

State of the

Environment

Report

2011/2012



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1. Introduction

1.1 Purpose of State of the Environment Reporting

Council's responsibility to produce an annual State of the Environment Report (SoE) directly reflects the increasing accountability of local government to manage and protect the environment. This not only relates to the efforts of Council's themselves but also refers more importantly to the role of local communities to make choices and decisions that will restore and sustain the environment and maintain a high standard of living.

SoE reporting provides a means of giving the community easily understood & readily available information about the local environment and about impacts on that environment.

It also provides a public account of the activities of government, industry and the community in efforts to protect and restore the environment.

1.2 The 2011/2012 State of the Environment Report

This State of the Environment Report prepared by Gwydir Shire Council covers the period 1 July 2011 to 30 June 2012.

In accordance with the Local Government Act 1993, the 2011/12 State of the Environment (SoE) Report is a supplementary SoE to provide additional information to support the comprehensive reported completed for the year 2008/2009.

This year's supplementary report provides updates on key theme areas arising in the preceding 12 months. Any measurable changes in the state of the environment, pressures on that environment and the responses in place to address these pressures will be reported on.

The key theme areas for SoE reporting have not changed and are:

- ◆ Biodiversity
- ◆ Land
- ◆ Air
- ◆ Water
- ◆ Waste
- ◆ Noise
- ◆ Aboriginal Heritage and Non-Aboriginal Heritage.

The drought conditions from the previous years gave way to flooding and heavy rains in the start of 2012. Coming out of the flooding the later part of the year the general state of the environment in the Shire has improved markedly.

1.3 Shire Profile

Location:

Gwydir Shire is located in North West New South Wales within the North West Slopes and Plains region.

The Shire covers an area of 9122 sq km and has a population of approx 5425 people. The northern part of the Shire almost touches the NSW/Queensland border, while to the east it is bounded by Inverell, Guyra and Uralla Shires, to the west by Moree Plains and Narrabri Shires and to the south by the Tamworth Regional Council.

The Shire has a number of urban areas at Warialda, Bingara, Gravesend, Warialda Rail, North Star, Croppa Creek, Coolatai and Upper Horton.

Gwydir Shire draws its name from the Gwydir River which is the main water course of the southern and central areas of the Shire. Bingara is situated on the Gwydir River whilst Warialda on Reedy Creek, one of the larger head water tributaries of the Gwydir.

Population:

The population of the Shire for the reporting period is detailed in the following. This has been compared against historical Australian Bureau of Statistics data and regional New South Wales.

Location	Population	% Change
NSW	6917656	5.6%
Gwydir	4965	-8.48%

Gwydir Shire has two towns Bingara – population 1093 and Warialda – population 1120 and seven villages, Warialda Rail - population 201, Crooble, Coolatai, Gravesend - population 322, Upper Horton- population 207, Croppa Creek and North Star - population 423. With the exception of Warialda Rail all of these villages are relatively remote from the two main towns. This leaves approximately 1599 people distributed throughout the remainder of the Shire.

The Shire is located within the Border Rivers and Gwydir Catchments and is part of the Border Rivers, Gwydir Catchment Management Authority.

Figure 1: Gwydir Shire boundaries.

