Great Lakes Rural Living Strategy

Issues Paper









Great Lakes Council
March 2004

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Issues Paper

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March 2004

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Chapter 1: Introduction

The coastal areas of NSW are becoming a popular place for living as well as holidaying. The proximity of Great Lakes to Newcastle, the Central Coast and in fact the Greater Metropolitan Area of Sydney and the improvements in the Pacific Highway make the area more accessible to people who wish to move to the area. Great Lakes contains a number of significant natural resources both located on the coast as well as inland. These include coastal estuaries, areas of native vegetation and associated habitat.

Great Lakes is also an area for recreation and tourism. This is mainly focused on the coastal part with the Wallis, Smiths and Myall Lake systems, ocean and Port Stephens playing a significant role. There are also some tourism resources in the western part including Stroud and surrounds.

Great Lakes has a diverse number of settlements of varying sizes and function. These range from small settlements with limited or no services like Limeburners Creek, Stroud Road and Nerong to larger ones with a range of services such as Nabiac and Bulahdelah.

There are two distinctively differing landscapes in Great Lakes - the coastal landscape to the east of Pacific Highway and rural landscape to the west.

The Rural Living Strategy will provide a future direction for the settlements and land within the rural areas of the LGA. It does not cover the future of the towns of Forster, Tuncurry, Hawks Nest, Tea Gardens, Pacific Palms or Smith Lakes. It does however consider the future rural living opportunities around those towns.

The Rural Living Strategy has four component documents as follows:

- Community Consultation Report
- Background Data Report
- Issues Paper
- Strategic Environmental Assessment and Draft Strategy

This Issues Paper has been prepared to provide a discussion of the matters that will have to be addressed by the Rural Living Strategy. It is a companion document to the Background Data Report and expands on the matters in that report.

Chapter 2: Location and Study Area

Great Lakes is located on the mid north coast of NSW and is part of the Hunter Region. To the north are the Local Government Areas (LGAs) of Taree and Gloucester, to the west is Dungog with Port Stephens to the south.

The LGA has an area of 3,339 square kilometres with a coastline of 145 kilometres. It is bounded by Port Stephens in the south, Hallidays Point in the north and the foothills of the Great Dividing Range to the west.

One third of the total Council area is made up of 6 National Parks (58,775 hectares) and 7 State Forests (57,069 hectares).

There are a number of settlements in Great Lakes and they include the following:

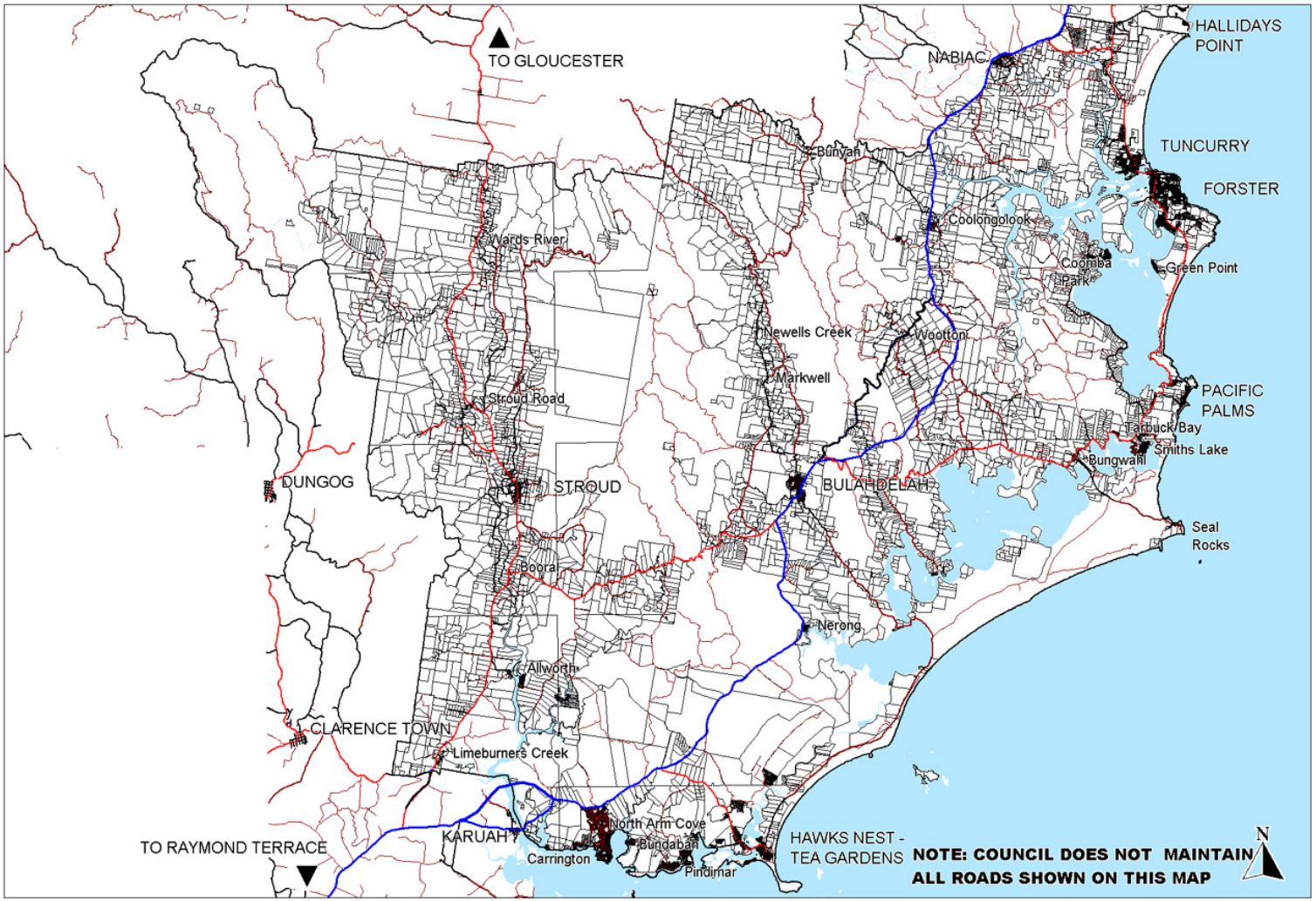
- Allworth
- Booral
- Bulahdelah
- Bundabah
- Bungwahl
- Bunya
- Carrington
- Coolongolook
- Coomba Park
- Forster
- Green Point
- Hawks Nest
- Limeburners Creek
- Markwell
- Nabiac
- Nerong
- Newells Creek
- North Arm Cove
- Tea Gardens
- Tuncurry
- Pacific Palms
- Pindimar
- Seal Rocks
- Smiths Lake
- Stroud
- Stroud Road
- Tarbuck Bay
- Wards River
- Wootton

Map 2.1 shows the Great Lakes LGA and the location of these settlements.

Photos 2.1 and 2.2 show the different settlement types in Great Lakes.

Photo 2.1: Coastal Settlement

Photo 2.2: Inland Settlement



Map 2.1 : Great Lakes showing the location of the settlements.

Chapter 3: Planning Policy Framework

3.1 Introduction

The management and control of rural land uses within Great Lakes are guided by a number of policy and legal processes. These are Acts of Parliament and Regulations as well as Plans and Policies prepared under the provisions of those Acts and Regulations.

The State Government has overall authority for the statutory processes applicable to the management of rural land within Great Lakes. The Council has the day to day decision making powers which are carried out under the auspices of the various acts of Parliament which will be outlined below. The Federal Government plays a role in the conservation of biodiversity under the auspices of the Environmental Protection and Biodiversity Conservation Act 1999.

The main Act dealing with landuse within Great Lakes' rural land is the Environmental Planning and Assessment Act 1979 (EP&A Act). The Local Government Act 1993 also controls the manner in which Local Government is carried out in New South Wales and also requires that Councils adhere to the policies of Ecologically Sustainable Development (ESD) with all decisions that are made. It is not the purpose of this document to outline fully the provisions of the EP&A and Local Government Acts, suffice to say that they have a major bearing on the planning of Great Lakes' rural lands. The EP& A Act makes provision for three levels of planning policies which are:

- State Environmental Planning Policies (SEPPs)
- Regional Environmental Plans (REPs)
- Local Environmental Plans (LEPs)

3.2 State and Regional Plans and Policies

The State Environmental Planning Policies that are relevant to the rural lands are as follows:

- SEPP No. 1 – Development Standards
- SEPP No. 14 – Coastal Wetlands
- SEPP No. 26 – Littoral Rainforests
- SEPP No. 30 – Intensive Agriculture
- SEPP No. 44 – Koala Habitat
- SEPP No. 55 – Remediation of Land

The Hunter Regional Environmental Plan 1989 is relevant to the rural lands of Great Lakes. The aims of this Plan are as follows:

(a) *to promote the balanced development of the region, the improvement of its urban and rural environments and the orderly and economic development and optimum use of its land and other resources, consistent with conservation of natural and man made features and so as to meet the needs and aspirations of the community;*

(b) to co-ordinate activities related to development in the region so there is optimum social and economic benefit to the community; and
(c) to continue a regional planning process that will serve as a framework for identifying priorities for further investigations to be carried out by the Department and other agencies.

The aims will be implemented in this plan by specifying:

(a) objectives for the future planning and development of the region,
(b) regional policies to guide the preparation of local environmental plans and development control plans, to control development and to control activities in the region, and
(c) principles relating to future needs of the region, future development opportunities and requirements and the manner in which the effects of growth and change are to be managed.

The REP also list a number of requirements for the preparation of plans and strategies for the following matters:

- Housing
- Health, education and community services
- Economic development
- Industrial development
- Commercial development
- Tourism
- Land use and settlement
- Rural land
- Urban land
- Transport
- Roads, railways and public transport
- Ports and airports
- Mineral resources and extractive materials
- Soil, water and forest resources
- Environment protection
- Pollution control
- Waste disposal
- Environmental hazards
- Tall buildings
- Conservation and recreation
- Natural areas
- Recreation

In addition to these Environmental Planning Instruments the NSW Coastal Policy 1997 should be considered by the Rural Living Strategy as well as the detailed rezoning stage which will follow the preparation of the Strategy. The Coastal Policy is the Government's coordinating policy for development in the coastal zone, which includes the study area. It is not intended to describe the Policy in detail here. The overarching theme of the policy is to ensure that development in the coastal zone is ecologically sustainable. The policy has nine goals and a series of complementary and strategic actions. The Coastal Policy is a section 117 Direction under the provisions of the EP&A Act which means that Council has to prepare LEPs in accordance with the provisions of the Coastal Policy. Of note is Strategic Action 6.1.2 which requires local Councils to prepare "urban land release/settlement strategies prior to major rezonings of rural land for urban expansion or will ensure that any such rezonings are consistent with endorsed regional settlement strategies" (NSW Government, p57).

3.3 Lower North Coast Catchment Blueprint

The Lower North Coast Catchment Blueprint covers the Shire. The catchment blueprint is an advisory "whole-of-government" plan for integrated catchment management that will guide the long term management of natural resources in NSW for the next 10 years. The blueprint sets overarching priorities for investment in natural resource management, consistent with NSW and Commonwealth Government policy. The catchment blueprint, together with regional vegetation management plans and water management plans, represent the first step in a process to provide for improved natural resource management in NSW.

