

State of the Environment Report

2017 - 2021



Ngayan marrungku paran wiyen Wanaruah, mirumalikan
para ani parraykupa, ngatan ngayan marrung wiyen
Ngarrakay paranpa yurakaykal ngatan pangaykal.

We acknowledge the Wanaruah people, traditional
keepers of this land, and we pay respects to their Elders,
past and present.

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1. Background

The Upper Hunter Shire State of the Environment Report 2016-2021 has been prepared in accordance with the reporting requirements of the Local Government Act 1993. It is in a format in line with the NSW Integrated Planning and Reporting framework implemented by Upper Hunter Shire Council.

Community Strategic Plan

The Community Strategic Plan 2027 (CSP) sets the desired future for the community and Council's operations for the next 10 years. Currently the environmental strategic objectives in the CSP relate to systems for minimising the environmental footprint of development and community activities, regular review of local environmental planning instruments, providing an efficient and effective advisory, assessment and regulatory service, promoting environmental care and a sustainable future, identification and conservation of heritage items, and providing incentives to preserve heritage items and places.

Environmental Aspirations and Strategic Objectives

The environmental goals and objectives in the CSP 2027 are as follows:

Aspiration: Protect the natural environment.

- Advocate for, facilitate and support programs that protect and sustain our diverse environment for our future generations.
- Encourage and support active Community participation within our Community to care for our environment and provide for a sustainable future.
- Ensure that all actions, decisions and policy response to natural hazards and climate change remain current and reflect capacity, community expectations and changes in environmental and climate change information.

Aspiration: Plan for a sustainable future

- Implement and regularly review Strategic Land Use Plans, Environmental Planning Instruments and Development Controls, which reflect the needs and expectations of the broad Community
- Provide efficient and effective advisory, assessment and regulatory services focused on being Customer 'friendly', responsive and environmentally responsible.
- Plan, facilitate and provide for a changing population for current and future generations.
- Provide efficient and effective waste and recycling services and support improved waste minimisation and recycling practices.
- Implement policies to ensure the protection of strategic agricultural lands, equine critical industry clusters, natural resources and heritage.

2. Local Environmental Issues

2.1 Water Use Management

State

A secure and safe drinking water supply is fundamental to the maintenance of public health. For the majority of residents within the Upper Hunter LGA drinking water is obtained from reticulated supplies, however a number of people living in rural areas and villages rely on private supplies including rainwater and bore water for drinking water. The key drinking water catchments supply for Scone, Aberdeen and Murrurundi are the Pages River catchment which has an area of 1,191km² and the Glenbawn Dam catchment which has an area of 1,300km². Merriwa and Cassilis rely on Artesian and sub-Artesian groundwater sources.

The annual water consumption for the Upper Hunter LGA is shown in Table 1, Table 2 and Table 3. The water sources vary between the different localities in the LGA.

Table 1. Annual Water Consumption: Scone and Aberdeen

Type	2017-2018	2018-2019	2019-2020	2020-2021
Residential (ML)	1041	883	772	597
Commercial (ML)	232 (679)	413 (643)	212 (663)	139 (538)
Parks (ML)	145	113	56	49
Total Production	1418	1409	1040	785

Note: the figures in brackets include the Abattoirs & Saleyards.

Table 2. Annual Water Consumption: Murrurundi

Type	2017-2018	2018-2019	2019-2020	2020-2021
Residential (ML)	63	48	46	51
Commercial (ML)	27	13	13	17
Parks (ML)	6	4	5	3
Total Production	96	65	64	71

n/a = The figures are unavailable.

