

# Nature Watch

Central Coast

diary



# Nature Watch Diary

Name of Observer: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

## Acknowledgments

This Diary has been a collaborative effort of a group of highly dedicated and committed individuals from differing state and local government agencies and community organisations, namely:

<b>Mark Attwooll</b>	Rumbalara Environmental Education Centre
<b>Susan Davis</b>	National Parks and Wildlife Service
<b>Trish Donnelly</b>	Gosford City Council
<b>Karen Douglas</b>	Wyong Shire Council
<b>Christine Freeman</b>	Rumbalara Environmental Education Centre
<b>Karen Johnson</b>	Lake Macquarie City Council
<b>Alan Morris</b>	Community Adviser
<b>Jane Smith</b>	Central Coast Community Environment Network

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This Nature Watch Diary is only a small part in a much larger network of Nature Watchers representing observations from bioregions throughout Australia. This larger network is co-ordinated by Alan Reid, President of the Gould League of Victoria in the **Timelines Project Australia** whose motivation and inspiration provided us with the beginnings of this project.

The achievement of the publishing of this diary demonstrates the immense possibilities available when these agencies/groups work together.





# Welcome to Central Coast Nature Watch

## ***Nature Watch: the study of seasonality in Nature***

One of the main objectives of this *NATURE WATCH* diary is to give community members the opportunity to record what is happening in the natural environment around us, day by day, throughout the year.

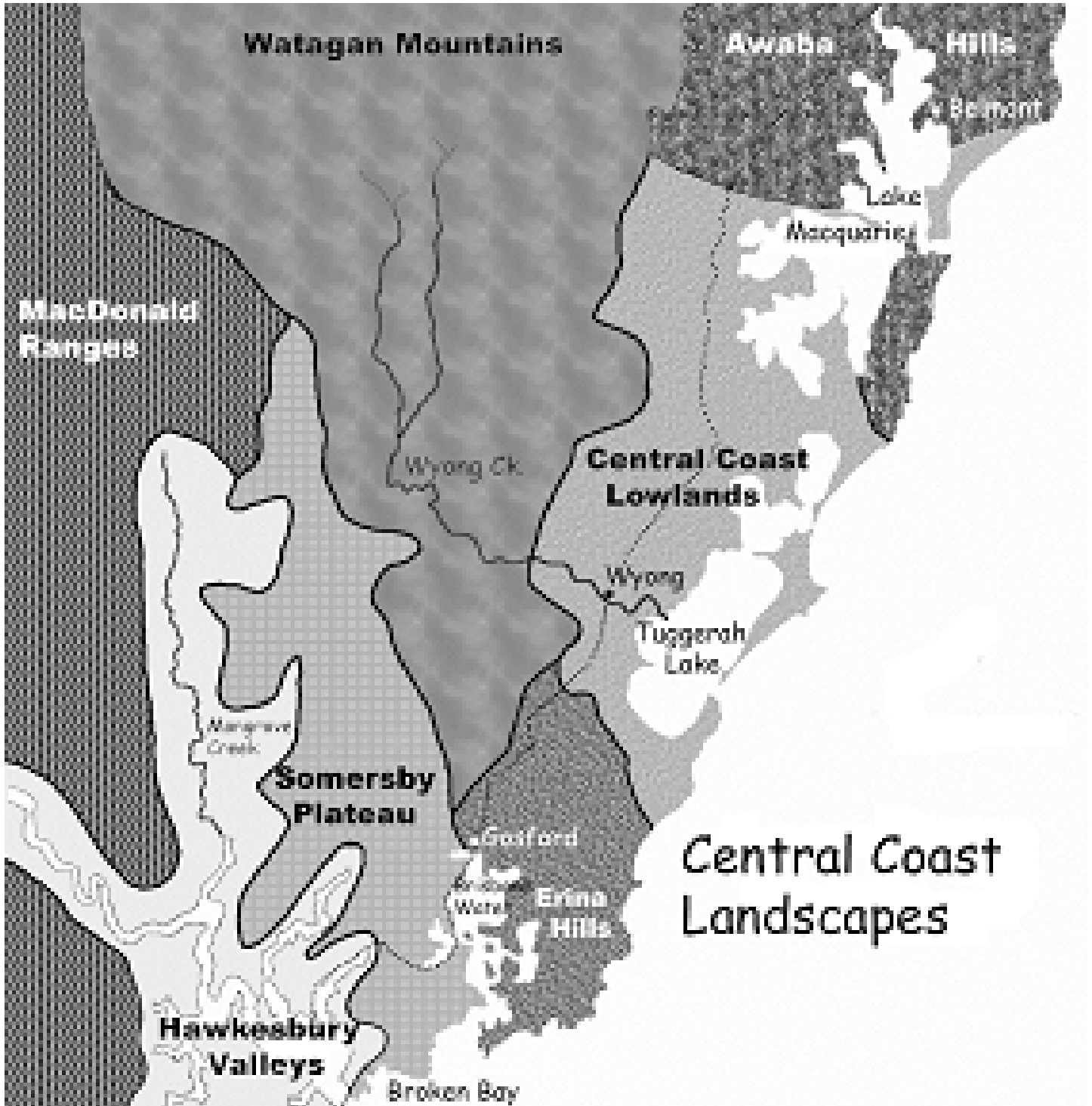
Most people who participate in systematic recording of their daily natural history observations soon become fascinated by the regular and predictable sequence of happenings in nature. On comparing notes made with those of previous years, the outstanding impression is how much nature is on 'time'. Experienced nature watchers can get to the stage where they can *predict to the very week of the year* when a certain plant will commence flowering, or when a certain migratory bird is sure to be seen or heard. Yet there is always something new to discover!

