

12.0 Building Coastal Biodiversity Resilience Action Plan

12.1 Scope of Biodiversity Resilience Action Plan

Coastal biodiversity includes both terrestrial and aquatic species, habitats and communities, as well as the connections between them and the ecosystem services that they provide. For the Wyong coastline, ecological communities included in coastal biodiversity include:

- Beach and nearshore marine fauna
- Rock platform species
- Species occurring on steep bluffs and rocky headlands
- Species associated with sheltered gullies on headlands and along small coastal creeks that drain to the sea (i.e. freshwater flows)
- Species associated with exposed frontal dune systems
- Species associated with the hind dune, back barrier and stabilised transgressive dune landscapes
- Estuarine species in the lake entrance area and in other smaller estuarine waterways. Management of the ecology of Tuggerah lakes is addressed in the Estuary Management plan, but some management options discussed in the WSCZMP will affect the entrance area.

Outside of lands managed by OEH (NPWS), much of the Wyong coastline has been used in the past for mineral sand mining or has long standing residential development. This means that within the core area to which the WSCZMP applies, there are relatively small areas of highly significant ecological communities.

Coastal vegetation on dunes is dominated by coastal sand scrub and spinifex. Small areas of Endangered Ecological Community (EEC) occur on headlands, for instance littoral rainforest is present at Norah Head. Norah Head also ranked highly in terms of intertidal and rocky shore habitat for birds and multiple species, including some species listed in international conservation agreements, are known to use the rock platform and adjoining areas (See **Section 17.0** in **PART C**).

The relatively small areas of EEC do not mean that the vegetation of the Wyong coast has no ecological value or performs limited ecosystem services. Frontal dune grassy habitats and scrubland contribute to dune stabilisation and the protection that the dune provides as a buffer to coastal erosion. The various ecological communities along the coast outside of national park lands also contribute to ecological connectivity between important habitat areas and contribute to the qualities of a coastal landscape that is highly valued for its scenery and recreational access. Both dune and headland vegetation communities contribute to the scenic values of the coastline.

Resilience is the capacity of a system to experience shocks or disturbances, while retaining the same basic 'identity'. The more resilient a system is, the bigger the shock it is able to deal with.

The resilience of an ecosystem therefore, will be the key to its capacity to respond to disturbances such as fire, disease and extreme weather, without losing its fundamental

structure and function (DSE Victoria web site, Fact Sheet 3, Biodiversity Resilience). Resilient ecosystems can also adjust to gradual changes without losing their fundamental structure and function in the landscape.

Coastal ecological communities are vulnerable to expanding urban and recreational footprints, including weeds (particularly bitou bush, but not limited to this invasive species) and feral animals, fire frequency, trampling (from heavy recreational use) and clearing. All of these threats apply to the Wyong coastline.

Coastal ecological communities, particularly those on frontal dune systems, and associated with terrain likely to be inundated by rising sea level are also vulnerable to impacts from climate change (erosion and recession driven by sea level rise and other aspects of a warmer climate, such as fire frequency). These climate change impacts exacerbate existing threats. For instance, climate change could lead to more 'shock' type events for ecological communities, but could also lead to ongoing gradual changes in the habitat conditions – such as by favouring certain invasive species.

12.2 Why is this plan important?

The Biodiversity Resilience Action Plan sets out how WSC will contribute to management activities along the coastline to protect and enhance the ecosystem services provided by coastal ecological communities in the short, medium and long term. These ecosystem services support not just environmental values but social, cultural and economic values of the coast.

The Action Plan acknowledges existing threats, such as urban and recreational activities. Many of these threats are being addressed in existing Council, CMA and Landcare plans and projects such as invasive species and fire management. The WSCZMP builds on this existing activity. It focuses on the interaction of coastal ecological communities and coastal processes now and in the future and considers how the ecological communities of coastal dune systems can be strengthened to enhance their resilience to the effects of climate change.

The Action Plan strongly supports continuing community involvement in the protection and restoration of coastal ecological communities.

Because it is largely limited to the interactions of coastal processes and coastal biodiversity, the Action Plan is not intended to stand alone as Council's only strategy to protect its coastal zone biodiversity. Rather, it is part of a suite of plans and strategies that will be developed and implemented by Council, OEH, HCRCMA and DPI (relevant sections of the former L&PMA) to protect the biodiversity values of the coastline.

In particular, Council is currently preparing a Biodiversity Management Plan for the Shire. The actions included in this Coastal Biodiversity Resilience Action Plan will feed into Council's broader Biodiversity Management Plan. It is expected that the broader Biodiversity Management Plan will provide context for the coastal management responses and show how coastal priorities fit into the broader framework of biodiversity management and resilience building across the Shire.

12.3 Who will be involved in making a difference

The Action Plan will be implemented by Council's Environment and Natural Resources Unit, within the Planning Directorate. The Environment and Natural Resources Unit will work closely with Council's open space managers.

Council will work closely with partners including HCRCMA, OEH and DPI (relevant sections of the former L&PMA), to ensure a consistent approach to the management of important ecological values along the coastline across land tenure boundaries. For instance, close cooperation is important at the transition from national park land to foreshore reserve. The HCRCMA’s coastal programs, including ecological assessments, community awareness raising and support for on ground works, provide the management context for Council’s activities.

Council will also continue to partner with residents and with Landcare/Coastcare groups to support opportunities for active community participation in biodiversity management, including implementing on-ground works and monitoring of ecological condition.

12.4 How the biodiversity actions contribute to objectives and targets

Table 12.1 identifies Council’s objectives and management targets in relation to biodiversity resilience along the coastline. It shows how the proposed actions will help to achieve the objectives.

