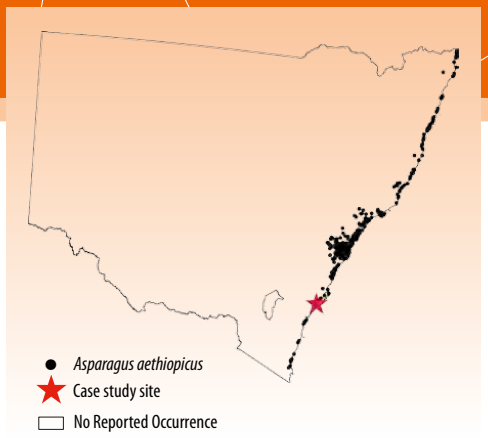
Case study 6

Regenerating the Narrawallee Beach Dunes: controlling *Asparagus aethiopicus* to restore an Endangered Ecological Community – Bangalay Sand Forest

Alasdair Stratton *and* ***Kerry Thompson,*** *Shoalhaven City Council;* ***Wendy Fuller,*** *Narrawallee Bushcare Group, New South Wales*



The Narrawallee Foreshore and Reserves Bushcare Group have been managing *Asparagus aethiopicus* within the local dunes since 2005 to protect the dunes from further degradation by this weed. The group's long-term aim is to encourage regeneration of the native understorey, improve local biodiversity and increase the resilience of the dunes.

Narrawallee Beach dunes are located along the south coast of New South Wales and sit just south of the 880 ha Narrawallee Creek Nature Reserve. The fore-dune vegetation consists primarily of Coastal Foredune Scrub. The hind-dune area is dominated by Bangalay Sand Forest, which is listed as an Endangered Ecological Community under the New South Wales *Threatened Species Conservation Act 1995*.

What is the problem and how are they managing it?

The dunes were heavily disturbed during the early residential sub-division of Narrawallee Beach township and the vegetation was degraded as a result. Over time, large areas of the Bangalay Sand Forest understorey had been invaded by dense infestations of *A. aethiopicus*, up to 90% of the understorey in some sections. *Asparagus aethiopicus* had reached such a high density that it was completely suppressing regeneration of germinating native species, which was causing the Bangalay Sand Forest to senesce. This prompted the Narrawallee Foreshore and Reserves Bushcare Group to act.

Gain financial support

The Narrawallee Foreshore and Reserves Bushcare Group, with support from Shoalhaven City Council, applied for funding and received two successive Australian Government Envirofund grants. The grant funding was used to pay professional contractors to conduct initial control activities in areas of high weed density which were beyond the capacity of the volunteers. This was a great help, as the group had limited labour resources to draw upon.

Control the weed and encourage native plant regeneration

To encourage native plant regeneration and increase resilience at the site, the group undertook two phases of control. Primary control focused on removing *A. aethiopicus* from a contained 7.5 ha area of the foredune and hind dune zones. Of this area, about 2.3 ha had high density infestations of *A. aethiopicus* and the remaining area had medium to light density infestations.

Contractors were employed to manually control the 2.3 ha of dense infestation. They did this by removing the crown and leaving the root mat and tubers in the ground. The group insisted that

In 2005, Asparagus aethiopicus dominated the Bangalay Sand Forest understorey

Working together, the volunteers and contractors removed many truckloads of Asparagus aethiopicus

only hand removal was to be undertaken for two main reasons: spraying would lead to hectares of dry, dead fronds that could be a fire hazard and removing the crowns would allow maximum natural regeneration.

Despite being more resource intensive, manual control techniques were selected by preference, as the group considered these methods would better encourage native plant regeneration in the area.

As a trial, they also chemically treated a small 20 × 10 m zone using metsulfuron-methyl. They found that this method was effective in controlling *A. aethiopicus*, but asparagus seedlings continued to germinate from the soil-stored seed bank and there was little to no regeneration of native seedlings. The number and diversity of native seedlings that naturally regenerated over the next 5 years was substantially less in this area compared with where they had manually controlled the weed. It should be noted that spraying of the trial area was undertaken in the middle of a prolonged dry period of 10 years, with lower than average rainfall occurring. Although metsulfuron-methyl has been used successfully to control asparagus weeds in other environments, the fact that it caused such detrimental impacts here highlighted the importance of conducting a small-scale trial under these specific climatic and ecological conditions, before attempting to use it more broadly.

'There was almost no regeneration of endemics (where A. aethiopicus was sprayed) until the present very wet season, yet there was amazing natural regeneration everywhere else in the immediate vicinity.' **Wendy Fuller, Narrawallee Foreshore and Reserves Bushcare Group.**

Follow-up monitor and control for many years to come

Following primary control efforts, the group continued to look for and manually remove any new seedlings over the next 2 to 5 years. This proved to be an exercise in patience and perseverance, with seedlings continually germinating from the vast seed bank. For ease of control, they waited until the leaves had formed before removing the seedlings, since research indicated that they would not set flower and fruit within the first 2 years. This meant they could concentrate on removing only larger seedlings during each sweep of the site, but checking to ensure that no seedlings were allowed to flower.

'Trying to remove the smallest seedlings wasted time and effort as more often than not the small fronds would break off and, with the high likelihood that they would re-shoot, we'd have to return to remove them a season or two later. We used our available time on the greatest threat.' **Wendy Fuller, Narrawallee Foreshore and Reserves Bushcare Group.**

To remove asparagus seedlings during these secondary control and maintenance stages, the group used a simple 3-pronged garden hand fork with the outside prongs ground off, turning it into a type of hook. They found it created minimal

By 2012, the densest infestations of Asparagus aethiopicus have been removed and native plants are regenerating in the once degraded Narrawallee Beach Dunes

disturbance and made their work faster, easier and safer than using a knife or folding saw. It is no good for removing large plants, however.