Table 3. Annual Water Consumption: Merriwa and Cassilis

Type	2017-2018	2018-2019	2019-2020	2020-2021
Residential (ML)	171	146	126	103
Commercial (ML)	46	40	38	27
Rural (ML)				
Institutions (ML)				
Parks (ML)	43	28	21	16
Total Production	260	207	185	146

The Scone and Murrurundi town water source is now via a pipeline from Glenbawn Dam. The Aberdeen water source is from the Hunter River at Aberdeen. This source is regulated by the State Water controlled Glenbawn Dam. A Water Sharing Plan is in place for the Hunter River, which sets out the allocations to users and describes how water will be prioritised in times of reduced availability. Town water supplies have a high priority and are not generally affected by reduced allocations (as general security or high security licences are).

The Aberdeen supply is supplied by intake works at the Hunter River at Aberdeen, which has not suffered any reduction in yield in recent years.

Water for the Merriwa and Cassilis schemes is sourced from artesian and sub artesian bores located within the urban areas. Yield has generally been reliable from these bores, despite dropping water table levels. From the bore location and the geology of the area, there is no expectation that yield will significantly decrease in the future.

Drinking water quality can also be an issue in the Upper Hunter. Overall the drinking water quality of municipal supplies is considered to be high, however in July 2020 boiled water alerts were put in place for Scone, Aberdeen and Murrurundi as continuous rainfall in the Glenbawn catchment resulted in increased turbidity, reducing the effectiveness of Council's water treatment processes and thereby creating a risk to the water for human consumption.

Pressure

The extraction of water from ground and surface sources are the most significant pressures on the availability of water in the Upper Hunter. The nature of this issue varies between the urban centres. For villages and rural areas, the infrastructure in place along most unregulated streams does not significantly impact on medium and high stream flows. The cumulative impact of many small pumps during periods of low flow places the most significant pressure on water availability. It is generally at low flows that significant extraction occurs (DLWC 2000). The extraction of alluvial groundwater can reduce base flows in streams during dry periods.

Water quality is primarily due to the high turbidity and nutrient levels. Drinking water quality needs to be considered in relation to a range of factors in the water supply catchments (which includes Glenbawn Dam). However there are other factors that affect water quality, including:

- Land use and land management practices - land disturbance and situations where vegetation groundcover is reduced to less than 70 per cent.
- Steep slopes
- Watercourse condition – sections of rivers, creeks and other watercourses with high levels of streambank erosion can make significant contribution to sediment loads, particularly during high flow events.
- Soil types – predominantly Krasnozems (Ferralsols), Eucrozems (Dermosols) and Podzolics (Podsols) which have a higher potential
- Weather conditions - Prolonged drought followed by intensive storms.

Response

- Effective operation of the Scone Effluent Re-use Scheme that has saved 1.9ML of water from our catchment.
- Implemented a sewer main infiltration program to reduce storm water ingress into Council's sewerage system.
- Started the process of development of Integrated Water Cycle Management Plan – with an Issues Paper produced (NSW Public Works Department, 2019).



2.2 Stormwater

State

Stormwater is generated from impervious surfaces associated with roads, footpaths, driveways and buildings. As stormwater travels over and through built areas it picks up various pollutants such as solid waste (bottles, papers, plastic etc) and finer waste such as grass clippings, grease and oils. These have the potential to cause pollution to waterways and the blockage of stormwater pipes and infrastructure.

The towns and villages of the Upper Hunter LGA have extensive stormwater collection systems, which eventually flow into natural watercourses. The quality of this stormwater then can have significant ramifications for the water quality in receiving waters.

Pressure

Stormwater quality is mostly associated with land management practices and inappropriate development. These practices include littering, oil spills, sedimentation from construction sites and illegal discharges from industrial and commercial development.

Response

- Maintenance of gross pollutant traps through the towns.
- Enforcement of conditions of consent regarding erosion and sediment control on building sites.



2.3 Transport

State

The Upper Hunter LGA is made up of a number of isolated urban settlements and rural lands. Small villages located substantial distances from one another are used by the population to access goods and services. There is a heavy dependence on private vehicle usage.