Table 12.1 – Achieving coastal biodiversity resilience objectives

Objective and Management Target	Action summary
<p>O3 To enhance the resilience of coastal biodiversity values – beach, dune, shore platform, headland and marine</p> <p>Targets</p> <p>By 2020, the health and species diversity of native vegetation communities on coastal dunes and headlands has improved</p> <p>By 2020, species diversity on shore platforms in WSC is equivalent to best regional conditions.</p>	<p>A81: Conduct a benchmark survey of the condition of coastal ecological communities, providing standardised information about a selection of representative sites along the coast. The assessment would be conducted in partnership with HCRCMA and local Landcare groups.</p> <p>A30: Strengthen vegetation communities on dunes by preparing, implementing (including monitoring effectiveness) vegetation management plans that include species selection, planting, weed removal, fencing etc.</p> <p>A32: Where feasible, establish conservation agreements for high value ecological communities in reserve areas that are vulnerable to climate change and other medium to long term threats</p> <p>A51: Council will continue to support Landcare groups to maintain and enhance the condition and function of native vegetation on coastal dunes, including weed removal and replanting</p> <p>A75: Council will continue to work with OEH and HCRCMA to protect nesting and roosting habitat for protected shorebirds such as Little Tern (examples include from disturbance from pedestrians, dogs and vehicles, possibly from short term wave overtopping).</p> <p>A8: Conduct dune stabilisation and revegetation works to encourage sand accretion and stabilisation of frontal dunes. These on-ground dune maintenance and stabilisation works will be conducted in accordance with Plans of Management for ocean frontage reserves managed by Council.</p>

12.5 Council's priorities

To achieve the above targets, Council is committed to managing the ecological resilience of coastal dune communities. This in turn contributes to the resilience of the broader coastal landscape, which is highly valued by residents and visitors.

Management of dune forms and coastal vegetation are immediate and ongoing activities for all parts of the Wyong coastline. The presence of healthy functional coastal vegetation is in the short term a major benefit to the effectiveness of frontal dune systems as a buffer to coastal recession. Council will continue to work in partnership with Landcare to improve the resilience of coastal ecological communities.

At a few locations along the Wyong coast (such as Curtis Parade), existing development is located on what would otherwise be the incipient foredune and frontal dune system. There is limited potential for strengthening dune resilience by vegetation management at these locations.

In the longer term (beyond 2050), strong coastal vegetation communities on frontal dunes are not expected to be sufficient to prevent coastal recession. In this time frame, the management of hind dune areas to allow roll back of coastal land forms and vegetation will be essential for maintaining ecological function and connectivity along the coast.

12.6 Implementation of biodiversity actions

Table 12.2 highlights the most important actions for enhancing the resilience of coastal ecological communities over the next 10 years.

Table 12.2 - Actions for enhancing the resilience of coastal ecological communities

<p>Step 1:</p> <p>A81: Conduct a benchmark survey of the condition of coastal ecological communities, providing standardised information about a selection of representative sites along the coast. The assessment would be conducted in partnership with HCRCMA and local Landcare groups.</p>
<p>Intent and logic</p> <p>The objective of management actions is to maintain or improve ecological resilience and condition, so it is important that Council and the community understand the existing condition of coastal ecological communities. Some survey work and mapping of condition already exists (for instance HCRCMA has assessed rock platform habitats). This action would seek to fill gaps and provide standardised assessment techniques that can potentially be implemented by community groups. Council would revisit the condition assessment every 2 to 3 years</p>

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
WSC strategic planning and biodiversity teams, in conjunction with Landcare, HCRCA, DPI (relevant sections of the former L&PMA) and OEH.	Within 12 months, with follow up condition assessment at intervals of 2 to 3 years (up to 5 years as a maximum).	Locations to be chosen in consultation with the partner organisations. The aim is to have a series of representative sites, sampling different habitat types along the coast.	Allow up to \$50,000 for condition assessment, but costs may be less, depending on the quality and coverage of existing data. See also Action E01 regarding the use of remote sensing techniques (a combination of LiDAR, aerial photogrammetry and satellite imagery), which may allow some parameters of vegetation condition to be assessed without field work in the future. See also Action A14, which foreshadows community involvement in ecological condition monitoring.

Step 2: Take action to reduce risks

A20: Use zoning and other planning measures to provide for retreat (landward migration) of important ecological communities, where possible.

Intent and logic

As sea level rises, coastal landforms and associated vegetation communities will roll landwards, provided there is sufficient sand supply and that land use and zoning creates spaces into which ecological communities can migrate. This action provides the planning context for coastal ecological communities on public land, to migrate landward. Information about the geomorphology of coastal dunes as sea level rises is in **Section 17.0** of **PART C**. Actions affecting the sand supply for coastal dunes are in **Section 9.0** and **Section 10.0** of **PART B**.

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
WSC Strategic Planning and Environment and Natural Resources Unit. Consult L&PMA where ecological communities are on Crown land/Crown reserve. Consult HCRCA with respect to regional biodiversity priorities.	Include in new Wyong LEP, due 2010. Review period Consider success of this measure in reviews of the condition of coastal ecological communities, conducted for councils State of the Environment Reports.	Use for SEPA26 littoral rainforest and for SEPA14 wetlands that are within coastal risk areas (Budgewoi). Where open coast dunes are on Crown land or council community land, zoning should also be used to facilitate roll back of landform and ecological communities.	No additional cost. These communities are either on Crown land or Council community land. Where facilitating landward migration of very high value ecological communities would involve private land, Council may consider acquisition of private property, in conjunction with OEH, HCRCA and the landholder.

Step 2: Take action to reduce risks

A8: Conduct dune stabilisation and revegetation works to encourage sand accretion and stabilisation of frontal dunes. These on-ground dune maintenance and stabilisation works will be conducted in accordance with Plans of Management for ocean frontage reserves managed by Council.