Control efforts were conducted during a long period of drought, which may have influenced the effectiveness of different control techniques and the rate of native plant regeneration. Since the drought broke in 2011, the group has observed an increase in the number and diversity of native plant species that have germinated.

Although no formal before and after monitoring has been conducted, members of the Narrawallee Bushcare Group have maintained a constant presence on the site since they commenced control, and have watched the site change over time. Casual observations from the group indicate that the percentage and abundance of ground cover species has increased on the dunes, with various species of terrestrial orchids being observed germinating for the first time.

Deal with other weed incursions

In the same area, *Pittosporum undulatum* Vent. (sweet pittosporum) had become dominant in the lower and mid-storey, and appeared to be altering the diversity of the Bangalay Sand Forest. Although native to Australia, *P. undulatum* is a semi-rainforest pioneer that may be responding to changes in soil moisture and fire regimes.

As a result of this, Shoalhaven City Council prepared a Review of Environmental Factors (REF) into the possibility of undertaking a staged control program of *P. undulatum* at Narrawallee. The REF suggested using a combination of controlled burns, manual control and cut paint or direct injection using neat glyphosate. They are also replanting 10% of the eucalypts each year to augment natural regeneration.

Some secondary weed invasion, mainly from *Lilium formosanum* A.Wallace (Formosan lily), has also occurred where *A. aethiopicus* has been controlled. Narrawallee Foreshore and Reserves Bushcare Group are controlling this using a snip-drip method with neat glyphosate and it has taken 5 years to reach a point where *L. formosanum* infestations have been significantly reduced to less than 20% of the original population.

Enjoy the success, but keep a watchful eye

Within 7 years, the group has achieved its initial aim of removing the densest infestations of *A. aethiopicus*, and is maintaining the effort by monitoring the site annually to ensure that it does not re-establish again. Native plant regeneration is already occurring in the once degraded parts of the foredune vegetation as well as the Bangalay Sand Forest Endangered Ecological Community. This will help build resilience against future invasion of this or other weeds.

'Natural regeneration has surpassed all our expectations and we are also witnessing the return of several species of ground orchid and small birds.' **Wendy Fuller, Narrawallee Foreshore and Reserves Bushcare Group.**

Hon Penny Sharp MLC
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Gerroa Environment Protection Society (GEPS)
PO Box 71
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15 April 2026

Item 19.3

Enclosure 1

Hon Penny Sharp MLC

Please consider this proposal from the Gerroa Environmental Protection Society to expand Seven Mile Beach (SMB) National Park.

In this submission we provide a rationale for expanding the SMB National Park to conserve extraordinary ecological values of lands adjoining the Park.

We draw attention to new information about declining viability of Southern Greater Glider populations in the region and on the south coast and highlight the importance of conserving Greater Glider habitat on lands adjoining the Park. Finally, we prioritise the Vegetation Units located outside the Park that we would like to see considered for inclusion in an expanded National Park.

SMB vegetation is disconnected from the hinterland. The small size and isolation of this vegetation island makes it vulnerable to species loss due to habitat disruption and loss. These factors impact species' ability to repopulate and thrive over time, but they also provide some protection from wildfire and disease transmission.

SMB vegetation encompasses an association of seven Endangered Ecological Communities (EECs), that support at least thirteen endangered or threatened species (Jones, 2021). It is most probably the last stronghold of the endangered Southern Greater Glider on the south coast (Daly 2025) and encompasses the state's most significant Coastal Freshwater Wetland.

The existing SMB National Park protects approximately half this vegetation, however most of the scientifically important ground water dependent ecological communities, wetlands and significant areas of Greater Glider habitat are located on the western side of Crooked River Road outside the National Park.

Altogether more than 80 ha of Endangered Ecological Communities and primary Greater Glider dune forest habitat has been cleared in association with sand mining at SMB. The judgement in GEPS 2008 Land and Environment Court challenge[1] acknowledged the impact of habitat loss and fragmentation caused by vegetation clearing and sand mine dredge ponds. It is of great concern

[1] Gerroa Environment Protection Society Inc v Minister for Planning & Cleary Bros (Bombo) Pty Ltd [2008] NSWLEC 173. - file no 10801 of 2007

that some of the most biologically complex vegetation and significant Glider habitat is at risk of further clearing and fragmentation because it coincides with a perceived sand resource.

Detailed biological information supporting this proposal.

In 2021 GEPS submitted a nomination for the habitat at Seven Mile Beach to be recognised as *Area of Outstanding Biodiversity Value (AOBV)*. This nomination is underpinned by 16 scientific studies and plans specific to SMB. It describes in detail the environmental values of the SMB area. It can be used for further reference for scientifically documented values found in lands adjoining the National Park and it supports this proposal to extend the National Park. This nomination can be accessed through our website at https://geps.kiamaregion.blog/wp-content/uploads/2022/12/GEPS-SMB-AOBV-nomination-docx.pdf

A new understanding of the importance of the SMB Greater Glider population

Since the GEPS AOBV nomination was compiled, studies by Daly (2025), Mulley (2022 & 2024) and Hofman (2021) provide a better understanding of the regional and state significance of the endangered Greater Glider population at Seven Mile Beach.

These studies show that the Greater Glider population at SMB remains stable while populations across the south coast are experiencing widespread decline. Scientists inform us that habitat alteration, including vegetation clearing and fragmentation and loss of hollow bearing trees, as well as fire and climate change threaten the viability of the SMB Glider population. They also inform us that the present area of glider habitat at SMB National Park may be insufficient to support viable glider populations into the future. According to Robinson (1988), the koala disappeared from SMB some time before the 1950's and unless we protect the remaining Glider habitat, Greater Gliders may be next. (Appendix 1 provides more detailed evidence to support this information).

