

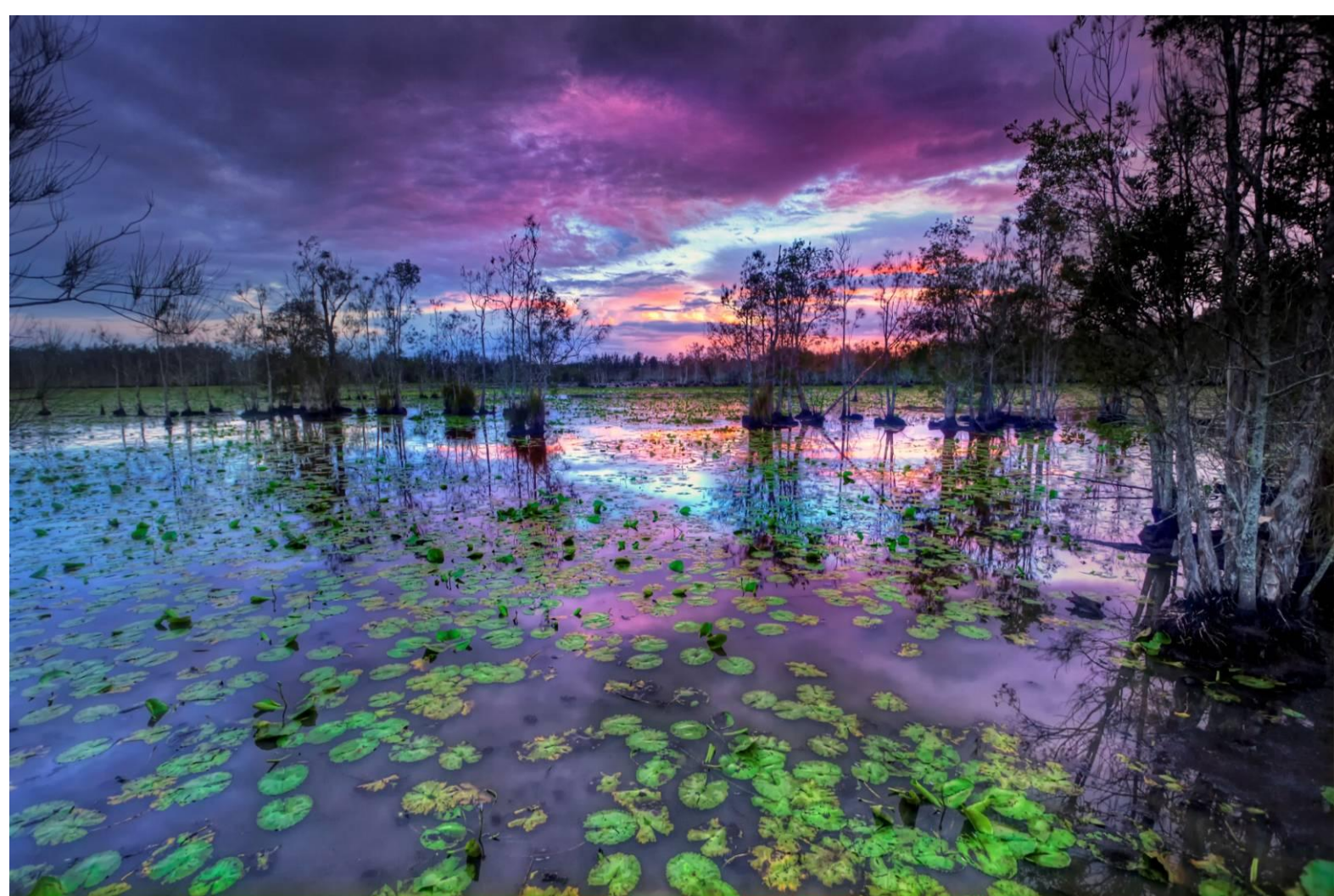


Greater Taree
City Council

Cattai Wetlands

Future Directions Strategy

Adopted May 2014



Cattai Wetlands Future Directions Strategy

May 2014

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1 SETTING THE SCENE

1.1 Background and Purpose of this Future Directions Strategy

Future Directions Strategies, Plans of Management and similar documents are developed to describe and guide the future management of Council-managed places – such as a bushland reserve, wetland area, park or sportsground. They are prepared in conjunction with the community, and act as direction-setting documents. They act as an agreement between a Council and the community, as to how a place is to be managed, its values protected and, where appropriate, how an area is to be enjoyed or used. They typically identify values, current land management operations, uses and activities and set out future management directions – including management operations and approved visitor uses, activities and developments (including leases and licences).

The *Local Government Act 1993* requires Councils to prepare a Plan of Management for areas classified as “Community Land” – that is, land a local government body owns and manages on behalf of and for the benefit of the community.

The Cattai Wetlands are classified as “Operational Land” and the preparation of a Plan of Management is not a mandatory requirement of the *Local Government Act* for Operational Land. However recognising the values and community significance of the Cattai Wetlands, and the need for a direction-setting document for the management of this area, Greater Taree City Council prepared and adopted the original Cattai Wetlands Plan of Management in 2006.

This Future Directions Strategy is to supersede the 2006 Plan of Management. It has been developed in order to provide an updated management tool for the Wetlands and to enable community feedback to help guide the area’s future management.

1.2 How Council Prepared this Future Directions Strategy

The current Cattai Wetlands Plan of Management was prepared in 2005 and 2006, and was formally adopted by Greater Taree City Council in March 2006.

Some of the actions recommended in the current Plan have been achieved or partially achieved, others may no longer be relevant, and/or were unable to be funded or otherwise remain unrealised. An audit of the 2006 Plan of Management’s implementation to date is provided at Appendix A.

Council’s management efforts at the Wetlands to date – as guided by the 2006 Plan of Management – have focused on achieving water quality improvements, floodplain management, weed control and habitat enhancement (as described further in Section 2.3). Council has also developed a limited range of visitor facilities and, since January 2013, has opened the area to general visitor access enabling the local community and tourists to

experience and enjoy the Wetlands. Between 2009 and early 2013 visitor access to the Wetlands was limited to approved uses or events only, prior to 2009 the Wetlands were not open to the public. This greater accessibility and use in 2013 has provided a valuable insight on how people would like to appreciate, use and enjoy the Wetlands.



Since adoption of the 2006 Plan, Council has also prepared and adopted the *Manning Valley Community Plan 2010-2030*. This represents the community's vision for the Greater Taree City Council area and guides all of Council's policies, strategies, plans and subsequent actions. The Cattai Wetlands Future Directions Strategy must align with the relevant objectives of the *Manning Valley Community Plan* and ensure that the area's management remains consistent with the community's expressed values and preferences.

Greater Taree City Council considered that it is therefore time to review the current Plan and its management directions for the Cattai Wetlands – to ensure these remain faithful to the current and future desires and needs of the community, as well as being consistent with Council's management capacity and resources.

Preparation of this Future Directions Strategy was made possible with funding provided by the Australian Government through the "Caring for our Country" initiative. Council engaged Sydney-based firm Gondwana Consulting to assist in this Future Directions Strategy's preparation.

Council's intention in preparing this Future Directions Strategy is to consolidate and build on past gains in the environmental management and quality of the Cattai Wetlands. The Strategy will guide Council in both the area's day-to-day or operational management as well as longer-term aspirations for the site. It will also identify how to make the Wetlands more accessible for the community to enjoy and appreciate and, if possible, assist in realising ecotourism or economic benefits.

This Future Directions Strategy has been prepared based on:

- previous reports and studies, and other available data, regarding the Wetlands;
- specialist studies of the Wetlands' flora and fauna values, the management of acid sulfate soils and water quality issues, and an Aboriginal cultural heritage assessment of the central area of the site – which were undertaken specially for this project (as discussed further in Section 2.2);
- on-site evaluations of the entire Wetlands property – including the area's values, issues, current management and use, and potential management directions – and a detailed constraints and opportunities assessment of the site (as included in Appendices K and L);
- community consultation (as summarised in Section 4.2 and described in Appendix J);
- consultation with Greater Taree City Council's planning, environmental and management staff;
- a review of the Wetlands' regional conservation context; and
- an overview of comparable/competing nature-based visitor destinations in the surrounding region.

1.2.1 Community Comment

Council believes that community involvement is central to the preparation of the Cattai Wetlands Future Directions Strategy to ensure that the Strategy responds to community values, attitudes and desires for the area and its future management.

Community comment was sought on the draft Future Directions Strategy to receive feedback on both the general directions and particular management actions proposed for Cattai Wetlands, which helped to finalise the Strategy.

1.3 Land Covered by this Future Directions Strategy

This draft Future Directions Strategy applies to the Cattai Wetlands, an area of approximately 509 hectares north-east of Coopernook – as shown in Figure 1. The land is owned and managed by Greater Taree City Council, and classified as Operational Land under the *Local Government Act 1993*.

The Cattai Wetlands were originally acquired by Council, with the support and agreement of the area's former owner Mr John Hogg, in August 2003. The Wetlands originally covered approximately 486 hectares. A parcel of privately owned land adjoining the north-east of the Wetlands was purchased by Council in 2009, bringing the Cattai Wetlands to their current extent and total area of approximately 509 hectares – as shown in Figure 2.

The individual land parcels that make up the current Cattai Wetlands, and to which this Future Directions Strategy relates, are listed in Appendix B. The Wetlands include several Crown road reserves, the ownership and management of which is also vested in Council with these areas also making up part of the Wetlands.

The Cattai Wetlands are classified as "Operational Land" (rather than "Community Land") under the *Local Government Act 1993*. Operational Land is typically land which is used by a Council in carrying out its functions, such as a Council works depot or garage, and is not generally open to the public or may be land held by a Council as an asset or for investment

purposes. Operational Land can be more simply sold, leased or licensed, or alienated by some other means than can Community Land.

A Future Directions Strategy (or a Plan of Management) is not mandatory to guide a Council in managing or using Operational Land. However, as indicated above, Council considers a Future Directions Strategy to be a valuable tool in its management of the Wetlands.

1.4 Structure of this Future Directions Strategy

The *Local Government Act* sets out specific requirements for the content and structure of a Plan of Management for Community Land. There are no comparable legislative obligations on the format of a Plan of Management, or comparable document such as a Future Directions Strategy, for Operational Land.

However this Future Directions Strategy is structured consistent with the layout of a typical park or bushland management plan, and is divided into the following 6 sections.

1. Setting the Scene
2. Site Description
3. Planning Context
4. Basis for Management
5. Management Directions and Actions
6. Implementation and Review

2 SITE DESCRIPTION

2.1 Cattai Wetlands – A Brief Overview

The Cattai Wetlands are located approximately 22 kilometres (approximately a 20 minute drive) north of Taree, north-east of the village of Coopernook and east of the Pacific Highway – as shown in Figure 1.

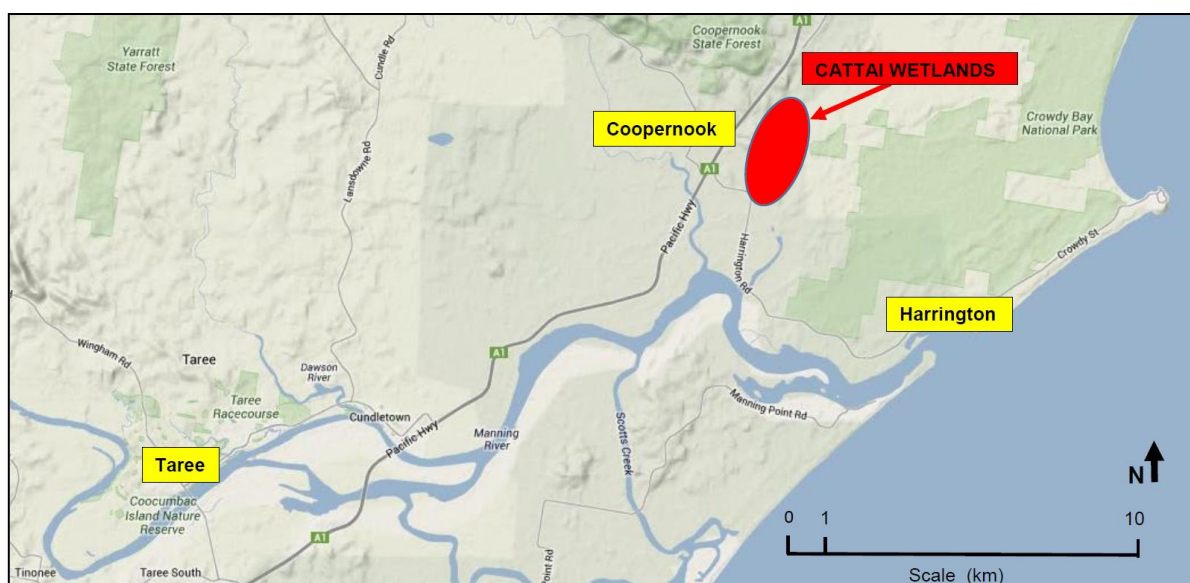


Figure 1 Location plan (base map source: Google Maps)

The Wetlands are owned and managed by Greater Taree City Council, and cover approximately 509 hectares, between Cattai Creek to the east and the Pacific Highway to the west (see Figure 2). The Wetlands include the lower reaches of Coopernook and Two Mile Creeks, as well as the Cattai Wetland Lagoon, however the site only abuts Cattai Creek at a single point. The area is accessed from the Pacific Highway via the unsealed Spring Hill Road. Harrington Road also touches the far south-west corner of the area. The greater part of the site is coastal wetland and floodplain, in varying stages of remediation and regeneration supporting a variety of vegetation communities. A band of elevated land, rising to 30 metres above the surrounding floodplains, occurs west of Cattai Wetland Lagoon and across the centre of the site (see Figure 2).

The Wetlands are part of the traditional lands of the Biripi Aboriginal People. The area is of continuing importance for members of the local Aboriginal community and contains a number of recorded Aboriginal heritage sites (both physical artefacts/sites as well as places with intangible cultural heritage value).

The first recorded land grants over the current Wetlands site occurred during the 1870s and 1880s. The site and surrounding areas were drained for cropping and later, as yields decreased, for grazing uses into the early 1900s. As well as the land clearing and on-going

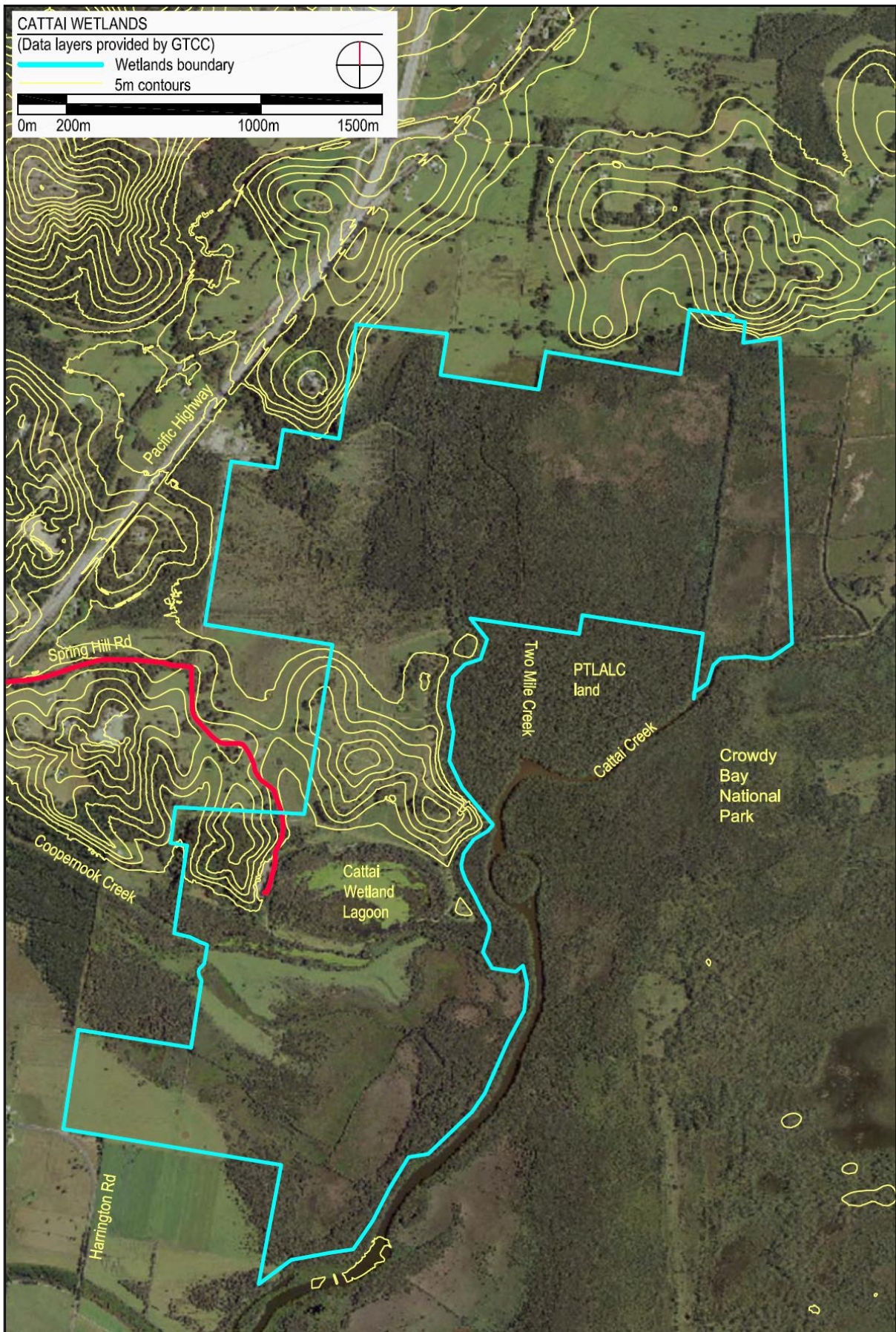


Figure 2 Cattai Wetlands site plan

wetland degradation caused by these activities, the drainage schemes later led to severe soil acidification and water quality issues. This generated adverse impacts on professional and recreational fishing and oyster production, as well as environmental values, in the Manning River system.

The “Cattai Wetlands Project” was established by Greater Taree City Council in August 2003 when a former farming property, which made up most of the current Wetlands area, was purchased by agreement from its owner Mr John Hogg. The project’s original aim was to improve water quality in the Manning River through wetland and floodplain remediation. The Cattai Wetlands are situated on the lower reaches of a major acid sulfate soil “hot spot”, in the Pipeclay Canal/Cattai Creek catchment (which includes the Big Swamp area upstream of the Wetlands on Cattai Creek).

The Wetlands also have a variety of significant conservation, heritage and landscape values. The area supports a range of vegetation communities, from freshwater wetlands to swamp sclerophyll forests, many of which are listed as endangered ecological communities. It also provides habitat for numerous species of threatened flora and fauna. As a regenerating natural landscape the Wetlands also serve as an important “stepping stone”, or link, in a regional wildlife habitat corridor between Crowdy Bay National Park in the east and the Lansdowne Escarpment to the west.

2.2 Site Description, Resources and Values

The following summary description of the Wetlands’ resources, attributes and values has been drawn largely from available information – such as published sources, public data bases and reports or information held by Council.

The existing information was supplemented by the following three specialist reports, undertaken specifically for the preparation of this Future Directions Strategy:

- *Review of Cattai Wetlands Plan of Management - Water Quality and Acid Sulfate Soils Review* (2013) prepared by PDA Services to provide specific advice on the past and recommended future management of water quality and acid sulfate soils within the Cattai Wetlands;
- *Greater Taree City Council Cattai Wetlands Review of Environmental Factors, Flora and Fauna* (2013), a literature review and “desktop” study (with no field surveys) of the known flora and fauna of the Cattai Wetland undertaken by oze ECO Management; and
- *Cattai Wetlands Aboriginal Cultural Heritage Values and Constraints Report* (2013) an assessment of the Aboriginal cultural heritage values of the central area of the Wetlands, undertaken by Virtus Heritage in collaboration with members of the local Aboriginal community and including an on-site heritage survey (parts of this report are confidential).

Information was also obtained through on-site observations and assessments of the Wetlands and discussions with the area’s managers.

2.2.1 Hydrology

The Cattai Wetlands are dominated by floodplain wetlands associated with Two Mile Creek, Coopernook Creek and Cattai Creek. Two Mile and Coopernook Creeks drain into Cattai Creek which then discharges into the Manning River.

The hydrology of the Wetlands, and the presence of actual and potential acid sulfate soils, has a significant impact on the water quality of both the site and Cattai Creek, and eventually the Manning River estuary. The quality of water within these latter areas is important for both environmental and economic reasons – water quality is of particular importance to the local recreational and commercial fishing industry, notably the local oyster industry.

The converging floodplains of Cattai Wetlands are separated by a central 800 metre wide ridge of 30 metres elevation. During flood events, the floodplain is subject to around 2 metres of inundation from local catchments and backflows from Cattai Creek and the Manning River. There is a series of natural and constructed drainage lines throughout the Wetlands, the constructed drainages being a legacy of previous land management practices and draining the land for grazing. Constructed drainage lines are also present within the lands adjoining the Cattai Wetlands, particularly within land to the north-east of the Wetlands, known as the Big Swamp.

Natural Drainage

The northern section of Cattai Wetlands forms the southern extent of the former “Great Swamp”. This was a natural detention basin for flows from Pipeclay Creek from the north and Two Mile Creek from the south. Construction of the Big Swamp Drainage Scheme, and the subsequent Two Mile Creek Drainage Scheme, greatly altered the hydrology of the former “Great Swamp” and Cattai Wetlands. Two Mile Creek did not have a well-defined channel connecting to Cattai Creek, prior to the Two Mile Creek Drainage Scheme, with flows previously being dispersed across the floodplain.



The upper catchment of Coopernook Creek has been cut off by the construction of the Pacific Highway and its water diverted to the Lansdowne River. Prior to this the water flowed from West Coopernook through an estuarine billabong and east to Cattai Creek. The lower reaches are believed to have been tidal, prior to alteration of the natural drainage within this area. Coopernook Creek now appears to be slowly infilling due to these reduced flows.



Currently, drainage from the south-east parts of the Cattai Wetlands is via constructed drains that discharge into Cattai Creek.

Constructed Drainage

The Cattai Wetlands forms the southern portion of the Big Swamp Drainage Scheme project area. The Big Swamp drainage scheme was constructed in the early 1900s (completed in 1903) with the aim for more productive agricultural use of the wetlands. The scheme began with the construction of Pipeclay Canal, an oversized channel to the north/north-east of the Wetlands. This was followed by the Two Mile Creek Drainage Scheme, which is believed to have been constructed pre-1920. The Cattai Creek Drainage Scheme was constructed

more recently, in the early 1980s. These drainage schemes have resulted in severe acid export into Cattai Creek and further into the Manning River.

Many of these drains and associated floodgates and levees are no longer in good working order. The effects of the drainage schemes however can still be felt. The following impacts were identified by the 2006 Plan of Management (page 10) as a result of the Two Mile Creek drainage scheme, they are a common impact of all constructed drainage within the wetlands:



- *dispersal of upland flows across the wetland have been interrupted and reduced;*
- *floodwaters are removed more quickly; and*
- *tidal waters are able to penetrate further into the wetland than was historically possible.*

Groundwater

Groundwater movement through the subsoil is known to be the main pathway for acidic products from acid sulfate soils into estuaries. Hydraulic conductivity testing was undertaken during the preparation of the 2006 Plan of Management. This testing was carried out in the south-east saltmarsh area of the Wetlands, soil hydraulic conductivity was extreme. However later testing in 2009, by the Department of Industry and Investment at four sites in this same area south of Coopernook Creek only returned moderate levels of hydraulic conductivity. Higher levels of conductivity allows for the rapid movement of acid groundwater to constructed drains. Tidal influences create a “pumping” action within the groundwater and in areas that have previously been drained, such as the floodplains of Cattai Wetlands; with the result that saline groundwater can be found further into the Wetlands than previously possible. Acid groundwater and iron/monosulfidic ooze that has accumulated in the drains can then be mobilised by tidal movement, allowing movement into the creeks and estuaries.

The installation of weirs and/or backfilling of drains has been found to be effective in immobilising acid groundwater flows. (Further discussion regarding the management of Acid Sulfate Soil is provided in Section 2.2.3).

2.2.2 Water Quality

The Cattai Wetlands directly affect water quality in the Cattai Creek estuary, and its local tributary creeks, and then the Manning River. Poor water quality was a major concern identified in the 2006 Plan of Management which cited earlier studies into water quality in Cattai Creek (Sonter 1999, and Dove 1998) which highlighted that:

- *acid in the Cattai Creek is a direct result of ASS drainage;*
- *rainfall events mobilize acid;*
- *most acid originates in the upper reaches of Cattai Creek and along Pipeclay Canal;*
- *iron and aluminium are regularly at ecologically unacceptable concentrations (for oysters, fish and prawns); and*
- *limited tidal influence results in poor mixing and associated stratification of acid fresh water over more dense seawater.*

The water quality of Cattai Creek, and at times the Cattai Wetlands, is also impacted by the water run-off from the Big Swamp, adjoining the north-eastern boundary of the site, with increased acid export into Cattai Creek and backflows into the Wetlands.

Since 2009, Council has collected limited water quality data at 3 locations in or adjacent to the Wetlands, as shown on Figure 3:

- *Cattai Creek (Site 1) – the only point where the Wetlands block (ie. the Council-owned land) abuts Cattai Creek;*
- *Cooperbrook Creek “Causeway” (Site 2); and*
- *Cooperbrook Creek (Site 3).*

A further water quality monitoring site is located upstream on Cooperbrook Creek, adjacent to the Roads and Maritime Services land, as also shown on Figure 3.

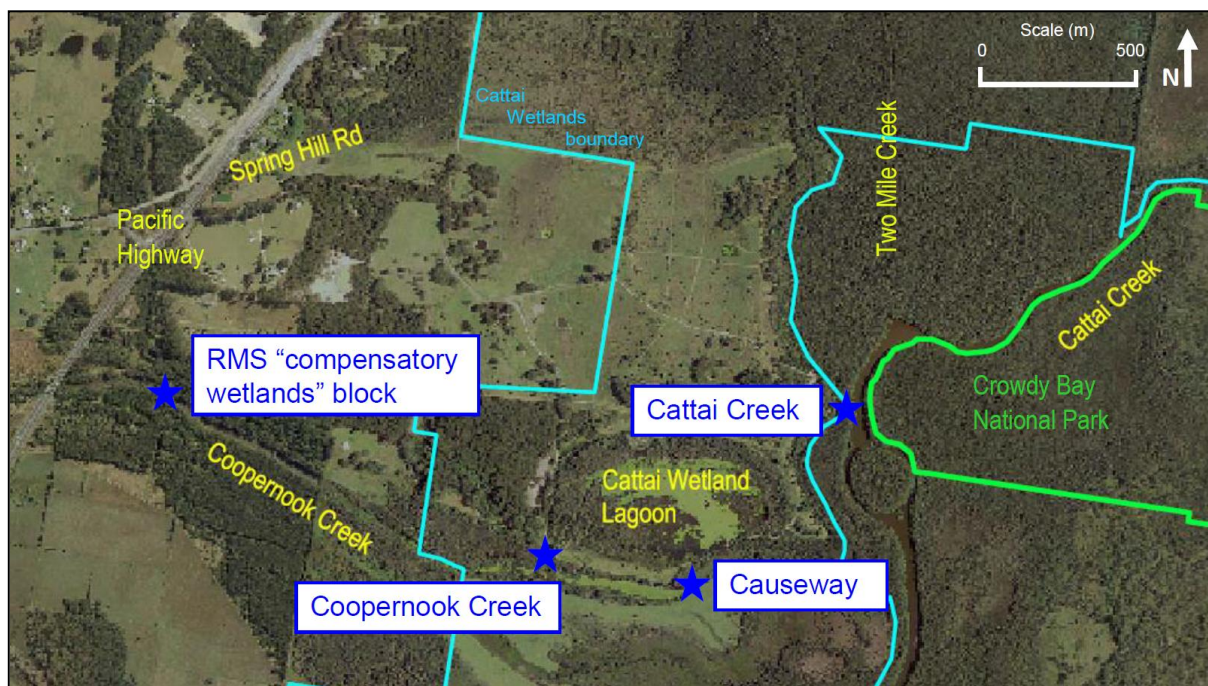


Figure 3 Water quality monitoring points

Two key parameters – pH and Dissolved Oxygen (DO) – have been evaluated at the three monitoring point sites to determine the water quality in and leaving the Wetlands. The acidity or alkalinity of water is indicated by its pH value. Estuarine waters generally have a pH range of 6.5 to 8.5 which is the preferable range for fish. Saturation levels of DO in estuarine waters generally lie between 6.5 mg/L and 9.0 mg/L. Decreases in DO can kill fish or cause environmental stress.

Data collected for these two parameters at the above three water quality monitoring points between January 2010 and December 2012, showed that pH and DO varied at each location during the survey period (details of this monitoring are provided at Appendix C). These varied results were considered to be due to varying rainfall, water levels and flows evident at these points. Overall the 2013 specialist water quality and acid sulfate soils report considered that no additional or specific management measurements, in addition to those warranted for acid sulfate soil management, were deemed necessary based on the results of

the water quality testing. However it was recommended that the ongoing water quality monitoring be continued and regularly recorded at the three existing on-site monitoring locations.

2.2.3 Acid Sulfate Soil and Water Quality Management

Acid sulfate soil (ASS) occurs naturally in estuarine and floodplain areas along the NSW coast. The soil is present below the water table, generally at elevations below 1 metre AHD. In its natural waterlogged state the soils pose no threat to the environment. Once the soils are exposed to air, and the sediments oxidise, sulfuric acid is produced. When water passes through these oxidised soils, the sulfuric acid (leachate) is exported as acidic water. Increased levels of aluminium and other metals can also be a result of the disturbance of ASS and be present in the leachate. ASS leachate can contaminate both surface and groundwater and can be toxic to flora and fauna.

Once disturbed, the ASS also have the ability to produce monosulfidic black ooze which is one of the most reactive acid products to enter estuarine waters. Monosulfidic black ooze was present within the Wetlands prior to the commencement of management actions from the 2006 Plan of Management.

The Greater Taree Local Environmental Plan 2010 maps the majority of the Wetlands in the higher risk (2a and 2b) classes for ASS risks – as shown on Figure 4. Cattai Wetlands, along with the wider Big Swamp area, has been identified (by the NSW Government [Tulau, 1999]) as an “ASS Hot Spot” due to the presence of actual ASS, acid scalds, and the impact of ASS on the Cattai Creek estuary and the Manning River.

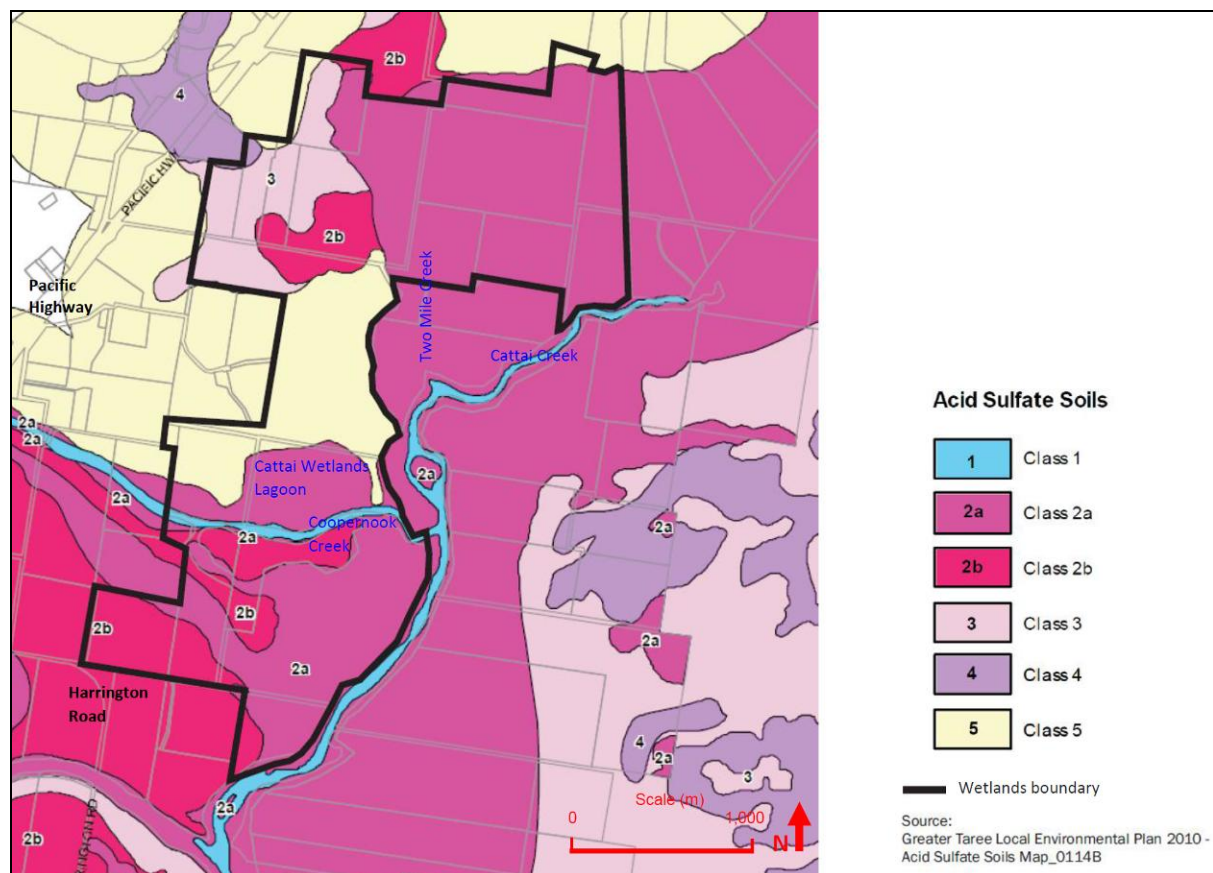


Figure 4 ASS classes for the Cattai Wetlands (source: Greater Taree Local Environmental Plan 2010)

Past land management practices and drainage of the Cattai Wetlands has resulted in the disturbance and exposure of ASS. ASS remediation was one of the main aims of the 2006 Plan of Management. The 2006 Plan confirmed previous observations about ASS and reduced water quality noting “ASS indicators” and that:

- *both the NE and SE ‘high risk’ areas have been ‘reclaimed for agriculture’ in the past via construction of levees, drains and floodgates;*
- *extensive acidification of the soil has occurred as a result of this drainage, but ongoing acid formation has been reduced by partial failure of the drainage infrastructure through the NE floodgate having been removed and the SE floodgates having partially failed;*
- *evidence of ASS is common on the low-lying surfaces and in drains as iron/monosulfidic ooze (dry/wet) and is prominent in much of the ASS landscape especially the lowest lying areas where vegetation is sparse and seasonal acid/salt scalds;*
- *the subsoil has an extremely high hydraulic conductivity (via macropores) allowing rapid movement of acid groundwater to constructed drains;*
- *tidal movement in constructed drains mobilises acid groundwater and iron/monosulfidic ooze accumulated in the drain.*



The Big Swamp, to the north of the Wetlands, is part of this larger ASS “hot spot”. At present, the Cattai Wetlands are impacted by acid export from the Big Swamp area. Improvement of water quality in Cattai Creek and the Manning River will depend on the reinstatement of the natural hydrology and wetland vegetation system within both the Big Swamp and the Cattai Wetlands. To this end Greater Taree City Council received a \$2 million grant in 2011 to undertake the Big Swamp/Cattai Wetlands project, to fund works to reinstate the natural hydrology of the area and accompanying coastal wetland vegetation to ultimately improve water quality in the Manning River.

ASS and water quality management works undertaken in the Cattai Wetlands to date, as guided by 2006 Plan of Management, are shown on Figure 5 and include:

- the flood gate on Two Mile Creek was made non-functional, and natural tree fall across the creek’s middle reaches has had the effect of creating temporary sills retaining water on-site and reducing the flow of potential acid water into Cattai Creek (the mouth of Two Mile Creek is considered too deep for simple or low-key sill or weir installation);



- the former flood gate south of the mouth of Coopernook Creek (fronting Cattai Creek) was removed and replaced by a sandbag sill on a drain south of the Creek's discharge point;
- temporary sandbag sills were installed on several drains in the Wetlands' south-east (fronting Cattai Creek); and
- a flood gate controlling drainage from the far south-east of the Wetlands (fronting Cattai Creek) was made non-functional.

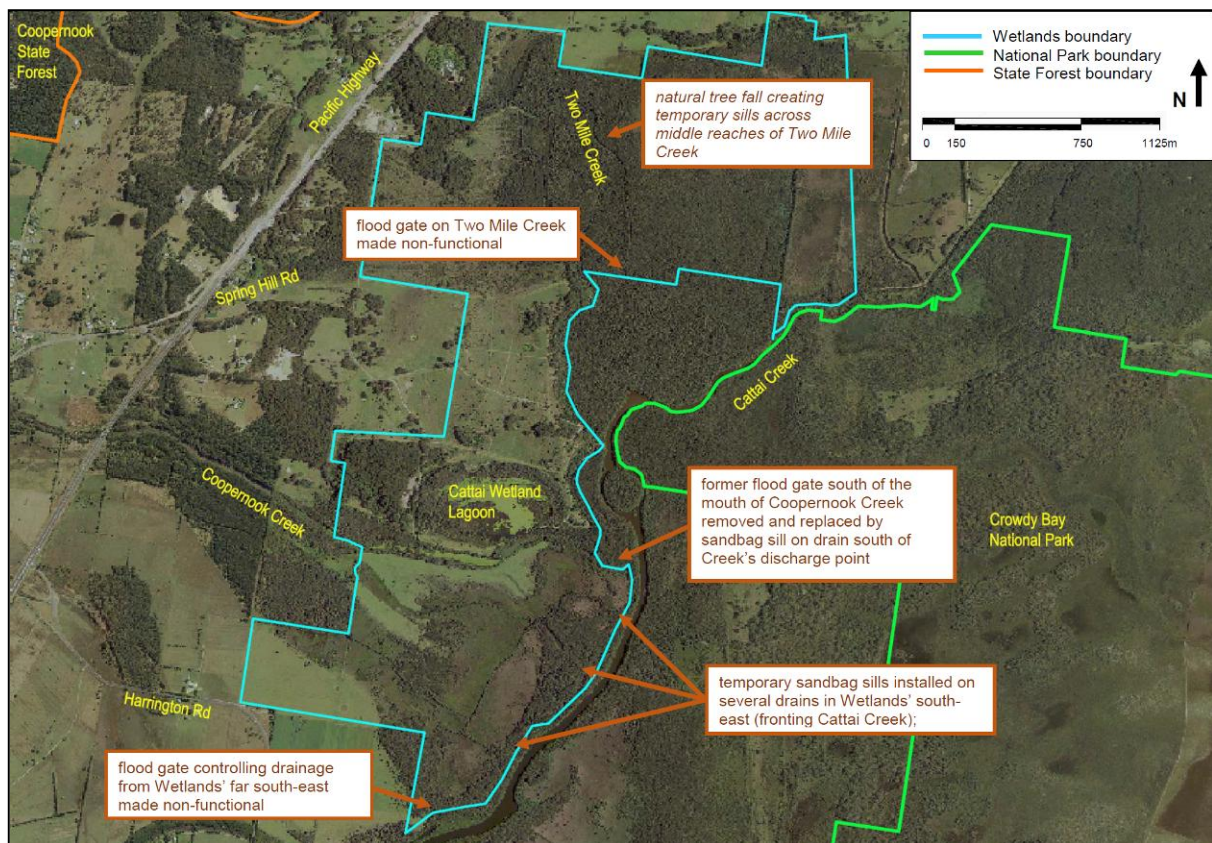


Figure 5 ASS and water quality management works undertaken to date

Sills or weirs in constructed drains act to control water levels near a drain's outlet by retaining water and reducing the water "gradient" within a drain (notably at low tides), which results in a reduction of acid groundwater mobilisation from the landscape – as shown in Figure 6. Former drains have also been progressively filled in by vegetation encroachment, bank collapse and other natural processes.



The 2006 Plan also recommended that constructed levees fronting Two Mile Creek in the Wetlands' north-east and along Cattai Creek in the south-east be breached allowing saltwater penetration to help neutralise ASS. However these areas are no longer generating significant acid outflows, and have been naturally revegetating, as noted by the 2013 specialist water quality and ASS report. The large formerly scalded areas in the Wetlands' south-east are now substantially vegetated and no longer apparent on-site. This expansive

scald area has undergone the most substantial transformation of any part of the Cattai Wetlands since 2006. Breaching these levees would encourage greater saltwater intrusion

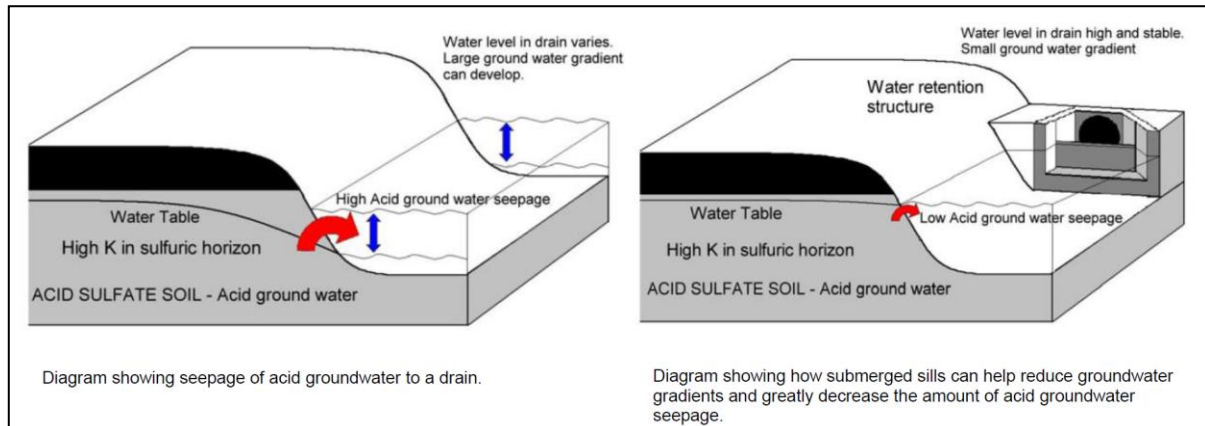


Figure 6 Functioning of sills to reduce acid groundwater seepage
(source: Roche Group Pty Ltd, 2008 [after S Johnson, NSW DPI])

and cause vegetation community changes, potentially replacing established/regenerating vegetation communities with saltwater wetland and more salt-tolerant vegetation. Breaching these levees was not recommended by the 2013 specialist report.

Table 1 below provides a summary of the ASS and water quality works undertaken and the outcomes of these (left column), and the works remaining from the 2006 Plan of Management as well as alternative ASS and water quality management measures as suggested by the 2013 specialist water quality and ASS report.

Table 1 Summary of ASS and Water Quality Works – Undertaken and Outstanding

Area	Works undertaken / outcomes of works	Works outstanding / alternative measures recommended by 2013 specialist ASS and water quality report
NE Area (Two Mile Creek)	<ul style="list-style-type: none"> • Installation of sills has not occurred, however the drain has naturally been blocked by a fallen tree. • Natural blocking has had effect of retaining water on site - reducing water flow and potential acid water into Cattai Creek. 	<ul style="list-style-type: none"> • Natural blocking has obviated need for construction of permanent and temporary sills in Two Mile Creek. • Creation of breaches in the constructed levees has not been undertaken. • Creation of breaches not recommended at this time, unless an additional objective of rehabilitation of saltwater wetland is recommended. • No additional remediation strategies deemed necessary – recommend current situation be retained and reviewed during next PoM review.

Area	Works undertaken / outcomes of works	Works outstanding / alternative measures recommended by 2013 specialist ASS and water quality report
Cooperbrook Creek and Cattai Wetland Lagoon	<ul style="list-style-type: none"> Former flood gate south of the mouth of Cooperbrook Creek (fronting Cattai Creek) removed and replaced by sandbag sill on drain south of the Creek's discharge point. Works have had the effect of retaining water on site for longer periods of time – creating a wetter on-site environment thereby improving the pH of water in the Cattai Wetlands. 	<ul style="list-style-type: none"> Relocation of flood gate and installation of temporary sill in Cooperbrook Creek has not been carried out. Raising of the temporary sill to 0.8m AHD to create a freshwater pond trial area has not been carried out. Given the success of the current works and potential impact of raising the sill on upstream properties, it is recommended that the raising of the sill not be undertaken at this time. No additional remediation strategies deemed necessary – recommend current situation be retained and reviewed during next PoM review.
South-east Area	<ul style="list-style-type: none"> Construction of major sill in drainage line south of Cooperbrook Creek and three additional minor temporary sills in other drainage lines has resulted in retention of rainfall in the SE and less saltwater interaction with the overflow from Cattai Creek. The works, along with exclusion of cattle grazing in this area, has resulted in revegetation of this area. The entire acid scald area is now substantially vegetated and no longer observed on site. The SE area has undergone the most substantial transformation of any part of the Cattai Wetlands since the inception of the 2006 PoM. 	<ul style="list-style-type: none"> The results of the revegetation of the acid scald area have been so significant that further recommendations of the PoM to establish and monitor a rehabilitation site are no longer applicable. Creation of breaches in the constructed levees have not been undertaken. Creation of breaches not recommended at this time, unless an additional objective of rehabilitation of saltwater wetland is recommended. Local flows were recommended to be supplemented with treated effluent from Mid Coast Water; this is not likely without a significant external subsidy. Given the success of the regrowth in this area, the provision of treated effluent is not deemed critical to the success of the wetlands. No additional remediation strategies deemed necessary – recommend current situation be retained and reviewed during next PoM review.

In addition to the above interventionist works the removal of grazing pressures, and other past agricultural practices, across the Wetlands has had a significant positive benefit in enabling vegetation cover to establish and therefore less acid runoff from site. Native tree planting has also aided in the improvement of water quality of the Wetlands.

2.2.4 Native Flora, Vegetation Communities and Habitats

Native Flora and Vegetation Communities

The vegetation of the Cattai Wetlands has been significantly modified by historic land uses across the site – initially land clearing and later ASS exposure and its effects. Early surveyors' plans show vegetation types and patterns markedly different to those evident across the site today (as demonstrated in Figure 9 of the 2006 Plan of Management).

Today a total of 176 individual native flora species, across 8 vegetation communities, have been recorded within Cattai Wetlands. To date 457 species of native plants have also been recorded within a 10 kilometre radius of the Wetlands

Previous studies have identified 14 vegetation types or communities as occurring within the Cattai Wetlands. The 2013 specialist flora and fauna review of Wetlands reconciled and consolidated these 14 types into 8 vegetation communities based on their descriptions and dominant vegetation type. The 8 vegetation communities are listed in Table 2 below, along with their estimated area of occurrence (as identified in the 2006 Plan of Management).

Table 2 Vegetation Communities within the Cattai Wetlands (2006 data)

Vegetation Community	Area (hectares, 2006 data)
<i>Flood Plain Rainforest</i>	0.09
<i>Mangrove Forest and Woodland</i>	6.70
<i>Open Freshwater Wetland</i>	53.78
<i>Riparian Forest</i>	14.59
<i>Saltmarsh</i>	62.60
<i>Sclerophyll Forest</i>	58.60
<i>Swamp Oak Forest</i>	54.76
<i>Swamp Sclerophyll Forest</i>	156.18

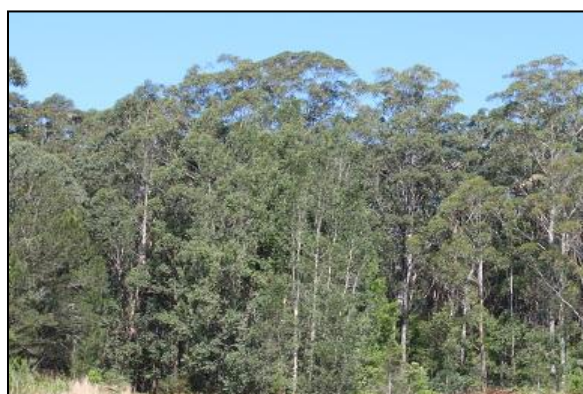
A further approximately 100 hectares was identified by the 2006 Plan of Management as “Unclassified” - consisting of pasture, waterways or other similar lands.

These 8 vegetation communities are mapped on Figure 7, showing that most remnant vegetation (with the exception of most of the Sclerophyll Forest community) occurs on the Wetlands’ lower-lying areas.

Swamp Sclerophyll Forest is the most extensive vegetation community (156 hectares) across the Wetlands, dominating much of the area flanking Two Mile Creek and along the north-east boundary as well as occurring around Cattai Wetland Lagoon.

Saltmarsh, Sclerophyll Forest, Swamp Oak Forest and Open Freshwater Wetland occur in approximately equal extents – each around 50 to 60 hectares – but across different parts of the Wetlands.