Scone and Murrurundi are also linked to cities, towns and localities by the railway line which forms part of the major inland line linking areas such as Gunnedah, Tamworth and Armidale to Maitland, Newcastle and Sydney in the south. Daily services operate from Scone to these centres.

Pressure

The high use of private motor vehicles is likely to be related to the large land area of the LGA, some 8,060 sq km, dispersed settlement pattern and relatively low population. This means that people are travelling to a range of destinations – rural properties, mines (out of the LGA), horse studs or one of the four towns. In this regard there would be a high cost of providing a public transport system that would meet the diverse needs of the population.

Response

The use of alternative methods of transport such as walking, cycling, car pooling and public transport are regarded as appropriate responses to transport issues. In line with government policy and the principles of good urban planning, the challenge for the Upper Hunter Shire Council is to manage air quality and community interaction by integrating land use and transport systems (Department of Transport and Regional Services, undated).

Integrated land use & transport

Due to the dispersed nature of settlement it is not possible (or economically feasible) to provide an integrated public transport system, which may be an appropriate response in larger urban areas. Nevertheless in the larger urban area of Scone there are a number of zones for high density, medium density and mixed use developments. This provides some scope for residential development that is closer to the businesses and community services. There have been a number of development applications for multi-unit residential development in these areas. However the preferred form of residential development in Scone is for the larger residential allotments that provide for low density housing development.

Creating safe conditions for cycling

The Council's Bicycle Plan (Ross Planning, 2014) "sets Council's direction and framework to establish a bicycle friendly environment over the next 10 years. The Plan's

long term vision for a connected network of on- and off-road bicycle routes that connects key destinations, also identifies a range of cycling infrastructure requirements (e.g. cycle lanes, parking, etc), and behavioural requirements (e.g. education and promotional activities) necessary to deliver the Plan's vision" (p 1).

The Council encourages the use of bicycles through the construction of a number of major cycleways. This includes over 4 km of cycle way between Satur and the Scone commercial area. These are used more for recreational purposes and are unlikely to have a great deal of impact in reducing motor vehicle usage.

Public Transport

There are a number of Community Transport options available within the Upper Hunter Shire. Regular services are provided to attend larger towns such as Muswellbrook and Tamworth and to provide improved links between the areas of Aberdeen, Merriwa, Murrurundi and Scone. There are also individual transport and non-emergency medical transport options available. Aberdeen, Merriwa and Scone areas are serviced by taxi. School bus services exist in all areas of the Shire. There are express bus services linking the Upper Hunter Shire with Newcastle, Port Macquarie, Sydney and interstate. Cityrail and Countrylink provide limited train services to the Upper Hunter Shire. There is a fully sealed airport at Scone offering refuelling and maintenance facilities. Passengers are catered for in the terminal adjacent to the runway.



2.4 Waste Management

State

The amount of waste that the Council collects from various sources is indicative of the amount of material throughput in the local government area and the degree to which the community as a whole is creating demands on natural resources to satisfy their wants and needs. Amounts of waste reaching landfill for disposal (rather than being reused or recycled or otherwise diverted from disposal) are indicative of the character of our consumer lifestyle and of the effectiveness of strategies to promote waste minimisation. While many environmental impacts of landfill operations are prevented and minimised through strict licensing conditions established by the Environment Protection Authority (EPA), the rate at which landfill space is used by the current generation also limits the ability of future generations to make use of the same disposal techniques.

There are landfill facilities at Scone, Aberdeen, Merriwa and Murrurundi which are within Environment Protection License conditions. One “Show Cause” letter was received in the reporting period from the EPA in relation to a delayed reporting requirement, which was responded to and which resulted in no regulatory action being taken against Council. No notifiable environmental incidents occurred. Leachate, water and dust monitoring is undertaken at various sites.

Pressure

Solid waste generation continues to put pressure on the local environment, with problems associated with litter and illegal dumping as well as diminishing our ability to dispose of waste materials in an environmentally responsible way. Increasing amounts of industrial and hazardous waste are also associated with growing human settlements, further adding pressure to the receiving environment in absorbing these waste products.