Lands proposed by GEPS to be incorporated into an expanded SMB National Park

Altogether we propose four units of vegetation to be incorporated into the Park. These are indicated on the map below by colours:

Unit 1. Green: Represents existing SMB National Park

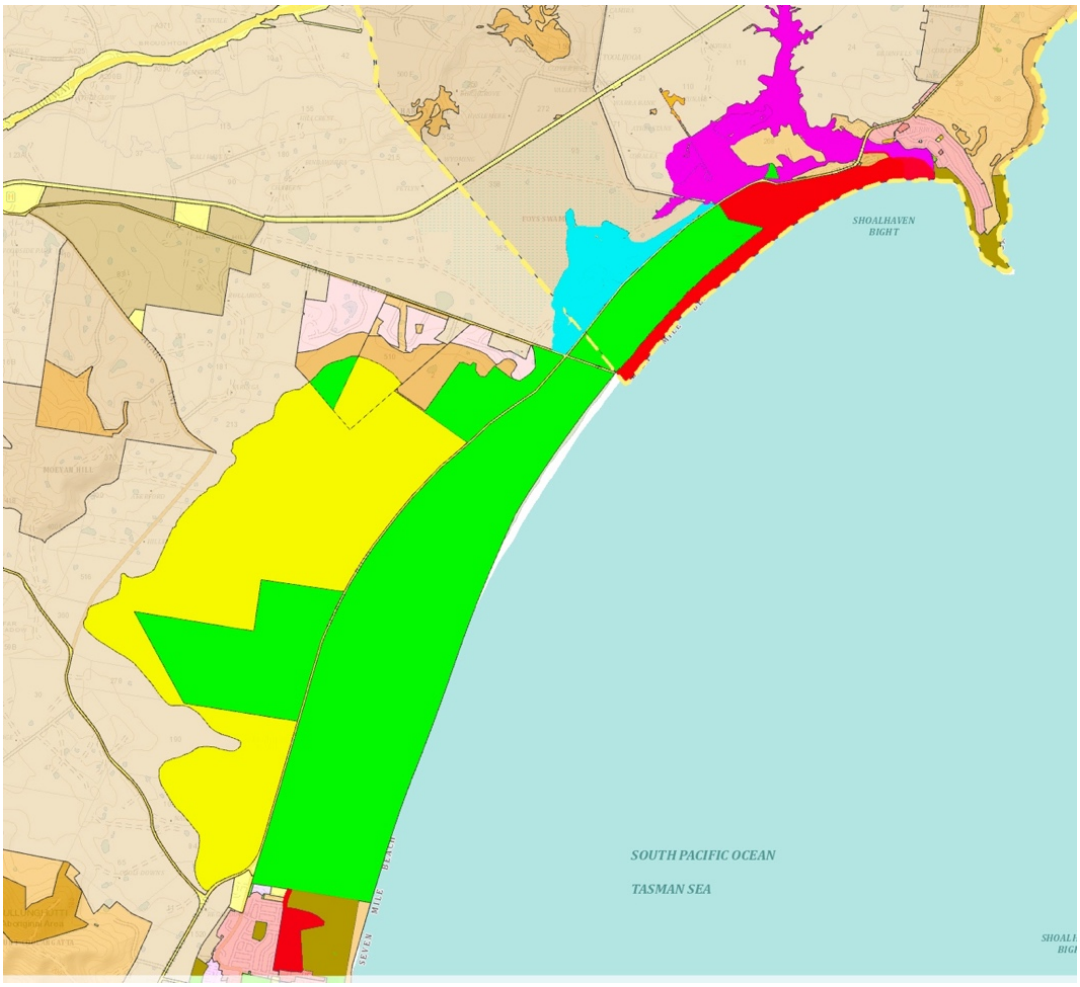
Unit 2. Red: Vegetation on Crown Lands adjacent to the National Park

Unit 3. Pink: Vegetation west of Crooked River Road on freehold & STP land (Crooked River end)

Unit 4. Blue: Vegetation west of Crooked River Road adjoining the sand mine on freehold land

Unit 5. Yellow: Vegetation west of Gerroa Road on freehold lands encompassing Coomonderry Swamp

Units 3 & 5 present the highest environmental values, and Unit 3 faces the greatest environmental threat. For these reasons this proposal will place more emphasis on these Units.



Unit 1. (Green on map) represents the existing SMB National Park

Reference: pages 10 & 11 on GEPS AOBV Nomination

Unit 2. (Red on map) Vegetation on Crown Land adjacent to the National Park

Reference: page 11 GEPS AOBV Nomination

These two Crown Lands reserves support Greater Glider habitat and include Bangalay sand forest and Littoral rainforest EECs. Greater Gliders have been recorded in both reserves.

The Crown land adjacent to the southern end of the NP, at Shoalhaven Heads, is inappropriately zoned R1 in the Shoalhaven LEP2014. However, this Crown land (Crown Reserve1003018), has been set aside for public recreation and environmental protection. It cannot therefore be developed for urban purposes while ever this reservation remains.

However, since the R1 zoned Crown land contains Bangalay Sand Forest, five threatened fauna species and a developing Littoral Rainforest community (Barratt 2017), the risk of the reservation being set aside to allow urban development makes it imperative that the land be added to the NP or, at the very least, the zoning be changed to C2." Incorporation of this area into the National Park should be a priority.

The Crown Land adjacent to the northern end of the National Park is zoned C2 in the Kiama LEP2011 and is identified as land having high biodiversity conservation value. It contains a substantial area of Littoral Rainforest as well as Bangalay Sand Forest and a large area of Blackbutt Forest that contributes habitat for the Greater Glider population outside the NP.

Unit 3. (Pink on map) Vegetation west of Crooked River Road on freehold and STP land, (Crooked River end)

Reference: pages 11 & 12 on GEPS AOBV Nomination

This area includes:

- Part of Lot 258, DP 751 254 (subdivision recently incorporated into new lot 12) vegetated dune and wetland areas.
- Part of Lot 2, DP1111012 (subdivision recently incorporated into new lot 12) vegetated dune/hill adjoining lot 258
- Lot 22, DP511 283
- Lot 23, DP511 283
- Regenerated vegetation at western end STP (regenerating swamp forest)

Unit 3 contains significant areas of Glider habitat as well as five Endangered Ecological Communities. The surrounding area has been impacted by ongoing clearing and fragmentation due to sand mining.

