliance with the Timber Plantation Operations COP Section 2.4.	Reducing competition (mechanical/chemical) through heavy reliance of the use of herbicides. Use of approved herbicides residuals but may include herbicides with long-half life. Herbicides not appropriate for pest species. Label requirements followed. Planting zone marked in the field prior to planting.
No consideration of nutrient requirements. Either no nutrients applied or formulation/ application not based on generalised recommendations.	Standardised fertiliser application at planting. Maintenance of records on location, date, type quantity, method of fertiliser application.
No post-plant grass and weed control. No thinning, or non-commercial thinning only. No pruning. Poor practice e.g. inter-row cultivation.	Control of grass competition maintained until saplings capture control of site. No thinning, or non-commercial thinning only. No pruning.
Ad-hoc access track locations, no consideration of erosion source, and not maintained. Non-compliance with the Timber Plantation Operations COP Section 2.3.	Design of tracks with appropriate drainage structures to minimise cut and fill disturbance to watercourses. Maintenance and management to minimise deterioration.
Clearing of regulated native vegetation & of regulated breeding sites of habitat. Lack of buffer zones around watercourses and areas of environmental interest. Disturbance to waterways.	Protection of land supporting protected plants, regulated native vegetation, or areas with significant environmental value. Protection of breeding sites of protected animals, koala habitat, or essential habitat. Accommodation of recommended buffers around watercourses. Lack of buffers around areas of environmental interest.
Lack of pest and disease monitoring, stand hygiene management, weed maintenance or noxious weed control, and lack of compliance with ACDC herbicide use or AVPMA requirements.	As for Dated Practice plus:- But compliant with ACDC herbicide use and AVPMA chemical registration requirements.
No stock control resulting in soil compaction, erosion, bare soil, tree rubbing, etc., Stock access to watercourses not regulated resulting in damage to stream beds and banks.	Stock excluded until trees are large enough to resist damage. No active management of cattle rotations within planted forest resulting in selective grazing. No control of stock access to watercourses resulting in damage to stream beds and banks
Lack of fire management plan & fire breaks. Planted forest area not partitioned by access tracks. Smothering of rare and threatened flora if fires are infrequent or too cool. Lack of management leads to higher risk (and incidence) of uncontrolled wildfires. Loss of productivity if subject to wildfires.	Compliance with local and state regulations including development of a Fire Management Plan. Planted forest areas partitioned by access tracks. Firebreaks constructed but not well maintained. Compliance with the Timber Plantation Operations COP Section 2.5.
No harvest plan and inappropriate management practices: creating erosion, compaction, stem damage, etc. None or very inappropriate silviculture practices.	Harvesting plan prepared in accordance with the Harvesting Code of Practice (2007) Appendix 3. Harvesting plan includes: timing, selection, access tracks, extraction routes, log dumps, internal and external haulage routes, fuel storage, equipment, products, wet soil types, environmental hazards, weather areas, etc. Complies with the Timber Plantation Operations Code of Practice Section 2.6.
Irrigated forests located over shallow water table, close to surface waters, or on low or high permeability soil types. No testing of soil types or site capability & of water chemistry. Inappropriate irrigation management. (Includes over watering, under watering, unnecessary costs).	Irrigated forest on site with at least 3m depth to groundwater. Irrigated forest on deep soils (>2m) with moderate permeability and medium to high water holding capacity. Irrigation rate matched to the limiting consideration of tree water use, crop nitrogen uptake, or soil phosphorous sorption capacity. Application rate not greater than soil permeability infiltration rate. Irrigation applied on a fixed schedule designed on seasonally average demand, with no correction for day to day and seasonal variations in soil moisture and crop water use.
No soil characterisation prior to drainage. No hydrological understanding prior to development, with possible seasonal inundation and disruption to overland flows. No silvicultural amelioration of poorly drained site conditions (mounding). Inappropriate species selection. Seasonal waterlogging resulting in loss of production and increased incidence of wind-throw. No consideration of fertiliser timing.	Minimal soil characterisation. Minimal understanding of hydrological impacts of drainage and/or mounding. Mounding to improve drained soil volume but limited consideration of overland flow paths. Inappropriate species selection. Seasonal waterlogging resulting in loss of production and increased incidence of wind-throw. Limited consideration of fertiliser timing.
No management plan or records kept. No regular monitoring.	Minimal management plan & record in place. Record collected or maintained compliant with relevant legislation (e.g. herbicide application). No routine inventory measurements. No post-silvicultural practice auditing, or review.