This action is also in **Table 9.1**. See also A26, which provides a greater focus on the details of vegetation management (e.g. weed removal) and O13, which uses dune management techniques to reduce coastal inundation risks. A12 suggests involving the community in various condition monitoring programs for coastal ecological communities.

Intent and logic

Vegetation management on dunes helps to trap wind-blown sand and builds up dune height and volume, providing a better buffer to coastal erosion. Dune vegetation management can therefore deliver on multiple objectives including biodiversity enhancement and protection of assets from storm erosion, at least in the short to medium term.

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>Council’s Environment and Natural Resources Unit will prepare Plans of Management for foreshore reserves in Council’s care and control.</p> <p>Council will support local Landcare groups to implement on the ground works.</p> <p>Council will liaise with L&PMA about consistent management of Crown Reserves managed by the Authority.</p> <p>HCRCMA is also a key partner for this action.</p>	<p>Immediate and ongoing</p> <p>Review period: At approximately five year intervals, review the extent to which new or updated Plans of Management have been prepared. Also consider evidence for improvements in the condition of coastal ecological communities in the same time frame.</p>	<p>This action is relevant to beaches where property is at immediate threat (e.g. North Entrance, Hargraves Beach, Blue Bay and surf club sites at Soldiers Beach and Lakes Beach), but is also relevant to beach and dune systems which are managed as open space or for conservation (for instance the Budgewoi dune system and Tuggerah Beach).</p>	<p>Preparation and/or updating of Plans of Management for foreshore reserves is within the responsibility of Council planning and environment staff.</p> <p>Allow for ongoing support of a Landcare coordinator and ongoing costs for plants and materials for Landcare groups.</p> <p>Funds may be sourced from HCRCMA programs.</p>

Step 2: Take action to reduce risks

A30: Strengthen vegetation communities on dunes by preparing, implementing (including monitoring effectiveness) vegetation management plans that include species selection, planting, weed removal, fencing etc.

This action expands on the vegetation management component of Action A8. It also provides more detail on how dune vegetation management will be carried out. Weed removal is a priority for much of the Wyong coastline, which is affected by Bitou bush and other species. The hummocky form and impact on species diversity associated with Bitou detracts from the stability of coastal dunes.

Both short term and longer term dune vegetation management actions require significant community involvement to be successful.

Intent and logic

As for A8. The aim is to maintain ecological processes and ecosystem services on coastal dunes that are affected by coastal recession. The effectiveness of this action may be reduced by rapid sea level rise or by more frequent major storm events. However, maintaining healthy coastal vegetation is still beneficial in the long term because of habitat connectivity values. Ongoing dune vegetation management will also contribute to successful vegetation colonisation as frontal dune systems roll landward as sea level rises.

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>Council's Environment and Natural Resources Unit will be responsible for this action, in close partnership with community Landcare groups and L&PMA where Crown land is involved.</p> <p>Council will also work closely with HCRCMA. Invasive species such as bitou bush are a priority in the HCRCMA CAP.</p>	<p>Immediate and ongoing</p>	<p>As for A8 above. The action is also relevant to ongoing management of dune heights and volumes (see O 13).</p> <p>Council would focus on locations where maintaining or enhancing biodiversity resilience is important because of the ecosystem services provided, including where well vegetated dunes provide a good buffer to coastal erosion (e.g. Budgewoi dunes and north Tuggerah Beach).</p>	<p>Allow for ongoing employment of a Landcare coordinator and ongoing materials for use by Landcare groups.</p>
	<p>Review period</p> <p>Align with reviews of the condition of coastal ecological communities conducted by HCRCMA, but generally at intervals of no more than 5 years.</p>		
<p>Step 2: Take action to reduce risks</p> <p>A32: Where feasible, establish conservation agreements for high value ecological communities in reserve areas that are vulnerable to climate change and other medium to long term threats</p> <p>This action can be applied to terrestrial communities and to intertidal habitats such as rock platforms.</p>			
<p>Intent and logic</p> <p>By applying conservation oriented land management, the resilience of coastal ecological communities to aspects of climate change and to other threats is increased. Conservation oriented land management (e.g. private conservation agreements negotiated with HCRCMA or with OEH) focus on maintaining and restoring ecological processes and ecological connectivity. No such agreements are currently in place for coastal locations in Wyong Shire.</p>			
Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>Council is a minor player in this action because it does not own major parcels of coastal land and conservation agreements would be negotiated with the State, rather than local government. Key stakeholders are HCRCMA, DPI (relevant sections of the former L&PMA) (tenure over all rock platforms, headland slopes and many coastal dune areas outside National Park)</p>	<p>Further develop options and appropriate conservation strategies over the next five years.</p>	<p>Not suitable for locations which are subject to coastal recession in the short to medium term.</p>	<p>Costs for Council are minor, commensurate with its minor, supporting role in the process.</p>
	<p>Review period: 5 years</p>		