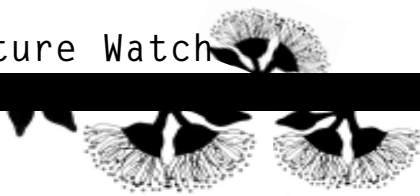
Once you 'get hooked' on keeping a diary of natural events you realise what an enjoyable and rewarding activity it is. You can '*nature watch*' anywhere, wherever you live, whether in a rural area, suburbia, exploring a National Park, walking along a beach or just watching in the confines of your own backyard.

*Your Observations may include:*

- What plants are currently in flower (or in bud, or in fruit)
- What birds are seen that day, that week
- Examples of animal behaviour, feeding, breeding
- Patterns of migration
- Weather phenomena
- Insect life cycles, behaviour, population explosions
- Wetlands phenomena, eg periods of inundation
- Seaboard phenomena, eg spring tides
- Interconnections, linkages, relationships
- Appearance of fungal fruiting bodies and so on.....

The Central Coast Nature Watch Diary will give Nature Watchers within the community an opportunity to rediscover the seasonal changes and co-happenings in nature which the Aboriginal people observed and understood so well in the thousands of years prior to European impact. They will also be keeping tabs on the diversity of plants and animals within the Central Coast region.





# Central Coast Landscapes

The Central Coast is that wonderfully diverse landscape extending from the Hawkesbury River in the south to Lake Macquarie in the north. To the east stretch magnificent beaches, lakes and estuaries and to the west rugged mountain wilderness.

It's also a rapidly changing landscape. Sandwiched between ever expanding Sydney and Newcastle it has one of the highest population growth rates in Australia. To sustainably accommodate this growth will require an understanding of the needs of **ALL** its inhabitants - not just the humans!

The diversity of Central Coast landscapes is due largely to the influence of the many different geological layers that surface here at the north-eastern edge of the Sydney Basin.

- The harder Hawkesbury Sandstone of the south-west is exposed in the spectacular cliffs of the Hawkesbury valley and gives rise to the rugged MacDonal Ranges and the undulating Somersby Plateau. Amazingly the infertile soils derived from Hawkesbury sandstone nurture the most fantastic displays of wildflowers.
- The softer but more fertile Narrabeen sand/mudstones form the steep hills and narrow valleys of the Watagan Mountains through to the less rugged Erina Hills in the south east.
- The relatively low-lying terrain of the Central Coast Lowlands is occupied by the coastal lakes (Tuggerah, Munmorah and Macquarie). Much of the Narrabeen sediments in this area are overlain by more recent river deposits and sand dunes.
- The low rolling Awaba Hills are built on the Munmorah conglomerate and Newcastle Coal Measures.

