



WET TROPICS

MANAGEMENT AUTHORITY

RAINFORESTS : SCLEROPHYLL : SCLEROPHYLL RAINFOREST
SCLEROPHYLL FORESTS AND WOODLANDS
ECOTONE COMPLEXES AND MOSAICS : SHRUBLANDS AND
HEATHLANDS : NON-WOODY VEGETATION : MANGROVES



VEGETATION OF THE WET TROPICS BIOREGION

The need for better maps

- The vegetation maps that were available in the past were not adequate for modern planning, decision making and technology.
- In the early days of the Authority, issues such as the Tully Millstream and Skyrail environmental assessments highlighted the need for higher resolution and more accurate mapping.

What was available in the past









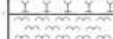


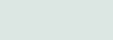
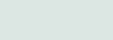

Forestry maps (1970s and 80s)

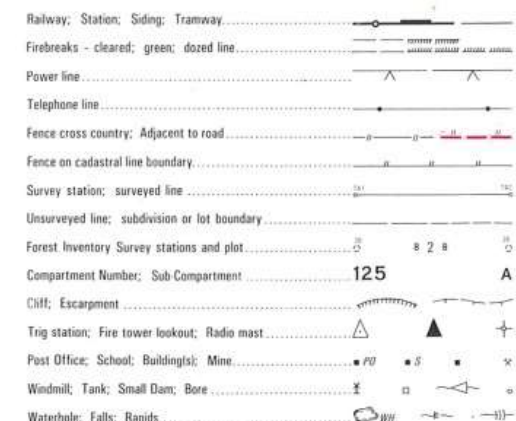
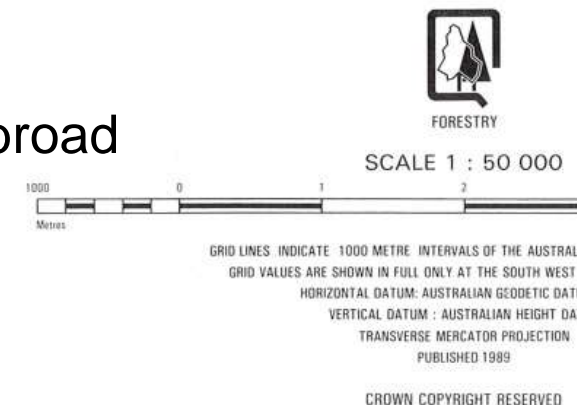
Main disadvantages

- Purpose – commercial logging
- Inadequate vegetation classification – only 8 broad vegetation types)

Vegetation classification

- Rainforest
- Hoop pine
- Wet sclerophyll
- Dry sclerophyll
- Scrub
- Swamp
- Tea-tree
- mangrove

State Forest	
Timber Reserve or other reserves under the control of the Conservator of Forests	
National Park, Environmental Park and Fauna Reserve	
Forest Entitlement Area	
Plantation	
Rainforest: Natural Hoop Pine	
Forest: Wet Sclerophyll	
Dry Sclerophyll	
Scrub (Brigalow, Belah etc.)	
Swamp	
Wallum	
Tea-tree etc.	
Mangrove	
Sand	
Mud	



Wet Tropics vegetation mapping

What was available in the past

Tracey and Webb (1975)

A series of 15 maps at 1: 100 00 scale

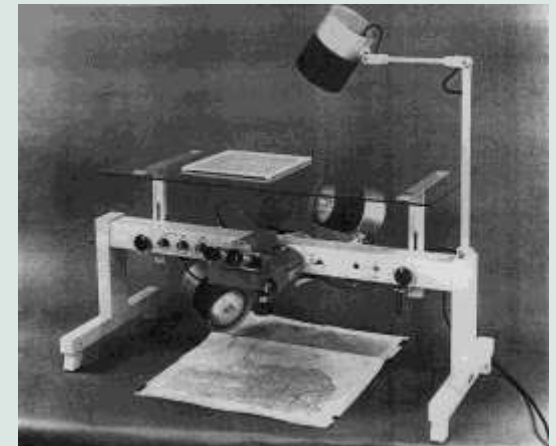


Advantages

- Great improvement over forestry maps: e.g. 2 broad vegetation types and 58 vegetation communities.
- Well used and respected