Large expanses of Saltmarsh only occur in the area’s south-east, on the flats west of Cattai Creek. Sclerophyll Forest chiefly occurs across the Wetlands’ higher areas – mostly as small scattered patches. Swamp Oak Forest is found closer to Cattai Creek in the south-east, behind the fringing Mangroves, and in two large areas in the north set back from Two Mile Creek. Open freshwater wetlands are mapped as Cattai



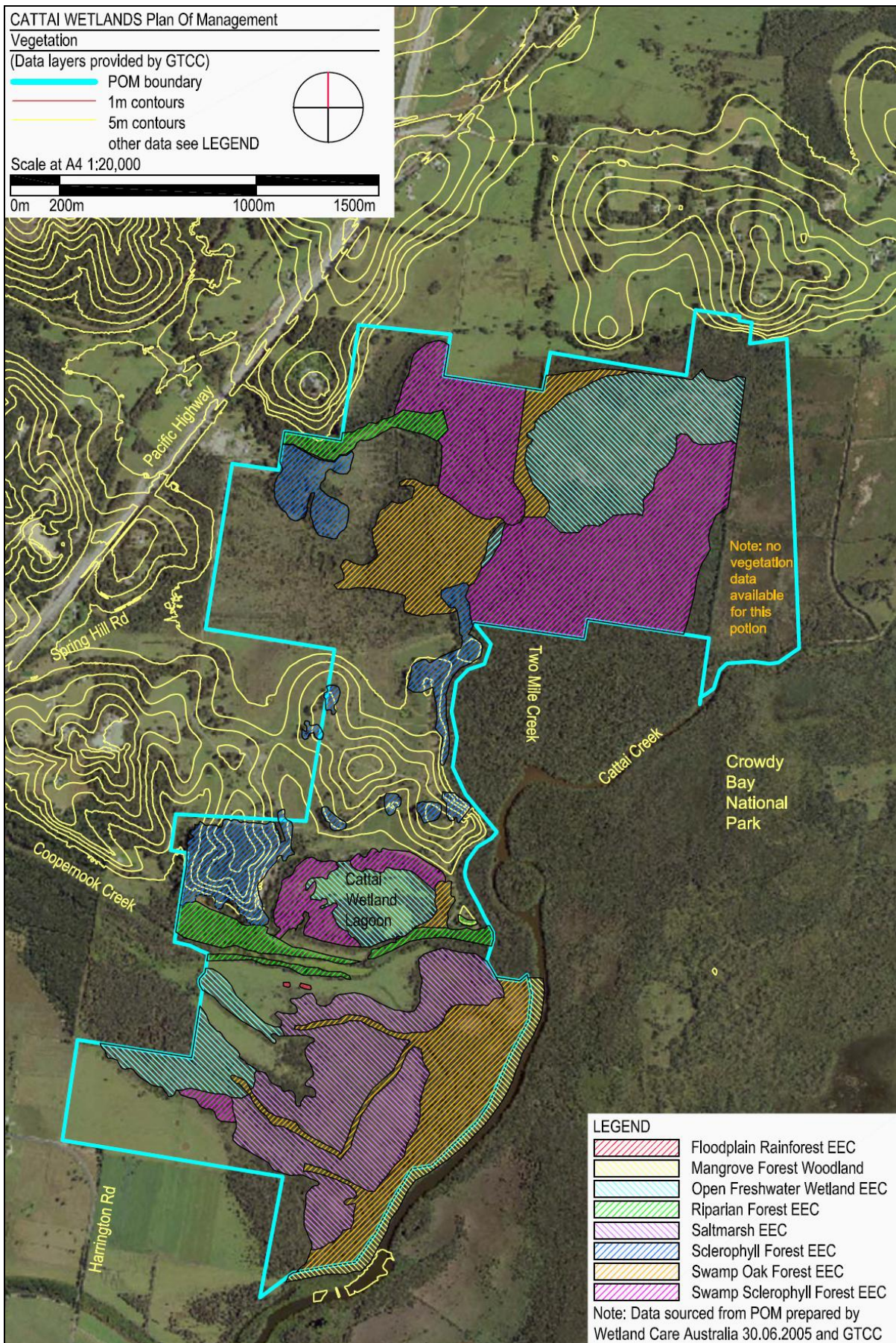


Figure 7 Vegetation communities (as mapped for the 2006 Plan of Management)

Wetland Lagoon, and two areas in the south-west and a large part of the Wetlands' north-east sector – however these latter locations appear to be less frequently inundated areas.



Mangrove Forest and Woodland communities fringe the banks of Cattai Creek, and so are not extensive within the Wetlands (which do not include most of the Cattai Creek banks). Riparian Forest is limited to narrow bands along Cooperbrook Creek and the upper section of Two Mile Creek. Floodplain Rainforest is mapped (from the 2006 Plan of Management) as only occurring at two very small sites immediately south of Cooperbrook Creek (although some unmapped floodplain forest is also found immediately south of Two Mile Creek).

The extent of these vegetation communities, and the mix of species present (and possibly the community classifications themselves), may have changed since the survey and mapping undertaken for the 2006 Plan – especially across the low-lying areas where vegetation regeneration has been rapid and significant. As an example, a large lowland area in the north-west is rapidly regenerated to a *Melaleuca/Casuarina* forest with mixed lowland species.

The previously cleared areas of the Wetlands, in both the elevated and low-lying areas, have been naturally revegetating as former vegetation communities re-establish themselves or new assemblages of species emerge. This natural revegetation has been most effective on the former scalded areas in the south-east, as well as across the north-east and north-west lowlands. Some lowlands, notably along the southern side of Cooperbrook Creek and in the south-west, have been slow to regenerate with native species – due in part to dense covers of introduced grasses and grazing pressures until recently. Regeneration of the drier uplands has also been less rapid, but juvenile tree and shrub species are establishing across these areas.



Small areas where native species have been mass planted occur north of Cattai Wetland Lagoon, on the lowland and lower slopes, as well as on lowlands south of Two Mile Creek in the north. A small plot on the northern side of Cooperbrook Creek has been planted with rows of mixed local tree species, in an arboretum style.



Habitat Values

The vegetation communities within Cattai Wetlands provide valuable habitat for the variety of native fauna resident within or passing through the site. As identified in the 2006 Plan of Management, vegetation communities of particular habitat importance include:

- open freshwater wetlands – as waterbird and aquatic fauna habitat;

- old growth and mature forests – supporting a range of hollow dependent fauna, including threatened species; and
- Swamp sclerophyll forests, dominated by Swamp Mahogany, and Broad Leaved Paperbark – as key foraging sites (over winter) for nectar-dependent threatened species.

An expanse of Sclerophyll Forest on the hill west of Cattai Wetlands Lagoon has been identified by Council as Koala habitat - classified as “Class 4 (Secondary Habitat Classes ‘B’ and ‘C’)” – as shown in Figure 8. This habitat however is also found outside of the boundary of the Future Directions Strategy in a relatively continuous corridor of vegetation that links to Cooperbrook State Forest west of the Wetlands (but across the Pacific Highway).

Grazing as a Management Tool

There is a long history of grazing within Wetlands, both during the area’s agricultural past and as a management tool in the site’s early years under Council management. The current agreed Property Vegetation Plan permits limited “strategic” grazing – for bushfire hazard reduction – on defined areas of the Wetland under specified conditions. However grazing has not occurred on any parts of the Wetlands in recent years. The Wetlands are vulnerable to damage caused by grazing, which can impact both the flora and fauna of the area.

Grazing is a widespread land use across the Manning floodplain and can be employed as a means of managing grass and weed growth, as well as assisting in fire management. It remains the chief land use along the Wetlands’ northern boundary, with some occurrence also adjoining the western boundary.

2.2.5 Native Fauna

The native fauna of the Wetlands is generally poorly known, with most data coming from two days and a single night of survey work (observation only, no trapping) undertaken for the 2006 Plan of Management. No fieldwork was undertaken as part of the 2013 specialist flora and fauna review of Wetlands (which was a “desktop” study only).

The area’s fauna can reasonably be expected to be typical of that of wetlands and coastal lowlands, and adjacent forest environments, of the Mid North Coast.

The 2006 Plan identified the following native fauna assemblage as observed across the Wetlands – 71 bird species, 4 mammal species (noting that this number did not include any microbats), 5 species of reptiles, 11 amphibian species and 1 (recorded) species of invertebrate. The 2006 Plan concluded that “many additional threatened species are considered highly likely to occur on the subject land due to the presence of high quality habitat”. It noted that the Wetlands’ aquatic fauna, in particular, was poorly represented in native fauna data.

The Hunter Bird Observers Club, Manning Valley Bird Watchers and other bird watching enthusiasts periodically visit the Wetlands to record the area’s bird species and numbers. These records have increased the number of native bird species observed at the Wetlands to 170 in total.

Within a 10 kilometres radius of the Wetlands the available literature and wildlife records identify a total of 375 native fauna species as having the potential to use the Cattai Wetlands and its surrounds. Native fauna species identified in this wider literature review include – 1 fish, 32 amphibians, 250 birds, 73 mammals, 18 reptiles and 1 insect.

2.2.6 Endangered Ecological Communities, Threatened Species and SEPP 14 Wetlands

Endangered Ecological Communities

Of the 8 vegetation communities identified within Cattai Wetlands 7 are listed as Endangered Ecological Communities (EECs) under the *Threatened Species Conservation Act 1995*, or have been assessed as synonymous to EECs by the 2013 specialist flora and fauna review – as shown in Figure 8. Table 3 provides a description of each of the 8 vegetation communities identified within Cattai Wetlands, along with a description of each applicable or synonymous Endangered Ecological Community.

Table 3 Description of Vegetation Communities and Related Endangered Ecological Communities

Vegetation Community	Cattai Wetlands Vegetation Community Description	Endangered Ecological Community (<i>NSW TSC Act 1995</i>)
Flood Plain Rainforest	<ul style="list-style-type: none"> • Small fragments of lowland floodplain, occurring between 1-2 metres AHD of the alluvial flats on the southern banks of Cooperbrook Creek. • Characterised by an abundance and diversity of remnant fig trees. 	<ul style="list-style-type: none"> • EEC - Lowland Rainforest on Floodplain. • Described as having a closed canopy, high diversity of trees encompassing a wide variety of shapes. Trees form 3 major strata, combined with variations in crown shapes and sizes, giving the canopy an irregular appearance.
Mangrove Forest and Woodland	<ul style="list-style-type: none"> • Dominated by halophytic (salt loving) mangrove trees within the intertidal zone of Cattai Creek and the lower reaches of Cooperbrook and Two Mile creeks. • Characterised by 2 common mangrove species <i>Avicennia marina</i> (Grey Mangrove) and <i>Aegiceras corniculatum</i> (River Mangrove). 	<ul style="list-style-type: none"> • Not a listed <i>NSW TSC Act</i> EEC, however it is associated as a fringe community to the endangered Saltmarsh vegetation community. • Protected under the <i>Fisheries Management Act 1994</i> and possibly also as SEPP 14 Wetlands (where mapped).
Open Freshwater Wetland	<ul style="list-style-type: none"> • Also referred to as “Freshwater Lagoon” and “Meadow Swamps”, occurring in the north-eastern, central and southern portions of the area. • Dominated by a diverse range of rushes and sedges. 	<ul style="list-style-type: none"> • EEC - Freshwater Wetlands on Coastal Floodplains. • Occurs in areas associated with semi-permanent or permanent inundation by freshwater (and sometimes minor saline influence). • Species are influenced by the degrees of inundation and can include meadows of grasses, sedges and rushes and aquatic herbs.
Riparian Forest	<ul style="list-style-type: none"> • Characterised by an overstorey of emergent <i>Eucalypt sp</i> with a rainforest understory of Cheese tree, Bangalow Palm and Lomandra spp. • Located adjacent to both the Cooperbrook and Two Mile Creek drainage lines. 	<ul style="list-style-type: none"> • EEC – Eucalypt Forest on River Flats. • Occurs on soils associated with periodically inundated alluvial flats or drainage lines and river terraces on coastal floodplains.

Vegetation Community	Cattai Wetlands Vegetation Community Description	Endangered Ecological Community (NSW TSC Act 1995)
Saltmarsh	<ul style="list-style-type: none"> • A community of plants and low shrubs that can tolerate high soil salinity and occasional inundation from saline water. Characterised by Samphire, Saltwater Couch and Sea Rush. • Occupies large areas of the south-eastern drained wetlands within elevations of 0.6m-0.7m AHD. 	<ul style="list-style-type: none"> • EEC – Saltmarsh. • Occurs on the shores of estuaries and lagoons in the intertidal zone along the NSW coast.
Sclerophyll Forest	<ul style="list-style-type: none"> • Characterised by a mixture of wet and dry species associated with the <i>Myrtaceae</i> plant species. 	<ul style="list-style-type: none"> • EEC – Subtropical Forests on Coastal Floodplains. • Associated with soils of periodically inundated alluvial flats or drainage lines and river terraces on coastal floodplains. • Generally occurs in the NSW North Coast bioregion below 50m AHD. • See discussion in text below.
Swamp Oak Forest	<ul style="list-style-type: none"> • Also referred to as “Open Casuarina Forest”. • Occurs over large areas adjacent to the tidal reaches of Cattai and Two Mile Creek areas. • Dominated by <i>Casuarina glauca</i>. 	<ul style="list-style-type: none"> • EEC – Swamp Oak Forest on Coastal Floodplains. • Associated with grey-black clay-loams and sandy loams, where groundwater is saline or sub-saline. • Occurs in waterlogged, or periodically inundated, flats, drainage lines, lake margins and estuarine fringes associated with coastal floodplains. • Generally occurs below 20m AHD but rarely above 10m AHD.
Swamp Sclerophyll Forest	<ul style="list-style-type: none"> • Also referred to as “Wet Sclerophyll Forests” and “Paperbark Forests”. • Dominated by <i>Melaleuca quinquenervia</i> and <i>Eucalyptus robusta</i>. 	<ul style="list-style-type: none"> • EEC – Swamp Sclerophyll Forest. • Associated with humic clay loams and sandy loams on waterlogged or periodically inundated alluvial flats and drainage lines associated with coastal floodplains. • Generally occurs below 20m AHD but may occur up to 50m AHD.

The Sclerophyll Forest found mainly on the Wetlands’ higher areas has previously been considered synonymous with the Subtropical Forests on Coastal Floodplains EEC. Although this is a highly variable EEC, in terms of structure and indicative species, there are some notable discrepancies between the species assemblages for the Sclerophyll Forest community on the Wetlands and that determined as typical for the Subtropical Forests on Coastal Floodplains EEC under its *Threatened Species Conservation Act 1995* listing. The EEC also typically occurs on periodically inundated alluvial flats, drainage lines and river terraces associated with coastal floodplains generally below 50 metres AHD elevation (but may also occur on river terraces above this elevation). While a minority of the Wetlands’ Sclerophyll Forest community are located on lowlands subject to inundation – notably in the north-west corner beside Two Mile Creek – the majority are on elevated terrain across the centre of the Wetlands which is not subject to inundation. The EEC status of the Wetlands’ Sclerophyll Forest community requires further investigation and clarification.

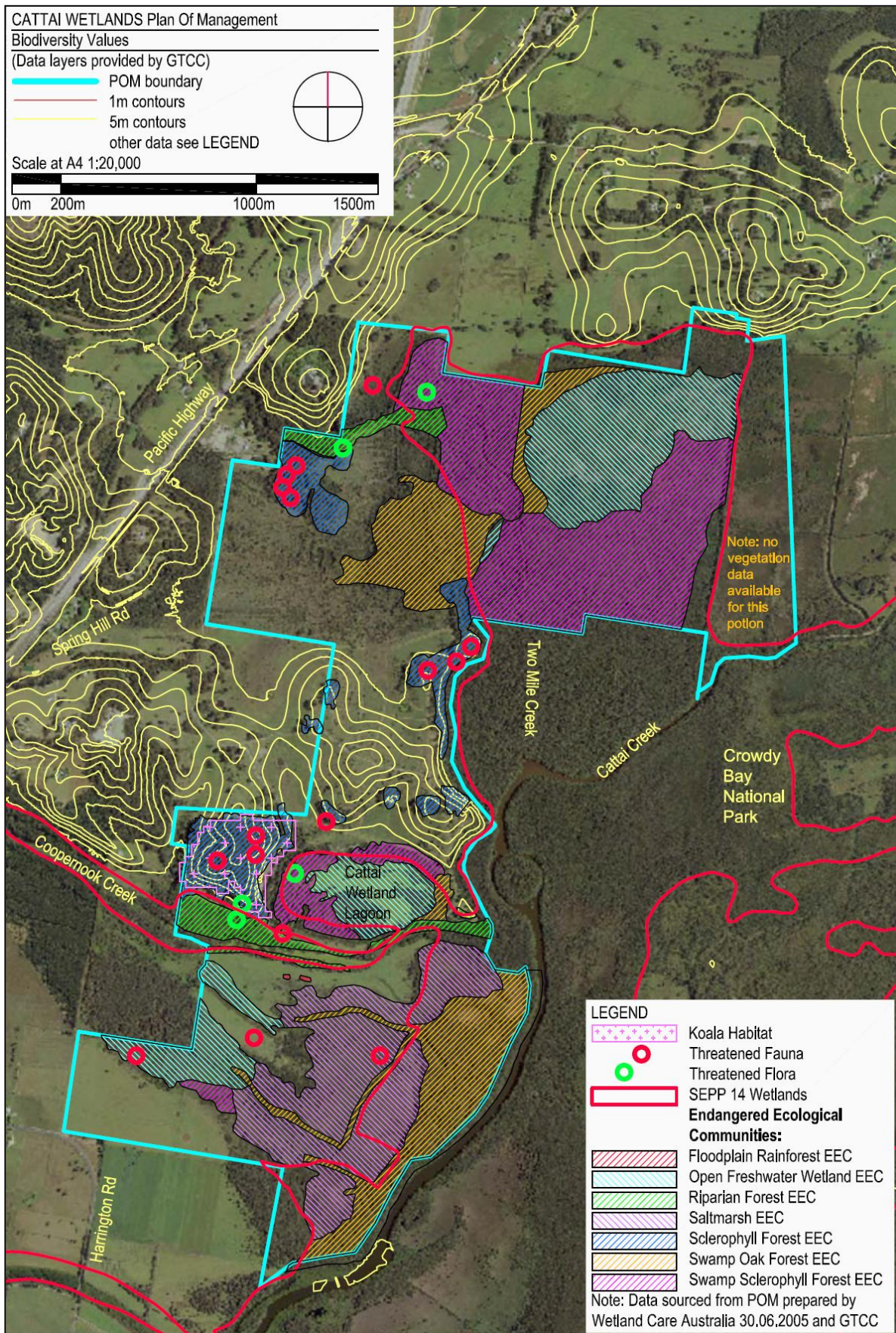


Figure 8 Endangered Ecological Communities, threatened flora and fauna locations, SEPP 14 wetlands and listed Koala habitat

Although not within the boundary of the Wetlands, *Littoral Rainforest and Coastal Vine Thickets* has the potential to occur within the area. This community is listed as a *Critically Endangered Community* (under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*). It is also known to support threatened fauna that have been identified within the Wetlands, such as the Common Blossom Bat.

In NSW Mangrove Forest and Woodland is not listed as an EEC under the *Threatened Species Conservation Act 1995*. However these areas are protected under the *Fisheries Management Act 1994* and can also be protected under State Environmental Planning Policy 14 Wetlands.

Threatened and Significant Flora Species

One species of threatened flora has been recorded from the Wetlands to date, as shown in Figure 8. *Maundia triglochinoidea* is a perennial herb of coastal swamps and lagoons which has been recorded from two sites in the Two Mile Creek area, and is listed as “vulnerable” under the *Threatened Species Conservation Act 1995*. The Two Mile Creek area may be a key habitat area for this species, potentially supporting a healthy population however this is yet to be verified by further survey work.



One locally significant flora species, *Lygodium microphyllum*, commonly known as the Climbing Maidenhair Fern, has been recorded within the Wetlands’ Swamp Sclerophyll Forest community. This species normally occurs north of Coffs Harbour (although it is also known to occur on the Myall River at Bulahdelah).

A further three threatened flora species have been recorded within a 10 kilometre radius of the Wetlands and have some potential to occur on the site. *Allocasuarina defungens*, Dwarf Heath Hakea (a sub-erect shrub to 2 metres tall), is listed as “endangered” under both the *Environment Protection and Biodiversity Conservation Act 1999* and *Threatened Species Conservation Act 1995*. *Melaleuca groveana* (Grove’s Paperbark, a shrub or small tree 2-5 metres tall) is listed as “vulnerable” under both the *Environment Protection and Biodiversity Conservation Act 1999* and *Threatened Species Conservation Act 1995*. *Hakea archaeoides* (a multi-stemmed shrub or tree to 7 metres tall) is listed as “vulnerable” under the *Threatened Species Conservation Act 1995*.

An additional 42 threatened flora species listed under either of the above Acts, have some potential to occur on or within 10 kilometres of the Wetlands, but have not been recorded in either area to date.

Threatened and Significant Fauna Species

Seven species of native fauna recorded from the Wetlands are listed as threatened under the relevant State or Commonwealth legislations – the NSW *Threatened Species Conservation Act 1995* (*TSC Act*) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*). These recorded threatened species are:

- Green and Golden Bell Frog, *Litoria aureae* – *TSC Act* “vulnerable”;
- Glossy Black Cockatoo, *Calyptorhynchus lathami* – *TSC Act* “vulnerable”;

- Black-necked Stork or Jabiru, (*Epphipiorhynchus asiaticus ssp australis*) – TSC Act “endangered”;
- Comb-crested Jacana (*Irediparra gallinacea*) - TSC Act “vulnerable”
- Square Tailed Kite (*Lophoictinia isura*) – TSC Act “vulnerable”;
- Giant Dragonfly (*Petalura gigantean*) – TSC Act “endangered”; and
- Koala (*Phascolarctus cinereus*) -- TSC Act “vulnerable” and EPBC Act “vulnerable”.



Black-necked Stork in the Cooperbrook Creek area (GTCC)

The locations of these sightings are shown on Figure 8.

An additional four threatened fauna species have been recorded within 10 kilometres of the Wetlands. A number of threatened fauna species, including migratory species, also have the potential to occur within this wider area and potentially the Wetlands.

SEPP 14 Wetlands

A number of the more environmentally sensitive coastal wetlands in NSW are identified by State Environmental Planning Policy (SEPP) 14. A large part of the north-eastern corner of the Wetlands, broad bands adjoining Cattai Creek in the south-east, the Cattai Wetland Lagoon and along Cooperbrook Creek have been mapped as SEPP 14 Wetlands – as shown in Figure 8. The majority of these mapped SEPP 14 areas within the Wetlands are also vegetation communities listed as Endangered Ecological Communities under the *Threatened Species Conservation Act 1995*. SEPP 14 wetlands have been mapped over parts of the following vegetation communities within the Wetlands – Mangrove Forest and Woodland, Saltmarsh and Swamp Oak Forest (as well as some cleared vegetation). Large areas of SEPP 14 wetlands have also been mapped in land surrounding the Wetlands. The SEPP imposes planning and development restrictions, and special approval requirements, for certain works in areas mapped as SEPP 14 wetland.

2.2.7 Weeds, Pests and Introduced Flora and Fauna

Introduced Flora

Although much of the Wetlands’ established or regenerating native vegetation is in good condition, eight introduced plant species are confirmed as occurring in the area. Several of these are declared as noxious weeds, or considered environmental weeds, in the Greater Taree City Council. Several are considered Weeds of National Significance (WONS) under the National Weeds Strategy due to their invasiveness, potential for spread, and economic and environmental impacts. The introduced plants recorded in the Wetlands to date are:

- Groundsel Bush (*Baccharis halmifolia*) a declared noxious weed (class 3) in the Greater Taree City Council area;
- Blackberry (*Rubus fruticosus*) – a noxious weed (class 4), and WONS;
- Lantana (*Lantana camara*) – a noxious weed (class 4), and WONS;
- Giant Parramatta Grass (*Sporobolus fertilis*) – a noxious weed (class 4);
- Madeira Vine (*Anredera cordifolia*) – a serious environmental weed in the Greater Taree City Council area, and WONS;
- Moth Vine (*Araujia sericiflora*);
- Five Leaved Morning Glory (*Ipomoea cairica*); and

- Camphor Laurel (*Cinnamomum camphora*).

Surrounding lands subject to less intensive management or with absentee owners, notably in the east and south-east, have been identified as problem areas, or source areas, for weed invasion of the Wetlands. Vehicle tracks and disturbed sites are other vulnerable locations for weed introduction and spread.

Blackberry, Groundsel Bush and Lantana have also been identified by Council as “major weed species of concern”. Council has existing programmes in place for the control of these species, as well as for Giant Parramatta Grass.

A total of 32 weed species have also been identified within a 10 kilometre radius surrounding the Wetlands. This includes five species identified as Weeds of National Significance, two of which, Blackberry and Lantana, already occur within the Wetlands.

Introduced Fauna

The following five introduced fauna species have been recorded within the Wetlands:

- European Fox (*Vulpes vulpes*);
- Hare (*Lepus capensis*);
- Indian Mynah (*Acridotheres tristis*);
- Gambusia (*Gambusia holbrooki*) or Mosquito Fish; and
- an unidentified species of Deer – (*Cervus sp.*).

Council at present has monitoring measures in place using remote cameras to assess numbers and behaviour patterns of the Deer population in the Wetlands. Building on this work, a student from Southern Cross University has recently completed a pest control plan for the area for Council – the *Big Swamp and Cattai Wetlands Vertebrate Pest Animal Control Plan 2014*.

Straying cattle from neighbouring properties frequently enter the Wetlands, notably along the north and north-eastern boundaries, and can impact both the flora and fauna of the area.

A total of 13 species of introduced fauna have also been identified in the broader Project Area. It is likely that some of the smaller and more mobile, or more cryptic, of these species – such as the House Sparrow Common Starling, House Mouse and Brown Rat – would also be present within the Wetlands at times.

2.2.8 Fire Management

Fire is a natural phenomenon. Managing fire at the Cattai Wetlands is not only important for ecological and biodiversity management reasons, but also to address statutory fire management requirements and to protect the area’s built assets.

Wetland vegetation communities – notably dry and wet forest, rainforests, riparian vegetation and mangroves – are sensitive to fire. Repeated fire is likely to cause impact to these communities and change native vegetation compositions. There are also a range of legislative constraints and procedural requirements regarding the use and management of fire in areas mapped as SEPP 14 wetlands. Importantly those communities with dry peat substratum require complete exclusion from fire due to the risk of uncontrollable and highly damaging peat fires. Peat fires can lead to severe soil acidification in ASS landscapes and can often smoulder unnoticed for months. A number of vegetation communities within the Wetlands however, require periodic fire to maintain ecosystem processes and ecological viability. The frequency and intensity of such fires must be adapted to each vegetation

community’s optimum fire regime. However, the appropriate fire thresholds for native vegetation communities – including many of those present within the Wetlands – is an area of ongoing research, monitoring and adaptive management.

Separate to the ecological management of fire at Cattai Wetlands, consideration needs to be given to fire as a threat to the Wetlands and its built assets. As the land owner and manager, Council also has a responsibility, under the *Rural Fires Act 1997*, to manage fire hazards to reduce risks to surrounding dwellings, major buildings or other area assets susceptible to fire. Council participates as a member of the Greater Taree Bush Fire Management Committee and co-operates with the Rural Fire Service and other agencies to implement the Greater Taree Bush Fire Risk Management Plan.



A well-maintained network of fire trails already exists across the more accessible, drier, areas of the Wetlands. However, the recent fire history of the Wetlands is not documented.

A fire management plan covering both the Cattai Wetlands and Big Swamp project areas is at present being prepared by Council.

2.2.9 Wildlife Corridor and Habitat Links

The *Draft Mid North Coast Regional Conservation Plan* (2010) indicates the northern portion of the Cattai Wetlands, approximately, as part of an area of “linking habitats” and a “major wildlife corridor” between Lansdowne State Forest in the west and Crowdy Bay National Park in the east, noting that this area includes a variety of vegetation systems and “is generally of high importance for repair”.

Although not directly abutting the Wetlands, Crowdy Bay National Park extends to the western bank of Cattai Creek, opposite the central and north-eastern portions of the Wetlands – as shown in Figure 9. Despite Cattai Creek separating them, these neighbouring reserves form a continuous expanse of natural vegetation (especially in the north/north-east of the

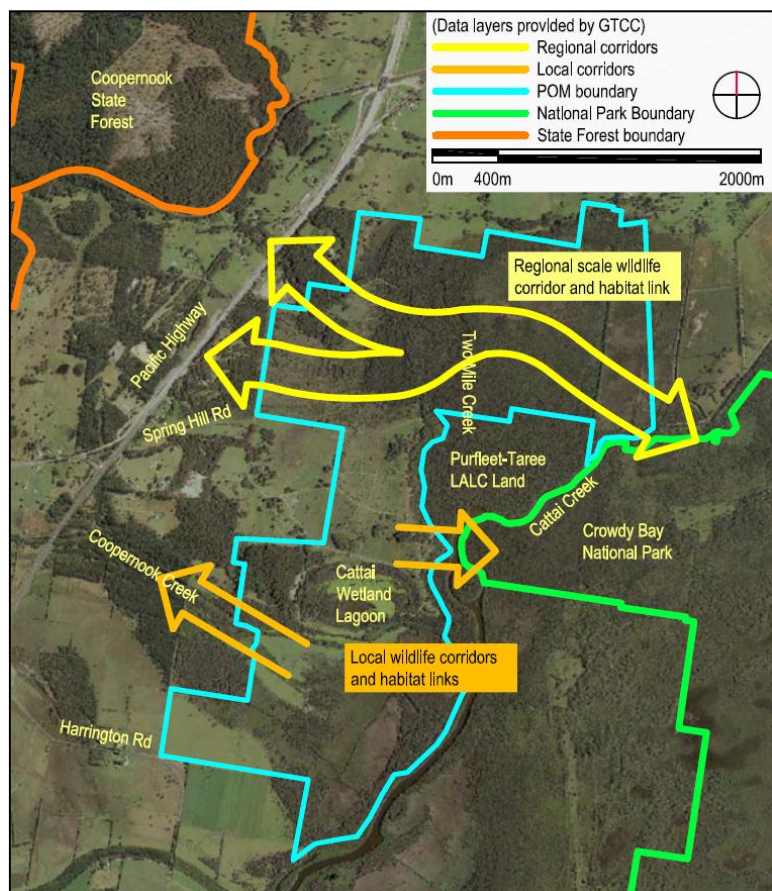


Figure 9 Identified wildlife/habitat corridors

Wetlands). Crowdy Bay National Park covers over 10,300 hectares and is dominated by extensive wetlands as well as coastal heath, woodlands and open forests, exposed headlands, saltmarsh, mangroves and pockets of littoral rainforest. From its creekside border with the Cattai Wetlands the National Park extends 8 kilometres east to the coast just north of Crowdy Head.

Also, on the western side of Cattai Creek between Crowdy Bay National Park and the Wetlands, is a land parcel owned by the Purfleet-Taree Local Aboriginal Land Council. This is also a well-vegetated area, comprising Melaleuca/Casuarina forest on floodplain, which has little development potential and contributes significantly to strengthening the vegetation and wildlife corridor connection between the Wetlands and the National Park.

Cooperook State Forest, chiefly Eucalypt forest, is located between 700 metres and 1 kilometre west-north-west of the Wetlands' north-west corner. The intervening area is predominantly private land – some of which has been cleared and is used for grazing and other agricultural activities, but also with areas of bushland (mainly Eucalypt forest) remaining. These vegetated areas offer an almost continuous, but narrow, link to comprise the north-western extension of this wildlife/habitat corridor. However they are cut by both the

Pacific Highway and the Northern Railway (along the edge of Cooperook State Forest in the west). Cooperook State Forest merges with Lansdowne State Forest to form a continuous area of bushland running up onto the Lansdowne Escarpment.

A secondary, local-scale, wildlife/habitat corridor, also joins the south-west corner of the Wetlands – as shown in Figure 9. A narrow band of protected wetland vegetation (SEPP 14 wetland) runs along the Cooperook Creek corridor (partially on a private landholding, with a mix of cleared land and remnant forest) and is backed by a larger expanse of Swamp Oak forest and degraded (non-SEPP 14) wetlands in the south. Much of this area is part of a 31 hectare landholding of the Roads and Maritime Services (RMS) managed as “compensatory wetlands” following the earlier Pacific Highway deviation. This area is being progressively rehabilitated by the RMS, with on-ground management undertaken by Council, as guided by a separate management plan prepared in 2001. These natural areas along Cooperook Creek continue west to, and under, the Pacific Highway from where a fragmented corridor (largely private landholdings and cut by several smaller roads, power lines and other clearings) links this area north-west to Cooperook State Forest.

2.2.10 Aboriginal Cultural Heritage (Past and Contemporary)

The Cattai Wetlands are part of the traditional lands of the Biripi Aboriginal People. Kattang was the principal language (usually spoken to the west of Gloucester) and closely related to Biripi. Warrimi was spoken to the south (Port Stephens area) and Thangatti to the north (Kempsey area). “Cattai” is believed to mean “swampy country” in an Aboriginal language (although which one is uncertain).

The Wetlands, located at the confluence of Cooperook and Cattai Creeks, with the associated wetlands and nearby Cattai Lagoon provided conditions conducive for Aboriginal occupation. The permanent supply of freshwater supported a diverse range of flora and fauna. Several plant species within the area are known to have been (and continue to be) used by Aboriginal people – for example Blue Flax Lily, Wattles, Eucalypts, Lomandra, Native Geraniums, Paperbarks, Bottlebrush, Native Raspberry and Corkwood – variously as food, for medicinal purposes, as building materials, for weaving and as utensils. Fish, reptiles (Goannas), marsupials (Possums) and many bird species would have been available across the Wetlands and formed part of the diet of the lower Manning River Aboriginal people.

The ridgeline is believed to have potentially added to the appeal of the Wetlands area, as it offers sweeping views east to the coast and north-west to the Three Brothers Mountains, which are associated with a traditional Biripi creation story.



Contact between Europeans and the Aboriginal people of the lower Manning River dates from the early 1800s. The decades that followed saw Aboriginal people progressively displaced and dispossessed of their traditional lands as European settlement and land use intensified. However despite the establishment of Purfleet Reserve in 1900 (an Aboriginal settlement located south of Taree), it is understood that Biripi people continued to move across their lands maintaining their connection with Country and maintaining many traditional practices.

European land use activities, both historically and into more recent times, have considerable potential to disturb or destroy evidence of an area's prior Aboriginal occupation. In agricultural areas, such as the Cattai Wetlands, the removal of old growth trees, clearing by machinery and ploughing, agriculture practices and associated infrastructure, and construction of drains are all likely to have destroyed evidence of Aboriginal occupation such as carved and scarred trees, stone artefacts and camp sites. Further, such practices can mix soil horizons and destroy artefact scatters or midden deposits in the process. Increased siltation in the Wetlands, caused by more frequent inundation during flood events following construction of the failed drainage/irrigation schemes, may also have led to burial of evidence of occupation.

Current Aboriginal Cultural Heritage Sites and Intangible Cultural Heritage Aspects

The only previous Aboriginal sites survey, prior to the 2012-13 survey for this Future Directions Strategy, was in 2004 and undertaken over part of the Wetlands for the area's original acquisition and development by Council.

This earlier survey focused on a proposed 4 lot subdivision, since carried out, adjacent to the (current) western boundary of the Wetlands. The field surveys were carried out by Aboriginal Sites Officers from the Purfleet-Taree Local Aboriginal Land Council. Ten Aboriginal sites were identified and recorded by this earlier study, however only 2 were located (just) within the current Wetlands area (based on corrected site data provided during the 2013-13 survey).

The central area of the Wetlands, as shown in Figure 10, was surveyed for Aboriginal cultural heritage values by Virtus Heritage in collaboration with members of the local Aboriginal community in late 2012. Survey findings were reported in the *Cattai Wetlands Aboriginal Cultural Heritage Values and Constraints Report* (2013) (parts of this report are confidential).

The Aboriginal cultural heritage sites identified in the 2012-13 study were, in approximate terms, mostly found on or around the ridge and higher terrain and the



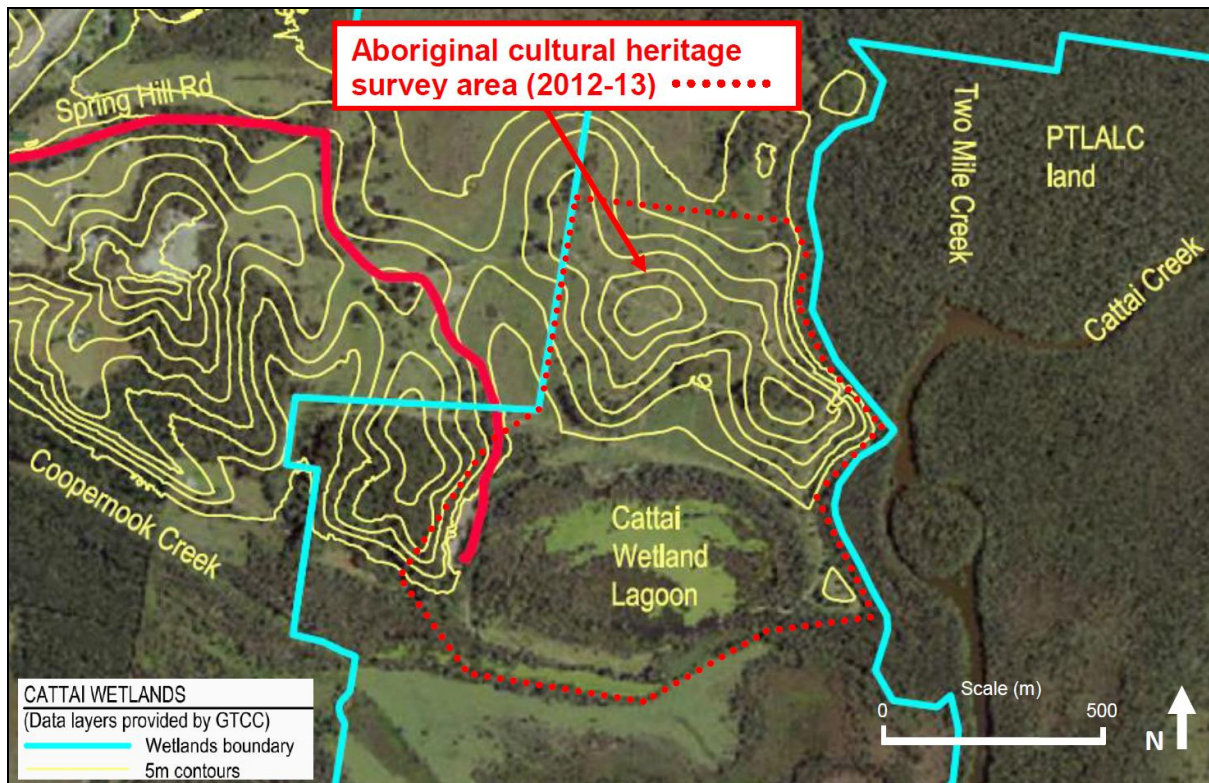


Figure 10 Aboriginal cultural heritage survey area (2012-13)

associated slopes. The recorded tangible Aboriginal cultural heritage sites comprise:

- stone artefact scatters, including evidence of heat-treated raw materials for stone tools – at 3 sites (including a possible cache site for stone artefacts from the earlier survey);
- one site with a single stone artefact (or “isolated find”); and
- two sites recorded from the earlier survey as being stone artefact scatters, but where no materials could be relocated.

A number of the stone artefacts appeared damaged – possibly due to previous vehicle movements, grazing impacts or other past activities.

Potential Archaeological Deposits (PADS) are sites or areas predicted to contain buried evidence of Aboriginal occupation (usually stone artefacts in sites away from water margins). The 2012-13 survey identified a large PAD, again on or around the ridge and higher terrain, and a smaller PAD at a lower elevation closer to Cattai Wetland Lagoon. Both PADs also include one, or more, of the above surface artefact scatters.

One intangible cultural heritage site was also recorded. This is a “modern corroboree” site located on the Spring Hill ridgeline. This site was used on 1 September 2009 for a meeting of “many local Biripi Elders” to discuss the cultural value of the Cattai Wetlands and the area’s future. With sweeping views to the Three Brother Mountains, the coast and the surrounding landscape this location is also a “story place” with intangible heritage values.

“Skeleton Ridge”, at the eastern end of the Spring Hill ridgeline above Cattai Creek, is another potential culturally significant and sensitive location. Skeleton Ridge is a possible burial and potential massacre site, although there are different versions of oral history regarding the area and its past which are known to Aboriginal people and shared with their families. Some oral history accounts identify Skeleton Ridge is an important burial site of extremely high cultural value, but not a massacre site. Other accounts relate the story of

Skeleton Ridge as a possible massacre and burial site, where a Biripi camp or family group had all “laid down to die” on the ridge. The story also has different versions in the recollection of Biripi and non-Indigenous locals, which have been passed down that the deaths of the Biripi were possibly due to diseases introduced by the Europeans (for example, influenza or small pox) or may have been an intentional massacre (possibly by poisoned flour). Some versions of the story also relate back to potential Aboriginal skeletal remains eroding out of the ridge. These accounts date from when the area was owned by William Newton (late 1800s and early 1900s).

Although these various accounts are often-repeated within local oral history, no written documentation has been identified to date regarding the history and events at Skeleton Ridge. Regardless of this, Skeleton Ridge is an important story place within the landscape, and one that Aboriginal people feel must be protected and should not be disturbed. Some Aboriginal Elders visiting the Wetlands have reportedly experienced “bad feelings” affecting them from on site, which they believe may be connected to Skeleton Ridge and the possible massacre of Aboriginal people.

Skeleton Ridge is also an historical site and story place which documents evidence of interactions between early settlers and Aboriginal people in the mid to late nineteenth century.

Ground surface visibility was poor during the 2012-13 survey, due to vegetation cover making the identification of artefacts difficult. However the study also identified zones of “archaeological sensitivity” within which the prospect of artefacts being found, based on landforms and landscape position, could be predicted. These zones of high, moderate, low and negligible “archaeological sensitivity”, for the Wetlands’ central area (and to an extent other parts of the Wetlands) are described in Table 4.

Table 4 Landform Archaeological Sensitivity Assessment

Zones of Archaeological Sensitivity:	Landforms:	Predicted Archaeological Potential and Use:
High	Lower slope, ridgelines and crests - for example the lookout ridgeline north of the lagoon and Skeleton Ridge and the adjacent slopes to the creek and lagoon.	Occupation favoured elevated platforms with excellent outlooks and proximity to water
Moderate	Spurs and swamp/creek/lagoon (including floodplain)	Lowlands were used in times of drought. Spurs were used as travel routes.
Low	Mid and upper slopes	Topsoil is likely to have been stripped decreasing their archaeological potential
Low to zero	Modified - for example quarries, hard stand areas	Where topsoil layers have been stripped.

Five sites recorded in the 2012-13 survey, as well as “Skeleton Ridge”, are in the process of being considered for registration on the Aboriginal Heritage Information Management System (AHIMS) maintained by the Office of Environment and Heritage. No other AHIMS sites have been recorded on the Wetlands. However all Aboriginal heritage objects, whether listed on the AHIMS or not, are legally protected under the *National Parks and Wildlife Act 1974*.

Current Cultural Connections

The Cattai Wetlands remain of cultural importance to Birpi Aboriginal People, as well as other members of the local Aboriginal community in the Greater Taree area.

Aboriginal people traditionally associated with the Taree area, plus others from many other places now living in the region, are members of or represented by a range of Aboriginal organisations including the:

- Biripi Elders Council;
- Purfleet-Taree Local Aboriginal Land Council (PTLALC);
- Taree Indigenous Development and Employment;
- Sunrise Guiwan Biripi Elders Corporation;
- Ghinni Ghinni Youth and Culture Aboriginal Corporation; and
- Doowakee Culture and Heritage Surveys.

Not all members of the Aboriginal community are associated with a formal group, but nevertheless retain close interest in the protection of culture and Country.

Local Aboriginal people have, in various forums, expressed strong connections to the Cattai Wetlands area. The area is part of important stories for the Biripi people (including “Skeleton Ridge”, for camping or hunting and “corroborees” or cultural “reconnection”, as well as for picnics and visits. Locations or features of particular value, as identified by Aboriginal people, include:

- the ridgeline and lookout with views to the Three Brother Mountains, coast and the surrounding landscape – for both cultural and aesthetic reasons;
- the creeks and lagoon as important sources for foods and medicines;
- “Skeleton Ridge” as a possible burial site and potentially a massacre site;
- the “modern corroboree” site on the flank of Spring Hill; and
- the remaining artefacts and other tangible occupation evidence.



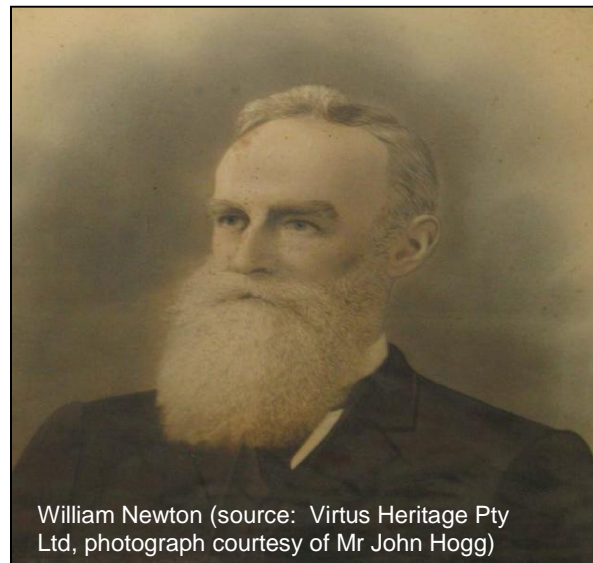
In the recent past discussions have been held between Council and the Aboriginal community regarding a potential cultural heritage facility, or other expression of Aboriginal people’s connections to the area, at a suitable site within the Wetlands. The vicinity of the Spring Hill ridge and the “modern corroboree” site are the locations most frequently suggested. The local Aboriginal community holds a range of views about the need for, and nature of, a possible cultural heritage facility in the Wetlands. There is however general agreement that the need for a cultural centre, keeping place or other cultural facility should come from – and be driven by – the Aboriginal community themselves.

2.2.11 Historic Heritage

On-ground European exploration of the Taree area began in 1818 when John Oxley surveyed the area from Harrington to Forster. He reported a landscape of timber, brush and swamps with abundant wildlife as well as observing large numbers of Aboriginal people over the wider area, particularly on the coast and around estuaries.

European settlement of the Cooperook area dates from 1824, first for timber-getting and later agriculture on the rich alluvial lands. Cedar getting began from 1833, with Biripi people often assisting. From 1837 the first land leases (pastoral) occurred in the area, with farms later established for grazing or small agricultural activities.

The Wetlands area was part of a larger portion of land purchased in the later part of the 1800s by William and Sarah Newton. Land clearing soon followed from the late 1800s, including sourcing old-growth timber for the Newtown's mill at Cooperook. The 1870s to 1910 was a period of marked intensification of land use in the Manning Valley and the Newtons expanded their land grants to include the newly-drained "Big Swamp" to the north-east of the Wetlands in the early 1900s. The Newtons used their lands, including the Wetlands area, for both agriculture and pastoralism. The general land use pattern in the area was to drain the lands for cropping and later, as yields decreased, to convert to grazing. There is some evidence that drains were installed in the north-east parts of the Wetlands during the Newton period.



William Newton (source: Virtus Heritage Pty Ltd, photograph courtesy of Mr John Hogg)

The Big Swamp Drainage Project commenced immediately north-east of the Wetlands in 1901, with the Pipeclay Canal completed by 1904. However by 1911 the scheme was declared a failure. Failure of the Big Swamp Drainage Project may have prompted subsequent construction of the Two Mile Creek Drainage Scheme, possibly as an 'improvement' to the Pipeclay Canal (as cited in the 2006 Plan of Management), in the north/north-east of the Wetlands. Although no records are available, the Two Mile Creek scheme is believed to have been constructed prior to 1920 and abandoned well before the 1980s. The lower part of Two Mile Creek was extensively excavated to become a constructed drain, with this drain believed to have been re-excavated in the 1970s to perform as a self-maintaining deep channel. The only physical remains of the Two Mile Creek scheme are the excavated drain or creek channel (evident as the straight, north-south, section of Two Mile Creek) and levee and part of a wooden floodgate excavated from the creek channel.

Despite failures of the Big Swamp and Two Mile Creek drainage projects, the Cattai Creek Drainage Scheme, in the south-east of the Wetlands, was constructed in the early 1980s. This scheme comprised a network of drains and three sets of floodgates and levee fronting Cattai Creek. It also failed.

These drainage schemes caused severe soil acidification and water quality issues. This generated adverse impacts on professional and recreational fishing and oyster production, as well as environmental values, in the Manning River system.

Land clearing, ploughing, earthworks and other activities associated with the area's history of cropping and grazing land uses have markedly reduced native vegetation cover, impacted soils and water quality, and caused on-going wetland degradation. Other past land uses included two quarries, dating at least from the 1970s. A larger quarry is located west of Cattai Wetlands Lagoon, and a smaller quarry on the eastern slope of the central (Spring Hill) ridgeline. The western quarry has been re-used as the Wetlands' carpark, while the eastern quarry has not been rehabilitated (and appears to still be in occasional use).

The Hogg family purchased the Wetlands area from the Newton family and have lived in the locality for many generations. Mr John Hogg purchased the Wetlands in the 1960s, when the property was known as *Spring Hills*. The site was purchased by Greater Taree City Council in August 2003, to “give back to the landscape” as part of an ASS and water quality management initiative and to realise biodiversity improvements.

Historic Sites

There are no recognised (registered or listed) historic heritage sites within the Wetlands.

In addition to the historic changes to the area’s landscape and vegetation, and remains of the Two Mile Creek and Cattai Creek drainage schemes, the area’s most visible “historic” features are the evidence of past farming activities. These include farm fences, service tracks, a log/plank vehicle bridge over Cooperbrook Creek (and the remains of a possible timber structure crossing Two Mile Creek) and three raised earth dams.