Incorporation of this area into the Park should be the top priority.

Sand Resource conflicts: Most of the vegetation in Unit 3 corresponds with a perceived sand resource. As the Unit has particularly high environmental values and is at risk of clearing and fragmentation for sand mining, it represents the most important habitat to protect within an expanded National Park.

The Illawarra Shoalhaven Regional Plan 2041 describes this conflict in the following words: *Land at Seven Mile Beach, Gerroa has both a sand resource and high conservation value. The land supports an array of flora and fauna, including endangered ecological communities, numerous threatened species and areas mapped as coastal wetlands, littoral rainforest and coastal environment areas under State Environment Planning Policy (Coastal Management) 2018. The land has also been identified as an important regional corridor between Seven Mile Beach and Barren Grounds Nature Reserve and has been mapped as part of the Berry Corridor - one of 10 priority corridors identified in the region. Extraction would have considerable impact on this sensitive habitat and ecological link.*

This Regional Plan has an objective to 'restore or maintain environmental assets'. However, to achieve this it suggests implementation of the 'avoid, minimise and offset' hierarchy. The potential sand resource area corresponds to the dune and swamp forests which are primary Glider habitat. Any removal of this habitat and adjoining EEC vegetation would result in unsustainable net losses of habitat regardless of whether they are offset or not. We believe that offsetting at this site would result in a net loss in biodiversity over time.

The Greater Glider was not listed as an endangered species when this Regional Plan was released and there was little awareness of the declining state of this species in the Illawarra/Shoalhaven region or broader south coast at that time. This new understanding of the regional significance and vulnerability of the SMB glider population should frame decision making when considering this conflict.

Biodiversity values worth protecting in Unit 3

- The land in this unit is zoned E2 in Kiama LEP 2011. It corresponds with the land having high biodiversity conservation value on the Natural Resources – Terrestrial Biodiversity Map - Sheet NRB_001 –in Kiama LEP 2011.
- The biodiversity values are particularly important due to the complex assemblage of five Endangered Ecological Communities in close association.[2] Littoral Rainforest (listed as critically endangered) is described by Mills (1988), who states that this is the most

[2] The Coastal Zone Management Plan for the Crooked River Estuary, Kiama Council, page 47

significant Littoral Rainforest area at SMB and many giant rainforest trees have survived along Blue Angle Creek. He says that small areas of freshwater wetlands support Swamp Oak and Swamp Sclerophyll EECs located in the lower wetland areas on lots 258 and 23 and Swamp Oak is also found along Crooked River and Blue Angle Creek, merging with the Swamp Mahogany community (Mills 1988).

- Riparian areas along Crooked River are included in this Unit because Crooked River and associated wetlands are considered an area of regional significance as they are home to several endangered, threatened and rare species of plants, birds, frogs and insectivorous bats (Reinfelds 2004). Coastal saline wetlands supporting Saltmarsh EEC is identified where the wetlands adjoin Crooked River west of the Gerroa STP (KMC 2015).
- The vegetation in lots 22 and 23 represents part of the last intact beach, fore dune, rainforest, hind dune, swamp vegetation profile remaining in the Illawarra (Muston 1992)
- Blackbutt, Bangalay and Swamp Mahogany are associated with SMB Greater Gliders[3] and indicate Glider habitat. Blackbutt is a primary foraging and den habitat for Greater Gliders (Hofman 2021). This Unit also has a number of large old trees with hollows. In a small area of wetland on the western edge of the vegetation on lot 258 Mills documented 20 hollows alone (Mills 2018) and these were found in all three tree species.
- An area west of the Gerroa STP site represents 20-year-old land-care plantings of 18,000 tees and natural regeneration carried out by Gerroa Environmental Protection Society in the early 2000s. This revegetation is nearing maturity and is described as *regenerating swamp Oak and Swamp Mahogany Forest west of the STP* (KMC, 2015).
- Large areas of vegetation in this Unit are protected under NSW Coastal Management SEPP coastal wetland and Littoral rainforest areas and buffers (parts of Lots 258, 22 and 23 and the STP lands) (see map in appendix 2).

Unit 4. (blue on map) Vegetation west of Crooked River Road adjoining the sand mine on freehold land

Reference: page 12 GEPS AOBV Nomination

- The land in this Unit is zoned E2 with very small regenerating areas zoned E3 in Kiama LEP 2011. The E2 land corresponds with land having high biodiversity conservation value on the Natural Resources – Terrestrial Biodiversity Map - Sheet NRB_001 –in Kiama LEP 2011.

[3] The Greater Glider population in the Seven Mile Beach National Park area - Sydney Basin: Distribution and vegetation associations (2018) Office of Environment and Heritage

- This Vegetation has been well described by Mills (2005, 2008) as consisting of Swamp Mahogany, Swamp Oak, Bangalay Sand Forest and Littoral Rainforest EECs as well as Blackbutt forest.
- Small E3 zoned areas and buffers to the E2 zoned vegetation are being regenerated as part of the Cleary Bros sand mine Landscape and Rehabilitation Management Plan developed by Mills (2008). It is in the process of being designated as a 'Conservation Area in perpetuity' as compensation for vegetation removed by sand mining. Under this Conservation (Stewardship?) Agreement, we assume there will be on-going management obligations for this vegetation.
- We support the addition of this land to the National Park but note that it will be conserved regardless through these this Agreement and ongoing management requirements.

Unit 5. (Yellow on map) Vegetation west of Gerroa Road on freehold land, encompassing Coomonderry Swamp

Reference: pages 12 & 13 on GEPS AOBV Nomination

This Unit contains areas of Glider habitat as well as biologically important Endangered Ecological Communities, including the State's largest Coastal Freshwater Wetland. We understand that a large part of this land has recently been protected under a Conservation Stewardship Agreement with on-going management obligations.