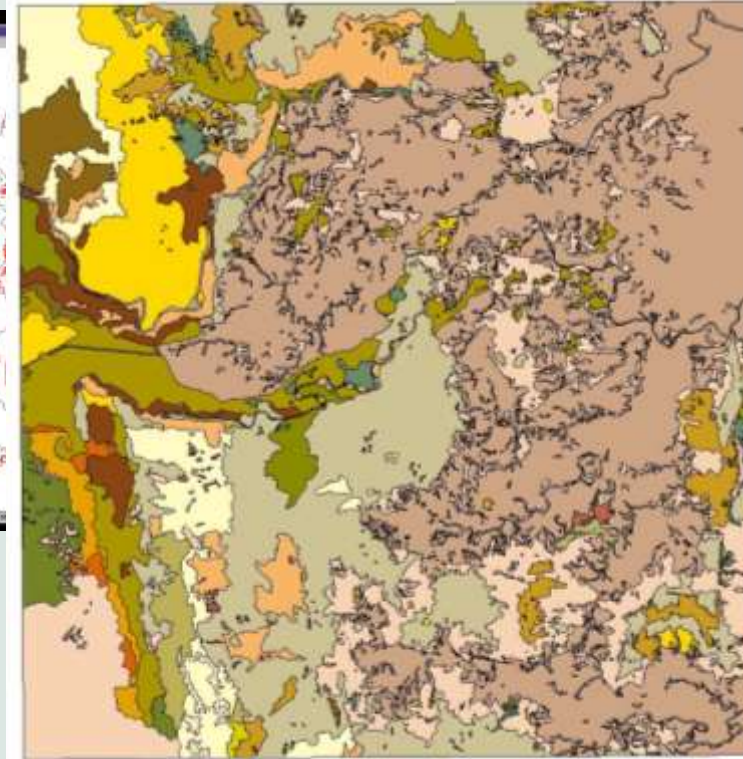
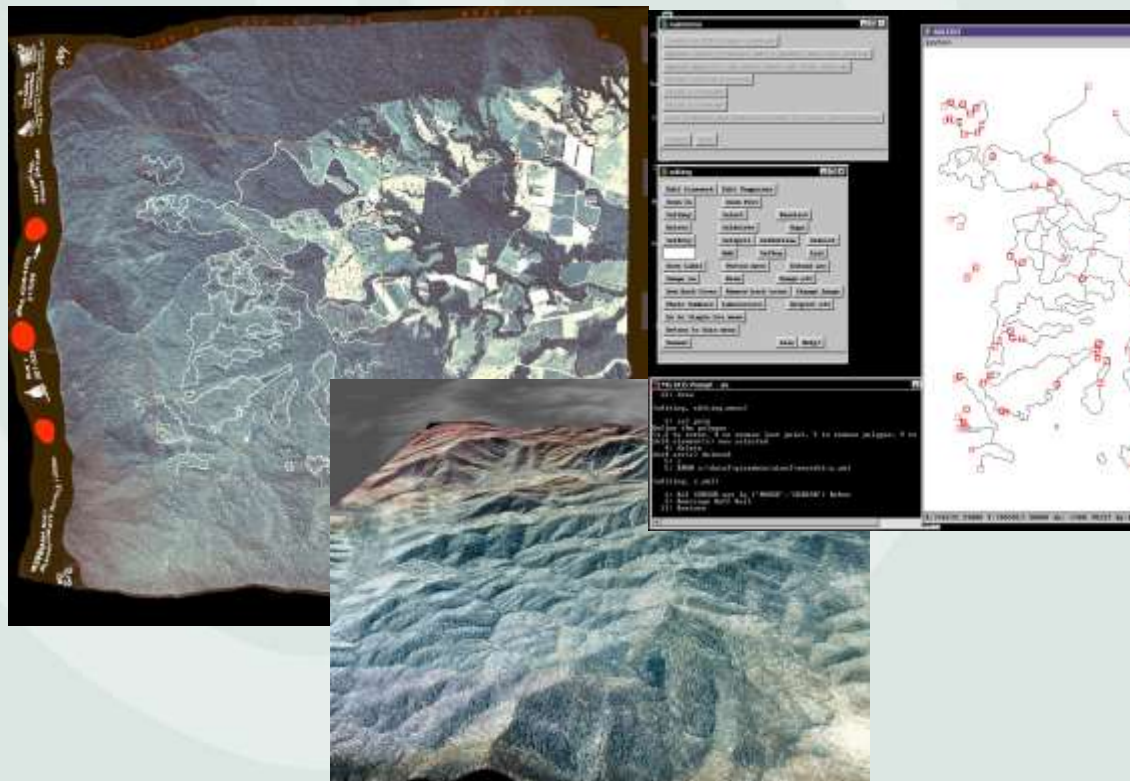
Disadvantages