There is speculation that the circular island in Cattai Creek, just south of the point where the Wetlands’ boundary abuts the creek, was man-made to allow timber-trade barges and boats to turn. (A wharf was known to have been located south of the Wetlands, near Jones Island, to support the cedar/timber trade.) A bench cut into the lower part of the slope beside the creek, near this water access point and “island”, is also speculated to have been associated with the timber trade, as a possible storage and/or loading area. Early Portion Plans show “wharfage” on Cattai Creek at this point, however neither of these features (the wharf or bench) have been closely investigated on-site or thoroughly researched. Similarly there is speculation that an early farm hut was situated on the knoll north-east of Spring Hill, however there are no remains visible at this site and no documentary records.

2.2.12 Recreation, Education and Tourism Values

The Cattai Wetlands Lagoon is the central, and most accessible, area within the Wetlands. For the majority of visitors it is also the site’s most attractive feature. This feature is more accurately described as a “perched freshwater wetland” – but is popularly referred to as the Cattai Wetlands Lagoon (and previously as Giants Footprint Lagoon).

The Lagoon’s appeal is supported by attractive sections of Cooperbrook Creek to the south and the partially enclosing ring of higher ground, some forested, to the west (Forest Hill) north (Spring Hill) and north-east (“Skeleton Ridge”). The Lagoon area and surrounds is where Council has focused most of the visitor facilities provided in the Wetlands to date (as described in Section 2.3 below). As discussed in Section 2.4.3, the Wetlands are the only nature-based visitor attraction within a day-trip radius of Taree solely focused on a wetland experience and environment.



Spring Hill, immediately north of the Lagoon, is the highest point in the Cattai Wetlands. It offers striking views north to The Brother Mountains, east to Crowdy Head and south as far as Cape Hawke at Forster as well as views over much of the Wetlands. It is a major supporting attraction.

Cattai Wetlands Lagoon, and to a lesser degree “The Lookout” on Spring Hill, are the only areas the vast majority of independent Wetlands visitors go to at present. Visitors typically enjoy the boardwalk and its views over the Lagoon, with some also continuing to climb Spring Hill to “The Lookout” or completing the remainder of the Wetland Loop. Visitor uses are predominantly “passive” activities – chiefly short easy walks and sightseeing – suggesting only a limited length of stay within the Wetlands. Special interest groups, notably birdwatchers, have been regular visitors both before (with approval) and after the area’s public opening. Abundant and visible birdlife is part of the Wetlands’ visitor appeal.



The number of independent visitors coming to the Wetlands since the area’s public opening in January 2013 is minimal. Vehicle counts at the site entry, over 5 weeks during March and April 2013, show an average of only 48 vehicles entering the Wetlands each week, with a skew towards Fridays and weekends. At an assumed occupancy rate of 2 people per vehicle this equates to only 96 people per week visiting the Wetlands (or 120 people per week at a 2.5 people per vehicle occupancy rate). Anecdotal data indicates that visitor numbers have increased slightly since this time. A Council self-administered survey at the Wetlands indicates that most visitors (66%) come from the Taree local government area, and almost half (47%) are over 61 years old.

Away from the Lagoon the forested areas of the Wetlands hold some existing, or potential, visitor appeal.

Forest Hill offers an accessible forest experience close to the Lagoon, but appears to receive only limited use at present. Tall lowland forests in the Wetlands’ north-west corner also offer an attractive setting, especially in association with the paperbark forest on Two Mile Creek nearby (but in an area much less frequently accessed by visitors).



The Wetlands’ cleared hilly terrain, mostly north from Spring Hill, is valuable in opening up vistas across the property and further to the Brother Mountains. These cleared areas are mainly a visual resource, with very few visitors now actually venturing into them. The Wetlands’ management access network criss-crosses these cleared areas, as well as connecting the quarry carpark and Lagoon area to the Wetlands’ north-west quarter and upper section of Two Mile Creek. However the management access network is not mapped, signposted or identified as available for visitor use – so very few people venture onto these trails.

The management access over Spring Hill continues east to run beside Cattai Creek and then south to connect with the Wetland Loop. It accesses the only point where Council's Wetlands block actually meets Cattai Creek. This site is a valuable, but largely unrealised, visitor use attraction offering a comparatively deeper water access point for small craft on Cattai Creek and possibly downstream to the Manning River.



Minimal, if any, visitor use is made of the large area south of Coopernook Creek. This area offers some interesting vegetation types in places, notably closer to Coopernook Creek in the north. However the difficulty in accessing many of the lower wetter areas, thick impassable vegetation, and the unattractive flat former grazing block adjacent to Harrington Road all make this area far less attractive for visitor use in its present state. Similar access constraints of impassable vegetation and flat wet terrain, and less visually appealing vegetation, preclude any visitor use in the extensive north-eastern corner of the Wetlands and in much of the country along Two Mile Creek.

2.3 Current Management

Environmental Management

Council's management efforts at the Wetlands to date have focused on water quality improvements through the "rewetting" of soils to reduce acid sulfate discharges and remediating the site back to a more natural state. This has included reversing or modifying former drainage works as well as wetland rehabilitation, floodplain management, stabilising creek banks, bush regeneration, weed control and bushfire management projects. Redundant internal fencing (former farm fences) have been removed or re-used.

Over 5,000 trees have been planted across parts of the site, many with the assistance of the community and volunteers. Other areas have seen considerable natural regeneration. Together these measures have produced several positive environmental results. Council has also worked with neighbouring landholders in relation to fire management and, in the past, controlled grazing on parts of the site to reduce fuel loads and help control weeds.



Management Infrastructure

A small storage and workshop facility is located on-site – at the elevated northern end of the eastern quarry carpark – to support Council's efforts in the area and two field staff (at present) are tasked to the Wetlands' management.

Council has also worked with various government agencies, Indigenous and green groups, community volunteers and other organisations in managing the Wetlands.

Visitor Facilities, Access and Management

In recent years the Council has been providing for the public to appreciate and enjoy the Wetlands' more accessible and scenic areas.

The former quarry in the area's west, at the end of the unsealed access road, has been adapted to serve as a carpark, although no internal definition or improvements have been made (beyond minor surface levelling and gravelling). A sheltered interpretive panel and sheltered picnic table are located at the southern end of the carpark, with a wide path leading a short distance to a small low-flow toilet block.



From the carpark, as the start-point for most visitors, a small network of three walking tracks, as loop walks, has been developed.

A 2 kilometre walking track – the “Wetland Loop” – runs around the scenic Cattai Wetland Lagoon. This includes sections of boardwalk, with a viewing platform on the Lagoon's edge, and a short bridge over a “lily lagoon” beside Coopernook Creek. A large open-sided shelter with seating, suitable for group or educational use, has recently been developed in an open grassy area at the northern end of the Lagoon boardwalk. A single sheltered picnic table is located halfway around this loop, on the elevated tombolo feature on the Lagoon's eastern end.

Track markers and interpretive panels are installed along this longer track, the most popular of the three loops. A guide brochure (small booklet style) is available to highlight features of interest marked along this loop.



A shorter “Forest Loop” leads from the carpark over the Eucalypt forested hill to the west. The “Lookout Loop” branches off the lagoon track to climb up and over Spring Hill to access the vantage point offering views to the Three Brothers Mountains and surrounds. A small shelter, with interpretive panels, has been erected at the lookout.



The walking tracks are mostly slashed grass “corridors”, former farm/service tracks or current management access tracks. Some sections of the Wetland Loop are timber boardwalk, and some parts of the Lookout Loop have been sheeted with crushed gravel. All tracks are maintained in good condition. Visitors can also use the management access tracks to explore other areas of the Wetlands, however these are not at present signposted.

Since 2009 the Wetlands have been available to educational, community and other groups by arrangement with Council, as well as being open to the general public during special events (such as World Wetland Day). Since early January 2013 the Wetland’s central area, where the above facilities are concentrated, has been open to the general public on specific days each week (typically Friday through to Monday). This is part of Council’s efforts to enable the wider community and tourists to experience the natural beauty of Cattai Wetlands.



Council’s on-site staff have had increasing contact with visitors since the Wetlands’ public opening. They typically answer questions and provide orientation and safety advice as well as information about the area’s values and management. Guided activities – such as displays, walks and talks – are offered for visitors on special events occasions, such as World Wetland Day, and guided group tours are available by prior arrangement.



2.4 Regional and Local Context

2.4.1 Surrounding Lands

Land uses surrounding the Wetlands include:

- private rural landholdings along the south-western, western, northern and north-eastern boundaries – variously as cleared/grassed paddocks, areas of remnant vegetation or drained and cleared/grassed floodplains (mainly in the north-east);

- an area of remnant vegetation along Cooperook Creek in the south-west – including both private lands and a 31 hectare block owned by Roads and Maritime Services managed as “compensatory wetlands” which are progressively being rehabilitated (as part of the earlier Pacific Highway deviation);
- Crowdy Bay National Park, and undeveloped forested floodplain owned by the Purfleet-Taree Local Aboriginal Land Council, to the north-east; and
- floodplains under private ownership to the south-east, forested in the north and progressively more drained and cleared/grassed to the south.

2.4.2 Regional Wetland Conservation Status

At a regional scale, across the Mid North Coast Region, the Office of Environment and Heritage considers wetlands as reasonably represented in national parks and nature reserves – noting in the *Draft Mid North Coast Regional Conservation Plan* (2010) that “forests are the major vegetation type protected ... but there are also large tracts of coastal heath and wetland types reserved”.

A number of internationally and nationally listed wetlands are located within the region – including:

- Myall Lakes National Park - approximately 50 kilometres south of the Cattai Wetlands;
- Hunter Wetlands National Park and Hunter Estuary Ramsar Site – approximately 90 kilometres south-west of Cattai Wetlands; and
- 11 nationally important wetlands across the Mid North Coast Region, as listed in the *Directory of Important Wetlands in Australia* (2001), including the adjacent Crowdy Bay National Park – only 5 of these listed wetlands are protected, and some only partially, in reserves (including the three named above).

In addition:

- there are 6 conservation areas (National Parks or Nature Reserves) protecting sizable areas of wetland and associated vegetation communities within a radius of approximately 100 kilometres of Cattai Wetlands; and
- more than 730 separate wetlands, covering just over 500,000 hectares, have been identified and mapped as SEPP 14 coastal wetlands throughout the Mid North Coast Region.

Despite those wetlands already within the national parks and reserves network, the *Draft Mid North Coast Regional Conservation Plan* acknowledges that wetland ecosystems require greater representation in the reserve system. Notably the lower-lying and less rugged landscapes are not well reserved, as these areas were previously cleared and developed for agricultural and other land uses. Accordingly the vegetation communities that occurred on these flatter lands have been more extensively cleared, and many are now listed as endangered ecological communities (EECs). This increases the conservation value of those remnant lowland vegetation communities remaining within the Cattai Wetlands – with 7 of the site’s communities listed as EECs (as discussed in Section 2.2.6).

2.4.3 Other Nature-based Visitor Attractions

The Cattai Wetlands are one of many nature-based destinations or attractions in the Taree and wider Mid North Coast Region on offer to residents and visitors to the area. Within a 1 to 1.5 hour drive from Taree – the approximate range of “day trips” for residents or visitors based in Taree and surrounds – 55 existing attractions were assessed in terms of potentially complementing or competing with the attractions and experiences that are, or may be, on

offer at Cattai Wetlands. The attractions selected for assessment were nature-based destinations considered most comparable to the Wetlands – that is, they:

- are in comparable natural settings or environments, with a bushland and/or water focus – but excluding sites that were primarily beach access points, or boat ramps, or built heritage sites;
- are a protected/managed location, or a conservation oriented land use – including local and state government parks and reserves, but excluding informal or unmanaged sites;
- are accessible by 2WD vehicle, on sealed or unsealed roads/tracks – but excluding 4WD access or walk-in sites; and
- are not highly developed sites with substantial levels of infrastructure/investment, or private sectors facilities.

Of the 55 nature-based attractions assessed only a single site – Old Bar Park (approximately 37 kilometres by road from the Wetlands, and 16 kilometres from Taree) – included “wetlands” as a major feature of the area (and in this instance it has only a small area of wetland landscape/vegetation).

Comparable nature-based attractions within 25 kilometres of the Wetlands (or Taree) are very strongly focused on beach and coastal attractions – with two-thirds of these “closer” sites offering beach, coastal or estuary experiences. These closer attractions are roughly equally divided between picnic areas, camping areas and “other” site types (walking track entry points, lookouts, riverside sites, etc).

Comparable nature-based attractions between 25 and 50 kilometres of the Wetlands (or Taree) are somewhat more diverse, with a closer balance between beach or coastal destinations and “other” attractions focused on forest settings, inland rivers and lookouts. Picnic or day-use destinations dominate the comparable attractions in this zone, comprising two-thirds of all sites assessed.

On the outer limit of the day-trip zone, up to 1.5 hours travel from the Wetlands (or Taree), comparable nature-based attractions are again strongly dominated by estuarine and coast/beach attractions and show a predominance of camping sites (reflecting the many sites in Myall Lakes National Park falling within this zone).

A table summarising the surrounding nature-based visitor destinations within this 50 kilometre “day trip” zone is provided in Appendix D.

Other Wetland Attractions

Although there are no visitor destinations solely focused on wetlands within an easy day trip radius of the Wetlands (or Taree) the following, slightly more distant, wetland attractions provide a wider perspective on visitor attractions potentially competing with or complementing the Cattai Wetlands (further details of these attractions are provided in Appendix E).

- The 45 hectare Hunter Wetlands Centre at Shortland, approximately 175 kilometres (by road) south of the Cattai Wetlands, is a staffed commercial attraction offering a developed wetland experience with a focus on education and interpretation. It offers a far more developed and structured wetland experience compared to the Cattai Wetlands.
- The Kooragang Wetland Rehabilitation Project on Ash Island, in the Hunter River and part of the Hunter Wetlands National Park (and the Ramsar-listed Hunter Estuary Wetlands), covers an area of 780 hectares. This area was more significantly disturbed

than Cattai Wetlands with the Kooragang Wetlands being progressively rehabilitated since 1993. This project is somewhat more comparable to the Cattai Wetlands, although it caters for a much wider range of uses.

- Yarrahapinni Wetlands National Park, approximately 180 kilometres (by road) north of Cattai Wetlands, covers 1,200 hectare on a tributary of the Macleay River. The greater majority of this park is inaccessible to visitors, except by canoe or kayak in some places; vehicle-based visitors are able to access the park's south-eastern edge where they can gain a limited and low-key wetlands experience in a semi-natural setting – one that is far more restricted than the experience on offer at the Cattai Wetlands.

3 PLANNING CONTEXT

3.1 State and Commonwealth Legislative and Planning Context

Several pieces of State and Commonwealth legislation are pertinent to the Cattai Wetlands and will require consideration, and adherence, in the area's planning, development and management. The primary pieces of legislation relevant to the planning and management of the Wetlands, and the major requirements or implications of each, are listed below (further details are provided in Appendix F).

3.1.1 State Legislation

Under applicable State Government legislation, Council is required to:

- manage land in the best interest of current and future generations and comply with the requirements set out for the planning and management of the public land owned and managed by council, both operational and community lands (*Local Government Act 1993*);
- plan and control development and land use, and manage land to protect the environment (*Environmental Planning and Assessment Act 1979*);
- assist in protecting mangroves, saltmarsh and seagrass areas (*Fisheries Management Act 1994*);
- assist in protecting listed threatened species, populations or ecological communities, or their habitats, and consider these values when regulating the development and use of land (*Threatened Species Conservation Act 1995*);
- assist in protecting Aboriginal heritage, including objects and sites with tangible Aboriginal cultural heritage features (*National Parks and Wildlife Act 1974*);
- assist in protecting cultural and built heritage as listed in the State Heritage Register, or subject to an Interim Heritage Order, and consider these values when regulating the development and use of land (*Heritage Act 1977*);
- control declared noxious weeds on Council owned/managed lands, and support the community in noxious weed control (*Noxious Weeds Act 1993*);
- undertake hazard reduction measures and manage bushfire risks on Council owned/managed lands as necessary to protect life and property, while also considering the principles of ecologically sustainable development (*Rural Fires Act 1997*);
- assist in the management of natural resources to protect and enhance catchments (*Catchment Management Authorities Act 2003*);
- assist in the protection and enhancement of the quality of the State's environment including air quality, water quality, pollution control and noise control (*Protection of the Environment Operations Act 1997*);
- assist in the regulation of broad-scale clearing of native vegetation or protected regrowth (*Native Vegetation Act 2003*);
- appropriately manage risks to people undertaking recreational activities on Council owned/managed lands, and provide appropriate risk warnings (*Civil Liability Act 2002*); and
- protect the health, safety and welfare of people working for Council (*Work Health and Safety Act 2011*).

3.1.2 Commonwealth Legislation

Under applicable Commonwealth Government legislation, Council is required to:

- assist in the protection of “Matters of National Environmental Significance” (MNES) and seek approval from the relevant Commonwealth Minister for any “controlled action” (*Environment Protection and Biodiversity Conservation Act 1999*); and
- not discriminate on the basis of a person’s ability/disability (*Disability Discrimination Act 1992*).

3.1.3 State Policies and Environmental Planning Policies

The Cattai Wetlands Future Directions Strategy, its directions and actions must be guided by, and where required comply with, applicable State policies and environmental planning policies. The main such policies are summarised below (further details are provided in Appendix G).

- The *NSW Wetlands Policy (2010)* promotes the sustainable conservation, management and wise use of wetlands at a state-wide level.
- *State Environmental Planning Policy 14 - Coastal Wetlands* aims to ensure the protection and preservation of coastal wetlands by restricting development in wetland areas and protecting these areas from land/vegetation clearing, filling, drainage works or levee construction. Any such proposed works, and potential impacts, require the preparation of an Environmental Impact Statement (EIS) to accompany a development application, and subsequent approval by both a local council and the Department of Planning and Infrastructure (however measures to control noxious weed and other minimal clearing works, such as boundary surveys, are exempt). Wetland “restoration” works – including “works to restore or enhance plant communities, water levels, water flow and soil composition” – also require approval by a local council and the Department of Planning as well as approval of an appropriate restoration plan (rather than an EIS), and notification of the Director of National Parks and Wildlife.
- *State Environmental Planning Policy 44 - Koala Habitat Protection* aims to conserve and manage Koala habitat areas to ensure that permanent Koala populations are maintained over their present range.
- *State Environmental Planning Policy (Rural Lands) 2008* aims to protect and manage rural land and avoid the loss of agricultural land or diminished productivity/sustainability. It assists councils in planning for the proper management, development and protection of rural lands – including opportunities for economic development and the protection of natural resources and environmental values.

3.1.4 Regional Strategies and Plans

The Cattai Wetlands Future Directions Strategy should also recognise and be consistent with wider regional strategies and plans. The main such strategies and plans are summarised below (further details are provided in Appendix H).

- The *Mid North Coast Regional Strategy 2006-2031* recognises the “immense environmental value” of floodplains and coastal wetlands and aims to protect such through appropriate zoning, development controls and other measures.. It maps the

northern portion of the Cattai Wetlands as part of a regional fauna corridor linking Crowdy Bay National Park to the Lansdowne escarpment. The Strategy also aims to protect “high value environments” and habitat corridors by directing new urban development away from such areas and their catchments, also limiting development in places constrained by coastal processes, flooding and wetlands. Three actions identified in the Strategy are of relevance to Cattai Wetlands and are detailed in Appendix H.

- The *Draft Mid North Coast Regional Conservation Plan (2010)* identifies regional conservation priorities. The Strategy maps the majority of the uncleared or vegetated areas of the Cattai Wetlands as “high conservation value biodiversity assets”. Despite this it only rates the Wetlands as a low to moderate priority area for conservation. However the Strategy recommends that all wetland areas, in general “should be protected due to their importance in ecosystem function and as threatened species habitat”. It also identifies an area of “linking habitats” and a “major wildlife corridor” across the north of Cattai Wetlands, and recommends this area as “generally of high importance for repair”. Three priority actions recommended by the Strategy are of direct relevance to Cattai Wetlands as follows (and as detailed in Appendix H):
 - the protection of endangered ecological communities;
 - the protection of coastal wetlands, with enhancement and restoration of key habitats “for example saltmarsh”; and
 - the protection and enhancement of existing vegetation and habitat within regional wildlife corridors, and the restoration of “certain areas to improve connectivity and to enable movement and dispersal of flora and fauna populations”.
- The *Hunter-Central Rivers Catchment Action Plan 2013-2023* helps councils within the Hunter-Central Rivers Region to identify high conservation value biodiversity assets warranting protection and in endeavouring to achieve sound natural resource outcomes in land use planning and management. Three of the Action Plan’s 10 catchment goals – relating to water systems (including groundwater and wetlands), the condition and connectivity of terrestrial and aquatic habitats, and preventing/minimising the impacts of ASS – are particularly relevant to Cattai Wetlands (as further described in Appendix H).

3.2 Local Planning Context

Several existing Council plans include recommendations or directions relating, either specifically or in general terms, to the Cattai Wetlands. The key documents, and their relevant provisions, are as follows. It is important that the Future Directions Strategy is consistent with Council’s higher level plans, and particularly *The Manning Valley Community Plan 2010-2030*; supports or helps to achieve related plans, such as the *Draft Environmental Action Plan 2013*; and acknowledges Council’s adopted policies.

3.2.1 Land Use Planning Instruments and Zoning

Council’s development and use of the Cattai Wetlands must be consistent with the land uses and developments permissible for the area under the Greater Taree Local Environmental Plan (GTLEP) 2010.

The GTLEP zones the Wetlands’ lowest-lying floodplains, the Cattai Wetland Lagoon and Cooperbrook Creek for environmental protection, as zone “E2 Environmental Conservation” –

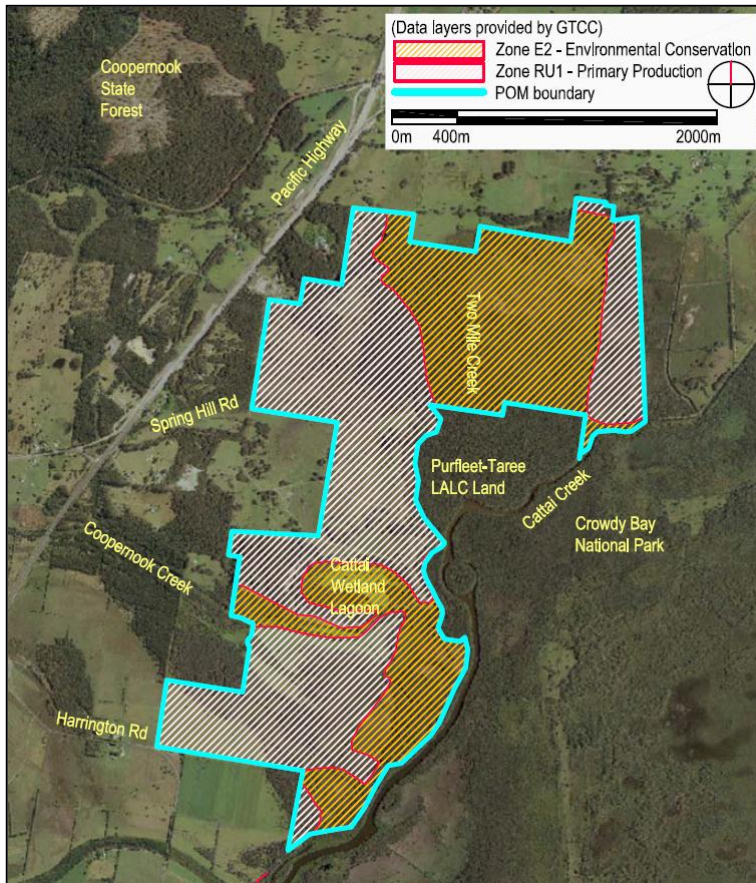


Figure 11 Land use zones

as shown on Figure 11. The remainder of the Wetlands are zoned for rural uses, as zone “RUI Primary Production”.

The objectives of the E2 Environmental Conservation zone are to – protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values; and prevent development that could destroy, damage or otherwise have an adverse effect on those values.

The objectives of the RUI Primary Production zone are to – encourage sustainable primary industry production by maintaining and enhancing the natural resource base; encourage diversity in primary industry enterprises and systems appropriate for the area; minimise the fragmentation and alienation of resource lands; minimise conflict between land uses within this zone and land uses

within adjoining zones; permit small scale rural tourism uses associated with primary production and environmental conservation with minimal impact on primary production and the scenic amenity of the area; maintain the rural landscape character of the land; and protect and enhance the native flora, fauna and biodiversity links.

Further details of both these zonings, including permissible uses, are provided in Appendix I.

3.2.2 Greater Taree City Council Plans and Polices

The Manning Valley Community Plan 2010-2030

The Manning Valley Community Plan 2010-2030 presents the community’s vision for the next 20 years. It will guide Council’s strategic priorities over this time and provides an important reference point and framework for future plans and activities across the Greater Taree City Council local government area, including the Cattai Wetlands Future Direction Strategy. To provide this guidance the Community Plan identifies 5 key directions, 37 strategies and 146 possible actions. Those of particular relevance to the Cattai Wetlands Future Directions Strategy are as follows.

- Looking after what we’ve got (key direction 1)
 - *Public assets and infrastructure will be planned, managed and funded to meet community needs and agreed levels of service (strategy 1).* Possible actions – consider infrastructure implications of new development, and ensure whole-of-life costings are assessed (1.1); resource and implement a prioritised maintenance programme for all public assets, incorporating a risk management approach (1.3);

- and encourage community involvement in the design and care of community assets (1.5).
- *Aim for a higher quality of design and maintenance in all development, both public and private (strategy 5).* Possible actions – incorporate environmental performance criteria in all design guidelines and plans for public infrastructure (5.2); and ensure public places are managed and maintained as safe, clean and inviting places, that will reinforce a desired community standard (5.5).
 - Respecting the Environment (key direction 2)
 - *Maintain and enhance biodiversity, in accordance with the principles of ecologically sustainable development (strategy 7).* Possible actions – planning and implementing measures, in partnership with the community, to restore and protect key habitat corridors, that protect sites of biological significance and prevent further extinction of flora and fauna (7.3); and protect significant remnant vegetation and significant trees (7.4).
 - *Protect and preserve local water resources (strategy 8).* Possible actions – continue to implement a programme to achieve effective management and rehabilitation of acid sulfate soils (8.5); and continue to implement a programme to achieve effective management of coastal wetlands (8.6).
 - *Effective management of environmental risks and hazards (strategy 10).* Possible actions – continue to participate in the implementation of the local Bushfire Risk Management Plan (10.1); and maintain an active role in weed management, and the control of feral animals and birds (10.5).
 - *Our community will have a high level of environmental knowledge and understanding (strategy 15).* Possible actions – develop interpretive sites, such as Cattai Wetlands, to assist in the delivery of community and environmental education programs (15.3); and provide opportunities for the community to participate in environmental management programs (15.4).
 - A strong economy (key direction 3)
 - *Expand job opportunities through the growth of existing businesses, and encourage new businesses to establish or relocate (strategy 18).* Possible actions – recognise the role of the tourism industry and provision of specific support in partnership with local tourism operators (18.7).
 - A great lifestyle (key direction 4)
 - *Leisure and recreation: Establish broad opportunities for residents and visitors to enjoy public places and facilities (strategy 25).* Possible actions – ensure that management and maintenance of public places and facilities achieves desired levels of safety, cleanliness and usability (25.3).
 - *Reconciliation: Commit to active reconciliation between the indigenous and non-indigenous communities through recognition and celebration of the strengths of our Aboriginal heritage (strategy 29).* Possible actions – continue engagement with the Purfleet Taree Local Aboriginal Land Council and other Aboriginal groups that will assist in achieving reconciliation outcomes (29.1); in partnership with the Aboriginal community construct, manage and operate an Aboriginal Cultural Heritage Centre (29.2); and encourage broad community participation in Aboriginal cultural heritage training (29.3).
 - *Heritage: Ensure that our heritage is valued (strategy 30).* Possible actions – continue to research and document all local heritage as the basis of preservation, conservation and interpretation activity (30.1); Encourage the collection and preservation of oral history (30.4).

- Getting things done (key direction 5)
 - *Pursue adequate resources for implementation of the plan (strategy 33)*. Possible actions – pursue all opportunities for government funding of planned programmes (33.4).
 - *Ensure sound local governance (strategy 37)*. Possible actions – ensure responsible stewardship of community facilities and resources (37.3).

Environmental Action Plan 2013

The *Environmental Action Plan* (adopted in November 2013) includes projects to address priority local environmental issues identified by the Manning Valley community. Three of the five key environmental issues identified are relevant for planning and management of the Cattai Wetlands. These relate to ASS, degradation of estuaries and wetlands and the loss of biodiversity (due to the degradation, loss and fragmentation of native vegetation and wildlife habitat).

The Plan specifically identifies the Cattai Wetlands as a priority area for ASS hot spot remediation projects. Other priority activities identified of relevance to the Wetlands' planning and management include coastal floodplain vegetation protection and enhancement, natural reserve management, environmental weed and pest animal control, and landscape connectivity improvements.

Greater Taree Environmental Management Plan 2006

The *Greater Taree Environmental Management Plan 2006* provided a strategic framework for the protection and enhancement of all natural resources across the Greater Taree City Council local government area (prior to the 2013 *Environmental Action Plan*).

Four of the six key natural resource management issues the Management Plan identified are relevant for the Wetlands' planning and management, as follows:

- loss of biodiversity;
- degradation of rivers, estuaries and wetlands, including sedimentation, loss of vegetation, stream bank erosion, and resulting impacts on water quality;
- degradation, loss and fragmentation of native vegetation and wildlife habitat; and
- acid drainage from exposed ASS.

Prepared after commencement of the Cattai Wetlands Project, the Environmental Management Plan included the action to “continue the implementation of first stage of the Cattai Wetlands Project, and explore ongoing implementation through a trust or similar mechanism” (action C10 in the “Coast and Estuaries” theme).

Other Council Plans

Council's 2008 *Local Greenhouse Action Plan* recognises that the propagation and planting of local native trees throughout the local government area can create greenhouse or carbon sinks (as carbon is sequestered in trees and vegetation when actively growing). It includes the action to “investigate opportunities to participate in carbon sinks and trading schemes”.

As operational land (rather than community land) the Cattai Wetlands are not included in Council's 2011 *Open Space Strategy*. The *Manning Valley Boating Infrastructure Plan 2012* makes no reference to the Cattai Wetlands or to Cattai or Coopernook Creeks.

A number of plans or reports relating directly or indirectly to the Cattai Wetlands were prepared prior to, or as part of, the 2006 Cattai Wetlands Plan of Management. These plans

and reports were incorporated, to varying degrees, in the 2006 Plan's preparation, and as such have been reflected in this Future Directions Strategy where relevant

Council Policies

Council's 2011 Risk Management Policy, and associated *Risk Management Framework and Guidelines* (2010), include an environmental risk category (covering "environmental performance of Council's operations including adverse outcomes relating to Aboriginal heritage, air, fauna, flora, water, waste, noise and vibration, land, sustainability, hazardous materials and heritage") and legal compliance and liability category (including public health and safety and public liability claims). Both are relevant to the Wetlands' planning and management.

3.2.3 Current Agreements

Property Vegetation Plan

Council entered into an Incentive Property Vegetation Plan with the Hunter-Central Rivers Catchment Management Authority (CMA), in 2010, under the *Native Vegetation Act 2003*. Property Vegetation Plans (PVPs) are legally binding agreements between a landholder and the local CMA. They may be negotiated for a number of reasons, including to access native vegetation incentive funding and to protect native vegetation for future generations.

The PVP sets some agreed management prescriptions for the Cattai Wetlands – in the form of authorised activities; agreed or required actions, and requirements to be complied with. Schedule 2 of the Cattai Wetlands PVP sets out the following authorised activities and management actions or conditions which Council must, at present, adhere to in the area's management:

- grazing may occur only on specific portions of the site, as shown on Figure 12 (and only for a maximum of 8 weeks each year outside of wet periods and subject to set maximum stocking rates;
- Council is to control weeds and Feral Pigs;
- Council is to plant suitable indigenous trees and shrubs;
- Council may slash existing firebreaks – as shown on Figure 12 – up to four times each year;
- Council is to prepare a Fire Plan for the area (within 5 years) and is not to carry out any burning unless in accordance with the Fire Plan or as required under the *Rural Fires Act 1997*;
- Council is not to clear any native vegetation (remnant or regrowth), remove any standing or fallen dead timber, remove rock, and remove any water;
- commercial apiary (over 100 hives) is to be excluded; and
- Council is to establish photo-points and monitor/document vegetation condition improvements for reporting to the CMA.

The PVP permits Council to undertake clearing associated with certain "routine agricultural management activities", as specified in the PVP and as permitted under the *Native Vegetation Act 2003*.

The Cattai Wetlands PVP includes the following "special conditions", both of which are directly relevant to planning and management of the Wetlands:

- any benefits (legal, commercial or other) that Council may gain from carbon sequestration on the site (carbon credits, etc) as a result of the PVP's implementation

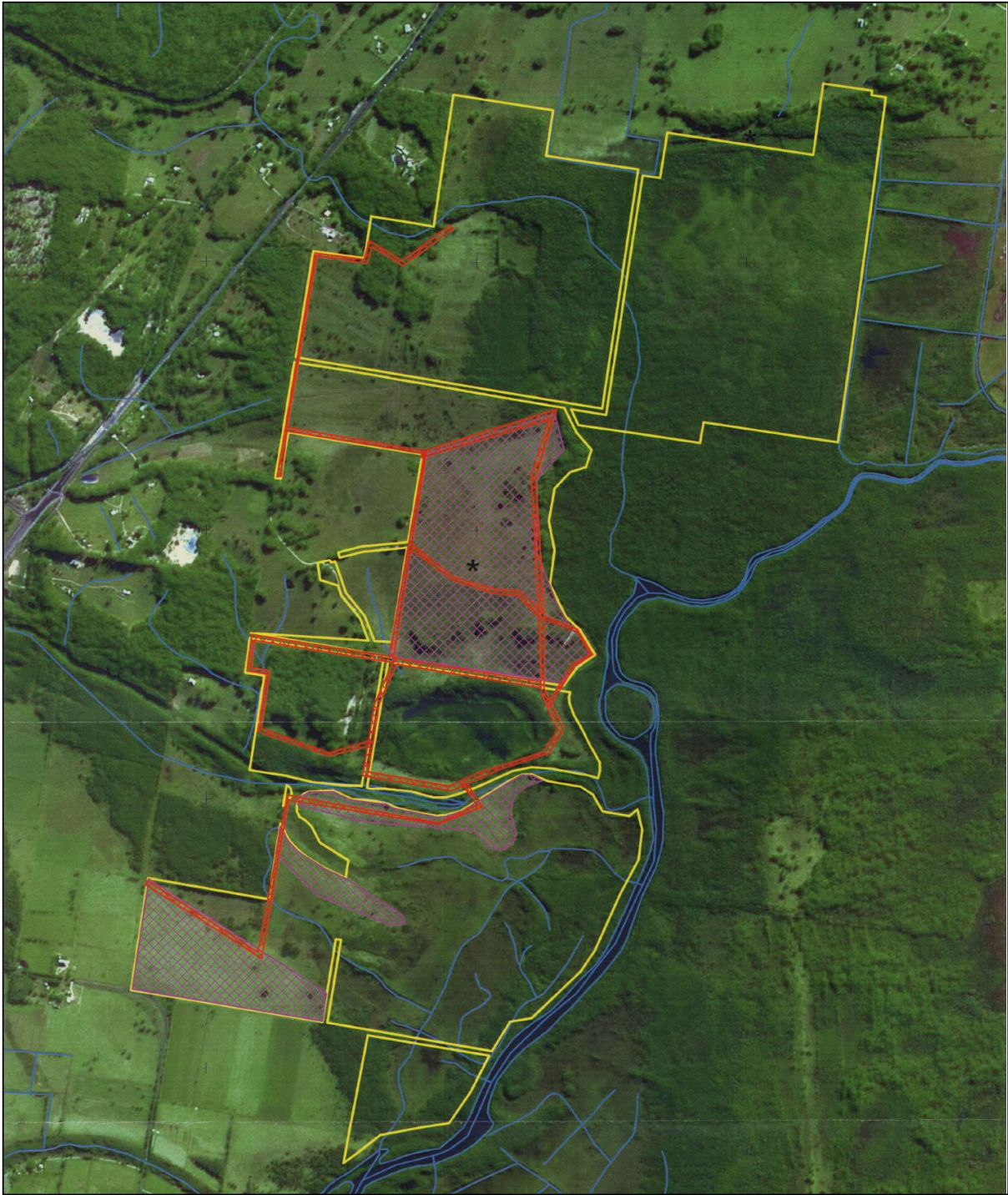


Figure 12 Approved grazing zones (cross-hatched purple) and firebreaks (cross-hatched red), from the 2010 PVP

- are to vest jointly with the Council and the Hunter-Central Rivers CMA (although either party can forego this right); and
- the Hunter-Central Rivers CMA acknowledges the possible development of a Cultural Centre at a nominated site on Spring Hill, and the PVP permits this (on the proviso that “any clearing is kept to a minimum”).

A landholder, in this case Council, can apply at any time to alter a PVP or its conditions – for example to accommodate a modification in management practices or to acknowledge new values or critical site information.

3.3 Current and Future Pressures

In addition to the biophysical processes acting on the Wetlands, and the resulting impacts on the area's natural values (which Council has been progressively remediating since commencing management of the site), the major pressures likely to be experienced by the Wetlands into the future will be human-induced factors. This will be especially felt following the Wetlands' opening to general visitor access in early 2013. Prior to this time the main human-induced changes impacting on the Wetland were the effects of past land use across the site (chiefly vegetation clearing, ASS exposure and effects, and reduced water quality) and the flow-on impacts from surrounding agricultural land uses or land use changes.

The Manning Valley Community Plan 2010-2030 projects a population growth rate of around 1% per year for the Taree region, with a predicted resident population of 60,000 in 2030 (compared with 48,00 people in 2013) and an aging demographic. In contrast to this modest resident population growth, domestic (and international) tourism to the Mid North Coast has been in steady decline since 1998, according to Destination NSW 2011 data, reducing at an average rate of 1% each year over this 14 year period. According to Destination NSW, domestic visitors spent only 11-12,000 visitor nights, approximately, in the entire Mid North Coast region in 2011.

Despite this decline in tourist numbers, and only slow steady increases in the local population, "people pressures" are potentially the greatest pressure likely to be exerted on the Wetlands during the period of this Strategy. Until early 2013 visitor access to the Wetlands was tightly controlled. Now that the Wetlands are accessible, the suppressed demand or possible visitor "pool" of the entire Taree regional population has the potential to visit the area. Even if only a small percentage of this previously untapped resident population, as well as a proportion of the region's' tourists, actually visit the Wetlands it will represent visitor pressures far in excess of those the area has previously experienced.

These new pressures will directly, and indirectly, effect the natural systems of the site. While some of these effects may take some time to be manifested, the more immediate and apparent effects of these new pressures will be on the Wetlands' visitor infrastructure and their surrounds as well as in the demands on Council and its resources in terms of managing the area.

4 BASIS FOR MANAGEMENT

The future management, use and development of the Cattai Wetlands is founded on a number of considerations – including legislative requirements and existing planning or policy directions, the values and significance of the Wetlands, the issues and threats to the Wetlands' values, the constraints and opportunities presented by the site, and the community and Council's aspirations for the area. These considerations are discussed in this section, leading to the identification of a set of "guiding principles" for the area's management.

4.1 Legislative and Policy Framework

This Future Directions Strategy must comply with the provisions of the *Local Government Act 1993* as well as the requirements of other applicable legislation, as described in Section 3. The Strategy must also be consistent with or be guided by existing State and local planning documents, policies and directions notably *The Manning Valley Community Plan 2010-2030*.

4.2 Community Consultation and Values

A range of measures were taken to ensure that members of the community, and especially known stakeholders, were aware of preparation of this Cattai Wetlands Future Directions Strategy and the opportunities to be involved in this process. Consultation enables the community to clearly express what they value about the Wetlands and their preferences or desires for the area's future management. It is important that the Future Directions Strategy reflects community values and aspirations for the area, and planning for the Wetlands acknowledges community views and inputs.

The exhibition of this draft Future Directions Strategy provides an additional opportunity for community and stakeholder input; with the ability to incorporate community and stakeholder feedback in preparation of the final Future Directions Strategy.

The people, organisations or groups known to have – or potentially having – an interest in the future planning and management of the Wetlands were broadly divided into the following 3 groups:

- neighbouring landholders – comprising 17 landholders identified from Council's data base;
- Aboriginal stakeholders – comprising 9 organisations, and 1 individual, known to have connections with or an interest in the area; and
- special-interest groups – comprising 10 groups, ranging from birdwatchers to local progress associations.

Other consultation efforts included on-going discussions with Council staff (including a workshop with planning and tourism staff), presentations/discussions with the Manning Wetlands Steering Committee, and a staffed on-site display at the official opening of the Wetlands and World Wetlands Day celebrations in February 2013.

Full details of the community consultation efforts, and feedback/comments received, are provided in Appendix J.

Key points raised in feedback from the targeted stakeholders included:

- general support for the protection and preservation of the natural environment of the wetlands;
- need to ensure effective risk management – introduced flora (weeds), introduced fauna (wild dogs) and fire;
- managing the balance between visitor access and protection of the natural environment; and
- maintaining and improving visitor facilities – road, parking, boardwalk, barbeques, a bird hide, seats and signage.

Special efforts were made to engage with the local Aboriginal community, including a visit to the Wetlands and opportunities for on-site discussions for all known Aboriginal stakeholders. Aboriginal stakeholders expressed a range of views about the Wetlands and their future, and particularly Aboriginal people's future involvement with the area and its management. Common themes or views included the following.

- The importance of future Aboriginal community involvement in the Wetlands' management, and in particular the involvement of Aboriginal Elders and traditional owners.
- A preference for retaining the area's natural values/character and environmental protection.
- Support for the measures to help everyone experience "the bush".
- The need for Aboriginal people to be involved in the approval process, and when necessary on-site works, for ground disturbance activities in culturally sensitive areas.
- Concerns about some parts of the site – in terms of suitability for access by Aboriginal people or non-Aboriginal people.
- The educational potential of the site, for Aboriginal people (as a "teaching place") and other visitors.
- That the need for a cultural centre, keeping place or other cultural facility should come from – and be driven by – the Aboriginal community.
- A range of views about the need for, and nature of, any cultural heritage facility on the site.
- Aboriginal knowledge, culture and stories should be controlled by Aboriginal people and not appropriated for economic/tourism use without the consent and involvement of the Aboriginal knowledge holders.

An additional valuable source of community views has been a self-administered visitor survey that Council has offered on-site at the Wetlands since June 2012. A total of 291 surveys had been completed (up until late August 2013) with the following major views expressed.

- "Tourist visit" was the most popular reason (62%) for visiting the Wetlands.
- Almost three quarters of respondents (73%) rated their visit to the Wetlands as "Excellent".
- "Signage" was the most popular improvement identified to enhance the visitor experience (50%), followed by "paths" (32%), "facilities" (24%) and "toilets" (22%).
- The provision of "educational facilities" was generally supported (24% of people supportive and only 5% opposed.)
- Some support was expressed for an "Indigenous cultural centre" (18% of people in favour and only 6% opposed).
- Mixed views were expressed regarding overnight camping at the Wetlands with strong opinions expressed both for and against the idea. On balance, more responses were in

favour of overnight camping (23%) with around half this number (13%) opposed. However many people that were “for” overnight camping stressed that any camping should be low-key, low-impact, limited and strictly controlled or managed.

- Almost half (44%) of respondents would be interested in a “Friends of Cattai” group.

4.3 Values and Significance

A range of values can be identified for the Cattai Wetlands. Values are what make a place important. Future Direction Strategies, Plans of Management and similar documents are typically values-based documents – meaning that management actions are shaped to reflect, maintain and enhance the values of a place.

The values of the Wetlands are founded on the area’s natural and cultural heritage features, its environmental systems and processes (and the context and contributions to the wider region), the reasons and purposes underlying the area’s original acquisition and management by Council, the area’s landscape and amenity values, and its potential for use and enjoyment by people for a range of activities. These values have been illuminated by background research (including values identified in the 2006 Plan of Management), on-site assessments, review of the Wetlands’ regional context and the attributes/values of surrounding areas, Council input and the views of the community and stakeholders regarding what they value about the Wetlands.

The Wetlands’ role in managing ASS impacts and improving water quality are well-established values of the site. The Wetlands’ value as an area of natural vegetation is readily apparent, with its importance for biodiversity conservation becoming more pronounced when the variety of endangered ecological communities on the site is also considered. The Wetlands’ cultural importance to local Aboriginal people has been well-documented. The Wetlands importance as a tourism, recreation and educational attraction is an emerging value.

The full suite of values identified for the Cattai Wetlands can be grouped around six broad topic areas, and summarised as follows:

Acid sulfate soils and water quality management

- Plays an important role in contributing to the management of an ASS “hot spot” (identified at the State level).
- Remediation of an ASS degraded area.
- Restoration of natural water regime in part of the Cattai Creek catchment.
- Plays a major role in managing water quality in Cattai Creek and contributes to improving water quality in the Manning River.
- Part of a larger regional-scale ASS and water quality management project.



Biodiversity Conservation

- Large areas of remnant and regenerating native vegetation, including 8 vegetation communities and 176 native flora species.

- 7 endangered ecological communities.
- Extensive areas of SEPP 14 wetland.
- 1 threatened, and 1 locally significant, native flora species as well as 6 threatened native fauna species.
- 3 vegetation communities of particular local/regional habitat importance.
- Part of a regional scale wildlife corridor and habitat links, plus local wildlife corridor and habitat links.



Aboriginal cultural heritage

- Area of continuing cultural significance and connection for local Aboriginal people.
- Recorded Aboriginal cultural heritage sites – both tangible sites, and intangible or story sites.
- Potential “contact history” sites.

Historic heritage

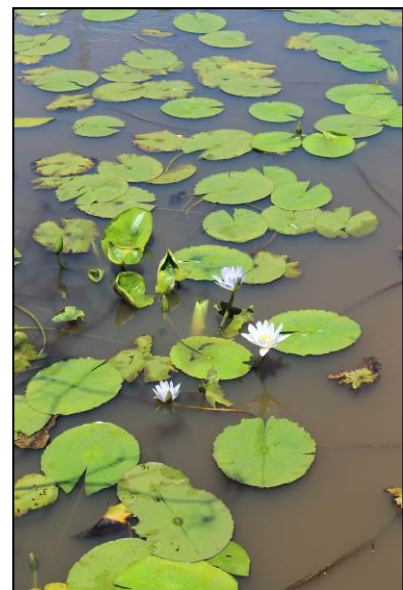
- Evidence of past land use, particularly former wetland drainage schemes and agricultural activities.

Landscape and scenic

- Prominent local topography and forested hills, visible from several locations.

Recreation and tourism attraction

- Conveniently accessible area of scenic natural landscape.
- Attractive lagoon with surrounding creek and bushland.
- Vantage point offering attractive regional views.
- Access to navigable section of Cattai Creek (for small craft).
- Visible wildlife, with abundant birdlife.
- Existing low-key visitor use facilities, uncrowded destination.
- Regionally uncommon attraction (wetland focus).
- Outdoor environmental education resource.



The following Table 5 lists the assessed level of significance for each of the values identified for the Wetlands.

Table 5 Values and Level of Significance

Value	Level of Significance			
	Local	Regional	State	National
Acid sulfate soil management			✓	
Water quality management		✓		
Biodiversity conservation			✓	
Aboriginal cultural heritage		✓		

Value	Level of Significance			
	Local	Regional	State	National
Historic heritage	✓			
Landscape and scenic	✓			
Recreation and tourism attraction		✓		

4.4 Key Issues, Constraints and Opportunities

A range of issues will need to be addressed in the future management of Cattai Wetlands. Many of these are common to ASS management and remediation projects (such as soil rewetting and acid immobilisation), others are typical issues encountered in the management of natural areas and bushland reserves (such as biodiversity, weed, pest and fire management challenges).

For the Cattai Wetlands, at the present point in the area's management, a major challenge will be the adjusting the area's management from a solely environmental management and site remediation focus to the desired greater emphasis on visitor access and enjoyment. This includes the developments and management measures necessary to support these additional uses. Where to strike the appropriate balance between environmental management and managing for visitors, over the Wetlands as a whole and in different parts of the area, will be a challenging issue to resolve.

Implementing the Wetlands altered management "mix", in terms of management resources and capabilities, is also likely to be a particular challenge for Council. Managing visitors in natural environments or settings requires differing abilities and can require considerable resources.

Site-specific management issues or challenges for different parts of the Wetlands are presented in the following constraints and opportunities assessment.

Constraints and Opportunities

A detailed constraints and opportunities assessment of the Wetlands was undertaken to provide part of the physical, or on-ground, framework against which to determine future planning and management directions.

The constraints and opportunities assessment drew upon existing published/available data and the three specialist studies completed for this Strategy as well as advice and input from Council's on-site managers and planning staff (including during on-site inspections). The assessments have also been based on detailed on-site evaluations across most of the Wetlands (excluding the less accessible north-east and south-east corners) carried out over several days addressing management issues, visitor use patterns, facilities, and current management measures and their effectiveness.

The findings of this constraints and opportunities assessment are presented in 6 figures – provided at Appendix K and L – three figures in Appendix K address the Wetlands' biophysical aspects (significant vegetation communities and flora and fauna, ASS, flooding, water quality, and connectivity) while the second set of three figures in Appendix L cover the area's cultural, recreation and scenic aspects (including Aboriginal cultural heritage).

