

Belongil Estuary Seabird and Shorebird Management Plan

Prepared on behalf of Byron Bird Buddies.



Belongil Estuary Seabird and Shorebird Management Plan

INTRODUCTION

Byron Shire Council's Development Control Plan No. 18 for the "Becton Site and Adjoining Lands" identifies a Seabird Habitat Precinct of 19.6 hectares located in the mouth of the Belongil Creek estuary, upstream from the coastal mean high water mark to the railway bridge. DCP 18 requires that a *Seabird and Shorebird Management Plan* be prepared for the precinct in consultation with the relevant Government Agencies.

The bulk of the site is public land, with about 1.3 hectares being over private lands under various ownerships. The actions specified in this plan apply to the public land within the Seabird Habitat Precinct. Private landholders within the Seabird Habitat Precinct will be asked to join in with the plan as appropriate.

The precinct encompasses about 2.6 hectares of mangroves, about 2 hectares of a more extensive area of the endangered ecological community saltmarsh, and some fringing vegetation, including the endangered ecological community Swamp Oak Floodplain Forest of the NSW North Coast. About 5.2 hectares of the precinct is mapped as SEPP 14 wetland.

The Belongil estuary is an Intermittently Closed and Open Lake and Lagoon. The estuary is intermittently closed off from the sea by sand bars behind which water levels consequently rise. Water levels are considered to have historically risen up to 2.6m AHD (Australian Height Datum) before the sandbar would be breached. In recent decades the estuary has been artificially opened at 1.2 m AHD, with this most recently being reduced to 1m.

The Belongil estuary remains the most significant roosting and breeding area for shorebirds and seabirds in Byron Shire. The Shire supports two other important shorebird areas, being the lower Brunswick Estuary and Tallow Ck. Both of these areas are impacted by human disturbance. Management of human disturbances at all three areas would greatly improve shorebird habitats and conservation initiatives within the Shire.

Eighty seabirds, shorebirds, waterbirds and other wetland associated birds have been identified in various surveys within the Belongil shorebird area. The most significant species are the endangered Little Tern, Black-necked Stork, and Beach Stone-Curlew. Thirteen species are identified as Vulnerable to extinction: Lesser (Mongolian) Sand-Plover, Sanderling, Terek Sandpiper, Great Knot, Greater Sand Plover, Sooty Tern, Pied Oystercatcher, Sooty Oystercatcher, Osprey, Black Bittern, Australasian Bittern, Bush-hen and Brolga. Twenty two species of birds recorded at Belongil breed in other countries and migrate to

Australia for feeding each year, with seventeen of these migrating over 4,000 km from breeding grounds in arctic regions.

The Belongil estuary was once far more extensive than is now the case, having been significantly reduced by frequent opening of the estuary mouth and drainage works undertaken throughout the catchment. The impact of this loss of habitat on waterbirds has been compounded by extensive clearing and modification of wetland vegetation, along with urbanisation, in the catchment. The remaining estuary is now polluted, which has resulted in significant impacts upon aquatic plants, invertebrates, fish, and waterbirds. Recreational use of the estuary mouth is causing significant disruption to shorebirds.

FIG. 1. BELONGIL SEABIRD HABITAT PRECINCT

Belongil Seabird Habitat Precinct



Since the 1960's there has been a one way trajectory of increasing degradation of habitat for the Belongil's waterbirds. Human related disturbance is the main threat to the Belongil shorebirds, and human pressure at the estuary has significantly increased following development of adjacent lands for tourism and urban expansion in Sunrise Beach and Byron Bay. Despite some successes, attempts since the early 1980's to halt the decline have mostly been ineffective.

Potential new threats are increased recreational use, increased urbanisation of the catchment, changes to the estuary mouth due to increased recession from rising sea-levels, reduced ability to undertake cost-effective fox control measures due to proximity of houses, and changes to bird distributions due to global warming.

With concerted action, there is now an opportunity to begin to reverse degradation pressures on the Belongil catchment and to improve the suitability of the Seabird Habitat Precinct for feeding, roosting and nesting activities. This plan aims to provide the framework required to implement effective and coordinated management to realise this opportunity.