Response

The Upper Hunter Shire operates landfill sites at Scone, Aberdeen, Merriwa and Murrurundi. All landfills have Environment Protection Authority licenses as a result of the inclusion into the New South Wales regional regulated area. All the landfills accept general solid waste and some have facilities to receive other types of waste, including dead animals and asbestos. A number of waste streams are consolidated and bulked for recycling purposes, including: scrap metal, lead-acid batteries, garden organics, tyres, e-waste, gas bottles, fluorescent lights, motor oil, paint, mattresses, cardboard and paper. Recycling shops operate at each landfill. Council prepared a Waste Management Strategy 2021-2031 that included community consultation and which presents a number of key projects moving forward.

Table 4. Yearly Waste Composition for Upper Hunter Shire Council Landfills

Waste Type	2016-2017 Tonnes	2017-2018 Tonnes	2018-2019 Tonnes	2019-2020 Tonnes	2020-2021 Tonnes
Municipal Waste Kerbside Collection	2,659.46	2,809.20	3,416.50	3,371.30	2,955.34
Municipal Recycling Kerbside Collection	1,048.05	906.59	786.66	784.18	784.03
Landfills	4,192.01	4,918.77	5,553.19	7,841.46	11,247.21
Total Waste Collected	7,899.52	8,634.56	9,711.15	11,996.94	14,986.58

New initiatives/ innovations and future plans:

- Feasibility study currently underway into expansion of the Aberdeen waste facility.
- Preliminary plans have been prepared for new Transfer Stations in both Merriwa and Murrurundi.
- Preliminary plans prepared for improvements to the Scone waste management facility.
- Closure plans being prepared for the existing Merriwa, Murrurundi and Scone landfills.
- Introduction of a kerbside Food Organics/Garden Organics (FOGO) service identified as a key project within the Waste Strategy.



2.5 Energy Efficiency

State

Energy consumption is one of the major impacts of human settlements both in terms of the consumption of resources to produce this energy and the outputs (in terms of greenhouse gas emissions). Energy efficiency within Council is concerned with the achievement of the abovementioned goal set out in the Management Plan. However Council also regards the promotion of sustainable energy use as a key role of the organisation in achieving the outcomes for the environment.

Electricity power in the LGA is provided through Essential Energy and Ausgrid from the national grid. Reticulated gas is not available within the Shire, although throughout there is a reliance on bottled LPG for domestic purposes.

Pressure

There is a raised level of community awareness of issues related to sustainability of energy consumption. Some action by individual home owners has been taken through the installation of solar panels and other energy saving devices.

Council's stated goal of becoming carbon neutral by 2030 and subsequent work into establishing our baseline corporate greenhouse gas inventory has highlighted the impact of current electricity supply arrangements.

Response

- Council has entered a contract for a Purchase Power Agreement that involves long-term, renewable electricity supply to our large consuming sites.
- Council has supported the change-over to more efficient LED street lighting. To date, Murrurundi has been completed, with the rest of the Shire due for completion by the end of 2021.
- Council engaged a third-party to develop an Energy Reduction Masterplan to assist with identifying opportunities for improvements relating to energy use.



Biodiversity

State

Overall the status of biodiversity in Australia is generally considered poor and deteriorating (Australian Government, 2016). This decline is likely to be reflected in the local environment as a result of development pressure and certain land management practices whereby much of the native vegetation within the LGA has been removed or disturbed to a varying degree. The majority of natural vegetation cover exists in the north and east where National Parks and State Forests cover 22% of the LGA including much of the Barrington Tops area. In the Upper Hunter Shire, there are 126 species of animals and 113 plants identified as vulnerable or endangered, as well as 34 Endangered Ecological Communities in the Atlas of NSW Wildlife.