- Scale not adequate
- Line work smoothed-out and not precise
- Many polygons with multiple labels
- Pre-digital age technology
- Not designed for modern computer age and GIS
- Originally only covered area from Cooktown to Cardwell Gap



The mapping process

- Aerial photography interpretation
- Scan air photos
- Create digital elevation model and ortho-rectify air photos
- GIS processes, scripting, QA
- Line work and vegetation capture

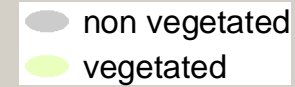
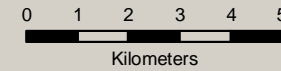


- *4000 x 1:25 000 aerial photographs*
- *90,000 polygons digitised and coded*
- *two million hectares mapped*
- *55 x 1:50k Australian map series sheets created*



Hinchinbrook Island

Vegetation Hierarchy : Level 1 - Division



Level 1 - Division
Vegetated / Non Veg (2)

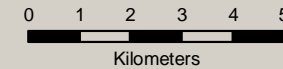
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Hinchinbrook Island

Vegetation Hierarchy : Level 2 - Class



Level 2 - Class
Broad Veg Types (8)

-  naturally unvegetated, non-native vegetation, cleared
-  mangroves and halophytes
-  non woody vegetation
-  Rainforests
-  sclerophyll forests and woodlands
-  sclerophyll rainforest
-  shrublands and heathlands
-  vegetation mosaics

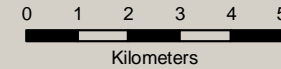
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Hinchinbrook Island

Vegetation Hierarchy : Level 3 - Formation



Level 3 – Structural formation Vine thicket (33)

- naturally unvegetated
- Mangrove forests
- Samphire hermland
- fernland
- Rainforests
- thickets
- Acacia forests and woodlands
- Casuarina forests and woodlands
- Eucalypt forests and woodlands
- Lophostemon forests and woodlands
- Melaleuca forests and woodlands
- Syncarpia forests and woodlands
- closed Acacia forest
- closed Eucalypt forest
- Closed Lophostemon forest
- Acacia heathland
- Acacia shrubland
- vegetation mosaics

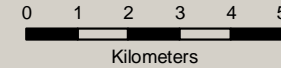
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Hinchinbrook Island

Vegetation Hierarchy : Level 4 - Alliance



Level 4 - Alliance Microphyll fern thicket (103)

- naturally unvegetated
- water body
- Mangrove forest complex
- Halosarcia indica herbland
- Dicranopteris linearis fernland
- mesophyll vine forest
- microphyll vine forest
- notophyll vine forest
- Palm vine forest
- microphyll fern thicket
- Acacia flavescens forests and woodlands
- Acacia julifera forests and woodlands
- Allocasuarina littoralis forests and woodlands
- Corymbia clarksoniana forests and woodlands
- Corymbia intermedia forests and woodlands
- Corymbia tessellaris forests and woodlands
- Eucalyptus cloeziana forests and woodlands
- Eucalyptus drepanophylla forests and woodlands
- Eucalyptus portuensis forests and woodlands
- Eucalyptus resinifera forests and woodlands
- Eucalyptus tereticornis forests and woodlands
- Melaleuca dealbata forests and woodlands
- Melaleuca quinquenervia forests and woodlands
- Lophostemon suaveolens forests and woodlands
- Melaleuca viridiflora forests and woodlands
- Melaleuca leucadendra forests and woodlands
- Syncarpia glomulifera forests and woodlands
- Closed Acacia celsa vine forest
- closed Eucalyptus pellita forest
- Closed Lophostemon confertus forest
- Acacia flavescens heathland
- Acacia celsa shrubland
- vegetation mosaic

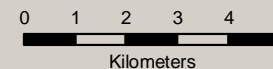
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Hinchinbrook Island

Vegetation Hierarchy : Level 5 - Association



Level 5 - Association

Microphyll vine thicket (211)

