LAND AND WATER RESOURCES TO SUPPORT A GROWING TERRITORY

Water Resources  July 2014
1883 What’s changed!

- West Australian Surveyor General John Forrest wrote of the Kimberleys
  “It is a district with fertile plains which will, I believe and hope, be suitable for pastoral purposes and, in it’s more northern portion, in the future, for tropical agriculture, but those who venture in its development will have to incur a large expenditure and much trouble and difficulty and years of toil under the tropical sun before they make their fortunes and they require the easiest terms and conditions.”
Rainfall Annual
10-year average (1996-2005)
Current Precincts

- Mataranka Tidal Limestone Aquifer
  19 340 ML/year on 1682 hectares

- Ooloo Dolostone Aquifer Daly Region
  61502 ML/year on 7798 hectares + 691 hectares from surface water

- Katherine Tindall Aquifer
  35 631 ML/year on 4697 hectares

Combined 16 000 hectares in region
Crop Land Suitability Framework

Groundwater Requirements:

<table>
<thead>
<tr>
<th>Yield</th>
<th>Irrigation Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5-2.5 L/s and 0.5-5.0 L/s</td>
<td>Limited or Localised</td>
</tr>
<tr>
<td>5.0-10.0 L/s</td>
<td>Small Scale</td>
</tr>
<tr>
<td>5.0-50.0 L/s</td>
<td>Broad Scale</td>
</tr>
</tbody>
</table>

Soil-landscape Requirements:

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Soil Depth (cm)</th>
<th>Soil pH</th>
<th>Rock (%)</th>
<th>Slope (%)</th>
<th>Drainage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Crops</td>
<td>&gt;90</td>
<td>4.5-8.0</td>
<td>&lt;10</td>
<td>&lt;2</td>
<td>Well</td>
</tr>
<tr>
<td>Annual Horticulture</td>
<td>&gt;40</td>
<td>4.5-8.0</td>
<td>&lt;10</td>
<td>&lt;2</td>
<td>Well</td>
</tr>
</tbody>
</table>
Irrigated Field Crops  North (Broad Scale)

Proportion of suitable soils:
- 1-20%
- 20-40%
- 40-60%
- 60-80%
- 80-100%

NT Water Management Areas:
- Water Allocation Plan Area
- Draft Plan
- Water Control District

Boundary extent of Northern Land System mapping (scale 1:250,000)
Irrigated Field Crops North (Small Scale)

Boundary extent of Northern Land System mapping (scale 1:250,000)

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Irrigated Annual Horticulture (Broad Scale)

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NT Water Management Areas
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Boundary extent of Northern Land System mapping (scale 1:250,000)
Greater Darwin

DEPARTMENT OF LAND RESOURCE MANA
Wildman River

Northern Territory Government

Wildman River National Park

Horticultural Potential

- **HIGH**
  - Soils exhibit minor constraints to horticultural development. Soils are moderately deep to deep, well drained, contain little if any rock outcrop and are relatively stable. Slopes are generally minimal. Development would still require planning and management to reduce erosion risk.

- **MODERATE**
  - Soils exhibit some constraints to horticultural development. Constraints may include rock outcrop, substantial slopes, erodable or shallow soils and seasonal waterlogging. Constraints may be overcome with suitable planning and management.

- **LOW**
  - Soils exhibit numerous constraints to horticultural development. Constraints may include poor drainage, abundant rock outcrop, excessive slopes, erodable or very shallow soils.
Wildman River

- Groundwater investigation in the 1980’s
- Resource in a thick sand aquifer
- Test bores yielded in the order of 100L/s (~ 10 ML/d)
- Estimate of available water is 100 GL/y
- No studies yet undertaken on surface water connectivity and environmental assets
Northern Bathurst Island
Tiwi Islands

- NT Government working to identify arable land and quantify water resources
- Target area northern Bathurst Island
- Estimates indicate sustainable yield will be in the order of 5 ML/ha/annum
- Water Resources examining all supply options
Larrimah to Tennant Creek

- Overlies the Georgina Basin
- Individual bore yields possibly up to 20 L/s from a deep (300m) aquifer
- No current users
- Subject to further investigations to establish extent and characterisation of aquifer
Ali Curung

- Groundwater resources within a deep sandy system
- Individual bore yields in excess of 20 L/s
- Part of the Western Davenport Plan area – central zone
- Low current usage throughout the plan area
- Available water allocation around 10 GL/y
Ti Tree

- Ti Tree Water Allocation Plan area
- Individual bore yields in excess of 20L/s
- Allocations available in two of four zone areas
- Total water available about 10 GL
- Current entitlements are at around 5 GL
- Usage low at the present time
ACKNOWLEDGEMENTS

• Thanks to Des Yin Foo and Jason Hill

• Report

‘Identification of potential land for long term sustainable food production’
September 2011