Gwydir Shire Council

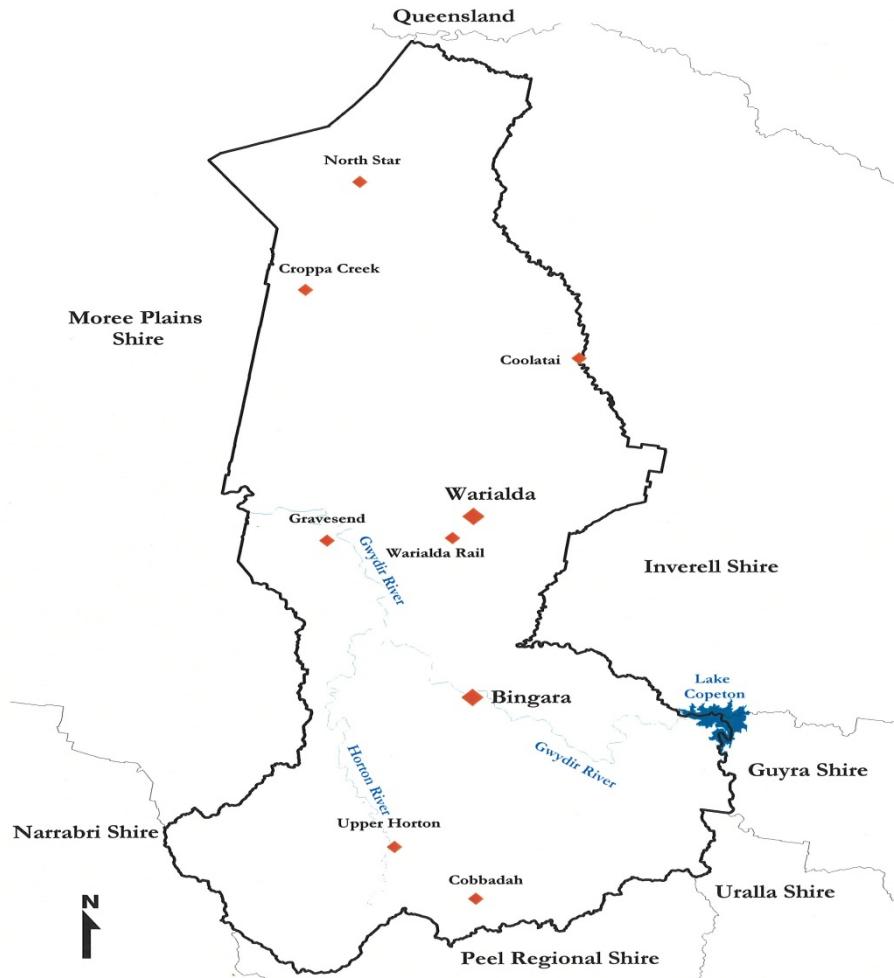


Figure 1: The Gwydir Shire Council boundaries incorporating both the Gwydir and Border Rivers Catchments.

Land Use:

The major land use in the Shire is agriculture with the main source of income being beef, sheep and cropping. The slopes around Bingara and Warialda are generally a mixture of grazing on native grasses with some small areas of grazing on improved pastures and crops. While large sections of cropping occur in the north western section of the Shire, which is characterised by flat black earth soils. Figure 2 below provides a more in-depth look at the Shire's broad soil types.

Landholders have started to diversify their agricultural pursuits from the common, beef, sheep & crops to intensive livestock industries such as piggeries, aquaculture, horticulture, olives and seed oils such as sunflower and linseed.

The urban area only comprises a small proportion of the total shire area.