Reflecting the poor state of Australia's biodiversity the Upper Hunter Shire Council (along with many other Local Government Areas) has recently experienced the apparent increase in flying-fox camps occupying areas within or close to residential areas in the towns of Aberdeen, Scone and Murrurundi. Flying-foxes are nomadic mammals that travel up and down the east coast of Australia feeding on native blossoms and fruits, spreading seeds and pollinating native plants. There are three species, the Grey-headed flying-fox, the Black flying-fox and the Little Red flying-fox. Flying-foxes are an important native species protected by NSW State legislation and for the Grey-headed Flying-Fox both State and Federal legislation. Flying-foxes help pollinate plants and spread seeds, ensuring the survival of our native forests. They do this over much larger distances than birds or insects (DCCW, 2010). Flying-foxes are increasingly moving closer to towns and people in search of food and shelter because of the loss of their natural habitat and in response to local food availability through changed weather patterns.

Pressure

The issue of flying-foxes needs to be understood in relation to how changes ecological processes affect particular species. In relation to flying-fox camps being within or close to urban areas there are significant challenges between co-existing with these threatened species. The DPIE provide the following information:

Flying-foxes are increasingly moving into urban areas. This may be a response to changing environmental conditions such as the loss of previous camps and foraging areas due to clearing for housing, agriculture or forestry. It may also be a response to local food shortages or fewer predators in urban areas.

The urbanisation of flying-foxes has increasingly brought flying-foxes into contact with people. It may look as though they are becoming more abundant, but recent estimates of the vulnerable grey-headed flying-fox show no evidence of any increase in their population.

Three major flying-fox camps developed in the Upper Hunter between 2015 and 2018 at Aberdeen, Scone and Murrurundi. The Aberdeen Flying-fox camp developed in riparian vegetation along the Hunter River and adjacent to an equine facility. The camp had been used intermittently since 2010, however in 2015 flying-fox numbers increased to an estimated maximum of 3,000. It should be noted that numbers have not reached this level at the Aberdeen camp since this time. Flying-foxes were first noted in the south western residential area of Scone in 2016 (predominantly in Hill Street, Kingdon Street and the Scone Golf Course). Flying-foxes established a camp at Murrurundi on the Pages River in April 2017 which reached an estimate maximum of 100,000. The land occupied by the Camp is predominantly managed by Council, although it does impact private residences and the primary school. The development of these camps has presented challenges to residents and land manager in terms of noise, odour and a perception that flying present a health risk.

Response

The Council has worked with the Office of Environment and Heritage, Hunter Joint Organisation of Councils, residents and experts to develop flying-fox camp management plans for Scone-Aberdeen and Murrurundi (UHSC, 2017a and UHSC 2017b). These plans seek to:

- better understand the effects of and mitigate direct negative impacts on local residents
- educate and better inform local communities about the importance and benefits of flying-foxes
- conserve and protect, as required by law, flying-foxes and their habitat.

3. Local Environmental Planning Instruments

3.1 Upper Hunter Local Environmental Plan 2013

The Upper Hunter Local Environmental Plan 2013 was published in the NSW Government Gazette on 3 December 2013. This was prepared in accordance with the Standard Instrument (Local Environmental Plan) Order 2014. It includes a number of local provisions that specifically aim to improve the environment of performance of developments in relation to terrestrial biodiversity, groundwater vulnerability, riparian land and watercourses and drinking water catchments.

3.2 Upper Hunter Development Control Plan 2015

The Upper Hunter Development Control Plan 2015 was adopted by Council on 4 June 2015. This provides greater detail on the implementation of the LEP and responds to a range of environmental issues that can potentially arise from developments. Part 11 of the DCP specifically relates to protecting the natural environment. It covers areas such as tree preservation, biodiversity, riparian land and watercourses, groundwater protection, drinking water catchments, soil and water management, on-site waste water management, waste minimization and management, and buffer areas. Council is in the process of reviewing the DCP which will entail of additional chapters including one on sustainability, and provisions enabling a more targeted approach to urban salinity.

