

Due to the region's low population, low level of development and remoteness from the mainland, the pressure on natural resources and the presence of threatening processes are not high compared to mainland Australia. Economic utilisation of the natural resources and relatively high population growth trends, however, tend to raise concerns with the effect of development on the continued value and productivity of the region.

Pressures on the resource include community expansion and outstation development, construction and infrastructure, and natural resource based economic development. Threatening processes in the region that can cause land and water degradation include weeds, feral animals, limited quarantine procedures, land clearing, soil erosion and fire. In addition, factors that limit the capacity of landowners to manage the natural resource base can be threatening processes in themselves. These include public awareness and education, availability of resources, and lack of co-ordination between groups.

Communities and outstations

Principle:

Communities and outstations are the main population centres in the region. Pressures placed on natural resource values from population expansion and community development need to be adequately planned for and appropriately managed.

As with other predominantly Aboriginal areas, the Tiwi Islands have a relatively young population. The 2001 Census counted 1,537 people under age 35, and 900 people under age 20. This represents 69% and 40% respectively of the total Tiwi population. In comparison, figures for the total Northern Territory are 57% under age 35, and 31% under age 20.

Tiwi people now largely reside in communities, and current and anticipated trends in population growth will lead to increased demand for appropriate land for urban expansion. The three main communities of Nguuu, Pirlangimpi and Milikapiti all have constraints to expansion, with serviced lots in increasingly short supply. Constraints to expansion include cultural areas, flood risk, excessive slope, water catchment areas, noise and height restrictions due to power stations and airstrips, and height restrictions for the provision of water and sewerage. Pirlangimpi and Milikapiti in particular will soon be faced with the need to identify and develop new subdivisions that are outside currently serviced areas. While the lead responsibility for community land use planning is with the NT Government, adequate and appropriate consultation with landowners must be carried out if effective long-term plans are to result.

All three main communities are located on the coast, and coastal cliff regression has emerged as a significant issue in both Nguuu and Milikapiti. While much of the regression is a natural process, it is accelerated in some areas by concentrated urban stormwater runoff. No buildings are under immediate threat at this time, however fence lines and gardens have been lost at Milikapiti, and some cliff areas of Nguuu are showing significant structural failure and slumping.

Similarly, the coastline adjacent to Paru outstation is regressing at rates of up to 1m in a wet season. Monitoring transects were installed in risk areas during 2001 and 2002, however it will take several years to determine long term trends. Anecdotal evidence suggests that a section of cliff at Milikapiti retreated 3m during cyclone Thelma in 1998, and the effect of another such event is unknown.

The region is characterised by high volume and intensity rainfall, and for many years urban stormwater drainage has been a vexing issue for all communities and most outstations. Subdivision development has historically begun in the lowest areas closest to the coast, and drainage structures in these areas have been unable to carry increased flow generated from later, higher sub-divisions. Failures of stormwater drainage structures are frequent during most wet seasons, and it is common for stormwater to enter houses during normal wet season rainfall events.

Stormwater eventually drains into the sea through both formal and informal means, and it is common to see red plumes as inadequate

drains incise and erode. The natural freshwater swamp adjacent to the Pirlangimpi coast has so much sediment deposited that it now overtops and creates erosion gullies through the coastal dune system into the sea. Milikapiti also has a number of gullies along the coastal cliff where uncontrolled runoff has channelled over the edge.

Outstations have historically been designed to sheet flow stormwater, however this method consistently fails as traffic and normal living create areas that will concentrate and channel sheet flow. Similarly, increased runoff from roofs, roads and hard stand areas will not disperse through sheet flow.

While drainage standards are improving in the three main communities, repairs and upgrades are ad hoc, and funding opportunities often compete with the provision of housing. Similarly, developments of new sub-divisions are rarely scoped to provide adequate drainage to final outlets. Outstation planning rarely takes stormwater drainage into account, and often does not address issues associated with future expansion.

Community waste disposal emerges as an issue from time to time, and Milikapiti, Pirlangimpi and Wurankuwu all operate the trench method of waste disposal, where rubbish is deposited into an excavated trench and compacted and buried as required. Nguui has recently opened an area fill site, where rubbish is deposited, regularly compacted and covered with fill.

Minor issues with fencing, formalising rubbish and extending the trenches are generally addressed as required, and the facilities are located sufficient distances from each community and community water supply. Inspections by NT Government environmental representatives have not raised any issues with leachate or other pollutants. Some issues arise from uncontrolled dumping of rubbish, and individual communities are exploring methods to deal with this. Although not a priority issue at this stage, the provision of dedicated machinery for tip management would be useful in extending the life of these facilities and improving operations.

Previous rubbish disposal at Nguui involved tipping rubbish into a natural gully head that outlets into an estuarine marine system, creating a number of issues including rat infestation, weed

proliferation and leachate entering the natural system. Stabilisation and rehabilitation of this area should be considered a matter of priority.

Sewerage ponds operate effectively in the three main communities and Wurankuwu, while outstations are serviced by septic systems. Munupi Lodge outside Pirlangimpi is also serviced by a septic system, which is insufficient to service the needs of the facility. During times of high demand, diluted effluent runs out over the coastal cliff into an area of mangroves. Options for upgrading the system have been identified, however lack of funding to date has precluded a solution.

Outcomes:

Sustainable community and outstation growth and management.

Objectives:

8. Develop and implement improved planning processes for community and outstation development.
9. Address priority natural resource management issues in communities and outstations.

Recommended Actions:

- 8.1 Through a process of early and thorough consultation, develop 5 to 10 year land use structure plans for Nguui, Milikapiti and Pirlangimpi communities.
- 8.2 Continue coastal monitoring in high risk areas, and develop estimates of erosion rates.
- 8.3 Implement a policy of assessing all developments within 100m of the coastline before allowing development activities.
- 8.4 Undertake a consultative review of stormwater drainage design standards for communities and outstations.
- 9.1 Identify priority areas, and actively explore options for prioritised stormwater drainage upgrades in all communities.
- 9.2 Rehabilitate the old waste disposal site at Nguui, and discourage informal use.
- 9.3 Upgrade sewerage disposal facilities at Munupi Lodge, Pirlangimpi.