# B BEST PRACTICE

## Current best management practice

A costed plan for establishment and maintenance of planted forest. Some consideration of future products and markets and/or services. Plan considers returns from some but not all products and/or services.

Soil types and landforms are mapped and site capability assessed. Best available information utilised to ensure species selected are suited to climate, soil type, landform, regional ecosystem type, target crop and regional processors. Species selected that have higher wind stability and, for timber plantations, reduced likelihood of stem and branch damage based on best available knowledge. No species with a weed potential is planted (refer to Weeds of Mackay Whitsunday region).

Documented plantation management plan consistent with the Timber Plantation Operations Code of Practice (2), showing soil types, pre-clearing regional ecosystem types, slope classes, watercourses and stream order, buffers, plantation compartments, access tracks, log dumps, future internal haulage routes, external haulage routes etc.

Plan progressively updated based on stratified management units and inventory data including tree density, species mix, size class distribution, fuel loads, groundcover. Interaction with surface water considered in accordance with catchment management plans and the WQIP.

Soil cultivation to fracture profile and encourage rapid early root growth and tree establishment while minimising bare soil exposure. Site cultivation appropriate to soil type and slope (e.g., contour ripping and ploughing). Avoid use of mounding expect on waterlogged sites. Minimum area of grass control around planted seedlings. Season taken into account, planting time considers position in landscape/time of year (e.g. frost/wet season onset etc.). Maintenance of grassed waterways. Compliance with the Timber Plantation Operations COP Section 2.4.

Targeted application of herbicides to planting rows only.

Use of herbicides with low eco-toxicity, low migration potential and short half-life in the environment. Maintenance of grassed inter-rows. Label requirements followed. Planting zone mapped and marked in the field prior to planting. Burning of woody debris should be kept to a minimum. Compliance with the Timber Plantation Operations COP Section 2.4.

Standardised fertiliser application at planting and reactive supplementary fertiliser over the growth cycle based on visual foliar symptoms and foliar analysis. Sub-surface application by manual or tractor-based injection. Maintenance of records on location, date, type quantity, method of fertiliser application. Schedule for visual and foliar monitoring to inform nutrient response action and maintain optimum forest health.

Control of grass competition maintained until saplings capture control of site. Stand progressively thinned to maximise stem volume growth, maintain close to full stocking and canopy cover, and maximise timber output stand vigour. Thinning to maintain slenderness ratio less than 80 to 100, even crown spatial distribution and canopy height to reduce wind-throw. Stand progressively pruned to minimise knotty core and remove ladder fuels. Pruning carried out during the dry season in periods of low sap flow to reduce the risk of infection and prior to onset of active growth to achieve rapid wound occlusion. Compliance with Timber Plantation Operations COP Section 2.4.

Access track layout is pre-planned prior to planted forest establishment works. Whoa boys, turn-outs, filter strips, buffer zones, and sediment detention basins to divert runoff. Spacing and type of track drainage structures according to generic tabulated guidelines incorporating allowances for road base material and rainfall intensity.

Runoff diverted onto undisturbed areas. Design of tracks to minimise cut and fill, gradients, disturbance to watercourses, etc., for minimum site disturbance. Design of watercourse crossings according to the stream size, flow, profile and to minimise barriers to passage of fish and aquatic fauna. Restrictions on access track use during periods of prolonged wet weather. Decommissioning and rehabilitation of tracks (temporary or permanent) when not required. Compliance with the Timber Plantation Operations COP Section 2.3.

As for Conventional Practice plus:-

Minimisation of disturbance to waterways & of erosion potential by avoiding timber production on steep slopes.

Minimisation of erosion potential by establishing environmental plantings on steep slopes. Retention of riparian zones. Compliance with Timber Plantation Operations COP Section 2.2.