Figure 2- Gwydir Shire Council soils map

Gwydir Local Government Area - Broad Soils

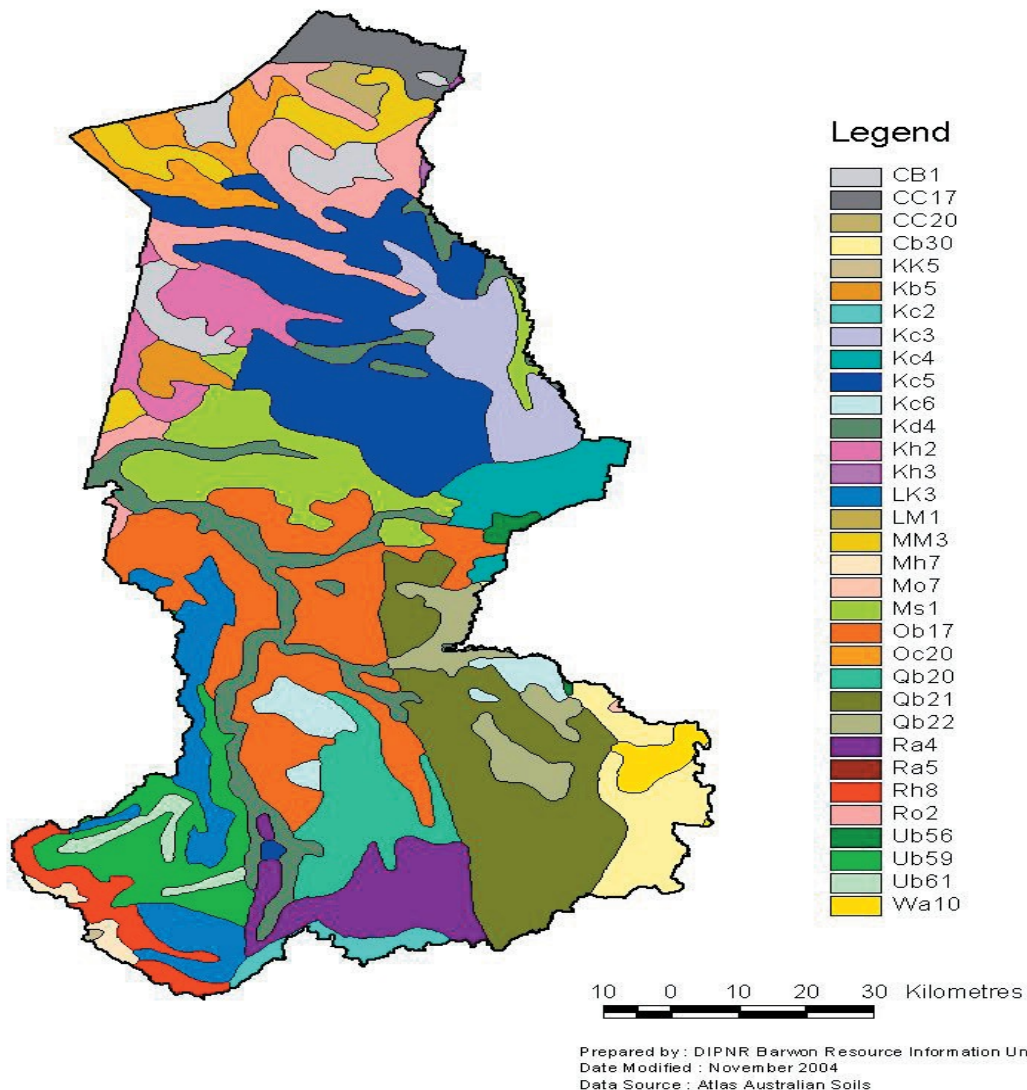


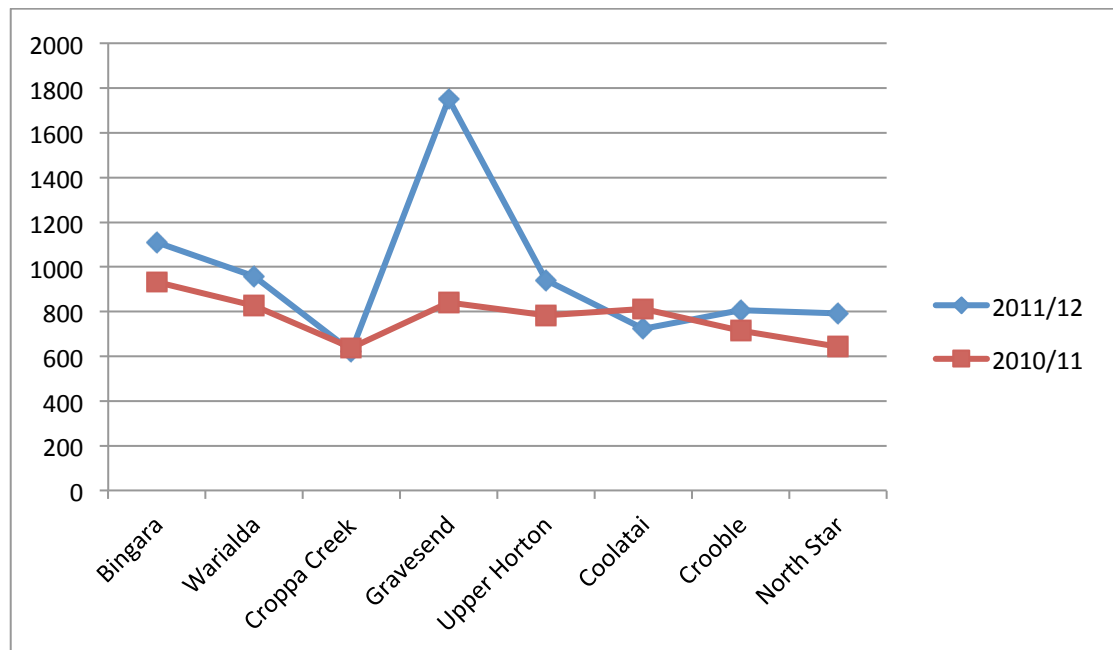
Figure 2- Gwydir Shire Council soils map- soil type descriptions are found in Appendix 1.

