

8 Land Protection

Council recognizes the need to protect and restore the land in order to achieve ecologically sustainable development.

The Issues:

Land degradation and the subsequent loss of productivity is a problem which has confronted Modern Australians since European settlement, yet it is only relatively recently that concerted efforts have been made to address the problem. We are beginning to appreciate that arable land is indeed a finite resource, that clearing native vegetation for agricultural use often exacerbates salinisation and erosion of existing agricultural land, and that land degradation is an increasingly significant economic burden to the nation.

Australia's largely ancient, and nutritionally and structurally poor soils require careful husbandry to maintain any degree of productivity, particularly in light of the climatic damages also associated with farming areas not managed sensitively, we may find that what little topsoil we have has been blown or washed off the continent. Reddish-brown tinge on the ski-fields of New Zealand has been found to have originated from Australia's farmland.



Soil erosion is a major land protection issue, but not the only one.

Erosion, salinisation, acidification, compaction, loss of soil fertility and structural integrity, contamination by chemical residues, and displacement of preferred plants by weeds are covered by the term "land degradation". These problems manifest as reduced cropping and grazing yields; waterways, wetlands, and reservoirs, contaminated by silt, chemicals and algae; greater production and maintenance costs; and ultimately, a decline of the rural social-economic environment.

Land degradation is not restricted to the rural environment. Agricultural and environmental weeds often proliferate on untended urban land, and can spread from there to valued natural bush and farmland. Contamination of land and water is a major problem in urban areas; runoff from sub divisional and hard paved areas can carry significant loads of silt, nutrients, chemicals and other pollutants, including hard rubbish. It is possible that river impoundments built to provide water supplies, and sand extraction from river-beds, can intercept material which would have previously provided sands to dunes and beaches, thus artificial enrichment may be required where coastal erosion is a problem. And obviously, there is an intimate relationship between the health of the urban and rural social-economic environments.



You can assist with Land Protection objectives by not treating remnant bush land as a rubbish dump.

Community-based "Landcare" groups play a pivotal role in raising awareness of the land degradation issue and implementing remedial programs. Council actively supports the local Townsville-Thuringowa Landcare Group and is represented on the committee by the Deputy Mayor, Ald. Ann Bunnell. In conjunction with bush regeneration groups and other interested parties on Magnetic Is. and in Townsville, Council has supported various weed control and erosion programs to assist the maintenance of valued bush land. Investigation of coastal erosion problems and a dune restoration program have commenced along Rowes Bay with support from the Beach Protection Authority and various experts from Townsville-based institutions.

The objectives for achieving an acceptable level of Land Protection are to:

Support Landcare groups in providing a community based approach to land degradation problems; and,
Integrate land protection measures with engineering and developmental works.



Dune restoration works at Rowes Bay involved both Land Protection and Biodiversity Conservation - revegetating with indigenous plants grown from locally-collected seed.

Ensure subdivision of areas does not prevent successful implementation of land protection strategies now or at a later date. (TP: ENV: ENG)

Promote means to increase public awareness of land degradation issues. (ENV)

Areas for Council Action:

To ameliorate land degradation and conserve soil productivity, Council should consider the following actions:

In cooperation with the DPI and other land management agencies, develop a land use capability plan for non-urban lands to assist land use planning and the formulation of statutory planning instruments. (PD)

Protect areas which are particularly sensitive to disturbance (e.g.: riparian zones, foreshores, mangroves and wetlands) and, in association with other land management agencies, develop management strategies to control public access, clearing, fire risk, pollution and other threats. (ENV: PD:OA)

In cooperation with CSIRO, DPI and other relevant agencies, investigate means of managing in an environmentally responsible manner the clearance of trees and native vegetation from public and private land. (ENV: PD:OA)

Provide support for local land care groups to carry out land protection projects. (ENV)

Develop a set of guidelines to minimize soil disturbance and erosion during construction and Maintenance work. (ENV: ENG)

Areas for Community Action:

Keep soils covered with mulch or vegetation to reduce storm-water runoff and soil erosion.

Wash vehicles with low-phosphate detergents on the lawn or grass to protect waterways.

Dispose of chemical wastes in the appropriate manner - contact DEH for advice

Set up a compost heap to recycle kitchen and garden refuse into compost for your garden (leaflets are available from the City Council).

Join the Townsville Thuringowa Landcare Group, ring the facilitator on: (077) 832355.

Join a bush regeneration group, contact NQCC or QNPWS for information.

Dispose of uncomposted plant material thoughtfully to restrict the entry of weeds and disease into bush land, parks and waterways.

Areas for Research:

There is a great need for the development and implementation of improved, affordable land protection technology. Examples include environmentally safe fertilizers, herbicides and detergents, species-specific weed control techniques, soil husbandry procedures, and measures to reduce soil erosion and/or to control the quality of runoff reaching waterways.

