
MESSAGE FROM THE MAYOR OF TOWNSVILLE

The Townsville City Council is proud to have developed an Environmental Conservation Strategy for our City.

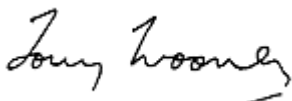
As one of the first local authorities in Queensland to develop such a strategy, I hope that our lead will be followed in the future by other authorities. I say this because local government has tended to see "the environment" as an area of responsibility for other spheres of government. However, as the closest sphere of government to the people, local government has a key role to play in its own right as well as in terms of motivating and educating our communities about environmental issues and conducting economic activity on sustainable principles.

The title of our Strategy "Living Today for Tomorrow" captures this objective. In scope the Strategy is comprehensive ranging from global to local environmental issues. More importantly it provides a guide to positive initiatives that we can all implement to secure our environment for tomorrow.

The strategy will provide a valuable source of guidance to the Council in its actions and decisions. The Council will try to implement actions arising from the Strategy over the next few years. It is envisaged that the Strategy will be a living and dynamic document, subject to periodic review to ensure it remains relevant to the issues, which confront us.

I would like to acknowledge the work of key Council staff members, Dr. Nicky Goudberg, Tym Barlow and Debbie O'Sullivan, in production of the Strategy. Input from aldermen and members of the Townsville community has also been important. Alderman Ann Bunnell, the Deputy Mayor and Chairperson of the Environmental Consultative Committee are to be congratulated for overseeing development of the Strategy.

I commend "Living Today for Tomorrow - an Environmental Conservation Strategy for Townsville" to you.



TONY MOONEY
MAYOR OF THE CITY OF TOWNSVILLE

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© 1993, Townsville City Council,
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ISBN:0-646-14623-8

Authorship

The draft of the Townsville Conservation Strategy was initially prepared by Dr Nicole Goudberg, former Environmental Planning Officer with the Townsville City Council. Tym Barlow, who took up this position with the Townsville City Council in October 1992, completed and edited the document to its current stage. Some re-wording and re-ordering of the original text (as published in the Draft Townsville Conservation Strategy) has been done, but the document generally retains the same issues, objectives and suggested actions developed by Dr Goudberg as the principle author.

Acknowledgments

The initial information on which much of this Strategy is based comes out of the RIKES Report. RIKES ("Rapid Identification of Key Environmental Sites") was an initiative of the Environmental Consultative Committee of the Townsville City Council, and attempted to rapidly identify the key environmental sites in Townsville. The report served as a resource document for both the review of the Town Plan and for this Conservation Strategy.

The RIKES process involved a series of four, one day workshops involving about 80 people with expertise in different areas, followed by a community forum to encourage public comment and input. The latter was attended by about 60 people (Goudberg et al. 1991).

Acknowledgment is gratefully made of all the people who participated in the RIKES process or who provided information for the Strategy. Particular thanks go to Debbie O'Sullivan for drafting the Pollution and Waste Management section of this report; to Shaun Matthews for helpful comments regarding the section on Local Area Management; to Jasper Taylor from the Bowerbird Bookshop for assistance in preparing Appendix III (Further Reading and Information); and to Mrs. Pat Kirkman, Corporate Librarian with the Townsville City Council for her invaluable help in tracking down background material.

1 Introduction

What is, and why do we need, an environmental conservation strategy?

We live in a complex world where many important issues are interlinked. What happens in one area affects another, often seemingly isolated from the first in both space and time. People are becoming more aware of the resulting problems of ad-hoc decisions made in the absence of a strategic plan (sometimes termed 'the tyranny of small decisions'). Townsville's plan, "Living Today for Tomorrow", seeks to integrate the management and use of existing resources which contribute to our quality of life (regardless of whether or not we currently have a "use" for them) with the need to provide equitable access to quality living standards for current and future generations. To implement this plan, we need to consider the short and long-term ecological, economic, and social implications of our daily actions and decisions. It is these factors, together with the physical and natural resources upon which they are based, that constitute our "environment" - where and how we live.

An Environmental Conservation Strategy fundamentally advocates that, in the absence of reasonably certain and contained results, decision-making should be of a cautionary nature, and that decisions should be made with the benefit of the best available information. This document aims to raise awareness of the problems we face in Townsville, to see the wider implications of our past, present and future actions, and to suggest measures we can take to develop a more environmentally responsible Townsville.