Or

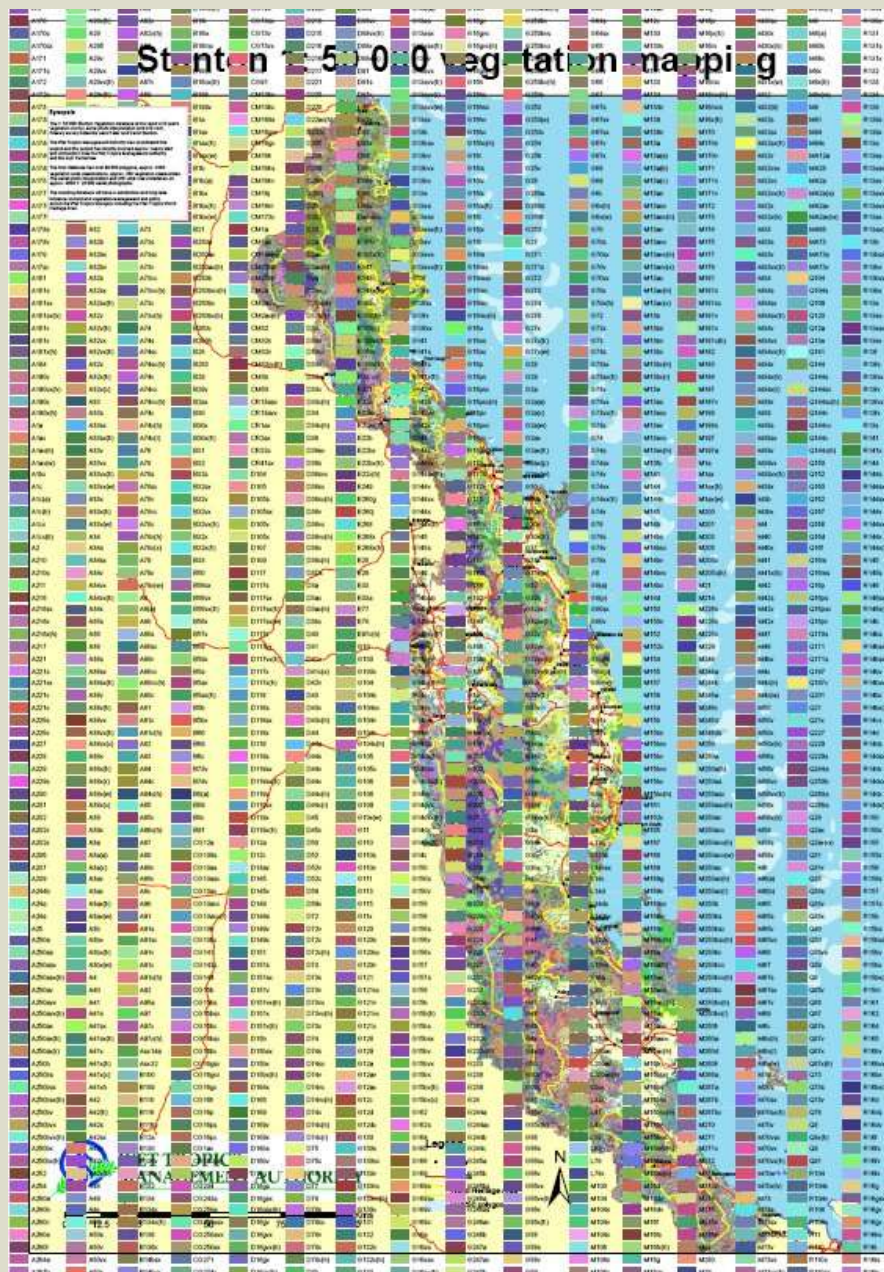
(over 2000 with Geology prefixes)

(Refer separate legend file)

