

## 10. NATURAL RESOURCES

### 10.1 Explanation

“Natural Resources” refers to plants, animals and micro-organisms and their relationship with the non-living environment on which they depend. It includes ecological processes including those associated with the coastal zone.

By their inherent character, environmental and ecological processes affect and are affected by virtually all development and use of premises, due to:

- the character of ecosystems as well as individual natural settings and features; and
- the cumulative effects of a broad range of activities on an ecosystem.

Therefore, there are a number of environmental issues which transcend the application of specific sections of the Planning Scheme.

### 10.2 Key Issues

The key elements forming the basis for the Natural Resources planning strategy include:

- the need and desire to advance the purpose of the Act in seeking to achieve ecological sustainability;
- the maintenance of biodiversity through adherence to key principles including:
  - retaining the representativeness of different species, ecosystems and vegetation communities;
  - ensuring that large, viable tracts of habitat are conserved so that ecological processes of movement, dispersal, breeding and feeding can occur and to retain as broad a range of species and genetic diversity as possible;
  - managing a landscape which exhibits important connections and linkages including linkages between the coast and hinterland, between scattered rainforest remnants, from high to low altitudes and for continuous transects reflecting the transition between different habitat types; and
  - maintenance of the integrity of native vegetation and waterway systems through strategies such as prevention of weed infestation and/or rehabilitation of disturbed areas to restore and enhance remnant values;
- recognising and valuing the diversity of significant natural landscapes within Maroochy Shire including:
  - the ocean, beaches, foreshores and coastal plains;
  - major waterways;
- unique landforms, such as Mount Coolum, the other past volcanic landscapes, Blackall Range, Buderim Mountain and associated escarpments; and
- the vegetated and open, rural character of much of the Shire;
- areas of high ecological, scientific and aesthetic value including the vegetation associations of coastal and mountain heathlands, paperbark forests and wetlands, riverine communities and the ecotonal and rainforest communities found along many coastal streams and in parts of the Blackall and Conondale Ranges; Eucalypt forests;
- the occurrence of a number of rare and threatened flora species with very restricted distributions, including *Macadamia ternifolia* (the Maroochy Nut), *Triunia robusta* (previously considered to be extinct), *Allocasuarina emuina* (found only in small populations near the coast), and *Eucalyptus conglomerata* (the Swamp Stringybark, considered to be the most threatened eucalypt species in Queensland);
- the presence of rare and threatened fauna, such as the Ground Parrot (*Pezoporus wallicus*) found in coastal heathlands, frog species from both acidic waters in low coastal environments and mountain stream habitats, fish species and their habitat including the Mary River Cod, Honey Blue-eye and Oxleyan Pigmy Perch), the Richmond Birdwing Butterfly (*Ornithoptera richmondia*) which depends on rainforest patches throughout the Shire and the large number of species considered regionally significant (because the Shire represents the northern or southern limits of their distribution);
- the essential need to retain the considerable and significant natural resources of the Shire including the protection of aquatic and marine environments, terrestrial habitats, the diverse geological features and the natural character of the Shire so that:
  - ecological processes are protected;
  - habitat integrity is conserved;
  - the natural amenity of the Shire is maintained;
  - the quality of life of residents is protected;
  - a sustainable tourist industry is provided for;
  - recreational settings are maximised; and
  - the need to strive for a high environmental standard for the reasons given above is maintained;
- recognition that significant areas of natural habitat are in public ownership, most of which is preserved in a natural or semi-natural state, including the beaches and waterways, National and Conservation Parks and State Forests and a number of Council parks.

- recognition that substantial areas of natural habitat occur on freehold land and that the rights of property owners will be considered equitably in regard to the protection and management of natural resources on these lands; and
- recognition of the special nature of the dynamic dunal systems of the coastal zone, the importance of coastal vegetation in the prevention of, and recovery from, major erosion events in this zone, and the potential impacts of natural processes associated with the coastline for much of the length of the Shire.

### 10.3 Natural Resources Strategy

The following elements outline the planning strategy to be employed in protecting the natural resources of the Shire.