This plan has been adopted by the Byron Bird Buddies and was prepared in consultation with the Department of Environment and Climate Change, Marine Parks Authority and Byron Shire Council.

1. BELONGIL ESTUARY SEABIRD AND SHOREBIRD ACTION PLAN

1.1. Aims and Objectives

The aim of this plan is to establish a management regime that will reverse the ongoing degradation of the Belongil Seabird and Shorebird Habitat Precinct and improve its values as a sanctuary area for feeding, roosting and nesting of seabirds, shorebirds and other waterbirds.

The objectives of this plan are to:

- a) Encourage appropriate management of the Belongil catchment so as to improve water quality and enhance food sources available for waterbirds;
- b) Encourage openings of the estuary to be undertaken in a manner that accounts for the needs of waterbirds and minimises adverse impacts upon them;
- c) Implement measures to enhance the feeding, roosting and/or nesting opportunities for all waterbirds;
- d) Implement specific measures aimed at encouraging nesting by Little Tern and Beach Stone-curlew, and enhancing the breeding success of Pied Oystercatchers;
- e) Minimise disturbances to key bird roost, nesting and feeding areas by implementing required constraints on human activities during the period of highest vulnerability from July to March;
- f) Monitor and appropriately control nest and bird predators;
- g) Raise public awareness and understanding of the needs of waterbirds and the threats they face, with particular reference to Belongil; and
- h) Implement an adaptive management approach through ongoing monitoring of shorebirds and threatening processes and regular review of management actions.

1.2. Implementation Actions

BBB – Byron Bird Buddies (formerly Belongil Bird Buddies), BSC – Byron Shire Council, DEC – Department of Environment and Climate Change, MPA – Marine Parks Authority, RLPB – Rural Lands Protection Authority.

The responsible body shown in bold is the lead body for that action.

No.	Action	Man Plan Objective	Responsible body	Timeline
1.	Community Education			
1.1	Develop and implement a community education program including a media strategy,	g	DEC, BBB,	Annually in July

	considering such issues as shorebirds, human access, dogs, plague minnow, and bitou bush.		MPA, BSC	
2.	Public Access			
2.1	Seek site wardens to patrol and assist with the protection of the shorebird area and pursue funding for such.	e	BBB	Ongoing
2.2	Develop and implement an annual compliance program targeting dog walkers, and fishing and collecting in the special purpose and sanctuary zones, during breeding season.	c, d, e	BSC, MPA, DEC, BBB	Annually by end of August
2.3	Prepare a sign plan and erect permanent information signs at strategic locations on principal access routes.	c, d, e, g	BBB, BSC, MPA, DEC,	Within 12 months
2.4	Erect temporary fencing and signs to discourage people from the estuary for the duration of the breeding season.	c, d, e	BBB	Annually for duration of breeding season
2.5	Erect appropriate fencing and signs to effectively discourage public access through the back of the estuary.	c, d	Becton	ongoing
2.6	Maintain and improve permanent fencing around principal refuge area	c, d	BBB	ongoing
3.	Predator Control			
3.1	Develop feral animal control strategy as an adjunct to this plan.	c, d, f	BSC, DEC, BBB	Within 18 months, subject to attracting external funds.
3.2	Implement regular fox, cat and dog tracks monitoring program to be used as the basis for a feral animal control strategy.	c, d, f, h	RLPB, BSC, BBB, DEC	Commence monitoring by next breeding season.
4.	Habitat Management			
4.1	Develop and implement a site-specific strategy for the management of bitou bush, and other invasive vegetation, for the shorebird breeding area as an adjunct to this plan.	c, d	BSC	Within 12 months of obtaining dedicated funds.
4.2	Seek funding, such as from the Environmental Trust and Catchment Management Authority, for management of bitou bush and other invasive plants.	c, d	BSC, BBB, MPA, DEC,	ongoing
5.	Pollutants			
5.1	Implement measures to reduce pollutants entering the Belongil Estuary from all point sources and Acid Sulfate Soils.	a	BSC	Ongoing