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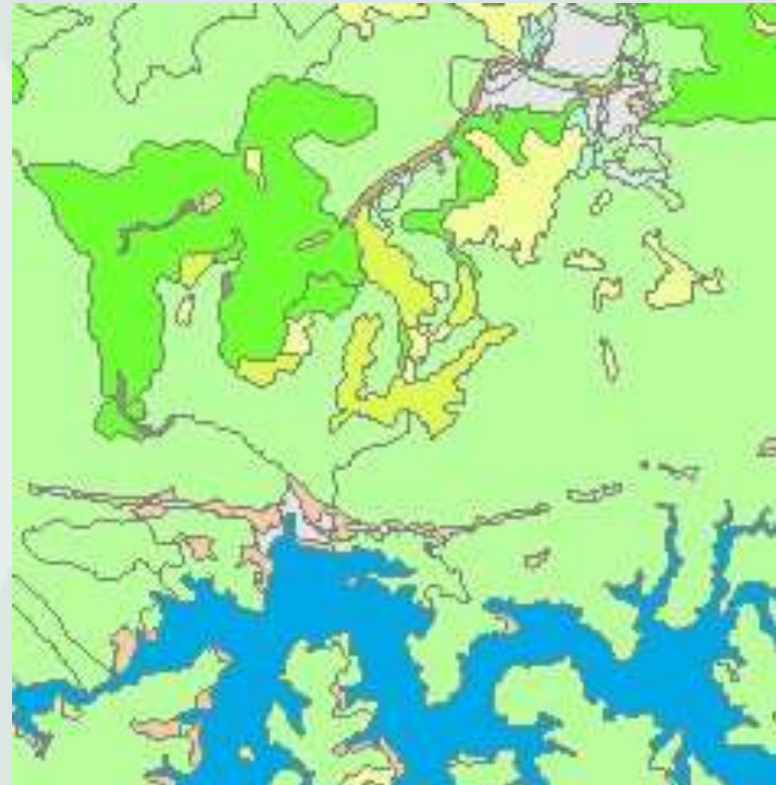
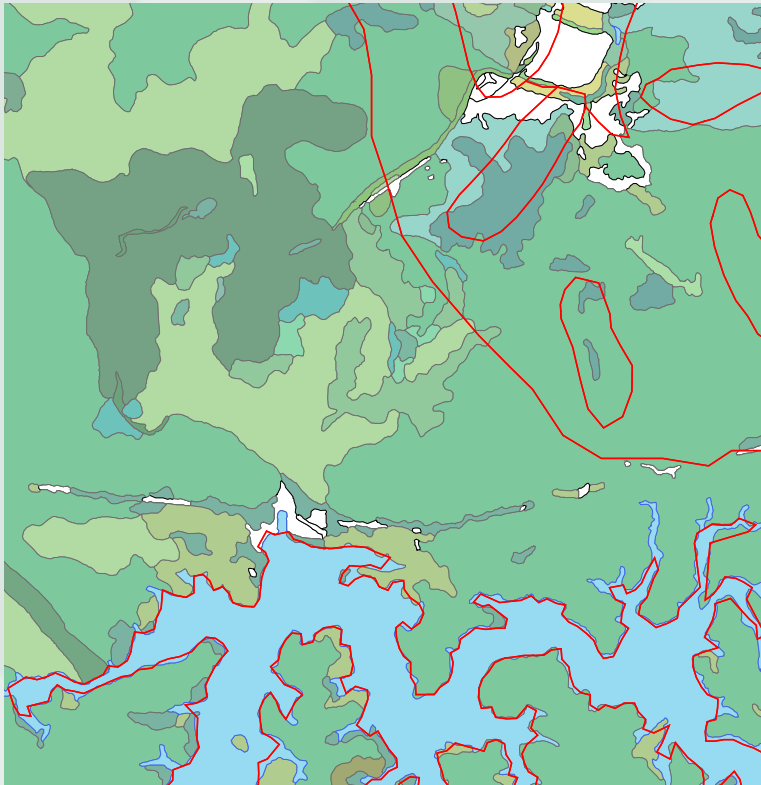


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We had to revisit the data

- *Remove geology*
- *Develop a vegetation classification hierarchy*
- *Re-coding (similar to similar) - site data*
- *Develop a colour scheme*



Colour conventions

You want how many greens and yellows and mangroves are what?

rainforest

Level_3

- Mesophyll rainforests
- Palm-leaf rainforests
- Notophyll rainforests
- Microphyll rainforests
- Notophyll thickets
- Microphyll thickets

sclerophyll_rainforest

Level_3

- Closed Acacia forests
- Closed Eucalyptus forests
- Closed Lophostemon forests

sclerophyll_woodlands

Level_3

- Eucalyptus forests and woodlands
- Melaleuca forests and woodlands
- Syncarpia forests and woodlands
- Casuarina forests and woodlands
- Lophostemon forests and woodlands
- Acacia forests and woodlands

veg_complexes

Level_3

- Secondary successional complex
- Coastal beach community complex
- Fern complex
- Riparian complex
- Wetland complex
- Rock pavement and coastal headland complex