Incorporation of this area into the Park should be a top priority.

Biodiversity values worth protecting in Unit 5

- The land in Unit 5 is zoned E2 in Shoalhaven LEP 2014. It corresponds with the land having high biodiversity conservation value on the Natural Resources – Terrestrial Biodiversity Map - Sheet NRB_001
- Coomonderry Swamp, an intact Endangered Ecological Community, covers approximate 670 hectares and is the largest freshwater coastal wetland in the southern region of NSW, representing 40% of this wetland type within the State (DECCW NSW 2010).
- It is recognised as nationally important in the Directory of Nationally Important Wetlands in Australia (Environment Australia, 2001) and listed on the register of the National Trust of Australia (NSW).
- The ecological integrity of this wetland is well documented. It supports a high diversity of wetland plants in a variety of wetland habitats and these in turn provide the food, shelter and refuge for a large number of fauna. (De Jong, 1997). It also represents many irreplaceable biodiversity conservation values, including plants and animals of regional and state significance that are reliant on freshwater. The swamp and verges comprise

Endangered Ecological Communities and species, Coastal Freshwater Swamp, Swamp Sclerophyll, Swamp Oak Forest and populations of endangered Australasian Bittern and Green and Golden Bell Frog. (Craven, 2016).

- Coomonderry Swamp is a significant habitat for the endangered Green and Golden Bell Frog because it is the most extensive wetland in which the frog has been discovered in New South Wales and maintains a large population. The majority of the extant GGBF populations in New South Wales occur in coastal wetlands south of Sydney, particularly in the Wollongong, Kiama and Shoalhaven council areas (Daly, 1996).
- The Endangered Australasian Bittern occupies confined areas of open water and mostly dense aquatic vegetation. Coomonderry Swamp has these characteristics (de Jong, 1997). This species has been recorded consistently at this wetland as aural detections in 1993, 1995, 2005, 2008, 2014 and 2015, (Craven 2016). A recent photo of a fledgling confirms that it is breeding in the wetland (G. Daly pers. comm).
- Encroaching urban development in the catchment threatens the sustainability of this wetland habitat. Buffers need to be extended and rehabilitated and the entire wetland protected within the National Park. If regional biodiversity is to be maintained planning authorities need to adopt local environmental planning instruments that protect habitats identified as significant for rare and endangered species such as the Green and Golden Bell Frog, (Daly, 1996).
- Coomonderry Swamp is protected under the NSW Coastal Management SEPP as a coastal wetlands area (see map in appendix 3)

Designated SMB Habitat Corridors

All the vegetation Units referred to in this proposal are part of the Southern Rivers CMA corridors that link to the Great Eastern Ranges Corridor identified in the South Coast Regional Conservation Plan and the Southern Rivers Catchment Action Plan. (see map in appendix 4)

Summary

In this submission we provide evidence of the outstanding biological values of the SMB ecosystem. SMB represents an irreplaceable coastal dune wetland sequence that is a habitat for an association of seven well-documented Endangered Ecological Communities, including the largest intact coastal freshwater wetland in NSW and thirteen endangered species. Because of the drainage pattern between the escarpment and the beach all the biologically important wetlands and groundwater dependent ecosystems are located on the western side of Crooked River Road outside the National Park where they are threatened by development and mining.

Recent studies show that SMB may have the only stable Greater Glider population in the region and that populations are declining alarmingly in other National Parks across the south coast. We now know that this SMB population relies on unprotected habitat outside the Park for survival and the area of habitat within the Park alone may not be enough to sustain a viable population.

The vegetation areas we propose be incorporated into an expanded SMB National Park in order of priority include Vegetation Unit 3, Unit 5, Unit 2 and Unit 4

We seek to incorporate these significant vegetation communities, wetlands and glider habitats into the Park to ensure that they are protected into the future

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Appendix 1. Greater Glider evidence

Recent studies show that the Greater Glider population at SMB remains stable while populations across the south coast are experiencing widespread decline.

- Greater Gliders are listed as endangered under the BCA and EPBC Acts.
- Southern Greater Glider populations are rapidly declining across coastal lowlands in NSW (Mulley 2024).
- There have been severe declines in Greater Glider populations in nearby Jervis Bay and the Royal National Parks.[4]
- The Southern Greater Glider has suffered severe declines in abundance and distribution across South Coast National Parks, except for Seven Mile Beach, where populations are stable and have remained unchanged, (Daly 2025)
- SMB Greater glider population is estimated to be in the vicinity of 375 at a density of 0.46 gliders per ha. This equated to 0.05 more gliders per ha than previous estimates. (Mulley 2022).

Comments:

Daly (2025) revisits base line data in South Coast National Parks and confirms that Southern Greater Glider populations are in serious decline across the Region. This may be due partly to recent wildfires but it confirms already observed trends. However, Daly (2025) and Mulley (2022) observe that SMB populations are stable or possibly growing slightly. The reasons why are unclear but it is speculated that the isolation and low wild fire history in the SMB NP may be factors in the current viability of this SMB population.

Scientists inform us that habitat alteration, including vegetation clearing and fragmentation and loss of hollow bearing trees, threatens the viability of the SMB Glider population

- The NSW Threatened Species Committee comments: The Greater Glider population in the SMB National Park area is facing a number of threats including habitat loss, fragmentation and degradation. The population has undergone loss and fragmentation of habitat over the last decade as a result of clearing associated with agriculture, golf course expansion, sand mining, sewage treatment plant construction and roadside clearing, resulting in loss of hollow-bearing trees (G. Daly in litt. March 2014, D Moore in litt. August 2016). The Greater Glider has specific requirements for tree hollows for shelter and breeding and particular tree species assemblages to provide foliage for food (Kavanagh and Lambert 1990). Hence the species is particularly vulnerable to habitat alteration (Tyndale-Biscoe and Smith 1969; Kavanagh and Wheeler 2004). Continued urban development of the Shoalhaven and Berry areas and extension of the sand mine are likely to lead to further habitat loss and

[4] NSW Threatened Species Scientific Committee, Conservation Advice, Petauroides Volans, (2016)

fragmentation of the species habitat, reducing the potential habitat patches and the possibility of Greater Gliders dispersing and colonising these patches (G. Daly in litt. March 2014)[5].