<p>Step 2: Take action to reduce risk</p> <p>A51: Council will continue to support Landcare groups to maintain and enhance the condition and function of native vegetation on coastal dunes, including weed removal and replanting</p>			
<p>Intent and logic</p> <p>This action enhances community involvement in recreational activity but also has major benefits for the natural landscape. Community contributions to the protection of coastal ecological communities are a key component of sustainable coastline management. The action also underpins a solid partnership between Council and HCRCMA for coastal vegetation management. The action partners Actions A8,A30 and A32.</p>			
<p>Responsibility and key partners</p> <p>Council will investigate funding options to employ a Coastcare/Landcare coordinator for on-ground works in coastal locations. Members of Landcare groups and residents are key stakeholders. HCRCMA is a key stakeholder.</p>	<p>When - Priority</p> <p>Current and ongoing Review period: Review role of coordinator and focus of activities after 5 years, or in line with HCRCMA reviews.</p>	<p>Where – locations for investment</p> <p>Applies to all coastal dunes in the Shire, with particular attention at North Entrance, Budgewoi to Hargraves Beach, Soldiers Beach and Blue Bay. The strategic benefits of Landcare activities at all locations would be determined in conjunction with HCRCMA.</p>	<p>Indicative cost and source of funding</p> <p>As per Action A8, allow approximately \$60,000 for a coordinator, plus funds to provide training and materials for Landcare volunteers (allow approximately \$100,000 for each of the five groups working along the coast, over ten years). Council will investigate funding options, including potential funding under HCRCMA programs.</p>
<p>Step 2: select and implement actions to reduce risk</p> <p>A75: Council will continue to work with OEH and HCRCMA to protect nesting and roosting habitat for protected shorebirds such as Little Tern (examples include from disturbance from pedestrians, dogs and vehicles, possibly from short term wave overtopping). Council would cooperate with HCRCMA and OEH in implementing these programs.</p>			
<p>Intent and logic</p> <p>Several species of shore bird, including migratory species protected under international agreements and EPBC Act are known to forage and or nest along the Wyong coastline. This action is to reinforce Council’s position as a committed, cooperative and consistent stakeholder in the management of protected fauna species. The presence of these species adds to the biodiversity of the coastline.</p>			
<p>Responsibility and key partners</p> <p>It is likely that the lead for this action will be taken by HCRCMA</p>	<p>When - Priority</p> <p>This is an ongoing activity over the life of the Plan.</p>	<p>Where – locations for investment</p> <p>Norah Head rock platform is a key site (see studies for</p>	<p>Indicative cost and source of funding</p> <p>Council has a minor role and only minor investment, principally</p>

<p>and/or OEH. Council has a supporting role. For instance, Council could participate in monitoring programs, and Council could ensure that new access tracks are sited away from sensitive areas. Important beach habitat would be considered in any plan to scrape beach sand up to reinforce frontal dune systems.</p>	<p>Review period: Council will review its role and level of involvement after 5 years.</p>	<p>HCRCMA, discussed in Section 17.0 of PART C)</p>	<p>within the responsibilities of existing Council staff, is expected.</p>
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13.0 Recreation and Tourism Action Plan

13.1 Scope

The visual attractiveness, easy access and lack of crowding of beaches and foreshore reserves along the Wyong coastline is one of the biggest attractions of the area for residents and visitors. The coast is a key element of the Wyong lifestyle. It also underpins a major part of the Wyong economy, through businesses providing accommodation and services to visitors.

This Action Plan sets out how WSC will maintain and build on the important recreational and tourism values of the coastline, taking into account potential coastal recession associated with climate change and sea level rise.

The Recreation and Tourism Action Plan focuses on the interaction of these activities with coastal processes. It complements, and will feed into, Council's other social, economic and tourism planning at a Shire wide scale and is not intended to stand alone as the overarching strategy for recreation and tourism in the Shire. In particular, the WSCZMP Recreation and Tourism Action Plan addresses:

- Provision of the right coastal access facilities to meet the needs of diverse coastline users, including surf clubs, recreational swimmers and surfers, fishers, walkers, young families, the elderly, people with their family pets, tourism and fitness businesses.
- Priority investment to provide high quality coastal recreational infrastructure at high profile sites.
- New facilities and attractions to encourage ongoing recreational visitation, all year round.
- Recreational and tourism activities and facilities that can adapt to climate change impacts. As noted in **Section 9.0**, Council will continue to invest in the relocation of surf club facilities, in accordance with a schedule based on erosion hazard and the significance of the facility to safe beach use in the Shire.
- How Council will monitor the condition of coastal assets that support safe access to and use of beaches, headlands, rock platforms and coastal reserves and Council's commitment to maintenance of community facilities. Measures to manage access and to repair access ways after major coastal storms are discussed in **Sections 8.0** and **9.0**.
- How Council will assess the sustainability of new proposals for recreational and tourism uses of the coastline.

13.1.1 Who will be involved in working towards sustainable coastal recreation and tourism?

Whilst some aspects of sustainable coastal recreation are affected by coastal processes, responsibility for much of the planning for recreation and tourism activities more correctly sits with Council's community development and social planning teams.

The actions in this Action Plan focus on issues associated with coastal process impacts on recreation infrastructure, but also highlight some broader opportunities. Actions relating to the siting of surf club buildings that are in coastal risk areas are included in the Coastal Risk Areas Action Plans (**Section 9.0**). Actions about post storm assessment and maintenance of access infrastructure such as steps, ramps and viewing platforms are also in **Section 9.0**.

Council's detailed planning and implementation of actions to protect safe recreation and tourism activities in the context of climate change will always involve close consultation with a range of other stakeholders, including OEH, DP&I, DPI (relevant sections of the former L&PMA), precinct committees, Landcare/Dunecare groups, surf clubs, recreational fishing and boating clubs, visitors and landholders.

13.2 Objectives and targets

Table 13.1 shows how the actions in this Plan will contribute to achieving Council's objectives and targets for the coastline.

Table 13.1 – Achieving objectives and targets relevant to recreation and tourism

Objectives and management targets	Action summary
<p>O4 To maintain and enhance the condition and capacity of community assets and infrastructure (in this context, in relation to recreation access and tourism facilities)</p> <p>Targets</p> <ul style="list-style-type: none"> • By 2012, an asset condition data base is complete and detailed Plans of Management and/or Master Plans are in place for high profile, 'icon' seaside recreation areas. • By 2015, Council has a funded strategy for post storm assessment and timely restoration of coastal access assets such as ramps, stairs viewing platforms. • By 2012, Council has an agreed strategy for reducing risks associated with sea walls not currently designed for higher sea level conditions (in this case, the seawall at The Entrance). 	<p>See Table 9.2 for management of the condition of access ways affected by storm erosion and coastal recession</p>