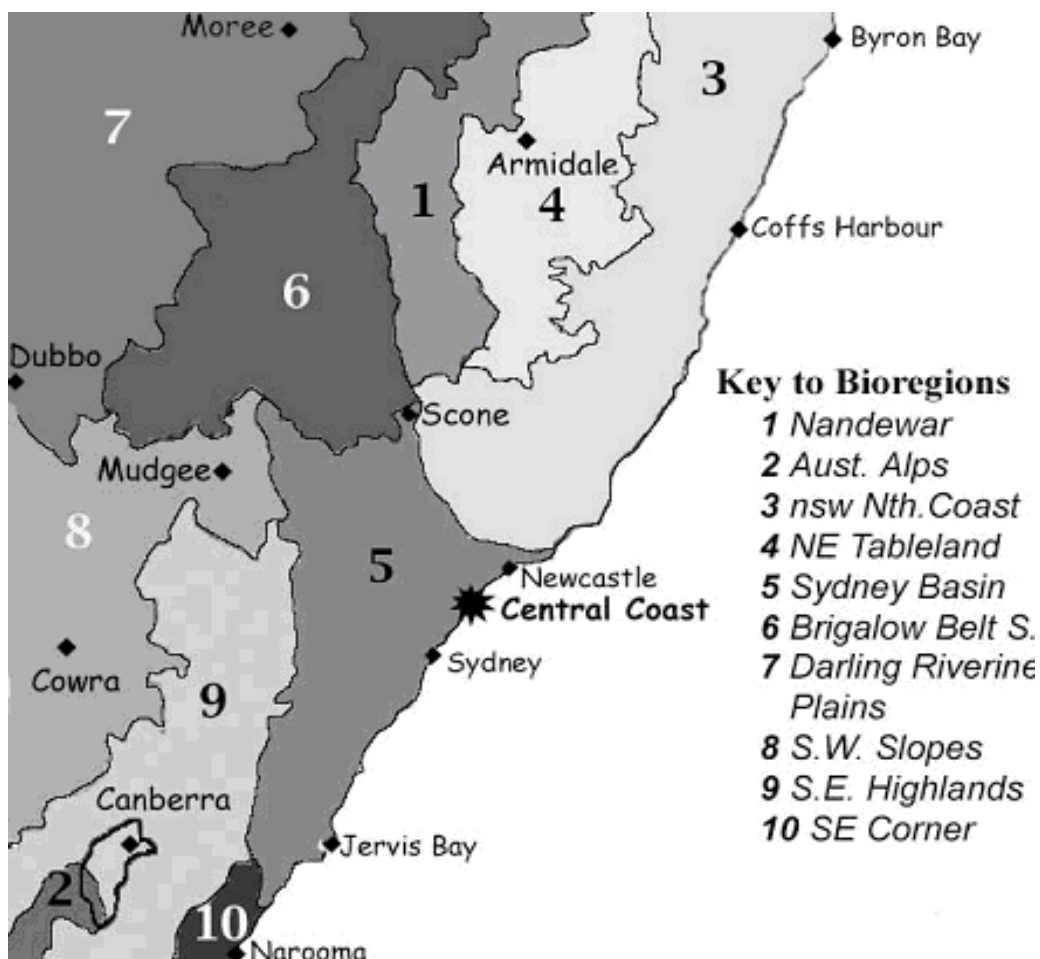


# Biodiversity

Australia is regarded as one of the 12 'Mega' diverse regions in the world. Basically this means that we are lucky in having a huge number of different animal and plant species. What makes this even more important is that most of our plants and animals are endemic. In fact 90% of our mammals; 70% of our birds; 85% of our flowering plants; 88% of our reptiles and 92% of our frogs are found nowhere else.

However Australia has the not so envious reputation of having the greatest losses of biodiversity. Since European colonisation in 1788, half of all the world's mammal extinctions were Australian! In that time over 125 plants and 42 vertebrates were lost forever. We don't know how many invertebrates and lower plants have gone because our records are so poor but it has been estimated that for every extinct plant there are likely to be 15 species of dependent invertebrates which have also become extinct without us even noticing.

Today in Australia there are nearly 1000 species of plants and animals listed as threatened including many from the Central Coast (Appendices). They include the Red-crowned Toadlet and the Broad-headed Snake, species unique to the Sydney Basin but pushed to the edge by urban expansion. We also have species that reach the limits of their distribution on the Central Coast. Such populations are often genetically different and their loss usually results in a smaller gene pool and increased vulnerability for the species. The Land Mullet and the Southern Angle-headed Dragon, the Southern and Northern Brown Bandicoots and the Regent Bowerbird are in this category.