The Wetlands' main biophysical constraints and opportunities, as shown on the 3 "Biophysical" constraints and opportunities plans, include:

- with the exception of the central hills and ridgeline, the entire site is flood liable (i.e. below 2 metres AHD);
- with the exception of the central hills and ridgeline, and a minor area in the north-west corner, the entire site falls within the top 3 ASS hazard classes;
- additional ASS and water quality management measures could be effectively undertaken at a number of sites;
- most of the vegetated/revegetated areas across the site are Endangered Ecological Communities;
- many parts of the site are protected as SEPP 14 wetland – including much of the north-east corner, Cattai Wetland Lagoon and Coopernook Creek, and a wide band fronting Cattai Creek in the south-east;
- listed threatened flora and fauna species have been recorded from a number of locations within the Wetlands, and the forested hill west of Cattai Wetland Lagoon has been assessed as Class 4 Koala Habitat;
- noticeable weed infestations occur in several locations;
- areas beside Cattai Wetlands Lagoon, Coopernook Creek and Two Mile Creek are being successfully revegetated by mass plantings, and several other parts of the site have the potential for similar revegetation efforts (or natural regeneration) – particularly the remaining cleared areas south of Coopernook Creek;
- the north-east lowlands are successfully naturally regenerating as an area of Melaleuca/Casuarina Forest and mixed wetland species;
- there is the potential to revegetate the site's central hills and ridgeline with forest species to connect and reinforce the remnant areas of tall Eucalypt forest, and increase this habitat type across the area;
- there is potential for vegetation/wildlife corridors linking both east and west across the northern third of the site;
- there is the potential for integrated management, and a possible future vegetation/wildlife corridor link (dependent on land tenure), with the Roads and Maritime Service's "compensatory wetland" block west along Coopernook Creek; and
- stock intrusion is an issue in places along the northern boundary.



The Wetlands' cultural, recreation and scenic constraints and opportunities, as shown on the 3 "Cultural, Recreation and Scenic" constraints and opportunities plans, include:

- the higher parts of the site – the central ridgeline and hills – is a zone of known and potential Aboriginal cultural heritage value;
- an area of Aboriginal cultural heritage value is located on the hill west of Cattai Wetland Lagoon;
- the access road corridor provides a scenic entry to the site, however the quarry carpark is functional but unattractive;
- visitor vehicle access to all the site's main features is not possible/practical from the current single entry and access road;

- the provision of tracks or access, or the development of infrastructure or facilities, is not practical across large areas of the site due to the area's biophysical constraints;
- Cattai Wetland Lagoon, the Wetland Walk and the lookout on Spring Hill are the site's principal existing visitor attractions/experiences;
- vegetation management will be required to retain views from the Spring Hill lookout;
- there is the potential to upgrade sections of existing walking tracks, and provide new links, to offer easier access for elderly or mobility impaired visitors (and possibly all abilities access) to the Lagoon boardwalk and viewing point;
- there is considerable potential to provide further sections of boardwalks, as well as locations suitable for the development of a bird hide, to offer additional visitor experiences of the Lagoon and wildlife;
- there are several attractive locations on the Wetlands Walk, especially along Cooperbrook Creek, that are potential sites for picnic or day-use facilities;
- the attractive Forest Walk, and other locations with remnant tall Eucalypt forest, offer visitor experiences that complement the area's dominant wetland/creek settings;
- the site offers considerable potential, and a variety of themes, for interpretation and education – from Aboriginal cultural landscapes to ASS management;
- the site's only access to Cattai Creek has considerable, but unrealised, recreation and visitor use potential;
- accessible locations along Two Mile Creek have potential for low-key remote-setting visitor facilities and experiences;
- a number of additional walking track routes/connections are available that would expand and diversify visitors' experiences, including possible walks south of Cooperbrook Creek;
- there are a number of locations that have the potential for special purpose uses or developments, without detracting from the wider visitor experience of the site;
- there is the potential for a future walking track link (dependent on land tenure) west along Cooperbrook Creek through the Roads and Maritime Service's "compensatory wetland" block;
- much of the site's service track network could be used by cyclists;
- dual purposes routes, where walking tracks follow (or are adjacent to) service tracks, or tracks along fencelines, offer poor experiences for walkers;
- redundant fencing detracts from the site's appearance and visitor experiences;
- the low-lying lands between Harrington Road and Cooperbrook Creek present a number of challenges for the development of walking tracks, and this area largely offers only limited visual/visitor interest (with the exception of the southern side of Cooperbrook Creek);



- the site's boundary on Harrington Road offers a potential promotional and visitor access point; and
- intrusive views, and noise, from adjoining buildings and land uses detract from visitor experiences in several places.



4.5 Guiding Principles for Management

The following guiding principles have been identified to direct the future planning and management of the Cattai Wetlands (in addition to Council's legislative responsibilities).

- ▶ Acid sulfate soil management, water quality management, natural heritage conservation and cultural heritage conservation will continue to be the Wetlands' overall and highest management priorities.
- ▶ Biophysical rehabilitation and restoration of the Wetlands will continue to be high priorities, and will acknowledge and be compatible with the site's landscape-scale context and connectivity.
- ▶ The Wetlands' continuing Aboriginal cultural heritage values will be acknowledged and promoted, and both Aboriginal cultural heritage and historic heritage sites or features will be appropriately managed.
- ▶ Aboriginal people will have a continuing role in the Wetlands' management, and especially in the protection and presentation of their culture (both physical and intangible).
- ▶ Visitor, staff and neighbour safety will continue to be priorities in the Wetlands' management.
- ▶ Understanding and appreciation of the Wetlands by visitors, and educational and research uses of the Wetlands, will continue to be promoted.
- ▶ Heritage-based visitor uses and recreational activities will be permitted, and provided for, where this does not unduly impair the Wetlands' heritage conservation and biophysical values or management priorities.
- ▶ Appropriate recreational uses of the Wetlands will generally be low-key and sustainable activities, that are compatible with and reliant on the area's natural setting and values, and within Council's management capabilities.
- ▶ Council may facilitate more intensive development or use of selected parts of the Wetlands by approved third parties, for appropriate activities or commercial uses, under Council's guidelines, limits and performance criteria.
- ▶ Development and management of the Wetlands will be guided by the principles of ecologically sustainable development, with a preference for low-impact and reversible developments, and within the constraints of Council's management resources and abilities.

- ▶ Council will continue to promote community involvement in the Wetlands' management.
- ▶ Council will continue to be a responsible land manager and good neighbour in its management of the Wetlands.
- ▶ Development and management of the Wetlands will not be to a level, or require such management resources or effort, that makes the area unattractive for potential future management by another public land agency.

5 MANAGEMENT DIRECTIONS AND ACTIONS

The following Management Tables present a variety of management actions – comprising both policies and management directions or guidelines, as well as more specific on-ground or tangible actions – that will guide management of the Cattai Wetlands over the coming 5 to 10 years.

The management directions and actions have been identified in response to the Wetlands' values and significance, the threats to these values and other management issues, community values and aspirations as expressed through the various community consultation measures during the Strategy's preparation, and the guiding principles for management identified for the Wetlands (as listed in Section 4.5).

A Masterplan – at Figure 13 (A and B) – summarises the Action Tables' key on-ground management actions. Figure 13A shows site-specific high priority actions, while Figure 13 B shows priority management action across the Wetlands as a whole.

Management Actions have been grouped in specific value or operational areas, matching the descriptions of the Wetlands' attributes and values as presented in Section 2.2, as follows:

- Hydrology, Water Quality and Acid Sulfate Soils;
- Biodiversity;
- Cultural Heritage;
- Visitor Access, Use and Facilities; and
- Park Operations, Management and Administration.

Each value or operational area is preceded by the key management principle(s) relative to that topic, and the management objective(s) that the management actions are intended to achieve. The key directions, strategies and actions from the *Manning Valley Community Plan 2010-2030* applying to each management topic are also referenced.

Within the Management Action Tables individual management actions are presented in the following style, for ease of reference and use:

- ▶ *italic text* – indicates management directions that are of a policy, guidelines or processes/procedures character; and
- ▶ plain text – indicates tangible actions or specific on-ground tasks.

The Management Action Tables include an indication of the order of priority and likely resources required for each management action – as a guide to the Strategy's implementation or operation.

The “**Priority**” identified for each management action or direction within the Management Action Tables give an indication of both the relative importance, and preferred timing, of that action – as follows.

- **HIGH** – Essential to achievement of the Wetlands' management objectives, or where there is potential for the public to be exposed to an unacceptable level of risk, or there is potential for a serious threat to the area's values or the environment and warranting funding consideration until achieved.

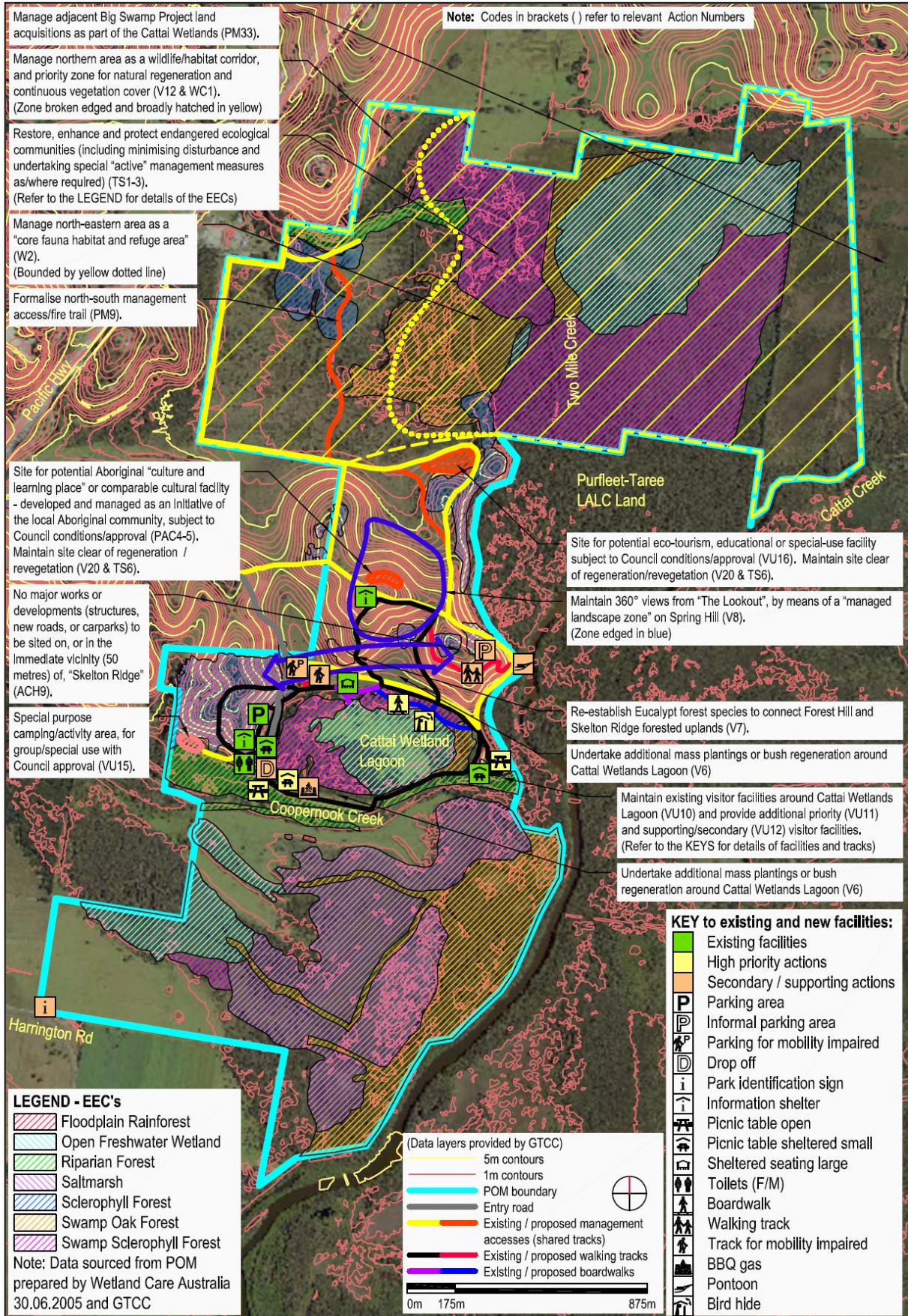
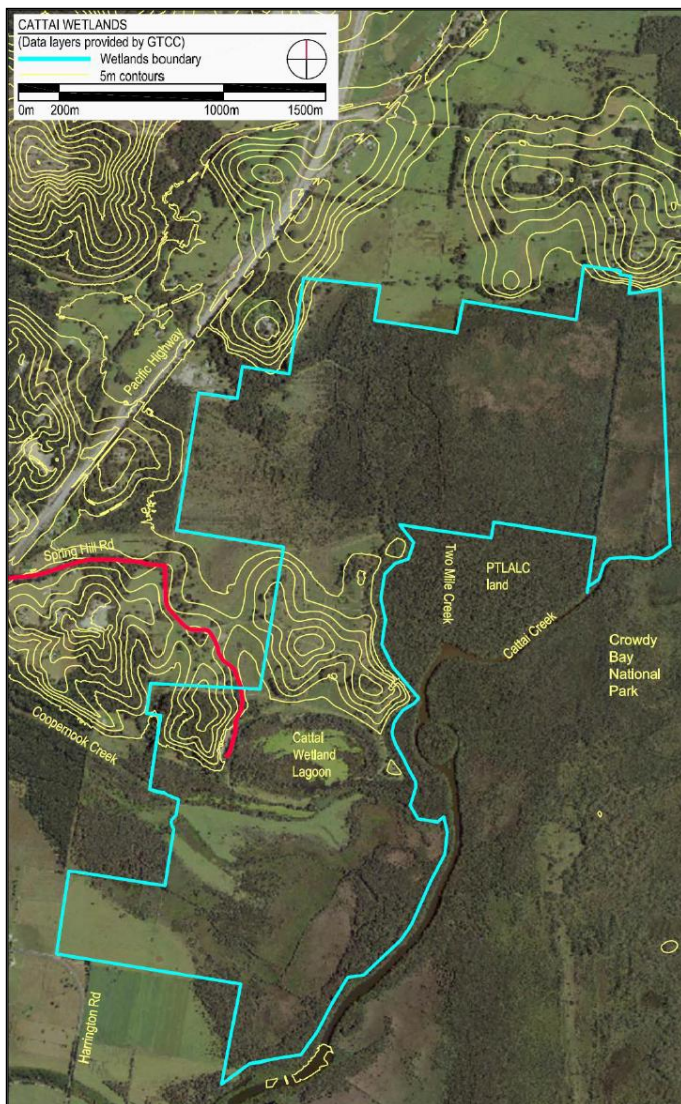


Figure 13A Masterplan – Site-specific Priority On-ground Management Actions



Wetlands-wide Priority On-ground Management Actions

- Maintain existing, and install new, sills and other in-drain water control structures (including tree falls) to control water levels and acid groundwater mobilisation (ASS3-6).
- Restore/maintain natural vegetation and habitats, and re-establish/maintain the area's former natural vegetation communities, across the majority of the Wetlands (ASS2, V1, W1, TS1-3 & WP1).
- Protect existing and regenerating areas of native vegetation, and minimise bushland disturbances across the majority of the Wetlands (V3 & W1).
- Restore, enhance and protect (minimising disturbance and undertaking special "active" management measures as/where required) endangered ecological communities and threatened flora/fauna habitats or locations (TS1-3).
- Use natural regeneration as the principal means of "broad-acre" revegetation - supported by targeted bush regeneration, assisted revegetation, weed control and fire management measures (V2 & V4-5).
- Implement a rolling programme of targeted/prioritised weed control and bush regeneration (WP2).
- Implement a rolling programme of targeted/prioritised weed control and bush regeneration (WP2).
- Undertake periodic and opportunistic monitoring of weeds and pests (WP3 & WP6).
- Undertake targeted control measures, programmed and opportunistic, against Deer and Foxes and remove straying/intruding stock as/where required (WP7 & WP9).
- Implement the key directions of the Cattai Wetlands and Big Swamp Fire Management Plan (when finalised/adopted) (F3).
- Manage identified Aboriginal sites as consistent with legislative requirements and in collaboration with local Aboriginal people/groups (ACH3-5 & ACH7), including appropriate levels pre ground disturbance assessment (ACH8 & ACH10-12).
- Continue "open" access for visitor use/enjoyment (VU2 & IE5).
- Maintain/upgrade existing, and develop new, walking tracks with adequate directional signage and orientation (VU17).
- Expand on-site interpretation measures (IE7), including presentation of Aboriginal cultural heritage values (PAC2) and GTCC's management of the Wetlands (IE8), and provide or permit guided tours, walks, talks and other activity programmes for visitors (VU30).
- Maintain management access tracks (fire trails) (F7 & PM7-8) and expand network as required (F3 & F7 & PM9-10).
- Maintain and upgrade/extend boundary fencing (PM39-40).

(Note: Codes in bracket () refer to relevant Action Numbers)

Figure 13B Masterplan – Wetlands-wide Priority On-ground Management Actions

- **Medium** – These actions are desirable to enhance achievement of the Wetlands’ management objectives, or to address issues that meet a significant community need, or to improve management outcomes and ideally should be implemented within the life of this Strategy.
- **Low** – These actions are useful for the overall management of the Wetlands or address issues that have longer-term impacts (such as meeting less urgent community needs or improving inefficient services) and should be undertaken if resources permit.

The “**Resource Requirement**” for management actions or directions are generalised according to the following categories, with further discussion of the Strategy’s resourcing and implementation provided in Section 7:

- negligible or minor – actions that are routinely part of the Wetlands’ management and can be met from normal Wetland-specific or wider Council operational budgets, or are in-house Council activities;
- moderate – actions that will require special allocations in the Wetland-specific or wider Council operational budgets, additional resourcing, may extend over a number of funding cycles, and/or require a level of capital works funding;
- high – actions that are significant projects, typically requiring sizeable capital works or other funding; and
- not applicable (n/a) – actions that are of a policy nature or guidelines, that do not have a resource requirement attached or where implementation/operational costs are part of other actions.

Council will generally be responsible for implementation of the identified management actions. Individual Council sections or business units have not been identified, to allow for organisational change and the allocation of tasks to the most appropriate section of Council. Where management actions may potentially involve external agencies or stakeholders this has been identified in the “Resource Requirement” column for a respective action. Similarly where management actions require or can be supported by the involvement of other third parties – such as volunteer groups, specific stakeholders or commercial ventures – these opportunities are identified in the “Resource Requirement” column for the respective action.

Intended outcomes, and associated performance measures or means of assessing and tracking progress towards the stated management objectives, are identified following the Management Action Table for each general value or operational area as a whole.

5.1 Hydrology, Water Quality and Acid Sulfate Soils

5.1.1 HYDROLOGY, WATER QUALITY AND ACID SULFATE SOILS

Guiding Management Principles:

➤ Acid sulfate soil (ASS) management and water quality management (along with natural heritage and cultural heritage conservation) will continue to be the Wetlands' overall and highest management priorities.

Management Objectives:

- ❖ To continue remediation of the Wetlands as an ASS hot spot, and reduce acid export into Cattai Creek and the Manning River.
- ❖ To continue reinstatement of the Wetlands' natural hydrology - surface and groundwater flows, and tidal interactions - and wetland vegetation systems.

- ❖ To limit the further disturbance and exposure of ASS, and remediate acid scalds and other ASS impacts.
- ❖ To monitor water quality, ASS impacts and acid export levels.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 8 Protect and preserve local water resources (*under Respecting the Environment - Key Direction 2*).

- Action 8.5 - Implement a programme to achieve effective management and rehabilitation of acid sulfate soils.
- Action 8.6 - Achieve effective management of coastal wetlands.

Management Actions, Priorities and Resource Requirements - Hydrology, Water Quality And Acid Sulfate Soils (ASS):

Action No.	Actions	Priority	Resource Requirement
ASS1	<i>Council will continue to adopt an "adaptive management" approach to ASS and water quality management. Applying low-key (less expensive) measures and natural processes (eg. drain collapse and obstruction by tree fall), as a first response and monitoring results, until more interventionist measures are warranted.</i>	HIGH	n/a
ASS2	<i>Restoring and maintaining natural vegetation, including coastal wetland vegetation, across the majority of the Wetlands (refer to Management Actions Table 5.2.1 [V]) will be employed to assist in managing ASS exposure/impacts and improving water quality.</i>	HIGH	n/a
ASS3	Existing sills and other in-drain water control structures will be retained, and maintained, where they continue to be effective in controlling water levels and acid groundwater mobilisation.	HIGH	Minor
ASS4	Additional sills, weirs or other drainage control/restoration works structures (temporary or permanent) will be undertaken on an "as needed" basis – as guided by the "adaptive management" approach to ASS and water quality management.	HIGH	Moderate

Action No.	Actions	Priority	Resource Requirement
ASS5	Limited tree felling, where environmental impacts can be demonstrated to be minimal (and consistent with legislation), may be employed to create “natural” waterway/drain obstructions to help manage ASS and improve water quality.	HIGH	Minor
ASS6	The effectiveness of the natural blockage (by tree fall) of Two Mile Creek will be monitored. If required alternative or additional “natural” or constructed (temporary or permanent) measures may be installed to help manage ASS and improve water quality.	HIGH	Minor
ASS7	<i>No additional sills/weirs higher than the level of the existing sill near the mouth of Cooperbrook Creek will be established on this waterway, to help avoid potential flooding impacts on adjoining properties upstream and possible inundation of visitor facilities in the adjacent areas. The freshwater pond trial area on Cooperbrook Creek, suggested by the 2006 Plan, will not be pursued.</i>	Medium	n/a
ASS8	<i>Constructed levees along Two Mile and Cattai Creeks will not be artificially breached, to avoid substantial alterations to existing/regenerating vegetation communities that have established under this hydrological regime. However natural localised breaches/failures of these levees will not be repaired.</i>	Medium	n/a
ASS9	The ongoing role and retention of the constructed levees along Two Mile and Cattai Creeks will be reviewed during this Strategy, considering factors such as the desirability of rehabilitating areas of saltwater wetland or possible sea level rises due to climate change.	Low	Minor
ASS10	Council will liaise with adjacent landholders regarding flood gates, drains, weirs and other drainage structures along the Wetlands’ boundary – notably in the north – to move towards a more natural drainage system across the Wetlands while ensuring the impacts of drainage works on the Wetlands are not adversely impacting surrounding properties.	Medium	Minor
ASS11	Council will liaise with adjoining landholders to identify opportunities for shared projects, resourcing and experience in implementing ASS and water quality management measures that will benefit all parties and the local environment.	Medium	Minor
ASS12	Water quality monitoring will be continued at the three current monitoring sites – Cattai Creek access point and two points along Cooperbrook Creek.	Medium	Minor
ASS13	Water quality monitoring will be extended to include an additional site at a suitable location on the lower reaches of Two Mile Creek.	Medium	Minor
ASS14	Water levels and flow retention on Cooperbrook Creek upstream of the Wetlands may be monitored after major rainfall events to identify any flooding repercussions for adjoining landholders.	Low	Minor
ASS15	Soil salinity, groundwater conductivity and other ASS specific parameters may be monitored on an opportunistic basis – as, when and where required.	Medium	Minor
ASS16	Vegetation photo monitoring points (refer to Action V19) will include monitoring locations to track vegetation changes due to drainage and saltwater inundation management measures.	Low	Minor
ASS17	Suitable measures – such as minimising soil exposure, drainage controls, ASS Management Plans, or Erosion and Sedimentation Control Plans – will be implemented to manage ASS disturbance and impacts during any larger development works in the Wetlands.	HIGH	Minor

Action No.	Actions	Priority	Resource Requirement
ASS18	Supplementing on-site drainage and water retention with treated effluent from Mid Coast Water, to help manage ASS and promote vegetation regeneration, may be undertaken in the south-east of the Wetlands – subject to appropriate environmental assessments and approval, planning approval, and significant external/third party funding or partnerships.	Low	High (dependent on significant, or full, external funding)
ASS19	Monitoring and implementation measures for ASS and water quality management will be included in the Wetlands' operations programme (refer Action PM14) to ensure that they form a routine and regular part of the area's management and are adequately resourced.	HIGH	Moderate

Performance Measures and Outcomes:

- Reduced acid exports into Cattai Creek and the Manning River, and further remediation of the Wetlands as an ASS hot spot.
- ASS impacts and evidence are further reduced throughout the Wetlands.
- Wetlands' natural hydrology - surface and groundwater flows, and tidal interactions - are further restored and naturally functioning.
- Improved water quality monitoring results.
- More extensive and healthy wetland vegetation systems.
- Reduced disturbance and exposure of ASS.

5.2 Biodiversity

5.2.1 NATIVE FLORA, VEGETATION COMMUNITIES AND HABITATS

Guiding Management Principles:

- Natural heritage conservation (along with ASS and water quality management, and cultural heritage conservation) will continue to be the Wetlands' overall and highest management priorities.
- Biophysical rehabilitation and restoration of the Wetlands will continue to be high priorities, and will acknowledge and be compatible with the site's landscape-scale context and connectivity.

Management Objectives:

- ❖ To maintain and enhance the Wetlands' natural systems, vegetation communities, biodiversity and habitats.
- ❖ To restore and maintain the majority of the Wetlands' as a large continuous area of native vegetation.

- ❖ To manage the Wetlands in recognition of their regional role as an expanse of natural vegetation surrounded by areas of modified landscape.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 7 Maintain and enhance biodiversity, in accordance with the principles of ecologically sustainable development (*under Respecting the Environment - Key Direction 2*)

- Action 7.3 - Restore and protect key habitat corridors, protect sites of biological significance, prevent further extinction of flora and fauna;
- Action 7.4 - Protect significant remnant vegetation.

Strategy 8 Protect and preserve local water resources (*under Respecting the Environment - Key Direction 2*).

- Action 8.6 - Implement a programme to achieve effective management of coastal wetlands.

Management Actions, Priorities and Resource Requirements - Native Flora, Vegetation Communities And Habitats (V):

Action No.	Actions	Priority	Resource Requirement
V1	<i>Manage the majority of the Wetlands to re-establish and maintain the area's former natural vegetation communities – to restore, enhance and protect the Wetlands' natural environment, habitats and biodiversity values as well as to assist in improving water quality and contribute to the area's recreation and scenic appeal.</i>	HIGH	n/a
V2	Natural regeneration will continue to be "used" as the principal means of "broad-acre" revegetation across formerly cleared and partially vegetated areas of the Wetlands.	HIGH	Minor
V3	Protecting existing and regenerating areas of native vegetation, and minimising bushland disturbances (to the extent as consistent with other actions identified in this Strategy), will be used as the dominant "passive" management measures employed to maintain native flora, vegetation community and habitat values across most of the Wetlands.	HIGH	Minor

Action No.	Actions	Priority	Resource Requirement
V4	Bush regeneration, assisted revegetation and weed control will continue to be used as the major “active” management measures used to maintain and enhance the Wetlands’ native flora, vegetation communities and habitat values. These measures will be undertaken across smaller areas where required for ecological, habitat, erosion control or site rehabilitation, visitor experience, safety, or other site-specific management purposes.	HIGH	Moderate
V5	Fire management (including the use of fire as an ecological management tool) will be used as a supporting “active” management measure (refer to Management Actions Table 5.2.5 [F]).	HIGH	Moderate
V6	Additional mass plantings or bush regeneration will be undertaken in areas around the Cattai Wetlands Lagoon – to re-establish appropriate native vegetation communities, enhance visitor settings/experiences, and provide a range of lowland vegetation communities of potential interpretive interest. Revegetation in this area will be balanced with the need to provide cleared/open areas for visitor use and facilities (refer to Management Actions Table 5.4.1 [VU]) and to retain vistas/views.	HIGH	Moderate
V7	Connecting the scattered upland eucalypt forest areas (Sclerophyll Forest Community), to expand and link this community/habitat across the central parts of the Wetlands as shown on Figure 14, is a priority for mass plantings or bush regeneration. However planting/regeneration areas will be located and managed to maintain 360° views from “The Lookout” (refer Action V8 below). Linking Forest Hill to Skelton Ridge is a high priority, with other links as lower priorities (depending on the success of natural revegetation in re-establishing Eucalypt forest species).	HIGH	Moderate
V8	Maintaining 360° views from “The Lookout” is a priority in revegetation (natural and assisted) and vegetation management on the Wetlands’ central ridge. Mass plantings and/or bush regeneration measures on the lower ridge slopes will use careful species selection, planting zones and vegetation management (including selective removal) to ensure that mature vegetation heights are reduced and that views will not be obstructed by tree species when fully grown. Natural regeneration on the mid and upper ridge slopes, in a “managed landscape zone” as shown on Figure 14, will also be controlled to preserve views from “The Lookout” – by slashing, selective removal, fire management and other measures (with a preference for low visual impact measures).	HIGH	Moderate
V9	The grassy flat south of Cooperook Creek is a lower priority area for mass plantings or bush regeneration. A revegetation plan will be prepared regarding the vegetation communities to be re-established in this area – including reinforcing and expansion of the small remnant Floodplain Rainforest Community (EEC) in this area and possibly establishing a range of lowland vegetation communities for inclusion on a potential interpretive walking track (refer Action VU14). Planting/regeneration areas will be located to maintain flyways for birds, and bird-watching opportunities, immediately beside Cooperook Creek.	Medium	Moderate
V10	Connecting and expanding the Eucalypt Forest on River Flats EEC (riparian forest community) along Cooperook Creek is a lower priority for mass plantings or bush regeneration.	Low	Minor
V11	<i>Mass plantings, bush regeneration works and supplementary revegetation plantings will only use local-provenance endemic species, preferably grown from seeds or vegetative material sourced (under managed conditions) from within the Wetlands.</i>	HIGH	n/a

Action No.	Actions	Priority	Resource Requirement
V12	The northern areas of the Wetlands will be managed as a priority zone for supporting natural regeneration and maintaining continuous vegetation, to protect and enhance the recognised wildlife/habitat corridor value of this area (refer to Management Actions Table 5.2.6 [WC]).	HIGH	Minor
V13	Natural regeneration areas will be monitored regarding revegetation progress, species succession, re-establishment of target/preferred vegetation communities, and the need for interventionist or adaptive management to modify a final/climax community. Management measures may be undertaken, where practical and feasible, to modify the vegetation communities being naturally re-established – including selective thinning/removal, fire management, seeding, mass plantings, or other targeted and contained-impact measures.	Medium	Minor to Moderate
V14	Regenerating former degraded wetland communities/areas will be monitored regarding possible <i>Casuarina</i> invasion/revegetation. Where <i>Casuarina</i> invasion is considered a problem, compromising the regeneration of more desirable wetland or saltmarsh communities, interventionist management measures may be undertaken. These may include – selective thinning/removal, spot poisoning, seeding, surface mulching, fire management, mass plantings, or other targeted and contained-impact measures.	Medium	Minor to Moderate
V15	Supporting vegetation regeneration (natural and assisted) by irrigating using treated sewage supplied by Mid Coast Water may be undertaken in the Wetlands' south-east (pasture grass paddocks) and north-west (regenerating lowland Melaleuca/Casuarina mixed forest) – if the necessary infrastructure can be installed with limited environmental and visitor experience impacts – subject to appropriate environmental assessments and approval, planning approval, and significant external/third party funding or partnerships.	Low	High (dependent on significant, or full, external funding)
V16	<i>Koala feed tree species may be intentionally over-represented in the species selected for mass planting, bush regeneration or assisted revegetation measures in suitable forest communities (especially the Sclerophyll Forest Community) – to enhance the Wetlands' value as Koala habitat, and to potentially encourage free-living Koalas as additional visitor attractions.</i>	Low	n/a
V17	Undertake or facilitate vegetation surveys and further research across the Wetlands. Priority areas for further survey/research work are updating vegetation community classification and mapping, bushfire control planning/management, clarifying EECs status (refer Action V18 below), clarifying the full extent of wetland communities (potentially under-estimated by SEPP 14 mapping), the Wetlands' aquatic flora, population census and mapping the occurrence of the threatened <i>Maundia triglochinooides</i> , and determining pre-clearing vegetation communities (to guide revegetation objectives).	Medium	Moderate (potential to involve other agencies, education or research bodies or volunteers)
V18	Undertake or facilitate further assessment of the occurrences of Sclerophyll Forest Community across the Wetlands and the EEC status of this community.	Medium	Moderate (potential to involve other agencies, education or research bodies or volunteers)

Action No.	Actions	Priority	Resource Requirement
V19	Establish additional floristic monitoring points, and continue to periodically undertake monitoring measures (such as transects, quadrats, photo points, etc), to track bushland condition, progress of regeneration/revegetation, fire sensitive vegetation communities or plant species (particularly threatened flora), and possible changes to vegetation communities.	Low	Minor
V20	Potential facility development or special use sites (as described in Management Actions Table 5.4.1 [VU] and accompanying figures) that are now mostly cleared/grassed areas will not be revegetated with forest communities or EECs, and natural regeneration in these locations will be managed as required. These locations will be retained/managed as open grass/shrub dominated areas, so as to pose no vegetation clearance constraints on future development or use. Some sites may require minor tree clearing if/when developed, requiring amendment to the current agreed Property Vegetation Plan (refer Action PM34).	HIGH	Minor
V21	<i>Limited cattle grazing (outside of wet periods and at specified maximum stocking rates as consistent with the terms of the current agreed Property Vegetation Plan) may be undertaken, with Council approval, in the far south-west corner of the Wetlands (the paddock abutting Harrington Road). Access must be from Harrington Road, and effective fencing in place to ensure that cattle do not enter other parts of the Wetlands. If grazing is to be undertaken for longer than the maximum of 8 weeks each year as allowed for under current agreed Property Vegetation Plan Council will liaise with the Hunter Local Land Services to amend the current Plan [refer Action PM33]. The other approved grazing areas specified in the Property Vegetation Plan will not be used.</i>	Low	Minor (grazing undertaken by third party, with Council approval)
V22	<i>Council may approve grass cutting/harvesting in the far south-west corner of the Wetlands (the paddock abutting Harrington Road) to assist in fire hazard reduction, vegetation management or revenue generation. Such approvals will be subject to any necessary conditions, and access must be from Harrington Road. Grass cutting/harvesting will be limited to the existing open/grassed paddock in the far south-west corner of the Wetlands and will not impact on native vegetation communities (extant or regenerating) or act to extend the current area of open/introduced grassland.</i>	Low	n/a (grass cutting/harvesting undertaken by third party, with Council approval)

Performance Measures and Outcomes:

- Expansion of the Wetland's native vegetation cover, and consolidation of vegetation communities.
- Target vegetation communities are re-established – based on survey, monitoring and observation.
- Condition of the Wetlands' native vegetation is maintained or enhanced – based on survey, monitoring and observation.
- Increased knowledge of the Wetlands' native vegetation communities, flora and habitats.
- Unobstructed views from "The Lookout" retained.

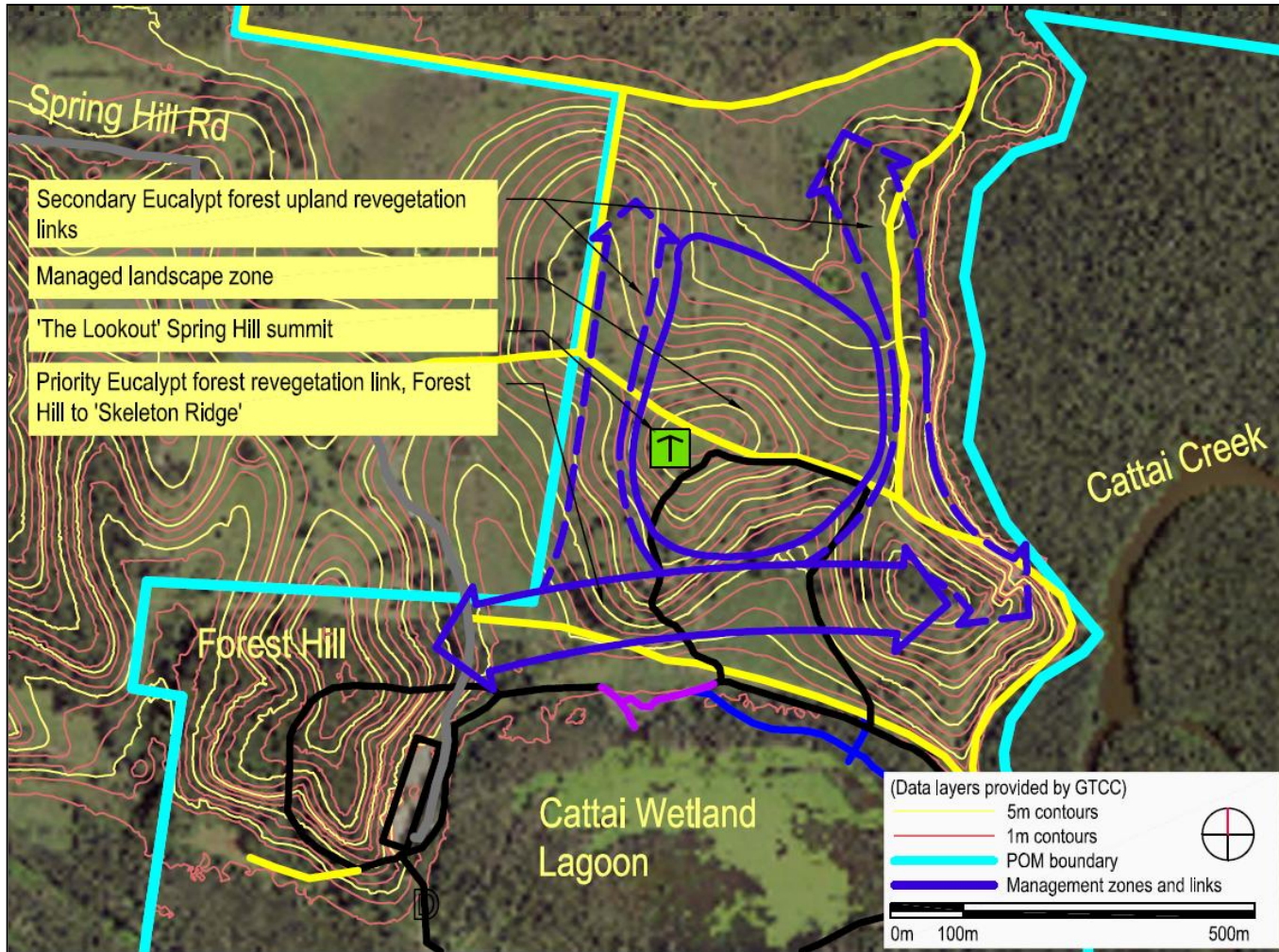


Figure 14 Sclerophyll forest revegetation Links, and managed landscape zone, on Spring Hill

5.2.2 NATIVE FAUNA

Guiding Management Principles:

- Natural heritage conservation (along with ASS and water quality management, and cultural heritage conservation) will continue to be the Wetlands' overall and highest management priorities.
- Biophysical rehabilitation and restoration of the Wetlands will continue to be high priorities, and will acknowledge and be compatible with the site's landscape-scale context and connectivity.

Management Objectives:

- ❖ To support an increase in the diversity, abundance and population resilience of native fauna.

- ❖ To maintain and enhance the Wetlands' natural systems, biodiversity and habitats.
- ❖ To manage the Wetlands in recognition of their regional role as an expanse of natural habitat surrounded by areas of modified landscape.

Alignment with Manning Valley Community Plan 2010-2030:

- Strategy 7 Maintain and enhance biodiversity, in accordance with the principles of ecologically sustainable development (*under Respecting the Environment - Key Direction 2*)
- Action 7.3 - Restore and protect key habitat corridors, protect sites of biological significance, prevent further extinction of flora and fauna.

Management Actions, Priorities and Resource Requirements - Native Fauna (W):

Action No.	Actions	Priority	Resource Requirement
W1	<i>Habitat protection – through restoring and maintaining natural vegetation across the majority of the Wetlands as well as minimising bushland disturbances and fragmentation (to the extent as consistent with other actions identified in this Strategy or for works otherwise approved in this Strategy) – will be the dominant “passive” management measures employed to support native fauna populations within the Wetlands.</i>	HIGH	n/a
W2	The north-eastern area of the Wetlands – a large and less accessible area of regenerating Open Freshwater Wetland (and possible Saltmarsh), Swamp Sclerophylly Forest and Swamp Oak Forest (as shown in Figure 15) – will be managed as a “core fauna habitat and refuge area”. No further fragmentation, vegetation clearing, new uses or developments (other than ASS/water quality, biodiversity, cultural heritage and fire management measures) or visitor facilities and uses (including no new tracks or trails, other than for management access) will take place in this area. This area also forms part of the northern wildlife/habitat corridor (refer to Management Actions Table 5.2.6 [WC]).	HIGH	Minor
W3	<i>Wildlife may be actively managed (including relocation or habitat/nest manipulation) in and around high visitor use areas and at other locations, where/when required, for visitor and public safety purposes.</i>	Medium	n/a

Action No.	Actions	Priority	Resource Requirement
W4	Undertake or facilitate periodic native fauna surveys and monitoring, and further research into the Wetlands' fauna, to improve the knowledge base regarding the area's fauna and support wildlife conservation management measures. Priority areas for further survey/research work are the Wetlands' aquatic fauna, small mammals (including microbats), threatened fauna species (particularly the Giant Dragonfly (<i>Petalura gigantean</i>) and Koala (<i>Phascolarctos cinereus</i>) populations), and migratory or vagrant bird species.	Medium	Moderate (potential to involve other agencies, education or research bodies or volunteers)

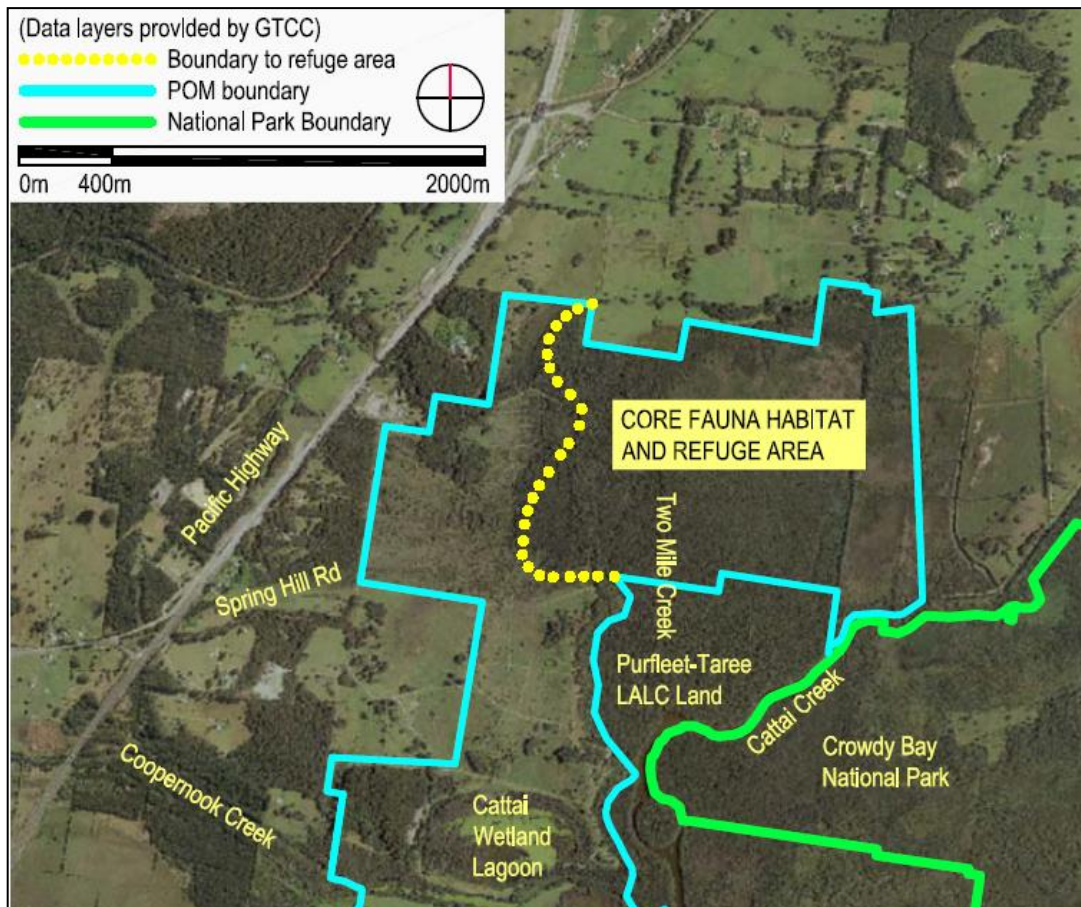


Figure 15 Core fauna habitat and refuge area

Performance Measures and Outcomes:

- Diversity and abundance of the Wetlands' native wildlife is maintained or enhanced (consistent with naturally occurring/sustainable levels) – based on survey, monitoring and observation.
- North-eastern “core fauna habitat and refuge area” maintained with minimal avoidable disturbance.
- Increased knowledge of the Wetland's native wildlife.

5.2.3 ENDANGERED ECOLOGICAL COMMUNITIES, THREATENED SPECIES AND SEPP 14 WETLANDS

Guiding Management Principles:

- Natural heritage conservation (along with ASS and water quality management, and cultural heritage conservation) will continue to be the Wetlands' overall and highest management priorities.
- Biophysical rehabilitation and restoration of the Wetlands will continue to be high priorities, and will acknowledge and be compatible with the site's landscape-scale context and connectivity.

Management Objectives:

- ❖ To protect ecological communities and native flora and fauna species legislated as having high conservation value, or assessed as of regional conservation significance.
- ❖ To maintain and enhance the Wetlands' natural systems, vegetation communities, biodiversity and habitats.

- ❖ To restore and maintain the majority of the Wetlands' as a large continuous area of native vegetation.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 7 Maintain and enhance biodiversity, in accordance with the principles of ecologically sustainable development (*under Respecting the Environment - Key Direction 2*)

- Action 7.3 - Restore and protect key habitat corridors, protect sites of biological significance, prevent further extinction of flora and fauna;
- Action 7.4 - Protect significant remnant vegetation.

Strategy 8 Protect and preserve local water resources (*under Respecting the Environment - Key Direction 2*).

- Action 8.6 - Implement a programme to achieve effective management of coastal wetlands.

Management Actions, Priorities and Resource Requirements - Endangered Ecological Communities, Threatened Species and Sepp 14 Wetlands (TS):

Action No.	Actions	Priority	Resource Requirement
TS1	<i>Manage the majority of the Wetlands to re-establish and maintain the area's former natural vegetation communities and habitats to assist to restore, enhance and protect the Wetlands' EECs, recorded (or suspected) locations of threatened flora and fauna, and other species of conservation significance.</i>	HIGH	n/a
TS2	Protecting and minimising disturbance of existing and regenerating areas of EECs, and threatened species habitats/locations, will be the dominant "passive" management measures employed to manage and protect these significant biodiversity values.	HIGH	Minor
TS3	Undertake special "active" management measures as/where required to manage and protect EECs, recorded (or suspected) locations of threatened flora and fauna, and other species of conservation significance. This includes undertaking relevant measures set out in any applicable Approved Recovery Plans under the <i>Threatened Species Conservation Act 1995</i> . Special management measures may include bush regeneration, assisted revegetation, weed control, special fire protection or management, erosion control or site rehabilitation, managing visitor information, limitations on visitor access and use, fencing/signposting, monitoring, and others.	HIGH	Moderate

Action No.	Actions	Priority	Resource Requirement
TS4	Seek management advice from the Office of Environment and Heritage, and other specialist agencies, where required, in the management of EECs, threatened flora or fauna species and their habitats.	Low	Negligible (with OEH and other agencies)
TS5	<i>Developments or management operations involving clearing or disturbing areas of EEC, SEPP 14 wetlands, or threatened species habitats/locations will be avoided as far as practical (to the extent as consistent with other actions identified in this Strategy). Any developments or operations in these areas will preferably be located on previously cleared or disturbed sites, and will be subject to the required assessment and approval procedures.</i>	HIGH	n/a
TS6	EECs will not be re-established on potential facility development or special use sites, and natural regeneration in these locations will be managed (refer Action V20).	HIGH	Minor
TS7	Undertake or facilitate further survey and research efforts targeting the Wetlands' threatened flora and fauna species/populations to support their conservation management (refer Actions V17 and W4).	Medium	Moderate (potential to involve other agencies, education or research bodies or volunteers)

Performance Measures and Outcomes:

- Condition and extent of the Wetlands' EECs and SEPP 14 wetlands maintained or enhanced – based on survey, monitoring and observation.
- Extent, occurrence and condition of listed threatened species, and species of regional conservation significance, maintained or enhanced – based on survey, monitoring and observation.
- Disturbance to EECs, SEPP 14 wetlands, listed threatened species and their habitats, and species of regional conservation significance minimised.
- Increased knowledge of the Wetlands' threatened species and their habitats.

5.2.4 WEEDS, PESTS AND INTRODUCED FLORA AND FAUNA

Guiding Management Principles:

- Natural heritage conservation (along with ASS and water quality management, and cultural heritage conservation) will continue to be the Wetlands' overall and highest management priorities.
- Biophysical rehabilitation and restoration of the Wetlands will continue to be high priorities, and will acknowledge and be compatible with the site's landscape-scale context and connectivity.
- Council will continue to be a responsible land manager and good neighbour in its management of the Wetlands.

Management Objectives:

- ❖ To reduce the occurrence and impacts of weeds and pests within the Wetlands.
- ❖ To maintain and enhance the Wetlands' natural systems, vegetation communities, biodiversity and habitats.