Climate: The climate over the district is strongly influenced by the topography and elevation of the area.

Council has installed 2 weather stations in the townships of Bingara and Warialda adjacent to the sewage treatment facilities. These stations monitor the following parameters:

- Rainfall
- Temperature
- Wind speed and direction
- Relative humidity &
- Solar radiation.

Rainfall across Gwydir Shire LGA showing variations over two years



Upper Horton missing July, August, December data 2011/12
 North Star missing August Jan May June data 2010/11
 North Star missing September data 2011/12

Demographics:

The Shire has a population of 4965 spread across the two towns Bingara – population 1093 and Warialda – population 1120 and seven villages, Warialda Rail - population 201, Crooble, Coolatai, Gravesend - population 322, Upper Horton- population 207, Croppa Creek and North Star - population 423. With the exception of Warialda Rail all of these villages are relatively remote from the two main towns. This leaves approximately 1599 people distributed throughout the remainder of the Shire.

Employment:

Employment in Gwydir Shire is based on the rural enterprises in the district and tourism operations. Council is also a large employer itself.

Ecologically Sustainable Development (ESD) strategy

Ecologically sustainable development allows council to treat the economy, the environment and social issues in a connected way, without having to separate them artificially. The Commonwealth of Australia (1992) has defined 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’.

In simple terms, ESD is about meeting the needs of the present without sacrificing the ability of future generations to meet theirs.

The simplified broad objectives of ESD include:

- Recognising and addressing the needs of everyone, including future generations;
- Careful use of natural resources;
- Protection of the environment;
- Being cautious in activities which may harm the environment; and
- An economic system that achieves the above objectives while supporting development.

The implementation of specific actions is the responsibility of everyone and as such relies on input and involvement from across all Government Departments and the Community as a whole.

In the past, Council's implementation of ESD as a custodian and trustee of public assets has been informal and adhoc. This is not to say Council had done nothing. There are many good examples of sustainable changes which have been made to activities undertaken by Council and this continues in a more structured way.

Council continues to ensure that its public works program is undertaken in a manner to have the least impact on the environment. The following Council programs aim to preserve, protect, restore and enhance the environment:

- Improvement of waste disposal depots through attendants, fencing, improved maintenance, including compaction, cover and better signage;
- Expansion of the kerbside recycling pick-ups for the residents of the shire in Bingara and Warialda and the commencement of a service in Croppa Creek, and expansion into Gravesend, Warialda Rail and North Star.
- Continuing the use of drop off sites at the village landfills to recycle scrap steel, green waste, batteries, glass, paper, cardboard, plastic and aluminium cans; and
- Implementation of the Storm Water Management Plans.
- Council implementing energy reduction across the organisation and planning to switch to a predominantly solar powering of the site using the most energy

Gwydir Shire is a member of the Northern Inland Regional Waste (NIRW), which is a group made up from Council's across New England and North West that develops and implements waste management programs on a regional level.