## We all live in a catchment

A catchment is made up of all the land that drains water to a common point such as a creek, river, lake or ocean. Whether it is a small or large valley, a wide floodplain, a coastal estuarine area, rugged mountainous terrain or suburbia we can see that we are in a catchment whenever it rains.

All the creeks and gullies connecting to larger rivers within a landscape make up many smaller catchments (some may be many hundreds of kilometres in area). Ultimately, their waterways drain into lakes or wetlands, or the ocean.

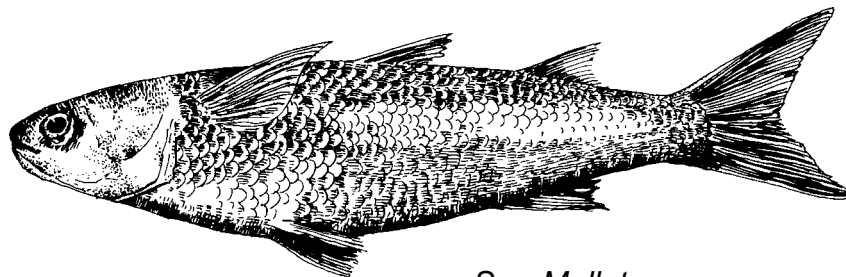
Catchments are not necessarily reflected in local government boundaries. Indeed, they seldom are, which is a pity, since it would be more sensible if a local government area was given a better sense of ecological entity by using ridgelines as boundaries rather than drawing arbitrary straight lines on a map.

Within Gosford, Wyong and Lake Macquarie local government areas the main catchments are Brisbane Water, Tuggerah Lakes and Lake Macquarie respectively.

Catchments are not just about watersheds, they also show an integrity regarding their underlying geology and landforms, their soils, their climates (and microclimates), and of course, their communities of plants and animals. These days we refer to the 'flora and fauna' of a given area as its **biodiversity**, a term taken to include the genetic heritage of the area and encompassing the overall ecology of the locality, taking into account the myriad of interdependencies amongst all the living things found there.

Each catchment, whether large or small, has its own integrity, its own uniqueness. The boundaries of any catchment (usually the ridgelines) not only 'catch' water when the rains fall; they also 'capture' some of the plants and animals found there, and hold them in various microclimatic conditions.

In this sense, the biodiversity of any catchment is unique, in that it is different, if only slightly, to the biodiversity of a neighbouring catchment. Within a very large region, such as the Central Coast, the spectrum of biodiversity is very wide, ranging from coastal to inland habitats, from low-lying areas to huge hillsides, from wetlands to exposed, rocky ridgelines.



*Sea Mullet*

## A Special Relationship

Aboriginal people have lived on the Central Coast since the Dreamtime. They were here during the ice age and they were here when rising sea levels created the coastline we know today.

During this unfathomable period of time their survival depended on an intimate and profound understanding of the environment. It required knowledge of seasonal changes in the availability of food, the use of fire and the ability to procure medicines and tools.

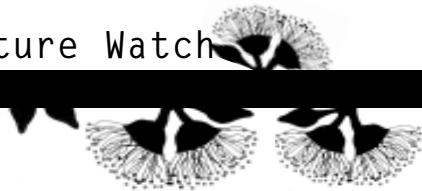
This 'factual' knowledge was intertwined with a religious cosmos about morals and behaviour, explanation and ritual, spirits and inner existence. Clegg (1990) says 'Aboriginal people recognised that nature was made up of different forces expressed symbolically through mythic characters. Every individual person was closely identified with one particular mythic being and contained the same spiritual essence'. Their **totems** are displayed in many of the rock engravings found on the Central Coast.



The Aboriginal rock engravings illustrated above can be viewed in Brisbane Water and Bouddi National Parks

What plant or animal do you identify with? Use the space below to describe your 'totem' – the plant or animal that you take a special interest in knowing.