**10.3.1** Central to the strategy is the location, objectives and implementation criteria of the preferred dominant land uses of Conservation and Rural or Valued Habitat. These allocations are intended to:

- protect critical representative vegetation communities within the Shire of all sizes which includes the seven rainforest associations, the coastal and inland scribbly gum areas, rare and threatened flora species, rare and threatened fauna species and their habitat as well as important eucalypt, melaleuca, aquatic, marine and coastal habitat;
- protect unfragmented, relatively undisturbed tracts of vegetation in both coastal and hinterland landscapes which provide habitat for species which do not thrive in smaller, more isolated remnants;
- retain vegetated areas which function as links and corridors such as closely located mosaics of vegetation and vegetated waterways to enhance rehabilitation opportunities, benefit fauna movement and genetic exchange and improve the viability of vegetated remnants;
- preserve significant geological formations and prominent escarpments; and
- protect soil resources and the quality of creeks and rivers;

**10.3.2** The Conservation preferred dominant land use includes those areas considered to have the more highly valued areas of vegetation such as rainforest or heathland as well as land in public ownership intended to be preserved in a natural or semi natural state, such as National Parks and Conservation Parks. Also included are particular vegetated waterways where protection and rehabilitation is important to sustainable ecosystems.

**10.3.3** Rural or Valued Habitat allocations include areas of remnant vegetation, often in private ownership, which form broad linkages between the principal

conservation areas and major vegetation zones within and outside the Shire. They also incorporate other land where vegetation protection or rehabilitation is considered appropriate due to slope, potential for landslip, or for its catchment, recreational or aesthetic values.

**10.3.4** The Conservation and Rural or Valued Habitat areas also intend to protect wetland areas which are valuable natural physical and biological treatment systems of water quality and quantity.

**10.3.5** Aquatic and marine ecosystems are to be maintained through the retention and rehabilitation of waterway corridors and coastal and estuarine communities, and through land use measures intended to minimise clearing, stabilise and rehabilitate banks and adjacent lands, reduce soil erosion and sedimentation and control excess nutrient impacts and stormwater flows in new development.

**10.3.6** While the emphasis for this Strategic Plan has centred around the identification and protection of vegetation and waterway and wetland values, it follows that the development of a comprehensive strategy for the protection of vegetation will allow appropriate conservation of the Shire's fauna populations.

**10.3.7** A strong environmental framework requires not only the protection of resources through limiting land uses in sensitive locations, but requires also the establishment and implementation of an appropriate array of development guidelines and standards for all other forms of development. Such guidelines and standards, imposed as conditions on development and embodied in Council's Planning Scheme Codes for environmental management<sup>3</sup>, will:

- ensure sensitive and innovative development solutions;
- adopt a best environmental management practice approach;
- reinforce environmental objectives; and
- seek a high standard of environmental amenity.

**10.3.8** Under the Natural Resources Strategy, as proposed, the maintenance of land in its natural state is considered a legitimate land use in itself. This means that in some parts of the Shire development opportunities are limited to those which ensure the natural resource values for that site or adjoining areas are protected in perpetuity.

<sup>3</sup> Any development in a koala habitat area is to be assessed against the koala conservation criteria contained in the Nature Conservation (Koala) Conservation Plan 2005 and the Management Program 2005-2015 or, prior to the adoption of the Conservation Plan, the Interim Guideline: Koalas and Development. Koala habitat areas are identified in these documents.

10.3.9 The broad strategy measures are intended to be refined and implemented through the relevant codes.

10.3.10 In addition to protection of vegetation, waterways and wetlands, the Conservation and Valued Habitat areas apply to land in the coastal zone. Every effort will need to be made to retain land along the coastline as a buffer zone free from all development so that coastal fluctuations can be accepted without the need for property protection measures which are detrimental to beaches. The desirable area of the coastal buffer zone is the designated erosion prone area as shown on the State Government's Plan No SC 3369E, which is held by Council.

## 10.4 Preferred Dominant Land Uses

### 10.4.1 Conservation

Those areas that are intended or preferred for Conservation are shown as dark green on the Strategic Plan Map. These designations represent best available information at a particular point in time in combination with the constraints of existing land uses and are not considered to be a definitive representation of all areas in the Shire having conservation value.

The Natural Resources Strategy objectives are best achieved by the exclusion of most forms of development from such areas.

### 10.4.2 Rural or Valued Habitat

The emphasis of this allocation is generally on the retention of the land in its present situation, although development allocation in accordance with the Natural Resources Strategy and the development management and relevant code provisions of the Planning Scheme are envisaged. This includes land being used for rural purposes which may not have been identified as good quality agricultural land; land with limited rural capability; land identified as good quality agricultural land which contains vegetation worthy of preservation and significant vegetation; and land which, at this time, has a preferred non urban function. While it is intended that rural and non urban uses and the retention of valued habitat should be the dominant activities occurring in the Rural or Valued Habitat areas, the allocation provides for a range of other uses suited to establishing in rural areas.