The programs that this Council participates in are:

- DrumMuster program – for the collection and recycling of used chemical drums;
- Chemical Collection program – for the collection of hazardous farm and household chemicals;
- Waste Oil Collection – Council has three Waste Oil Collection facilities at Bingara landfill, Warialda and North Star depots for residents to use;
- Scrap Metal recycling; and
- Green Waste chipping and composting
- Trash and treasure buyback centre
- partnering with mobile muster and cartridge muster.

Council continues to work in partnership with the Border Rivers Gwydir Catchment Management Authority, the Upper Gwydir Landcare Association and other Landcare groups like Warialda Rivercare Committee to restore and rehabilitate degraded sections of Crown Land alongside the waterways within the Shire.

Biodiversity:

Biodiversity is the term used to describe the variety of organisms (plants, animal, fungi and microbe), the genes they contain and the ecosystems they form. There are numerous and complex relationships present between living entities and the environment. These relationships provide the interconnecting web or fabric, which supports all life.

Whilst biodiversity is threatened by a range of processes within Gwydir Shire there are many significant projects being implemented to restore these ecosystems. The removal of threatening factors such as noxious and environmental weeds and the reintroduction of native vegetation through Landcare projects will assist in the re-establishment of viability and diverse ecosystems in Gwydir Shire.

Alex Dudley provided the following information which was well suited for inclusion in the Biodiversity section of this report. Appendix 3 is also a list of species Alex has observed within a 5km radius of Coolatai.

The lack of baseline information on flora and fauna for much of the Shire (as evidenced by the lack of fauna records in the NSW Wildlife Atlas) makes producing accurate "State of the Environment" reports with any value for monitoring difficult to say the least.

In many regards the Shire is very diverse - it includes fauna and flora elements of the

- Nandewar Bioregion,
- Darling Riverine Plains Bioregion
- Brigalow Belt South Bioregions.

As a consequence there are many species that occur in the Shire at the northern, southern, eastern or western edge of their distributions and makes Gwydir Shire a prime bird watching area. However, the native bushland has been seriously fragmented, that fragmentation continues and the waterways have suffered reduced flow rates.

The threats to biodiversity in the region are many; some of the major threats are listed below.

Land clearing

Land clearing laws have slowed but not stopped the amount of land cleared for agriculture in the region. Managing land already cleared for long-term sustainability is vital for the future of the region. Encouraging landholders to take up training in land management courses offered through the CMA is vital in this regard.

Firewood collection

Unregulated firewood collection is a serious threat to many species including woodland birds, possums, frogs and reptiles. Fallen timber is broken down by insects and other organisms, effectively returning carbon to the soil while providing homes and shelter from predation for a variety of species. The physical barriers presented by fallen timber to the trampling of cattle are one of the few defences to the species that live and forage in leaf litter such as Speckled Warblers and the endangered Five-clawed Worm Skink. Termites and other soil dwelling organisms aerate the soil and allow water to penetrate. If the fallen timber is removed trampling by cattle or sheep compacts the soil, killing these organisms and instead of the water penetrating the soil it washes over the top, taking with it loose particles and leaf litter (sheet flooding).

Removal of firewood reduces biodiversity, increases erosion, reduces water retention in the soil, and reduces soil carbon (therefore soil health) and thus soil productivity. The burning of firewood at home releases carbon dioxide into the atmosphere.

Overgrazing, or grazing in sensitive environments

Whilst much of the most severe overgrazing occurs on private land in times of drought, when native plant and animal populations are at their most vulnerable, and most likely to be restricted to Council reserves is when stock are most likely to be placed in these areas. It is imperative that representative areas of all vegetation communities within the shire remain off limits to stock at all times for the future maintenance of biodiversity.

Pollution and degradation of waterways

Many of the waterways in the Shire have undergone serious environmental degradation. Ottley Creek, which represents part of the boundary between the Gwydir and Inverell Shires, has a number of ongoing environmental issues, including unregulated access to its banks by stock, leading to erosion of the banks, the spread of weeds and the fouling of the water. A number of invasive and noxious weeds occur along the banks including but not limited to Noogoora Burr, Willows and Cats Claw Vine.