9 Waterways, Wetlands and Catchments

Council recognizes that sound catchments management is required to control the severity of flooding of urban areas, and, within this context, the need to protect the integrity of waterways and wetlands.

The Issues:

It is obvious from the previous chapter that there exists an integral relationship between the issue of land protection and protecting waterways and wetlands. The condition of waterways and wetlands largely defines the level of land protection and reflects the quality of land management occurring within the catchments of those waterways and wetlands.

The urbanization of the Townsville region has mirrored that have countless example around the world, with many waterways channelled and diverted for flood mitigation, and wetlands drained or used for landfill opportunities. Unfortunately, these practices have led to ecological degradation, and the problems of cleaning up and containing sources of often unknown and potentially hazardous waste in such a disperse environment is a very costly and difficult task. Much of this has occurred with inadequate knowledge or recognition of the ecological and scientific values of the waterways and wetlands. Given the proximity of the Townsville region to the Great Barrier Reef, there is a particular responsibility to ensure that catchments management is of a standard, which presents little or no threat to this internationally significant treasure. In order to avoid degradation, expense and other problems, impacts to wetlands and waterways need to be controlled, with due recognition to the privileges of private ownership and the responsibilities of local area management, for the benefit of the entire community. Waterways and wetlands are some of the 1St sensitive components of the local environment and remain vulnerable to further degradation through inappropriate catchments management.

With urban development comes an increase in runoff generation due to the increase in sealed surfaces and subsequently lowered soil permeability. As a result of Townsville's flat, flood plain topography, the emphasis to date has been on flood mitigation by modifying waterways to rapidly drain water from urban areas following monsoon downpours. Upstream areas which drain more quickly, either through design or inadvertently through poor land management, will cause downstream areas to flood more quickly where drainage systems are not designed to carry such increased runoff loads.

Such situations, greater emphasis on detention and retention systems are needed in order to mitigate the impact on downstream areas. The Lakes Development in West End/Currajong is an innovative example of such an approach.

The Town Common contains wetland habitats of international renown.



The short, highly variable wet season experienced in Townsville necessitates a drainage scheme capable of accommodating severe floods and extended dry periods. There is therefore opportunity to utilize drainage areas for alternative planned uses, such recreation, urban forestry and creation of wildlife habitat.



Tree planting along the Woolcock Street drain has vastly improved the amenity of this area.

The objectives for managing Waterways, Wetlands and Catchments are to:

- Develop co-operative, integrated catchments management programs for the region; and,
- Develop flood mitigation programs for flood-prone areas, which recognize the ecological and scientific values of waterways and wetlands:

Areas for Council Action:

To achieve environmentally responsible management of waterways and wetlands, inter-alia integrated catchments management, Council should consider the following actions:

- In association with community groups and agencies, implement a systematic natural resources inventory to aid management of waterways in the Townsville region. (ENV:OA)
- Liaise with adjoining local authorities to set up joint management of important catchments such as the Ross River and Bohle River catchments. (ENV: ENG: PD:OA)
- Where possible, reserve natural drainage lines and waterways in subsequent subdivision planning and require natural vegetation within a set buffer strip to be retained. (PD: ENG: ENV)
- Support and promote community action to rehabilitate urban waterways and riparian strips within the constraints of engineering requirements. (ENV)
- Retain as much natural vegetation as possible if channeling of urban waterways is necessary for flood mitigation. Re-vegetation exposed soils with local plant species. (ENV: ENG)

Develop a riparian reserve along Ross River and other waterways, which include pedestrian and cycling paths (such as outlined in the Ross River Recreation Master Plan). Liaise with Thuringowa City Council to encourage complementary natural reserves beyond Townsville City boundaries. (ENV: PD:OA)

Develop appropriate management programs, including restoration, for wetlands and waterways, such as Louisa Creek and Ross River (see RIKES Report, Chapters 3 & 5) (ENV: PD)

Encourage better links between industrial planning and water pollution control with publicity campaigns, incentive schemes, regular monitoring and self-disclosure of wastes produced. (PD: ENV)

Investigate the efficiency and cost of designing sporting grounds so they act as detention basins in storm events. (ENG: ENV)

Regularly monitor the water quality of important water bodies in co-operation with State agencies. (ENV:OA)

Areas for Community Action:

- Adopt a creek or riverbank in your neighborhood, picking up litter, replanting and removing weeds.
- Protect soils with vegetation cover and dispose of wastes in the appropriate manner, not down the drain or over the back fence.

Areas for Research:

Design and development of innovative solutions to drainage and disposal problems, which address the protection requirements of downstream areas as well as those of waterways and wetlands.