shrublands_heathlands

Level_3

- Grasslands
- Sedgeland

mangrove

Level_3

- Mangrove forests
- Mangrove grasslands and herblands

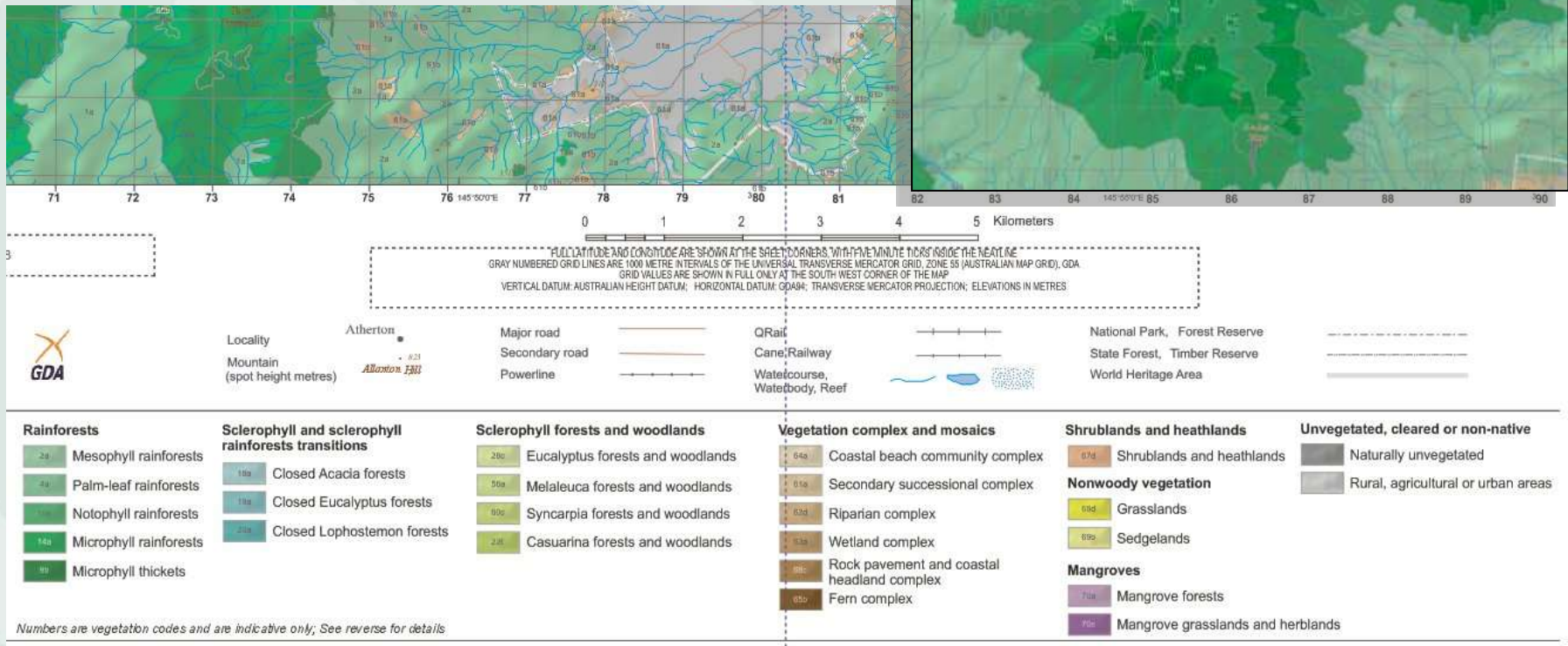
unvegetated

Level_3

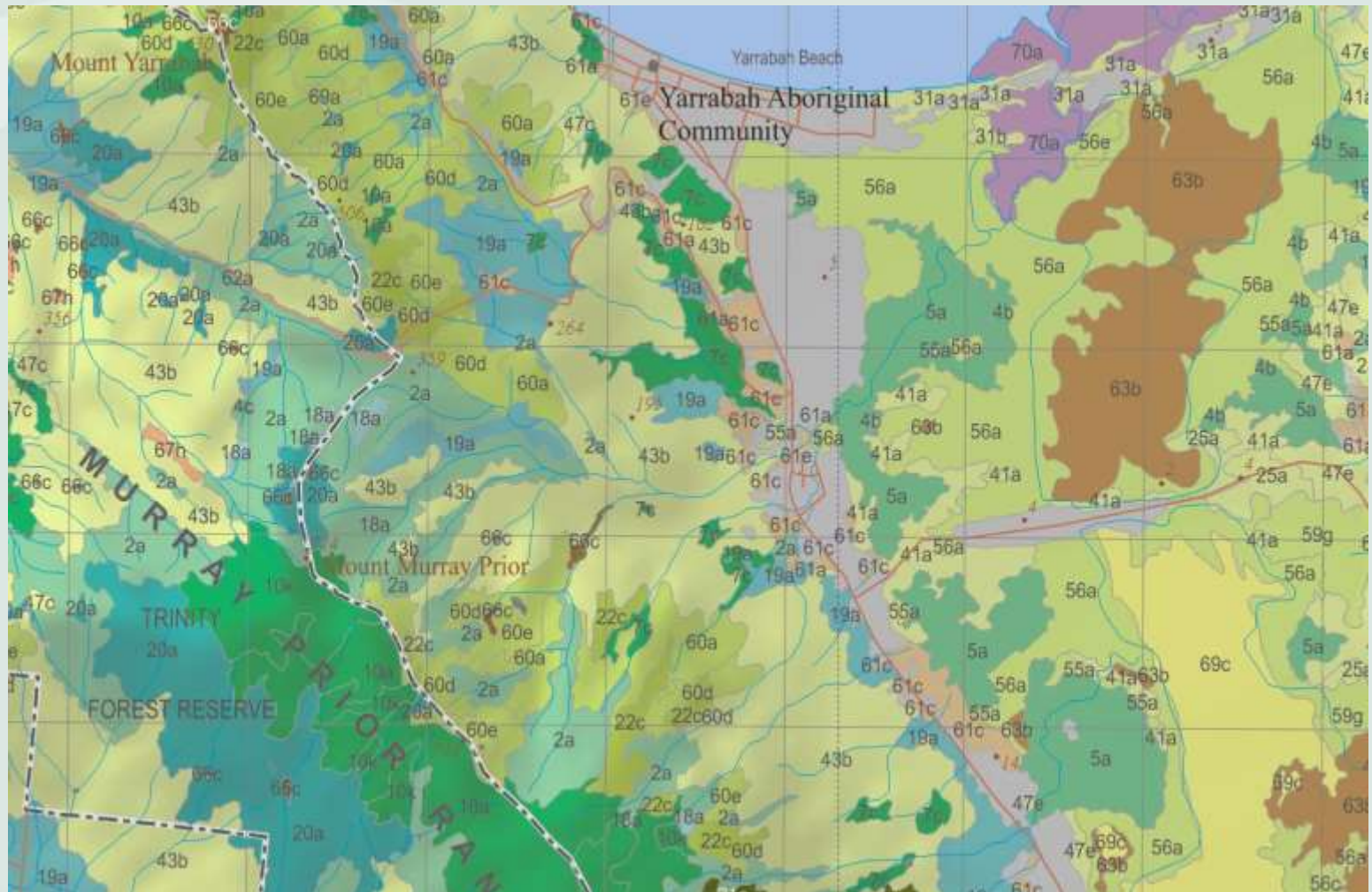
- Naturally unvegetated
- Rural, agricultural and urban
- Water body



- Some vegetation types were ordered in the legend to achieve a “Higher the Darker” Hypsometric colour effect
- Hill shading provided topographic information