Invasive species of plants

Coolatai Grass is presently taking over large areas of the Shire. This and other invasive grass species (such as Buffel Grass) can substantially impact biodiversity in a number of ways. Because of the densities of these grasses the amount of sunlight reaching the substrate is limited, reducing basking opportunities for many small reptiles. Other issues with these grasses include displacing native ground-dwelling plants and more seriously, increasing the intensity of any fire that might pass through. Annual burning which takes place out of necessity in some areas of Coolatai Grass has knocked out fire-sensitive species of plants. In many areas of Australia, Buffel Grass has reduced native vegetation substantially.

Invasive species of animals

Pigs and foxes cause substantial damage to agriculture and native wildlife. In relation to biodiversity, other invasive animal species are also causing problems in the Shire. While foxes are probably the most serious threat to small to medium-sized terrestrial vertebrates and ground-dwelling birds, cats, both feral and domestic also cause serious damage to the environment. "Wild dogs" are regarded as a major agricultural issue and are indiscriminately killed without regard for the role that dingos play in the ecology - especially the role of controlling foxes and cats. Studies have demonstrated that dingos left to their own devices have a tightly controlled pack system restricted to a territory and it is individual dogs, usually rogues that cause problems with stock losses. Targeting the specific dogs is much more effective at limiting stock losses than the blanket baiting which is regarded as politically expedient.

Common Mynahs are appearing in increasing numbers. These birds, along with Starlings, are a major threat to any other hollow-dwelling animal including Parrots, Insectivorous Bats and Sugar Gliders. Their impact on bird diversity is severe. A trapping program could be instigated to stop the spread of these birds.

Big-Headed Ants (also known as Coastal Brown Ants *Pheidole megacephala*) are a serious domestic nuisance. These ants are regarded as a noxious pest in other Australian states because they threaten biodiversity. Feral Honeybees are also a threat to the pollination ecology of a number of plants and compete directly with native nectar feeding birds such as Swift Parrots and Regent Honeyeaters. Greater controls on feral colonies would increase yields from responsible Apiarists and reduce the pressure on native pollinators.

Inappropriate fire regimes

A number of the reserves in the region are operated by NPWS who lack the staff numbers to undertake fuel reduction or habitat management burns. More habitat management burns would lead to a greater diversity of plant communities and could protect threatened communities such as Dry Vine Thickets. Cypress Pine identified as a Woody Weed, can be controlled with fire as it would have been during the period prior to European Settlement (Alex Dudley, 2009 Council correspondence).

Regional Weed Management

During 2011/12, Gwydir Shire Council continued to operate its own weeds control program. Council's program is committed to reducing the negative impact of noxious and other environmental weeds on the local economy, community and environment.

To facilitate operational and publicity issues covering Shire, the Weeds Unit has two full time authorised weeds officers. They conduct, to the limit of available resources, roadside surveillance and treatment programs throughout the Shire to prevent the introduction of new weeds species and to control the numbers and minimise the spread of weeds already present.

In conducting its weed control coordination program Council seeks to identify existing and potential weed problems of major significance to agriculture, human welfare, amenity and biodiversity. It coordinates the approach to weed management by all stakeholders and enhances cooperation between Council, State Authorities, Corporate and Community sectors. The weed program raises the profile of weeds as a major environmental management issue and engages and educates the community wherever possible, eg local agricultural shows.

During the reporting period a total of 1133 property inspections were undertaken. Cooperation was received from landholders, however, due to the drought a number of properties were found to be abandoned and weeds were uncontrolled and spreading beyond boundaries. Owners in some cases were not able to be located, and therefore additional spraying was conducted to control the weeds. In addition extra monitoring was factored into the officers work schedules.