A key principle of the natural resources strategy, as implemented through the Code for Nature Conservation and Biodiversity, is that, where development is proposed for sites having significant vegetation, buildings and other infrastructure should be directed away from environmentally sensitive areas and avoid fragmentation of important habitat corridors and linkages.

Valued Habitats have been defined as vegetation worthy of preservation and significant vegetation as identified by the Turnbull & Olsen Report (1992), and the Mary Maher and Associates Coastal Remnant Bushland Study (1996). These designations should also be supplemented with the findings of the 1999 study of Remnant Vegetation in Maroochy Shire (Draft). Together these studies form the basis of the Nature Conservation Management Special Management Area.

These uses may include by are not limited to rural industries, tourist and accommodation facilities appropriate to a rural area and animal husbandry and rural residential in the Permissible Area for rural Residential.

In Rural or Valued Habitat areas it will be a requirement that all development and use of premises protect the natural resources of the sites and that all development activities incorporate appropriate design solutions and other best environmental management practices.

## 10.5 Objectives and Implementation Measures

### 10.5.1 To Protect and Maintain the Biodiversity Values of the Shire

Considerable emphasis has been given to the significance of the natural resources of the Shire in terms of ecological and aesthetic values. Their protection is essential in maintaining a high level of biodiversity and landscape integrity. To achieve this goal it is necessary to implement effective mechanisms for the assessment of environmental impact associated with development applications.

#### Implementation

- (1) Council has prepared Planning Scheme provisions which describe the circumstances in which a formal environmental assessment report will be sought in support of a development application and the scope of such appraisal. Council has also prepared a Planning Scheme Policy which provides guidelines for the preparation of such reports. Any environmental appraisal required by Council must be prepared by appropriately qualified and experienced professionals. If after assessing any environmental appraisal, Council is not satisfied that a sensitive ecosystem, habitat or natural area with an integrated landscape function can be adequately sustained, it may not support the application.
- (2) In the assessment of development proposals which incorporate the retention of vegetation or adjoin areas which are vegetated, Council will have regard to the adequacy of any proposed fire management measures to protect the premises or may require the preparation of such measures if none are proposed.

### 10.5.2 To Protect those Habitats of Terrestrial and Aquatic Fauna and Flora which are Considered Ecologically Significant in a Manner which Ensures Long Term Sustainability

Inventories of the vegetation of the Shire have been prepared and assessments made of the ecological significance of natural areas. These assessments were conducted on the basis of: size of remnant vegetation areas; their regional significance; the degree of connectivity or isolation; their condition; diversity exhibited and the presence of significant species.

The nucleus for a Natural Resource strategy is the conservation of:

- representative locations of significant ecosystems and vegetation communities;
- large viable areas of habitat to ensure the maintenance of ecological processes; and
- natural connections and linkages across the landscape.

The protection of these resources is critical in maintaining the current level of biodiversity and in preserving a high level of landscape integrity within the Shire.

#### Implementation<sup>4</sup>

- (1) On land shown as Conservation, Urban and Rural or Valued Habitat on the Strategic Plan Map, and/or shown as a Special Management Area on Council's regulatory maps, Council will not support development which is likely to:
  - unduly degrade or reduce the values of regionally significant ecosystems
  - require the removal or destruction of rare and threatened flora or its habitat; and
  - otherwise impact on the habitat so as to threaten the existence of the rare and threatened species.
- (2) On other land, Council is unlikely to support an application which may detrimentally impact on a regionally significant ecosystem or the habitat of any rare and threatened species of fauna and flora unless it can be demonstrated that adequate and appropriate measures are to be provided to ensure protection.

<sup>4</sup> Any development in a koala habitat area is to be assessed against the koala conservation criteria contained in the *Nature Conservation (Koala) Conservation Plan 2005 and the Management Program 2005-2015* or, prior to the adoption of the *Conservation Plan, the Interim Guideline: Koalas and Development*. Koala habitat areas are identified in these documents.

### 10.5.3 To Protect or Provide Connections and Linkages to or Between Areas of Conservation Significance

The protection and rehabilitation of vegetation corridors utilising waterways, ridgelines and remnant vegetation to link to or between significant natural areas is essential to:

- link core areas and provide critical linkage from coast to hinterland or connect extensive areas of similar habitat type;
- assist fauna movement through viable, quality and safe areas of habitat;
- minimise the fragmentation of areas and increase the quality of the linkage; and
- manage biodiversity within a fragmented landscape by minimising edge effects and impacts from surrounding land uses;

It must be recognised that this objective will be realised over the longer term. Some corridors, for example, along particular creek and river systems or in localities typified by a mosaic of bushland remnants are often devoid of any substantial endemic vegetation. In many rural areas, all available land down to the top of the stream bank has been utilised for agricultural purposes. In such locations (and given the protection afforded farm land), it will be important to build co-operative management approaches with landholders, foster community involvement in management and encourage ownership of remnants.