- ❖ To collaborate with neighbours to reduce the occurrence and impacts of weeds and pests.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 10 Effective management of environmental risks and hazards (*under Respecting the Environment - Key Direction 2*)

- Action 10.5 - Maintain an active role in weed management, and the control of feral animals and birds.

Strategy 7 Maintain and enhance biodiversity, in accordance with the principles of ecologically sustainable development (*under Respecting the Environment - Key Direction 2*)

- Action 7.3 - Restore and protect key habitat corridors, protect sites of biological significance, prevent further extinction of flora and fauna;
- Action 7.4 - Protect significant remnant vegetation.

Management Actions, Priorities and Resource Requirements - Weeds, Pests and Introduced Flora and Fauna (WP):

Action No.	Actions	Priority	Resource Requirement
WP1	Re-establishing and maintaining the area's natural vegetation communities will be used as a primary form of weed control across the Wetlands.	HIGH	Minor

Action No.	Actions	Priority	Resource Requirement
WP2	Implement a rolling programme of weed control and bush regeneration efforts within the Wetlands, with adequate on-going commitments to follow-up works at treated sites (both existing sites and future sites) to ensure effectiveness. Priorities for weed control include: <ul style="list-style-type: none"> • declared noxious weeds, and environmental weeds with a high potential for spread; • the less extensive EECs – specifically Floodplain Rainforest and Eucalypt Forest on River Flats (riparian forest); • threatened flora and fauna habitats/sites, and flora and fauna species of conservation significance; • existing weed infestations and disturbed sites; • areas vulnerable to weed invasion/spread (such as creeklines, roadsides, management access tracks, walking tracks, and major visitor nodes); • park boundaries – particularly where weed invasion of the Wetlands has been, or remains, a management concern; and • visitor use areas. 	HIGH	Moderate
WP3	Due to their widespread occurrence throughout the Wetlands, other EECs and SEPP 14 wetlands as well as formerly cleared areas of regenerating vegetation will be opportunistically monitored for weed infestation/invasion and control measures undertaken as/when required.	HIGH	Minor to Moderate
WP4	A monitoring programme will be prepared and implemented targeting areas vulnerable to the introduction and spread of weeds – including the risk of aquatic weed introduction or spread. This will include regular monitoring of high visitor use areas as well as periodic monitoring of access roads, management access tracks and vulnerable sections of the Wetlands' boundary.	Medium	Minor
WP5	<i>Precautions will be observed to ensure that any soil, fill or other bulk materials brought into the Wetlands are sourced from "weed clean" sites/sources and do not contain weed propagules.</i>	HIGH	Negligible
WP6	Continue the periodic and opportunistic monitoring of pest animal populations, with priority to deer species, to inform and target control measures.	HIGH	Minor
WP7	Deer and Foxes are priority pest species, and targeted control measures will be undertaken against these species across the Wetlands on both a programmed and opportunistic basis.	HIGH	Minor to Moderate
WP8	<i>Dogs – excluding guide and assistance dogs – and horses will be prohibited from the Wetlands (except for approved management purposes). Other domestic animals/pets will be prohibited from the Wetlands.</i>	Medium	n/a
WP9	Straying/intruding stock will be removed from the Wetlands as a priority, and/or may be impounded in accordance with Council's established practices. Fencing of the Wetlands will be improved, co-operatively with adjacent landholders, where required (refer Actions PM39 and PM40).	HIGH	Moderate
WP10	Council will liaise with adjoining landholders to identify opportunities for shared/co-operative projects regarding weed and pest that will benefit the Wetlands and neighbours.	Medium	Minor
WP11	Council will endeavour to participate in co-ordinated local/regional weed and pest animal control programmes, with neighbouring land managers (such as the National Parks and Wildlife Service) and other authorities, to support weed and pest control within the Wetlands and more widely.	Medium	Minor (with the involvement of other agencies)

Performance Measures and Outcomes:

- Weed control programme in place and regularly reviewed, and opportunistic weed control measures undertaken.
- Weeds and pest species regularly and opportunistically monitored.
- Reduction in the number and extent of weed degraded sites and incidence/extent of weed infestation – based on monitoring and observation.
- Reduced incidence of new weed infestations/introductions – based on monitoring and observation.
- Reduced populations of, and adverse impacts of, pest animals – based on monitoring and observation.

5.2.5 FIRE MANAGEMENT

Guiding Management Principles:

- Natural heritage conservation (along with ASS and water quality management, and cultural heritage conservation) will continue to be the Wetlands' overall and highest management priorities.
- Biophysical rehabilitation and restoration of the Wetlands will continue to be high priorities, and will acknowledge and be compatible with the site's landscape-scale context and connectivity.
- Visitor, staff and neighbour safety will continue to be priorities in the Wetlands' management.
- Council will continue to be a responsible land manager and good neighbour in its management of the Wetlands.

Management Objectives:

- ❖ To manage fire risks and minimise threats to life, property and the Wetlands' values posed by wildfires in the Wetlands.
- ❖ To use fire as an ecological management tool to maintain the Wetlands' vegetation community, species and biodiversity by managing fire regimes within the thresholds appropriate to the area's plant and animal communities.

- ❖ To ensure that effective fire management and fire control resources are in place across the Wetlands.
- ❖ To collaborate with other agencies and neighbours to reduce the risks, occurrence and impacts of fire in and around the Wetlands.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 10 Effective management of environmental risks and hazards (*under Respecting the Environment - Key Direction 2*)

- Action 10.1 - Participate in the implementation of the local Bushfire Risk Management Plan.

Strategy 7 Maintain and enhance biodiversity, in accordance with the principles of ecologically sustainable development (*under Respecting the Environment - Key Direction 2*)

- Action 7.3 - Restore and protect key habitat corridors, protect sites of biological significance, prevent further extinction of flora and fauna;
- Action 7.4 - Protect significant remnant vegetation and significant trees.

Management Actions, Priorities and Resource Requirements - Fire Management (F):

Action No.	Actions	Priority	Resource Requirement
F1	<i>Management of fire risks and fire control operations will be in accordance with requirements of the Rural Fires Act 1997, the directions set out in the Greater Taree Bush Fire Risk Management Plan, the Threatened Species Conservation Act 1995, and other relevant policies and legislation.</i>	HIGH	n/a
F2	Finalise the Cattai Wetlands and Big Swamp Fire Management Plan.	HIGH	Minor

Action No.	Actions	Priority	Resource Requirement
F3	Implement the key directions of the Cattai Wetlands and Big Swamp Fire Management Plan (when finalised) – including: <ul style="list-style-type: none"> • undertaking hazard reduction activities, and any associated environmental assessment/approval requirements; • establishing/maintenance of asset protection zones and strategic bushfire management zones, where required; • protecting fire exclusion or fire sensitive vegetation communities from unplanned fires; • undertaking the ecological uses of fire to support conservation of the Wetlands' vegetation communities, habitats and biodiversity; • the provision of fire management/control resources, including an effective fire trail network and sufficient water supply/access points; and • fuel load monitoring. 	HIGH	Moderate (with the involvement or assistance of other agencies)
F4	Update the Cattai Wetlands and Big Swamp Fire Management Plan as needed, in response to fire incidents and fire management actions over time.	Medium	Minor
F5	Ensure consideration of the Wetlands' fire management requirements in planning by the Greater Taree Bush Fire Management Committee and implementation of the Greater Taree Bush Fire Risk Management Plan, including annual hazard reduction and works programme (as guided by the Cattai Wetlands and Big Swamp Fire Management Plan, when complete).	HIGH	Minor (with the involvement or assistance of other agencies)
F6	Seek management advice from the Office of Environment and Heritage, and other specialist agencies, where required, in relation to appropriate fire regimes for the Wetlands' vegetation communities and habitats, and particularly for the area's EECs.	Medium	Negligible (with OEH and other agencies)
F7	Manage/maintain management access tracks (fire trails) to be serviceable for fire management/control.	HIGH	Moderate
F8	<i>Avoid or minimise the use of fire retardants in and around wetland and saltmarsh areas.</i>	Medium	n/a
F9	Employ visually and/or environmentally sensitive bush fire hazard reduction measures where required (such as around visitor facilities or high visitor use sites, around threatened species locations/habitats, and adjacent to watercourses).	Medium	Minor
F10	Council will liaise with adjoining landholders to identify opportunities for shared/co-operative fire risk reduction and other fire management measures around the Wetlands' boundary, as well as explain fire hazard management measures being applied across the Wetlands.	Medium	Minor
F11	<i>Council will pursue a policy of requiring Asset Protection Zones for assets/developments located adjacent to the Wetlands to be developed on the subject landholding, and not within the adjoining area of the Wetlands.</i>	Medium	n/a
F12	<i>Wood-burning barbeques will not be provided, and the use of fire by general Wetlands visitors will be prohibited (without special approval).</i>	Medium	Negligible
F13	Total fire bans will be notified to visitors as/when required, and fire ban restrictions enforced. The Wetlands may be closed to visitors on days of unacceptable fire risk (refer Action VU5)	HIGH	Minor

Performance Measures and Outcomes:

- Finalisation of the Fire Management Plan.
- Successful completion of annual hazard reduction measures – as assessed against programme targets.
- Reduced incidence of damage by unplanned fires to Wetlands' assets and resources, and neighbouring assets.
- Vegetation communities and habitats subject to appropriate fire regimes – based on monitoring and observation community/habitat condition.

5.2.6 WILDLIFE CORRIDOR AND HABITAT LINKS

Guiding Management Principles:

- Natural heritage conservation (along with ASS and water quality management, and cultural heritage conservation) will continue to be the Wetlands' overall and highest management priorities.
- Biophysical rehabilitation and restoration of the Wetlands will continue to be high priorities, and will acknowledge and be compatible with the site's landscape-scale context and connectivity.

Management Objectives:

- ❖ To manage the Wetlands to maintain and enhance the site's value as a regional and local scale wildlife corridor and habitat link.
- ❖ To maintain and enhance links to adjacent or nearby natural areas.

- ❖ To co-operate with adjoining landholders and managers to maintain and enhance regional and local scale wildlife corridors and habitat links, and support the protection of native flora and fauna populations.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 7 Maintain and enhance biodiversity, in accordance with the principles of ecologically sustainable development (*under Respecting the Environment - Key Direction 2*)

- Action 7.3 - Restore and protect key habitat corridors, protect sites of biological significance, prevent further extinction of flora and fauna.

Management Actions, Priorities and Resource Requirements - Wildlife Corridor and Habitat Links (WC):

Action No.	Actions	Priority	Resource Requirement
WC1	<p>The large northern section of the Wetlands – as shown on Figure 16 – will be managed to maintain continuous native vegetation cover to support this area's role as an important part of an identified regional wildlife corridor and habitat link. This area includes the Wetlands' "core fauna habitat and refuge area" (refer Action W2). Management measures to be undertaken will include:</p> <ul style="list-style-type: none"> • restoring and maintaining natural vegetation communities; • supporting natural regeneration – through weed control, fire management and supplementary bush regeneration or mass plantings; • consideration in fire management/control activities – to avoid burning the majority of the area in a single event, or disrupting the continuous east-west vegetation cover; • minimising bushland disturbances; and • limiting visitor access and facilities over most of this area. 	HIGH	Minor

Action No.	Actions	Priority	Resource Requirement
WC2	Only low-key low-impact visitor facilities will be developed in the north-western section of the Wetlands – limited to walking tracks and small-scale day-use only sites (refer to Management Action Table 5.4.1 [VUJ]) – to avoid unduly disrupting this area’s role as a wildlife/habitat corridor. No visitor facilities will be developed in the Wetlands’ northern and north-eastern areas (in the “core fauna habitat and refuge area”).	HIGH	n/a
WC3	Council will liaise and co-operate with the Office of Environment and Heritage, Department of Planning, Forestry Corporation of NSW and other agencies in protecting the wider Crowdy Bay National Park to Lansdowne Escarpment wildlife/habitat corridor, of which the Wetlands form a part.	Medium	Negligible (with OEH and other agencies)
WC4	Council will liaise with, and where appropriate support, the Purfleet-Taree Local Aboriginal Land Council in conservation management of their landholding between the Wetlands and Crowdy Bay National Park.	Medium	Minor
WC5	Council will liaise and co-operate with the Roads and Maritime Services, and private landholders upstream on Coopernook Creek, to maintain and strengthen the corridor of SEPP 14 wetland and other native vegetation communities upstream from the Wetlands’ south-west corner along Coopernook Creek.	Medium	Minor

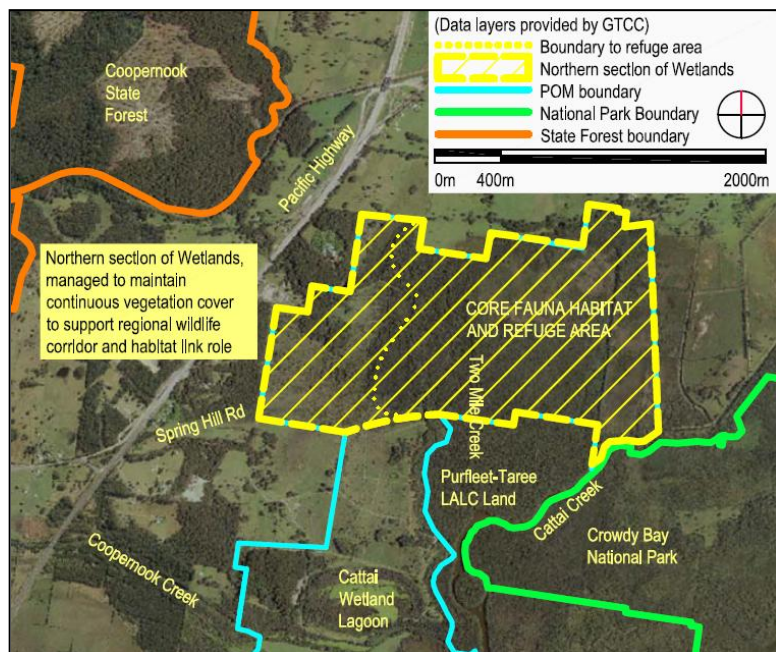


Figure 16 Northern area to be managed to retain continuous native vegetation cover

Performance Measures and Outcomes:

- Links to surrounding natural areas are not compromised by management actions on the Wetlands.

5.3 Cultural Heritage

5.3.1 PROTECTION OF ABORIGINAL CULTURAL HERITAGE

Guiding Management Principles:

- The Wetlands' continuing Aboriginal cultural heritage values will be acknowledged and promoted, and both Aboriginal cultural heritage and historic heritage sites or features will be appropriately managed.
- Aboriginal people will have a continuing role in the Wetlands' management, and especially in the protection and presentation of their culture (both physical and intangible).

Management Objectives:

- ❖ To collaborate with Aboriginal people in the identification, management and presentation of the Wetlands' Aboriginal cultural heritage.
- ❖ To manage Aboriginal cultural heritage sites and values in accordance with requirements of the *National Parks and Wildlife Act 1974*.

- ❖ To protect Aboriginal cultural heritage values during management, development and use of the Wetlands.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 29 Reconciliation: Commit to active reconciliation between the indigenous and non-indigenous communities through recognition and celebration of the strengths of our Aboriginal heritage (*under A Great Lifestyle - Key Direction 4*)

- Action 29.1 - Continue engagement with the Purfleet Taree Local Aboriginal Land Council and other Aboriginal groups that will assist in achieving reconciliation outcomes.

Management Actions, Priorities and Resource Requirements - Protection of Aboriginal Cultural Heritage (ACH):

Action No.	Actions	Priority	Resource Requirement
ACH1	Council will consult and work closely with the relevant "Local Aboriginal Cultural Heritage Committee" (with responsibility for the Wetlands area), when formed, in relation to the identification, protection, and management of the Wetlands' Aboriginal cultural heritage sites and values. "Local Aboriginal Cultural Heritage Committees" are the Aboriginal consultative bodies proposed under the NSW Government's preferred model for Aboriginal cultural heritage reform. They are envisaged as comprising "Aboriginal people who hold the cultural authority to make decisions about heritage management" within an area.	HIGH	Minor

Action No.	Actions	Priority	Resource Requirement
ACH2	If a relevant Local Aboriginal Cultural Heritage Committee is delayed or not established Council may sponsor the formation of an Aboriginal Cultural Reference Group (or similar) with which to consult regarding the identification, protection, and management of the Wetlands' Aboriginal cultural heritage sites and values. As a minimum this Group will include representation from both the Biripi Elders Council and the Purfleet-Taree Local Aboriginal Land Council as well as one other local Aboriginal organisation.	HIGH	Minor
ACH3	The Local Aboriginal Cultural Heritage Committee (or Reference Group) will be involved to provide advice regarding the management of identified Aboriginal sites, provide input to both overall management directions and day-to-day issues (when required), and be a single reference and advice point for all Aboriginal cultural heritage matters across the Wetlands (ranging from nominating appropriate Aboriginal people to participate in on-site surveys or works monitoring, to the preparation or review of interpretive materials).	HIGH	Minor
ACH4	Recorded Aboriginal cultural heritage sites/materials will preferably be protected in-situ. Limiting visitor knowledge of the location of, and access to or near, cultural heritage sites/materials will be an important management tool in protecting these places. Other appropriate possible protection and management measures may include buffer zones, relocating minor facilities (such as tracks or park furniture), fencing, signage, "capping" materials with protective fill (with depth/proximity indicator layers), cautioning staff and contractors about potential sites/locations, or other measures as determined in consultation with Aboriginal people associated with the Wetlands and the Office of Environment and Heritage. Relocation, caching or the salvage of Aboriginal cultural heritage materials may be a more practical option in some instances – subject to the necessary approvals (refer Action ACH7).	HIGH	Moderate
ACH5	Stone artefacts and other moveable Aboriginal cultural heritage items that are located in disturbed or exposed locations where they may be subject to impacts or disturbance, are vulnerable to possible souveniring, or are at risk from Wetland's operational or development activities may be relocated or salvaged – subject to the necessary legislative approval processes and procedures (refer Action ACH7). Aboriginal people will be involved in any relocation, caching, salvaging or other approved treatments of such materials.	HIGH	Minor to Moderate (depending on extent of approvals required)
ACH6	<i>Council will be guided by the Office of Environment and Heritage's "due diligence" process when determining the level of Aboriginal cultural heritage assessment and approvals required in relation to works and activities on the Wetlands.</i>	HIGH	n/a
ACH7	Office of Environment and Heritage approval – via Aboriginal Heritage Impact Permit process, with the accompanying Aboriginal Cultural Heritage Assessment and Aboriginal community consultation obligations – will be required prior to damaging or destroying any Aboriginal cultural heritage materials/sites (this includes the relocation or caching of objects).	HIGH	Minor to Moderate (depending on type and location of works requiring approval)

Action No.	Actions	Priority	Resource Requirement
ACH8	<p>The following levels of work/disturbance will not be undertaken without an assessment of the likely presence of Aboriginal cultural heritage sites/materials and measures required for their protection. Such an assessment may range from consultation and advice from Aboriginal people associated with the Wetlands to a full on-site survey and report (broad-area assessments may be undertaken where this is more cost-effective in zones likely to be subject to multiple or ongoing works).</p> <ul style="list-style-type: none"> Proposed works or developments involving ground disturbance (beyond driving pickets, posts or other narrow objects into the ground, without digging) where located in assessed potential archaeological deposits or known, or suspected, zones of high or moderate archaeological sensitivity (including "Skeleton Ridge)". Works such as mass plantings, installation of park furniture, constructing boardwalks, or boxing-in fill on walking tracks would require such assessments if/where undertaken in these sensitive areas. Proposed works or developments involving significant earthworks or ground disturbance – such as mechanical excavation, or extensive manual ground disturbance over wider areas – where located in areas of low archaeological sensitivity <p>Council will take a precautionary approach to the need for Aboriginal cultural heritage sites/materials assessment prior to works involving ground disturbance.</p>	HIGH	Minor to Moderate (depending on type and location of works and level of assessment required)
ACH9	Major works or developments (such as structures, new roads, or carparks) will not be sited on, or in the immediate vicinity (50 metres) of "Skelton Ridge" (as registered in the AHIMS) in recognition of its probable cultural importance as a story place, historical site and a possible burial/massacre site. Any low-key works undertaken in this area, such as walking track construction, will require Aboriginal people associated with the Wetlands to provide cultural input on site selection or routing and be present in a cultural monitor role during ground-breaking works.	HIGH	Minor to Moderate (depending on the scale of works and level of involvement required)
ACH10	Ground-breaking works in areas assessed as potential archaeological deposits, where not being undertaken in previously disturbed locations, will require Aboriginal people associated with the Wetlands to be present in a cultural monitor role.	HIGH	Minor to Moderate (depending on the scale of works and extent of monitoring required)
ACH11	Ground-breaking works in zones of known (or suspected) high or moderate archaeological sensitivity, as well as significant earthworks or ground disturbance in all parts of the Wetlands, may require Aboriginal people associated with the Wetlands to be present in a cultural monitor role – where this is a requirement of an Aboriginal Heritage Impact Permit or other approval. Cultural monitors may be deemed necessary by Council for such works, where these are being undertaken in locations that have not been previously disturbed, on a precautionary basis – even where this is not a requirement of a project's approval.	HIGH	Minor to Moderate (depending on the scale of works and extent of monitoring required)
ACH12	Additional survey efforts will be undertaken to relocate previously recorded Aboriginal cultural heritage sites/materials, and poorly or incorrectly recorded sites possibly within the Wetlands, which could not be found/confirmed during the 2012-13 survey. Precautions will be taken regarding any works or disturbances (refer Action ACH8) in the vicinity of these "known" sites until further on-site investigations have been made.	Medium	Moderate

Action No.	Actions	Priority	Resource Requirement
ACH13	Council will liaise with adjoining landholders immediately west of Spring Hill regarding the appropriate management of recorded Aboriginal cultural heritage sites/materials located beside or in the vicinity of the vehicle track (used for management access) leading to the Wetlands' boundary at Spring Hill.	Low	Negligible/Minor
ACH14	Council staff, and contractors, working in the Wetlands will be made aware of their obligations to protect known sites and avoid harm to Aboriginal cultural heritage sites sites/values.	Medium	Negligible
ACH15	Information regarding the location, in general terms, of known Aboriginal cultural heritage sites/values (including areas of potential archaeological deposit) will be included in operational procedures, and fire management plans, to ensure Council staff, and contractors, working in the Wetlands are aware of sensitive locations and can avoid inadvertent disturbance or damage.	Medium	Negligible
ACH16	Council will regularly liaise with the Office of Environment and Heritage regarding the most suitable approaches to the management and protection of Aboriginal cultural heritage sites/values within the Wetlands.	Medium	Negligible (with OEH)
ACH17	<i>Traditional resource harvesting by Aboriginal people having an association with the Wetlands will be permitted to the extent allowed under legislation. Aboriginal people will also be permitted to harvest natural resources from the Wetlands for interpretive or tourism uses, where this is a specific part of Council's approval for these activities.</i>	Medium	n/a
ACH18	Council will actively promote and support the possible involvement of local Aboriginal groups/businesses in management operations within the Wetlands – such as in undertaking mass plantings, bush regeneration, weed control, fence removal, track/trail maintenance and other operational or maintenance tasks.	Medium	Negligible/Minor

Performance Measures and Outcomes:

- Compliance with relevant legislation and “due diligence” process.
- Protective management of Aboriginal heritage sites – as assessed by periodic inspection and Aboriginal community feedback.
- Effective collaboration with representative Aboriginal body, and other Aboriginal people and groups.
- Works undertaken with necessary approvals, Aboriginal community involvement and minimal disturbance to Aboriginal sites/objects.
- Increased awareness of Aboriginal cultural heritage values/sites by Council staff.
- Increased knowledge of the Wetlands' Aboriginal cultural heritage values/sites.

5.3.2 PRESENTATION AND INTERPRETATION OF ABORIGINAL CULTURAL HERITAGE

Guiding Management Principles:

- The Wetlands' continuing Aboriginal cultural heritage values will be acknowledged and promoted, and both Aboriginal cultural heritage and historic heritage sites or features will be appropriately managed.
- Aboriginal people will have a continuing role in the Wetlands' management, and especially in the protection and presentation of their culture (both physical and intangible).
- Educational and research uses of the Wetlands will continue to be promoted.
- Council may facilitate more intensive development or use of selected parts of the Wetlands by approved third parties, for appropriate activities or commercial uses, under Council's guidelines, limits and performance criteria.
- Development and management of the Wetlands will not be to a level, or require such management resources or effort, that makes the area unattractive for potential future management by another public land agency.

Management Objectives:

- ❖ To collaborate with Aboriginal people in the identification, management and presentation of the Wetlands' Aboriginal cultural heritage.
- ❖ To manage Aboriginal cultural heritage sites and values in accordance with requirements of the *National Parks and Wildlife Act 1974*.
- ❖ To protect Aboriginal cultural heritage values during management, development and use of the Wetlands.
- ❖ To increase visitor awareness of Aboriginal cultural heritage and of the continuing importance of the Wetlands to Aboriginal people today.

Alignment with Manning Valley Community Plan 2010-2013:

- Strategy 29 Reconciliation: Commit to active reconciliation between the indigenous and non-indigenous communities through recognition and celebration of the strengths of our Aboriginal heritage (*under A Great Lifestyle - Key Direction 4*)
- Action 29.1 - Continue engagement with the Purfleet Taree Local Aboriginal Land Council and other Aboriginal groups that will assist in achieving reconciliation outcomes;
 - Action 29.2 - In partnership with the Aboriginal community construct, manage and operate an Aboriginal Cultural Heritage Centre.
- Strategy 15 Our community will have a high level of environmental knowledge and understanding (*under Respecting the Environment - Key Direction 2*).
- Action 15.3 - Develop interpretive sites, such as Cattai Wetlands, to assist in the delivery of community and environmental education programs.
- Strategy 18 Expand job opportunities through the growth of existing businesses, and encourage new businesses to establish or relocate (*under A Strong Economy - Key Direction 3*).
- Action 18.7 - Recognise the role of the tourism industry and provision of specific support in partnership with local tourism operators.

Management Actions, Priorities and Resource Requirements - Presentation and Interpretation of Aboriginal Cultural Heritage (PAC):

Action No.	Actions	Priority	Resource Requirement
PAC1	<i>Council will recognise Aboriginal people as the principle knowledge holders and custodians of Aboriginal cultural heritage information, and arbiters of Aboriginal cultural heritage values and matters, in relation to the Wetlands.</i>	HIGH	n/a
PAC2	Information regarding the Wetlands' Aboriginal associations and history, Aboriginal peoples' past and present connection with and use of the area, the Wetland's known heritage values and sites (in general terms only), and its continuing significance for Aboriginal people will form an important part of the Wetlands' interpretive and educational materials and programmes.	HIGH	Minor to Moderate
PAC3	<i>Aboriginal people associated with the Wetlands will have a key role in determining, preparing, delivering and advising on the interpretive materials and/or programmes developed to present the Wetlands' Aboriginal cultural heritage. Wherever practical interpretive messages and materials regarding Aboriginal cultural heritage will be developed by Aboriginal people associated with the Wetlands.</i>	HIGH	n/a

Action No.	Actions	Priority	Resource Requirement
PAC4	<p>A potential site for an Aboriginal “culture and learning place” or comparable cultural facility has been identified on the northern flank of Spring Hill, just below the summit and oriented to the north/north-east. Council will support the development and operation of a suitable built facility to present the Wetlands’, and the wider region’s, Aboriginal cultural heritage on this site (to the maximum size/extent described in Action PAC5 below). This support will be on the basis that such a facility is developed and managed as an initiative of the local Aboriginal community and meets the following minimum conditions.</p> <ul style="list-style-type: none"> • Support – the proposal must have demonstrable majority support among the local Aboriginal community. • Governance – the project must be managed by an incorporated association or other legal entity that is capable of entering into binding agreements with Council. This entity must have a majority of local Aboriginal people or groups, and include (as a minimum) representation from both the Biripi Elders Council and the Purfleet-Taree Local Aboriginal Land Council as well as one other local Aboriginal organisation. • Viability – the project must be supported by a feasibility study and business plan illustrating the viability of major/commercial proposals and an operational programme/budget, or a maintenance schedule for more low-key proposals. • Design and operation – the proposal must be self-contained in terms of utilities and services, must not be reliant on visitor vehicle access to the summit, must be sympathetic to and “fit” both the site and Wetlands in terms of design and appearance, must serve an information/education function and not be dominated solely by retail or commercial space, and must not include a permanent residential component. • Approvals – the proponents would be responsible for obtaining all necessary planning, environmental and cultural heritage approvals for the project. • Assurances – a bond or other provision for removal and site reinstatement in the event of failure, or sale/vesting arrangements, must be provided/included to Council’s satisfaction. <p>If Council is satisfied a project does, or can, meet these required “gateway” criteria it may enter into a lease or licence agreement , or other arrangements, for the approved Aboriginal entity to occupy and develop an area on the northern slope of Spring Hill (from east of the summit to the Wetlands’ western boundary) covering no more than 5 hectares.</p>	Medium	Medium to High (actual facility development by approved third party)

Action No.	Actions	Priority	Resource Requirement
PAC5	<p>The maximum size/scope of any possible “culture and learning place”, or comparable cultural facility, developed and operated on the northern slope of Spring Hill by an approved Aboriginal entity would be in the order of:</p> <ul style="list-style-type: none"> • a total building footprint, or developed site coverage, of approximately 1,300 square metres for built central facility; • plus ancillary outdoor spaces or activity areas – such as a fire pit, gathering space, summit lookout and small outdoor performance or demonstration/presentation space – around the central facility; • a larger special events space/amphitheatre for occasional use, in the managed landscape surrounding the summit of Spring Hill; and • a parking area located on/near the Wetlands boundary to the west, with walking tracks and service access to the central facility. 	HIGH	Minor
PAC6	<p><i>Development and operation of a possible “culture and learning place”, or comparable cultural facility, on the northern slope of Spring Hill by a third party must not prevent access to “The Lookout” on the summit of Spring Hill by general Wetland visitors.</i></p>	HIGH	n/a
PAC7	<p>In the event that approved Aboriginal entity does not pursue a possible “culture and learning place” or comparable cultural facility on the northern slope of Spring Hill, Council may independently develop lower-key interpretive facilities at this site – such as interpretive decks or viewing platforms below the hill’s summit. These would focus on the Wetland’s Aboriginal cultural heritage values and place in the wider cultural landscape, with the design of these elements and the interpretive messages/materials developed with the involvement of Aboriginal people associated with the Wetlands (refer Action PAC3).</p>	Medium	Moderate to High (depending on scale and nature of infrastructure)
PAC8	<p>Investigate possible Aboriginal cultural heritage sites that may be accessed for visitor appreciation – where supported by the Local Aboriginal Cultural Heritage Committee (or Reference Group), and only where adequate management can be provided to protect and present these sites.</p>	Low	Minor
PAC9	<p>Council will actively promote and support the possible involvement of local Aboriginal groups/businesses in potential educational, visitor use and tourism activities within or incorporating the Wetlands – such as cultural tours/activities, bush food tours, culture camps, specialist land or resources management workshops, special cultural events/celebrations, or visitor equipment hire.</p>	Medium	Negligible/Minor

Performance Measures and Outcomes:

- Suitable public information available regarding the Wetlands’ Aboriginal heritage values.
- Aboriginal people involved in all aspects of presentation of the cultural and cultural values of the Wetlands.
- “Culture and learning place”, or comparable cultural facility, successfully developed and operated by an approved Aboriginal entity.

5.3.3 HISTORIC (NON-ABORIGINAL) HERITAGE

Guiding Management Principles:

- The Wetlands' historic heritage (and Aboriginal cultural heritage) sites or features will be appropriately managed.

Management Objectives:

- ❖ To acknowledge and present the Wetland's non-Aboriginal past.
- ❖ To improve knowledge of the Wetland's post-1788 history.
- ❖ To appropriately manage any sites of historic heritage value

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 30 Ensure that our heritage is valued (*under A Great Lifestyle - Key Direction 4*)

- Action 30.1 - Continue to research and document all local heritage as the basis of preservation, conservation and interpretation activity;
- Action 30.4 - Encourage the collection and preservation of oral history.

Management Actions, Priorities and Resource Requirements - Historic (Non-Aboriginal) Heritage (HH):

Action No.	Actions	Priority	Resource Requirement
HH1	Council will encourage and support further research, including oral history research, into the Wetlands' post-1788 history.	Low	Minor
HH3	The Wetlands' post-1788 history and previous land uses, notably the agricultural past and drainage schemes, will figure in the area's interpretation. The willing sale of the Wetlands by the previous owner to support ASS, water quality and biodiversity improvements will be included in the area's interpretation.	Medium	Minor
HH4	Undertake or facilitate research into possible evidence of an historic loading point for early timber harvesting on Cattai Creek, and a possible early farm hut on the knoll north-east of Spring Hill. Protect and interpret these sites/features – if verified – as required.	Low	Minor

Performance Measures and Outcomes:

- Suitable public information available regarding the Wetlands' post-1788 history and previous land uses.
- Increased knowledge of the Wetlands' post-1788 history and previous land uses

5.4 Visitor Access, Use and Facilities

5.4.1 VISITOR ACCESS, USE, FACILITIES AND SERVICES

Guiding Management Principles:

- Heritage-based visitor uses and recreational activities will be permitted, and provided for, where this does not unduly impair the Wetlands' heritage conservation and biophysical values or management priorities.
- Appropriate recreational uses of the Wetlands will generally be low-key and sustainable activities, which are compatible with and reliant on the area's natural setting and values, and within Council's management capabilities.
- Understanding and appreciation of the Wetlands by visitors, and educational and research uses of the Wetlands, will continue to be promoted.
- Visitor, staff and neighbour safety will continue to be priorities in the Wetlands' management.
- Development and management of the Wetlands will be guided by the principles of ecologically sustainable development, with a preference for low-impact and reversible developments, and within the constraints of Council's management resources and abilities.
- Council may facilitate more intensive development or use of selected parts of the Wetlands by approved third parties, for appropriate activities or commercial uses, under Council's guidelines, limits and performance criteria.
- Development and management of the Wetlands will not be to a level, or require such management resources or effort, that makes the area unattractive for potential future management by another public land agency.

Management Objectives:

- ❖ To provide for sustainable visitor enjoyment of the Wetlands.
- ❖ To provide for safe visitor access and use.

- ❖ To increase the number and range of visitor use attractions, activities, facilities and settings now offered across the Wetlands.
- ❖ To manage visitor use without significant impacts on the Wetlands' natural and cultural heritage values and landscapes.
- ❖ To retain the natural, un-crowded and low-key character of the Wetlands.
- ❖ To provide an appealing, informative and safe walking track and trail network.
- ❖ To enable enjoyment of the Wetlands' key attractions by the elderly, mobility impaired and people with a disability.
- ❖ To offer visitors a selection of additional visitor services and experiences to enhance their enjoyment and understanding of the Wetlands.
- ❖ To ensure that visitor facilities are environmentally sensitive and can be managed/maintained within available resources.
- ❖ To monitor visitor numbers, visitors' experiences and their impacts.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 1 Public assets and infrastructure will be planned, managed and funded to meet community needs and agreed levels of service (*under Looking After What We've Got - Key Direction 4*)

- Action 1.1 - Consider infrastructure implications of new development, and ensure whole-of-life costings are assessed;
- Action 1.3 - Resource and implement a prioritised maintenance programme for all public assets, incorporating a risk management approach.

Strategy 5 Aim for a higher quality of design and maintenance in all development, both public and private (*under Looking After What We've Got - Key Direction 4*)

- Action 5.2 - Incorporate environmental performance criteria in all design guidelines and plans for public infrastructure;
- Action 5.5 - Ensure public places are managed and maintained as safe, clean and inviting places, that will reinforce a desired community standard.

Strategy 18 Expand job opportunities through the growth of existing businesses, and encourage new businesses to establish or relocate (*under A Strong Economy - Key Direction 3*).

- Action 18.7 - Recognise the role of the tourism industry and provision of specific support in partnership with local tourism operators.

Strategy 25 Leisure and recreation: Establish broad opportunities for residents and visitors to enjoy public places and facilities (*under A Great Lifestyle Strong Economy - Key Direction 4*).

- Action 25.3 - Ensure that management and maintenance of public places and facilities achieves desired levels of safety, cleanliness and usability.

Strategy 37 Ensure sound local governance (*under Getting Things Done - Key Direction 5*).

- Action 37.3 - Ensure responsible stewardship of community facilities and resources.

Management Actions, Priorities and Resource Requirements - Visitor Access, Use, Facilities and Services (VU):

Action No.	Actions	Priority	Resource Requirement
VU1	<i>In terms of visitor access and use, the Wetlands will continue to be managed as a predominantly natural attraction/landscape, accessible by 2WD vehicles, providing opportunities for independent nature-based low-key activities supported by a "basic" standard of limited visitor facilities.</i>	HIGH	n/a
Access/Entry			
VU2	The Wetlands will continue to be open for general access and enjoyment by visitors. Opening days and times will be advised/promoted to intending visitors prior to their arrival at the Wetlands (through signage at the start of Spring Hill Road and via promotional material and Council's website, and other means) as well as at the Wetlands' entry. Council may alter the Wetlands' opening days and times as necessary in response to demand and/or available resources or for operational, safety or other reasons.	HIGH	Minor
VU3	<i>Council will not charge visitors to the Wetlands an entry fee. However fees may be applied to additional services/activities – such as guided tours or talks.</i>	HIGH	n/a
VU4	The Wetlands will be closed to general visitors outside the notified opening times, and the entry gate(s) locked. Measures to prevent visitors from being locked-in, and late/afterhours gate opening arrangements (for a fee) may be put in place.	Medium	Moderate

Action No.	Actions	Priority	Resource Requirement
VU5	The Wetlands' will be closed to general visitors during periods of extreme or catastrophic fire danger rating or at times of severe winds. The Wetlands' may be closed to general visitors on declared Total Fire Ban days.	HIGH	Negligible
VU6	Council will maintain Spring Hill Road to provide safe 2WD vehicle access for visitors to the Wetlands (and local residents). Advisory/warning signs and speed limiting measures may be installed to ensure vehicles travels at safe speed and to help minimise hazards or disturbances (such as noise and dust) for local residents.	Medium	Moderate to High (depending on any roadworks required)
VU7	<i>Spring Hill Road will preferably be maintained at its current class – as an unsealed sheeted gravel two lane road with drainage and signage improvements – to support the intended low-key and natural character of the visitor experience being offered at the Wetlands (and potentially to deter or “filter-out” visitors preferring sealed roads and high standard destinations).</i>	HIGH	n/a
VU8	Visitor vehicle access will be restricted to the Wetlands' entry road and existing quarry carpark (also refer to Action VU9 below). An on-site speed limit of 40kph on the entry road will be signposted and enforced.	HIGH	Negligible
VU9	<i>Special approval may be given for visitor vehicle access along the management track over Spring Hill to reach the Cattai Creek access point (for special activities/uses such as canoe launching/retrieval or organised tours). Visitor vehicle access to the western flank of Spring Hill may be developed as part of the potential Aboriginal “culture and learning place” (refer Action PAC4).</i>	Medium	n/a
Visitor Facilities			
VU10	The central zone encompassing Cattai Wetland Lagoon and surrounds, “The Lookout” and Spring Hill, western side of Cattai Creek and northern side of Cooperook Creek (and the existing quarry carpark and associated visitor facilities) will continue to be the location for the primary concentration of visitor use and facilities within the Wetlands. Existing visitor facilities in this central visitor use zone will be maintained, and upgraded or additional facilities developed and experiences offered (as described elsewhere in this Management Action Table).	HIGH	High
VU11	Priority additional visitor facilities to be developed in the central visitor use zone include the following – as shown on Figure 17: <ul style="list-style-type: none"> • extension of the existing Lagoon boardwalk (which will be retained/maintained) to continue east/south-east beside the Cattai Wetland Lagoon and through the fringing vegetation communities, extending to the eastern side of the Lagoon and with a link to the eastern end of the Lookout Walk junction (this boardwalk extension could be potentially developed in stages and will be of a similar high standard, but not necessarily the same style/materials, as the current timber boardwalk); • a small bird hide at a suitable site on the Cattai Wetland Lagoon's north-eastern margin, accessed from the proposed boardwalk extension, and offering good views over the waterbody; • new picnic tables, both open and sheltered tables, on the open flats beside Cooperook Creek (south-east, and within easy access, of the existing toilets at the quarry carpark); and • additional open and/or sheltered picnic tables on the tombolo halfway along the Lagoon Walk. 	HIGH	High

Action No.	Actions	Priority	Resource Requirement
VU12	<p>Supporting, or secondary priority, visitor facilities to be developed or upgraded in the central visitor use zone include the following – as shown on Figure 18:</p> <ul style="list-style-type: none"> • develop a parking bay (one or two spaces, potentially as laybys) on the Wetlands’ entry road, near the Forest Loop crossing point, and a short section of high standard path aligned and constructed to suit elderly or mobility impaired visitors connecting east to the existing Wetland Loop; • upgrade the section of the Wetland Loop, between the Wetlands’ entry road east to the start of the Lagoon boardwalk, to assisted wheelchair access standards (in conjunction with or following the parking laybys and link above, to provide easier access for elderly or mobility impaired visitors to the Wetlands’ major attraction); and • provide additional picnic furniture and sheltered gas barbecues on the open flats beside Coopernook Creek to develop this site as the Wetland’s main day-use/picnic area – a short section of the existing management access to/through this area, south-east from the existing quarry carpark, may be upgraded/developed as a small vehicle access and drop-off (no parking) area for visitors using this expanded day-use site; • upgrade the existing quarry carpark (possibly including an additional access point on the entry road and a modified circulation pattern) if required, to better accommodate greater vehicle numbers and present a more appealing initial Wetland experience for visitors; • construct a walking track from the Lookout Loop, east of the Spring Hill summit, across “Skeleton Ridge “ to the Cattai Creek access point – of a comparable standard to the Wetlands’ other marked walks; • install a small floating pontoon at the Cattai Creek access point, to allow for easier water access (liaise with the Crown Lands Office and Fisheries NSW as required); and • modify the flatter area of the small quarry near Cattai Creek to serve as an informal parking area to support approved visitor (or tour operator) vehicle access to the Cattai Creek access point. 	HIGH	High
VU13	<p>Supporting, or secondary priority, visitor facilities that may be developed in other parts of the Wetlands – as also shown on Figure 18 – are:</p> <ul style="list-style-type: none"> • a low-key picnic/seating/rest area – comprising two items of park or picnic furniture only, and sited in a “bush” setting – on the southern side of Two Mile Creek, accessible from a nearby management access (developed if visitor use of the management track network to access this northern part of the Wetlands increases sufficiently to warrant low-key facilities in this area); and • a low-key picnic/seating/rest area – comprising two items of park or picnic furniture only, and sited in a “bush” setting – on the north-eastern side of the small knoll north-east of Spring Hill (if this area is not developed for a special-use facility – refer Action VU16) accessed from a nearby management access. 	Medium	Minor

Action No.	Actions	Priority	Resource Requirement
VU14	<p>Lower priority and/or longer-term visitor facilities that may be developed in other parts of the Wetlands – as shown on Figure 19 – are:</p> <ul style="list-style-type: none"> • construct a loop walking track south of Coopernook Creek, taking in a sample of lowland vegetation communities across this area, comprising extended sections of low boardwalk as well as on-ground track, and crossing Coopernook Creek via the existing old-farm vehicle bridge in the east and a new low-level footbridge in the west near the proposed day-use area (this route could also potentially be extended with a walking track linking south-west to the Wetlands' boundary on Harrington Road, to provide a southern [walkers only] entry to the Wetlands, with a small informal parking area also possibly developed here within the road reserve); • realign the Lookout Loop's northern section, across the summit of Spring Hill, away from the adjacent management access (to offer an improved experience for walkers); and • develop a small low-key parking area for visitors' vehicles just inside the Wetlands' boundary west of Spring Hill (if required by usage levels or demand, and if this site is not already developed as part of the potential Aboriginal "culture and learning place" [refer Action PAC4]). 	Low	High
VU15	<p>A special purpose camping/activity area, for group or special use by prior approval from Council (such as by educational groups, Aboriginal people associated with the Wetlands, volunteers, researchers, Scouts or Guides, and similar groups) will be developed in the existing clearing south of Forest Hill on the northern flat of Coopernook Creek – as shown on Figure 18. This area will be developed with park/picnic furniture, and possibly shade shelter(s) and a fire pit. The existing toilets are located approximately 250 metres to the east, and users may be permitted to bring portable toilets to support their use of this area (subject to Council's approval and conditions).</p>	Medium	Minor
VU16	<p>A potential site for development of a possible eco-tourism, educational or special-use facility has been identified on an open grassed slope north of a small knoll north-east of Spring Hill – as shown on Figure 18. This site is accessible via an existing management access and is hidden from major visitor activity areas, including "The Lookout" on Spring Hill. It could potentially be suitable for developments/uses such as "tented" or semi-permanent eco-camps, eco-tourism centres, field study or outdoor education facilities, and "culture camps" or "teaching places". Such facilities would be developed and operated by third parties, not Council, and must not entail unacceptable impacts on the Wetlands values and must be self-reliant in terms of services and utilities. Visitor vehicle access will not be permitted to this site under any approved development/use. Realising any such developments/uses would be subject to negotiation and approval by Council, and may include arrangements for the lease or licence of this area of the Wetlands (to maximum area of 3 hectares).</p>	Medium	Moderate to High (actual facility development by approved third party)

Action No.	Actions	Priority	Resource Requirement
Walking Tracks			
VU17	Existing walking tracks will be maintained, and new tracks developed, as safe and appealing to walkers, with all tracks maintained to “sandshoe” standards (that is, requiring sound enclosed footwear but not warranting walking boots). Tracks will preferably be cleared and even surfaces, or boardwalks where required in wetter or sensitive areas, or sheeted with gravel or other surfaces where necessary for surface stability or trafficability, or low mown grass/vegetation, or other suitable surface and drainage improvement. Simply slashing walking tracks will be avoided, as far as practical. All walking tracks will have adequate directional signage/markers and orientation information.	HIGH	Moderate to High
VU18	Walking tracks and management accesses will be separate routes as far as possible. Where a management access also serves as part of a walking track, notably along the southern margin of Cattai Wetland Lagoon, they will be sympathetically managed/maintained to minimise detracting from walkers’ experience.	Low	Minor
VU19	Walking tracks will be maintained through a programmed system of inspections and maintenance, supported by responsive maintenance works as required. Minor track re-routings and works may be undertaken as required for user safety and to minimise adverse impacts on the Wetlands’ values.	Medium	Moderate to High
VU20	Informal and unauthorised walking tracks will be closed and rehabilitated – and walking track alignment, design and treatments will endeavour to minimise the likelihood of the creation of unauthorised/alternative tracks.	Medium	Minor
VU21	Council will collaborate with upstream landholders on Coopernook Creek to assess the feasibility of a walking track, or shared path, from the Wetlands upstream to Coopernook village – as shown on Figure 19 – and participate in the joint planning, design and development of this link if feasible.	Medium	Minor (potentially Moderate to High if link proceeds)
Regulating Visitor Uses/Activities			
VU22	The Wetlands’ management access network will be available for use by both walkers and for bicycle touring (except when closed due to management, safety or other reasons). Directional signage/markers will be installed on the management access network to support this use, and stiles may be installed at fences/gates to allow for ease of walker access.	Medium	Minor
VU23	<i>Bicycles will not be permitted on walking tracks – the Wetland, Forest and Lookout Loops and the proposed track from the Lookout Loop to Cattai Creek.</i>	Medium	n/a
VU24	<i>Mountain biking events (for approved users or groups) may be held on the Wetlands’ management access network, subject to Council approval and conditions.</i>	Medium	n/a
VU25	<i>Horseshoeing and trailbike riding will be prohibited within the Wetlands.</i>	Medium	n/a
VU26	<i>Fishing, canoeing/kayaking, swimming or other water-contact recreational use will not be permitted in Cattai Wetland Lagoon or on Coopernook Creek.</i>	HIGH	n/a

Action No.	Actions	Priority	Resource Requirement
VU27	Overnight camping, including campervans or caravans, will not be permitted within the Wetlands – except with Council’s prior approval and for special (approved) activities. “No camping” advice will be included on signage at the start of Spring Hill Road, at the Wetlands’ entry and via other promotional or pre-visit information.	HIGH	n/a
VU28	Use of the Wetlands by larger visitor vehicles – notably caravans, camper trailers and coaches (40+ seats) – will be monitored. If access by these vehicles adversely impacts the Wetlands’ values, or creates problems in the quarry carpark or on Spring Hill Road or the entry road, Council may designate the Wetlands as unsuitable for these vehicles and take measures to prevent or manage their access.	Medium	Minor
VU29	<p><i>Special recreational uses or events may be permitted, in the Wetland’s developed or accessible areas, with Council’s approval and subject to any conditions, where:</i></p> <ul style="list-style-type: none"> • <i>consistent with the Wetlands’ values and character</i> • <i>there are unlikely to be unacceptable impacts on an area’s natural and cultural heritage resources/values;</i> • <i>there are unlikely to be unacceptable impacts on an area’s on-going amenity and visitor infrastructure;</i> • <i>other users are not unduly disadvantaged; and</i> • <i>no excessive demands are placed on the Wetlands’ management.</i> 	Low	n/a
Tours, Activities and Visitor Services			
VU30	Guided tours, walks, talks and other activity programmes (such as school holiday activities) may be offered by Council at the Wetlands during peak visitor use periods and at other times. These activities may also be offered by commercial tour operators, volunteers (such as bird watching groups) or other parties (such as Aboriginal people/groups preferably delivering Aboriginal cultural heritage programmes) with the prior approval of Council and subject to any conditions.	HIGH	Moderate
VU31	Council will liaise with the Office of Environment and Heritage regarding possibly including the Wetlands on the local National Parks and Wildlife Service’s seasonal “Discovery Ranger” programme.	Low	Negligible
VU32	<i>Commercial tour or recreation operators will be licenced (longer term) or permitted (shorter-term) to access/use the Wetlands as part of their itineraries or activities, with the prior approval of Council and subject to any conditions. In approving and managing such uses Council will consider issues such as appropriate activities, suitable locations, group size, frequency of use, acceptable impact limits, and the potential for disturbing or displacing other Wetland visitors.</i>	Medium	n/a
VU33	<i>Council may require appropriate accreditation, qualifications, safety standards and other conditions prior to licencing Commercial tour or recreation operators to access/use the Wetlands. Council will apply its own commercial operator licencing system or mirror those used by other managers of other comparable areas (such as the National Parks and Wildlife Service).</i>	Medium	n/a