Complementary to the 1:50 000 Australian map series



Most locational information has been carried over from the

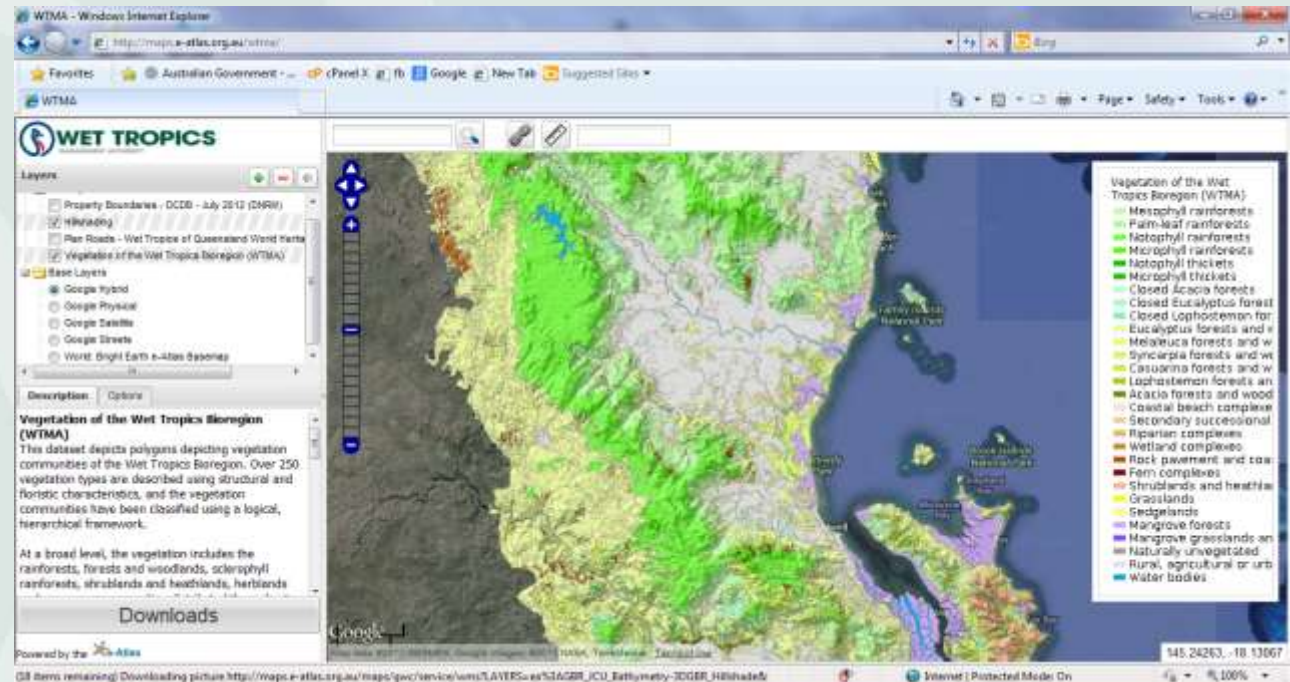
User-friendly and accessible data

VEG CODE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
	Division	Class	Formation	Alliance	Association
1e	Vegetated	Rainforest	Mesophyll rainforest	Complex mesophyll vine forests (CMVF)	Complex mesophyll vine forest characterised by <i>Intsia bijuga</i> , <i>Beilschmiedia obtusifolia</i> and <i>Palaquium galactoxylon</i> (on calcareous sand ridges). Very wet lowlands on dunes. (variant of 1a)
44a	Vegetated	Sclerophyll forests and woodlands	Eucalyptus forests and woodlands	<i>Eucalyptus reducta</i> forests and woodlands	Medium to tall open <i>Eucalyptus reducta</i> forest + <i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i> + <i>Allocasuarina torulosa</i> . Wet to dry highlands mainly on granites.
68b	Vegetated	Non-woody vegetation	Grasslands	<i>Imperata cylindrica</i> grasslands	<i>Imperata cylindrica</i> grassland + <i>Sorghum nitidum</i> ± <i>Mnesithea rottboellioides</i> . Wet and very wet lowlands on alluvium and metamorphics.
71a	Un-vegetated	Cleared, un-vegetated or non-native	Naturally un-vegetated	Naturally un-vegetated	Seasonally fluctuating water bodies with emergent and floating vegetation.
	2	8	32	70	187- vegetation communities 251 - communities (including subtypes and variants)
No. of vegetation types described at each level					

Products and delivery

Developed with the end-user in mind

- *GIS digital maps*
- *Hard copy maps*
- *USB wafer*
- *E-Atlas*
- *Website*



The maps and data are a valuable and useful resource

PLANNING DEVELOPMENT AND ASSESSMENT

- Statutory vegetation mapping (regional ecosystems)
- Regional land use planning
- Environmental impact assessments
- Environmental planning
- Catchment planning
- Vegetation management and compliance

SCIENCE & POLICY

- Conservation biology
- Field work/site selection
- Spatial modelling
- Conservation assessment
- State of the Environment Reporting

LAND MANAGEMENT

- Vegetation restoration
- Property planning
- Weed and pest priorities
- Fire management
- Protected area Plans of Management
- Pest Management (Large Herbivores)

EDUCATION

- Education – community
- Understanding and appreciation

Available to our stakeholders



VEGETATION MAPS OF THE WET TROPICS BIOREGION