Consequently the conservation values of these corridors require recognition in the Strategic Plan.

#### Implementation

- (1) (a) The important linkage component provided by waterway corridors occurs in many areas of the Shire. The right to farm or undertake rural activity, where that use is already established, will generally take precedence over use of corridors land. Such rights however do not override such other duties or responsibilities under the instruments such as the *Environmental Protection Act* which imposes a general duty on all Queenslanders to prevent environmental harm.
- (b) The allocation will not affect any existing rural operations or existing urban development or existing industrial use, nor will it prevent existing or future improvements allied or incidental to established activities, which do not require development approval where an urban or industrial use is already established in the corridors. Where it is not practical to establish a corridor, regard will still be had in the consideration of the applications, to the intent of Council. Where large areas of land are required

for a waterway corridor, Council may negotiate an agreement with a development proponent to acquire the land for public open space purposes.

- (2) In waterway situations, corridors should be preserved having regard to:
- the ecological values of the land;
  - physical characteristics;
  - other constraints such as flooding or urban land uses which may encumber the land; and
  - the need for flood mitigation, stormwater drainage and physical infrastructure.
- (3) In linkage areas development is to be sensitive to site values through sympathetic design and should seek to establish in existing cleared areas to prevent further fragmentation.
- (4) Opportunities should be sought to establish appropriate buffers in development applications and through catchment management activities.
- (5) The protection or rehabilitation of other corridors and linkages may also be required in locations not identified specifically on the Strategic Plan Map. Such features may include:
- the presence of wetlands;
  - the intrinsic value of the habitat for fauna and flora; and
  - other physical and aesthetic characteristics of the land.

#### 10.5.4 To Protect Waterways, Waterbodies and Wetlands in a Manner Which Protects and Enhances Water Quality and Aquatic Habitats

The riverine and coastal systems of Maroochy Shire contain many important heathland, aquatic and intertidal systems which provide essential habitats for many varieties of birds, fish and crustacea. Estuarine and marine environments, such as mangroves and seagrass meadows, also provide critical nursery habitat for a large number of juvenile marine species which, as well as their intrinsic and ecological values also provide the basis for the Shire's commercial and recreational fishing resources. These habitats also comprise some of the principal recreational resources of the Shire which underly the Shire's highly prized lifestyle and its tourism industry.

The protection of the waterways and waterbodies is therefore not only critical in preserving a high level of environmental amenity within the Shire but their protection is also critical from a visual amenity and recreational perspective.

It is conceded that many matters relating to the protection of waterways, wetlands and waterbodies is outside the

ambit of the Planning Scheme (and determined by other State Government legislation). However, it must be recognised that terrestrial activities adjacent to waterways, wetlands and waterbodies, and within their catchments, are closely linked to health, and therefore sustainability, of these aquatic and marine environments. Therefore, a number of land use controls are warranted to ensure that any impacts on waterways and waterbodies are minimised.

#### Implementation

- (1) When considering relevant applications for development adjacent to waterways, Council will have regard to:
- the likely impact of the intended use, including its construction, on the physical, chemical and biological qualities of water and ground water;
  - the likely impact of any discharge associated with the intended use on water quality; including ground water quality;
  - the likely impact of stormwater run-off and the need for management of contaminated and uncontaminated stormwater;
  - the likely impact of any recreational or other water based activities which will occur ancillary to the intended use on water quality.
  - the measures proposed to be implemented to improve water quality, prevent erosion, prevent decline in water quality and unacceptable prevent nutrient and soil inputs;
  - the opportunities available for alternatives to disposal such as waste prevention, on-site wastewater treatment and recycling and/or are-use so far as such options do not increase human health or safety risks; and
  - the need to retain and/or provide adequate buffers between adjacent uses and marine, wetland and heathland environments.
- (2) In considering whether impacts on water quality have occurred or are likely to occur, Council will have regard to the Environmental Protection (Water) Policy 1997 and, in particular, the following matters:
- the likely impact on water quality values (as defined in the EPP for Water);
  - cumulative impacts from releases;
  - short term and long term impacts;
  - data on ambient quality of the receiving waters and possible effects on the existing water quality;

- monitoring programs and impact monitoring programs related to releases;
- any stormwater management plan;
- acceptable health risks; and
- whether the initial mixing zone will effect environmental values including biological integrity.

