

4 Depletion of the Ozone Layer

Council recognizes the need to protect the ozone layer by reducing the use and emission of chlorofluorocarbons (CFC's) and halons, to seek safe alternatives to ozone depleting chemicals, and to recycle where possible.

The Issues:

Ozone is a gas, which occurs in a band in the upper atmosphere (stratosphere). It protects life from lethal levels of ultra-violet radiation. Ozone is produced and broken down by natural processes, but breakdown is exacerbated by an increase in certain molecules such as halon gases and CFC's which are products of modern technology. Atmospheric physicists have been monitoring the rapid decline in the thickness of the ozone layer over the poles. Each spring the ozone hole over the poles, especially over the Antarctic continent, becomes larger and takes longer to repair. Monitoring such as this reveals that the protective layer of ozone is being seriously damaged.

Damage to the ozone layer is caused by chlorofluorocarbons (CFC's) and halons containing chlorine and bromine. These are contained in a range of products used by the community, such as fire extinguishers, aerosols, plastics, foam, fridges and air conditioners. These long chain compounds rapidly breakdown in the presence of UV radiation in the stratosphere, releasing chlorine to react with and destroy ozone molecules. The key to protecting the ozone layer from further depletion is to limit the amount of halons and CFC's in use and to ensure that what is already in use is recycled and not released into the atmosphere

The Queensland Government is preparing an amendment to the Clean Air Act to facilitate implementation of the Ozone Protection Strategy. Until this is brought into effect it is up to local authorities to minimize emissions in their own areas.

Council has initiated a program whereby non-essential BCF fire extinguishers are replaced with "ozone-friendly" alternatives. Other ozone friendly products are used wherever possible.

The objectives for addressing Ozone Protection are to:

Ensure that ozone depleting gases, and goods which contain them, are not disposed of recklessly, and recycled where possible; and,

Seek and promote ozone-safe alternatives.

Areas for Council Action:

To limit the use and emission of ozone depleting chemicals in Townsville, the Council should consider the following actions:

Encourage the replacement of all non-essential BCF fire extinguishers with suitable alternatives as soon as possible and no later than the next scheduled hydrostatic test (ENV: COR)

Carry out regular electronic leak detection for CFC's on all Council vehicles fitted with air conditioning units (COR)

Institute leak detection as part of routine servicing requirement for industrial/commercial air-conditioning and refrigeration. (ENV:OA)

Encourage dry cleaning premises to change to cleaning agents containing no CFC's where possible. (ENV)

Send Council personnel to government accredited training schemes for all workers involved in design, installation, servicing and testing of equipment involved with ozone depleting substances, once the scheme is operating. (COR)

Areas for Community Action:

Salvage and recycle the gas from old refrigerators and air-conditioners before taking them to the tip. Contact NORQEB for advice.

Do not accept foam plastic packaging or disposable foam containers and buy aerosols, which do not contain CFC's.

Lobby supermarkets and retail outlets to provide recycled cardboard packaging, if any, in place of foam alternatives.

Buy safe alternatives to harmful chemicals wherever possible.

If you have an air-conditioner in your car ensure that you service it regularly, that the gases are decanted and reused, not released, and run your air-conditioner weekly to keep seals lubricated. You could, of course, consider whether you really need an air-conditioner.

Areas for Research:

Council should encourage or support research aimed at developing alternative technology which is "Ozone-friendly", and take up any opportunities, which arise from this research.

5 Biodiversity

Council recognizes the importance of conserving biodiversity to maintain a healthy supply of economic and ecological resources to current and future generations, as well as the intrinsic rights of wild plants and animals to survive independent of any "use" to humans.

The Issues:

Biodiversity is a term (abbreviated from biological diversity) used to define the variety of all life forms on the planet, and includes the genetic diversity, and range of habitats, biological communities and ecological processes in the biosphere. All of the organic things we use in life - food, water, pharmaceuticals, clothing, even much of the material we use for shelter and so on, are derived from this biodiversity, much of which has never been looked at for further benefits.

Much of the Australian biota is found nowhere else in the world - it is unique and particularly diverse. The state of Victoria, for example, has more terrestrial orchid species than the European and North American continents combined. It is well known that the uniqueness and diversity of Australian flora and fauna is a major, if not principle, basis of our tourism industry, as well as contributing significantly to our national character.

Over the past two hundred years, 24 animal species and 117 plant species are known to have become extinct in Australia - there may well be more species lost that have never been known to science. Current information indicates that some 500 vertebrate species and almost 3500 plant species are threatened with extinction in the next 10 to 50 years, unless remedial action is implemented (DASET, 1992). The risk of extinction faced by much wildlife, often small and inconspicuous species is exacerbated by changing land use and accompanied habitat degradation. All but one of the 24 animal species has become extinct in the last 200 years due to habitat loss (the exception being the Crescent Nail-tail Wallaby which was hunted to extinction earlier this century). The other major cause of extinction is predation by, and competition with, introduced species.