The Lower North Coast Catchment Blueprint applies to north-eastern New South Wales. The area covered by the blueprint extends to 3 nautical miles offshore and covers a land area of approximately 12,700 square kilometres. The land area consists largely of coastal rural hinterland with a seaside fringe and includes several estuarine lakes. The major catchments within the Board area are the Manning, Myall and Karuah Rivers and Wallis Lake. The three largest urban areas are Taree, Forster/Tuncurry and Nelson Bay/Tomaree Peninsula. There are approximately 115,000 residents in the region. There can be large influxes of people throughout the summer and over school holidays into many areas of the Lower North Coast. There are considerable areas of National Park ranging from offshore islands and coastal lakes to subalpine plateaux. Grazing, dairying, forestry and hobby farming are the major landuses in the rural hinterland, whilst tourism and commercial fishing, especially oyster farming, dominate the coastal fringe. The main local government areas that make up the Lower North Coast Catchment Management Board area are Port Stephens, Great Lakes, Greater Taree and Gloucester, while parts of the Hastings, Walcha, Nundle, Scone and Dungog Councils make up the remainder.

The Blueprint lists 5 first order objectives for the catchment which are:

1. Water bodies are managed to balance natural ecosystem requirements with community needs.
2. The physical structure and vegetation of river, lake, estuary and wetland riparian zones are protected (and rehabilitated where required) to sustain healthy ecosystems.
3. Viable native plant and animal populations and communities are maintained and enhanced.
4. Primary production, human settlement and other land use takes place while protecting Aboriginal cultural heritage, soil, water and ecosystem health.
5. The coastal zone environment is protected whilst providing for the social and economic needs of the community.

The Blueprint then lists 4 catchment targets to focus management activity. These targets are concerned with the resource condition and are measurable. They are surrogate measures of catchment health through which management success can be measured. The Catchment Targets are to be achieved in 10 years (by 2012). It will take approximately 5 years of action to implement this Blueprint. It will take a further 5 years before all the benefits are realised.

The targets relate to the following areas:

- *Terrestrial Biodiversity*: By 2012, 100% of Regionally Significant Ecosystems are protected by an environmental planning instrument or conservation agreement.
- *Soil Health*: By 2012, the area affected by soil degradation in identified high priority areas (benchmarked at 2001) is reduced by 9300 hectares.
- *Aquatic Health*: No decline in assessed Aquatic (freshwater, estuarine and marine) Condition Functioning as reflected in key indicators, benchmarked at 2004.
- *Water Quality*: By 2012, achieve a 10% reduction in total phosphorus in high priority rivers (Myall and Wallamba Rivers) and no increase (and where possible a reduction) in other river systems, based on the 80th percentile results measured at the freshwater end-of-system monitoring points.

The Blueprint then lists a total of 22 management targets and 35 Priority Management Actions which provide the detailed work that is needed to achieve the targets and objectives. Many of these targets and actions require specific work to be taken by a variety of State Government Agencies whilst there are some that relate to work to be done by Local Government. A number of them can also be classed as operational rather than strategic and therefore many are not able to be adopted by the accompanying strategy. Those that relate to Local Government and that are strategic in nature are best dealt with by a strategy like the Rural Living Strategy which accompanies this Issues Paper. For the operational matters, the Council should abide by the basic principles and objectives in its operational decision making. By doing this, it can help to achieve a sustainable future for the Shire.

3.4 NSW Coastal Policy

In addition to these Environmental Planning Instruments the NSW Coastal Policy 1997 should be considered at the Rural Living Strategy, as well as at the detailed rezoning stage which will follow the preparation of the Strategy.

The Coastal Policy is the Government's coordinating policy for development in the coastal zone, which includes the study area. It is not intended to describe the Policy in detail here. The overarching theme of the policy is to ensure that development in the coastal zone is ecologically sustainable. The policy has nine goals and a series of complementary and strategic actions.

The Coastal Policy is a section 117 Direction under the provisions of the EP&A Act which means that Council has to prepare LEPs in accordance with the provisions of the Coastal Policy. Of note is Strategic Action 6.1.2 which requires local Councils to prepare "urban land release/settlement strategies prior to major rezonings of rural land for urban expansion or will ensure that any such rezonings are consistent with endorsed regional settlement strategies" (NSW Government, p57).

3.5 SEPP 71 Coastal Development

This State Environmental Planing Policy commenced in November 2002. Its purpose was to give legal force to certain elements of the NSW Coastal Policy 1997 and introduce additional matters for consideration for councils when preparing local

environmental plans and for consent authorities when determining development applications in the coastal zone.

The coastal zone is defined as follows:

- is generally one kilometre landward of the western boundary of the coastal waters of the State,
- is generally one kilometre landward around any bay, estuary, coastal lake or lagoon,
- follows the length of any coastal river inland generally at a distance of one kilometre from each bank of the river:
    - ⇨ to one kilometre beyond the limit of any recognised mangroves on or associated with the river, or
    - ⇨ if there are no such recognised mangroves to one kilometre beyond the tidal limit of the river,
- is shown to the nearest cadastral boundary or easily recognizable physical boundary.

The aims of the policy are as follows:

(a) to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast, and
(b) to protect and improve existing public access to and along coastal foreshores to the extent that this is compatible with the natural attributes of the coastal foreshore, and
(c) to ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore, and
(d) to protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge, and
(e) to ensure that the visual amenity of the coast is protected, and
(f) to protect and preserve beach environments and beach amenity, and
(g) to protect and preserve native coastal vegetation, and
(h) to protect and preserve the marine environment of New South Wales, and
(i) to protect and preserve rock platforms, and
(j) to manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6 (2) of the *Protection of the Environment Administration Act 1991*), and
(k) to ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and
(l) to encourage a strategic approach to coastal management.

The Policy makes the NSW Minister for Planning the consent authority for the following development:

- mining, extractive industry, industry, landfill, recreational establishments, marinas, tourist
- facilities (except bed and breakfast establishments and farm stays as defined in the SEPP).
- structures greater than 13m in height

- subdivision of land within a residential zone into more than 25 lots
- subdivision of land within a rural residential zone into more than 5 lots
- subdivision of land within any zone into any number of lots if effluent will be disposed of by a non-reticulated system.

It also identifies and requires specific controls on 'sensitive coastal location' which is defined as :

- a coastal lake (a list of coastal lakes appear in Schedule 1 of the SEPP)
- land within 100m above mean high water mark of the sea, a bay or an estuary
- land within 100m of the water's edge of a coastal lake, a declared Ramsar wetland, a World Heritage
- property, an aquatic reserve, a marine park, a national park, a nature reserve, or a SEPP 14 -- Coastal Wetland
- residential land within 100m of land identified under SEPP 26 -- Littoral Rainforest.

The Policy provides for the following matters of consideration for councils when preparing a local environmental plan and when determining DAs in the coastal zone:

- the aims of the SEPP
- scenic qualities
- visual amenity and overshadowing of the coastal foreshore
- public access
- wildlife corridors
- conflict between land and water based activities
- animal and plant habitats
- water quality
- items of heritage, archaeological, or historic significance
- cumulative impact
- marine habitat
- coastal processes and hazards
- Aboriginal heritage
- water and energy efficiency
- suitability of the development

The Policy requires that a consent authority must not grant consent for certain types of land subdivision unless the Minister has adopted a master plan for land to which the development applies. The Coastal Council of NSW, the relevant local council, and other relevant agencies will have the opportunity to make comment on a draft master plan. The Minister may also waive the need for a master plan to be adopted given the nature of the development, the adequacy of other planning controls, or other such reasons.

Master plans are now required for:

- subdivisions in a residential zone or rural residential zone, if part or all of the land is within a sensitive coastal location
- subdivisions on land that is zoned residential into 25 lots or rural residential into 5 lots, where that land is not within a sensitive coastal location.

3.6 Acts of Parliament

There are also a number of other acts that affect the management of land within Great Lakes, which are listed below:

- Environmental Protection Biodiversity Conservation Act, 1999 (Commonwealth)

- Protection of the Environment Operations Act 1998
- Fisheries Management Act 1994
- Fisheries Management Amendment Act 1997
- Native Vegetation Conservation Act, 1997
- Threatened Species Conservation Act 1995
- National Parks and Wildlife Act 1974
- Heritage Act 1977
- Rivers and Foreshores Improvement Act 1948
- Crown Lands Act 1997
- Water Management Act 2000
- Rural Fires Act 1997
- Contaminated Lands Management Act 1997

3.7 Great Lakes LEP 1996

The Great Lakes Local Environmental Plan 1996 applies to the LGA.

The aims and objectives of the plan are as follows:

The aims of this plan are:

(a) to provide an updated and simplified plan for the area of Great Lakes, and
(b) to protect and enhance the environmental qualities of the area, and
(c) to facilitate the orderly and economic development of land within the area, and
(d) to promote the well-being of the area's population.

The objectives of this plan are:

(a) to provide a land use framework to guide the future use of the land within the area of Great Lakes, and
(b) to provide a basis for the preparation of detailed development control plans, and
(c) to protect environmentally sensitive areas and the heritage of the area, and
(d) to improve opportunities for ecologically sustainable development, and
(e) to provide for the cultural needs of and the equitable provision of services and facilities for the community.

The LEP makes provision for the following zones:

- 1 (a) (Rural Zone)
- 1 (c) (Future Urban Investigation Zone)
- 1 (d) (Small Holdings Zone)
- 1 (d1) (Rural Residential)
- 1 (f) (Forestry Zone)
- 2 (Village Zone)
- 2 (a) (Low Density Residential Zone)
- 2 (b) (Medium Density Residential Zone)
- 2 (c) (High Density Residential Zone)
- 2 (f) (Mixed Residential-Commercial Zone)
- 3 (a) (General Business Zone)
- 3 (d) (Special Business Waterfront Zone)
- 4 (a) (General Industrial Zone)
- 5 (a) (Special Uses Zone)
- 5 (c) (Local Road Reservation Zone)
- 5 (d) (Arterial Road Reservation Zone)
- 6 (a) (Open Space and Recreation Zone)
- 7 (a) (Wetlands and Littoral Rainforest Zone)
- 7 (b) (Conservation Zone)
- 7 (c) (Scenic Protection Zone)
- 7 (f1) (Coastal Lands Protection Zone)
- 7 (f2) (Coastal Lands Acquisition Zone)
- 8 (a) (National Parks and State Recreation Areas Zone)
- 8 (b) (National Parks and State Recreation Areas (Proposed) Zone)

Controls are placed on the building of houses and subdivision of land within the rural lands as well as other controls.

3.8 Great Lakes Development Control Plans

There are a number of Development Control Plans (DCPs) that apply to Great Lakes which are of relevance to the future development of the rural area. The following is a list of them:

- DCP No. 3 Bulahdelah Recreation Reserve R91201
- DCP No. 4 Charlotte Bay Reserves R94357 & R94358
- DCP No. 5 Relocatable Housing Estates
- DCP No. 6 Outdoor Advertising
- DCP No. 7 Integrated Housing Development
- DCP No. 8 Western Shores of Wallis Lake
- DCP No. 10 Dual Occupancy Development
- DCP No. 11 Rural Residential Subdivision and Development of Lot 2 DP 555466, Lot 52 DP 774454 and Lots 11 – 14 DP 236679
- DCP No. 14 Rural Residential Subdivision and Development – Nabiac Candidate area
- DCP No. 15 Rural Residential Subdivision and Development – Land in the vicinity of Minimbah Creek
- DCP No. 16 Rural Residential Subdivision and Development – Land in the Vicinity of Markwell Road via Bulahdelah

- DCP No. 20 Tipton's Land, Failford
- DCP No. 24 Small Rural Lots – "Listening Hill", Stroud
- DCP No. 25 Small Rural Lots – Markwell Back Road, Bulahdelah
- DCP No. 27 Subdivision and Development of Lots 4 & 6 DP 261078 and Lot 31 DP 819686, Minimbah Road
- DCP No. 28 Exempt and Complying Development
- DCP No. 30 Residential Urban Areas
- DCP No. 31 Subdivisions

Chapter 4: Ecologically Sustainable Development

4.1 Introduction

> *"Sustainability is a direction, more than a fixed destination. It is most effective when embraced voluntarily by people living together in cooperation and democracy. The term is now being used worldwide, in every language, to express this critical concept for the future of human societies on earth: that to survive, we need to better understand the consequences of current growth and development patterns on future generations and to pay attention, now, to the linkages that make the environment, economy and society interdependent. The challenge is to learn to continually work with this delicate balance through changing times. The concerns range from local needs and regional limits to global impacts, but the work is here, now, day by day. And it involves everyone."* (Sustainable Seattle 2000)

Ecologically Sustainable Development (ESD) is an important matter to consider when discussing the future of the rural lands of Great Lakes.

