

# Bawley Bush Retreat

## Field notes for bushwalks on the property *Use this in combination with site map*

*The walks described in this guide begin at the yellow/white timber post southwest and below the Seabird (Cormorant and Oystercatcher) Bush Apartments.. As you descend towards the lake you will immediately pass our boundary line and enter a Shoalhaven Council owned reserve around the lake. These notes assume you will take the left path at the fork along the lake-shore and, about ¾ of an hour later, return to this fork after circumnavigating our property. There are many places where you can abandon the walk and return to your accommodation. So, turn left and follow the path/(and wooden stakes with the painted tops about 25m apart).*

**Before you start, background on the lake:** Lake Willinga is in reality a small shallow coastal lagoon of about 100 acres linked by a long shallow inlet to the sea. One of approximately 90 coastal lakes in NSW that open intermittently to the sea, Lake Willinga has a catchment of only 19 square kilometres. Due to its shallowness it is not suitable for recreation other than kayaking and then only when it is closed to the sea and filling. Up until 1995 there was very little development in the catchment though it has been logged and farmed for 120 years. In the 90s a considerable number of small rural residential lots were created and some 12 – 15 new residences as well as our property were constructed in the catchment by 2010. From 2012-2016 Willinga Park, one of Australia's biggest equestrian centres, has been under construction within the catchment on the property directly across the lake from Bawley Bush Retreat.

During our development phase we were very conscious that our tourism development had the potential to impact the lake by way of siltation (soils are light and sandy), visual impairment and, later, by nutrient contamination. We reduced siltation risk by grassing disturbed areas, leaving tree and grass filters around the lake boundary undisturbed and gradually sealing/gravelling our roads to stop erosion. We maintain visual understatement by keeping sight lines to buildings from the lake shrouded by trees and by placing lights so they light only those areas that need to be lit. We mitigate our nutrient impact by providing low-flow waste water systems, composting toilets and a best practice nutrient-stripping secondary water treatment/transpiration system.

Periodically storm events at sea cause lakes like Lake Willinga to close. This happens via the dumping of such large quantities of sand that a berm is created at the entrance. Such lakes then gradually fill with tannin-stained (from the eucalypt, wattle and leptospermum forests) fresh water from rainfall run-off attracting swans, pelicans, and ducks to the lake. Swans, in particular, graze on the large crops of underwater grasses that grow while the lake is predominantly fresh. During spring to early summer the lake water warms and the surface can get heavily populated with yellow algae, especially when water level is low. This is natural, always clears and has nothing to do with human impact. We hope that the recent clearing of bush over the lake and conversion of the land there to permitted agricultural uses combined with the significant importation of nutrients to feed animals does not result in run-off that could exacerbate this.

Unless opened by Council (by backhoe), to stop Bawley Point Road flooding, the lake will eventually overflow and naturally break out to sea again. A large variety of recently-nurtured marine species are then emptied to the ocean food chain. Until the next storm event the lake will be tidal, shallow (at low tide ankle deep and at high tide no deeper than 500mm) and saline attracting a variety of wading birds (egrets, ibis, oyster catchers, etc) that feed in the shallow water, sand and mud. During this phase juvenile mullet, bream, flathead and prawns will enter on the tides to mature in the next closed cycle. This natural “fish farming” of species that can adapt to low salinity levels as the lake fills is an important part of our coastal ecology.

**Walking along the lake foreshore:** As you walk east along the lake shore you will notice that between the high seawater and high fresh-water marks the predominant floristic species are rushes, common reed (*phragmites australis*), swamp oak (*casuarina glauca*) and ti-tree (*leptospermum*). Sedges grow in clumps to 1.8m high just above the high fresh water mark and in other damp places on the property. As you walk and the ground rises to your left you will see native cassia, spotted gum and burrawang communities that provide a typical stark and beautiful south coast scene. While few sound old growth trees survive in this district due to unrestrained logging that occurred from 1870 to 1990 there are beautiful spotted gums along this lake shore that are now well on their way to maturity. Their life span is up to 600 years but these are considerably younger.