Objectives and management targets	Action summary
<p>O5 To maintain and enhance safe and appropriate public access to the coastline</p> <p>Targets</p> <p>In addition to the targets above:</p> <ul style="list-style-type: none"> • By 2012, all public land along the ocean frontage is clearly identified • By 2012, land tenure issues on a retreating coastline are resolved, to provide for continuing legal public access to all beaches. 	<p>A46: Maintain a close working relationship with surf clubs and Surf Life Saving Australia in relation to beach patrols, beach safety information and beach environment information. Surf clubs also have a role in emergency response activities and their activities (such as major surf carnivals) also contribute to tourism income.</p> <p>Note that actions relating to the relocation of surf club buildings and related infrastructure, to accommodate coastal recession associated with sea level rise, are included in Section 9.0. Council will continue to invest in relocation of surf club facilities in accordance with a schedule based on erosion hazard and the significance of the facility to safe beach use in the Shire.</p> <p>A76: Prepare and/or review of Plans of Management and Master Planning for the main recreational beaches and coastal reserves of Wyong Shire. Upgrade shade and picnic facilities at high profile beaches, in accordance with these Plans of Management. Identify priority asset and infrastructure works for public reserves in accordance with these Plans of Management. Council will review the design and integrity of structures such as stairways and lookouts which are within immediate geotechnical hazard zones and relocate or modify as necessary.</p> <p>A47: Work with community groups, OEH, DPI (relevant sections of former L&PMA) and DTIRIS to plan routes for a coastal walk extending the full length of Wyong Shire coastline, for local users and which can be promoted as a recreational attraction for the coastline. Council intends to construct the walk over ten years.</p> <p>A52: Review access ways to and within high profile foreshore and headland reserves and provide disabled access. This would be included in reviews/preparation of plans of management</p> <p>A55: Review off leash dog exercise areas in terms of compliance and feedback from users and make changes as necessary to minimise negative impacts on other users and values.</p>
<p>O6 To maintain and promote the visual, social and heritage values of significant coastal cultural landscapes</p> <p>Target</p> <ul style="list-style-type: none"> • By 2015, detailed Plans of Management or Master Plans are in place for significant cultural places along the Wyong coastline. 	<p>A47: Work with community groups, OEH, DPI (relevant sections of former L&PMA) and DTIRIS to plan routes for a coastal walk extending the full length of Wyong Shire coastline, for local users and which can be promoted as a recreational attraction for the coastline. Council intends to construct the walk over ten years.</p> <p>A50: Develop a design theme for coastal information, interpretation and safety signage.</p> <p>A53: Conduct regular (for instance, every three years) surveys of beach users in relation to satisfaction with facilities and services.</p>

13.3 Implementation of recreation and tourism actions

Table 13.2 summarises Council’s proposed actions to provide for safe coastal recreation and tourism that takes coastal hazards into account and does not detrimentally impact on the scenic amenity or stability of the coastline. Issues associated with recreational impacts on coastal biodiversity are addressed in **Section 12.0**.

Table 13.2 - Actions for safe and sustainable recreational and tourism uses of the coastline

<p>Step 2: Take action to reduce risk or enhance opportunities</p> <p>A46: Maintain a close working relationship with surf clubs and Surf Life Saving Australia in relation to beach patrols, beach safety information and beach environment information. Surf clubs also have a role in emergency response activities and their activities (such as major surf carnivals) also contribute to tourism income.</p>			
<p>Intent and logic</p> <p>This action demonstrates the value that Council places on community resources which contribute to safe and enjoyable beach access. Council sees the Surf Life Saving community as a valuable partner in coastline management.</p>			
<p>Responsibility and key partners</p> <p>Council recreation and tourism development units. Council will work closely with surf clubs and the peak surf life saving organisation.</p>	<p>When - Priority</p> <p>Ongoing Review period: Review achievements and new challenges after approximately five years.</p>	<p>Where – locations for investment</p> <p>Applies to all patrolled beaches along the coast, as a minimum.</p>	<p>Indicative cost and source of funding</p> <p>No additional costs involved.</p>
<p>Step 2: Take actions to reduce risks or enhance opportunities</p> <p>A76: Prepare and/or review of Plans of Management and Master Planning for the main recreational beaches and coastal reserves of Wyong Shire. Upgrade shade and picnic facilities at high profile beaches, in accordance with these Plans of Management. Identify priority asset and infrastructure works for public reserves in accordance with these Plans of Management. Council will review the design and integrity of structures such as stairways and lookouts which are within immediate geotechnical hazard zones and relocate or modify as necessary. See also A52 , A50 and A54</p>			
<p>Intent and logic</p> <p>The aim of this action is to enhance opportunities for safe and enjoyable use of the main recreational beaches (i.e. those with surf club infrastructure and good access), consistent with long term coastal hazards. The action also addresses a range of management issues at other high profile recreational reserves along the coast, predominantly on headlands, but also at locations such as Mazlin Reserve, Jenny Dixon and Hargraves Beach. In addition to coastal hazard issues, the issues to be addressed include:</p> <ul style="list-style-type: none"> • Storm water management • Weed Management (particularly Bitou, but also a range of other invasive species) • OH&S and other public safety issues, and • Geotechnical hazards management 			

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>Plans to be prepared by Open Space and Community Development teams.</p> <p>Council will work closely with L&PMA.</p>	<p>Plans for beaches to be prepared in line with Council proposals to relocate/enhance surf club buildings in coastal risk areas. Expect that plan preparation will extend over five years and implementation over ten years.</p> <hr/> <p>Review period: Review extent of implementation after approximately 5 years.</p>	<p>Applies to all of the main recreational beaches – Toowoan, Shelly, Soldiers, The Entrance, North Entrance, Lakes Beach.</p> <p>This action also applies to coastal reserves such as the Mazlin Reserve at Cabbage Tree Harbour and to Council reserves (or Crown land managed by Council) on headlands and bluffs.</p>	<p>Plan preparation – allow \$50,000 for each area. On ground upgrade works- allow up to \$250,000 for each beach and each main foreshore reserve.</p> <p>Funds from NSW and Australian government recreation programs, plus Council funds. These works are not suitable for funding under the NSW Coast and Estuary Program. If structural protection from coastal processes is agreed for these reserves, these works could be funded from the Coast and Estuary Program (50/50 with Council)</p>

Step 2: Take action to reduce risk or enhance opportunities

A47: Work with community groups, OEH, DPI (relevant sections of former L&PMA) and DTIRIS to plan routes for a coastal walk extending the full length of Wyong Shire coastline, for local users and which can be promoted as a recreational attraction for the coastline. Council intends to construct the walk over ten years.