Regular schedule of visual pest and disease monitoring.

Vehicle and machinery wash-down to prevent spread of weeds. Hygiene thinning or clearing to contain pest and disease outbreaks. Minimal use of chemicals to control pests and diseases. Maintenance of forest heath and stocking via nutrition and silvicultural management to minimise weed incursion. Noxious declared weed control as required. Judicious use of registered herbicides to label specifications or off-label permitted use. Maintenance of records on herbicide and pesticide use (date, rate, location). Compliant with the Timber Plantations COP Section 2.5.

Stock excluded until trees are large enough to resist damage. Grazing managed on a controlled rotational basis to avoid selective browsing, maximise recovery time between rotations, maximise grass vigour and biomass, and minimise damage to trees. Exclusion of stock from sensitive riparian creek lines and steep slopes through fencing (electric) and off creek/steep slope watering through the use of piped water and troughs.

As for Conventional Practice plus:- Controlled burning based on fuel loads, drought index and predicted fire behaviour. Fire management plan incorporates expert advice.

As for Conventional Practice plus:-

Location of harvest boundaries clearly demarcated in the field. Soil disturbance for harvest access infrastructure minimised and appropriately drained onto undisturbed areas. Post-harvest management plan developed including: progressive rehabilitation/ replanting or coppicing and monitoring. Harvest contractor management controls established and implemented. Thinning operations aim to maintain even crown spatial distribution and canopy height to reduce wind-throw.

As for conventional Practice plus:-

Soil profile characterisation and soil type mapping to match site capability with water chemistry, crop type and irrigation practice. Irrigation water testing and monitoring to match water chemistry with soil type, crop type and irrigation practice. Modelling steady state soil salinity to design irrigation rate and leaching fraction to manage on-site salt accumulation and off-site salt movement. Irrigation scheduling based on estimated soil moisture content using modelling tools, crop factor, rainfall and weather records. All irrigation records maintained.

Detailed site characterisation to understand soil chemical impacts from drainage and/or mounding. Basic understanding of hydrological impacts of drainage and/or mounding and appropriate management actions to minimise. Appropriate design of mounding to provide improved drained soil volume and minimal disruption to overland flow paths. Appropriate species selection and management objective. Site selection and management avoids seasonal waterlogging, loss of production and excessive wind-throw. Fertiliser application by injection and applied during dry season.

Detailed forest management plan incorporates monitoring schedule. Regular visual monitoring program for pests and diseases, weed growth, nutrition, tree vigour, feral animals, infrastructure etc., Routine inventory (for timber production). Benchmarking growth against expected productivity as a quantitative indicator of stand health. Post silvicultural management practices auditing, reviewing and updating of plans with continual improvement.

# A ASPIRATIONAL

## Innovative practices that require further validation

A costed plan for establishment and maintenance of planted forest. Identification of future products and markets and/or services. Plan considers returns from all potential products and/or services including timber, secondary products, agricultural productivity and environmental services. Regular periodic plan review. Acquired certification (e.g. AFS, FSC). Species specific Fire Management Plan.

As for Best Practice plus:- Consideration of a changing climate more wind resistance/ heat tolerance, flood and drought etc.).

• Documented plantation management plan consistent with the Timber Plantation Operations Code of Practice (Section 2.1 and App. 2), showing soil types, pre-clearing regional ecosystem types, slope classes, watercourses and stream order, buffers, plantation compartments, access tracks, log dumps, future internal haulage routes, external haulage routes etc., Influence on environmental values, biodiversity, habitat values & on socio-economic impacts of plantings and associated operations considered (i.e. high scenic quality, biological sites, cultural heritage sites). Regular periodic plan review. Acquired certification (e.g. AFS, FSC).

As for Best Practice plus:-

Use of spot cultivation on steeper slopes. Inter-rows managed for groundcover and other benefits.

As for Best Practice plus:- Active minimisation of herbicide use by precise, targeted application in line with weed type and level of competition. Active management of inter-rows. Woody debris mulched to return organic matter to soil. Exceed compliance with the Timber Plantation Operations COP Section 2.4.