5.2	Encourage the establishment of gross-pollutant traps for all stormwater sources.		BSC	Ongoing
5.3	Analyses for pesticides and heavy metals to be undertaken on any dead waterbirds located in or near the Seabird Habitat Precinct.	h	DEC, MPA	ongoing
6.	Planning Controls			
6.1	Identify appropriate planning controls (including buffers) for waterbodies and streams in the Belongil catchment, in a manner that accounts for global warming, for application in the Byron Local Environmental Plan.	a	BSC, MPA	Immediate
6.2	Prepare a Belongil Estuary Opening Strategy that identifies an appropriate long-term strategy and regime for estuary opening that accounts for the needs of waterbirds and the likely impacts of global warming and rising sea-levels on them.	b	BSC, MPA	In progress.
7.	Monitoring and Response			
7.1	Develop and implement a regular monitoring methodology for waterbirds that is compatible with population monitoring methodologies applied elsewhere in NSW and suitable for incorporation into DEC wader reporting and BSC SOE reports.	h	DEC, BSC, BBB	Within 12 months for methodology
7.2	Develop emergency response strategy for implementation in the event of attempted nesting by Little Tern or Beach Stone-curlew	d, e, f	BSC, DEC, MPA, BBB	Within 6 months of obtaining dedicated funds.
7.3	Review and revise actions	h	BSC, MPA, DEC, BBB	Every 3 years

The above actions meet the requirements of the Priority Action Statements for threatened species (refer to www.threatenedspecies.environment.nsw.gov.au) and the Little Tern Recovery Plan (NPWS 2003b). A summary of the justification for the actions are presented below along with the range of management activities to be considered. Background information is included in a supporting report.

1.3. Management Activities

If the intent is to restore the Belongil Seabird Habitat Precinct as a viable breeding area for a variety of waterbirds, and in particular the Pied Oyster Catcher, Little Tern and Beach Stone-curlew, then it is necessary to take concerted and decisive action to redress the threatening processes that have caused the degradation of the area in the past. The task is made more difficult,

and the need more urgent, due to increasing development in the vicinity and the environment undergoing significant changes as consequences of global warming.

1.3.1. Community Education

Since Belongil Bird Buddies (now Byron Bird Buddies) was established there have been a number of successful community education activities variously undertaken by BBB, DEC and BSC, from a season launch at the Beach Hotel to distribution of pamphlets to widely reported press releases. The success of these initiatives has been enhanced by the co-coordinated approach undertaken.

Community education activities can include:

- Distribution of educational posters, displays, pamphlets and materials;
- Media releases and interviews;
- Erection of information boards near the nesting site;
- Events, such as a season launch or information evenings;
- Mailouts to residents of specified areas;
- Advertising in local media;
- Preparation and distribution of an educational DVD, posters, pamphlets and other materials to tourist accommodation venues, schools, community groups, video rental stores etc.;
- Preparation of a presentation kit for talks to schools, public meetings, interest groups etc.
- Preparation of displays for exhibition at local venues;
- Selling of merchandise;
- Use of a community champion for raising awareness;
- Guided walks to the site;
- Construction of a bird hide for observation of the estuary.

The need for community education is identified by DEC as a High Priority Action for Beach Stone-curlew, Medium Priority Actions for Brolga, Bush-hen, Sooty Oystercatcher, Osprey, and Pied Oystercatcher, and Low Priority Actions for Black-necked Stork, Great Knot, Greater Sand-plover, Lesser Sand-plover, Sanderling, and Terek Sandpiper.

DEC have also given commitments in a variety of documents to raise public awareness on a variety of issues, such as Little Tern (Recovery Plan Actions 2.1, 8.2), Bitou Bush (Threat Abatement Plan, Action 4.2), and Plague Minnow (Threat Abatement Plan, Action 2). Where appropriate, it would be good to integrate public education on these issues into the overall communication strategy.

It is considered best for Byron Bird Buddies and agencies to co-ordinate and integrate their respective public education activities through the preparation of an

annual Communication Strategy in July, to allow for commencement before the breeding season commences. This has worked well in the past.

1.3.2. Public Access

The biggest problem with maintaining the shorebird breeding and roosting area around the mouth of the estuary has been the number of people using it for recreation, particularly when also accompanied by off-leash dogs.