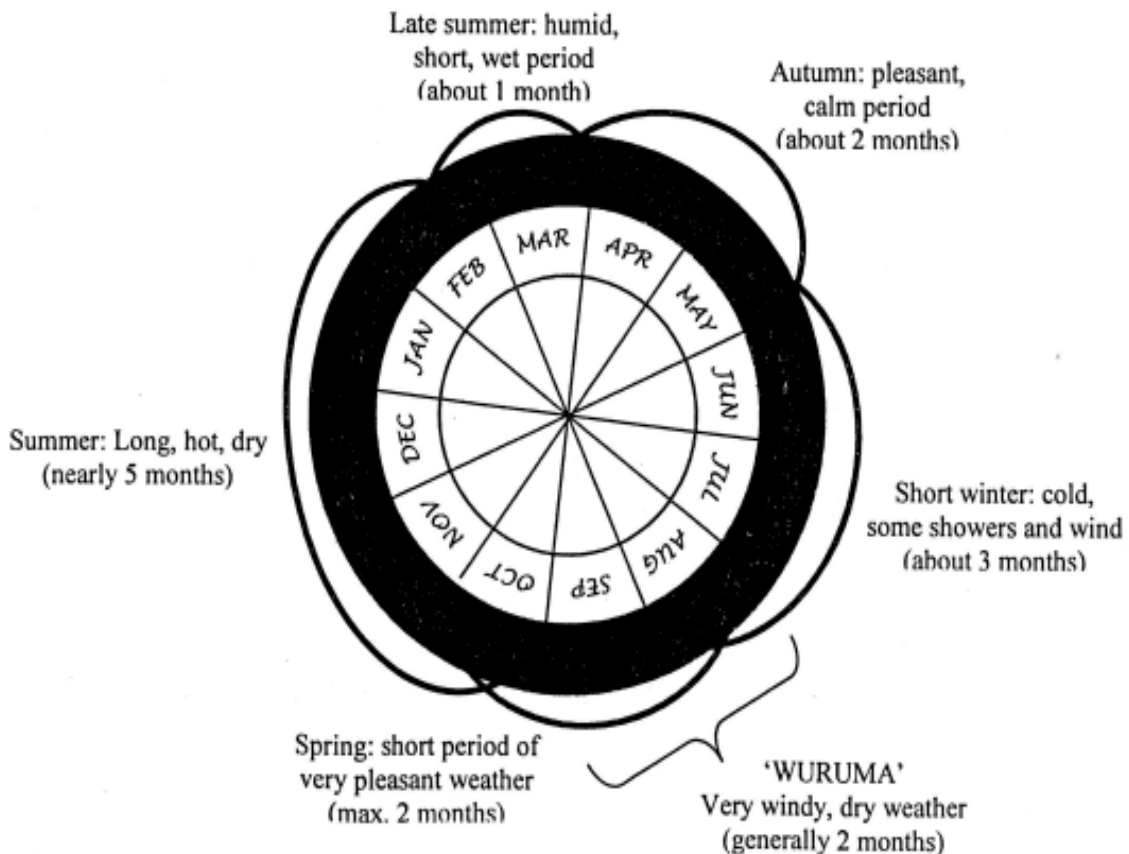


# NATURE UNFOLDS WITH THE SEASONS

Seasonal patterns reflect the annual orbiting of the earth around the sun. Thus flowering plants undergo a regular sequence of bud formation, flowering, formation of fruit, and setting and dispersal of seeds. With animals, there is also a pattern in their appearances or activities during the year, as seen in their reproductive behaviour and in seasonal migrations. Recorded observations can reveal patterns, leading to predictable trends such as 'wet seasons', mating times, and major migration times.

Research by Alan Reid suggests that Aborigines have understood the workings of the land and its shifting climates intimately for many thousands of years. Aboriginal tribes have observed nature and followed its calendars or timelines by monitoring significant events, such as the migration and mating patterns of birds, changes in local vegetation, the effects of major weather changes and natural disasters such as fires and floods. They use calendars with from five to seven seasons depending on location, suggesting the European concept of four equal seasons has little relevance in Australia.

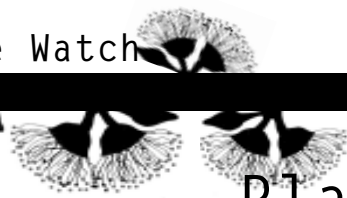
## Seasonal Trends - Lower Hunter Central Coast region, NSW



# RECORDING YOUR OBSERVATIONS

## Some useful hints on how to use this diary:

- Encourage your whole family, class or workmates to get involved, anyone can record interesting and useful observations;
- Try to make the observations at different times of day;
- Always note the time of day, date, month and year for each observation;
- Keep weather records, or include comments such as 'cold, raining' or 'strong westerly wind';
- Remember to note the regular occurrences as well as the unusual;
- Keep the diary handy, don't use scraps of paper or if you do transfer the information to your diary as soon as possible;
- Remember to summarise your observations (summary sheets included in Appendices).
- Use some of the recommended field guides in the reference list to help with species identification, you will be amazed at how quickly you remember the names;
- Take photographs to keep in your diary, as well as relevant newspaper clippings;
- Use the notes section for more detailed accounts of your observations, you can also make sketches of anything that is unusual or fascinating;
- Keep your observations for comparisons in future years, you will soon start to see regular patterns emerge.