Extinction is the end result of depletion and fragmentation. It is usually not until a species is in imminent danger that particular attention is given to the problem. Local government and communities are ideally placed to address this situation by aiming to ensure that no species or biological communities become extinct within the local area, or where this is not feasible, within the (bio)region.

A less recognized threat to biodiversity is that of genetic erosion, whereby the genetic diversity within a species is simplified through the elimination or contamination of local gene pools. This can be due to absolute loss, or by being overwhelmed by more favored or competitive varieties. An example is the garden planting of ornamental *Livistona* palms on Magnetic Is., which is placing the native *L. decipiens* at risk through hybridization. Whilst it is often suggested that indigenous species be used for landscaping or re-vegetation works, unless the plants are actually sourced from the local gene pool (generally defined as being from similar habitats as near as possible to the receiving site), such plants are far more likely to threaten the genetic integrity of local species than are exotic species, although some of these can be environmental weeds also, due to their capacity to spread into natural vegetation. On the other hand, we know so little of the breeding systems of the vast majority of the biota; we can only infer from an educated observation what the local gene pool of a particular species is.



Both the Palm etum and Anderson Park contain populations of the rare Cape River Palm (*Livistona* sp.). This species, endemic to the Burdekin Basin, is one of many plants yet to be described and named by science.

Whilst it is quite unrealistic to think that Biodiversity can be conserved (ex situ) in zoological and botanical gardens, in some instances such institutions can play a major role. This is exemplified by the fact that Townsville's three botanical gardens contain Australia's most significant collection of endangered tropical plant species. The Palmetum is renowned internationally for its collection and presentation of palms, many of which are threatened with extinction in their natural habitat.

The Council has undertaken a number of initiatives, which have or will assist in the in situ conservation of the area's biodiversity. These include trusteeship and cooperative management with DEH of the Town Common, preparation of management plans for Castle Hill and Magnetic Is., implementation of a restoration program for the Rowes Bay Foreshore, liaison with

The Dept of Defense concerning the management of the Mt Stuart area, assisting the NQCC to obtain funding to prepare a conservation management plan for the Ross River South Bank area, as well as serving on the Townsville- Thuringowa Landcare Committee. During 1992, Dr Goudberg presented a paper on behalf of Council to a national conference on biodiversity in Canberra. This conference formed the backbone of information upon which was developed the National Strategy for the Conservation of Australia's Biological Diversity (DASET, 1992).



Conserving and managing natural habitats is the key to conserving biodiversity.

The following chapters discuss the management of Local remnant vegetation and wildlife, including mangrove ecosystems, in more specific detail - a direct application of biodiversity conservation.

The objectives for Biodiversity Conservation in Townsville are to:

Maintain, as far as is practicable, the range of plants and animals and representative ecosystems within the region;

Mitigate threats and impacts (e.g. as posed by pest plant and animals) to Townsville's natural biodiversity; and,

Promote awareness throughout the community of the need and means of conserving biodiversity.

Areas for Council Action:

To conserve regional biodiversity, Council should consider the following:

In collaboration with QNPWS, DPI, AIMS, JCU and other groups, identify the status and any threats to native species and plan the control or reduction of such threats (e.g.: fire, feral species, habitat loss).

(ENV:OA)

Initiate with other agencies an inventory of indigenous biota and communities within the region.

(ENV:OA)

Develop practical conservation strategies for native vegetation on public and private land in cooperation with landholders, DEH, DPI, NQCC and other interest groups.

(ENV:OA)

Support individuals, community groups and other organizations in habitat restoration programs (e.g. Bush regeneration, weed and vermin control).

(ENV:OA)

Provide information to horticulturists and home gardeners raising awareness of what they can do to assist in biodiversity conservation.

(ENV:OA)

Encourage the use of local native plants where appropriate.

(ENV)

Support groups such as Greening Australia or the Society for Growing Australian Plants (SGAP) in identifying, growing and supplying local native plants.

(ENV)

Plan revegetation programs which integrates biodiversity conservation with urban forestry projects.

(ENV)

Areas for Community Action:

Adopt a local area and conserve its biodiversity by undertaking weed control and re-vegetation programs.

Seek advice from Council, DEH, SGAP and NQCC on how to collect seed or cuttings and grow local native plants for your garden.

Don't dump unwanted animals or garden refuse, including aquarium fish and plants, anywhere "do the right thing" (if you don't know - ask!).

Before buying plants inquire as to their origin - refuse to buy plants stolen from the bush, especially if they are rare or endangered.

Areas for Research:

Development of a flora and fauna database to assist land use planning and determine management requirements.

Investigate the nature and extent of disturbance to native biota caused by exotic, naturalized plants and animals.