Action No.	Actions	Priority	Resource Requirement
Visitor Facility Maintenance			
VU34	All visitor facilities and infrastructure within the Wetlands, including the entry road and quarry carpark, will be maintained in a safe, serviceable and presentable condition through a programmed system of maintenance and replacement, supported by responsive and opportunistic maintenance works as required.	HIGH	Moderate
VU35	<i>The serviceability, durability and maintenance demands, sustainability and environmental performance, and appearance (in keeping with the Wetland's natural setting) of materials and infrastructure will be considerations in the construction and maintenance of the Wetlands' facilities.</i>	Medium	n/a
VU36	Rainwater will be harvested from facilities/structures where practical for visitors. However potable water (assured/tested quality) will not be provided for visitors' use.	Medium	Minor
Visitor Safety			
VU37	Appropriate hazard warning, safety advice and precautionary information will be provided to visitors – both on-site and in pre-visit information. On-site hazard/safety signs will be effective, but not unnecessarily intrusive or overwhelm other Wetlands information being presented to visitors.	HIGH	Minor
VU38	Periodically undertake risk assessments and visitor safety audits, including tree safety audits, in high visitor use locations (including along walking tracks and around waterbodies) to identify and address visitor safety issues and their management.	HIGH	Minor
VU39	Sections of redundant farm fencing, especially barbed wire fencing, in proximity to walking tracks and visitor use nodes will be removed.	HIGH	Minor
VU40	Council will ensure that it has effective emergency procedures in place in relation to visitor use of the Wetlands – including Wetland closure procedures, evacuation procedures, identified refuge areas, and emergency access and communications.	HIGH	Negligible/Minor
Visitor and Impact Monitoring			
VU41	Continue to monitor the number of visitors to the Wetlands, and the timing/patterns of visitor numbers, to assist in the Wetlands' and visitor management.	Medium	Minor
VU42	Continue to monitor visitor profiles/characteristics, behaviour and satisfaction levels to assist in the Wetlands' and visitor management – through both structured visitor surveys and opportunistic feedback.	Medium	Minor
VU43	Monitoring points will be established, or other measures implemented, to evaluate the impacts of increased visitor access and use on the Wetlands' natural and cultural heritage resources/values.	Medium	Minor

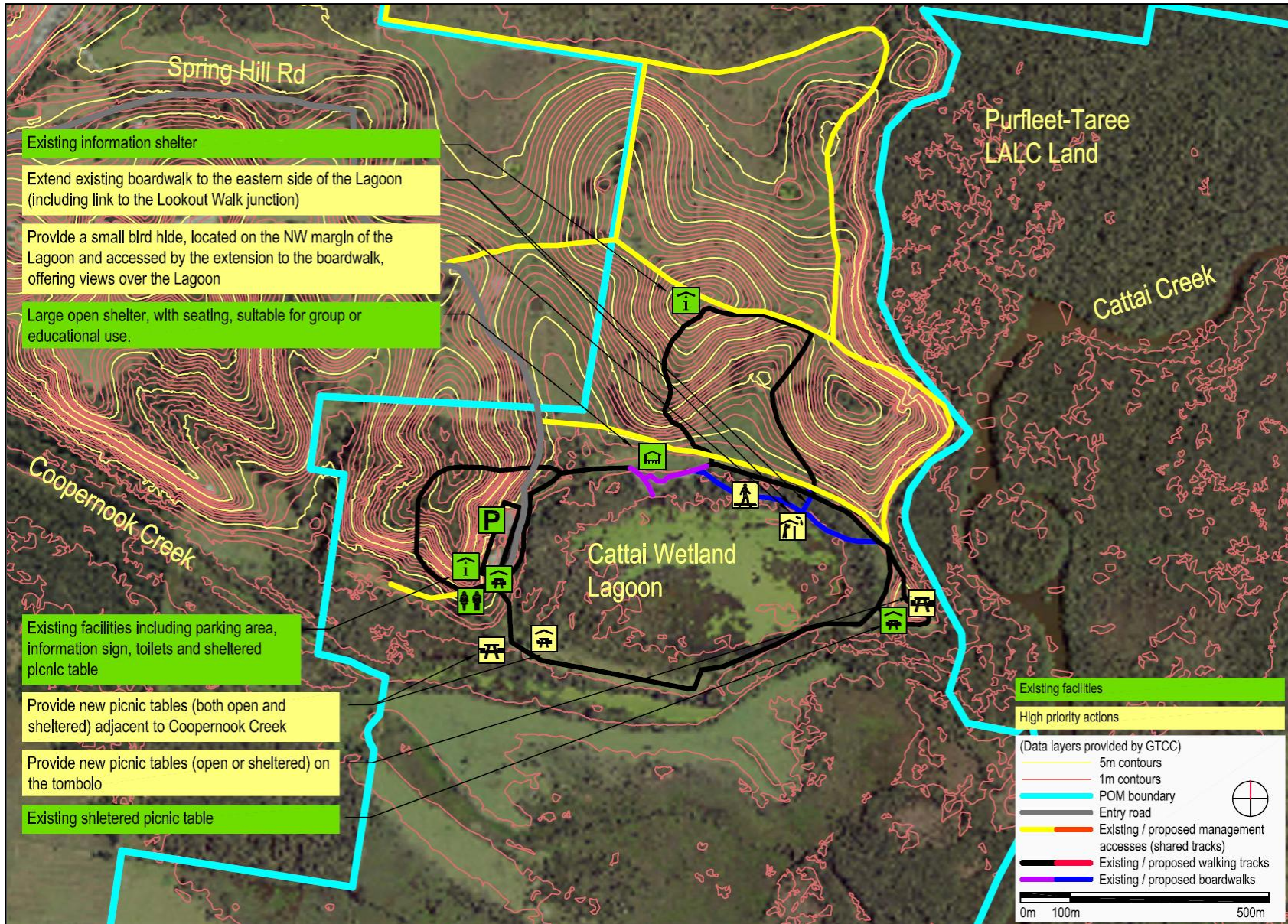


Figure 17 Priority additional visitor facilities to be developed in the central visitor use zone

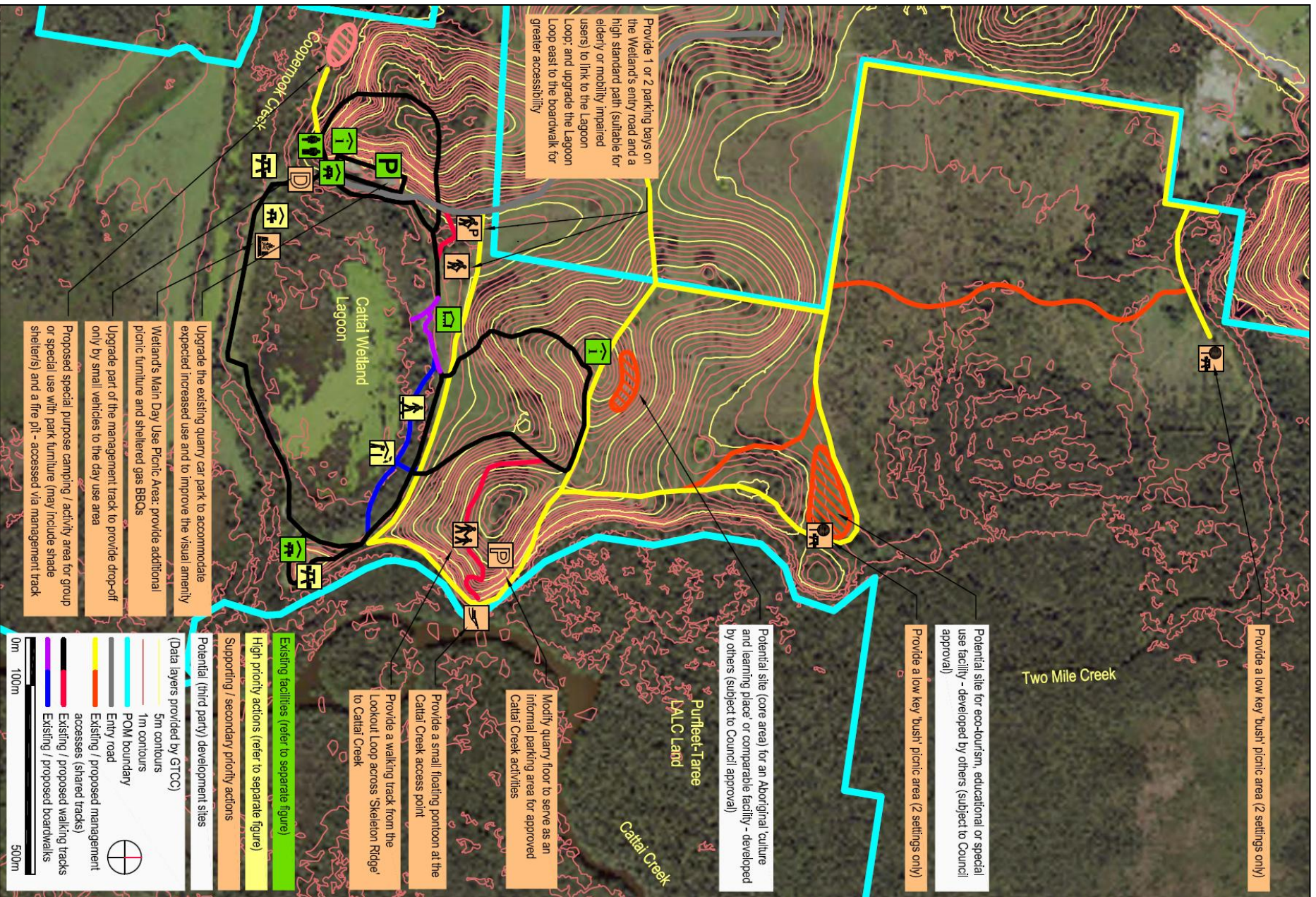


Figure 18 Supporting, or secondary priority, visitor facilities

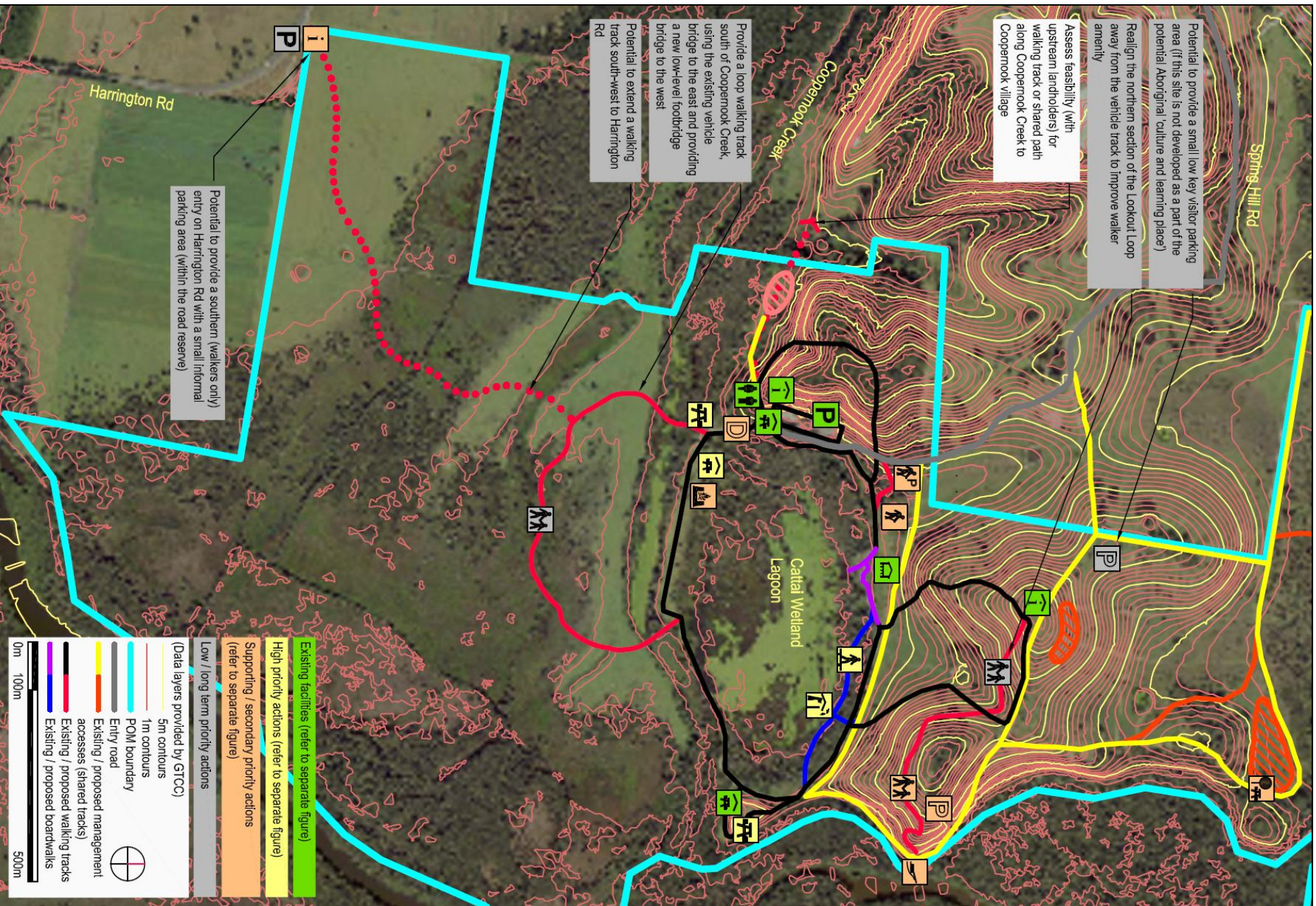


Figure 19 Low priority, or longer term, visitor facilities

Performance Measures and Outcomes:

- Additional visitor facilities and usage nodes developed in orderly fashion and in use – as assessed by works reporting, observations/surveys and user feedback.
- Visitor activities/experiences broadened and additional visitor services offered – as assessed by observation and user surveys/feedback.
- Visitor numbers increasing, but within acceptable environmental impact limits – as assessed by regular use surveys and impacts monitoring.
- Existing/desired Wetlands character maintained, and underlying values not compromised, by visitor use and developments.
- Walking track network maintained and additional track/upgrading works implemented.
- Maintenance programmes in place and effective for visitor facilities/infrastructure – as assessed by regular condition assessments, works reporting and user feedback.
- Visitor use, and other, risks effectively managed - as assessed by ongoing completion of risk assessments as/when required, and implementation of risk management actions.
- Visitor safety standards achieved – as assessed by number of reported incidents/accidents.
- Spring Hill Road maintained as an effective unsealed access/entry – as assessed by accidents/incidents and user/resident feedback.
- Vehicle access and carparking operates safely and efficiently – as assessed by accidents/incidents and user feedback.
- Wetlands accessible to a broad range of user groups, including mobility impaired – as assessed by regular user surveys/observations, and range of users evident.

5.4.2 INTERPRETATION, INFORMATION AND EDUCATION

Guiding Management Principles:

- Understanding and appreciation of the Wetlands by visitors, and educational and research uses of the Wetlands, will continue to be promoted.

Management Objectives:

- ❖ To manage promotion and awareness of the Wetlands as a means of controlling visitor numbers.
- ❖ To ensure that intending visits have sufficient pre-visit information for a safe and enjoyable Wetland experience.
- ❖ To improve recognition, understanding and appreciation of the Wetland and its values as well as Council's management of the site.
- ❖ To provide on-site and remote interpretation to improve visitor awareness of the Wetlands' natural and cultural heritage, other values and significance, issues and management.

- ❖ To maintain and improve on-site face-to-face interpretive services.
- ❖ To encourage and promote the use of the Wetlands for education.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 15 Our community will have a high level of environmental knowledge and understanding (*under Respecting the Environment - Key Direction 2*).

- Action 15.3 - Develop interpretive sites, such as Cattai Wetlands, to assist in the delivery of community and environmental education programs.

Management Actions, Priorities and Resource Requirements - Interpretation, Information and Education (IE):

Action No.	Actions	Priority	Resource Requirement
Promotion, Awareness and Pre-visit Information			
IE1	Restrict promotion of the Wetlands in brochures and guides distributed by Council and the Manning Valley Visitor Information Centre, and liaise with Destination NSW, to limit promotion of Wetlands primarily to within the Taree region. However the Wetlands will be actively promoted to residents of the Taree region, and to visitors once they have arrived in the region.	Medium	Minor
IE2	On-ground promotion of the Wetlands will be restrained. Only a smaller "locality" direction sign will be installed on the Pacific Highway – in consultation with the Roads and Maritime Services – at the Spring Hill Road intersection (in preference to a larger brown tourism attraction/direction sign). The existing Wetlands information sign will be retained at the start of Spring Hill Road.	Medium	Minor (with involvement of the RMS)
IE3	An identification/information sign will be installed on the Wetlands' boundary with the Harrington Road, to increase awareness of the Wetlands among local residents and visitors using this road.	Medium	Minor

Action No.	Actions	Priority	Resource Requirement
IE4	Update the Wetlands' pre-visit brochure, website information and other promotional/pre-visit information as/when required – to ensure that intending visitors have easy access to the latest information concerning the Wetlands (especially opening times, "planning your visit", "what to bring" and safety information).	Medium	Minor
IE5	Maintain Park entry, orientation, visitor information and regulatory signs at the Wetlands entry.	HIGH	Minor
IE6	Develop a Wetlands logo or branding (using distinctive imagery, such as the Giant Dragonfly) for use across all promotional, interpretive and public information.	Low	Moderate
Interpretation and Education			
IE7	Expand the Wetlands' on-site and remote interpretive and information services and facilities – including additional on-site interpretation (both signs and on-site brochures as well as other media, such as interactive or digital measures) and off-site published and web-based materials.	HIGH	Moderate
IE8	<i>Interpretive materials will feature the Wetlands' management, including management challenges and achievements, in addition to information about the area's values and significance.</i>	HIGH	n/a
IE9	<i>The possible visual and environmental impacts of on-site interpretive/information signs (sun glare, imposing on viewsheds, disrupting skylines or vantage points, etc) will be considered prior to their approval, siting and installation.</i>	Low	n/a
IE10	Maintain and update – and expand/supplement where appropriate – the Wetlands' range of web-based and hard-copy interpretive brochures and information.	Medium	Minor
IE11	Possible development and operation, by an approved third party, of an Aboriginal "culture and learning place" or comparable cultural facility on the northern flank of Spring Hill (refer Action PAC4), or development of alternative interpretive facilities (such as interpretive decks or viewing platforms) at this site by Council (refer Action VU16).	refer Actions PAC4 and VU16	
IE12	Guided tours, walks, talks and other activity programmes (such as school holiday activities) may be offered by Council at the Wetlands during peak visitor use periods and at other times (refer Action VU30).	refer Action VU30	
IE13	Offer guided walks and other face-to-face interpretive services – on a fee basis when appropriate – on special occasions (such as World Wetland Day) and as/when resources permit.	Medium	Minor to moderate (staff time commitment)
IE14	<i>Encourage and accommodate use of the Wetlands as a venue and asset for environmental, outdoor and other educational uses – including community-based environmental education projects.</i>	HIGH	n/a
IE15	Liaise with the Department of Education and Communities to identify opportunities for the Wetlands' values, management issues and initiatives, and potential interpretive themes to align with elements of the primary and secondary school curricula. Prepare, or support the development of, curriculum relevant support materials and "teacher packages" to facilitate educational use of the Wetlands.	Medium	Minor to Moderate
IE16	Identify environmental education opportunities along the walking track network, and other easily accessible sites, for use/inclusion in curriculum relevant support materials.	Medium	Minor

Action No.	Actions	Priority	Resource Requirement
IE17	<i>Special interest tours or activities (such as demonstration field days or site tours and teaching days), by others, showcasing the Wetland's management and environmental achievements – such as ASS management, wetland rehabilitation and land management– will be supported by Council where possible.</i>	Low	n/a

Performance Measures and Outcomes:

- Localised promotion of the Wetlands effectively managing visitor loads – assessed by visitor numbers and user surveys/feedback.
- Pre-visit and off-site Wetlands information provided and adequate - as assessed by user feedback.
- Adequate and effective on-site signage maintained – as assessed by regular facilities audits and user feedback.
- Effective and varied Wetland information and interpretation – as assessed by user surveys/feedback and observation.
- Increased delivery of face-to-face interpretive services – as assessed by staff time commitments to interpretation, and user feedback.
- Increased educational use of the Wetlands – as assessed by booking data, requests, staff time commitments to education services, user surveys and observation.
- Increased capacity, delivery or support for educational activities/uses – as assessed by availability of appropriate curriculum material and user feedback.

5.5 Park Operations, Management and Administration

5.5.1 Park Operations, Management and Administration

Guiding Management Principles:

- Development and management of the Wetlands will be guided by the principles of ecologically sustainable development, with a preference for low-impact and reversible developments, and within the constraints of Council's management resources and abilities.
- Visitor, staff and neighbour safety will continue to be priorities in the Wetlands' management.
- Council will continue to promote community involvement in the Wetlands' management.
- Educational and research uses of the Wetlands, will continue to be promoted.
- Council will continue to be a responsible land manager and good neighbour in its management of the Wetlands.
- Development and management of the Wetlands will not be to a level, or require such management resources or effort, that makes the area unattractive for potential future management by another public land agency.

Management Objectives:

- ❖ To ensure adequate resources are provided for the Wetlands' effective and efficient management, administration and reporting.
- ❖ To maintain a network of management accesses and fire trails to support the Wetlands' management.
- ❖ To apply minimum impact, sustainability and reversibility principle as far as practical in the Wetlands' management.
- ❖ To strengthen the community's ties with, and involvement in, the Wetlands and their management.
- ❖ To ensure any leases, licences, permits or other agreements protect the Wetlands' values, have minimal impact on other users, and can be effectively managed.

- ❖ To provide statutory planning recognition of the Wetlands' environmental and conservation values.
- ❖ To manage the Wetlands in conjunction with the Big Swamp Project area.
- ❖ To minimise adverse impacts from utility easements within the Wetlands, and avoid the creation of any additional easements.
- ❖ To work co-operatively with neighbours and relevant agencies to benefit the Wetlands and their management.
- ❖ To pursue funding/revenue sources to support the Wetlands' management.
- ❖ To provide for safe visitor access and use.

Alignment with Manning Valley Community Plan 2010-2030:

Strategy 1 Public assets and infrastructure will be planned, managed and funded to meet community needs and agreed levels of service (*under Looking After What We've Got - Key Direction 4*)

- Action 1.1 - Consider infrastructure implications of new development, and ensure whole-of-life costings are assessed;
- Action 1.3 - Resource and implement a prioritised maintenance programme for all public assets, incorporating a risk management approach;
- Action 1.5 – Encourage community involvement in the design and care of community assets.

Strategy 5 Aim for a higher quality of design and maintenance in all development, both public and private (*under Looking After What We've Got - Key Direction 4*)

- Action 5.2 - Incorporate environmental performance criteria in all design guidelines and plans for public infrastructure;

- Action 5.5 - Ensure public places are managed and maintained as safe, clean and inviting places, that will reinforce a desired community standard.
- Strategy 15 Our community will have a high level of environmental knowledge and understanding (*under Respecting the Environment - Key Direction 2*).
- Action 15.4 – Provide opportunities for the community to participate in environmental management programmes.
- Strategy 25 Leisure and recreation: Establish broad opportunities for residents and visitors to enjoy public places and facilities (*under A Great Lifestyle Strong Economy - Key Direction 4*).

- Action 25.3 - Ensure that management and maintenance of public places and facilities achieves desired levels of safety, cleanliness and usability.
- Strategy 33 Pursue adequate resources for implementation of the plan (*under Getting Things Done - Key Direction 5*).
- Action 33.4 – Pursue all opportunities for government funding of planned programmes.
- Strategy 37 Ensure sound local governance (*under Getting Things Done - Key Direction 5*).
- Action 37.3 - Ensure responsible stewardship of community facilities and resources.

Management Actions, Priorities and Resource Requirements - Park Operations, Management and Administration (PM):

Action No.	Actions	Priority	Resource Requirement
Staffing			
PM1	Council will continue to provide adequate operational/management staff resources for the Wetlands' protection, development, management and presentation – this may be as special Wetlands allocated staff (as now) or staff resources from Council's wider parks/gardens staff team, and/or contractors as required.	HIGH	High
PM2	Wetlands on-site operational/management staff resources will be increased at times of peak visitor use.	HIGH	Moderate to High
PM3	Specialist Council staff will provide support and additional expertise to the Wetlands' management, as/when required.	HIGH	Moderate
PM4	Council will continue to liaise with other natural lands and nature-based recreation managers in the region, and engage in appropriate staff professional development activities, to increase the organisation's capacity/capabilities and stay up-to-date regarding approaches to natural area and recreation management.	Medium	Minor
Management Facilities and Management Access			
PM5	Upgrade the existing Maintenance Depot at the northern end of the quarry carpark, as/when required to support the Wetlands' management – including improved security and fencing.	Medium	Minor to Moderate

Action No.	Actions	Priority	Resource Requirement
PM6	Carry out additional landscaping and screening along the southern and eastern side of the existing Maintenance Depot, to improve its presentation and screening from the quarry carpark and entry road.	Low	Minor
PM7	Ensure there is adequate management and emergency vehicular access to and within the Wetlands, through the maintenance of the management access and fire trail network and access/entry points on the Wetlands' perimeter. Periodically review the adequacy of the Wetlands' management access and fire trail network.	HIGH	High
PM8	Undertake gravelling/sheeting and drainage works at locations on the management access and fire trail network where required for serviceability, particularly for fire management/control purposes.	HIGH	Minor to Moderate
PM9	Formalise the existing rough vehicle track, running north-south through the area of regenerating Melaleuca/Casuarina forest and mixed lowland species in the Wetlands' north, as a management access and fire trail – as shown in Figure 18.	Medium	Moderate to High
PM10	An additional/alternative management access and fire trail will be established south-west of the small knoll north-east of Spring Hill – as shown in Figure 18 – as an alternative route to the existing tracks, and as an fire control line, around the margin of the potential eco-tourism, educational or special-use facility site (refer Action VU16) should this area be developed.	Medium	Moderate (if warranted)
PM11	The existing management access over Spring Hill to Cattai Creek will be maintained to a sufficient standard to permit 2WD vehicle use, if special approval is given for visitor vehicle access along this route to Cattai Creek (refer Action VU9).	Low	Minor (if warranted)
PM12	Redundant internal farm fences across the Wetlands will progressively be removed, where no longer required for management purposes. Timber posts will be re-used wherever practical.	Low	Minor
PM13	Redundant farm dams will be retained – as possible water sources for bush regeneration/plantings irrigation and/or fire-fighting – but not actively maintained. Visitor safety measures will be installed if warranted.	Low	Minor
Operational Programme			
PM14	An operational programme will be prepared to guide the Wetlands' day-to-day management, and incorporating the key actions and directions of this Strategy, to provide all Council staff with consistent management guidance for the Wetlands. A programmed maintenance schedule for the Wetlands' built assets will be part of this operational programme.	HIGH	Minor (for programme development, component works covered elsewhere)
Environmental Protection/Sustainability and Reporting			
PM15	All major new works or major maintenance projects undertaken on the Wetlands, likely to entail significant environmental impacts, will be subject to appropriate environmental impact assessment and approval procedures (including necessary Aboriginal cultural heritage assessments – refer Actions ACH6 and ACH8).	Medium	Minor to Moderate (depending on scale or proposal)

Action No.	Actions	Priority	Resource Requirement
PM16	<p><i>Proposed major development works within the Wetlands, including potential proposals by third parties, must address the following (among other/site specific issues):</i></p> <ul style="list-style-type: none"> • <i>the protection of identified values (and need for assessments to determine site-specific values);</i> • <i>demonstrate a clear connection with the Wetlands' role and management priorities;</i> • <i>public accessibility and equity (where applicable);</i> • <i>consistency with the character and scale of a site and any existing facilities;</i> • <i>environmental sustainability and performance, and reversibility;</i> • <i>aesthetic impacts, site amenity and public and staff safety;</i> • <i>pollution impacts and risks;</i> • <i>vehicle access issues (where applicable);</i> • <i>indigenous planting/landscaping or screening;</i> • <i>impact amelioration and remediation measures; and</i> • <i>maintenance demands and whole-of-life costings.</i> 	HIGH	n/a
PM17	Continue to apply waste minimisation, recycling and energy efficiency practices across all aspects of the Wetlands' management.	Medium	Minor
PM18	<i>Rubbish/recycling bins will not be provided in the Wetlands, with general visitors required to take all rubbish away with them.</i>	Medium	n/a
PM19	A reporting programme will be established for the Cattai Wetlands project – to feed into Council's annual reporting against the environmental actions in the <i>Manning Valley Community Plan 2010-2030</i> .	Medium	Minor
Community Involvement			
PM20	Council will maintain and expand avenues for stakeholder and community input/advice into the Wetlands' management – through forums such as the Manning Wetlands Steering Committee, as well as possible additional forums with broader representation (notably including Aboriginal cultural heritage representatives, Wetlands neighbours, recreation/tourism interests, and user groups).	HIGH	Minor
PM21	Council will encourage/support on-ground community involvement in the Wetlands' management – under the guidance of Council's staff and as consistent with management priorities. This may include the managed participation of volunteers (such as a Friends of Cattai Group), users, special interest groups (such birdwatchers or walkers), schools, "clean-up" organisations, service organisations, and others.	HIGH	Minor to Moderate (depending on levels of involvement)
PM22	Council will encourage/facilitate research programmes and partnerships – such as with tertiary education institutions, research bodies, senior/research students, and schools – where there will be a direct benefit for the Wetlands' management.	Low	Minor
PM23	Involve the community in recording and monitoring the Wetlands' biodiversity and water quality – through "Community Wildlife Surveys", plant identification, weed reporting, significant species alerts, "Streamwatch" and other initiatives.	Medium	Minor

Action No.	Actions	Priority	Resource Requirement
Leases, Licences and Permits			
PM24	Leases or licences may be granted over parts of the Wetlands in relation to the potential Aboriginal “culture and learning place” or comparable cultural facility (refer Action PAC4) and the potential eco-tourism, educational or special-use facility (refer Action VU16).	(refer Actions PAC4 and VU16)	
PM25	<i>Licences and permits will only be issued for short term or once-off activities within the Wetlands where these:</i> <ul style="list-style-type: none"> • are consistent with, or ancillary to, the Wetlands’ key values, role and management priorities; • do not require vegetation clearing, or unduly impact an area’s values or amenity; • do not disturb/displace or present a risk to other Wetland visitors; and • do not involve the erection of any building or other substantial structure, or permanent advertising that detracts from the visual qualities of the Wetlands. 	HIGH	n/a
PM26	<i>Licences and permits will not be granted for activities that are purely commodity or product marketing oriented or commercially focused.</i>	HIGH	n/a
PM27	<i>Licences or permits will be granted for commercial filming within the Wetlands at Council’s discretion.</i>	HIGH	n/a
Utilities and Services			
PM28	<i>Facilities and developments within the Wetlands, including any approved third party developments, will be “self-contained” in terms of utilities/services and not require the extension of mains electricity, water, sewerage or communications into the Wetlands.</i>	HIGH	n/a
PM29	Council will liaise with the relevant electricity provider regarding appropriate management of the powerline/easement inside the Wetlands’ south-west boundary, and management and measures to reduce any maintenance impacts on the Wetlands values.	Low	Negligible
PM30	<i>Council will oppose the creation of any additional (foreign) utility easements through the Wetlands.</i>	HIGH	n/a
Land Tenure and Additions			
PM31	Rezone the large area of the Wetlands now zoned RUI Primary Production zoning to the more suitable E2 Environmental Conservation zone, or another more appropriate environmental zoning that will accommodate the area’s intended land uses/activities, under the Greater Taree Local Environmental Plan 2010.	Medium	Minor
PM32	<i>Continue to manage the Wetlands in a co-ordinated and integrated approach with Council’s management of the adjacent/upstream Big Swamp Project area.</i>	HIGH	n/a
PM33	<i>Manage Council’s recent land acquisitions, made under the Big Swamp Project but which abut the Wetlands, as part of the Cattai Wetlands and consistent with the directions set out in this Strategy.</i>	HIGH	n/a
PM34	Council will continue to pursue a policy of strategic land acquisition, as/when opportunities arise, to consolidate and expand the Cattai Wetlands.	Medium	High (in relation to potential land purchase costs)

Action No.	Actions	Priority	Resource Requirement
PM35	Collaborate with the Hunter Local Land Services (incorporating the Hunter-Central Rivers Catchment Management Authority) to amend the current Property Vegetation Plan for Cattai Wetlands, where necessary, to align with this Strategy.	HIGH	Minor
PM36	Liaise with the Crown Lands Office regarding incorporation of the unmade Crown Road Reserves, following the necessary formal road closures, into the Wetlands under Council's ownership.	Low	Minor
PM37	Council will periodically reassess the opportunities for, and cost/benefits of, the possible sale or transfer of the Wetlands' to other suitable land managers (such as the National Parks and Wildlife Service or Crown Lands Office).	Low	Negligible/Minor
Neighbouring Land Uses			
PM38	Negotiate emergency and Wetland management access agreements with neighbouring landholders – if not already in place.	Medium	Minor
PM39	Ensure that the Wetlands' boundaries, where required, are fenced and that boundary fencing is maintained and effective. "Give-and-take" fencing lines may be employed, by agreement with adjoining landholders, to achieve the most practical and cost-effective fencelines.	HIGH	Moderate to High
PM40	Fencing will be installed/repared where required on the Wetlands' northern and north-eastern boundary, as a priority, to prevent stock intrusion in this area.	HIGH	Moderate to High
PM41	Council will liaise and collaborate with neighbouring landholders – in areas such as ASS management, hydrology and water quality, weed and pest management, fire management, and fencing (as described in other parts of this Strategy) as well as to promote understanding and support for the Wetlands management among neighbours.	HIGH	Minor
PM42	Council will liaise with the Purfleet-Taree Local Aboriginal Land Council regarding the management, and possible future use of their landholding adjacent to the Wetlands.	Medium	Minor
PM43	Council will liaise with the Roads and Maritime Services Traffic Authority regarding continued Council management of "compensatory wetlands" block on Cooperook Creek in accordance with this area's 2001 management plan and in a sympathetic fashion to the Wetlands' intended management (also refer Actions WC5 and VU21), and with the National Parks and Wildlife Service regarding management of the adjoining area of Crowdy Bay National Park (also refer Action WC3).	Medium	Minor
Funding/Revenue Sources			
PM44	Regularly pursue grant funding assistance in areas relevant to the Wetlands' values and management to support/supplement Council's budget.	HIGH	Minor
PM45	Investigate "Carbon Credits", associated with revegetation (natural and assisted) across much of the Wetlands, as a possible revenue stream – including implications for the standard revenue sharing clause in the current Property Vegetation Plan.	Medium	Minor
PM46	Investigate the viability and practicality of farm-forestry or agro-forestry in the Wetlands' south-western grassed block (adjacent to Harrington Road).	Low	Minor

Performance Measures and Outcomes:

- Adequate staffing and management levels – as assessed by the total (paid) time inputs of Council staff committed to the Wetlands' management.
- Serviceable management access and fire trail network maintained.
- Minimum environmental impact/disturbance due to developments and maintenance works – as assessed by pre and post works impact observation/recording.
- Adequate environmental evaluation of Wetland development proposals, commensurate with type/level of development and potential impacts.
- Re-use and recycling measures in place.
- Stakeholder and community consultative mechanisms in place and effective.
- Increased community awareness of, and support for, the Wetlands and its management – demonstrated by increased incidence of positive/supportive behaviours.
- Increased community participation in Wetland management – as assessed by total participation hours, and range of tasks featuring community/volunteer involvement.
- Licences, permits and approved special uses consistent with the Wetlands' values.
- Wetlands more appropriately zoned under the Greater Taree Local Environmental Plan 2010.
- Progressively strengthened management links with the Big Swamp Project.
- Opportunistic expansion of the Wetlands.
- Reduced adverse impacts from easement presence/management, and no new easements established.
- Ongoing liaison and co-operation with surrounding natural area owners/managers.
- Additional revenue generation opportunities identified and realised, without compromising Wetlands' values or management.

6 IMPLEMENTATION AND REVIEW

6.1 Resourcing and Implementation

This Future Directions Strategy contains a substantial list of management actions.

Many of these are management guidelines, providing policies or directions to guide future decision-making in regard to the Wetlands' management. Others address procedural matters.

However many are physical actions that will require the commitment of Council funds or resources – such as staff time – to implement. Council does not have the capacity to undertake all of these, more resource-intensive, management actions immediately. Management, and to a greater extent the further development, of the Cattai Wetlands will ultimately be reliant on, and largely determined by, the funding and resources available to Council.

As such implementation of the management actions identified for the Wetlands, and specifically those requiring significant resource commitments, must be evaluated against other Council priorities, budget cycles/allocations under Council's current four year Delivery Programme and annual resourcing strategies, capital works programme, business planning for Council's various units, and other competing interests.

The priorities assigned to each management action – as shown in the Management Actions Tables in Section 5 – reflect their relative importance and implementation timing in order to achieve the Strategy's objectives. They will aid in the selection of actions to resource, in the light of these financial and resourcing realities/constraints.

Many of the management actions identified are continuing or routine management operations typical of those for natural areas managed for both biodiversity conservation and visitor access and enjoyment, or are policies and guidelines for application when the given issues or circumstances arise. However others are tangible works, many involving a considerable commitment of funds and resources, and so need to be programmed into a prioritised forward "works" schedule.

Recognising that funding and resources may come from many sources, including volunteer involvement or specific-purpose grant funding, identified management actions of different priority may proceed in differing orders or at different rates – and high priority actions need not necessarily precede lower-priority actions. Implementation of some actions may also be contingent on or influenced by the results of other actions, changing management circumstances or opportunities to gain management efficiencies. In some cases, the resources to deliver a longer-term action may be available before a high priority action. This may be due to the amount of money required, or the project being funded from resources other than Council funds, or factors outside of Council's control.

6.2 Review

A comprehensive review of this Future Directions Strategy, in terms of the achievement of stated objectives and the implementation of actions, should preferably be undertaken no later than 5 to 7 years after its adoption. A review of high and medium priority actions involving significant expenditure or resource commitments should be undertaken annually, to guide subsequent funding bids and works scheduling.

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Appendix A: Audit of the 2006 Plan of Management

The following tables present an audit of the current (2006) Cattai Wetland Project: Plan of Management based on “the list of strategies and actions recommended in Table 4” from that document.

Biodiversity

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Habitat Conservation		
GTCC encourages additional surveys (e.g. birds, bats, fish) by DEC, and DEC to expand the recorded Threatened Species list.	Ongoing	Limited progress, undertaken on an ad hoc basis only. Fish survey in progress and regular bird surveys undertaken – consultants required by law to register any records of threatened species onto OEH's Atlas of NSW Wildlife Database.
Invite DEC to become members of the Management Committee to provide ongoing expertise in the management / implementation of recovery plans for Threatened Species and their habitats, and to advise upon ecologically sustainable land management practices.	Complete	OEH (Soil Science and NPWS) represented on the wider Manning Wetlands Steering Committee.
Foster links with academic institutions to undertake ecological research and monitoring of the GTCC property.	Ongoing	Ad hoc involvement of academic institutions only. Southern Cross University intern recently completed Vertebrate Pest Animal Control Plan for Cattai Wetlands.
Terrestrial Rehabilitation		
Natural vegetation regeneration be relied upon to rehabilitate all wetland areas in association with modification to grazing, drainage and fire management.	Ongoing	Natural vegetation regeneration progressed, to varying extents, across differing parts of the Wetlands.
Photo monitor and report recovery rates in all stressed wetland communities (see 'Wetland Health').	Ongoing	Photo monitoring points established.
The hill and alluvial regeneration areas will require expensive tree planting and follow-up maintenance. This should be placed on hold pending the availability of funds and treated effluent for irrigation to ensure a high rate of success (\$ costing to be determined by detailed study).	Ongoing / Partially complete	Irrigation with treated effluent on hold. Mass plantings undertaken at selected locations on hill and alluvial areas – south of Two Mile Creek and north and south side of Cattai Wetlands Lagoon.

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
A 'start-up' vegetation rehabilitation program be commenced on the NW bank of Coopernook Ck in wet sclerophyll landscape to link wetland with hill, and tackle most severe weed infestation on property (Lantana and Blackberry). Priority weeds such as Madiera Vine and Groundsel should also be thoroughly treated as a matter of priority.	Ongoing / Partially complete	Arboretum style revegetation has occurred on a small part of the north side of Coopernook Creek. Weed control efforts ongoing.
Continue annual weed control program using a combination of manual, mechanical, grazing and chemical means (Best Practice techniques).	Ongoing	Weed control efforts ongoing as part of the Wetlands day-to-day management.
LMWAG convene a public meeting to examine the formation of a Cattai Creek 'User Group' Sub-Committee with the view to developing policy and user maintenance program	Ongoing	Manning Wetlands Steering Committee has now taken on this role.
Wetland Habitat Degradation		
Zero further grazing and burning of wetland areas (see 'Grazing and Fire').	Completed	No grazing or intentional burning of wetland areas.
Decommission the remaining derelict floodgate structures in the SE and replace with sills at natural ground level, to allow supra tidal and floodwater exchange.	Partially complete	
Photo monitor vegetation changes for a period of 10 years (currently being undertaken for 2 years by WCA under contract to CVA Wetlands 'Revive' Program) (see 'Terrestrial Rehabilitation').	Ongoing	Photo monitoring points established.
Seek input from local bird watching groups to undertake voluntary bird counts (Bird Atlas of Australia)	Completed	Local bird watching groups periodically undertaking bird counts and report annually to Council.
Seek involvement of tertiary institutions e.g. Newcastle Uni, UNE in ongoing data collection.	Not complete	Ad hoc involvement of academic institutions only.

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Regeneration of seasonal acid/salt scald areas is possible using a variety of techniques such as mounding, liming and mulching; but this involves site disturbance and high cost and would not immobilise MSO (therefore not recommended).	Completed	Not recommended – therefore no action required.
Land Tenure		
Negotiate boundary alteration in the NE (see 'Fencing and Grazing').	Partially complete	Fencing of northern boundary in progress.
Neighbouring landholders be further briefed on the provisions of GTCC Local Environmental Plan Clause 47 'Conservation Incentives' as a means of providing the necessary incentives for landholders to consider offering their wetlands for acquisition.	N/A	Neighbouring landholder liaison ongoing across a range of issues. (Greater Taree Local Environmental Plan 1995 replaced by Greater Taree Local Environmental Plan 2010 (LEP 2010) with Clause 47 removed from the standard template. Council currently investigating reintroducing a similar clause as a local provision in LEP 2010. Recent land acquisition undertaken using the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> .
Promote partnerships with other agencies interested in land acquisition such as DEC (NPWS) and DEH (Canberra).	Ongoing	GTCC pursuing land acquisitions largely independent other agencies (other than sourcing potential grant funding). Council has approached the local office of NPWS to determine their interest in acquiring land in the Cattai Creek/Pipeclay Canal Catchment area (not a current priority for NPWS).
GTCC review existing LEP provisions to prevent subdivision of wetlands where future management for environmental benefits is likely to be impeded.	Ongoing	Assessed on a site by site basis through the development assessment process.
Bushfire		
GTCC progressively install and maintain (\$4000 pa) the network of slashed fire trails illustrated in PoM map.	Partially complete / Ongoing	Fire trail networks expanded (not precisely as mapped in 2006 Plan) and maintained. (Costs have increased to approx \$10,000 p.a.)
GTCC work with the RFS to undertake seasonal hazard reduction burns on a mosaic pattern in areas adjoining wetlands.	Not complete	

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
LEP Wetland Zoning		
Council publicise the opportunity for landholders to initiate Development Applications under GTCC LEP Clause 47 as a means of achieving wetland rehabilitation.	N/A	Greater Taree Local Environmental Plan 1995 replaced by Greater Taree Local Environmental Plan 2010 (LEP 2010) with Clause 47 removed from the standard template. Council currently investigating reintroducing a similar clause as a local provision in LEP 2010.
Council at the time of its next Shire-wide LEP review, consider expanding wetlands zoning to embrace SEPP 14 and other 'mapped' wetlands of EEC status.	Partially complete	Greater Taree Local Environmental Plan 2010 zones all SEPP 14 wetlands as zone "E2 Environmental Conservation" with the remainder of the Wetlands zoned for rural uses, as zone "RU1 Primary Production".
Rehabilitation works be permissible 'with consent' subject to the preparation of a Wetland Rehabilitation Plan.	Completed	Environmental protection works permitted with consent under both "E2 Environmental Conservation" and "RU1 Primary Production" zones. Requirement for a "Wetland Rehabilitation Plan" dependent on GTCC assessment/approval process.
Aquatic Biodiversity		
Council to seek collaboration and support with DPI (Fisheries) to undertake aquatic flora and fauna surveys to allow assessment of aquatic species as measures of ecosystem health within the wetland environments.	Ongoing	Fish surveys in progress.

Soil Health

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Drying and Scalding of ASS		
Further acidification of soils be limited by decommissioning the remaining floodgates (in SE), drains and levees (SE and Two Mile) (see 'Acid Groundwater Flows').	Partially complete	Several floodgates and drains have been decommissioned, however others and the levees remain intact.

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Stores of acid within the soil profile be contained by limiting groundwater drawdown via constructed drains with placement of in-drain sill structures or backfilling (see 'Acid Groundwater Flows').	Partially complete	Temporary sill structures have been included in five drains in the south-east area. The works involved substantial structures in two locations (up to 7 bags high) with more minor structures being constructed in 3 other locations (2-3 bags high). The works did not involve backfilling.
Further surface acid accumulation as MSO be limited by reinstating reeds and rushes to produce an organic matter 'wet blanket' to prevent capillary rise of acid groundwater (see 'Acid Groundwater Flows').	Complete	Natural regeneration of reeds and rushes has occurred in the south-eastern area, artificial vegetation reinstatement was not required.
Burning of Peat		
Maintain fire trails and mosaic burning of adjoining Sclerophyll forests (under appropriate regimes) to reduce the risk of fires entering wetlands (see 'Fire Management').	Partially complete / Ongoing	Fire trail networks expanded and maintained. No mosaic burning of forests initiated to date.
Diffuse upland flows across wetlands by installing blocks in the constructed drains in the SE and in the channel of Two Mile Creek.	Partially complete	Temporary sandbag sills installed on several drains in the south-east (fronting Cattai Creek), and natural tree fall across the middle reaches of Two Mile Creek has created a natural temporary sill.
Invasion by Casuarina		
No intervention is proposed to remove invasive Casuarina stands.	Complete	Not recommended – therefore no action required.
Promote dispersal and retention of upland flows to promote reeds / rushes that are better able to immobilise acid products (see 'Inundation by Tidal Water and Displacement of Fresh Meadows').	Ongoing	Temporary sandbag sills installed on several drains in the south-east, and natural tree fall across Two Mile Creek, has helped disperse/retain upland flows. Natural regeneration of reeds and rushes has occurred in the south-eastern area, other areas subject to regeneration of various forest assemblages.
Photo monitoring of Casuarina (and all other wetland associations) to be undertaken (see 'Wetland Habitat Degradation').	Ongoing	Photo monitoring points established.

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Inundation by Tidal Water and Displacement of Fresh Meadows		
Trial the physical separation of freshwater wetlands from tidal wetlands on a test rehabilitation site in the SE. <ul style="list-style-type: none"> Stage 1: Encourage the retention of local upland flows using existing spoil heaps as bunds plus sandbags across drains; Stage 2: Supplement local flows with treated effluent (when available) and measure increased growth of reeds / rushes (see 'Treated Effluent Reuse'); and Stage 3: Subject to results of Stages 1 and 2, expand area to cover all seriously impacted MSO areas >10 Yrs east of trial site. 	Not complete	The rehabilitation site has not been defined in the field, however it has been known in general by GTCC workers on site. Substantial natural regeneration has occurred in the south-eastern area and all seriously impacted monosulfidic ooze areas are now fully vegetated and exhibit no areas of scald (therefore definition and interventionist management of the proposed rehabilitation site no longer warranted). Irrigation with treated effluent has not been undertaken as Mid Coast Water have not secured funding to have the project implemented.
Photo monitor vegetation changes (transition from sparse Saltmarsh in MSO landscape to thick carpet of ungrazed reeds burying MSO) (see 'Wetland Habitat Degradation' \$ see 'Surface Acid Flows')	Ongoing	Photo monitoring points established.
Loss of Saltmarsh Productivity Through MSO Accumulation		
Prior to setting up the Stage 1 trial, a benthic survey of SE Saltmarsh be carried out and compared with a pristine Saltmarsh area (DPI Fisheries has indicated that financial support would be available for a project to be undertaken by an approved postgraduate student) (see 'Inundation by Tidal Water and Displacement of Fresh Meadows').	Not complete	Substantial natural regeneration has occurred in the south-eastern area.