Environmental responsibility is the ethic, which must be adopted in order to achieve "ecologically sustainable development". There is much confusion about what this concept actually means, and has been much abused by different interests seeking to achieve their own ends. Extreme "pro-growth" elements interpret it to mean a process, which enables current patterns of growth and development to be sustained, whilst extreme "pro-conservation" elements consider it to mean that conservation interests should prevail over any form of development, and - "ne'er the twain shall meet". The fact is that the vast majority of. People, place themselves somewhere between these two extremes and recognize that we cannot have one without the other.

Ecologically sustainable development is a concept, which seeks to create a style and rate of economic development, which protects biodiversity and life support systems, and satisfies the needs and aspiration of current generations without jeopardizing those of future generations. It is about achieving optimal economic, environmental and social well-being.

A dynamic strategy for change

This Strategy calls for changes to be made in the way we make decisions and the things we do on an everyday basis. Some of the changes called for may eventually prove to be either unnecessary or unrealistic. For the Strategy to be taken seriously, it must be both realistic and relevant and will therefore require continual review and updating. Publication of this document is only the initial step in developing an Environmental Conservation Strategy for Townsville. Feedback concerning the Strategy is both wanted and welcomed.

The Townsville profile: The City:

Townsville is the provincial capital of North Queensland. With a population of almost 120,000 and an area of 376 square kilometres, Townsville supports a wide variety of business and industry. Additionally, the strategic location has attracted an air-force base and Australia's largest army base, Lavarack Barracks, to Townsville. It is also the academic and intellectual centre of the north with James Cook University and various research establishments such as CSIRO, AIMS, and GBRMPA.

The area first came to European notice in 1770 when James Cook named Cleveland Bay and Magnetic Island. However, it was not until 1864 that settlement of the area started, following the opening of a meat works and a cattle port by John Melton Black. The municipality of Townsville was recognized in 1866, named after Captain Robert Towns, John Melton Black's financial partner. The town grew steadily due to the burgeoning gold mining boom and cattle industry in the region, and was declared a City in 1902. The population increased to 45,000 in 1956 and with it the city's urban fringe encroached into the adjoining Shire of Thuringowa. With the rapid increase in spill-over population from Townsville, Thuringowa was declared a City in 1986 and has become one of the fastest growing areas in Queensland (Hornby, 1989).

The Land:

Townsville is located in the dry tropics, experiencing a variable short wet season over summer, a long dry season from about April/May to December, and an annual average rainfall of 1156mm. Actual annual rainfall can vary from 464mm to 2191mm. In 1990, 865mm of rain fell in February alone. Evaporation rates are very high, with an average of only 10 days of the year not receiving sunshine, and 171 days with 10 hours of sunshine or more (Oliver, 1978). This high level of solar radiation results in rapid drying of the soil and moisture stress for plants. The City is in the cyclone belt, experiencing cyclones with an average return period of 20 years.

Soils of the region are generally nutritionally and structurally poor. Either saline clays or duplex shallow sandy loam covers about 80% of the area. Most soils have low levels of phosphorous in particular, as well as nitrogen, iron and exchangeable potassium. The clays are highly disperse (mix readily with water) and prone to water logging. The topography ranges from coastal plains at near sea level to coastal highlands peaking on Mt Elliot at some 1200m. The coastal highlands are predominantly early carboniferous to early Cretaceous intrusive and residual volcanic rock, while the coastal plains are formed on Quaternary deposits (Murtha and Reid, 1976).

Within Townsville, Castle Hill rises abruptly from the Ross River floodplain to a height of 294m. The surrounding hills of Cape Cleveland, Magnetic Island, Many Peaks Range, Harvey Range, Mt Stuart and Mt Elliot form a dramatic backdrop to the town. The major soil types exist in the area - coastal sands, alluvial deposits on the floodplain, and granitic gravels on Magnetic Island and around Castle Hill.

Indigenous vegetation patterns are primarily determined by moisture availability, which at the broad scale is determined by altitude and topography. Localized influences of soil type, drainage and the maritime environment play a major role in establishing the range of vegetation communities present in the region. Eight distinct vegetation units within the municipality can be defined at the broadest level based on soil types and moisture regimes: Mangroves and salt marshes on poorly drained, varying wet and saline areas; coastal forests on well-drained sands and rocky outcrops along the coasts; wetlands, riparian forest and Paper bark woodlands on alluvial floodplains; and Box/Ironbark/Bloodwood lands,

Vine thickets (broad-leaf scrub), scrublands and grasslands on gravels and duplex clays on the hills.