Spotted gum was used by boat builders last century because of the ability of the timber to be steamed and bent for the curved ribs of boats. Trunks have quite a thick sapwood so only the larger trees return the best timber. If ordering hardwood from a mill find out if it is spotted gum you are being supplied. If so, make sure it does not contain sapwood. If it does it will attract the lictid wood-borer more readily than other species...not a major disaster structurally, but the borer deposits lots of dusty powder under the timber from its burrowings. These days spotted gum from state forests is not only used for internal lining boards, stair treads and flooring but it has properties that make it a good substitute for hickory in shovel, hammer and axe handles.

You will pass our blue sea-kayaks stored alongside this path by the lake. Guests are welcome to borrow these and return them to *above the high water mark (or we might lose them)*. We have paddles, supporting backrests and life vests you can borrow located on the veranda at the shed. Please return them there after use. It is a condition that borrowers will take all responsibility for their own safety, the equipment and its condition. The most enjoyable places to paddle are up either of the two long creeks that flow into the lake but you can also paddle down the inlet to the sea. You will get a wet bum so wear swimmers.

Take a close look at the burrawangs (*macrozamia communis*). The plant is a spikey-leaved cycad that, belong to a species that is more than 350 million years old; pre-dating dinosaurs and angiosperms (flowering species such as eucalypts) by a hundred million years. They have a deep tap-root. Mature plants have a root about 1300-1500mm long and 300mm in diameter. Male plants have a long curved penis-like (?) “flower” while the females have a pod whose hard fruits turn bright orange when ripe, fall on the ground, go brown and germinate in clusters around the mother plant. Plants can reproduce only every few years. Never chew the 30mm long seeds or nuts; they are poisonous unless, like aborigines, you know how to treat them. Burrawangs start their lives where seeds fall, under or nearby their mothers, or to wherever carried by small animals such as bandicoots.

***Follow the wooden stakes until you climb back to the flat area overlooking the lake.***

**Up on the flat:** From here you can look over wetlands towards the Bawley Point Road at the bridge where it crosses the Lake Willinga inlet. The lake is bounded by two such wetlands (the other one is to the southwest) gazetted as environmentally important under SEPP14. These areas all flood when the lake is full and are inhabited mainly by leptospermum (ti-tree). There are also several species of eucalypt and paperbarks that love having wet feet. Swamp wallabies, bandicoots and antechinus (marsupial mouse) are the main animals that live in these habitats but there are many early-in-the-food-chain insects and bugs that live here too. Sea eagles and

swamp harriers can often be seen overhead seeking a feed.

As you approach the man-made clearing where our bush campsites are you will see a large old spotted gum, mainly trunk, on your left. This is an example of a very old tree that survived the 19<sup>th</sup> century axe and 20<sup>th</sup> century chainsaw because of its unsuitability for milling. Unfortunately its top has long since fallen, rotted and/or burnt. Perhaps it broke off from lightning strike, or old age or high winds. On your right you will see a stump about 3 metres high. You can see where the pre-chainsaw axeman cut notches to hold the boards he stood on to fell the tree. There are several such examples on this property and we have retained many stumps so you can see just how mature these forests once were and how close together very large trees were growing.

**Termite mounds:** There are many species of subterranean termites living here. Not all species will attack houses and the mounds you see are built by a variety that pest exterminators tell us do not. We hope they're right. Termites that do can't tell the difference between house timbers and dead wood, they just travel in humidity controlled tunnels for as far as 200 metres looking for food to bring back to the home-makers and the queen (who can live up to 60 years). A nest dies when the queen dies. We have not destroyed the mounds, which are an extremely hard cement-like material. Where possible we protect our buildings from termites by passive means... Termimesh, Graniteguard and having slabs that can be visually inspected but we have been forced by regulations to use chemicals in two instances.