4.2 Ecologically Sustainable Development

Ecologically Sustainable Development or ESD is a set of principles that have been adopted by all levels of Government in Australia. In 1995 the Intergovernmental Agreement on the Environment was signed and this included Local Government. The discussion that follows outlines ESD and puts it into the context of why it is important for the Council to consider ESD when making decisions about the rural lands of Great Lakes.

The National Strategy on Ecologically Sustainable Development defines ESD as

> *'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'*. (Commonwealth of Australia, 1992 p1)

Put more simply, ESD is development which aims to meet the needs of Australians today, while conserving the ecosystems for the benefit of future generations. To do this, there is a need to develop ways of using those environmental resources that form the basis of the economy in a way which maintains and, where possible, improves their range, variety and quality. At the same time there is a need to utilise those resources to develop industry and generate employment.

The goal for ESD is :

> *Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.* (Commonwealth of Australia, 1992 p1)

The Strategy lists the core objectives of ESD as follows:

- *To enhance individual and community well being and welfare by following a path of economic development that safeguards the welfare of future generations.*
- *To provide for equity within and between regions.*
- *To protect biological diversity and maintain essential ecological processes and life support systems.*

The guiding principles of ESD are outlined in the Strategy as:

- *Decision-making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.*
- *Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*
- *The global dimensions of environmental impacts of actions and policies should be recognised and considered.*
- *The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.*
- *The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.*
- *Cost-effective and flexible policy instrument should be adopted, such as improved valuation, pricing and incentive mechanisms.*
- *Decisions and actions should provide for broad community involvement on issues that affect them.*

(Commonwealth of Australia, 1992 pp 2-3)

The Council of Australian Governments has adopted these as the Intergovernmental Agreement on the Environment, which was adopted in 1995, and it endorsed a concept of ESD.

The New South Wales Local Government Act defines ESD as follows:

> *Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:*
>
> *(a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent*

environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:

(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

(iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

One of the aims of the Local Government Act is to require Councils, Councillors and Council employees to have regard to the principles of ecologically sustainable development in carrying out their responsibilities. The Act also lists a charter, which identifies the principles under which Councils must function. This charter has as one of its components the following, which deals with ESD:

> *" to properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development."*

Great Lakes Council therefore is legally obliged to consider the above policies and definitions when carrying out its functions in relation to the rural lands.

4.3 Biodiversity

The purpose of this section is to explain the wider concept of biodiversity and the reason why Great Lakes Council is bound to consider it for the decisions to be made for the rural lands.

Definition

Biodiversity, as defined by the NSW Biodiversity Strategy, is:

> *"The variety of life forms, the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form. It is usually considered at 3 levels: genetic diversity, species diversity and ecosystem diversity.* "(NSW p4)

The 3 levels of biodiversity are as follows:

- *genetic diversity* - the variety of genetic information contained in all of the individual plants, animals and microorganisms that inhabit the earth. Genetic diversity occurs within and between the populations of organisms that comprise individual species as well as among species;
- *species diversity* - the variety of species on the earth; and
- *ecosystem diversity* - the variety of habitats, biotic communities and ecological processes.

> *"It is not static, but constantly changing; it is increased by genetic change and evolutionary processes and reduced by processes such as habitat degradation, population decline, and extinction. The concept emphasises the interrelatedness of the biological world. It covers the terrestrial, marine and other aquatic environments."* (Commonwealth Government 1996b p5)

It is this mixture of things that makes the environment that people live in and enjoy. Biodiversity is vital in supporting human life on Earth. It provides many benefits, including all our food, many medicines and industrial products and supplies clean air and water, and fertile soils. Australia is one of the biologically richest countries in the world and many industries such as tourism, agriculture, forestry and fisheries depend directly upon biodiversity. Therefore its conservation is very important – socially, economically and environmentally. Over the past 200 years, however, the Australian environment has been modified dramatically.

Reasons for Preserving Biodiversity

The four main reasons for preserving biodiversity relate to the following:

- *Ecosystem Processes*: Biodiversity is often taken for granted, however it does provide the critical processes that make life possible. A healthy and functioning ecosystem is necessary to maintain the quality of the atmosphere as well as maintaining and regulating the climate, freshwater, soil formation, cycling of nutrients and disposal of wastes. This is often

referred to as the ecosystems services. Biodiversity is also essential for controlling pest plants, animals and diseases, for pollinating crops and for providing food, clothing and many raw materials that are used in the manufacturing of products used on a day-to-day basis. The conservation of biodiversity can also have a positive impact on water quality.

- *Ethics*: all species have an inherent right to exist. Biodiversity belongs to the future as well as the present and no species or generation has the right to take away this inherent right by destroying the existence of a species.

- *Aesthetics and Culture*: Biodiversity has a range of intrinsic values such as beauty, tranquillity and isolation. Many Australians place a high value on the presence of native plants and animals. This has contributed to the sense of cultural identity and is important for the spiritual enrichment of the community as well as providing for recreation.

- *Economic*: some components of biodiversity have an economic value that can be used to generate wealth. The variety of plants and animals in Australia provide an attraction for tourism, as well as providing food, medicines and other pharmaceutical products and energy and building materials.

Pressures on Biodiversity

The major pressure on biodiversity today comes directly and indirectly from the increasing demand from population growth and human settlement and the lifestyle and expectations of the residents of those settlements and the way in which the population disperses throughout the environment. This includes the needs and desires for food, water, housing, energy, transportation, recreation and many other aspects of modern living. Figure 4.1 illustrates the impacts of human populations on biodiversity. The modification of habitats, particularly the clearing of vegetation for urban development has been and still is the most significant cause of the loss of Australia's biodiversity. The high proportion of Australians living in and around the large metropolitan centres and on the coastal fringe generates a range of pressures on biodiversity throughout the continent which includes the destruction of natural habitat, harvesting of plants and animals, the spread of exotic diseases and pollution. An example of this can be seen from the bird community in Sydney. At the time of European settlement there were 283 species of birds believed to have occurred here. Of these, 11 species are now extinct, 76 have decreased in range and/or abundance and only 39 have increased in range and/or abundance. (State of the Environment Advisory Council, 1996 p 4-9). As well, 5 Australian species have invaded the area because the changes imposed on the landscape suited them and 20 exotic birds were deliberately released and have established viable populations.

The pressure on the biodiversity of Great Lakes comes mainly from land clearing associated with development and agriculture. The Council's 2000 – 2001 State of the Environment Report notes that underscrubbing of native vegetation that occurs prior to land rezoning is of particular concern.

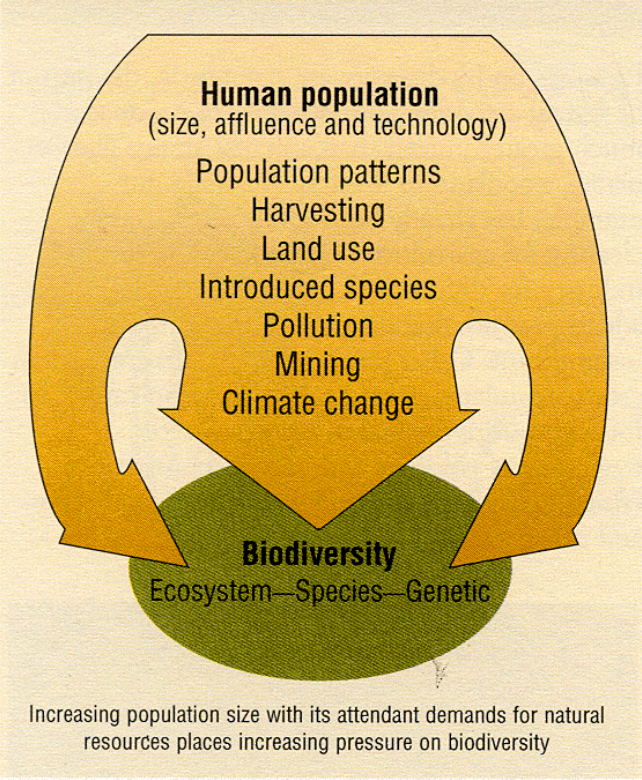


Figure 4.1: Major pressures on biodiversity
Source: SoEAC, 1996, p 4-9.

National Biodiversity Strategy

The National Biodiversity Strategy was prepared in response to these pressures. "Its aim is to bridge the gap between current activities and the effective identification, conservation and management of Australia's biological diversity." (SoEAC., 1996 p 4-39). The document recognises the need to change the way that society thinks, acts and make decisions so as to ensure that economic development is ecologically sustainable. It is recognised that human activities are having a significant impact on the fundamental ecological processes of the planet. "If we are to achieve a sustainable future in which food, shelter, health and other basic needs of the growing global population are met, we must act now to change so that we live within the Earth's carrying capacity." (Commonwealth of Australia, 1996, p4). The strategy's goal is as follows:

> *"The strategy recognises that:*
>
> - *The conservation of biological diversity provides significant cultural, economic, educational, environmental, scientific and social benefits for all Australians.*
> - *There is a need for more knowledge and better understanding of Australia's biological diversity.*
> - *There is a pressing need to strengthen current activities and provide policies, practices and attitudes to achieve conservation and sustainable use of biological diversity.*

- *We share the Earth with many other life forms that have intrinsic value and warrant our respect, whether or not they are a benefit to us*." (Commonwealth of Australia, 1996, p5).

It acknowledges the core objectives of the National ESD Strategy and accepts the guiding principles of that strategy. The National Biodiversity Strategy contains 9 principles which are to be used for its implementation. These are as follows:

1. *Biological diversity is best conserved in-situ.*
2. *Although all levels of Government have clear responsibility, the cooperation of conservation groups, resource users, peoples and the community in general is critical to the conservation of biological diversity.*
3. *It is vital to anticipate, prevent and attack at source the causes of significant reduction or loss of biological diversity.*
4. *Processes for and decisions about the allocation and use of Australia's resources should be efficient, equitable and transparent.*
5. *Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity.*
6. *The conservation of Australia's biological diversity is affected by international activities and requires actions extending beyond Australia's national jurisdiction.*
7. *Australians operating beyond our national jurisdiction should respect the principles of conservation and ecologically sustainable use of biological diversity and act in accordance with any relevant national or international laws.*
8. *Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable protected areas integrated with sympathetic management of all other areas, including agricultural and other resource production systems.*
9. *The close, traditional association of Australia's peoples with components of biological diversity should be recognised, as should the desirability of sharing equitably benefits arising from the innovative use of traditional knowledge of biological diversity.*

(Commonwealth of Australia, 1996, p6).

NSW Biodiversity Strategy

The NSW Biodiversity Strategy details actions to conserve the biodiversity of NSW. The focus is on:

- community consultation, involvement and ownership;
- conserving and protecting biodiversity;
- addressing threats to biodiversity and their management;
- natural resource management; and
- improving our knowledge.