Water Quality

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Acid Groundwater Flows		
Subject to agreement with potentially affected landholders install temporary sandbag sills (0.6m AHD) in lower end of Two Mile Ck and in the three discharge drains in the SE of the property, to reduce groundwater drawdown and limit tidal ingress to a more natural regime and trial a range of heights and monitor impacts in consultation with neighbours.	Partially complete	Five discharge drains have been sandbagged, as temporary sills, in the Wetlands' south-east. Temporary sandbag sills have not been constructed in the lower end of Two Mile Creek, however natural tree fall across the middle reaches of the creek has created a natural temporary sill. No trial of heights has occurred or monitoring of impacts in consultation with neighbours.
Create breaches (0.8m AHD) in the constructed levees (all of the levees north of boundary of Crown Reserve, west of Two Mile Creek) and 10% levee fronting Cattai Ck to reinstate overland flood flows rather than relying on constructed drains.	Not complete	Potentially expensive works given the extent of machinery required to carry out such works and accessibility difficulties on the site. The creation of breaches may not be necessary given the success of current measures.
Subject to trial results, install 3 permanent sills in Two Mile Creek at 300 m intervals above the Crown Reserve boundary and backfill drains in SE sector with adjacent spoil heaps.	Not complete	Tree fall across the middle reaches of Two Mile Creek has created a natural temporary sill.
Surface Acid Flows		
Evaluate raising the sandbag sills to 0.8m AHD in constructed drains in central part of SE (Area 'C') drainage network to create a freshwater pond trial area.	Not complete	Potential flooding issues for surrounding visitor facilities and upstream landholders.
Install 2 standpipes in sills to allow water levels to be raised or lowered seasonally.	Not complete	
Introduce treated effluent to promote prolific reed / rush growth in the spring / summer (do not over water) (see 'Treated Effluent Reuse').	Not complete	Substantial natural regeneration of reeds and rushes has occurred in the south-eastern area. Irrigation with treated effluent has not been undertaken as Mid Coast Water have not secured funding to have the project implemented.
Subject to long-term trial results, backfilling SE drains.	Not complete	

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Flooding		
Assess whether further opening / closing of constructed levees is required.	Not complete	
Undertake photo monitoring of changes in vegetation composition and ground cover using both ground and aerial photographs.	Ongoing	Photo monitoring points established and aerial photographs undertaken annually.

Land Use

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Wetland Protection and Rehabilitation		
No further drain cleaning or floodgate maintenance to be carried out.	Complete	
Public Access		
Access from the Pacific Highway be upgraded consistent with requirements for rural residential release.	Complete	
A hierarchy of property access tracks be installed (see PoM Map) to allow: <ul style="list-style-type: none"> public vehicular all-weather gravel track with culverts to 'The lookout' and the 'quarry'; upgrade fire trails (culvert and gravel wet spots) but limit access to official vehicles for property maintenance, fire management and other emergency purposes only; and walking trails radiating out from the 'lookout' be slashed to provide access to signposted high amenity / high conservation / high education – interpretive sites (see 'Bushfire'); and horse / mountain bike access to marked fire trails be provided initially for club events only. 	Partially complete	Public vehicle access upgraded and permitted to "the quarry", but public vehicle access not permitted to "The Lookout". Fire trail network expanded and maintained, access restricted to authorised vehicles. Walking tracks established and maintained, radiating from "the quarry"/carpark but accessing "The Lookout". Horse and mountain bike use of fire trails not permitted.

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Establish a 'User Group' sub-committee to recommend public access operational procedures (see 'Terrestrial Rehabilitation').	Not complete	Manning Wetlands Steering Committee has now taken on this role.
Public access be developed in 3 stages. <ul style="list-style-type: none"> Stage 1: Establish a series of numbered interpretive site posts along walking trail at the - 'lookout', 'wharf' (Crown Land), 'boardwalk', 'bird hide'. Provide interpretive information initially in the form of a pamphlet dispenser and web site. Stage 2: Progressively construct interpretive shelters / bird hides / boardwalks with static displays plus composting toilet. Examine the feasibility of constructing an Interpretive Centre and Caretaker's Residence. 	Partially complete	Interpretive site posts and interpretive panels provided along the Wetland Loop, and interpretive shelter provided at summit lookout on the Lookout Loop. No interpretation provided along the Forest Loop. "Self-guided Wetland Walk" brochure prepared and available on-site. Boardwalk established to viewing point over Cattai Wetlands Lagoon, with on-site interpretive panels. Low-water use toilets installed at quarry carpark. Feasibility of an Interpretive Centre, and Caretaker's Residence, not yet examined in detail.
Fencing and Grazing		
Negotiate boundary adjustment and fence to exclude cattle from NE wetland (distance 1130m).	Partially complete	'Give and take' fencing of the northern boundary has commenced to exclude stock from sensitive wetland areas.
Existing grazing agreements to be renewed only upon the fencing out of vegetation regeneration, high conservation and wetland areas with semi-permanent electric or conventional fencing. (see PoM Map) (distance 3300m, excludes subdivision fencing).	Partially complete	Grazing phased out, additional fencing no longer required.
Fencing of the proposed four rural residential blocks be undertaken to define allotments.	Complete	As part of subdivision, sale and development process for lots outside current Wetlands boundary.
All fence lines to be slashed on both sides, where possible, as part of fire trails (see 'Bushfire').	Ongoing	Undertaken where possible/practical.
Boundary fencing be upgraded.	Ongoing	Ad hoc as funding permits.

Recommended Strategies / Actions (as per 2006 Plan, Table 4)	Status	Comments
Wetland Education		
While the site has excellent potential for educational purposes, caution is advised in embarking on an over-ambitious plan at the outset, given high capital and recurrent costs (see 'Public Access').	Ongoing	Staged development of the Wetlands, with the provision of visitor use/educational facilities consistent with available development and management resources.
Depending on uptake of public access, install a composting toilet near the lookout (below ridgeline and with landscape screen planting) (see 'Public Access').	Complete	Low-water use toilets installed at quarry carpark.
Form an Environmental Education Sub-Committee to plan the rollout of facilities annually and update the Plan of Management as required	Not complete	Regular liaison with the Manning Environmental Education Group, Mid Coast Water, and Local Land Services – but no formal Environmental Education Sub-Committee.
Treated Effluent Reuse		
DEC be approached to seek endorsement 'in principle' to allow effluent reuse on the Cattai holding including a research trial wetland rehabilitation scheme in the SE (outside SEPP 14).	Not complete	
MCW be formally approached to design and cost an effluent reuse scheme embracing the proposed Cattai wetland rehabilitation trial in preparation for the likely upgrading of the Harrington WWTP.	Not complete	Irrigation with treated effluent has not been undertaken as Mid Coast Water have not secured funding to have the project implemented.
Funding to supplement the basic irrigation infrastructure supplied by MCW would need to be pooled from various potential sources such as GTCC, DEC, and University etc.	Not complete	Irrigation with treated effluent on hold.
Lodge an expression of interest with a local carbon credit broker (e.g. www.ecotechgroup.com)	Not complete	Not currently considered a viable venture.

Appendix B: Land Parcels Comprising the Cattai Wetlands

This Future Directions Strategy addresses management of the following land parcels, owned by Greater Taree City Council, that comprise the Cattai Wetlands (as well as unmade Crown Road Reserves within the site that are managed by Council).

However as the Wetlands are classified as “Operational Land” the plan of management provisions (for “Community Land”) under the *Local Government Act 1993* do not apply to this Future Directions Strategy. Council may therefore expand or amend the area of Council-owned or managed lands to which this Strategy applies in variance to the current land parcels listed below.

Land Parcel Details	Address
Lot 5 DP 1121789	Lot 5 Springhill Road, Coopernook NSW 2426
Lot 129 DP 754415	Lot 129 Springhill Road, Coopernook NSW 2426
Lot 8 DP 1138509	Lot 8 Long Point Road, Moorland NSW 2443
Lot 133 DP 754415	Lot 133 Springhill Road, Coopernook NSW 2426
Lot 127 DP 754415	Lot 127 Springhill Road, Coopernook NSW 2426
Lot 40 DP 754415	Lot 40 Springhill Road, Coopernook NSW 2426
Lot 49 DP 754415	Lot 49 Springhill Road, Coopernook NSW 2426
Lot 128 DP 754415	Lot 128 Springhill Road, Coopernook NSW 2426
Lot 119 DP 754415	Lot 119 Springhill Road, Coopernook NSW 2426
Lot 77 DP 754415	Lot 77 Springhill Road, Coopernook NSW 2426
Lot 39 DP 754415	Lot 39 Springhill Road, Coopernook NSW 2426
Lot A DP 184508	Lot A Springhill Road, Coopernook NSW 2426
Lot B DP 184508	Lot B Springhill Road, Coopernook NSW 2426
Lot 92 DP 754415	Lot 92 Springhill Road, Coopernook NSW 2426
Lot 64 DP 754415	Lot 64 Springhill Road, Coopernook NSW 2426

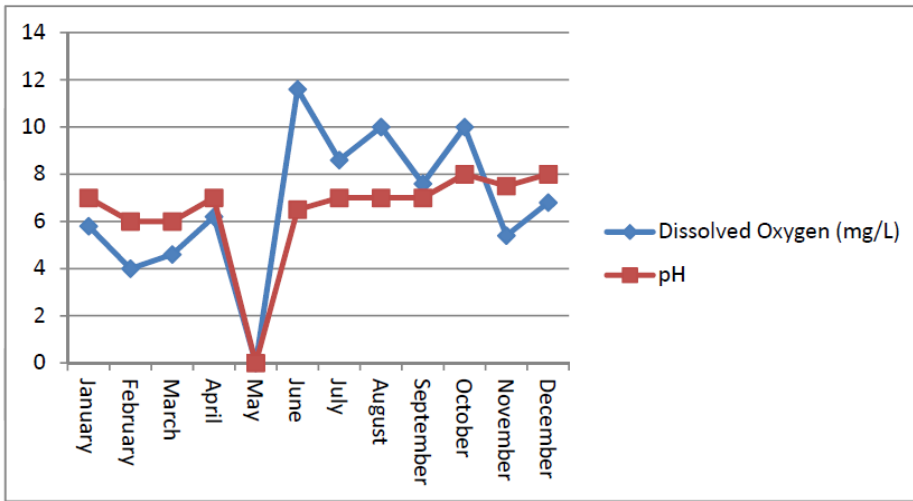
Appendix C: Water Quality Monitoring Data

Source: Greater Taree City Council data as applied in PDA Services, 2013, *Review of Cattai Wetlands Plan of Management - Water Quality and Acid Sulfate Soils Review*

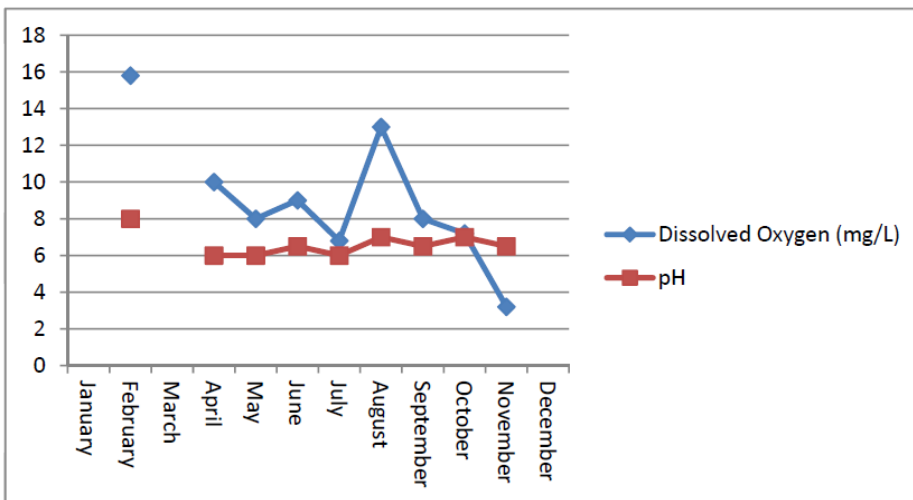
Summary of water quality data collection

Site	Ph	Dissolved Oxygen
Cattai Creek (Site 1)	<ul style="list-style-type: none"> Ph was generally above 6. The lower pH recordings in 2010 are most likely the result of heavy rainfall after a relatively dry period 	<ul style="list-style-type: none"> DO levels were considered to be generally good over the sampling period. No management measures deemed necessary to address DO levels in the Cattai Creek system.
Coopernook Creek "Causeway" (Site 2)	<ul style="list-style-type: none"> As per the results for the Coopernook Creek test site, Ph levels have tended towards more neutral conditions since mid 2011. Improvement in Ph coincides with construction of temporary sills in Coopernook Creek and the retention of water and creation of wetlands in the area. Although a pH of 2 was recorded in December 2012 – likely a result of reduced water levels in the wetlands. 	<ul style="list-style-type: none"> DO levels varied significantly during the sample period and December 2012 also saw a significant drop in DO with a reading of only 2 mg/L. This low DO reading coincides with the reduced water levels in the wetlands and it is expected that once water levels increase, DO readings will return to a more normal range.
Coopernook Creek (Site 3)	<ul style="list-style-type: none"> Ph levels have tended towards more neutral conditions since mid 2011. Improvement in Ph coincides with construction of temporary sills in Coopernook Creek and the retention of water and creation of wetlands in the area. 	<ul style="list-style-type: none"> DO levels varied significantly during the sample period. The results however indicate low levels of DO are not an issue for management on the site.

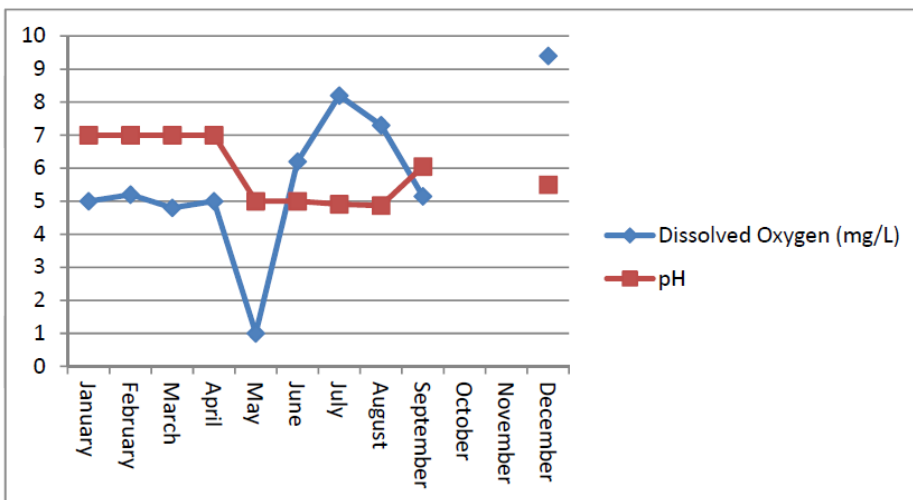
Cattai Creek - 2012 Summary



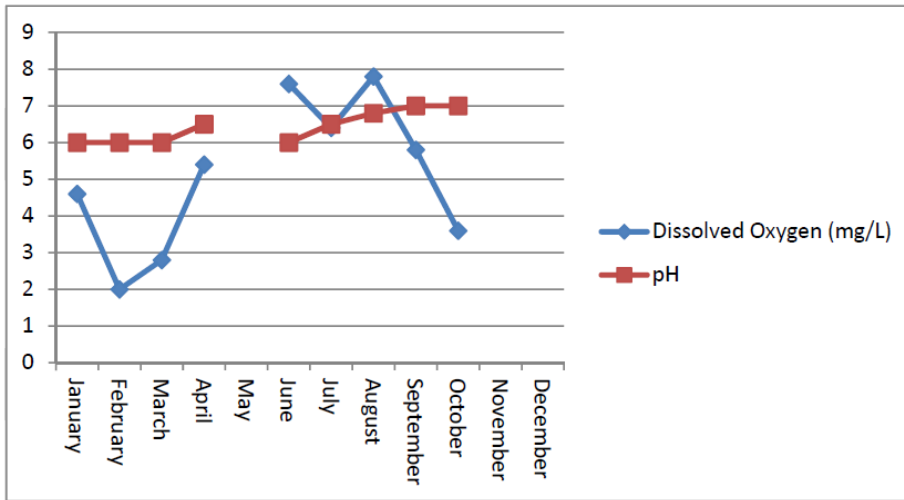
Cattai Creek - 2011 Summary



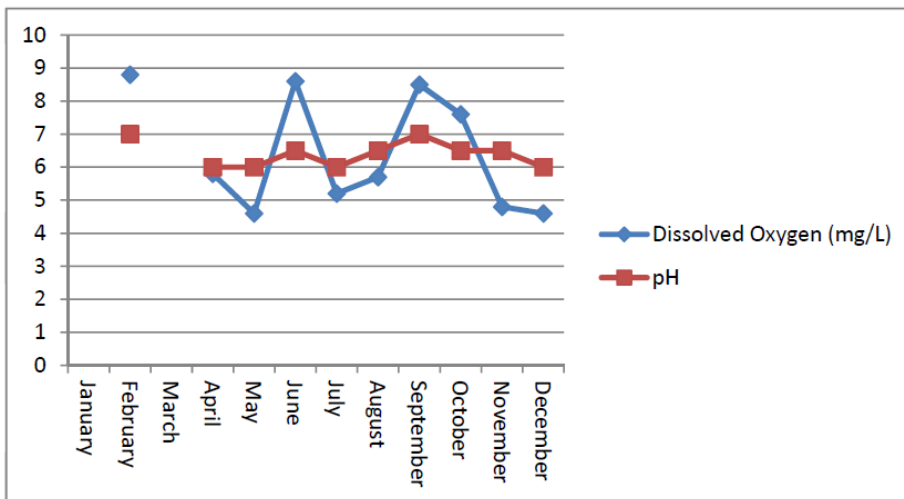
Cattai Creek - 2010 Summary



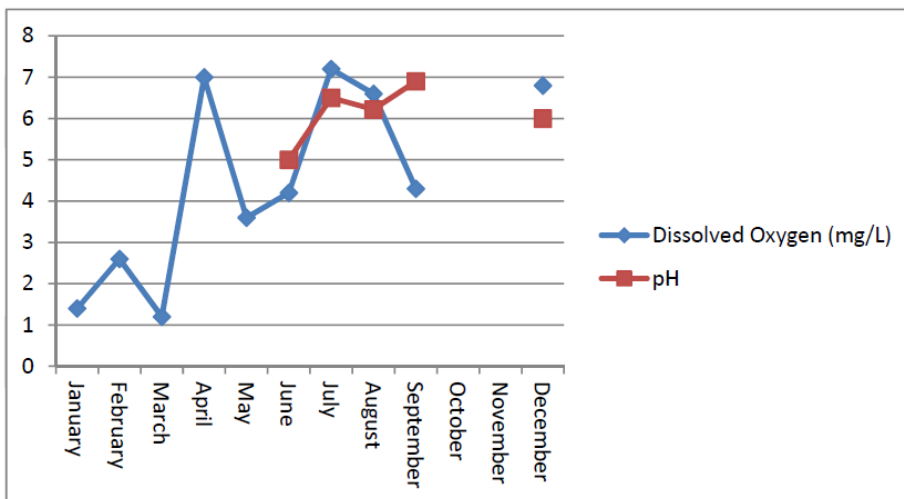
Cooperbrook Creek - 2012 Summary



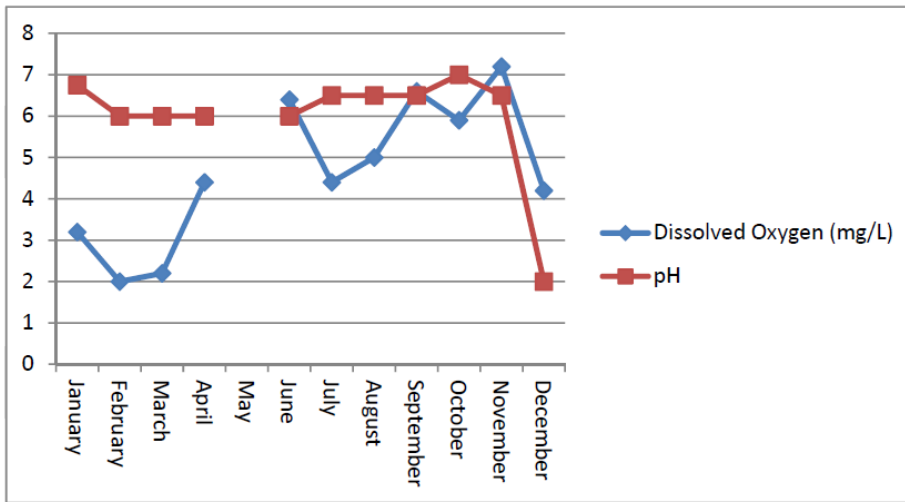
Cooperbrook Creek - 2011 Summary



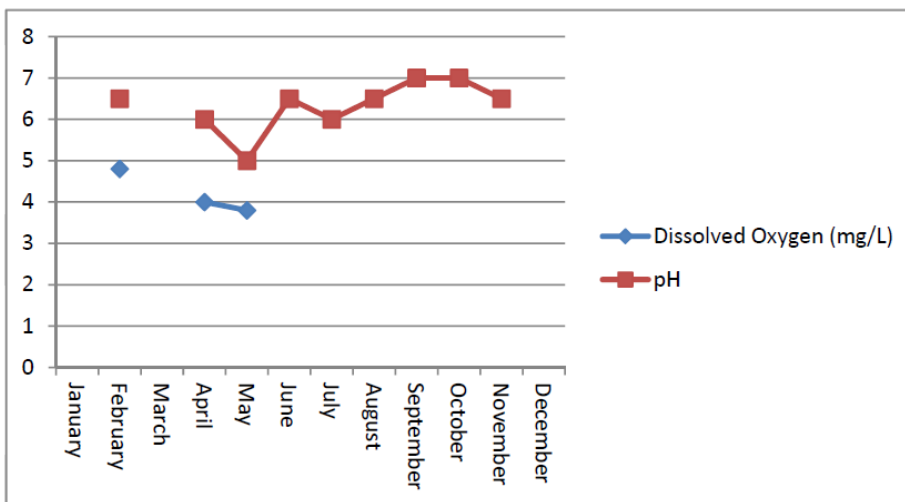
Cooperbrook Creek - 2010 Summary



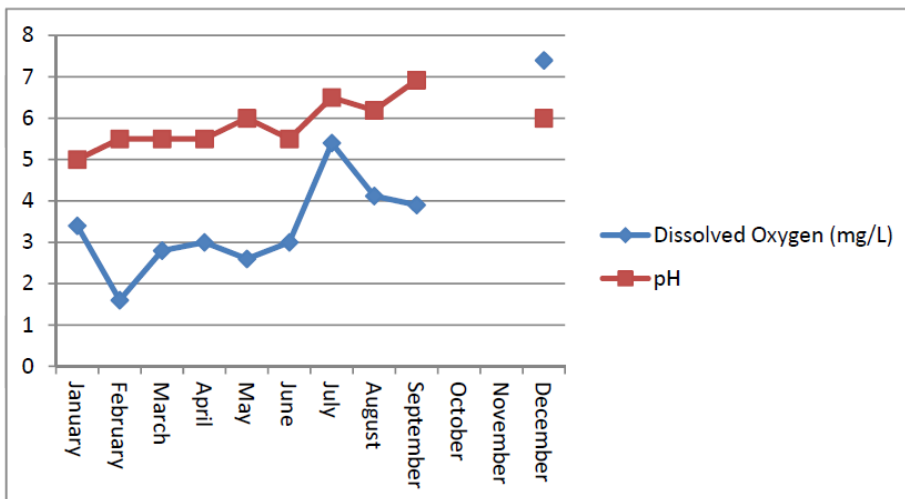
Causeway - 2012 Summary



Causeway - 2011 Summary



Causeway - 2010 Summary



Appendix D: Surrounding/Regional Nature-based Visitor Attractions

Summary of the surrounding comparable nature-based visitor destinations within the Taree and wider Mid North Coast Region - within a 1 to 1.5 hour drive from Taree or the Cattai Wetlands (the approximate range of “day trips” for residents or visitors based in Taree and surrounds). Nature-based destinations considered most comparable to the Wetlands were selected as those that are:

- in comparable natural settings or environments, with a bushland and/or water focus – but excluding sites that were primarily beach access points, or boat ramps, or built heritage sites;
- a protected/managed location, or a conservation oriented land use – including local and state government parks and reserves, but excluding informal or unmanaged sites;
- accessible by 2WD vehicle, on sealed or unsealed roads/tracks – but excluding 4WD access or walk-in sites; and
- not highly developed sites with substantial levels of infrastructure/investment, or private sectors facilities.

DISTANCE FROM CATTAI WETLANDS OR TAREE	ATTRACTION SETTING / ENVIRONMENT (number of sites)						ATTRACTION TYPE (number of sites)		
	Coast / Beach	Beach and Estuary	Estuary or Tidal Lake / River	Inland River	Forest (inc freshwater creek sites)	Lookouts	Picnic and Day-use Areas	Camping Areas *	Other Sites (walks, lookouts, etc)
Less than 25 km	7	1	2	3	1	1	6	5	4
25 to 50 km	2	-	5	3	2	3	10	2	3
Over 50 km °	12	2	10	-	-	1	6	17	2
Totals	21	3	17	6	3	5	22	24	9

* most camping areas also offer/include picnic facilities

° over 50 km and up to a 1.5 hour drive (approximately)

N.B. - All nature-based attractions within 25 kilometres of the Cattai Wetlands or Taree, and most attractions between 25 and 50 kilometres distant, were evaluated by on-site assessment. Sites over 50 kilometres from the Wetlands (or Taree) were mainly assessed using available tourism information/guides, internet research and other publications as well as selected site visits.

Appendix E: Other Wetland Visitor Attractions

There are no wetland-focused destinations within an easy day trip radius of the Cattai Wetlands (or Taree). However the following, slightly more distant, wetland attractions are notable.

Hunter Wetlands Centre

The Hunter Wetlands Centre at Shortland, approximately 175 kilometres (by road) south of the Cattai Wetlands, is a staffed commercial attraction offering a developed wetland experience with a focus on education and interpretation.

It offers a far more developed and structured wetland experience compared to the Cattai Wetlands. The Hunter Wetlands Centre is run as a not-for-profit, self-funded, community organisation (with sponsorship by major Hunter Valley businesses). The Centre is fully fenced, set in a residential and residual open space area, and covers 45 hectares as a series of semi-natural and constructed ponds, each with a different theme or “habitat”.

An extensive network of surfaced/compacted walking and bike trails, including large sections of boardwalk and decking, weave between the ponds – with interpretation and orientation signs, seating, viewing points, several birds hides (including a viewing tower) and a “bush tucker” garden along the various paths. Extensive grassed areas, a barbeque shelter and picnic facilities, and playground are also provided (a canoe hire operated previously, but is now closed). Self-guided and guided ecotours, dip-netting, “feeding talks” and a range of activities are offered. The Centre operates a strong education programme – including a purpose-built classroom complex, outdoor teaching/group areas, a “Discovery Trail” as well as targeted curriculum and on-line resources. The Centre opens 7 days a week, with visitor access via an entry/pay desk and interpretive display (this building also includes a cafe, gift shop, viewing deck and conference facilities).



Kooragang Wetland Rehabilitation Project

A few kilometres north of the Hunter Wetlands Centre on Ash Island, in the Hunter River and part of the Hunter Wetlands National Park (and the Ramsar-listed Hunter Estuary Wetlands), is the Kooragang Wetland Rehabilitation Project being undertaken by the Hunter Local Land Services.

The Ash Island section of this project, covering 780 hectares, was more significantly disturbed than the Cattai Wetlands and has seen the progressive rehabilitation of former wetland areas/habitats since 1993 as well as the more recent development of visitor facilities. This project is



somewhat more comparable to the Cattai Wetlands, although it caters for a much wider range of uses – including a number of heritage structures, city farm, bush food garden, community garden and a model flying club as well as being cut by established sealed and gravel roads. Despite this the project has restored sizeable areas of wetland vegetation, constructed a limited network of walking tracks and boardwalks as well as a more extensive network of shared (walker/cyclist) tracks (using service or management access trails comparable to Cattai Wetlands), installed interpretive and information signs, developed several picnic facilities areas and carparks, and installed a large jetty/pontoon on the Hunter River. Entry is free and a range of guided tours are available, on a bookings basis, and the area also includes a small environmental education/resource centre.

Yarrahapinni Wetlands National Park

Approximately 180 kilometres (by road) north of Cattai Wetlands is the 1,200 hectare Yarrahapinni Wetlands National Park on Boringalla Creek (a tributary of the Macleay River).

The greater majority of this park is inaccessible to visitors, except by canoe or kayak in some places. However the low-key Golden Hole Picnic Area, in the adjacent Clybucca Historic Site adjoining the park's south-east end, provides access to the park's edge for vehicle-based visitors. From here visitors can enjoy a short (return) walk along floodgates and levee wall between the wetland and adjacent estuary. An undeveloped canoe launching point is located nearby. This site provides a limited and low-key wetlands experience in a semi-natural setting – one that is far more restricted than the experience on offer at the Cattai Wetlands.



Appendix F: Relevant Legislation

STATE LEGISLATION

- **Local Government Act 1993**

This Act provides the legal framework for an effective, efficient, environmentally responsible and open Statewide system of local government. Chapter 6 of the Act relates to the service functions of councils – including the provision, management or operation of environment conservation, protection and improvement services and facilities; cultural, educational, recreational services and facilities; pest eradication and control services and facilities; fire prevention, protection and mitigation services and facilities; land and property development; and tourism development and assistance. Part 2 of this chapter addresses planning and management of the public land owned and managed by council – both operational and community lands.

- **Environmental Planning and Assessment Act 1979**

This Act provides the legislative framework for the State's planning system and governs all planning, development and environmental assessment. It addresses the preparation of environmental planning instruments and undertaking development control actions, and sets requirements for assessment and approval of proposed development and activities including environmental impact assessments.

- **Fisheries Management Act 1994**

This Act addresses fisheries management, fish and marine vegetation. Mangroves, saltmarsh and seagrass areas are all protected under this Act. It also requires a permit from the Minister for Fisheries to undertake certain works – such as damaging marine vegetation on public waters or foreshores; creating an obstruction across/within a river, creek or across/around a flat; and dredging or reclamation works.

- **Threatened Species Conservation Act 1995**

This Act sets out guiding principles for the management, protection and recovery of threatened biodiversity. To identify and protect native plants and animals in danger of becoming extinct this Act provides for the listing of species and ecological communities, and key threatening processes, and the development of species recovery and threat abatement plans/programmes. If a threatened species, population or ecological community (or their habitats) may be affected by a development proposal or activity, listing under this Act triggers the requirement for consideration under Section 5A of the *Environmental Planning and Assessment Act* (the “seven-part test”), and then possibly the preparation of a Species Impact Statement (SIS).

- **National Parks and Wildlife Act 1974**

This Act provides a planning mechanism for the conservation of biodiversity, habitat and other areas of ecological and biophysical significance. It is also the principal legislation governing the protection and management of Aboriginal heritage within the State. All Aboriginal objects, including sites with physical evidence, are protected under the Act – regardless of their size or level of significance or land tenure (with the exception of Commonwealth Lands). The Act establishes the National Parks and Wildlife Service and provides it with responsibility for the management of conservation reserves, native flora and fauna protection, the protection of Aboriginal sites/resources, and administration of the *Threatened Species Conservation Act 1995*.

- ***Aboriginal Land Rights Act 1983***
 This Act provides land rights for Aboriginal people in New South Wales by specifying the requirements for representative Aboriginal Land Councils, setting out a legal avenue for the acquisition of land, and the management of land and other assets and investments by or for Land Councils. The Act provides a mechanism for Land Councils to make claims to claimable Crown Land(s).
- ***Heritage Act 1977***
 This Act protects cultural and built heritage (and certain natural heritage elements) by listing in the State Heritage Register, or via Interim Heritage Orders (IHO). Items listed on the State Heritage Register, or subject to an IHO, are afforded protection from a range of damaging or disruptive activities – except with the prior approval of the NSW Heritage Council, or in some instances a local council. The Act includes references to the “cultural” value and “archaeological” value of items or places, both of which may include Aboriginal heritage values.
- ***Catchment Management Authorities Act 2003***
 This Act enables Catchment Management Authorities (CMAs) to be established across NSW to devolve operational, investment and decision-making natural resource functions to catchment levels (to ensure that regional communities have a say in how natural resources are managed) and provide for natural resource planning at a catchment level that takes into account appropriate issues. It also provides for the preparation of catchment action plans – strategic, statutory plans that provide a framework, prioritise and guide natural resource management activities within the area of a CMA.
- ***Protection of the Environment Operations Act 1997***
 This Act aims to protect, restore and enhance the quality of the State’s environment. It establishes the NSW environmental regulatory framework and addresses environmental offences, air quality, water quality, pollution control, and noise control. The Act allocates environmental regulation, and licensing (environmental protection license), responsibilities between the Environment Protection Authority, councils and other public authorities.
- ***Native Vegetation Act 2003***
 This Act regulates broad-scale clearing (clearing of native vegetation or protected regrowth) on all land across the State – excluding for State Forest, urban land, national parks and other conservation reserves. It permits landholders to clear and manage native vegetation without approval for specified uses such as “routine agricultural management activities” or excluded activities, or as consistent with a property vegetation plan approved by a local catchment management authority.
- ***Noxious Weeds Act 1993***
 This Act sets up categorisation and control actions for various noxious weeds, according to their potential to cause harm to the economy, community and environment. It defines the roles of government, councils, private landholders and public authorities in the management of noxious weeds.
- ***Soil Conservation Act 1938***
 This Act provides for the conservation of soil resources and farm water resources and for the mitigation of erosion.
- ***Water Management Act 2000***
 This Act governs the management of surface and groundwater across the state in NSW. It aims to allocate and provide water for environmental purposes (river health and groundwater systems) and water users, licence holders, who are given secure access to

water and greater opportunities to trade water entitlements. It also requires approvals for specified controlled activities.

- ***Rural Fires Act 1997***

This Act provides for the prevention, mitigation and suppression of bush and other fires in local government areas and rural fire districts, the co-ordination of bush fire fighting and bush fire prevention, and the protection of life and property from bushfires. It also addresses protection of the environment, by requiring that these activities are carried out “having regard to the principles of ecologically sustainable development”. The Act makes land managers and owners responsible for undertaking hazard reduction measures as necessary to protect life and property. The Act empowers the Rural Fire Service to inspect bush fire hazards on private property and, if necessary, issue a Bush Fire Hazard Reduction Notice to any landowner or manager (private, commercial and governmental).

- ***Civil Liability Act 2002***

Division 5 of this Act relates to recreational activities. It provides that people engaging in “dangerous recreational activities” where there is an “obvious risk”, or engaging in recreational activities where a risk warning (verbal or written) is provided, have, under most circumstances, no or at least a reduced claim for negligence or compensation in the event that they suffer harm. The Act reduces the exposure of activity providers, and land managers, to negligence claims by injured participants and visitors.

- ***Work Health and Safety Act 2011***

This Act (previously the *Occupational Health and Safety Act 2000*) provides the legal framework to secure and promote the health, safety and welfare of people at work across NSW.

COMMONWEALTH LEGISLATION

- ***Environment Protection and Biodiversity Conservation Act 1999***

This Act addresses impacts on “Matters of National Environmental Significance” (MNES) which include – World Heritage properties, Ramsar wetlands, national heritage places, national threatened species and ecological communities, migratory species (and international agreements), Commonwealth marine areas, and nuclear actions. Commonwealth approval is required for any “controlled action”, being a project or development that might have a significant impact on any MNES and such actions must be referred to the relevant Commonwealth Minister for consideration.

- ***Native Title Act 1993***

This Act recognises and protects Native Title and provides a process by which Native Title rights can be established and compensation determined, and by which determinations can be made or acts done as to whether future grants can be made over Native Title land and waters.

- ***Disability Discrimination Act 1992***

This Act provides protection for against discrimination based on disability. It addresses a range of disabilities, across a wide variety of situations, making disability discrimination against the law in many areas of life – including sporting activities, access to premises and government programmes.

Appendix G: State Policies and Environmental Planning Policies

NSW Wetlands Policy

The NSW Wetlands Policy (2010) “promotes the sustainable conservation, management and wise use of wetlands” at a state-wide level. Of the Policy’s 12 “guiding principles” for adoption by government agencies, and for the guidance of stakeholders, when making decisions regarding wetland management and conservation the following 6 are most directly relevant to the Cattai Wetlands.

- Wetlands are valued as significant parts of NSW landscapes – their conservation and management are most appropriately considered at the catchment scale (Principle 1).
- Land management practices should maintain or improve wetland habitats, ecosystem services and cultural values (Principle 5).
- Wetlands should be recognised as places with important cultural values, in particular that wetlands are an important part of Country for Aboriginal people (Principle 6).
- Degraded wetlands and their habitats should be rehabilitated and their ecological processes improved as far as is practicable (Principle 7).
- The potential impacts of climate change should be considered in planning for wetland conservation and management (Principle 8).
- Co-operation and incentives among land managers, government authorities, catchment management authorities, non-government organisations and the general community are essential for effective wetland management (Principle 11).

State Environmental Planning Policy 14 - Coastal Wetlands

SEPP 14 (Coastal Wetlands) aims to ensure the protection and preservation of coastal wetlands (outside the Sydney metropolitan area). The policy restricts development in wetland areas and protects these areas from activities such as land/vegetation clearing, filling, drainage works or levee construction. Any such proposed works, and potential impacts, require the preparation of an environmental impact statement (EIS) to accompany a development application, and subsequent approval by both the local council and the Department of Planning (however minimal clearing along property boundaries for fencing and surveying purposes are exempt, as are measures to control noxious weed). Wetland “restoration” works – including “works to restore or enhance plant communities, water levels, water flow and soil composition” – also require approval by a local council and the Department of Planning as well as approval of an appropriate restoration plan (rather than an EIS), and notification of the Director of National Parks and Wildlife.

State Environmental Planning Policy 44 - Koala Habitat Protection

SEPP 44 aims to ensure that permanent free-living Koala populations are maintained over their present range through the conservation and management of natural vegetation areas that provide habitat for Koalas. The policy requires that prior to approving development in an area affected by the policy (identified Koala habitat) a local council must first carry out an investigation of core Koala habitat.

State Environmental Planning Policy (Rural Lands) 2008

This SEPP aims to protect and manage rural land and avoid the loss of agricultural land or diminished productivity/sustainability in areas outside Sydney, Wollongong and Newcastle. It sets out rural planning subdivision principles, to assist councils in planning for the proper management, development and protection of rural lands – including opportunities for economic development and the protection of natural resources and environmental values.

Appendix H: Mid North Coast Regional Strategies and Plans

Mid North Coast Regional Strategy 2006-2031

This Mid North Coast Regional Strategy 2006-2031, which incorporates the Greater Taree City Council area, is primarily aimed at ensuring adequate and appropriately situated land is available for projected housing and employment needs across the region over the next 25 years.

However the Strategy recognises that floodplains and coastal wetlands are of “immense environmental value, providing a variety of habitats for many aquatic and terrestrial organisms” and the importance of corridors to allow wildlife to connect with or migrate to other habitat areas and climatic zones. The northern portion of the Cattai Wetlands is mapped as part of a regional fauna corridor linking Crowdy Bay National Park to the Lansdowne escarpment. The Strategy aims to protect these “high value environments” and habitat corridors – as well as threatened species, vegetation communities and – by directing new urban development away from these important areas and their catchments. It limits development in places constrained by coastal processes, flooding and wetlands.

Relevant Actions identified in the Strategy include that:

- local environmental plans will protect and zone land with high environmental, vegetation, habitat, riparian, aquatic, coastal or corridor values for environmental protection; and
- local environmental plans will include provisions to encourage habitat and corridor establishment in future zoning of land with environmental and rural values.

The Strategy also recognises the importance of the Region’s Aboriginal cultural heritage and the intention that development not adversely impact on places, features or landscapes of cultural significance to Aboriginal people. It encourages the input and involvement of Aboriginal owners, custodians and other interest groups into the identification and conservation of cultural heritage.

Draft Mid North Coast Regional Conservation Plan

The Mid North Coast Regional Conservation Plan (draft 2010) complements the Mid North Coast Regional Strategy 2006-2031, setting out regional conservation priorities for the same 25-year period.

To guide conservation planning, and assist Council’s in their land-use planning, the Strategy’s classifies biodiversity assets as having differing value of significance. Biodiversity assets of relevance to the Cattai Wetlands include:

- SEPP 14 Coastal Wetlands and SEPP 26 Littoral Rainforest and endangered ecological communities (listed under the *Threatened Species Conservation Act 1995*) – classed as having State significance;
- primary wetlands (forested and non-forested) – classed as regionally significant; and
- other wetlands – classed as locally significant.

More widely the Strategy considers the following vegetation types to be of high conservation value, for their biodiversity and support of threatened species – riparian, wetland (including coastal wetlands), estuarine vegetation and endangered ecological communities (listed under the *Threatened Species Conservation Act 1995*).

The Strategy maps the majority of the uncleared or vegetated areas of the Cattai Wetlands as “high conservation value biodiversity assets” (*Figure 2 Distribution of lands supporting high conservation value biodiversity assets*). Despite this it only rates the Wetlands as a low to moderate priority area for conservation (*Figure 9 Biodiversity Forecasting Tool priority ‘conserve’ and ‘restore’ areas*). However this rating is in terms of regional conservation priorities, that is “areas that, if lost, would have the greatest impact on the region’s biodiversity” and generally favours areas containing high conservation value vegetation in good condition (rather than regenerating areas such as the Cattai Wetlands).

Notably the Strategy recommends that, “in general, all wetland areas should be protected due to their importance in ecosystem function and as threatened species habitat”. The Strategy also notes that ecosystems on the “coastal lowlands, for example coastal wetlands, mangroves and saltmarsh”, are the most vulnerable to the impacts of climate change (particularly higher temperatures, altered fire regimes and altered hydrology).

The Strategy nominates an area of “linking habitats” and a “major wildlife corridor” between Lansdowne State Forest and Crowdy Bay National Park – across the north of the Cattai Wetlands – which includes a variety of vegetation systems and “is generally of high importance for repair”.

The following priority actions for high conservation value biodiversity assets are recommended by the Strategy, and are of direct relevance for the Cattai Wetlands:

- endangered ecological communities should be protected, and efforts undertaken to abate the threatening processes that have led to these communities becoming endangered;
- an “emphasis on protection of identified coastal wetlands, with enhancement and restoration of key habitats (for example saltmarsh)”, the protection of existing wetlands and riparian vegetation, and enhancement and restoration of key habitats; and
- protecting and enhancing existing vegetation and habitat within regional wildlife corridors, and the restoration of “certain areas to improve connectivity and to enable movement and dispersal of flora and fauna populations”.

Hunter-Central Rivers Catchment Action Plan 2013-2023

The Hunter-Central Rivers Catchment Action Plan aims to promote “healthy and productive catchments, through ecologically sustainable management of our natural resources and environment, for the benefit of present and future generations”. The Plan assists councils to identify high conservation value biodiversity assets for protection and ensure natural resource outcomes are addressed in land use planning and management.

Of the Plan’s 10 catchment goals, and associated targets, 3 are particularly relevant to the Cattai Wetlands as follows.

- Goal 5 - to maintain and improve the ability of catchments to provide ecosystem functions and secure freshwater, including groundwater and wetlands. Target 4 - improve or maintain the condition and connectivity of water systems, including groundwater and wetlands.
- Goal 6 - to improve or maintain the ability of catchments to provide ecosystem functions and services which sustain biodiversity and regionally significant habitats and species – to (among other purposes) conserve and recover native terrestrial and aquatic biodiversity and the habitats it depends on. Target 7 to improve or maintain the connectivity of terrestrial and aquatic habitats. Target 8 to improve or maintain the condition and extent of habitats. Target 9 to reduce the occurrence and impact of threats and threatening processes.

- Goal 4 - to improve or maintain the ability of land and soils to provide ecosystem functions to support (among others) biodiversity. Target 3 to prevent and minimise impacts of acid sulfate soils and salinity.

Appendix I: Current Land Use Zoning, Greater Taree Local Environmental Plan 2010

Zone E2 Environmental Conservation

1. Objectives of zone
 - To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
 - To prevent development that could destroy, damage or otherwise have an adverse effect on those values.
2. Permitted without consent
Home occupations
3. Permitted with consent
Dwelling houses; Environmental facilities; Environmental protection works; Flood mitigation works; Roads
4. Prohibited
Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Rural industries; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3.

Additional provisions are found within the Greater Taree Local Environmental Plan 2010 in relation to land zoned E2 Environmental Conservation, regarding:

- development near zone boundaries;
- minimum subdivision lot size for community title schemes;
- erection of dwelling houses on land in certain environmental protection zones; and
- minimum subdivision lot size for strata subdivision of residential or tourist and visitor accommodation.

Zone RU1 Primary Production

1. Objectives of zone
 - To encourage sustainable primary industry production by maintaining and enhancing
 - the natural resource base.
 - To encourage diversity in primary industry enterprises and systems appropriate for the
 - area.
 - To minimise the fragmentation and alienation of resource lands.
 - To minimise conflict between land uses within this zone and land uses within adjoining zones.
 - To permit small scale rural tourism uses associated with primary production and
 - environmental conservation with minimal impact on primary production and the
 - scenic amenity of the area.
 - To maintain the rural landscape character of the land.
 - To protect and enhance the native flora, fauna and biodiversity links.

2. Permitted without consent

Extensive agriculture; Forestry; Home occupations; Intensive plant agriculture

3. Permitted with consent

Agriculture; Animal boarding or training establishments; Bed and breakfast accommodation; Cellar door premises; Cemeteries; Correctional centres; Crematoria; Dual occupancies (attached); Dwelling houses; Environmental facilities; Environmental protection works; Extractive industries; Farm buildings; Farm stay accommodation; Flood mitigation works; Funeral homes; Helipads; Home-based child care; Home businesses; Home industries; Intensive livestock agriculture; Open cut mining; Roads; Roadside stalls; Rural industries; Rural workers' dwellings

4. Prohibited

Livestock processing industries; Any other development not specified in item 2 or 3.

Additional provisions are found within the Greater Taree Local Environmental Plan 2010 in relation to land zoned RU1 Primary Production, regarding:

- development near zone boundaries;
- minimum subdivision lot size for community title schemes;
- rural subdivision;
- erection of dwelling houses on land in certain rural zones;
- minimum subdivision lot size for strata subdivision of residential or tourist and visitor accommodation; and
- development for farm stay accommodation.

Appendix J: Community Consultation

A range of measures have been undertaken to ensure that members of the community and known stakeholders were aware of preparation of the Cattai Wetlands Future Directions Strategy and the opportunities to be involved in this process. Such consultation also enables the community to clearly express what they value about the Wetlands and their preferences or desires for the area's future management. It is important that the Future Directions Strategy reflects community values and aspirations for the area, and planning for the Wetlands acknowledges community consultation and feedback.

Additional opportunities for community and stakeholder input will be offered at later stages in the Strategy's planning process.

In addition to the community engagement measures described below, additional consultation measures have included:

- on-going discussions with relevant Council staff responsible for the Wetlands' planning and on-site management;
- a workshop with Council wider planning and tourism staff;
- presentations and discussions with the Manning Wetlands Steering Committee; and
- a staffed display inviting stakeholder/community input at the official opening of the Cattai Wetlands, and World Wetlands Day celebrations, on-site in February 2013.

Notification of Known Stakeholders and Project Promotion

The people, organisations or groups known to have – or potentially having – an interest in the future planning and management of the Wetlands were broadly divided into the following 3 groups:

- neighbouring landholders – comprising 17 landholders identified from Council's data base;
- Aboriginal stakeholders – comprising 9 organisations, and 1 individual, known to have connections with or an interest in the area (this list was expanded during the consultation process to include 43 people or groups)
- special-interest groups – comprising 10 groups, ranging from birdwatchers to local progress associations.

Each of the above groups or individuals were sent "notification letters" (by post and/or e-mail) in early December 2012, or personally contacted, advising them of:

- Council's intention to prepare the Cattai Wetlands Future Directions Strategy;
- the purpose of the Strategy and how it will be prepared;
- an overview of the Wetlands;
- why they have been contacted;
- avenues to be involved in the Strategy's preparation, and inviting their involvement and inputs; and
- contact details for further information.

Letters were accompanied by a 2 page information sheet seeking input to the Future Directions Strategy, describing the Wetlands and their management to date, describing Council's intention and process for preparing the Strategy, and opportunities for community input and involvement.

Stakeholders were also notified directly by Council staff (including Council's Aboriginal Community Officer) on an opportunistic basis, as part of other contacts and dealings.

Information regarding preparation of the Future Directions Strategy was placed on the Cattai Wetlands page on the Greater Taree City Council website. Preparation of the Strategy, and the invitation for community input, was also covered by the local media.

A staffed display regarding the Future Directions Strategy and inviting stakeholder/community input was mounted as part of the Wetlands' official opening and World Wetlands Day celebrations on-site on Saturday 2nd February 2013. This event was by invitation only. Copies of the project Information Sheet, and Feedback Form (see below), were available and distributed at this event.

Feedback Form, and Direct Submissions

A "Feedback Form" was developed to assist people in providing information for consideration during preparation the Future Directions Strategy. It was a self-administered questionnaire format, returned via a reply-paid mailback facility (to Gondwana Consulting, or by post/e-mail/hand delivery to Council). A copy of the "Feedback Form" can be found at the end of this Appendix.