It is important to recognise that shorebirds are vulnerable to all forms of recreational activities and have various levels of tolerance to approach distances that depend on the activity being engaged in. The tolerance of waterbirds varies with species and experience, and is likely to vary depending on whether they are feeding, roosting or nesting. For some birds disturbances may result in avoidance behaviour and for others it may result in their being scared away.

DEC identify disturbances due to recreational activities as a threat to Beach Stone Curlew, Great Knot, Greater Sand-plover, Little Tern, Pied Oyster Catcher, Sanderling, Sooty Oystercatcher, and Terek Sandpiper. Minimising disturbances is identified as a Priority Action for all these species (except Sooty Oystercatcher).

The Little Tern Recovery Plan (NPWS 2003b) identifies a variety of measures to “control human disturbance” under Action 2.1, including prohibiting dogs, erecting signs around nesting areas, erecting simple guidance fences, and wardening during busy periods. DEC’s Priority Actions for Pied Oystercatcher include prohibiting dogs and wardening.

Council has (theoretically) prohibited dogs from this section of the beach for many years and for the past few years the Belongil Bird Buddies have actively been undertaking fencing, signage and wardening activities.

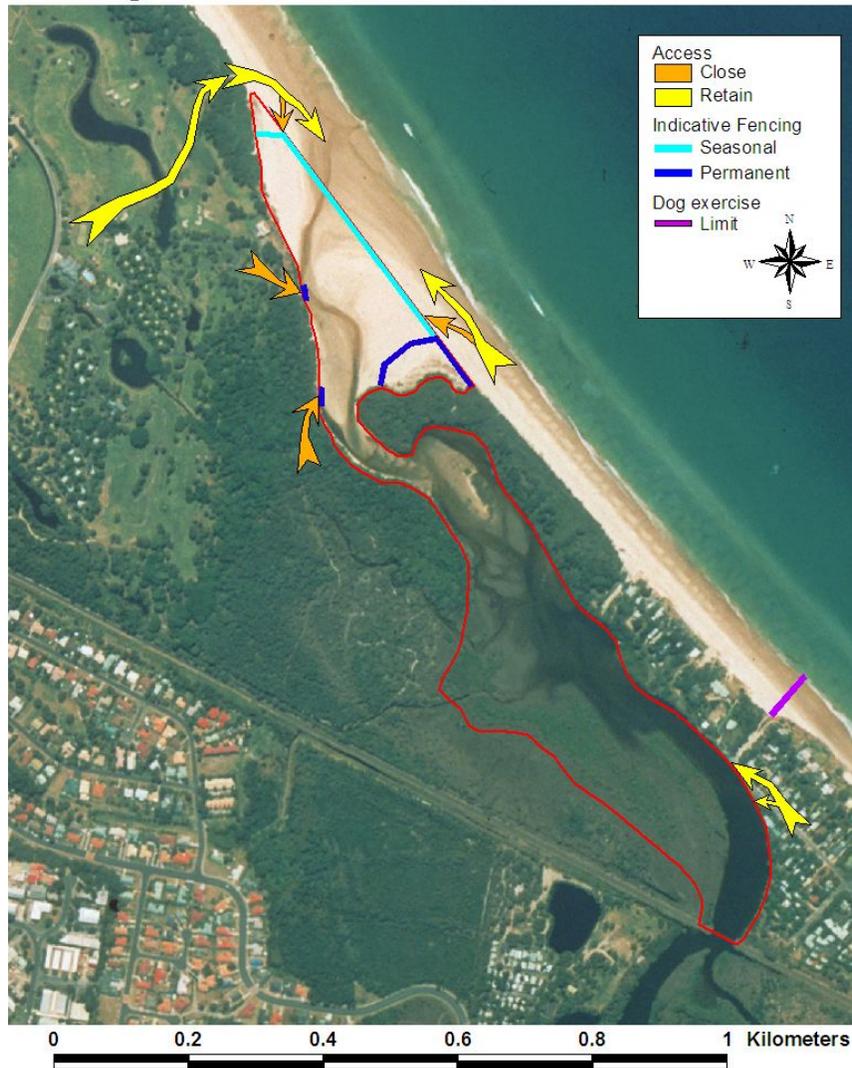
It is considered important to maintain a fenced core refuge area for permanent residents of the estuary in the proximity of the current fenced area (Fig 2). Becton are now required to stop the access to the rear of the estuary being used (except for emergency purposes) and redirect public access to the north (Fig 2).