- For the Southern Greater Glider ground movements are rare and generally outside their normal behaviour, hence these species are tied to near contiguous forest. For most Australian gliding mammals, interruptions in canopy for distances greater than 55m forms a barrier to movement. (Daly 2025)

Comments:

With regard to habitat loss and fragmentation, over 80 ha of mostly blackbutt dune forest, bangalay sand forest and swamp mahogany have been historically cleared in association with sand mining at the north western end of SMB. These vegetation communities were primary glider habitat: blackbutt has been identified as the primary glider foraging and den habitat at SMB (Mulley 22); swamp mahogany is identified as a high nutrient foraging habitat (Daly pers.comm.); bangalay hollows provide glider den habitat. This ongoing habitat loss highlights a fundamental conflict that needs to be resolved. Sand mining at the northern end of SMB in Unit 3 has the potential to continue fragmentation and loss of habitat and threaten the viability of the SMB glider population.

Scientists inform us that fire and climate change threaten the viability of the SMB glider population

- NSW Threatened Species Scientific Community cites fire as contributing to substantial glider losses and declines across NSW. It is predicted that Australia will experience increases in intensity and frequency of fires into the future (BOM 2021).
- Greater gliders are cavity dependent with poor thermotolerance and high susceptibility to fragmentation and fire. --- Given the isolation of the SMB population and the predicted changes in climate, wildfires are the biggest threat to the SMB glider population. (Mulley 2022)
- Southern greater gliders have physiological and ecological characteristics that increase their extinction potential, making them vulnerable to habitat loss and fragmentation, fire and climate change (Mulley 2024)

Comments:

With regard to fire threats, the isolation and small size of SMB vegetation makes it less vulnerable to extreme wildfire. Surprisingly, the greatest glider population density is at the southern end of the Park, where fires have been most frequent. This may be because these fires have been of low intensity.

[5] The NSW Scientific Committee - Final Determination, Listing of the SMB Greater glider population (2016)

The glider habitat adjoining the Park on the western side of Crooked River Road has been fire free for a long time and may act as a refuge because it's habitat includes Littoral rainforest and groundwater dependent wetland ecosystems. The northern end of SMB has an infrequent fire history, the last fire being 1982, and this was also confined to the eastern side of Crooked River Road. So, fire may be less of a threat to glider survival at SMB than in other coastal areas and this may be a contributing factor to the stability of the SMB glider population?

Regardless, the SMB fire history informs us that habitat adjoining the NP on the western side of Crooked River Road is less vulnerable to fire, which is a reason to ensure its protection by incorporating it into the Park.

Scientists inform us that the present area of glider habitat at SMB National Park may be insufficient to support viable glider populations into the future

- Greater gliders require at least 1000 hectares of connected habitat to survive, while SMB NP is a smaller than this, adjoining habitat outside the national park exceeds the minimum size to support a viable population. Daly (2025)
- The NSW Scientific Committee states that Seven Mile Beach NP is approximately 953ha, and a considerable portion of the Park supports forest/vegetation communities that are not used by Greater Gliders[6].
- The NSW Scientific Committee comments that the Greater Glider population in the SMB area occupies no more than 1,240 ha (comprising 813 ha within Seven Mile Beach National Park and 427 ha of non-reserved land) ------ Greater Gliders have been located mostly within Coastal Sand Forest, a component of which forms part of the Bangalay Sand Forest (EEC). On the basis of available vegetation mapping, it is estimated that approximately 1,120 ha within the population boundary contains suitable habitat for Greater Gliders, 66% of which occurs within the National Park[7].

Comments:

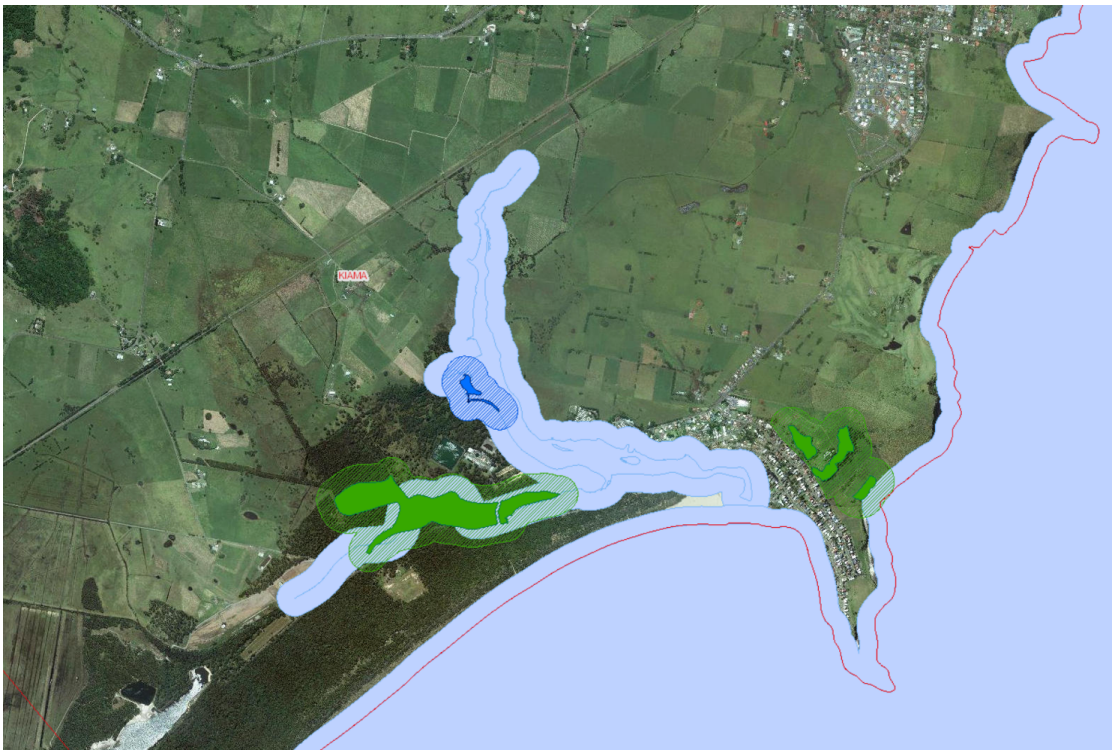
Large areas of glider habitat are located outside the National Park on the western side of Crooked River Road, along the length of the NP. This includes bangalay, blackbutt and swamp mahogany vegetation. There is evidence from road kill that greater gliders are moving outside the park to utilise this habitat. Reduction of this habitat would reduce the area of available habitat to sustain a viable SMB glider population.