The Form provided an introduction and project background before offering 7 open-ended questions that aimed to identify the key values, visitor use patterns, issues, suggestions, and a respondent's vision for the future of the Cattai Wetlands. Additional comments were invited. It also sought some basic information about the respondent (gender, age group, suburb/location, and organisation/group if applicable).

The Form was available for downloading from Council's website from early February 2013. It was also distributed on request directly to stakeholders (as hard copy or e-mail), was available at all stakeholder meetings, and distributed at the Wetlands' official opening and World Wetlands Day celebrations on-site on Saturday 2nd February 2013 (approximately 30 Forms distributed).

Feedback Form Analysis – Community and Stakeholder Views

Uptake and use of the Feedback Form was poor. A total of only 5 Forms were completed and returned (some with questions left unanswered). In addition to these completed Forms, 3 e-mails submissions were received by Council. One e-mail submission was structured as per the Feedback Form, the other two e-mails provided only general feedback. The responses are not representative or statistically valid, but are discussed below in general terms and to illustrate some people's views of the Wetlands.

Respondent Characteristics

Submissions were received equally from males and females (4 males and 4 females). Only 4 survey respondents identified their age group – all were over 36 years old (2 x 71+ years, 1x 56-70 years, and 1 x 36-55 years).

What's Important About the Wetlands

Respondents were asked to identify what they saw as the key values or significance of the Cattai Wetlands. Only 5 respondents answered this question. Generally the responses related to the importance of protecting and preserving the natural environment of the Wetlands. Following is a snapshot of the responses received.

- ◆ *Not important because it has not achieved any of its original aims.*
- ◆ *Restrict development.*
- ◆ *Protection of the environment – it provides a lovely/scenic/quiet/beautiful area to visit.*
- ◆ *Perhaps in the future would make an ideal tourist attraction.*
- ◆ *To stay a natural wetlands and flora and fauna reserve – enabling the general public to experience a special area.*
- ◆ *To preserve area for future generations; introduce children as well as adults to this natural area now.*

Visits to the Wetlands and Usage Characteristics

Information collected regarding people’s use of the Wetlands and the characteristic of their visits was limited. Respondents were asked if they had visited the wetlands before completing the survey, what area(s) they visit and what they typically do there. Only 6 respondents provided information regarding their visits. In general, they had visited the Wetlands at least once before completing the survey. Only 2 respondents indicated where they visit, being:

- ◆ *Usually the main track, up the hill to the shelter shed and the landing overlooking the water lily lake.*
- ◆ *Mainly around the lagoon and to the cairn to see over to Crowdy, etc.*

Management Issues or Challenges, and Suggested Solutions/Approaches

Respondents were asked to list, in order of priority, what they considered to be the main issues or challenges to be addressed in the future management of the Wetlands as well as provide suggestions to address the issues. The responses and priorities were varied, the Table below summarise these responses.

Main Issues/Challenges	Suggested Solutions/Approaches
Priority 1	
<ul style="list-style-type: none"> ▪ “Control vermin – e.g. wild dogs” ▪ “Implement fire risk strategy” ▪ “Camphor Laurel infestation” – from northern end of wetland, adjoining Coralville floodplain where there are large stands of camphor laurel. Concerned that camphor laurel seedlings will germinate and affect the wetlands if grazing/slashing ceases. ▪ Improve accessibility “for people with walking difficulties or older people” – through “levelling the parking area and extending a board walk all the way around”. ▪ “Walking track to be kept in good condition”. ▪ Balance of keeping visitors interested yet keeping most of the area “untouched for future study, etc”. 	<ul style="list-style-type: none"> ▪ “Don’t increase area and manage what you’ve got”. ▪ “Make them legally binding”. ▪ “Have a targeted camphor eradication program on Coralville Floodplain”. ▪ Put aside money “specifically for the wetlands” – either 1% of Council rates or gain through grants or a money box like that at Crowdy Bay National Park. ▪ “By consulting with local people”.
Priority 2	
<ul style="list-style-type: none"> ▪ “Mosquitoes” – due to disease carrying capacity. ▪ “Preserve wildlife habitat”. ▪ “Maintenance of the road into the 	<ul style="list-style-type: none"> ▪ “Apply for any environmental grants on offer”. ▪ “More care taken with future plantings – tree guards removed when no longer

Main Issues/Challenges	Suggested Solutions/Approaches
wetlands". <ul style="list-style-type: none"> ▪ "Tree plantings to be better maintained". ▪ Allocating enough space for educational purposes and people with mobility problems and ameliorate views of "structures" so they don't take away from the "untouched feeling". 	needed".
Priority 3	
<ul style="list-style-type: none"> ▪ "Prevent vandalism, e.g. fire, shooting, logging". ▪ Continue "weed eradication" – particularly "farmers friends". ▪ "More picnic areas for families and seats for older visitors". ▪ Encourage communication regarding research activities between park visitors and interested parties. 	<ul style="list-style-type: none"> ▪ Put main access road on "Council's regular maintenance schedule". ▪ "Install more tables etc".

The Wetlands' Future

Respondents were asked to describe any improvements or changes they would like to see to the area and its management, and how they envision the Wetlands in 5 to 10 years time. Responses were limited – following is a summary of those received.

Suggested improvements or changes included the following.

- ◆ Resident ranger.
- ◆ Improved road and parking area.
- ◆ Boardwalk *all the way around the track*.
- ◆ *BBQ near parking area*.
- ◆ More access for the public, including for bird watchers. Build bird hide near main lake.
- ◆ More weed control of "Farmers Friend".
- ◆ Install a seat near parking area as a drop off area for people with limited mobility.
- ◆ Clear/maintain areas for groups.
- ◆ Name more areas *to help people orientate themselves and to feel ownership of the area*.
- ◆ Suggest guided tours by volunteers. Potential to link with tour to the Brother Mountains or other area of environmental significance, e.g. Wingham Brush.
- ◆ *Downloadable bird watching guides for visual census*.
- ◆ Wetlands have no effect on the *so called Acid Sulphate Soil situation or river health* – money would be better spent dredging the mouths of the river to allow tidal flow and flushing of the river.
- ◆ Improve signage regarding fish species and connectivity to Cattai Creek.

Only 3 respondents described how they would like to see the Cattai Wetlands in 5–10 years time, these included:

- ◆ *preserved for resident and migratory wildlife" and restricted eco-tourism to fund project,*
- ◆ *a place of peace and serenity for people to go and enjoy, and a natural area and tourist attraction (similar to Sea Acres at Port Macquarie); and.*
- ◆ *a popular destination for everyone including overseas visitors.*

Other Comments, Ideas, Suggestions or Concerns

The Form provided opportunity for other feedback, ideas, suggestions or concerns. Following is a summary of the additional comments received.

- ◆ Positive feedback regarding improvements at the wetlands to date – the “new” toilet block, maintenance of walking trails, signage and site information, the “wharf” overlooking the wetlands, well-maintained access road, great views, and the information brochure.
- ◆ Council staff have been *very knowledgeable and enthusiastic about the wetlands project.*
- ◆ *The wetlands/facility needs more advertising.*
- ◆ *Keep limited access.*
- ◆ *Prevent project being overturned by future Governments.*
- ◆ *Continue to monitor acid sulphate problem.*
- ◆ *Area becomes soggy after rain – could a few more drains help ?.*
- ◆ *Open 3 days a week is good – in the future a kiosk on site.*
- ◆ *More signage.*
- ◆ Concerns re the risk of an uncontrollable fire hazard, feral animal problem and mosquito problem – especially if the area is linked to surrounding national parks and forests.
- ◆ *Keep fire breaks up to scratch.*
- ◆ Local birdwatching group have been involved in remediation works at the Wetlands since 2006, and carried out bird/species counts on a monthly basis for 3 years and then more lately quarterly.
- ◆ Group to oversee the area with members from many different interested community groups who will report on decisions taken.

Consultation with Aboriginal People and Groups

Several avenues were pursued to offer Aboriginal people and groups associated with the Wetlands, or having an interest in the area’s management, the opportunity to be involved in preparation of the Cattai Wetlands Future Directions Strategy.

Following the initial notification of Aboriginal stakeholders known to Council (as described in Section 3.1 above), a wider list of potentially interested Aboriginal people or groups was progressively assembled. This larger consultation list ultimately comprised 43 people or organisations.

The following additional Aboriginal people/groups engagement measures have been undertaken. Further consultation with Aboriginal stakeholders will occur during finalisation of the Draft Future Directions Strategy.

► Round-table Aboriginal Stakeholders Meeting, March 2013

A round-table Aboriginal stakeholders meeting, to discuss ideas and desires for future management of the Cattai Wetlands and preparation of the Future Directions Strategy, was held in the Manning Visitor Information Centre, Taree, on Thursday 21st March 2013 in the afternoon. Letter and e-mail invitations were sent to 26 Aboriginal people and groups welcoming their involvement at this session, with follow up telephone contact with many invitees. The meeting was attended by six Aboriginal people.

► Elders and Community Meetings, May 2013

Aboriginal stakeholders were invited to two consecutive meetings on Thursday 16th May 2013 in the late afternoon and early evening in the Taree High School Hall, Taree.

The first of these meetings (4.00-5.30 pm), a Biripi “Elders Circle” and Discussion Meeting, was an invitation only meeting for members of the Biripi Elders Council. Members were invited/advised directly by Council’s Aboriginal Community Officer, as well as by the distribution of invitation “flyers”. Four Elders attended this session.

The following meeting (6.00-7.30 pm) was open to all members of the local Aboriginal community with people advised and invited by “flyers”, notices in Aboriginal organisations and service agencies, opportunistic contact by Council’s Aboriginal Community Officer and a community notice announcement on Ngarralinyi Radio. Unfortunately no-one attended this second meeting.

► On-site Inspection and Discussions, September 2013

Following a suggestion at the May Biripi Elders Meeting, a site inspection and discussion session was organised for all Aboriginal stakeholders for the afternoon of Thursday 26th September 2013. To assist dialogue at this session a preliminary concept plan, or discussion plan, was prepared showing some of the possible management directions and developments that might be considered in the Strategy’s preparation. All 43 Aboriginal stakeholders (people and groups) on the consultation list were mailed a personalised invitation to this on-site session, along with a copy of the concept/discussion plan and the project information sheet. The event was also promoted through opportunistic contacts by Council’s Aboriginal Community Officer. Ten Aboriginal stakeholders attended the site inspection/discussions and spent 2 hours visiting various parts of the Wetlands and discussing possible options for the area.

During the above consultation sessions Aboriginal stakeholders expressed a range of views about the Wetlands and their future, and particularly Aboriginal people’s future involvement with the area and its management. While it is not appropriate to detail all the comments offered, common themes or views included the following.

- ◆ The importance of future Aboriginal community involvement in the Wetland’s management, and in particular the involvement of Aboriginal Elders and traditional owners.
- ◆ A preference for retaining the area’s natural values/character and environmental protection focus.
- ◆ Support for the measures to help everyone experience “the bush”.
- ◆ The need for Aboriginal people to be involved in the approval process, and when necessary on-site works, for ground disturbance activities in culturally sensitive areas.
- ◆ Concerns about some parts of the site – in terms of suitability for access by Aboriginal people or non-Aboriginal people.
- ◆ The educational potential of the site, for Aboriginal people (as a “teaching place”) and for other visitors.
- ◆ That the need for a cultural centre, keeping place or other cultural facility should come from – and be driven by – the Aboriginal community.
- ◆ A range of views about the need for, and nature of, any cultural heritage facility on the site.
- ◆ Aboriginal knowledge, culture and stories should be controlled by Aboriginal people and not appropriated for economic/tourism use without the consent and involvement of the Aboriginal knowledge holders.

Greater Taree City Council Cattai Wetlands Survey

Since June 2012, Greater Taree City Council has provided a self-administered survey on-site at Cattai Wetlands for visitors to complete on a voluntary basis. The survey is available from a dispenser box, located at the Wetlands’ visitor carpark, with completed surveys placed in a

“mailbox” located beside the dispenser. A total of 291 completed surveys had been received up until late August 2013 and analysed by Council – with the survey results summarised below.

The survey consisted of a total of 12 questions – some were open ended questions while others provided a choice of pre-determined responses. Some of the 291 respondents did not provide responses to each question (the number of respondents to each question has been identified in Council’s analysis and has been noted in the following summary, where relevant). A copy of the survey can be found at the end of this Appendix.

It is important to note that in January 2013, Council opened the central area of the Wetlands to visitors 4 days a week. Prior to this, the area was only open to approved or escorted special access (e.g. World Wetland Day, educational groups, etc). Of the 291 responses, 75 were received prior to opening the area to general (unescorted) visitors. The remaining 216 responses were received after general access to the Wetlands was permitted.

Respondent Characteristics

Almost half of the visitors to Cattai Wetlands were aged 61 years or older – 46.9% of respondents were in the 61-80 years age group, and 3.1% of respondents were in the 81+ years age group. Approximately one-third of respondents were aged between 41-60 years (34% of respondents), while the remaining respondents (16%) were less than 40 years old. Younger visitors and family groups are therefore under-represented among the area’s visitors (or among survey respondents).

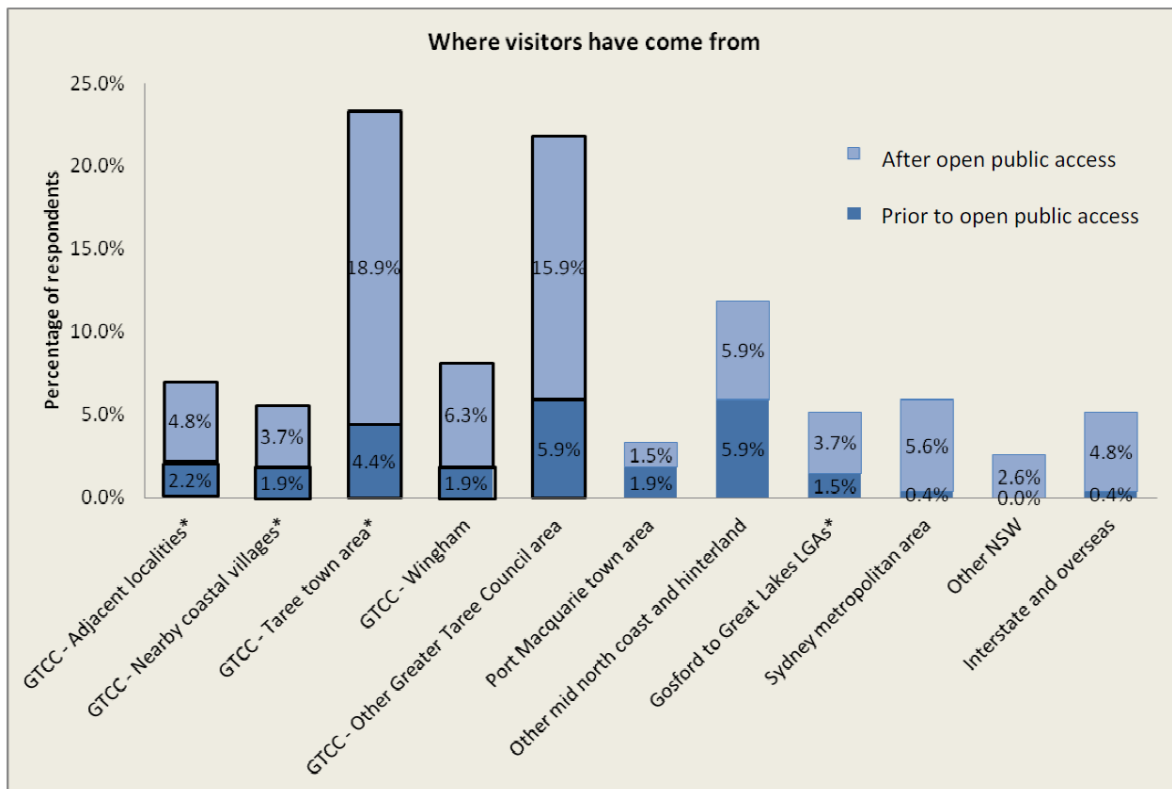
The Figure below shows the origin (place of residence) of respondents to the Council survey (noting that 21 people did not provide this information). Each column has been separated to identify the origins of visitors before and after the Wetlands were open to general visitor access in January 2013.

Most respondents came from within the Greater Taree City Council area (65.9% in total). Overall the vast majority of visitors were from NSW – with only 5.2% of respondents being interstate (10 respondents) or international (4 respondents) visitors. Beyond the Greater Taree City Council local government area the most common places of origin were “Other mid north coast and hinterland” (11.8%) then the “Sydney metropolitan area” (6.0%) and “Gosford to Great Lakes LGAs” (including Newcastle and the Hunter) (5.2%).

Opening the Wetlands to the general public in January 2013 did not markedly alter the origin of visitors. The majority of visitors were still from Taree and the Greater Taree local government area, although there was some increase in the proportion of visitors coming from outside the Council area (from 32.7% of all visitors prior to the area’s opening, to 38.3% of visitors after the January opening). Interestingly, similar numbers of visitors were drawn from the “Other mid north coast and hinterland” area both before and after the Wetlands were opened to the public; possibly due to the proximity of some of the centres within this area to the Wetlands, such as Kendall and Laurieton, among other locations.

Characteristics of Visits

Respondents were given 8 options to describe their reason for visiting the Cattai Wetlands. Only 18 people did not provide a response. “Tourist Visit” was the most popular reason, with almost two thirds (61.9%) of the respondents selecting this as the reason for their visit. It is worth noting however that prior to the opening of the area to visitors 4 days a week in January 2013, only 4.8% of respondents (13 respondents) selected this option as a reason for visiting the Wetlands – pointing to the area’s appeal as a local tourism destination. “World Wetlands



* GTCC Adjacent localities - including Coopernook, Moorland, Johns River, Lansdowne, Moto, and Jones Island

* GTCC Nearby coastal villages - including Harrington and Crowdy Head

* GTCC Taree town area - including Taree, Cundletown, Chatham, Kolodong, Dumaresq Island, Taree South and Purfleet

* Gosford to Great Lakes LGAs - including Newcastle and Hunter Valley

Day” was the second most popular reason for visiting Cattai Wetland, with approximately one fifth of the respondents visiting for this reason.

The majority of respondents heard about the Wetlands through the newspaper (41.2%) and through “word of mouth” (40.3%). Respondents were able to choose from a list of 5 predetermined responses, of the 243 respondents to this question, 82 also selected “Other” which included responses such as “radio”, “television”, “pamphlet”, and “signage” among others.

Visitor Experiences

Respondents were asked how they would rate their visit to Cattai Wetlands. The following response options were given – “Very Poor, Poor, Average, Good or Excellent”. All 291 respondents answered this question. Overwhelmingly (almost three-quarters of people) rated their visit to the Wetlands as “Excellent” (73.2% of respondents). Only 3 respondents rated their visit as Poor or Very Poor and only 6 respondents rated their visit as Average. Interestingly, the 9 ratings of “Average” or below were all given after the Wetlands were opened to the general public, 8 of these ratings were given by respondents that also selected “Tourist Visit” as their reason for visiting. This suggests that the site did not meet their expectations as a tourism destination (however other factors, such as weather conditions, can also influence satisfaction responses).

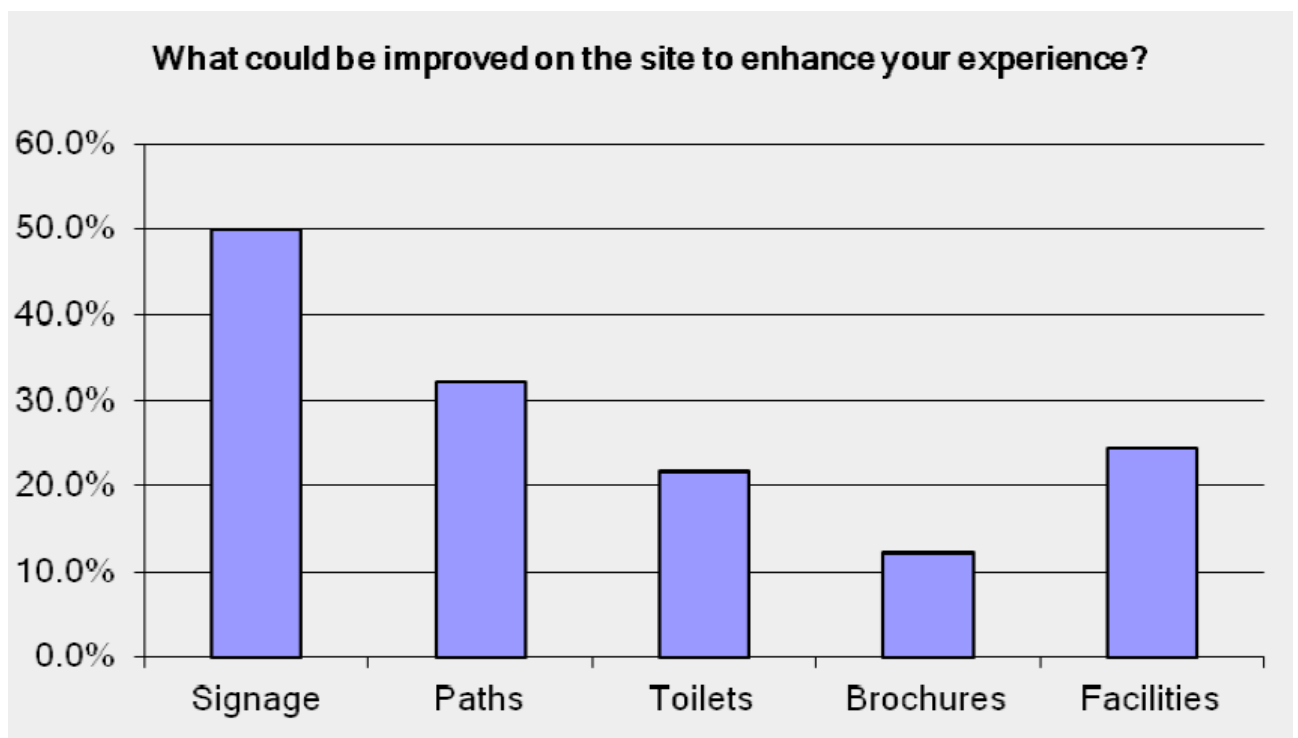
Respondents were asked what was the highlight/best feature of their visit, and 262 people responded to this question. Following is a random selection of the responses received (verbatim).

- ◆ *Seeing Kangaroos. The boardwalk to the wetlands.*
- ◆ *Just being able to sit and be a part of a wonderful natural experience. The wetlands are incredible.*
- ◆ *To realise the regeneration that has been achieved to date. The kiss principle used in the walking track construction - fits in with the surrounds. Appropriate but not overburdening signage.*
- ◆ *Well managed, easy walking. Great diversity of flora and fauna.*
- ◆ *Spectacular view from Spring Hill lookout & wetland platform (stop 3).*
- ◆ *Seeing nature at its best.*
- ◆ *Seeing the various improvements made since my last visit.*
- ◆ *Demonstration of how pollution enters our waterways - better understanding of ASS.*
- ◆ *Guided tour - informative guides - relaxed walk.*
- ◆ *Water Lily Pond. Wildlife.*
- ◆ *Fantastic diversity of birds and vegetation.*
- ◆ *The staff!!*
- ◆ *Boardwalks.*

Facilities and Suggested Improvements

Respondents were asked what could be improved at the Wetlands to enhance visitor experiences. Respondents were able to select from 5 pre-determined responses, and could select more than one response. The pre-determined responses were – “Signage, Paths, Toilets, Brochures and Facilities”. Respondents were also able to suggest “Other” options to improve the site’s visitor experience.

A total of 180 respondents answered this question (although respondents were able to select more than one option). Signage was identified as the most popular improvement to enhance the visitor experience, with half of the respondents selecting this option (50.0%). Almost one-third of respondents selected Paths (32.2%) while nearly one-quarter of respondents selected Facilities (24.4%) and Toilets (21.7%). The following Figure shows the breakdown of responses received and improvements suggested.



Of the 180 responses, 149 also suggested "Other" improvements. Following is a random selection of the "Other" suggestions received.

- ◆ *Flora information signage would make into a treasure hunt for children.*
- ◆ *Maybe some photos of the birdlife.*
- ◆ *Bins.*
- ◆ *Canoes, remove rural fencing (old).*
- ◆ *Aboriginal history.*
- ◆ *More seating, especially at the tombolo picnic spot.*
- ◆ *More Aboriginal information; shelter to cater for school groups.*
- ◆ *Can't think of anything it was wonderful.*
- ◆ *Bird Hide a priority and shade/sun shelter for visitors.*
- ◆ *Signage identifying trees, plants & birds; more boardwalks & gravel walkways.*
- ◆ *Need better/flatter walkways for seniors & wheel chair access.*
- ◆ *More general info and names of trees. Paths excellent. Toilets excellent. Brochures yes please, Facilities excellent - Perhaps a few more seats on the way around.*
- ◆ *Need better signage on highway.*
- ◆ *List of birds seen, maybe a whole board where bird sightings can be noted.*

In addition to asking what could be improved, respondents were asked which of the 5 pre-determined responses they would identify as the most important "enhancement" to the area's facilities or visitor experiences (or management). A total of 152 respondents answered this question. People selected one or more of the same pre-determined responses, with some again identifying "Other" as the most important enhancement. Comments collected under "Other" generally related to access, education, maintenance and environmental protection of the site - rather than the enhancement of built facilities. Some requested more specific information to be included within the signage.

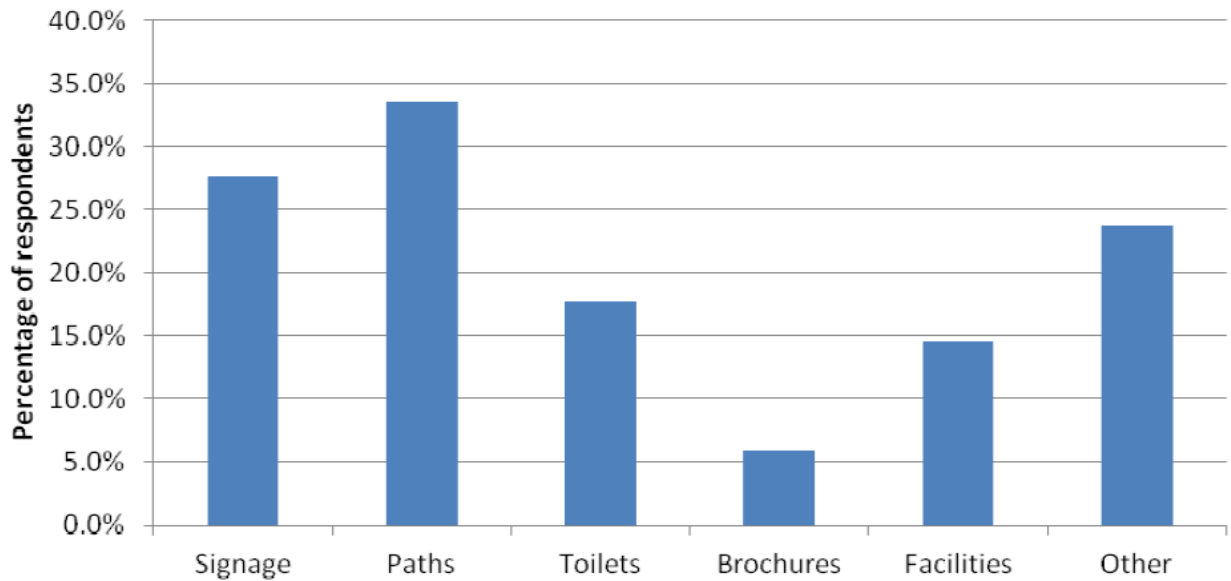
The Figure below shows the most important enhancements as identified by the 152 survey respondents. It should be noted that "Paths" also includes references to boardwalks while "Facilities" also includes references to bird hides, platforms, gas barbeques, bridges, seating, picnic tables and parking. Paths (33.6%) and Signage (27.6%) were identified as the highest priority enhancements. Interestingly, although Signage was identified as the "most popular" improvement by visitors (followed by Paths) at Question 7, Paths were actually identified as the higher priority enhancement (followed by Signage) at Question 8.

Respondents were asked for their support, or otherwise, for opportunities to "open up" the Wetlands for more people to enjoy. Specific feedback was requested regarding the possibility of an Indigenous cultural centre, education facilities and overnight camping opportunities. Additional ideas were also requested for the opening up of the area for more people to enjoy. This was an open ended question, and 204 responses were received with multiple responses possible.

Greatest support was expressed for educational facilities (23.8 % of responses in favour, and only 5.0% opposed). Respondents accessing the site before it was open to the general public (i.e. with a greater percentage of "local" respondents from the Taree local government area) tended to be somewhat more in favour of educational facilities (28.3% support) than the more diverse set of respondents surveyed after the site was open to the general public (22.2% support).

The idea of an Indigenous cultural centre was also well-supported (18.3 % of responses in favour, and only 5.5% opposed). "Local" respondents tended to be more supportive of this proposal (21.2% in favour, and 3.0% opposed) than the wider visitor sample (17.3 % in favour, and 6.3% opposed).

Most important enhancements



A more mixed response was received regarding overnight camping at the Wetlands, with strong opinions expressed both for and against the idea. However on balance more respondents overall were in favour of this use (22.7 % of responses in favour, and 13.0% opposed), although many responses also stressed that any camping – if provided – should be low-key, low-impact, limited and strictly controlled or managed. Interestingly visitors from the wider group of respondents (the public access surveys) were more forthcoming and slightly more polarised on the issue of providing for overnight camping (24.3 % in favour, and 14.1% opposed) than were “local” respondents (18.2% in favour, and 10.1% opposed).

Respondents offered a variety of additional or explanatory comments in answering this question. Following is a snapshot of some of these other/additional suggestions received.

- ◆ *Guided night tours with spotlights to see nightlife.*
- ◆ *Nice picnic area with gas bbq.*
- ◆ *Leave Alone! Unspoiled. Day visits only.*
- ◆ *Educational facilities, cultural centres - yes. I feel overnight camping would spoil the effect of the area.*
- ◆ *Indigenous culture centre & establishing a campsite.*
- ◆ *Camping should be permitted but controlled.*
- ◆ *No camping!!*
- ◆ *Birdwatching walks, overnight camping, visitors/educational centre, DVD/powerpoint presentation.*
- ◆ *Yes these are all very good suggestions & would certainly encourage more people to visit the wetlands.*
- ◆ *Yes we support the above. Why not use local artists to create temporary sculptures as an attraction or festival item. Christmas carols or alike.*
- ◆ *A Bird Hide, so the water fowl can be observed without them seeing us first.*
- ◆ *Just toilets & picnic facilities.*

Miscellaneous Questions

Question 10 asked respondents if they had heard of the Big Swamp project. Of the 279 responses 41.6% had heard of the project prior to their visit (on the day of survey) and 58.4% had not.

Almost half (44%) of the 257 respondents to Question 11 would be interested in being involved in a "Friends of Cattai" group to enable community involvement in the future management of the site.

Additional Comments

Additional comments were sought from the respondents at the end of the survey, and 168 respondents took this opportunity to provide additional comments or suggestions. The majority of comments provided positive feedback regarding their experience of the Wetlands. A random selection of these additional responses is provided below.

- ◆ *Very happy with the wetlands. I will definitely come back.*
- ◆ *A donation box or method for donation. Possibly a Face Book page/method for donation supplied on it.*
- ◆ *Extend opening hours.*
- ◆ *A coffee shop or cafe would be greatly appreciated!*
- ◆ *A visionary & environmentally friendly project - congratulations Council.*
- ◆ *Council staff in office very helpful. Rangers on site exceptionally informative & helpful.*
- ◆ *Shaded seating. Extend board walks. Not suitable as yet for handicapped people. Not on a hot day.*
- ◆ *I would like to see a continuing maintenance program to combat natural and human led deterioration over future years.*
- ◆ *More regeneration - saw a lot of weeds. But it is fabulous - loved the walk. Would be great to have some vegetation named somehow - signage - subtle though.*
- ◆ *Greatly enjoyed visit.*
- ◆ *Aboriginal history very interesting.*
- ◆ *I wouldn't mind paying a fee for an escorted tour - more than a gold coin.*
- ◆ *Thank you very much.*

Cattai Wetlands

Its Future - Your Views



Cattai Wetlands – Future Directions Strategy

Greater Taree City Council (GTCC) is preparing a *Future Directions Strategy* for the Cattai Wetlands. The Strategy will chart a direction for the future of these valuable wetlands and surrounding area and how this place is to be protected, managed, developed and used over the coming years.

GTCC is asking for your input on the things you value about the Cattai Wetlands, issues you feel need attention, and your suggestions and ideas for future directions for this important area.

The Wetlands cover nearly 500 hectares north-east of Coppenhook (right). They have significant water quality, conservation, heritage and landscape values - including importance for the local Aboriginal community. GTCC management advice has focused on water quality improvements (to meet the requirements of the State Water Act) and water quality in the Manning River floodplain, riparian bush regeneration and weed control - with several positive environmental results. A 2 km walking trail around the scenic Cattai Wetland lagoon, and a shorter forest walk, have been developed for visitors to enjoy - at those times when the area has been open to the public.

The *Future Directions Strategy* is to consolidate and build on past gains in the area's environmental management and quality. The Strategy will review the 2006 Cattai Wetlands Plan of Management and current management actions, identify any outstanding works still required, and guide Council in both the area's day-to-day management and longer-term aspirations for the site. It will also aim to identify how to make the Wetlands more accessible for the community to enjoy and appreciate and it possible realise ecotourism or economic benefits.

The community's input early in the planning process will help identify what people value about the Wetlands, how they do (or would like to) use or enjoy the area, perceived management issues or challenges to address, and aspirations for the area's future character, use and management.

This brief "Input/Feedback Form" is part of the planning process. Your responses, inputs and ideas would be appreciated and will contribute to the Strategy's preparation (the form is reply-paid). There will be several opportunities for community involvement during the Strategy's preparation. (See page 4).

To offer your ideas and input to the Strategy's preparation **please complete this form**, or contact Alan Gintis (Gondwana Consulting) on email alan@gondwanaconsulting.com.au or 0429 913 300. For information about the Cattai Wetlands, and the *Future Directions Strategy*, overall contact Tanya Cross (GTCC's Senior Environmental Planner) on email Tanya.Cross@gicc.nsw.gov.au or 6592 5248.

Your Views:

Your gender ? (please circle)	Male	Female				
Your age group ? (please circle)	16-17 yrs	18-25	26-35	36-55	56-70	71+
Your suburb ?						
Your organisation/group ? (if applicable)						

1. What do you see as the key values or significance of the Cattai Wetlands, or why is the area important to you?

2. Have you visited the Cattai Wetlands (before today) ? What area(s) did you visit, or do you visit most often ? And what do you typically do there ?

3. What do you consider to be the main issues or challenges that need to be addressed in the future management of the Cattai Wetlands ? (Please list in your order of importance/concern.)

(1)

(2)

(3)

Others:

4. How would you suggest these issues or problems are addressed in the Wetland's future planning and management ?

(1)

(2)

(3)

Others:

5. Describe any improvements or changes you would like to see in the management, uses, facilities and developments at the Cattai Wetlands - especially in terms of access and facilities for visitors ?

6. Briefly describe how you would like to see the Cattai Wetlands in 5 to 10 years time ?

7. Any other comments, ideas or suggestions you would like to make would be welcome ?

Contact details for future involvement/notification:

If you would like to be kept informed of additional opportunities to provide input or comments during preparation of the *Cattai Wetlands – Future Directions Strategy*, or the availability of material for public review (such as a Values, Issues and Opportunities Discussion Paper) please provide your name and preferred contact details below.

Name: _____ Preferred contact details (e-mail, telephone or postal address): _____

(Privacy Statement: All information collected is to assist in the development of the *Cattai Wetlands – Future Directions Strategy* and related actions may be made available through Freedom of Information processes if requested. Your personal information or may not be identified (please note that these may be made available through Freedom of Information processes if requested).

Thank you for your time and responses

TO RETURN THIS INPUT FORM

Fold it into thirds (at edge marks shown), with the mailing label below showing on the outside (& your contact details folded inside), & seal the end & edges with tape. Then drop it into any Australia Post mailbox. **YOU DO NOT NEED A STAMP. Please complete and return your survey by the end of February 2013, or sooner.**

Delivery Address:
23 Sydney Rd
WARREWOOD NSW 2102

No stamp required
if posted in Australia




Gondwana Consulting
Reply Paid 84252
WARREWOOD NSW 2102

Cattai Wetlands User Survey

Thank you for taking the time to fill out this survey. Your feedback will assist in maintaining/improving the experience you had at Cattai Wetlands.

1. Contact Information

Name:

Company:

Address 1:

Address 2:

City/Town:

State/Province:

ZIP/Postal Code:

Email Address:

Phone Number:

2. Age Group

0-20 41-50 81+

21-40 61-80

3. Why/when did you visit Cattai Wetlands?

World Wetlands Day Environmental Groups (e.g. Birdwatchers)

Community Service Group (e.g. Rotary, Lions Club) Tourist Visit

Cultural Heritage Event Environmental Work Program (e.g. Green Corps, CVA)

Educational (e.g. School, Tale)

Date:

4. How did you hear about Cattai Wetlands?

Newspaper Trace Visitor Information Centre

Newsletter Word of Mouth

Council website

Other (please specify)

5. How would you rate your visit to Cattai Wetlands?

Excellent Poor

Good Very Poor

Average

Cattai Wetlands User Survey

6. What was the highlight/best feature of your visit to the wetlands?

7. What could be improved on the site to enhance your experience?

Signage

Paths

Toilets

Brochures

Facilities

Other (Please specify)

8. Of the above what do you think is the most important enhancement?

9. Council is looking at opportunities to open up the wetland for more people to enjoy. Ideas such as an indigenous culture centre, education facilities and overnight camping have been suggested. Do you have any ideas for the future use of Cattai Wetlands? Do you support any of the above?

10. Had you heard of the Big Swamp project prior to today?

Yes

No

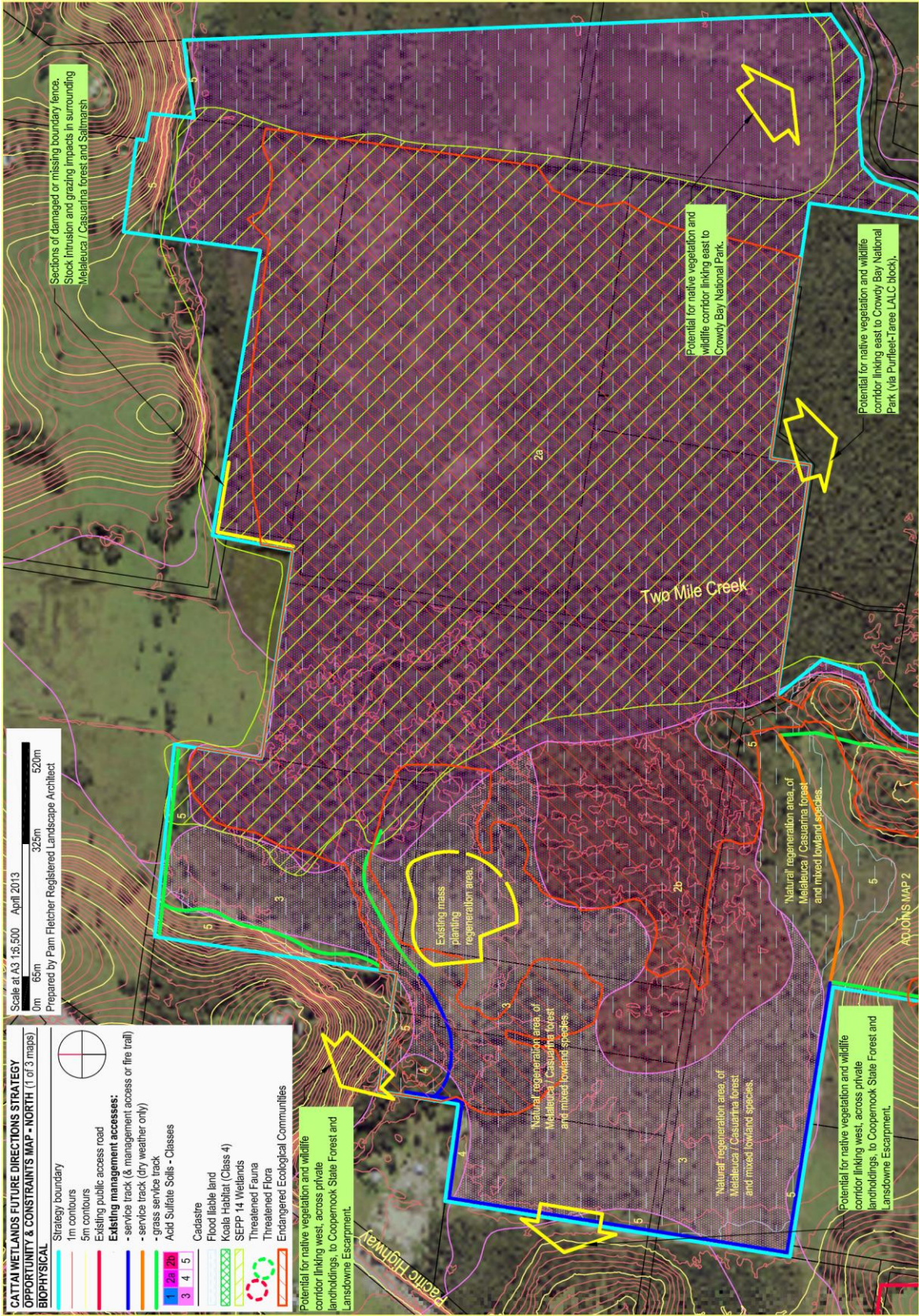
11. Council is considering establishing a 'Friends of Cattai' group to involve the community in the future management of the site. Would you be interested in being involved?

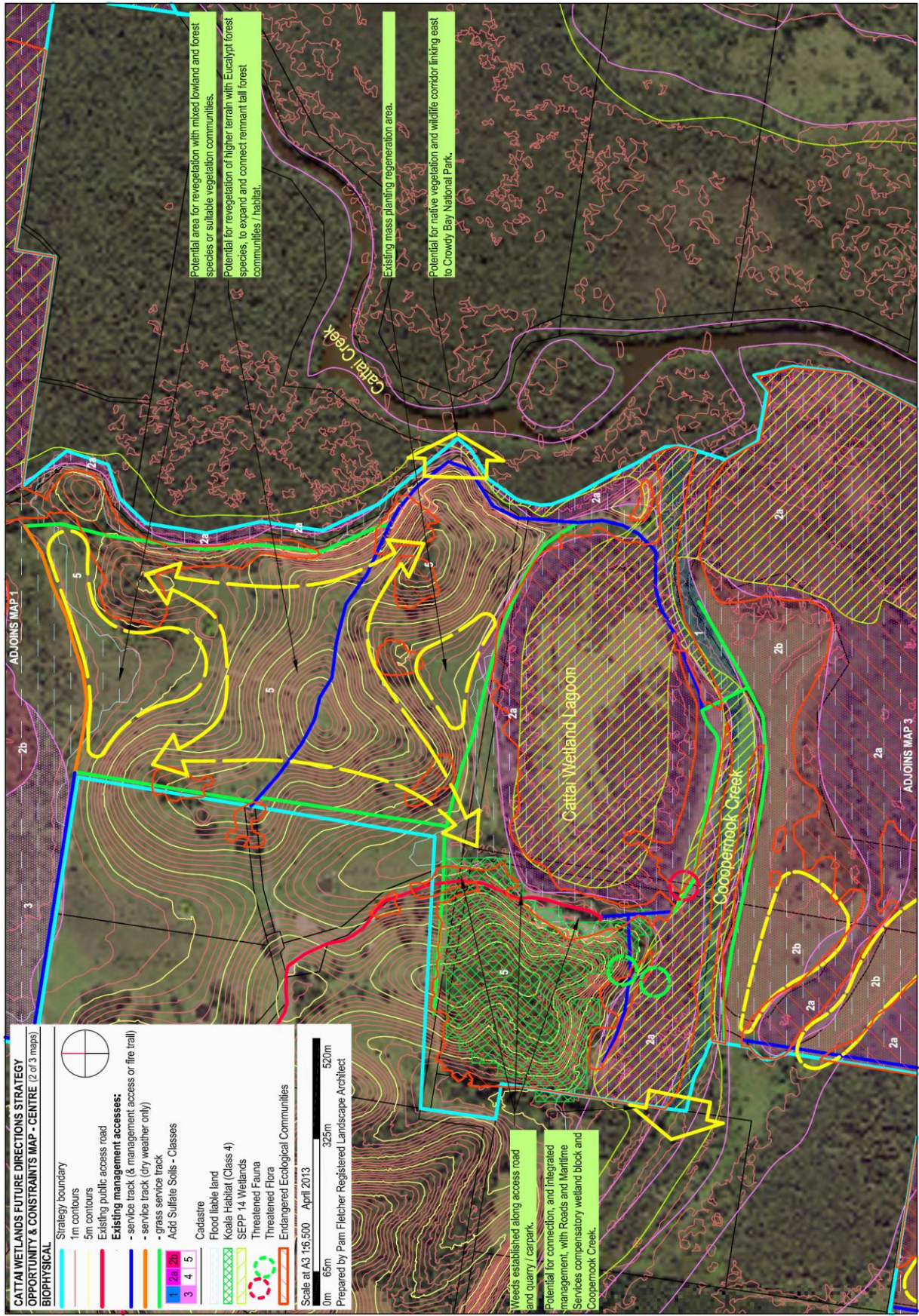
Yes

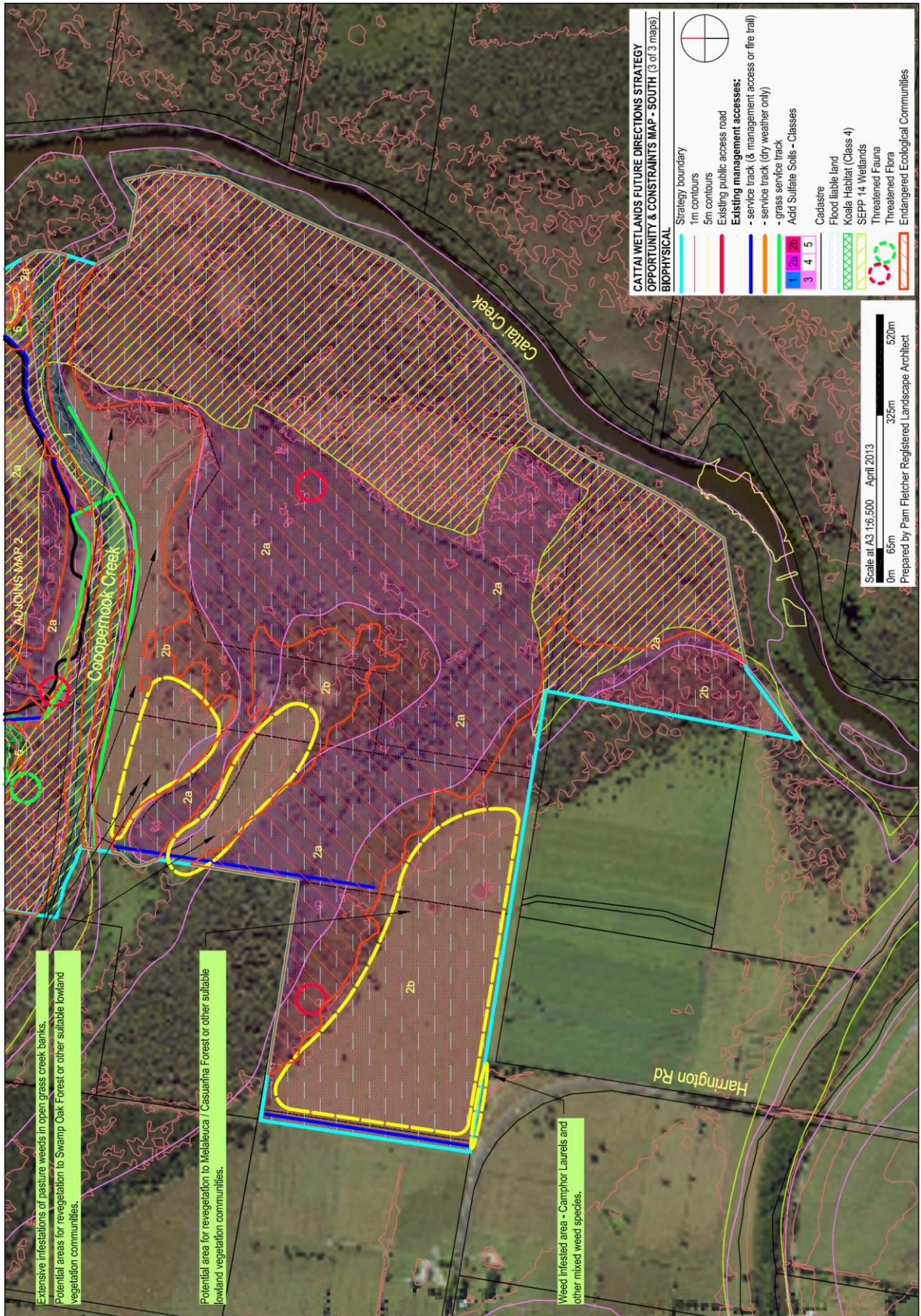
No

12. Any additional comments?

Appendix K: Constraints and Opportunities Mapping – Biophysical Aspects







Appendix L: Constraints and Opportunities Mapping - Cultural, Recreation and Scenic Aspects