To provide suitable breeding conditions for Little Terns and Beach Stone-curlew, and a refuge for migratory species, it is necessary to erect a temporary fence across the front of the estuary (in the vicinity of the beach boundary of the Precinct) (Fig 2), to exclude people walking through the site for the duration of the breeding season.

Information signs need to be erected to target people accessing the beach in the vicinity of the estuary from Belongil and the Becton site. Another sign is needed for people directly accessing the estuary from Childe Street. These signs need

to provide information on the shorebird precinct, its significant values and the need to control access. Simpler signs are required to be incorporated with the fencing.

FIGURE 2, BELONGIL SHOREBIRD AREA ACCESS.
Belongil Shorebird Area: Access



Experience is that enforcement is essential to control recreational activities in the vicinity of the estuary. Action 2.1. of the Little Tern Recovery Plan (NPWS 2003b) requires the prohibition of dogs, noting “*Local councils should be made aware of the threat to the nesting colonies posed by dogs, and the need to impose and enforce restrictions*”. DEC’s Priority Action Statement for Pied Oyster Catcher similarly requires the prohibition of dogs.

Co-ordinated compliance inspections by Byron Shire Council, Marine Parks Authority and Department of Environment and Conservation are required, with a particular emphasis on the beginning of the breeding season. A roster should be

determined in a Compliance Program agreed to before the start of each breeding season. This will necessarily be limited by the availability of resources and other priorities.

An emergency compliance program should be developed to be implemented in the event of a breeding attempt by Little Terns or Beach Stone-curlew.

DEC identify training wardens to undertake site management as a high priority for its Little Tern “priority” nesting sites. BBB have been undertaking voluntary wardening over the past few years, employing a warden for a period of time. This has not been able to be maintained over crucial periods. Obtaining funding for a warden for the Belongil nesting site during the breeding season, would be a valuable addition to present activities. The warden could provide public education, discourage inappropriate behavior, and undertake monitoring.

1.3.3. Predator Control

There is a potential need to control problem Foxes, Silver Gulls, Australian Ravens, Torresian Crows, Black Rats, feral Cats and Ghost Crabs. With foxes considered the biggest potential problem species.

DEC identify fox and feral cat control as a recovery action for Australasian Bittern, Beach Stone-Curlew, Black Bittern, Bush-hen, Little Tern, Pied Oyster Catcher, and Sooty Oystercatcher. Predator control is included under Action 2.1. of the Little Tern Recovery Plan (NPWS 2003b). The Threat Abatement Plan for Predation by the Red Fox (NPWS 2001) identifies high priority species for fox control activities, including the Beach Stone-curlew, Pied Oystercatcher, Little Tern, Australasian Bittern, and Brolga

To date there has been no monitoring of predators, so there is a need to first collate information on the extent and significance of predators on the site. This is readily done through regular monitoring of animal tracks in the sand.

Observations should be recorded of instances of predation, and any incidental observations of relevant behaviour. This information should be used to develop a predator control strategy that considers measures such as:

- An ongoing monitoring program;
- Combining a baiting campaign in Tyagrah Nature Reserve with a trapping program on site;
- Erecting portable fox and cat proof/deterrent fencing around specific nesting sites;
- Scattering stones and debris in areas likely to be used as nesting sites to enhance bird and egg camouflage from avian predators; and,
- Providing shelter for chicks.

Given the extreme vulnerability of nesting birds to predation, special measures will need to be urgently implemented if Little Tern or Beach Stone-curlew attempt to nest.

Through predation and competition the Plague Minnow has been found to have a significant impact on some frogs and aquatic ecosystems. The priority sites for this species are frog breeding areas outside this region, though both the Wallum Sedge Frog and Wallum Froglet, which inhabit swamps around the estuary, are vulnerable species. For this plan it is considered that the problems with this species in the Belongil catchment should be included as an issue in media strategies.