[6] NSW Scientific Committee, SMB Greater glider population nomination (2014)

[7] NSW Scientific Committee - Final Determination, Listing of the SMB Greater glider population (2016)

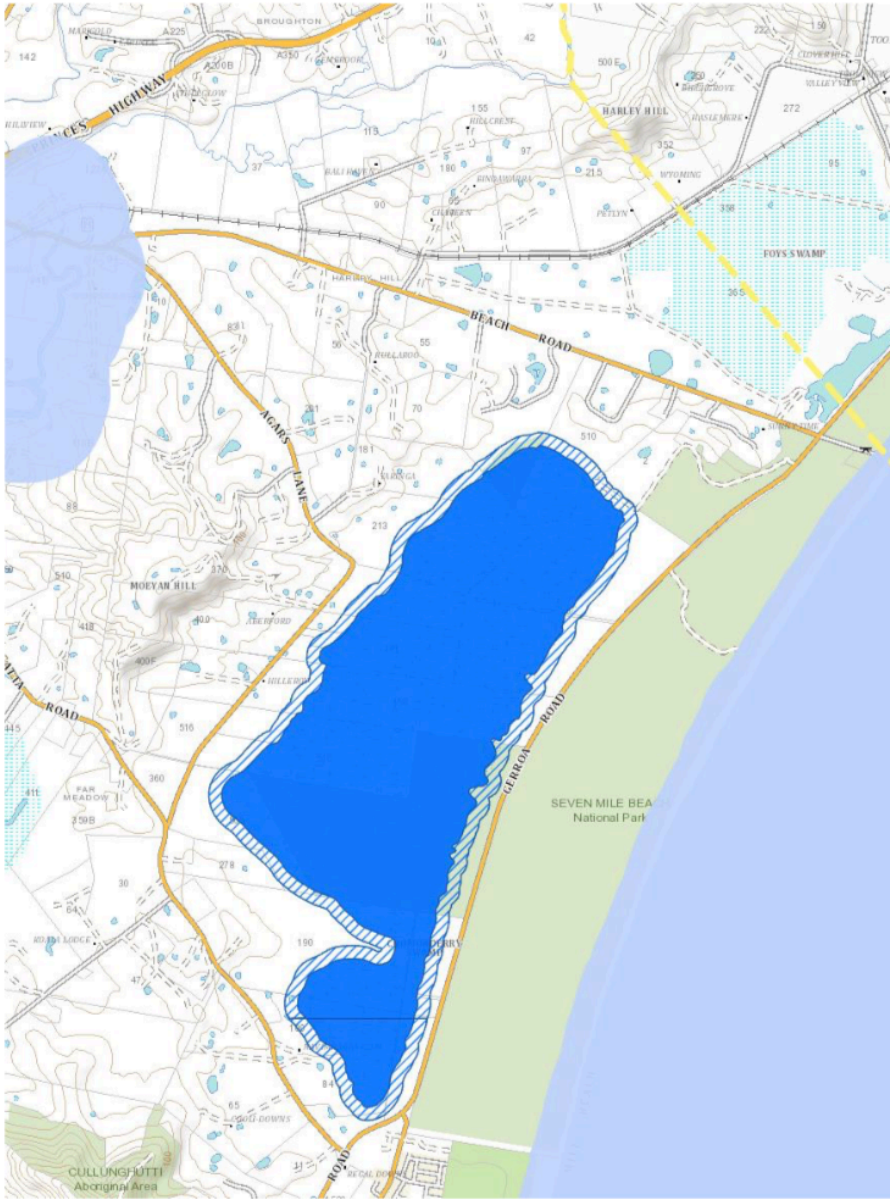
Appendix 2:

Unit 3, Map - Coastal Wetlands and Littoral rainforest areas and buffers protected under NSW Coastal Management Policy SEPP