Council continued to pursue its policy of promoting weed awareness at every opportunity. The publicity program has led to a higher level of weeds awareness throughout our rural community and resulted in more landholders taking a greater interest in controlling weeds on their lands. Council is a partner in the North West Weeds website: www.northwestweeds.nsw.gov.au

Weeds are dealt with on a priority basis, with particular attention being paid to St John's Wort, African Boxthorn, Galvanised Burr, Bathurst Burr, Green

Cestrum and Pathenium Weed. Another weed, Mimosa Bush (*Vachellia Farnesiana*) was also heavily targeted throughout the year.

Council in partnership with Moree Plains Shire Council, Inverell Shire Council and the Border Rivers Gwydir Catchment Management Authority have established the *Harrisia Cactus* containment line to slow the spread of this invasive species further into NSW from QLD. Council works with affected property owners to control *Harrisia Cactus* on their properties including providing funding from the \$30,000.00 provided by the Border Rivers Gwydir Catchment Management Authority.

Gwydir Shire Council's private property inspection program aims at increasing public awareness of noxious weeds in general and to encourage all occupiers of private land to adopt and implement effective weed management plans to:

- (a) Reduce the local environmental impact of weeds;
- (b) To improve the value and sustainability of their land; and
- (c) To ultimately meet specific requirements imposed by the Noxious Weeds Act 1993.

Inspection and extension activities takes into account the ever-present risk of new weed incursions through movement of motor vehicles, machinery, animals, environmental conditions and climate change where extreme changes to weather patterns increase risks. The work involves regular inspections of local nurseries, saleyards, abattoirs, road side rest areas, feedlots, railway corridor vegetation, grain handling facilities, riverside reserves, and waste facilities.

Main weeds and areas targeted during 2011/2012

- African Boxthorn in Bingara, Upper Horton, Riverview, Pallal, Gravesend and Warialda areas;
- Bathurst Burr generally shire wide but particularly in the Warialda area;
- Blue Heliotrope in Bundarra, Cobbadah, Upper Horton, Gineroi & Bingara areas.
- Common Pear in the North Star and Warialda areas;
- Galvanised Burr in the Gravesend, Elcombe, Gineroi, Bingara and Warialda areas;
- St John's Wort in Bingara, Barraba, Gineroi, Upper Horton, Riverview and Pallal areas;
- Green cestrum mainly in the Gravesend area with spot areas in Barraba, Bingara, Upper Horton and Warialda;
- Blackberry in small amounts in the Bingara, Copeton and Bundarra areas
- Harissa Cactus mainly in Boonal and North Star areas;
- Paterson's curse in Barraba, Horton, Bingara, Gravesend, North Star, Bingara and Warialda;
- Mimosa bush in Gravesend and Warialda;

- Mother of Millions in North Star, Warialda, Gravesend and Bingara areas;
- Sweet Briar in the Barraba, Bingara and Bundarra areas;
- Tiger Pear in the Warialda, Barraba, Bingara and Gravesend areas
- Tree pear in Warialda and North Star areas;
- Noogoora Burr monitoring in the Bingara, Coolatai, Barraba, Upper Horton, Narrabri and Warialda areas
- Parthenium weed, although inspections for Parthenium weed are carried out mainly in the Bingara, Croppa Creek, North Star and Warialda areas, the Gwydir Shire has only two known Parthenium weed infestations. Both are small infestations and have been treated appropriately. Constant monitoring of the sites are conducted to ensure control.

Gwydir Shire Council participates in the following weed control plans and policies:

State Weed Plan	Regional Weed Plans	Local Weed Plans
Parthenium weed	African boxthorn	Paterson's curse
	St John's wort	Johnson grass
	Green cestrum	Rope pear
	Silverleaf nightshade	Prickly pear
	Mother of millions	Sweet briar
	Blue heliotrope	Galvanised burr
	Blackberry	Mimosa bush
	Harissa Cactus	Tiger pear
		Velvety tree pear

Noxious Weeds - Customer service requests received for the period:

Bingara	Upper Horton	Warialda	other
9	2	2	1