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.
<table>
<thead>
<tr>
<th>MANAGEMENT PRACTICE CATEGORY</th>
<th>TRADITIONAL</th>
<th>CONVENTIONAL</th>
<th>BEST PRACTICE</th>
<th>ADVANCED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species Selection</td>
<td>Inappropriate species selection. Seasonal waterlogging resulting in loss of productivity.</td>
<td>Minimal evaluation of site attributes, land capability, and species selection. Inappropriate site and environmental considerations.</td>
<td>Species specific Fire Management Plan. Acquired certification (e.g. AFS, FSC).</td>
<td>Documented plantation management plan consistent with the Timber Plantation Operations Code of Practice (Section 2.1 and App. 2), showing compliance with local and state regulations including development of a Fire Management Plan. Planted forest areas have effective management plans to meet legislative requirements and are certified.</td>
</tr>
<tr>
<td>Site Preparation</td>
<td>No evaluation of species suited to site, climate or end products, and no consideration of site attributes or land capability for chosen application.</td>
<td>Minimal evaluation of site attributes, land capability, and species selection.</td>
<td>Detailed understanding of hydrological impacts of drainage and/or mounding and appropriate management actions to maintain/restore undisturbed areas. Post-harvest management plan developed including: progressive rehabilitation/ replanting or coppicing and monitoring. Harvest contractor accredited for fire management in the event of disturbance.</td>
<td>As for Best Practice plus:- Detailed understanding of hydrological impacts of drainage and/or mounding and appropriate management actions to maintain/restore undisturbed areas. Post-harvest management plan developed including: progressive rehabilitation/ replanting or coppicing and monitoring. Harvest contractor accredited for fire management in the event of disturbance.</td>
</tr>
<tr>
<td>Site Selection</td>
<td>Low or high permeability soil types. No testing of soil types or site capability &amp; soil type identification. Minimal soil characterisation. Minimal understanding of hydrological impacts on plantations.</td>
<td>Test soil types, site capability and soil type identification. No testing of soil types or site capability &amp; soil type identification. Minimal soil characterisation. Minimal understanding of hydrological impacts on plantations.</td>
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</tr>
<tr>
<td>Silviculture</td>
<td>No thinning, or non-commercial thinning only. No pruning. Poor practice e.g. inter-row cultivation.</td>
<td>Patterned thinning, non-commercial thinning or non-commercial thinning only. Non-commercial thinning may be required. Pruning carried out during the dry season.</td>
<td>Patterned thinning, non-commercial thinning or non-commercial thinning only. Non-commercial thinning may be required. Pruning carried out during the dry season.</td>
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</tr>
<tr>
<td>Pest and diseases</td>
<td>Limited consideration of pest and disease monitoring, stand hygiene management, weed control and maintenance, access and harvesting, filtration areas and/or riparian zones, etc.</td>
<td>Regular schedule of visual pest and disease monitoring.</td>
<td>Regular schedule of visual pest and disease monitoring.</td>
<td>Regular schedule of visual pest and disease monitoring.</td>
</tr>
<tr>
<td>Water Management</td>
<td>No routine water management.</td>
<td>Regular water management.</td>
<td>Regular water management.</td>
<td>Regular water management.</td>
</tr>
<tr>
<td>Irrigation</td>
<td>No irrigation planning.</td>
<td>Detailed irrigation plan documented.</td>
<td>Detailed irrigation plan documented.</td>
<td>Detailed irrigation plan documented.</td>
</tr>
<tr>
<td>Watercourse Protection</td>
<td>No watercourse protection management.</td>
<td>Oxidation/ filtration areas between stream beds and banks</td>
<td>Oxidation/ filtration areas between stream beds and banks</td>
<td>Oxidation/ filtration areas between stream beds and banks</td>
</tr>
<tr>
<td>Runoff</td>
<td>No diversion river management.</td>
<td>Runoff diverted onto undisturbed areas. Design of tracks to minimise cut and fill, gradients, disturbance to watercourses, etc., for minimum site disturbance.</td>
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</tr>
<tr>
<td>Fish and Wildlife</td>
<td>No active fish exclusion.</td>
<td>Stock excluded until trees are large enough to resist damage. No active fish exclusion.</td>
<td>Stock excluded until trees are large enough to resist damage. No active fish exclusion.</td>
<td>Stock excluded until trees are large enough to resist damage. No active fish exclusion.</td>
</tr>
<tr>
<td>Soil and water management</td>
<td>Minimal soil characterisation. Minimal understanding of hydrological impacts</td>
<td>Test soil types, site capability and soil type identification.</td>
<td>Test soil types, site capability and soil type identification.</td>
<td>Test soil types, site capability and soil type identification.</td>
</tr>
<tr>
<td>Access</td>
<td>Minimal consideration of access and maintenance, access and harvesting, filtration areas and/or riparian zones, etc.</td>
<td>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 catch sediment and water.</td>
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</tr>
</tbody>
</table>

** best practice**
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.


**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)


For more information please go to:

Australian Forest Growers (AFG) www.afg.asn.au
Timber Queensland – Queensland’s peak timber industry body www.timberqueensland.com.au
Queensland Department of Agriculture and Fisheries www.daf.qld.gov.au
Institute of Foresters Australia www.forestry.org.au
Private Plantations Queensland www.pfsq.net

Reef Catchments has produced this framework with the help of Peter Alden from Whitsunday Catchment Landcare to identify progress of sustainable practices in forestry.

Thanks to the following members of the Forestry Working Group for being involved updating the information used in this guide:
Phil Trendell (Qld Department of Agriculture and Fisheries), Jim Dickens, Ray Greaves (Silviculturist), Carla Lambropolous (Pioneer Catchment Landcare), Juliane Kasiske (Reef Catchments), Sophie Glasser (Reef Catchments), Dianne Williams (Forest Grower/Pioneer Catchment Landcare).

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