The National Local Government Biodiversity was adopted in 1998. It represents an agreed Local Government position at the national level on the management of Australia's biodiversity.

The strategy recognises that:

- Conservation and sustainable use of our natural resources will only be achieved through local area planning and management, along with community education and participation.

- There is a willingness of Local Government across Australia to play a lead role in dealing with our most pressing and complex conservation issue—the loss of biodiversity.

- A clear and co-operative partnership arrangement is required between the 3 spheres of Government.

The strategy addresses 5 key issues and identifies relevant actions for each key issue. The Strategy recognises that these actions will require varying degrees of support from all spheres of Government, and regional organisations. The issues are as follows:

- Awareness, Training and Education
- Local Government Resourcing
- Regional Partnerships and Planning
- Legislative Frameworks
- Information and Monitoring

As this has been adopted at the national level, it has relevance for the biodiversity policies of Great Lakes Council because Great Lakes Council is part of the organisation which signed the Strategy (the NSW Local Government and Shires Association).

Incentives for Biodiversity Conservation

A lot of the significant biodiversity is on land that is held in public ownership, however there is a significant amount of it on private land. It is this land that needs to be conserved in addition to the publicly owned land. The large amount of vegetation linkages within Great Lakes signifies the biodiversity value of the private land. However, to ensure that biodiversity is conserved on private land there should be some incentives in addition to regulations to allow this to occur. These incentives can take the form of economic or financial and non-financial. It must be recognised however that the conservation of biodiversity has costs associated with it. These can be as little as providing fencing, to labour associated with planting of trees, to taking land out of production and therefore losing the productive potential of the land. Whether this has a detrimental impact on the overall value of the land however, is not known.

Non-financial incentives for biodiversity conservation are likely to be in association with people's lifestyle choices and enjoyment of land.

Economic, or financial mechanisms for conserving biodiversity are being developed both in Australia and in other countries around the world. Some economic mechanisms are as follows:

- *Environmental pricing* includes charges levied and the setting of prices to fund conservation of biodiversity. These are rare in Australia and are really only used for

fees for Park use, trail access and other uses within the reserves. Some Councils have implemented an environmental levy on the ratepayers, such as Great Lakes, which has had a rate increase approved for the purposes of environmental management. Funds raised in this way are used to fund environmental rehabilitation and other matters associated with the improvement of the natural environment.

- *Conservation easements or agreements* such as those that are provided for under the National Parks and Wildlife Service Act bind current and future landowners to a set of conditions on the use of the land. This can include limitation on clearing, fencing of important areas and restricting grazing on the property. These can be complicated and take some time to draw up and come into force.

- *Funding arrangements*. A revolving fund is one of several ways to maximise the use of funds for managing biodiversity. This concept involves purchasing land and placing a conservation agreement over it (as a caveat on the title) to ensure that it is managed for conservation purposes. The land is then sold to somebody who agrees to abide by this agreement and the money is used to purchase more land, which is then conserved and sold.

- *Taxation*. There are some income tax deductions available for control of land degradation however they are narrowly defined and do not reflect the concerns of conservation of biodiversity. Land that has a conservation agreement over it can be differentially valued so that the conserved land is valued differently from the non-conserved land. A system of rate rebates can be applied to land for biodiversity conservation purposes (for this to occur in New South Wales however there is a need to amend the rating provisions of the Local Government Act because there is no category for biodiversity conservation). In South Australia, under the Native Vegetation Act 1992 rate rebates apply and further reductions are available under a heritage agreement.

- *Transferable Development Rights* (TDR). This mechanism is designed to limit development in conservation areas without affecting the underlying value of individual asset. Transferable development rights enable people who own areas of valuable habitat to sell the clearing rights to others who own land of a lesser biological importance and need development rights in order to proceed with a proposed development. This mechanism currently is used in the City of Sydney for the preservation of heritage sites in conjunction with building height limits. In this case, developers are able to purchase a heritage building and transfer the height allowance to another site thereby creating a site with double the normal height limit.

- *Purchase of Development Rights* is a scheme whereby the rights to develop private land are purchased by a Government body or non-government land trust. A valuation of the land for its development potential is arrived at and this is subtracted from the valuation of the land for no development potential. The difference is given to the landowner in exchange for a restriction on the title of the land that it can only be used for biodiversity conservation, for example. This scheme is not in use in Australia, however it is used widely in United States of America for agricultural land as well as biodiversity conservation.

- *Financial assistance* forms part of many voluntary management schemes offered by State Governments. They usually take the form of payment to assist with the cost of purchasing materials associated with the works required such as a fencing subsidy, the provision of plants or the provision of money for the hire of plant and equipment.

Incentives, therefore are needed to encourage people to conserve the biodiversity of their areas. They are a positive tool and can be used in conjunction with statutory mechanisms such as regulations on land use.

Chapter 5: Demographic Summary

5.1 Population and Growth

The population and growth of the LGA has been described in the Background Data Report.

The main findings are as follows:

- *There are 26 village zones in the LGA, all of which have at least one service (regular school bus service). Bulahdelah is the village with the most services, followed by Stroud, Karuah and Nabiac. The villages with the least services are Bundabah, Newells Creek and Pindimar.*

- *In respect to population, the largest urbanised areas are (in order – highest to lowest) Forster/Tuncurry, Tea Gardens/Hawks Nest, Bulahdelah, Smiths Lake, Stroud, Pacific Palms, Nabiac, Green Point, North Arm Cove and Coomba Park. The total urbanized (includes village zones) population in 1996 was 23,170. The combined urban areas have experienced significant growth.*

- *Village zones not included in the above point are not identified by the ABS with separate collector districts. These village zones, as well as properties outside village areas are classified as rural, and had a combined total population in 1996 of 5,330. Some of the collector districts have actually experienced negative growth, with the combined overall growth being minor.*

- *The LGA had 23.9% of the population less than 20 years of age, 44.2% aged between 20 and 59 and 31.6% 60 years and older. It also had a significantly smaller proportion of the 20 – 29 year age group than NSW and nearly double the NSW average for 60 years and over. This is a trend that has been steadily increasing since 1986.*

- *All urbanised areas experienced an increase in the number of dwellings. All areas, except North Arm Cove and Tea Gardens, experienced an increase in the number of unoccupied dwellings. All areas experienced an increase in the number of occupied dwellings.*

- *All areas, except Tuncurry, Stroud and Nabiac experienced a reduction in the overall vacancy rate. Green Point is the only urbanised area that experienced an increase in the household size from 1991-1996. The overall LGA household size fell to 2.4 residents per private occupied dwelling in 1996.*

- *The areas with the greatest average increase in dwellings approved are (in order) Forster, Tuncurry, Pacific Palms (includes Smiths Lake), Tea Gardens, Hawks Nest, Karuah Valley, Myall Valley, Port Stephens, Wallamba, Coomba and Green Point. The average annual number of dwellings approved in Great Lakes is 465.*

5.2 Implications for Great Lakes

Great Lakes is undergoing a change in its population base. There is a significantly high proportion of older people (aged over 60). This is a result of the aging of the local population as well as the influx of retirees who are seeking a quiet and attractive area to retire. There is also an increase in the number of young people under the age of 12 years. The age group that is below the average is the 13 to 19 and 20 to 30 year olds. This is a result of these people moving to the city to work or to study. Some people will return to the area to work and live for the lifestyle benefits of the area.

There is a national trend in the movement of Australia's population. This has been described by Bernard Salt, in his recent book titled *The Big Shift,* as the third Australian culture – the move to the beach. This has been a trend that has increased in the last 20 years of the 20th century. "The thing that most drives Australians to a particular location is the values that are held by the community. And of course, in the later decades of the 20th century, Australian values changed to embrace a beach lifestyle." (Salt, 2001b, p 5) People are now retiring or moving to towns for lifestyle reasons rather than purely for work. " … with the advent of telecommuting many will continue to spread out from the city in search of a sea change in places very much like Victoria's Barwon Heads." (Salt, 2001b p 27) "As if pushed and pulled around the continent by the land itself, Australians have more recently advanced along the length of the eastern seaboard, creating settlements based on new concepts of leisure, lifestyle and retirement." (Salt, 2001b p 21) 19% or nearly 1 in 5 Australians now live in a provincial coastal town.

Great Lakes exemplifies these national trends. However, as has been highlighted in the Background Data Report, the environmental attributes constrain the continued expansion of all of the towns and villages. This will be discussed in more detail in chapter 6.

The ageing of the population is already placing a strain on the provision of healthcare for people as well as the need to provide facilities and access to the large centres for the carers / spouses of those who have to be admitted to full time care.

There is also likely to be a need for more schools to cater for the increasing numbers of pupils. This will become more of a problem for the high schools which are located in Bulahdelah and Forster. The need for access to these centres from outlying ones will also increase. It is noted that a High School and College of Technical and Further Education complex is currently being constructed at Tuncurry which should ease some of the pressure in Forster High School.

The Background Data Report has shown the large amount of unoccupied dwellings, particularly in the coastal towns. This has been reducing as these holiday areas become permanent living areas for the people who want to pursue lifestyle living.

Chapter 6: Conservation and Development Issues

6.1 Introduction

The issues which have to be considered when we discuss the rural living opportunities for Great Lakes can be grouped into two broad headings

- Environmental Opportunities and Constraints
- Social and Economic Factors

There are a number of uses and issues which influence the settlement pattern of Great Lakes. The resources necessary to use the land are finite and need to be conserved. There are a number of constraints to the use of the land and the resource.

Underlying all of the issues are the philosophies of Ecologically Sustainable Development (ESD) and Total Catchment Management (TCM). It is shown graphically in figure 6.1. The figure illustrates the interconnectedness of the issues and the fact they all must be considered in relation to each other and cannot be considered in isolation.

ESD embodies the three concepts of:

- Environmental conservation
- Social equity
- Economic prosperity

All three are interrelated and have to be considered as such. The environment in which we live has to be treated carefully so we can ensure it is left in a good state for the future generations. However, for there to be future generations, we must have settlements in which to live – be they urban areas or rural residential or in houses scattered throughout the countryside. If we are going to live in an area, there also must be a market economy. There is a need to find the balance between these three so we can have a sustainable future and can leave an intact environment to the future generations.