### 10.5.5 To Rehabilitate Fragmented and Degraded Linkages

Equally as important as the stated objectives of protecting the significant natural features and terrestrial, aquatic and marine ecosystem is the rehabilitation, stabilisation and management of land where natural vegetation areas have been altered. Such works are essential if environmental sustainability of the Shire's ecosystems are to be secured.

#### Implementation

- (1) Where reasonable and relevant, Council may require as a condition of development that land which has been previously cleared or degraded, be rehabilitated back to a natural or semi-natural state for ecological or amenity purposes.
- (2) Such purpose may include that the land is:
  - prone to landslip as a result of geological characteristics or hydrological action;
  - located within a water supply catchment;
  - contributing to a lowering of water quality or detrimentally impacting on an aquatic habitat though soil erosion, nutrient or pollution discharge; and
  - identified on the Strategic Plan Map or within or adjacent to a Nature Conservation Management Special Management Area shown on regulatory map 1.1 of this Planning Scheme.
- (3) Where rehabilitation is required, Council will have regard to:
  - the purpose for which rehabilitation is required;
  - the proposed planting schedule including species selection, composition and distribution;
  - any rehabilitation works and the methods proposed for rehabilitation; and
  - any other measures which will result in the stabilisation and ongoing maintenance and management of the land.

### 10.5.6 To ensure that the Erosion Prone Area is kept to the extent possible as an area that allows for Natural Coastal Processes to continue to occur unimpeded

Where buffer zones exist, the dunes provide a reservoir of sand which will accommodate future erosion. The appropriate maintenance of dune vegetation within the buffer zone facilitates the stabilisation of the dune system and the rebuilding of the dunes after storms. The management of beach and hind-dune areas must include the regulation of development within erosion prone areas and the appropriate maintenance of these areas such that they can function as buffer zones to accommodate shoreline fluctuations. This acknowledges that coastal erosion is a natural phenomenon which may be accommodated through planning as an alternative to costly engineering works. The dune system acts as a buffer zone and affords protection from the sea.

#### Implementation

- (1) In assessing applications for development in the coastal buffer zone, and in assessing the provision of infrastructure and other works, Council will consider whether natural foreshore fluctuations, including natural movement of sand sediments, are likely to be compromised.
- (2) The development of land which is vulnerable to erosion is not in the long term interest of Council and where development has already encroached, the level of development will not be permitted to increase. Council will consider the opportunity to restore a full width buffer zone where possible. Coastal Management Control District No. 17 includes land in an area to which erosion prone area Plan No SC 3369E relates, and identifies private land (freehold or leasehold) that may be vulnerable to erosion. Where reasonable and relevant, Council may require as a condition of development the restoration of a full width of undeveloped coastal zone as a permanently reserved buffer.
- (3) Facilities such as picnic tables, barbecues, coastal trails and bikeways should be located landward of the erosion prone area or, if this is not practical, as far back as possible. Any such structures will be considered expendable or removable. Surf life saving observation towers and equipment sheds, lookouts, shelter sheds, elevated decks and pergolas should be specifically designed to be portable or demountable structures so as to be capable of being easily and quickly removed when threatened by sea erosion.

- (4) The Planning Area and Precinct provisions in Volume 3 of the Planning Scheme provide additional land use intent statements for consideration of impact assessable development, and which require coastal and estuarine processes not be impeded through development activity.

### 10.6 Other Measures for Natural Resources Protection and Management

10.6.1 The measures included in the Planning Scheme are intended to optimise outcomes for natural resources protection and management through the allocation of appropriate land use designations and through the development assessment process. In addition to Planning Scheme measures, Council has a range of additional strategies for achieving its long terms objectives in relation to the achievement of ecological sustainability, and in particular, maintenance of biodiversity. These strategies include:

- a conservation levy to provide funds specifically for acquisition of significant sites worthy of protection;
- voluntary conservation agreements under programs such as “Land For Wildlife” and “Bushcare”; and
- protection of environmentally sensitive areas in Council ownership or control through their management as bushland and conservation parks.

10.6.2 As part of encouraging rehabilitation and reforestation of degraded and fragmented bushland areas, Council will also encourage the establishment of uses such as farm forestry. While it is recognised that these uses when established have timber production as their primary purpose, they nevertheless can provide, as ancillary functions, increased habitat for native wildlife and improved environmental conditions where land is degraded from erosion and problems such as soils salinity.