As for Best Practice plus:- Expert advice on fertiliser requirements, application and strategy. Soil sampling and mapping to identify variation in soil type, soil nutrient fertility, organic matter and cation exchange (nutrient holding) capacity. Type and amount of fertiliser used is matched to site attributes, species requirements, seasonal conditions and projected economic returns. Use of organic or slow-release fertilisers (biosolids, manures, composts etc.) to maximise nutrient availability, minimise rates and loss.

As for Best Practice plus:- Consideration of short-rotation crops in line with anticipated cyclone risk. Woody regrowth and wildings mulched to return organic matter to soil.

As for Best Practice plus:- Use imported, stable, disease-free road base materials where required. Property plan map updated to show location and class of tracks e.g. planting track, snig track, haul road, fire track, etc.

As for Best Practice plus:- Active revegetation of riparian zones. Creating /maintaining biodiversity corridors between remnants, including via windbreaks. Retaining paddock/shade trees and isolated habitat trees from previous land use. Protected areas identified in the Plantation Management Plan. Acquired certification (e.g. AFS, FSC).

As for Best Practice plus:- Use of low pressure (minimal drift) spray equipment. Collaborate on pest, disease and weed management with neighbours. Aquatic weed control. Pest management plan in place, including records of weed species, abundance and location and reviewed annually. Biological control of pest and diseases (facilitation of natural insectivores).

As for Best Practice plus:- Grazing plan in place and reviewed each year.

As for Best Practice plus:- Compliance with local and state regulations including development of a Fire Management Plan. Planted forest areas partitioned by access tracks. Firebreaks constructed and regularly maintained. Fire management plan considers site, species, seasonal conditions. Fire plan communicated to neighbours and local fire brigade. Controlled burning for ecosystem and biodiversity outcomes. Acquired certification (e.g. AFS, FSC).

As for Best Practice plus:-

Mechanised low ground pressure harvesting equipment.

Harvesting plans gives consideration to seasonal biodiversity requirements. Salvage management plan documented for implementation in the event of loss from cyclones, fire etc.

As for Best Practice plus:- Irrigated scheduling based on a combination of modelling tools, climate monitoring and direct measurement using soil moisture and salinity probes. Periodic direct soil profile sampling to monitor changes in soil salinity, nutrients and other water contaminants. Surrounding surface water monitoring potential offsite impacts (lateral drainage and salt mobilisation). Groundwater monitoring for depth and quality. Detailed irrigation plan documented.

As for Best Practice plus:- Detailed understanding of hydrological impacts of drainage and/or mounding and appropriate management actions to minimise. Runoff water quality monitoring and records maintained.

As for Best Practice plus:- Assessment of permanent yield plots (timber plantations and carbon forests). Use of remote sensing (e.g. Normalized Difference Vegetation Index) to assess planted forest health.

## Acronyms

**AFS** - Australian Forestry Standard: a not-for-profit public company which owns and manages the Australian Forest Certification Scheme (AFCS)

**FSC** - The Forest Stewardship Council (FSC) is an international non-profit, multi-stakeholder organization established in 1993 to promote responsible management of the world's forests. The FSC does this by setting standards on forest products, along with certifying and labelling them as eco-friendly.

**WQIP** - Water Quality Improvement Plan 2014- 2021. (Folkers, A., Rohde, K., Delaney, K., Flett, I. Mackay Whitsunday Water Quality Improvement Plan 2014-2021. December 2014. 174pp.)

**COP** - Refers to the "Timber Plantation Code of Practice- for Queensland", Edition 1 June 2015, Timber Queensland, ([www.timberqueensland.com.au](http://www.timberqueensland.com.au))

Available from <http://www.timberqueensland.com.au/Growing/Plantation-operations-code-of-practice.aspx>

**ACDC**- Agricultural Chemical Distribution and Control. An Act that regulates chemicals and the operators that use the chemicals.

**APVMA**- The Australian Pesticides and Veterinary Medicines Authority (APVMA) is the National Registration Authority for agricultural and veterinary chemicals. The APVMA operates the Australian system which evaluates, registers and regulates agricultural and veterinary chemicals.