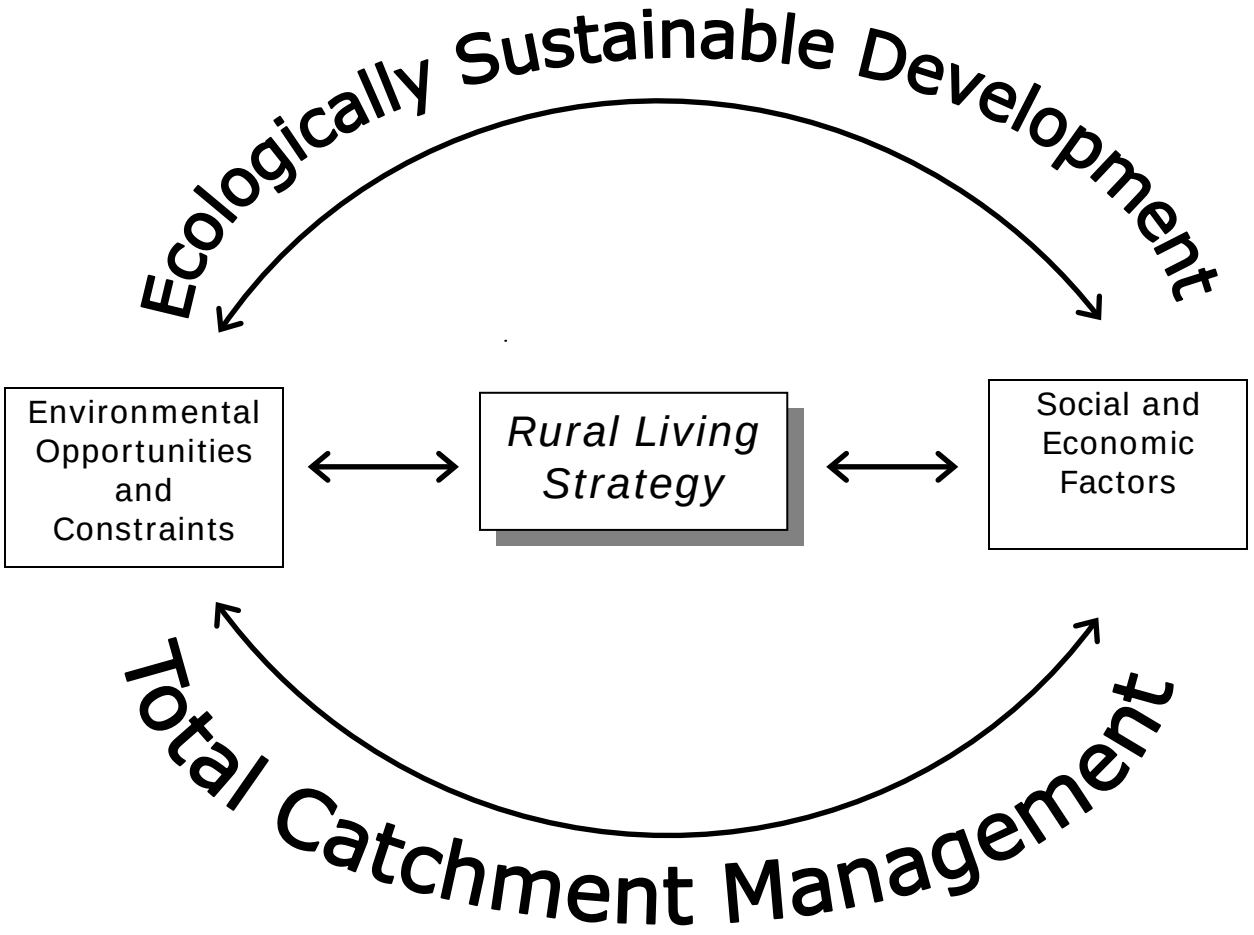


Figure 6.1: Issues and Themes for the Rural Living Strategy
Source: Sinclair 2002d

6.2 Environmental Opportunities and Constraints

The resources to enable the land to be used have to be conserved so that future generations can also enjoy and use the area. The principles of ESD and TCM are implicit to this section.

All land is within the various water catchments. Therefore, all development will have an impact on these catchments. Some uses have the potential to cause harm whilst others do not. Potentially harmful uses can be designed to minimise the impact of the use on the catchment.

The philosophy of Total Catchment Management (TCM) is one that should underlie all planning for settlements. As such, it is an issue which is very important to the Great Lakes Rural Living Strategy.

The following is a discussion of the physical constraints for settlement in the Great Lakes area. It considers the things which have to be looked at before any decision is made as to the future use of the land. Some also have implications to the current management of the land.

6.2.1. Water Catchments

The provision and conservation of water is a major issue for the future of settlement in Great Lakes LGA. There is a need to ensure that the integrity of the waterways are protected from inappropriate landuses.

The NSW Healthy Rivers Commission have released a draft paper as part of its Independent Inquiry into Coastal Lakes. It makes the following statement about the coastal lakes which is very pertinent to the water catchments of Great Lakes:

> *"The many lakes along the New South Wales coast generate valuable ecological, social and economic benefits that are enjoyed by the wider state community, as well as by the local communities that live near them, depend on them for employment or use them for recreation. Coastal lakes are diverse, and that diversity is itself highly valued, although it creates major challenges for those who seek to manage them. Unfortunately, one of the features common to coastal lakes is that we are placing increasingly intolerable demands on them. Many are now highly degraded while only one remains in a truly pristine condition. It is not only the environmental values of coastal lakes that are being threatened. The various human activities that depend on 'healthy lakes', such as tourism, fishing and oyster growing, are also being placed at risk."* (Healthy Rivers Commission (2001) pi)

There are many waterways in Great Lakes. Some are merely drainage depressions and only flow when it rains. Others, like the Myall and Karuah rivers and tributaries are extremely important because of their size and location. This is not to infer that the drainage depression is not as important as the larger creeks and river. A key objective of TCM is to ensure that landuses do not have a detrimental impact on the quality of the water in streams. It is also important to strive to improve the quality of water by

ensuring that the surrounding land uses are sustainable and conform to the principles of ESD.

There are many things that can cause the waterways to become stressed. Some are as follows:

- Nutrient from rural residential, waste disposal and intensive agriculture;
- Dams and water diversions;
- Extraction from rivers and streams – both licensed and unlicensed;
- Turbidity caused by soil erosion;
- Filling of land;
- Inappropriate development controls on existing uses.
- Loss of indigenous riparian vegetation.

The issue of preserving the natural flows of rivers is one that is impacted upon by a number of issues, including the number of rural dams which have the effect of holding back and trapping a large amount of water, especially during and after a long period of dry weather.

The protection and preservation of riparian land and its management is a major issue that has to be considered.

The groundwater resources of the area are an issue that needs to be considered in a regional context, but one that the use of land in the LGA can have an impact on. It is especially important for Hawks Nest and Tea Gardens which use groundwater for the domestic water supply. Groundwater is also part of the wider ecosystem and any changes to it will impact upon other aspects of the environment. It is noted that Mid Coast Water are considering the extraction of water from an aquifer at Minimbah near Nabiac for use as drinking water.

Council is participating in catchment management plans for the Wallis and Myall Lakes which will form an integral component of the Rural Living Strategy, when they have been finalised. In addition, Council has developed estuary management plans for Smiths and Wallis Lakes as well as Port Stephens.

Wallis Lake is one of the largest coastal lagoons on the New South Wales coast and as such is an outstanding natural asset. The Lake has a great diversity of terrestrial and aquatic ecosystems, many of which are of high conservation value. The lake is recognised as having wetlands of national importance with extensive seagrass beds. The Lake and its catchment is the habitat for a number of threatened species and migratory birds species protected under international agreements. The catchment has a diverse land use including agriculture, aquaculture, fishing and tourism industries. The local oyster industry is valued at $8 million per annum, the commercial fishing industry $2 million and the local tourism industry is estimated to be worth in excess of $124 million per annum. A State of the Catchment Report and Action Plan have been recently been prepared for public comment. The report contains description and analysis of the catchment and its issues and the Action Plan provides a management response to the issues.

There are a number of wetlands associated with the water catchments in the LGA. They are on the edges of the coastal lakes as well as being in the inland rural parts of

the LGA. The Council is also constructing a number of wetlands as part of water quality control measures. They form a major part of the natural ecosystem and therefore need protection. There are a number of coastal wetlands which are protected under the provisions of SEPP 14.

Photos 6.1 and 6.2 show aspects of the water catchments.

Photo 6.1: Coastal Lake catchment.

Photo 6.2: Rural Hinterland catchment.

6.2.2. Biodiversity

This section deals with the land-based biodiversity. It includes native vegetation including heath and woodland soil and water. It provides a habitat for birds and insects. It also is an important component of the natural heritage values of the area and provides for recreation and other issues associated with the urban and rural environment.

It has been noted in the settlement profiles in the Background Data Report, that there are a number of settlements that have areas of native vegetation surrounding them that limits the potential of the settlement to expand. This needs to be addressed, particularly in those settlements where expansion and rural residential development is to be considered.

Photo 6.3: The extent of Native Vegetation.

6.2.3. Soil

The maintenance of soil is a major consideration and there is a need to consider the impacts of land degradation, especially soil erosion. It is both a management issue as well as being associated with the future development of the land.

Soil erosion and sedimentation is an issue which becomes worse, as the uses become more intensive. It is also an issue for the more steeply sloping land and the construction of dwellings, particularly rural residential uses which tend to be on smaller lot sizes.

Soil erosion becomes more of a problem with the dispersive clay soils. The clays stay in suspension in the water for longer periods and cannot be trapped by conventional sediment controls.

This is an issue for the environmental as well as the human impact of development.

6.2.4. Topography

The topography of the land surrounding a settlement is important because steep land can become unstable and when the soil is disturbed, can lead to erosion. A lot of the steep land is also heavily vegetated and so this has to be considered.

This is particularly important for rural residential development. It is not just the slope of the land that the dwelling is proposed to be built on, but also the access to that land. As the land becomes steeper, there is more potential for land degradation to occur from unsealed accessways. As a general rule, 20% or more slope creates land degradation and should be avoided.

Effluent disposal on sloping land can cause it to become damp which can lead to erosion and slippage.

Photo 6.4 shows the topography in the western part of the LGA.

Photo 6.4: Diverse topography.

6.2.5. Bushfire

The abundance of native vegetation and the topography of the LGA make it prone to bushfire. The Great Lakes Bushfire Management Committee has prepared a Bushfire Risk Management Plan for the LGA.

The protection of the identified community assets is a key issue as is the preservation of biodiversity within the rural lands.

Managing the bushfire risk is noted as the key factor in dealing with the bushfire hazard. One of the management options is risk avoidance and therefore, land that is prone to bushfires should not be rezoned and subdivided where an adequate fire protection zone cannot be established.

Bushfire Risk Management includes the identification of the level of risk posed by bushfires to the assets and establishing strategies to protect those assets from the adverse effects of the fires. The purpose of bushfire risk management is to protect the community and its values from the adverse effects of wildfire. One key element of bushfire management is to achieve better integration of community preparedness and prevention strategies.

The Rural Fire Service and PlanningNSW have recently published a new set of guidelines titled Planning for Bushfire Protection. The guideline was produced to guide development in bushfire-prone areas. Planning for Bushfire Protection brings all the development planning protection measures into one publication. It provides councils and developers with information on bushfire protection from plan-making to development design, development control, construction certificates, and property maintenance.

Key features of Planning for Bushfire Protection include:

- identification of bushfire-prone areas;
- planning principles to be considered when councils are rezoning;
- latest hazard assessment method to work out appropriate setbacks;
- location of developments in areas of bushfire hazard based on latest CSIRO research on bushfire behaviour;
- appropriate level of building construction relevant to setback distances; and
- special setback distances for special use developments (such as aged care facilities).

Although the Planning for Bushfire Protection document was originally intended as a guide, recent changes to bushfire legislation make this guideline part of the statutory process. More information on this is contained in Section 4.2 of the Background Data Report.

Photo 6.5 shows a house that was burnt in the recent bushfires in the Sydney Region. It points out the need for an adequate asset protection zone.

Photo 6.5: The devastating impact of Bushfires in Warragamba

6.2.6. Flooding

Flooding occurs throughout the rural areas of the LGA. The Council has mapped those areas where the risk to dwellings is greatest. These areas are as follows:

- Bulahdelah
- Green Point
- Nabiac
- Nerong
- Smiths Lake
- Stroud
- Tarbuck Bay

This is not to say that there are not any other parts of the LGA that are flood prone. The Background Data Report identifies the areas that are low lying and this needs to be assessed in any consideration for village expansion or rural residential development. It is also important to ensure that there is flood free access to all dwellings to allow for safe evacuation if necessary.