A coastline walk and a 'mountains to the sea' walk are noted in WSC's Strategic Vision. The routes would complement the existing walking path/cycleway around the shore of Tuggerah Lake. A related action to A50.

Intent and logic

This action aims to promote the natural assets of the Shire's coastline and to encourage residents to participate in outdoor activity. The walks will diversify clearly marked opportunities for residents and visitors to enjoy the natural landscape of the Shire. The walks could become a valuable weekend tourism attractor, if linked to accommodation and restaurant services. The coastal walk could be structured to provide a recreational experience which could be enjoyed as short half day or day walks or which could be combined into a longer coast walking experience. Half day and day walks that link important features or transport access points are likely to appeal to many visitors and residents. The walk could connect into similar facilities and experiences in Gosford City Council and Lake Macquarie City Council areas to the south and north respectively.

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>Council recreational planners and strategic land use planners would be involved. Asset managers will be involved if any additional pedestrian infrastructure is required – such as path surfaces, stiles, gates, bridges.</p> <p>Wyong Council will work with OEH (NPWS), DPI (relevant sections of the former L&PMA) and adjoining councils.</p> <p>Local precinct committees will be consulted.</p>	<p>Planning to proceed over the next five years. Some sections will not require major investment to make them accessible – although signposting will be necessary</p> <p>Review overall strategy and investment requirements after approximately five years.</p>	<p>Priority areas include Norah Head to Budgewoi, The Entrance and North Entrance area and extensions of existing walking paths in national parks.</p>	<p>Cost will vary from area to area and the extent of track creation and track surfacing that is required.</p> <p>NSW government grants and Australian government grants for community infrastructure.</p>

Step 2: Take action to reduce risk or enhance opportunities

A48: Liaise with NSW Maritime Authority, NSW Marine Rescue and recreational and commercial fishers about the safety and suitability of ocean boat launching ramps and associated facilities (particularly the Cabbage Tree Harbour ramp) and identify any necessary upgrades to current facilities or need for additional safe facilities in the Shire.

The exposed open coast of Wyong Shire is not readily amenable to ocean going access infrastructure for small vessels.

Intent and logic

The aim of this action is to ensure that boat launching infrastructure remains safe and cost effective to maintain. Wyong Shire currently has only one major ocean access boat ramp, at Cabbage Tree Harbour. Some small boats are launched across the beach at Toowoona Bay. The structural integrity of the Cabbage Tree Harbour Ramp should be reviewed in the context of sea level rise.

Other issues at Cabbage Tree Harbour include parking for trailers, the capacity of the ramp in high usage periods and interactions between boat launching activities and other aquatic uses of the small embayment. These issues would be addressed in a new Plan of Management for the reserve (Action A76).

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>As noted above, NSW Maritime Authority and NSW Marine Rescue are key stakeholders, as are recreational boating users.</p>	<p>This action would be managed as a 'watching brief' over the first five years of the plan, and its priority would be reviewed at the first overall plan progress review.</p>	<p>Cabbage Tree Harbour.</p>	<p>New boating infrastructure is expensive. An upgrade of the ramp is likely to require investment of \$500,000 or more.</p> <p>Funds may be sourced from L&PMA grants and direct investment from NSW Maritime Authority.</p>

Step 2: Take action to reduce risks or increase opportunities

A50: Develop a design theme for coastal information, interpretation and safety signage.

This action supports Action A4, but extends to the broader interpretation of coastal landscapes. It is also linked to Action A47 (coastal walk) and to A76 in relation to Master Planning for high profile foreshore reserve areas.

Intent and logic

The principal aim of this action is to provide attractive presentation of clear information about the coast to beach users, supporting recreation, tourism and beach safety. When focused on beach safety (e.g. understanding rips), this action helps to reduce risks to the safety of beach users.

Examples of existing themed signage can be seen at The Entrance.