**RE Mapping**- Regional ecosystems mapping showing past and existing forest and component characteristics. See <https://www.qld.gov.au/environment/plants-animals/plants/herbarium/mapping-ecosystems>

## Definitions

**Riparian area.** The zone of vegetation adjacent to creeks and streams that has increased productivity due to its sheltered position in the landscape and the increased availability of water or moisture.

**Regional Ecosystem.** State classification of vegetation assemblages occurring together in the landscape.

**Buffer zones.** Areas surrounding environmental significant sites where no operations are to be carried out to protect the site.

**Environmental Services.** Ecosystem services are the many and varied benefits that humans freely gain from the natural environment and from properly-functioning ecosystems. Collectively, these benefits are integral to the provisioning of clean drinking water, the decomposition of wastes, and the natural pollination of crops and other plants that humans use..

**Silviculture.** Treatment of a forest to promote recruitment and growth of favourable species.

**Whoa-boy.** Diversion ridge and associated drain running across road to intercept water and divert it off the road

## Superscripts

(1) Relevant Legislation for Forestry Operations:-

- Planning Act 2016 (Qld)
- Vegetation Management Act (1999)
- Nature Conservation Act (1992)
- Work Health and Safety Act (2011)
- Environmental Protection Act (1994)
- Biosecurity Act(Qld) 2014

And more relevant legislation see page 35 of the code (1)

(2) Refers to the "Timber Plantation Code of Practice- for Queensland", Edition 1 June 2015. Timber Queensland ([www.timberqueensland.com.au](http://www.timberqueensland.com.au))

Available from <http://www.timberqueensland.com.au/Growing/Plantation-operations-code-of-practice.aspx>

### *For more information please go to:*

Australian Forest Growers (AFG) [www.afg.asn.au](http://www.afg.asn.au)

Timber Queensland – Queensland's peak timber industry body  
[www.timberqueensland.com.au](http://www.timberqueensland.com.au)

Queensland Department of Agriculture and Fisheries  
[www.daf.qld.gov.au](http://www.daf.qld.gov.au)

Institute of Foresters Australia [www.forestry.org.au](http://www.forestry.org.au)

Private Plantations Queensland [www.pfsq.net](http://www.pfsq.net)



This update is based on the original document *Mackay Whitsunday Region Plantation Forestry Management Practices* developed in 2015 by technical consultants Verterra with assistance from forestry industry stakeholders and the Regional Forestry Working Group.

The *Forestry Sustainability Guide 2016* was developed by the Forestry Working Group to simplify the complex original framework to create a more user-friendly management tool. The working group members were Gary Alsemgeest (Qld Department of Agriculture and Fisheries), Trevor Cavanagh (Australian Forest Growers), Jim Dickens, Ray Greaves (Silviculturist), Carla Lambropoulos (Pioneer Catchment Landcare), Peter Muller (Reef Catchments), Daniel O’Keeffe (Reef Catchments), Phil Trendell (Qld Department of Agriculture and Fisheries), Dianne Williams (Forest Grower/Pioneer Catchment Landcare).

In 2018, Reef Catchments, with the assistance of Peter Alden from Whitsunday Catchment Landcare, reviewed and updated the *Forestry Sustainability Guide 2016* in order to identify progress of sustainable practices in forestry. This guide has now been divided into two documents which provide more specific management strategies, one focused on native forestry and the other covering plantation forestry.

**Thanks to the following members for being involved updating the information used in this guide:**

Phil Trendell (Qld Department of Agriculture and Fisheries), Jim Dickens, Ray Greaves (Silviculturist), Carla Lambropoulos (Pioneer Catchment Landcare), Juliane Kasiske (Reef Catchments), Sophie Glasser (Reef Catchments), Dianne Williams (Forest Grower/Pioneer Catchment Landcare).

## Mackay Office

Suite 1/85 Gordon Street Mackay QLD 4740  
P: 07 4968 4200

## Proserpine Office

45 Main Street, Proserpine, QLD 4800  
P: 07 4945 2321

[www.reefcatchments.com](http://www.reefcatchments.com)



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