The New South Wales Government have recently published an updated floodplain management manual titled Floodplain Management Manual: the Management of Flood Liable Land. This manual outlines a procedure that Councils must follow to prepare a Floodplain Risk Management Plan and introduce appropriate controls within planning instruments. The resulting Floodplain Risk Management Plans are to address existing, future and continuing flood risk for flood prone land. It also requires an assessment of the probable maximum flood and the decision to address it recognises that these rare events should not preclude or unnecessarily hamper development within these areas.

Recently there was flooding in Nabiac as can be seen from the newspaper article shown in figure 6.2.

The rain came pouring down...and down...

Heavy downpours in the area last week caused the usual "pot hole" damage on council roads, as well as around $45,000 worth of damage to Minimbah Road, where gravel was washed off the surface. Additionally, council staff were called in to clear a large amount of flood debris, and a blocked pipe, near the Nabiac shopping centre.

Nabiac took on a distinctly aquatic appearance early last week, with six inches of rain falling in three hours on Tuesday.

Nabiac SES reports that six shops and 16 homes were severely affected by the flood waters.

Two thousand sandbags were used to help control the water flow - which reached waist-height in some places.

Nabiac SES laboured for 500 manhours with the assistance of Forster Pacific Palms SES, Nabiac Rural Fire Service, Ben Higgins and Greg Martin, Great Lakes Council (which brought in the loads of sand), Robert Stockdale, and many members of the Nabiac community.

It was the biggest flood Nabiac SES has had to deal with since the unit's formation in 1987.

Across the district, it was an extremely wet week. In fact the area had more rain dumped on in a few days than it usually receives for the whole month of February.

❒ *Floodwaters at Nabiac last Tuesday, when six inches of rain fell in three hours.*

Kevin Quirk, from Forster High School's Alan Ackland Memorial Weather Station, reports that the average rainfall received here in February is 120 mm.

In February last year, we received 182.4 mm of rain.

However the first seven days of February 2002 received rainfall totalling 188.6 mm.

Rainfall readings taken at Forster High for the week were 15.2mm on Monday February 4, 86.1mm on Tuesday February 5, 57mm on the Wednesday and 45.2mm on Thursday.

The rain was welcome after a long, dry January - but nonetheless most residents were still delighted to see the sun come out on Friday!

Local SES volunteers were kept busy during the torrential week, and were called out to 16 tasks in the Forster Tuncurry area, tarping leaking roofs, and sandbagging doorways and driveways to stop run-off water entering homes.

Fourteen members of Forster-Pacific Palms SES, comprising two response teams and headquarters staff, took on the duties.

Unit Controller Larry Thompson said around 230mm fell in the catchment upstream of Nabiac on Tuesday morning.

"The recently aquired sandbagging machine was put to good use in Nabiac, when flash flooding occurred in the town centre. About 1500 sandbags were filled and laid mostly in the town area," he said.

"Later in the day preparations were made for the large scale evacuation of parts of Nabiac, when the Wallamba River rose rapidly and burst its banks. However such evacuations proved unnecessary when the river began to recede," Mr Thompson said.

He said the levels of Wallis Lake were closely monitored during the early hours of Wednesday, but fortunately the high tide level was relatively low, alleviating any flooding problems in the Tuncurry/Forster areas.

Figure 6.2: Newspaper article on the recent flooding in Nabiac
Great Lakes Advocate, 13 February 2002 p5

6.2.7. Acid Sulphate Soils

Acid sulphate soils are extremely acidic soil horizons or layers resulting from the aeration of soil materials that are rich in iron sulphides, primarily pyrite. When drainage or excavation brings oxygen into these previously waterlogged soils, the pyrite is oxidised to sulphuric acid. Should the production of acid exceed the neutralising capacity of the soil so that the pH falls to below 4, these soils are known as actual acid sulphate soils. Potential acid sulphate soils are waterlogged soils rich in pyrite that have not been oxidised. Any disturbance that admits oxygen will lead to the development of actual acid sulphate soil layers. Potential acid sulphate soils are completely innocuous to the environment if kept under water. Actual acid sulphate soils overlay potential acid sulphate soils in Australian coastal environments.

Acid sulphate soils can cause damage to properties and structures and also have an adverse impact on water quality if they are disturbed.

The Department of Land and Water Conservation has prepared a series of Acid Sulphate Soil Risk Maps covering the entire NSW coastline. The mapping has been designed to provide information on acid sulphate soil distribution and indicate land uses that are likely to create an environmental risk by exposing acid sulphate soils to air. The maps show the presence of acid sulphate soils and potential acid sulphate soils along the coastal fringe and the banks of the lakes and rivers.

It should be noted that Acid Sulphate soils are more of a management issue than an exclusionary constraint.

6.3 Social and Economic Factors

The interaction of humans with the environment is an important component of any strategy dealing with the future of rural land.

6.3.1. Growth Management

Growth Management is the mechanism by which the growth of an urban area is limited and controlled. One of the biggest issues to be tackled is the balance between vertical and horizontal growth management. Vertical growth management is loosely called urban consolidation and horizontal the containment of urban sprawl. In an area like Great Lakes there are many constraints to horizontal growth management and in some areas, there is the possibility of increasing the density by encouraging smaller lots and or more medium density development.

As outlined previously, there are 26 settlements which can be described as being residential settlements.

The major issues for the potential of a centre to expand are as follows:

- Provision of reticulated water and sewerage;
- Provision of adequate access to the higher order centres (road and public transport);
- Ability to provide for social services and facilities;
- Presence of unconstrained land surrounding the centre; and
- Ability to absorb higher density of population.

6.3.2. Housing Types

The housing types within the Great Lakes local government area can be categorised into the following categories:

- Conventional housing
- Traditional urban housing
- Rural residential housing
- Rural / farm housing

The conventional housing type is generally constructed of brick with a tiled roof. The house generally takes up the whole width of the block and has attached garage which is in line with the front of the house. It is generally within one metre of the side boundaries. Photo 6.6 shows the style of housing.

Photo 6.6: Conventional housing

Traditional residential housing is generally constructed of fibro or weatherboard. The house is located in the middle of the block and there are considerable spaces on either side. Any garages are located separate to the house and to rear. Photo 6.7 shows this style of housing.

Photo 6.7: Traditional Residential housing

Rural residential housing is generally large and low in profile. It is set on a large lot and has a lot of space around it. Photo 6.8 shows this style of housing.

Photo 6.8: Rural residential housing

Rural / farm housing is provided in association with a farm or other rural use. It generally is located in cleared or semi cleared land and has a number of sheds and other buildings in association with it. Photo 6.9 shows this style of housing.

Photo 6.9: Rural / farm housing.

6.2.8. Rural Residential Development

Rural residential development is the use of rural land for primarily residential purposes. The main source of income is not from a pursuit carried out on the land. Most rural residential dwellers move there for lifestyle rather than for the land's productive potential. As a result of this and the lack of an agricultural pursuit, the household does not have any affinity with the productive potential of the land and therefore does not usually understand the issues associated with agriculture. This lack of understanding often leads to rural land use conflict with the adjoining or near agricultural uses. (Sinclair, 2001)

The main thing that separates urban housing from rural residential housing is the size of the lots and distances between the dwellings, which create a sense of openness. Rural residential development, broadly speaking has two types:

> *"Rural Urban Fringe development is that style of development, which is within the servicing catchments and in close proximity to an urban centre. It may have reticulated water and in fact may have reticulated sewerage although most effluent disposal will be on site. It will also have a garbage service. The lot size is generally in the range of 4000 square metres to 2 hectares and it is in "estate" style of development. At the smaller lot size, it is more akin to residential than rural residential and therefore, lots of less than 1 ha are considered to be large lot urban.*
>
> *Rural Living development is a residential use of the land within a rural environment. It is not necessarily near an existing urban centre and does not have reticulated water or any other form of service, which would generally be*

provided in a rural urban fringe zone or urban centre. The lot sizes are generally 2 hectares and larger". (Sinclair 2001)

Examples of rural urban fringe development in Great Lakes are Cape Hawke and Racecourse Estates. Photo 6.10 is of this area on the fringe of Forster.

Photo 6.10: Rural Urban Fringe Housing in Forster

These lots are "… inhabited by an essentially urban population … in these pleasant homesteads dotting the landscape … the new country residents are commuters and weekenders rather than farmers." (Auster and Epps, 1993, pp 77-78)

Rural residential development has both positive and negative impacts. It has to be said that the negative impacts outweigh the positive ones. However, it provides a choice of housing and therefore should be provided but in appropriate areas which do not take away good quality and productive farmland as well as areas of high biodiversity value.

On the positive side it provides for a lifestyle choice for a number of people. It also provides for a place of business for residents who run home offices and for tradespeople who need land to store plant and equipment as well as supplies. It can also contribute to the local economy. Anecdotal evidence is also that the newer purchasers of rural residential lots have a higher income and more time to devote to the local schools and community groups.

The negative impacts can be broken into financial, community and environmental. These impacts become more problematical as the lots get smaller.

There have not been any recent studies into the costs of providing rural residential development in Australia. However, a study in the United Kingdom compared clustered and dispersed growth. This found that overall, the annual costs would be one third higher for the dispersed settlement pattern than a concentrated one. The

study also found that, in terms of public costs, a scattered settlement pattern is 395% more expensive for capital and 236% for ongoing costs than a concentrated one.

There are community costs associated with rural residential development. They include the provision of services and facilities to the areas that are normally located some distance from towns and villages.

The environmental costs associated with rural residential development are related to the initial development and ongoing use of the land. During construction of a rural residential area, especially rural urban fringe development, there can be clearing of native vegetation and soil erosion and land degradation.

The ongoing impacts of rural residential development stem from the onsite effluent disposal, soil and water management and domestic pets. Most rural residential development has onsite effluent disposal and this can be a concern if there is not a large enough area of land available for disposal. There is also a concern about the cumulative impact of having a large number of onsite systems in one area as can occur with rural urban fringe. There can be impacts on adjoining bushland from the nutrients coming off the site as well as from weeds. Native wildlife can be eaten by domestic pets.

The building of houses in the rural area can have an impact on the landscape, especially when the land is hilly. The introduction of a number of new buildings can detract from the landscape quality of an area.

Rural residential development can also cause rural land use conflict if it is located in close proximity to intensive agricultural, mines and quarry uses. Siting the house too close to the agricultural uses can cause this.

In a majority of cases, the people who buy a rural residential lot are not aware of the issues associated with it as outlined above. Issues such as the need to service the on site effluent disposal system and the impact of pets on wildlife and weed eradication are common ones where the people don't fully understand.

Photo 6.11 is of Orchard Hills in Sydney's west illustrates the issues. There is a rural urban fringe subdivision of 4000 m^2 lots which is separated from the urban area which can be seen in the foreground. You can also see the houses interspersed with the agricultural uses and the proximity of the rural residential development to the creeklines and native vegetation.

It can be seen therefore, that rural residential development creates a demand on the services provided by the Council and other Government agencies. To ensure that it occurs in an efficient manner, it should only be permitted if it is close to an urban area where the services and facilities are located.

The Council has carried out a questionnaire survey of the residents of the Racecourse and Cape Hawke rural residential estates to find out the reasons for the people moving there as well as their desires for further subdivision. The majority of the residents moved there because of the large rural lots and its semirural feel. Slightly less than half of the respondents wanted to rezone the area to smaller lots. This is further evidence of the desires of the residents to have a lifestyle form of living.

Photo 6.11: Rural residential impacts
Please note that this photo has not been taken in Great Lakes.