1.3.4. Habitat Management

Control of vegetation encroachment into nesting areas will enhance their suitability for a variety of species, and is identified by DEC as a recovery action for Beach Stone-curlew and Little Tern. It is included as Action 2.1. in the Little Tern Recovery Plan (NPWS 2003b). Control of Bitou Bush where it impacts on threatened species is also Objective 1 of the Threat Abatement Plan for Bitou Bush (NPWS 2004).

Other actions aimed at encouraging nesting of seabirds and shorebirds that need to be considered are using spoil from dredging to create a breeding platform near the centre of the estuary, enhancement of potential sandy nesting habitat with shingle, shell-grit and other debris, provision of appropriate shelter for chicks, and using decoys to encourage nesting.

Bitou Bush is the principal weed affecting the area. DEC have identified a number of sites in the vicinity as being state-wide priority sites for Bitou Bush control due to the presence of littoral rainforest and select threatened plants. Invasion of habitat by Bitou Bush has been identified as a potential threat to a variety of waterbirds on the site. The Belongil Shorebird Precinct should be considered a high priority site for control of this weed within Byron Shire, and given the sensitivity of the site this warrants preparation of a site specific plan.

The site is also affected by invasion by wattles and casuarinas of the historic nesting area for Little Terns and current nesting area for Pied Oyster Catcher. The site specific plan for control of bitou bush should consider control of all weeds and any native species considered to be posing a threat to breeding habitat.

DEC should incorporate the Belongil Shorebird Precinct and/or threatened shorebirds in any local media campaign raising awareness of Bitou Bush and should include Byron Bird Buddies in any volunteer training programs for their priority sites.

In the past there has been consideration of the creation/enlargement of an island within the estuary as nesting habitat. This will require further consideration. Currently the estuary is regularly opened and the spoil should be used to create a raised breeding platform remote from predators (i.e. near the centre of the estuary).

The location of the opening will also affect the potential breeding habitat. Naturally the estuary mouth is trained by a north-west littoral drift and would usually open to the north, though the opening strategy has been to reduce potential erosion of the Bayshore building by opening the estuary near the historic fenced bird breeding area. The Bayshore building has now been removed and consideration needs to be given to undertaking any artificial opening in the vicinity of where it would naturally occur. This may allow for greater development of the sand spit, increase the protection from predators for the open sandy areas and enhance its suitability for nesting.

Many species generally avoid areas of bare sand for nesting (i.e. NPWS 2003b). The suitability of potential breeding habitat, such as open sandy substrate, should be enhanced where appropriate by the distribution of shingle, shell-grit and other debris to improve the success of bird camouflage and the site's attractiveness for nesting.

In the past 2 poles for Ospreys were erected adjacent to the estuary, one for roosting and one with a nesting platform (on which a nest has been built). These have been used by Ospreys regularly in the past, though due to deterioration are now in urgent need of repair.

1.3.5. Pollutants

The Belongil system is polluted by runoff from urban, industrial and agricultural lands, as well as a variety of point sources. DEC identify protection from pollution as a recovery action for Australasian Bittern, Beach Stone-curlew, Bush-hen, and Osprey.

Actions that should be taken to reduce pollutants entering the estuary and improve its health include:

- Incorporating riparian buffers into the LEP;
- Encouraging revegetation of cleared riparian buffers;
- Encouraging the sealing of gravel roads and the appropriate management of runoff in the vicinity of streams;
- Encouraging environmentally sound agricultural practices to minimise fertiliser and chemical leakage into streams ;
- Encouraging fencing of riparian areas and the establishment of off-stream watering facilities;
- Discouraging the application of pesticides and herbicides in the vicinity of water courses;

- Implementing measures to reduce acidic runoff from potential Acid Sulfate Soils;
- Ensuring high standard of discharges from the West Byron Sewerage Treatment Plant and on-site sewerage systems, accounting for nutrients, pathogens and hydrolic loads;
- Addressing leachates from the old town dump near the Butler Street Reserve, landfill sites and any other point sources;
- Establishing litter and gross pollutant traps on all stormwater entry points; and,
- Continuing community education about the link between stormwater and the estuary.

1.3.6. Planning Controls

There are numerous issues associated with the catchment of this site that are subject to other management and planning processes. The vulnerability of waterbirds and their food sources to pollution and manipulation of water levels emphasises the need to accommodate their needs into these processes in a meaningful manner.