## Places to look...

There are many places you can go to observe nature: your own backyard, the park down the street or a larger reserve retaining plants and animal in their natural habitats.

**National parks** contain natural and or cultural values which are important to conserve. These areas provide opportunities for people to explore and enjoy the natural environment.

**Nature reserves** are special sites dedicated to conserve wildlife and natural environments. They may conserve specific species or rare communities and they provide opportunities for scientific research and education. Because of the importance of these areas for conservation there may be limited access in comparison to national parks.

**State Recreation Areas** provide opportunities for public recreation and enjoyment. They contain areas of natural and cultural significance however some forms of activities, such as mining which are not permitted in national parks or nature reserves may be permitted in State Recreation Areas.

**State Forests** are managed by Forestry NSW, the primary function of these areas is to provide timber however they also contain areas that have been set aside for cultural and conservation purposes and provide for a wide variety of recreational pursuits.

**Council Reserves** - Each of the Councils (Gosford, Lake Macquarie and Wyong) manage numerous parcels of land for various reasons such as wildlife conservation, protecting water quality, heritage, recreation, scenic and educational values. Access varies depending on the purpose however a general rule is to stay on the designated walking tracks.

National Parks	Nature Reserves	State Conservation Areas	Council Reserves	State Forests
Bouddi <i>Killcare</i>	Cockle Bay <i>Empire Bay</i>	Lake Macquarie	Jenny Dixon Reserve, <i>Norah Head</i>	Strickland S. F.
Brisbane Water <i>Patonga</i>	Wamberal Lagoon	Munmorah	Karagi Point Reserve, <i>Nth Entrance</i>	Heaton S. F.
Yengo <i>Wollemi</i>	Wambina <i>Matcham</i>	Glenrock	The Ridgeway Reserve, <i>Tumbi Umbi</i>	Watagans S. F.
Watagans	Tingira Heights		Kincumba Mt Reserve, <i>Kincumber</i>	Olney S. F.
Wyrabalong <i>Nth Entrance</i>	Pulbah Island		Rumbulara Reserve, <i>Gosford</i>	McPhersons S. F.
Dharug <i>Spencer</i>	Awabakal <i>Dudley</i>		Green Point, <i>Belmont</i>	Wyong S. F.
Popran <i>Mangrove Mt</i>			Mt Sugarloaf	Awaba S. F.
			Jewells Wetland, <i>Redhead</i>	Ourimbah S. F.

Note: Please note that dogs are not permitted in national parks, nature reserves or state conservation areas.

For more info check the National Parks and Wildlife Service website [www.npws.nsw.gov.au](http://www.npws.nsw.gov.au)

## What to do with your records

Central Coast Nature Watch is a project involving a number of partner organisations including Gosford, Wyong and Lake Macquarie Councils, National Parks & Wildlife Service, Rumbalara Environmental Education Centre, Association of Environmental Education (Central Coast Branch) and the Central Coast Community Environment Network (CCCEN).

The CCCEN will coordinate the information that comes from the project.

## Join the Nature Watch Network:

We would like to know about your observations!

- **Register to become a part of the Nature Watch Network:-** Complete the Registration form enclosed and send to the CCCEN. We will be coordinating a number of activities during the year that provide an opportunity for Nature Watchers to get together and learn more about the Central Coast Environment. For example, a guest speaker on birds or reptiles that can help with identification.
- **Send us your summary sheet:-** The diary includes a summary sheet in the Appendices. Update this summary sheet throughout the year and fax it to us at the end of the year. We will compile this information, provide feedback to Nature Watchers, send to relevant groups and organizations and include significant information on regional databases.
- **On-going observations:-** Throughout the year contact us to tell us about significant observations.



*Kookaburra*