6.2.9. Settlement Size and Function

The size and function of a settlement will determine how it relates to the other settlements in the area and the wider region. This will provide the information to develop a settlement hierarchy for the LGA. This includes the following:

- Regional Centre
- Town
- Village
- Rural Centre

It is important to note that the regional centre may not be in the LGA and may in fact be another area such as Taree. This will be discussed in more detail in the Strategic Environmental Analysis section of the draft Strategy.

6.2.10. Agriculture

Details about the significance of the agriculture in Great Lakes are provided in the Background Data Report. It can be seen from the land use survey results presented in figure 6.3 that the major form of agriculture is extensive agriculture and that intensive animals (poultry) is not practiced on many lots. However, the poultry industry is clustered around the Stroud to Allworth area where it is one of the most significant land uses. The topography of the LGA affects the agricultural land use because of the steep hills which are mostly vegetated limit the agriculture to the valleys. This is mostly extensive forms of agriculture like grazing and some dairies. Aquaculture is a use that is expanding and it is located on or near the Pacific Highway.

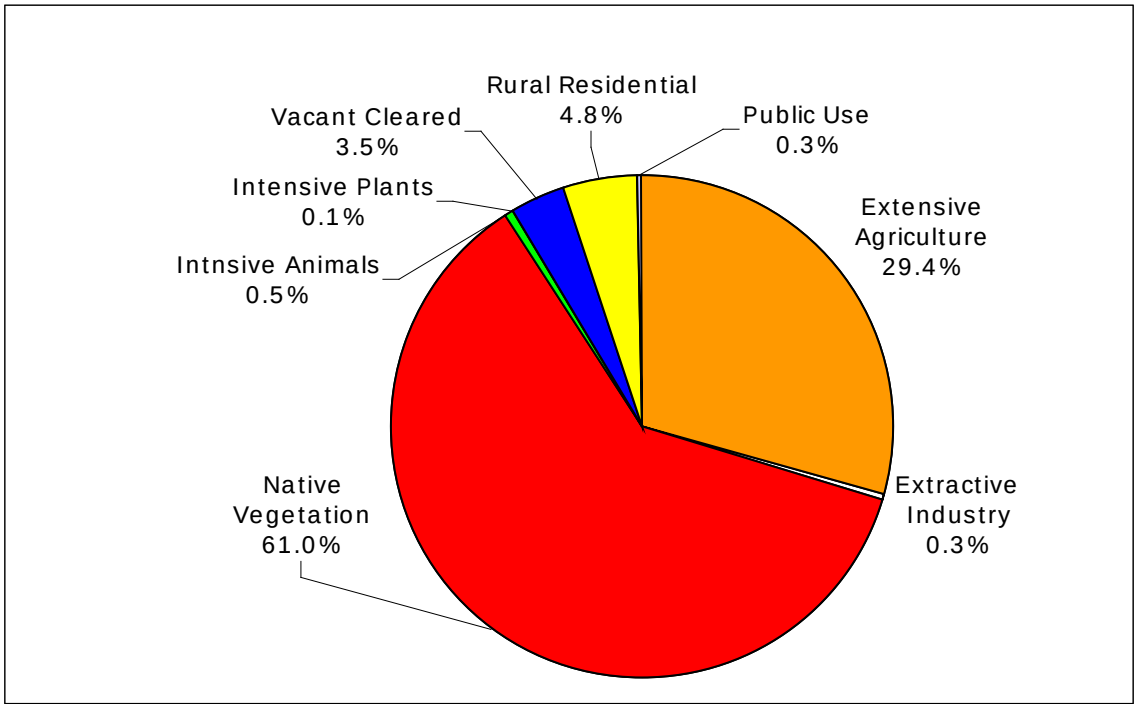


Figure 6.3: Great Lakes Rural Land Use

The issues that affect the future of agriculture include the ability of the existing enterprises to continue from an economic point of view as well as the impact of rural residential uses on them in the form of rural land use conflict.

A study has been carried out for the Hunter Economic Development Board which is titled Hunter Agribusiness Market Demand Survey. This study focused on 5 sectors that had potential competitive advantage which were:

- Beef
- Lamb
- Milk and milk products
- Game birds
- Mushrooms

The recommendations of the study included developing strategic plans for each of these industries. It is considered that the LGA can take advantage of these, especially beef and game birds having regard to the existing beef and poultry industries. However, it is also considered that aquaculture should be added as the land in the southern part of the LGA has capability for this which is illustrated by the presence of some existing farms. The Pacific Highway also adds to this competitive advantage.

The poultry industry is undergoing a change with a number of the contracts subject to renewal. Council conducted a survey of all poultry farmers in the Stroud area (17 in total) in early 2003, with a follow up letter to the five farmers that did not reply to the first letter.

The main purpose of the survey was determine whether the farmers are intending on staying in the industry, as buffers to poultry farms are the main constraint to further

urban or rural residential development at Stroud. This has enabled Council to determine whether it is possible to identify further development precincts. The results of the questionnaire are given in the table below.

Decision	Number of poultry farms
Staying on in industry	15
Leaving industry	2
Leaving industry and desiring subdivision	1

The only poultry farmer intending to leave the industry and interested in further subdivision is the one next to the village zone on the eastern edge of Stroud along Simmsville Road. This will enable the consideration of this property for urban expansion. Council recently received advice from the purchasers of this property that they do not intend to apply for a new contract and, as such, are interested in the use of their land for the expansion of Stroud.

6.2.11. Rural Land Use Conflict

The presence of agriculture and non-rural land use in the one location can often generate conflict due to their potential incompatibility. Agriculture can affect adjoining small rural lots, which are used essentially for residential purposes. Similarly, the presence of small rural lots creates an adverse influence on the continued operation of the agricultural enterprise. The issue of rural-urban conflict can arise when there is no separation between incompatible uses, let alone the misunderstanding, which may exist about the purpose and character of a district. Land use conflicts may arise in such situations through noise, odour, farm chemicals, light, visual amenity, dogs, and stock damage and weed infestation, to name just a few.

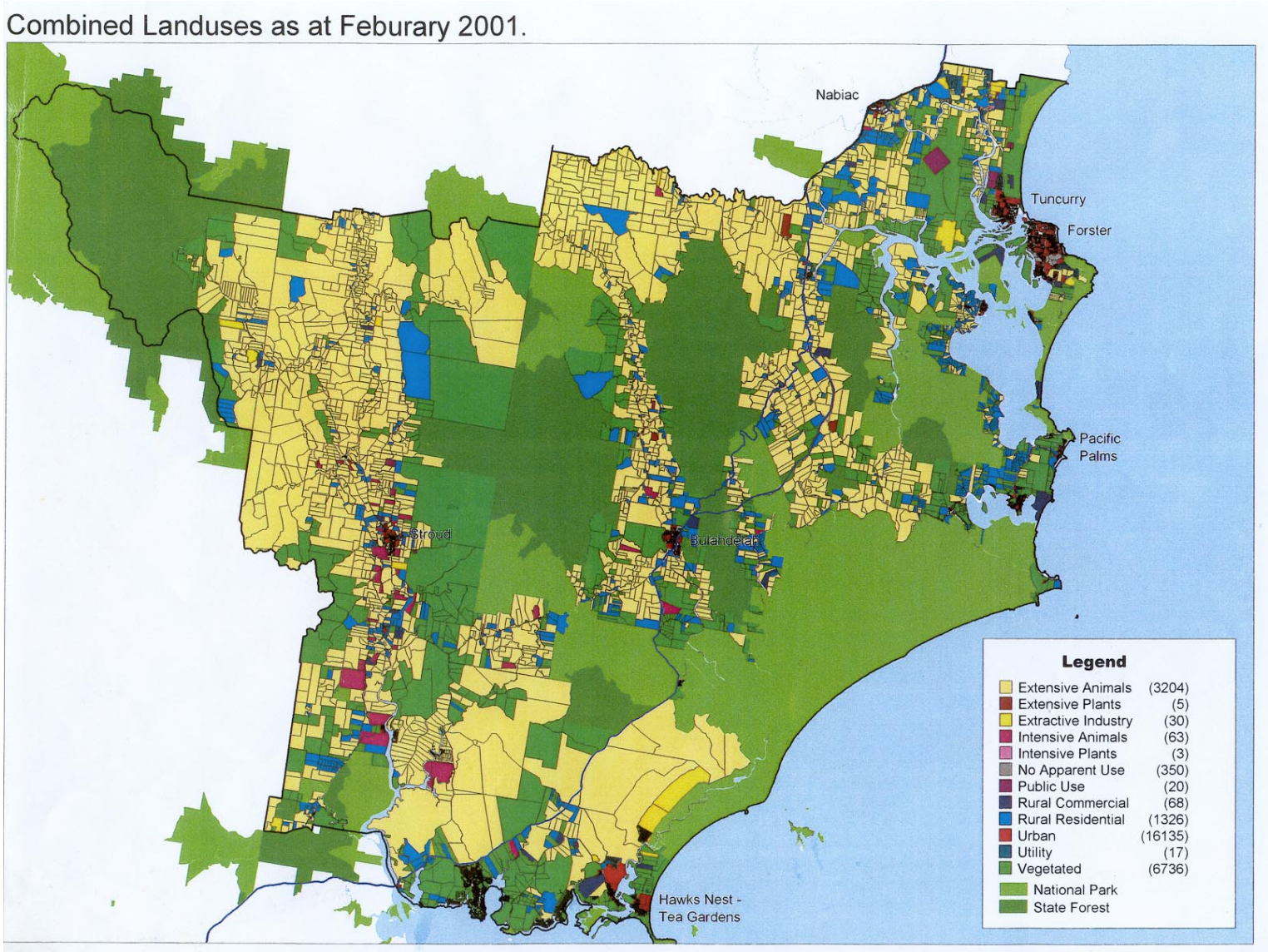
This conflict adds to the conversion of an area from rural to rural residential as the agricultural uses are forced to move because of the conflict. It is a paradox that people will move into a rural area because of the open spaces and agricultural uses and then when the agriculture starts to smell or the noise of the tractor or pump is too loud, the rural residents complain and the agricultural use is forced to alter its operations. This causes the agriculture to become less economically sustainable and the use changes to a residential one as the farmer sells up and moves out. This is shown by anecdotal evidence and experience of the consultant working in fringe metropolitan and rural areas as well as discussions with planners and farmers in the USA.

One issue that has to be addressed is the basic planning principle of the new use blending in with the current one. This has not happened in the past with dwelling houses being permitted to locate next to boundaries with no consideration of the impact it may have on the agricultural use on the next door property. This leads to rural land use conflict and experience in other areas has led to the agricultural use having to move.

