

Construction and infrastructure

Principle:

Construction activity and infrastructure development within the region has led to some land degradation processes. These processes should be minimised through improved planning and strategic rehabilitation.

Construction and infrastructure issues in addition to community issues arise from the extraction of sand, topsoil and gravel, and the construction and management of infrastructure such as roads, airstrips, barge landings and other facilities.

Sand and topsoil are mostly required for community development activities, and while construction sand is often barged in for larger projects, local reserves are required for community jobs and cultural activities. Sand and topsoil reserves close to community centres are becoming increasingly scarce, and new areas need to be identified. The ongoing operation and rehabilitation of extractive areas is also an issue that needs to be addressed. Previous practices of sourcing sand from coastal dune areas has all but ceased, however until alternative sources are identified there will be increasing pressure on this resource.

By far the major ongoing use of gravel in the region is for the construction and maintenance of roads. Smaller uses are maintenance of airstrips and construction of hard stand areas.

Most of the main roads on the Islands generally follow lateritic ridgelines, and gravel can often be sourced along the road alignment. Gravel reserves at the top of the catchment are often shallow, and large areas sometimes need to be accessed to gain sufficient material. There will be a steady increase in demand for this resource as construction and maintenance programmes in the region progress.

Economic considerations limit the haulage distance for gravel, and there are numerous pits and scrapes located along main road alignments. Gravel pit rehabilitation has not been a common practice in the region, and issues associated with a number of these pits include weed proliferation and soil erosion. Guidelines for the operation and rehabilitation of borrow pits were recently prepared by the Tiwi Land Council, and have been distributed to local and external contractors.

All connecting roads in the region are unsealed with varying levels of construction standard, including formed and sheeted sections, sections formed from natural material, flat bladed tracks and wheel tracks. Main connecting roads between the communities are regularly maintained, however other tracks often receive only irregular and cursory maintenance. Insufficient funds in the past has led to maintenance practices on all roads that have progressively lowered the surface, leading to issues associated with ponded water, soil erosion and sediment deposition.

Flat bladed tracks, wheel tracks and creek crossings have led to severe gully erosion in some areas, as have poorly designed drainage structures on some of the main roads. Major upgrades and better construction techniques have recently been carried out on sections of main road outside Pirlangimpi and Milikapiti, and this should be progressively extended to other main roads in the region. The Tiwi Land Council carried out an assessment of natural resource issues associated with other roads and tracks in the region in 2001, and these should be addressed on a priority basis.

Airstrips outside of the main communities include Maxwell Creek, Rolla Plains, Pickertaramoor and Port Hurd. Port Hurd airstrip was originally constructed to service the Barra Base tourist lodge, and now services the Marine Harvest aquaculture facility. Location of the airstrip has led to severe gully erosion, and while Marine Harvest are not responsible for the degradation, they contribute to ongoing maintenance and rehabilitation work. A joint programme between the Tiwi Land Council and Marine Harvest has successfully reduced the rate of erosion, and should result in the long term stabilisation of the area.

Non-government barge landings include Paru and a proposed forestry loading facility at Barlow Point. The Barlow Point facility has been assessed under current environmental legislation, and detailed erosion and sediment control works are being finalised. Paru barge landing is a concrete structure that has been subject to soil erosion due to prevailing currents, and the integrity of the facility is under question. Costly repair work will need to be assessed against the value of the facility, however the erosional process has stabilised and is not causing significant environmental damage.

Due to its northerly location, the region has been important for defence purposes, and has had a long association with defence force activity. A large radar facility proposed for Point Fawcett is currently in the final planning stage, and detailed assessments have been carried out for potential land degradation processes and impacts on the coastal zone. Results from studies indicate that no threatening processes will result from the facility.

External contractors and service agencies such as Telstra and PowerWater often undertake civil works projects in the region. In most instances, vehicles, machinery and equipment are barged to the Islands from the mainland, creating a risk of transporting feral ants, weeds and other pest species. The imminent arrival of cane toads in Darwin is a major issue the Land Council is attempting to address through the production and distribution of quarantine brochures, and construction of quarantine facilities on the mainland (see also Quarantine).

Movement by contractors and others around the Islands also creates issues with weed and feral animal transport within the region. Education, awareness and legislative opportunities should be further explored to minimise the impacts of movement both between the region and the mainland, and within the region itself.

Outcome:

No adverse impacts on natural resource values from construction activities and infrastructure development.

Objectives:

10. Develop and implement improved planning processes for construction activities and infrastructure development.
11. Identify and record land degradation processes resulting from construction and infrastructure activity, and develop prioritised plans for rehabilitation.

Recommended Actions:

- 10.1 Identify suitable sites for the extraction of sand, topsoil and gravel, and enter onto the Tiwi GIS.
- 10.2 Actively encourage the implementation of guidelines for borrow pit operation and rehabilitation through community education and inclusion in external contract conditions.

- 10.3 Develop and disseminate best practice guidelines for the construction and maintenance of unsealed roads. Include in external contract conditions.
- 10.4 Develop and disseminate Codes of Practice for external contractors and service agencies, focusing on issues associated with moving vehicles and equipment within the region.
- 10.5 Include rehabilitation and revegetation in work scopes for all new developments at the initial planning stage.
- 11.1 Develop and implement a rehabilitation plan for spent extractive areas prioritised on the level of active degradation.
- 11.2 Prepare and cost a plan for the progressive upgrading and/or rehabilitation of roads and tracks that are actively contributing to land degradation.
- 11.3 Continue erosion control works at Port Hurd airstrip.