4. Environmentally Responsible Services

4.1 Advisory

Council provides advice to developers and landholders on how to undertake development activities in a way that protects the built and natural environment.

4.2 Assessment

Council undertakes assessment of development applications pursuant to the Environmental Planning and Assessment Act 1979. This involves consideration of the likely environmental impacts of developments.

4.3 Regulatory

The Council carries out a range of regulatory and compliance activities in relation to the Environmental Planning and Assessment Act 1979, Protection of the

Environment Operations Act 1997 and Local Government Act 1993 which are aimed at the protection of the built and natural environment.

5. Caring for our Environment and Providing a Sustainable Future

5.1 Clean Up Australia Day

Organised or supported Clean Up Australia Day activities in Scone.

5.2 Sustainable Living

Council became a partner of Climate Clever, which provides an app that is usable by households, schools and business that supports environmental improvements. Council also runs initiatives such as Water Night.

5.3 Supporting Community Projects

Council is supporting community efforts at introducing a community nursery at Merriwa and a community garden in Scone.

6. Climate change

Climate change and the global heating is anticipated is expected to result in new climate trends in the Upper Hunter in relation to temperature, hot days, cold nights, rainfall and fire weather. Goal 3 (CS12) of the Upper Hunter Community Strategic Plan is to: “ensure that all actions, decisions and policy response to natural hazards and climate change remain current and reflect capacity, Community expectations and changes in environmental and climate change information”. During the reporting period Upper Hunter Shire Council declared a climate emergency, followed by setting a target of being carbon neutral by 2030. A corporate greenhouse gas inventory was completed. A climate change strategy was developed and adopted in 2021.



7. Heritage

The LGA's rural areas contain many sites of heritage significance. There are also landscapes with scenic and cultural values, which provide important social and economic benefits. Part of the protection of rural character relates to environmental amenity, including maintaining air quality and a quiet acoustic environment.

The need to conserve the Upper Hunter rural area's built heritage is important for tourism and maintaining identity and cultural history. Approximately 250 heritage items and 5 heritage conservation areas (Merriwa, Cassilis, Murrurundi, Scone West, Scone Central) are currently listed in Schedule 5 of the LEP.

The Aboriginal Heritage Management System is maintained by the NSW Government, and is subject to confidentiality policies to protect sites. It identifies at least 488 sites of Aboriginal significance in the LGA, most of which are located in rural areas. There is also potential for many more to be identified.

7.1 Cultural Heritage

An Upper Hunter Shire Aboriginal Heritage Study was completed in 2019. The Study includes a thematic history of the Aboriginal people of the Upper Hunter, identifying places and areas of heritage significance, by consulting with the community, Land Councils and other Aboriginal groups, historical societies and museums. The Study provides a record of Aboriginal Heritage in the region and enables Council to better manage Aboriginal sites and places and provides a protocol for ongoing Aboriginal community liaison.

7.2 Local Heritage Assistance

Fund Program

The Local Heritage Assistance Fund was established by the Upper Hunter Shire Council with the aid of a grant from the New South Wales Heritage Office. The grants have been established to conserve the heritage of NSW for the enjoyment and benefit of current and future generations. This is undertaken by assisting in identification, conservation, interpretation, management and promotion of heritage items.

7.3 Heritage Advisor

The Council engages the services of a heritage advisor to provide input into development applications and other activities that may impact on heritage items and heritage conservation areas. The program also provides scope for identifying and cataloguing new heritage items and providing advice on how Council can best manage its own heritage listed properties.

7.4 Heritage Committee

The Heritage Advisory Committee was established to ensure that there is an open forum for effective and productive communications between Council, the Committee and the Community in relation to heritage issues. The key function of the Committee is to support Council's Heritage Advisor in relation to preparing, supporting and reviewing Council's Heritage Study.



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