*From here you may choose to complete this stage of your walk by returning to your cottage, or continue your now un-staked walk up the vehicle track to the west, slightly to your right. The following information is provided for those who continue.....*

On your left, north of Café Cottage, is a typically dense *casuarina stricta* forest. These are important forests in our area because casuarina nuts are the *only* food eaten by the threatened glossy black (or casuarina) cockatoo. If glossy blacks are around, and they are quite regularly, you will hear the clicking sound made by the birds cracking seed pods while they hold them by their enlarged left foot. These birds are not glossy or black at all. On closer inspection they will be seen to be a dark matt chocolate in colour. They flash beautiful large deep red tail feathers when they fly and the female has a yellow flash on her cheek. Glossy blacks are bigger than gang gangs but smaller than the yellow-tailed black cockatoo which is more common in our general area. Unlike yellow-tails, glossy blacks are not gregarious, generally preferring the company of their mate and a single offspring but they are less shy and allow a closer approach. The adult "song" is more like a clacker, closer to that of the galah and gang gang and unlike the "whee" of the yellow-tailed black or the screech of a sulphur crested (seen here extremely rarely).

At the edges of the casuarina forest along the vehicle track you will find turpentines (bark winds up trees, leaf rich green, not like a eucalypt) and bloodwoods (tessellated sections of bark) as well as blackbutts (straight strands of bark until the top where the trunk and branches are clear of bark). There are some very old large blackbutts through the trees 30 - 50 metres to the north (right) of the track. There are also examples of yellow stringybark (stringy bark all the way including the top branches), a very dense excellent hardwood for bearers and joists.

This area is the southern boundary of the turpentine species in NSW. From the 1860's these were heavily logged for their application as marine-borer and rot-resistant wharf poles. Thousands of them support wharves in Sydney. Oyster farmers use them today for in-water timber racking. They are often used in the ground, without treatment, for posts, tank stands and farm sheds because they also resist (though are not fully immune from) subterranean termites. South coast bloodwoods are not used for timber, they become ringy but, because they split easily, are excellent for split fence posts and firewood. Blackbutt is a commercially valuable light coloured hardwood with long clear grain and use commonly for staircases, floor boards, bearers and joists. We have used blackbutt as feature timber in Bush Apartments (doors and staircase) and as stringers in the Chef's Cottage staircase. It splits under an axe very easily but is not as good as other species for firewood.

***You may choose here to continue your walk left up the fence-line/electricity clearing (shorter) or continue to the entrance road, turning left and following the sealed road back.***

**The electricity line clearing:** The casuarina forest remains on your left and remnants of it on the lower slopes to the right. On the right the casuarina forest gives way to “open forest” typical of this area with bracken fern, some burrawang and *lomandra* (a broad leafed grass) as understorey. Spotted gums reappear in this area because the soils are more freely draining and sandstone based. This area has been approved for a residential lot and some of this forest will be cleared one day for a house.

***At the shed/Wattlebird Apartment you can either return to your accommodation. You can continue your walk by bearing right then right again at the top along the main entrance road past the residence to the west side of dam.....***

Around the shed and on top of the hill you will see a few relatively juvenile ironbarks. These can be identified by the well-balanced shape of the tree and the high rough bark all the way to the leaves. Ironbark, as most people know, is an excellent, durable, very dense timber. It resists rot and is used for bridge timbers, major bearing beams, railway sleepers, fence posts etc. It burns hot and long. Ironbark is very slow growing and consequently there is a shortage of this valuable timber now because of past unsustainable logging. There is no doubt our best hardwood resources will continue to deplete faster than they can be regrown even with government controlled forest management.

***For those who chose to take the Willinga Road entrance walk...***

**The entrance road:** A 20m swathe of bush was cleared on the Crown Reserve all the way from Bawley Point Road for Willinga Road, Jack Reid Road and the associated power line in 1995. All nearby development has occurred since then. SEPP 14 wetland restrictions prevent development on most of the land to the East of Willinga Road between Bawley Point Road and Jack Reid Road. As you turn left onto Willinga Road you will see a corner of remnant wetland similar to the inaccessible SEPP 14 area on your right. It too is protected from clearing and further development. The large trees on the right as you go up the hill are blackbutts, wollybutts and spotted gums. To the left is a neighbour’s house (#89) constructed in 2006 in a clearing dictated by fire regulations.