Obviously, settlement and expansion of the built environment, and induced disturbance to the natural regimes of fire, grazing, drainage, soil structure and so forth have substantially, if not completely, modified the indigenous ecosystem in many parts of Townsville.

The People:

Townsville's social environment reflects its position as the northern regional center, with 35.2% of the population employed in the public sector (Hornby, 1989). This is higher than for the average Australian town, but is comparable to cities like Canberra and Darwin. As the state capital is over 1100km to the south, large government departments and offices (e.g.. Australian Taxation Office, Telecom, Employment and Industrial Relations etc.) are located within the city. Public sector development is an important key to Townsville's prosperity and economic stability. There is a significant population turnover in the city, leaving a significant impression on the social environment and community attitudes. This can be largely attributed to the transitory and temporary nature of common occupations. For example, most of the 7500 people based at Lavarack Barracks, or the 9000 at James Cook Uni are here on a temporary basis. The inference can be drawn that Townsville is not a very pleasant place to live, yet in a household survey, some 86% of the sample said they were quite to extremely satisfy living here (Hornby, 1989).

This same survey revealed that some 94% of respondents believed the Council ought to be giving more attention to environmental issues such as recycling. More high-rise development on The Strand was favored by 24% of respondents, whilst 66% thought greater attention should be given to upgrading the City Center (Hornby, 1989).

The Economy:

Today Townsville is the largest center of urban population in northern Queensland and the third fastest growing city in Queensland at 2.9% pa (Harris, 1990). Until 1970, the City of Townsville was synonymous with the area governed by the Townsville City Council. Since then, the city's population has spilled over into the surrounding rural Shire of Thuringowa as increasing jobs attracted people to the city. By 1976, over 8,000 Townsville people lived in the Shire (now City) of Thuringowa.

The present population estimate (as at July, 1991) for the statistical region of Townsville is 117,000 (Rider Hunt, 1991), of which Townsville City accounts for about 87,000 and Thuringowa about 30,000 (Skinner et al. 1989).

Townsville has experienced three major growth periods since the end of World War II; these are outlined below:

1947-1966:

Townsville's position as the major rail and sea junction for the rich western hinterland ensured its prosperity during the boom years of mining and grazing. It was also the regional manufacturing center, concentrating on grazing and mineral based industries (e.g.. meat works, refineries). Growth rates averaged about 3% pa.

1966-1976:

During this decade, population increased by 50% with an annual average growth rate of 4.1 % pa. Such growth was due to the establishment of the University College (additional 3,000 people), the Lavarack Army Barracks (10,000) and the Yabulu nickel smelter (3,000). By 1976 the manufacturing sector employed about 5,000 people, only topped by the rapidly expanding public administration/defense! Education sector employing some 7,300 workers, or 20% of the city's workforce (Harris, 1990).

1976-1992:

Until the mid 1970's the indications were for a high rate of sustained growth in the Townsville region. Indeed, Townsville was identified as one of Australia's '-growth centers' by the Australian Government Cities Commission (Harris, 1990). However, due to the national economic downturn, the slowing of growth at James Cook University due to tight fiscal control and the end of the Vietnam War, growth in the city declined to 1.3% pa during the period 1976-'81. Since the early 1980's there has been an attempt to stimulate growth by encouraging tourism, but this has done little to significantly improve the economic fortunes of the city (1.9% pa, 1981-1990).

Although there have been no substantial new industries established in Townsville since 1974, economic growth has steadied and been sustained in Townsville probably due to the following factors:

- the increase in the public service sector (35-38% of workforce including defense personnel – Rider

Hunt, 1991) with increasing decentralization by state and federal governments;

- the establishment of regional administration offices in the city by banks and financial institutions;
- the increased growth of James Cook University; and
- the slight growth in tourism, although not to the extent originally anticipated.

The future:

The decline in the traditional industries of metal and meat processing and transport activities, has paralleled an increase in the City's regional importance. This circumstance has led to growth in the areas of public administration, defense and education as well as the growth of regional business offices. This growth has diversified and stabilized the local economy and, despite national economic woes, Townsville's economy is expected to increase at an average rate of 2% pa over the 1990's (Harris, 1990).