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>Council's communication and tourism development teams would have a key role.</p> <p>Council would work closely with Surf Life Saving Australia, and with a variety of local groups, including historical society, precinct committees and Landcare. HCRCMA would also be involved.</p>	<p>Develop a consistent theme during the first five years of the Plan.</p>	<p>Focus on high profile or high usage sites first – such as Soldiers and Shelly Beach and Toowoon Bay (see existing signage at Toowoon Bay as an example).</p>	<p>Allow at least \$50,000 for a package of signage at each location.</p>
<p>Step 2: Take action to reduce risk or enhance opportunities</p> <p>A52: Review access ways to and within high profile foreshore and headland reserves and provide disabled access. This would be included in reviews/preparation of plans of management</p>			
<p>Intent and logic</p> <p>The aim is to make the coastal experience at beaches and headlands accessible to all. The action will contribute to the review and update of Plans of Management for selected reserves.</p>			
Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
<p>The action will be managed by Council Open Space and Recreation and Community Development units.</p> <p>Consult with L&PMA, precinct committees and with local organisations representing the disabled and elderly.</p>	<p>Audit existing access opportunities within one year. Upgrade access at two sites within five years.</p> <p>Review period: Review extent of access provided and usage, after approximately five years.</p>	<p>Investigate opportunities for providing disabled access onto the beach at all surf clubs. Maintain existing access opportunities such as from the special school at North Entrance.</p> <p>Toowoon/Blue Bay beaches are a priority because they are flat and protected from high energy waves for much of the time. Exposed, open ocean beaches are a lower priority for access onto the beach, but there should still be access to a viewing point.</p> <p>Liaise with L&PMA about maintenance of pathways at Norah Head.</p>	<p>Initial audit has minimal cost.</p> <p>Provision of full disabled access – ramps of appropriate grades and materials, handrails, mats to facilitate access across the sand etc., can be a significant cost. Allow a minimum of \$50,000 per site.</p>
<p>Step 3: Enhance knowledge and monitor achievements</p> <p>A53: Conduct regular (for instance, every three years) surveys of beach users in relation to satisfaction with facilities and services.</p>			
<p>Intent and logic</p> <p>Provide opportunities for community feedback about beach management and keep Council informed about community needs. The action could be integrated with existing surveys of customer satisfaction conducted by Council. This action will also provide information that contributes to the overall evaluation and improvement of coastline management.</p> <p>This action does not preclude other communication between Council and coastline residents and users, for instance, via precinct committees and the Tuggerah Lakes Estuary Management Committee, or direct submissions to council about specific issues.</p>			

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
Council Community Development section. Council would consult with precinct committees and/or the Coast and Estuary Management Committee as part of this process.	At intervals of approximately 3 years. Review period: This action provides information that will feed into the overall review of progress at 3 to 5 year intervals.	Applies to the entire coastline and potentially the sample would include people from across the shire and visitors.	Allow approximately \$25,000 for each survey, if conducted by consultants – sample design, survey and analysis.
Step 3: Enhance knowledge and monitor achievements			
A55: Review off leash dog exercise areas in terms of compliance and feedback from users and make changes as necessary to minimise negative impacts on other users and values.			
Intent and logic Council has several off leash and on leash dog exercise areas along the coast (such as Lakes Beach north of the surf club and North Shelly Beach). Dog owners have responsibilities for the safety of other beach users in these areas. This action is intended to review the level of satisfaction with the operation of dog exercise areas, by all beach users, so that changes to access can be made if necessary.			
Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
Council Community Development section will manage the review process. Consultation with Precinct Committees and Coastcare (or CEN) groups about the interactions of domestic pets and wildlife.	Within the first five years of the Plan At approximately five year intervals.	At existing dog exercise areas along the coast.	Within Council's existing responsibilities and budget.

13.3.1 Spatial distribution of actions

The actions in **Section 13.0** focus principally on high usage and high profile beaches, foreshore reserves and headlands along the Wyong coastline.

14.0 Cultural Landscapes Action Plan

14.1 Scope

The term cultural landscape integrates complex cultural, historic, design, visual, recreational and social values of the coastline.

This Action Plan focuses on how Council will identify, manage and maintain important cultural associations with the Wyong coastline. It incorporates:

- Aboriginal heritage places on the coast
- Historic heritage places on the coast
- Collecting and presenting the stories of generations of recreational users and holiday makers
- Interpreting important aspects of the coast's cultural heritage in the design and management of future development in the public domain.

The Cultural Landscapes Action Plan complements the Recreation and Tourism Action Plan (**Section 13.0**). The success of the Cultural Landscapes Action Plan depends on both celebration of cultural and social values but also on Council's adaptation to climate change and sea level rise impacts on the coastline, as some socially and culturally important locations are within the coastal risk areas.

14.2 Who is involved in making a difference?

The implementation of this Action Plan will require a strong working relationship between Council and local Aboriginal groups, such as the Darkinjung Local Aboriginal Land Council. Council will also work closely with L&PMA to ensure that the heritage, visual and social values of assets such as Norah Head Lighthouse and its landscape context are protected.

HCRCMA employs an Aboriginal Community Support Officer for the Central Coast/Lower Hunter region and also coordinates an Aboriginal Culture and Environmental Network (ACEN) committee for the region. ACEN advises the HCRCMA on broad natural resource management and cultural heritage issues for the region and enhances communication between HCRCMA and local Aboriginal communities.

The HCRCMA is also preparing an Aboriginal Cultural Heritage Protocols and Procedures document for on-ground works, which will be available to WSC in 2012.

The Wyong coastline has been highly valued as a family holiday and weekend destination for generations. This means that there is a wide community of interest in the social heritage values of the coastline.

14.3 Objectives and targets

Table 14.1 shows how the actions in this Plan will help to achieve Council's objectives for the coastline.

Table 14.1 – Achieving Objectives and targets – coastal cultural landscapes

Objectives and performance targets	Performance Targets
<p>O6 To maintain and promote the visual, social and heritage values of significant coastal cultural landscapes.</p> <p>Targets</p> <ul style="list-style-type: none"> • By 2015, detailed plans of management or Master Plans are in place for significant cultural places (in Council's management) along the Wyong coastline • By 2012, the Wyong LEP includes planning measures to respect and protect the cultural, heritage and visual value of significant coastal places • By 2015, Council and relevant partners are monitoring the condition of key indicators of the condition of coastal systems in a systematic manner. • By 2020, monitoring information shows a trend towards stable or improving condition of valued natural, social and cultural assets of the coastline. 	<p>A77: With the Darkinjung Local Aboriginal Land Council, Council will develop a project to document stories of Aboriginal community attachment to the Wyong coastline – spiritual, social and cultural. With the Land Council and other Aboriginal groups, identify information that could be used in interpretative material about the coastline and identify locations where this information would add to community appreciation of the values of the coastline</p> <p>A78: Council will work with the Darkinjung Local Aboriginal Land Council and other Aboriginal community groups, to monitor the condition of known Aboriginal sites on land in its care and include proper protection measures in Plans of Management for coastal reserves in Council's management.</p> <p>Council is mindful of the importance of respecting Aboriginal cultural processes in these projects.</p> <p>See also Section 7.0 regarding knowledge and information management.</p> <p>Plans of Management are also discussed in Section 13.0.</p>
<p>O7 To enhance the awareness of residents, landholders and land users of coastal processes, climate change, impacts and adaptation measures.</p> <p>Target</p> <ul style="list-style-type: none"> • By 2015, there is a 10 per cent increase in the number of residents participating in coastline management programs, including summer coast watch, and coastal discovery programs etc. 	<p>A79: In conjunction with L&PMA, review Plans of Management for Crown coastal holiday parks (such as Toowoan Bay, Norah Head, and Crown leases at Sun Valley and Blue Lagoon) and Crown Reserves such as Norah Head, to ensure that climate change hazards are recognised and that the impact of climate change and sea level rise on the recreational, visual and social values of these reserves and leases is managed for the benefit of the community.</p> <p>See also Section 13.0 for actions related to signage and interpretation, and the conduct of a regular survey of coast users. Section 7.0 addresses broad community engagement activities.</p>