After you pass through our wooden gateway you will see on the left another, once huge but now broken, spotted gum. The reason for this being spared the axe in the 1800s is obvious...there is a long run of dead wood through the tree and it would never have been suitable for milling. The small clearing past it on your right is where we milled the timber from the trees we cleared for road and house building. Much of that timber is visible inside our accommodation units and on the verandas. Proceed to the main dam.

***You can return to your cottage from here or continue the walk by turning off the road and along the overflow culvert on the west side of the main dam descending to the clearing below the dam. This will take you downhill back to a point where you can again choose to return to accommodation or take whichever of the lakeside or rainforest walks you have not yet taken.***

**PLEASE KEEP CHILDREN AWAY FROM THE DAMS AND DO NOT ALLOW THEM TO SWIM IN THEM. THE DAMS ARE VERY DEEP, COLD AND OPAQUE.**

The bank of the large dam in front of our house was formed in 1995 after the removal by us of some 12000 cubic metres of material for the fill that formed Willinga Road and our private access road. At its deepest it is around 6m deep. We extended the dam bank height by an extra 1 metre in late 2004. Though the dam has only a small hilltop catchment we have an average rainfall of about 1200mm per year and it remains full most of the time. It supplies water to our gardens, fire-hoses and sprinkler systems. After treatment dam water is also delivered to showers and flushing toilets. In the late 90s we stocked the dam with 200 trout but lost about 190 of them to cormorants! The dam was stocked again in February 2003 with eel-tailed catfish,

the best tasting native fish there is (and the only native eating species that will breed in a dam). However we have never harvested them. In January 2012 we added silver perch (they won't breed in a dam) and glass shrimp but have never sighted the latter since. Herons (Pacific, Rufous Night and Grey) and cormorants (smaller pied and large black) predate on the fish. Native turtles, ducks and teals that also use this dam. During spring and early summer evenings frog calls can be almost deafening. There is also a small dam above the road used as a wet-weather storage dam for waste water after it is treated in our treatment system.

**Our residence:** We built our residence between July 2003 and August 2004. Landscaping plants now give the environs a more settled look than it had back then. The house is constructed of earth brick veneer and we have used earth brick and hardwood as internal features. We pressed the bricks on site using a 12 tonne Civa ram. The earth we used is from a nearby road-base quarry and the colour is natural. There was no binding agent (eg cement) used though we have used a water sealing product on the exposed southern wall. In winter the house is centrally heated using a hydronics system heated by solar and a wood stove.

**The clearing below the dam:** As you walk down the hill leaving the dam on your left you will find rainforest species (damaged by 2006 fire) on the right and several large spreading bloodwoods. This area is identified in our Masterplan for future cottage construction and the clearing is maintained as part of our approved fire management plan.

*As you pass the second red water hydrant you will see two wooden posts marking a track heading south-west. Take that path if you would like to go on a 150m forest walk to our property boundary. If you choose not to then skip the next section which briefly describes that walk then read on.....*

This forest area you are walking through was significantly affected by bushfire in April 2006. It is surprising how many years it takes for fire-affected wetland species to fully recover. The wetland element of the walk includes remnant rainforest for the first 80 metres. Species of interest include sedge, leptospermum and maiden hair under a canopy of bloodwood, blueberry ash, paperbark and pittosporum. **Please do not pass the property boundary sign** as the land beyond belongs to a neighbour who has refused permission for our guests to pass over his land. Please return along the path you have just used.

*Upon your return to the posts continue walking downhill. After about 80 metres you will see on the right our waste water pumping sump that pumps waste water from cottages to the treatment area at the top of the hill. Another choice to be made here.....you can return to your cottage along the wide clearing or you can continue your walk to your original starting point. To continue enter the track between the two galvanised star pickets that leads down to the lake. You will pass by hakea, wattle and leptospermum and soon arrive at the point at which made your first circumnavigation decision. Now you have earned a drink!*