Planning actions that should be taken to improve catchment values and thereby the health and integrity of the Belongil Shorebird Precinct include:

- Zoning native vegetation and significant fauna habitat for environmental protection and encouraging appropriate rehabilitation works;
- Incorporating riparian buffers into the LEP;
- Limiting development nears streams and in floodprone areas (including those likely to become floodprone due to global warming);
- Restoring natural flow regimes of streams, wetlands and floodplains as far as practicable;
- Regulating activities that affect potential Acid Sulfate Soils to reduce acidic runoff;
- Requiring the application of stormwater infiltration strategies for new developments to reduce surface runoff; and,
- Implementing appropriate zoning to limit urban expansion in the catchment.

The need to place protection zones around known habitat sites and recent records is identified by DEC as recovery actions for the Bush-hen, Great-knot, Greater Sand-plover, Little Tern, Osprey, Pied Oyster Catcher, and Sooty Oystercatcher.

DEC identify protection and management of riparian vegetation as recovery actions for Australasian Bittern, Black Bittern, Bush-hen, and Osprey.

DEC identify altered hydrological regimes and/or drainage as threatening processes for Australasian Bittern, Black-necked Stork, Brolga, Bush-hen, Great

Knot, Greater Sand-plover, Lesser Sand-plover, Little Tern, Pied Oyster Catcher, Sanderling, Sooty Oystercatcher, and Terek Sandpiper. Maintenance and restoration of natural hydrological regimes are identified as recovery actions for all these species (except Australasian Bittern). DEC Priority Actions for the Little Tern and Pied Oyster Catcher include minimising disturbances due to estuary openings.

Being an ICOLL the Belongil estuary once used to have widely fluctuating levels, regularly expanding to create a very extensive wetland. This had created a very different and more productive ecosystem than that now found. Artificial opening of the estuary over the past few decades has significantly changed the ecological processes that used to operate and the nature of the ecosystems in the catchment. The ability to restore natural processes is now severely constrained by development of low lying areas. Government direction for management of coastal waterbodies is aimed at attempting to restore natural processes and, where possible, eliminating, over time, artificial estuary openings. Global warming, and rising sea-levels in particular, will initiate significant changes in estuaries and must be incorporated into the planning process.

The Estuary Opening Strategy being prepared needs to:

- Identify and implement actions that maximise the estuary's value as a shorebird feeding, roosting and nesting site;
- Account for global warming, particularly rising sea levels, changes in storm intensities and rising flood levels; and,
- Include a long-term strategy for phasing out artificial manipulation of the estuary mouth as far as is practicable.

1.3.7. Monitoring and Response

Monitoring needs to be undertaken of:

- Birds (species, abundance, breeding, behavior);
- Predators (i.e. fox, cat, dog, rat) tracks, scats and behavior;
- Inappropriate human activities (incursions into fenced areas, companion dogs, bird chasing).

There is a need to develop specific assessment, recording and analysis methodologies that enable the results to contribute towards adapting management actions to improve outcomes, while also contributing towards the information base on the species and allowing meaningful comparisons with other sites in the Shire and in NSW.

Monitoring is a requirement of Action 5.1. of the Little Tern Recovery Plan and an identified DEC Priority Action for the Pied Oyster Catcher. The DEC needs to identify an appropriate monitoring methodology and programme for the Belongil site to maximize its application in monitoring the site and allow integration with

statewide data. Council and agencies should provide assistance to BBB volunteers through providing training when possible.

It is important to utilise an adaptive management approach whereby the results of monitoring are regularly utilised to review and improve management activities. It is thus proposed that the management actions specified in this plan be reviewed every 3 years, though should the need for modification or addition of management activities become apparent then the plan should be able to be modified as the necessity arises. Any change must be by consensus of all parties involved in implementing this plan.

CONCLUSION

The above recommendations have been made following extensive consultation with relevant stakeholders and represent a unique opportunity to educate the Byron community on the importance of the shorebirds and waterbirds to the ecology of the area and for government agencies, local government and NGO's such as the Byron Bird Buddies to collaborate in the proactive long-term management of the Belongil estuary.