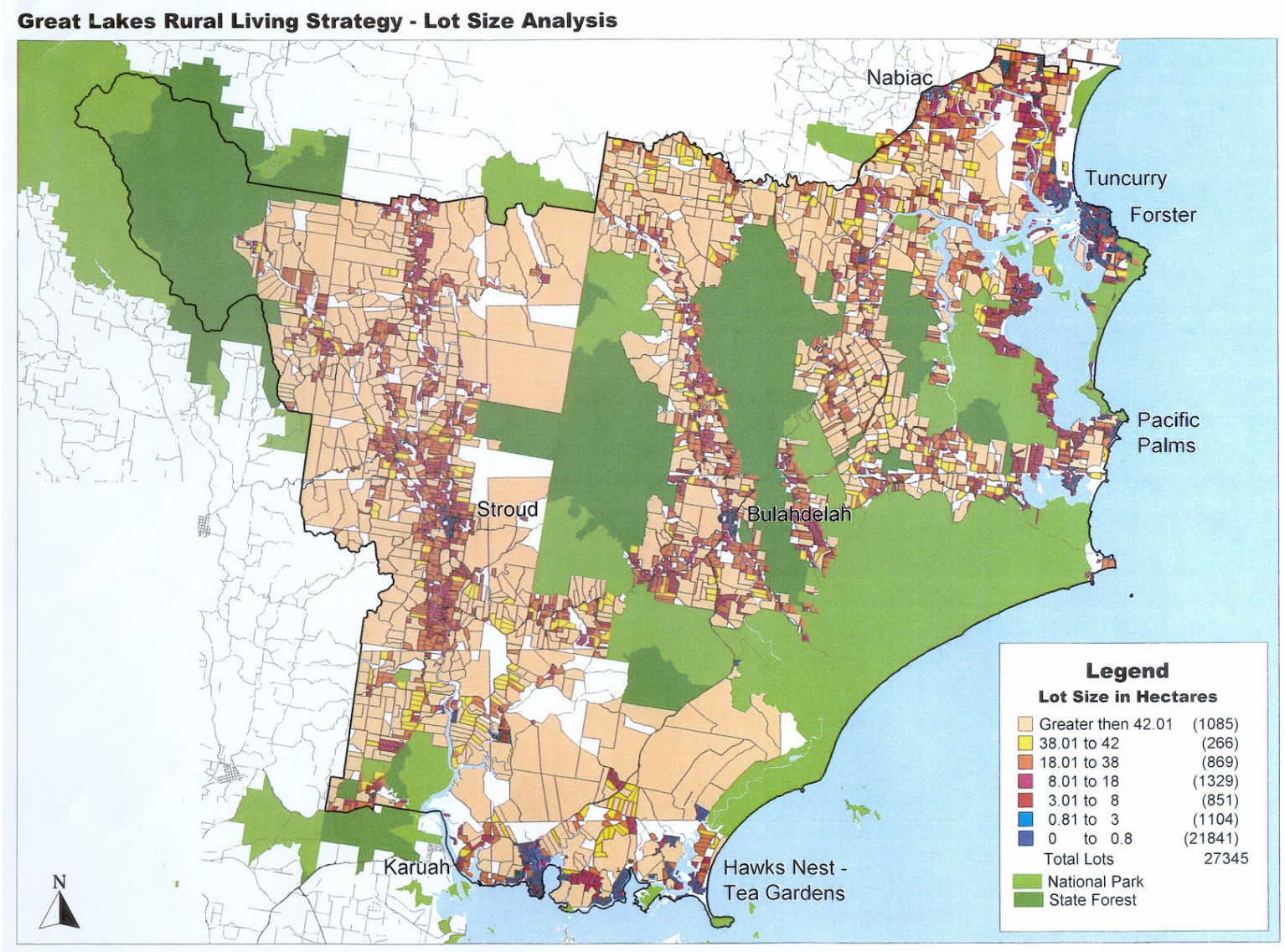
Photo 6.12: Rural land use conflict from Poultry farms

6.2.12. Land use and lot size

The land use and lot size data provided in the Background Data Report has shown that the major land uses are native vegetation, extensive agriculture and rural residential. The Land Use and Lot Size maps are provided as maps 6.1 and 6.2.



Map 6.1: Land Use



Map 6.2: Lot Size

There are some areas that have clusters of uses such as poultry around the Buckets Way from Allworth to Wards River and aquaculture along the Pacific Highway from Karuah to Bulahdelah.

The lot size analysis has shown that the uses are on sufficiently large enough parcels to allow for the containment of runoff and other pollutants.

Figure 6.4 shows the land use by lot size analysis.

The presence of rural residential uses and the spread out nature of them throughout the LGA causes some concern, especially for the intensive forms of agriculture like poultry and aquaculture. The main concern for agriculture is that of potential landuse conflict between incoming residents, often with residential expectations, and existing farming practices.

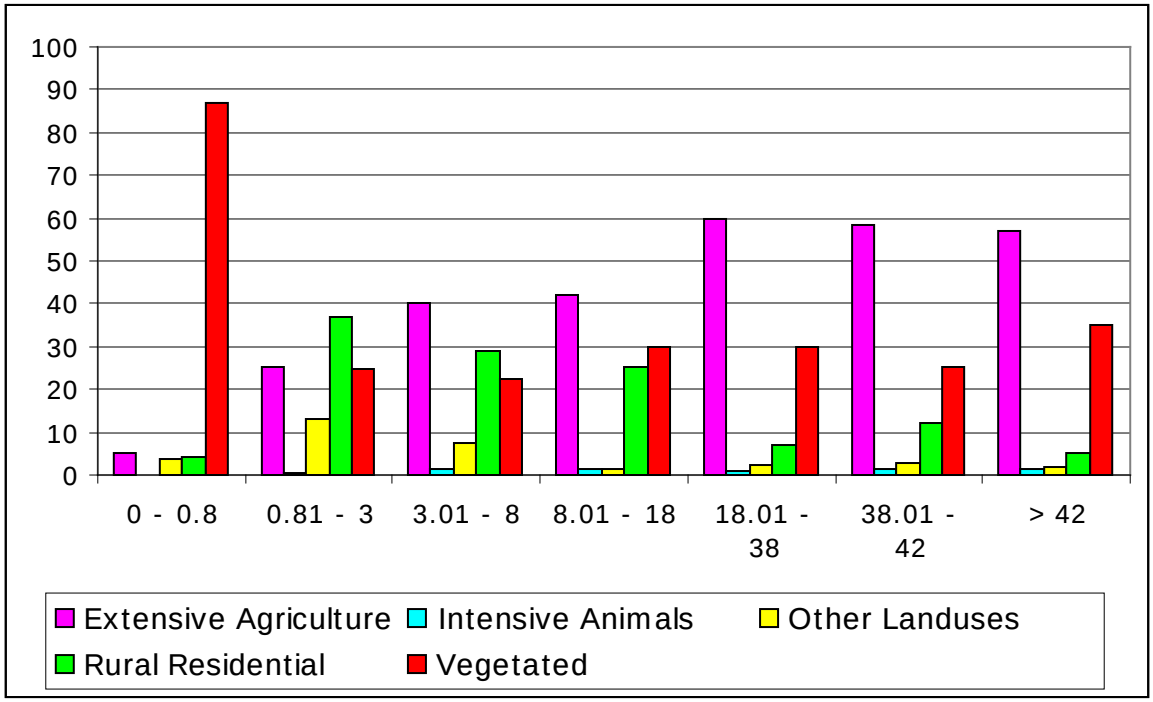


Figure 6.4: Great Lakes Rural Land Use by lot size

6.2.13. Domestic Effluent Management

This is perhaps the most important impact of human settlement on the water quality of the surrounding streams and the general environment. The Council has a general philosophy of not allowing residential expansion without the provision of a reticulated sewerage system and this principle should be adopted when considering urban expansion.

Most of the rural residential areas are not served by reticulated sewerage nor are they planned to be. The exceptions are Racecourse, Cape Hawke and Highlands Estates.

The NSW Government has released Environment and health Protection Guidelines for On-site Sewage Management for Single Households, which have to be complied with for all new on-site effluent disposal systems.

The Council has prepared an On-site Sewage Management Strategy that is to provide a framework to allow Council to regulate and manage the installation, operation and maintenance of all on-site sewage management systems with the objectives of:

- Protection of groundwater
- Protection of surface water
- Protection of land and vegetation
- Prevention of public health risk
- Maintaining and improving community amenity
- Ensuring maximum re-use of resources consistent with other objectives
- Ecologically sustainable development

This will be an important issue to be looked at when considering urban and rural residential development.

6.2.14. Infrastructure

Infrastructure such as water, electricity, telephone is necessary for the provision of human settlement areas. The LGA is well served by electricity and telephone. The settlement profile section of the Background Data Report has outlined the provision of infrastructure to the settlements.

Water and Sewerage provision is the responsibility of Mid Coast Water.

6.2.15. Solid Waste Disposal

The disposal of solid waste is an important matter and needs to be provided for. The Council's recycling service and education campaigns throughout the area will help to reduce the amount of waste that is currently disposed of. The Council is investigating a new landfill site at Minimbah because the current site at Tuncurry is reaching the end of its life.

The large influx of people in holiday periods is of concern.

6.2.16. Access and Roads

Access and roads to the LGA is considered to be adequate.

There is a proposal to bypass Bulahdelah which will have the effect of taking the through traffic out of the town. The route has been selected and is to the east of the town.

One matter that has to be considered is the state of the roads and their lifespan and the impact of increased traffic on them. This is an issue that has to be considered when investigating potential new rural residential areas. The cost of road upgrading over time as a result of increase traffic can be paid by the subdividers of the land under the provisions of Section 94 of the EP& A Act. The ongoing maintenance of these roads however, is shared by all of the ratepayers of the LGA.

6.2.17. Economic Development

The economic base of a settlement is a very important component of its future viability and sustainability.

Economic development is an important component of any settlement strategy. There is a need for the area to have a vibrant and diverse economy for it to survive.
The Great Lakes economy is heavily based on the tourism and service sector.

Economic development is an important component of any strategy for the future and there is a need to protect the existing businesses as well as attracting new ones.

6.2.18. Tourism

Tourism in the Great Lakes LGA has traditionally been based on the coastal areas. There is, however an emerging tourist industry in the inland part associated with the rural land. It is currently based on Stroud and the surrounding areas. There are some existing accommodation uses with cabins like the one in photo 6.13.

There is potential to build on this rural based tourism as well as eco-tourism in association with the large amounts of native vegetation in the LGA.

Photo 6.13: Rural based tourism

6.2.19. Heritage

It is important to consider the heritage of the area when looking at the future of the settlements.

The impact of European settlement on the Aborigines within Great Lakes is an issue that needs to be considered but does not form a major component of the strategy.

Knowledge of the significance of archaeological sites to Aboriginal people would enable more proactive protection for significant areas.

Aboriginal settlement has provided a rich diversity of sites and cultural information, which needs to be investigated and respected for any future settlement options.

6.2.20. Community Services and Facilities

The provision of community services and facilities to an area the size of Great Lakes is difficult as there is a need to cover such a large area and number of settlements with a limited amount of resources. As a general statement, the coastal areas are better provided with community services and facilities than the inland parts.

The main issue is one of social isolation of people who do not have ready access to a car. The provision of public transport between the towns and villages is virtually non-existent. It is a major concern particularly for the outlying towns and villages and provision of transport between the villages and the major towns. There is a community transport service that provides limited access to the larger towns. There is a network of school bus routes that provide public transport for the schools but this is not readily accessible to the wider community.

Health services are centred on the towns of Forster and Tuncurry. Areas in the north western sector from Stroud north rely on Gloucester for their medical and health needs.

The provision of community services and facilities and the access to them is a major issue to be considered for the future of settlements in the LGA.

Chapter 7: Conclusion

This document has been prepared as a discussion of the issues to be considered for the Great Lakes Rural Living Strategy.

Development of land must consider the concepts of ecologically sustainable development and total catchment management. There are a number of issues to be considered and they can be broken into the following headings:

- Environmental Opportunities and Constraints
- Social and Economic Factors

The document has discussed the following as they relate to the rural lands of the Great Lakes LGA:

- Planning Policy Framework
- Ecologically Sustainable Development
- Demographic make up of the community
- The environmental opportunities and constraints as well as the social and economic factors that have to be taken into consideration when considering the future of the rural lands.

The consideration of the issues in relation to the future of each settlement and the rural land generally leads to the conclusion that some of the current settlements will not expand because of a number of factors relating to the environmental constraints as well as the lack of population and distance from and access to the major centres of the LGA.

The implications of this as well as a consideration of the options available to address them are discussed in the *Strategic Environmental Assessment and Draft Strategy* document.

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