14.4 Implementation

Table 14.2 sets out the core actions for managing social and cultural values of the Wyong coastal landscape.

Table 14.2 – Actions for Managing Social and Cultural Values

<p>Step 1: Benchmark current condition Step 2: Take action to reduce risks or enhance opportunities A77: With the Darkinjung Local Aboriginal Land Council, Council will develop a project to document stories of Aboriginal community attachment to the Wyong coastline – spiritual, social and cultural. With the Land Council and other Aboriginal groups, identify information that could be used in interpretative material about the coastline and identify locations where this information would add to community appreciation of the values of the coastline</p>			
<p>Intent and logic The cultural value of the coast extends beyond physical evidence of the presence of traditional Aboriginal people. It includes stories about the origins of places, cultural knowledge about places, plants and animals as well as historical experiences of Aboriginal people on the Central Coast. This project is intended to respect the cultural attachment of Aboriginal people to the local landscape and to ensure that Council incorporates that respect in managing coastal places.</p>			
Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
Council Environment and Natural Resources Unit and Community Development Unit Darkinjung Local Aboriginal Land Council and other Aboriginal groups in the Wyong community. OEH (Cultural Heritage Unit) DPI (relevant sections of the former L&PMA)	Data gathering and documentation component within 2 years. Development of interpretative material within five years. This will be linked to other coastal signage projects for instance, in association with the coastal walk.	Locations will be determined in consultation with the Aboriginal community groups.	Allow \$25,000 for a consultation and documentation project. Allow up to \$20,000 for signage.
<p>Step 1: Benchmark current condition Step 2: Take action to reduce risks or enhance opportunities A78: Council will work with the Darkinjung Local Aboriginal Land Council and other Aboriginal community groups, to monitor the condition of known Aboriginal sites on land in its care and include proper protection measures in Plans of Management for coastal reserves in Council’s management.</p>			
<p>Intent and logic A detailed assessment of Aboriginal sites on Council land has not been conducted as part of the coastline management study. Whilst much of the dune country along the Wyong coastline has been impacted by past mineral sand mining, some archaeological sites may remain. Such sites would have rarity value on the Wyong coastline. Some sites may also remain on headlands. This action is a partner to A77. It focuses on the physical evidence of Aboriginal cultural heritage, where A77 focuses on the more spiritual attachment to country.</p>			
Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
Wyong Council Community Development Unit and Open Space and Recreation Unit. Darkinjung Local Aboriginal Land Council and other Aboriginal community groups OEH Cultural Heritage Unit	Audit and condition assessment of Aboriginal sites on council managed land within 1 year. Ensure Plans of Management for council coastal reserves reflect and protect Aboriginal cultural heritage values within 2 years.	Locations to be determined in consultation with Darkinjung Local Aboriginal Land Council and other local Aboriginal groups.	Allow \$10,000 for review of the condition of coastal Aboriginal sites. Allow \$30,000 for review of relevant Plans of Management to ensure they address the condition of cultural heritage evidence.

Step 1: Benchmark current condition

Step 2: Take action to reduce risks or enhance opportunities

A79: In conjunction with L&PMA, review Plans of Management for Crown coastal holiday parks (such as Toowoan Bay, Norah Head, and Crown leases at Sun Valley and Blue Lagoon) and Crown Reserves such as Norah Head, to ensure that climate change hazards are recognised and that the impact of climate change and sea level rise on the recreational, visual and social values of these reserves and leases is managed for the benefit of the community.

See **Section C, Part 16** for further information about coastal hazard impacts on Crown land.

Intent and Logic

Council and DPI (relevant sections of the former L&PMA) jointly are responsible for coastal reserves and built assets such as holiday parks which represent significant recreational, social and scenic assets for the Wyong community and for visitors. This action is designed to ensure that long term changes to coastal processes and the coastal landscape are taken into account in the management of these reserves and holiday parks.

This action complements actions to manage coastal erosion and recession hazards in **Table 9.2** and action to maintain and enhance the recreational and tourism values of the coastline, in **Table 13.2**.

Responsibility and key partners	When - Priority	Where – locations for investment	Indicative cost and source of funding
Council Asset Manager, Open Space and Recreation Manager, in conjunction with L&PMA	Review Plans of Management within 5 years	Applies to all Crown Reserves and Council managed foreshore reserves along the coast	Initial review of extent to which Plans of Management address climate change and sea level rise issues is within existing Council staff responsibilities. Allow \$20,000 for specialist advice on how reserve values can be managed and/or design of structures to protect assets.

Actions A47 (coastal walk), A50 (develop a theme for coastal information and interpretative signage) and A53 (conduct regular surveys of beach users) in **Section 13.0** are also relevant to this Action Plan.