The Issues:

Like any other city in the world, Townsville's environmental issues fall into four inter-related groups:

- Excess consumption, particularly of non-renewable resources, a process that has been occurring here more or less since 1864;
- Degradation of the environment either through contamination by inappropriate disposal of wastes (e.g.. pollution), or poor management leading to loss of use of the resource (e.g.. soil and beach erosion);
- Protection and management of natural areas and ecological processes to maintain biological diversity and other natural resources (e.g.. land clearance, pest plants and animals, fire management); and,
- People-based issues, which affect our perceptions of a comfortable and habitable living environment (e.g. building styles, health issues, urban development patterns).

The remaining chapters in this document attempt to elucidate these issues as they manifest in Townsville, and suggest actions, which could be undertaken to mitigate or redress problems emanating from these issues. Because of the inherent interrelationships of environmental issues, actions suggested in one area may be equally relevant to another.

For example, conservative use of non-renewable resources obviously has implications for pollution issues; since it simply means that there is less waste to dispose of. Indirectly, it also helps with conserving the natural environment as well as helping to create a more amenable "habitat" for the people of Townsville.

Over the past few years there has been an increased push to "green" the city. This issue emerged partly in response to the long drought of the 1980's adding to Townsville's reputation for being very dry and sparsely treed, and partly due to the availability of water with the completion of the Burdekin Dam and Pipeline and Stage II of the Ross River Dam. The very successful "100,000 Trees for Townsville" program involved the whole community and has significantly improved the City's amenity. The spirit of the greening campaign continues and tree planting is likely to remain popular. The emphasis of such programs will concentrate on the southern and northern approaches to Townsville, street-tree planting, and passive open space areas such as along waterways and roads where possible.

Infrastructure development and change to existing urban patterns have produced widespread community debate on a number of occasions. The most significant issues of late have included the proposed importation of nickel ore through Halifax Bay, the extension of the Port in South Townsville, railway relocation plans, and proposed developments on Magnetic Island, Castle Hill and around the Town Common. Such issues will doubtless continue to be debated as public consultation becomes more frequent and residents become increasingly conscious of weighing up the benefits and disbenefits to current and future generations of changes to the environment and their lifestyle.

The tropics generally do not experience the severe summer wildfires of the southern states. However, localized dry season fires have the potential to threaten life and property and in an effort to counter this threat, annual burning-off is practiced in an attempt to reduce dry season fuel loads and/or to increase palatability of the vegetation for grazing animals. Frequent burning eliminates fire-sensitive trees, shrubs and herbs and animals, leading to a more species-poor, open, grassy, flammable and fire tolerant vegetation, and exasperating soil degradation and atmospheric pollution. Fire management is increasingly becoming an issue as people become aware of the results of frequently firing the hills in and around the City.

The Town Common, Mt Stuart and Castle Hill, due to their high sociological and physical profile, and Magnetic Island, being partly National Park, residential area and with a tourism focus, are focal points of the fire issue. The lack of understanding of the role of fire in the environment may lead to controversy and will have to be carefully addressed. The need to develop a series of fire management strategies for different locations and habitats, combined with a community information program, is becoming a priority.

The mounting concern over industrial pollution, especially where rivers and marine environments are affected, indicates people are becoming more aware of the problems of resource use and disposal. Although most of the recent publicity has focused on "dirty" industries outside the city, the performance record of Townsville-based industries is expected to be more closely scrutinized than has been the case in the past. Townsville's close proximity to one of the "Seven Great Wonders of the World" - the Great Barrier Reef (World Heritage Area) - calls for particular attention to be made to the amount and type of pollutants, nutrients and sediments entering the marine environment. This will be achieved in part by co-operating with the implementation of the "25 Year Plan" for the area, shortly to be released by the Great Barrier Reef Marine Park Authority.

The Council has embarked on a major recycling initiative with weekly (monthly on Magnetic Is.) collections, which has received overwhelming community support. There are bound to be some teething problems in providing a collection and sorting service to some 80,000 people, but being subject to continual review and adjustment, it is envisaged that Townsville will soon be endowed with a highly efficient and satisfactory recycling service.

There are many more issues receiving attention on a daily basis to a greater or lesser extent, depending upon the priorities and perspectives of the relevant interested parties. Council has employed two Environment Officers to plan and develop with the community various programs to address these manifold environmental issues. This Strategy is a means of providing focus and corporate direction to this work.