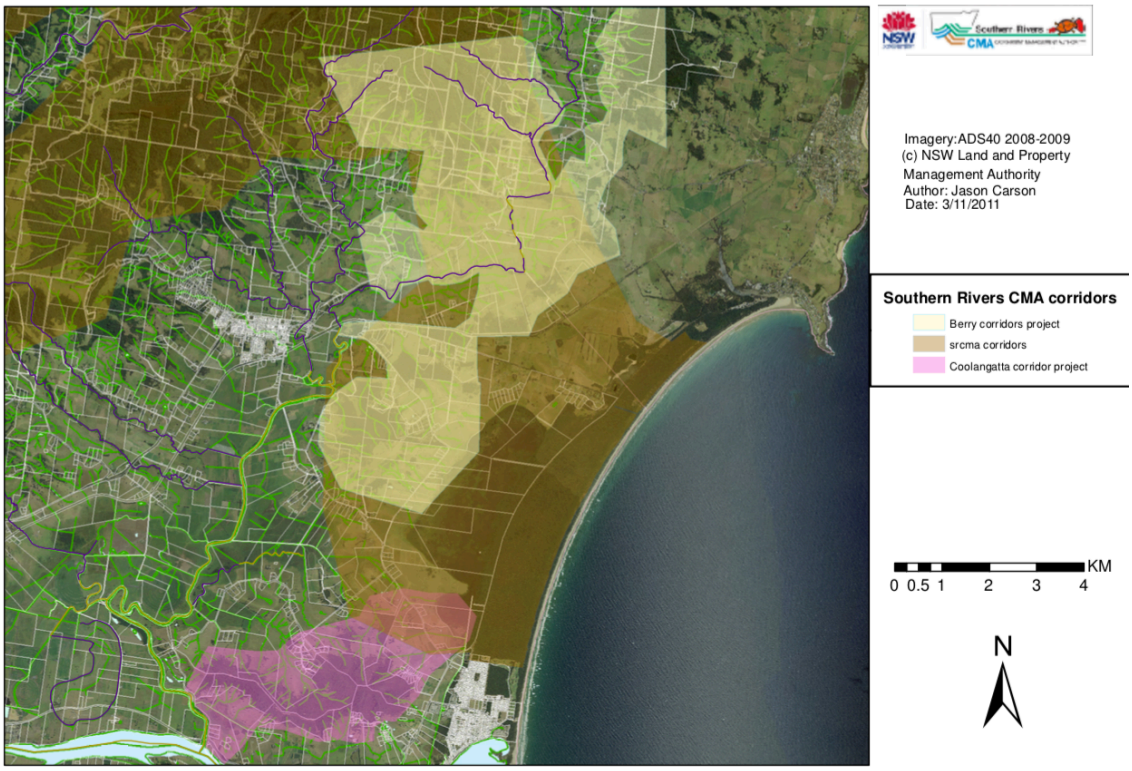
Appendix 3:

Unit 5. Map - Coomonderry Swamp - Wetlands and buffers protected under NSW Coastal Management Policy SEPP



Appendix 4:

Southern Rivers CMA corridors map identifying corridors in the South Coast Regional Conservation Plan and the Southern Rivers Catchment Action Plan



BACKGROUND INFORMATION

Gerroa Environmental Protection Society

A Rationale to Expand the Seven Mile Beach National Park

Seven Mile Beach is a beautiful natural area on the NSW South coast located between Gerroa and Shoalhaven Heads. Adjoining the beach is an area of around 2000 hectares of biologically diverse coastal vegetation. This vegetation is disconnected from the hinterland and is habitat for seven endangered ecological communities and supports at least thirteen endangered or threatened species.

The drainage pattern between the hinterland and the beach has resulted in extensive coastal freshwater wetlands. Coomonderry Swamp is an intact freshwater wetland that covers approximate 670 hectares. It is the largest coastal freshwater wetland in the southern NSW, representing 40% of this wetland type within the State (DECCW NSW 2010). It is recognised as nationally important in the Directory of Nationally Important Wetlands in Australia and listed on the register of the National Trust of Australia. It is also habitat for many endangered wetland species and supports a large Green and Golden Bell Frog population, being the most extensive wetland where this species has been discovered in NSW (Daly, 1996) and there is evidence of the Australasian Bittern breeding in the wetland.

The 930-hectare Seven Mile Beach National Park occupies about half this coastal vegetation, however most of the wetlands, all the ground water dependent ecosystems and significant areas of Greater Glider habitat lie unprotected outside the Park.

More than 80 hectares of Greater Glider habitat has been cleared for sand mining over the years and consequent vegetation fragmentation has reduced the capacity of this species to utilise much of the available habitat.

There is almost no local memory of the koala which disappeared from Seven Mile Beach before the 1950's and, unless we protect the remaining glider habitat and build on habitat corridors, Greater Gliders may also become a distant memory. A study by Mulley (2022) found that the Seven Mile Beach NP Greater Glider population has a poor viability and high extinction risk. Yet encouragingly, a recent study by Daly (2024) informs us that the Seven Mile Beach Glider population remains stable while populations across the south coast are suffering severe declines in abundance and distribution.

In managing the survival of this iconic species, we need to ensure no more habitat is lost because we know that available glider habitat within the National Park alone is insufficient to support a viable population into the future (Daly 2024).

The Gerroa Environment Protection Society has made a submission to Environment Minister to promote these environmental values. They propose to expand the Seven Mile Beach National Park to protect all adjoining Greater Glider habitats, wetlands and ground water dependent ecosystems. This submission identifies four vegetation units, prioritised according to ecological value and perceived environmental threats. Details of this submission can be found on the GEPS website: http://geps.kiamaregion.blog

References

Mulley, B. P 2022. Viability of an Endangered Population of Greater Gliders. Honors thesis. University of Wollongong.

Daly, G. 1996. Some problems in the management of the Green and Golden Bell Frog, Litoria aurea at Coomonderry Swamp on the South Coast of NSW. Australian Zoologist 1996

Daly, G. 2024. Long-term monitoring of arboreal mammals in coastal reserves on the south coast of New South Wales - Australian Zoologist 2024

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Lands proposed by GEPS to be incorporated into an expanded SMB National Park

Unit 1. Green: Represents existing SMB National Park

Unit 2. Red: Vegetation on Crown Lands adjacent to the National Park

Unit 3. Pink: Vegetation west of Crooked River Road on freehold & STP land (Crooked River end)

Unit 4. Blue: Vegetation west of Crooked River Road adjoining the sand mine on freehold land

Unit 5. Yellow: Vegetation west of Gerroa Road on freehold lands encompassing Coomonderry Swamp

Units 3 & 5 present the highest environmental values and Unit 3 faces the greatest environmental threat. For these reasons this proposal will place more emphasis on these Units.

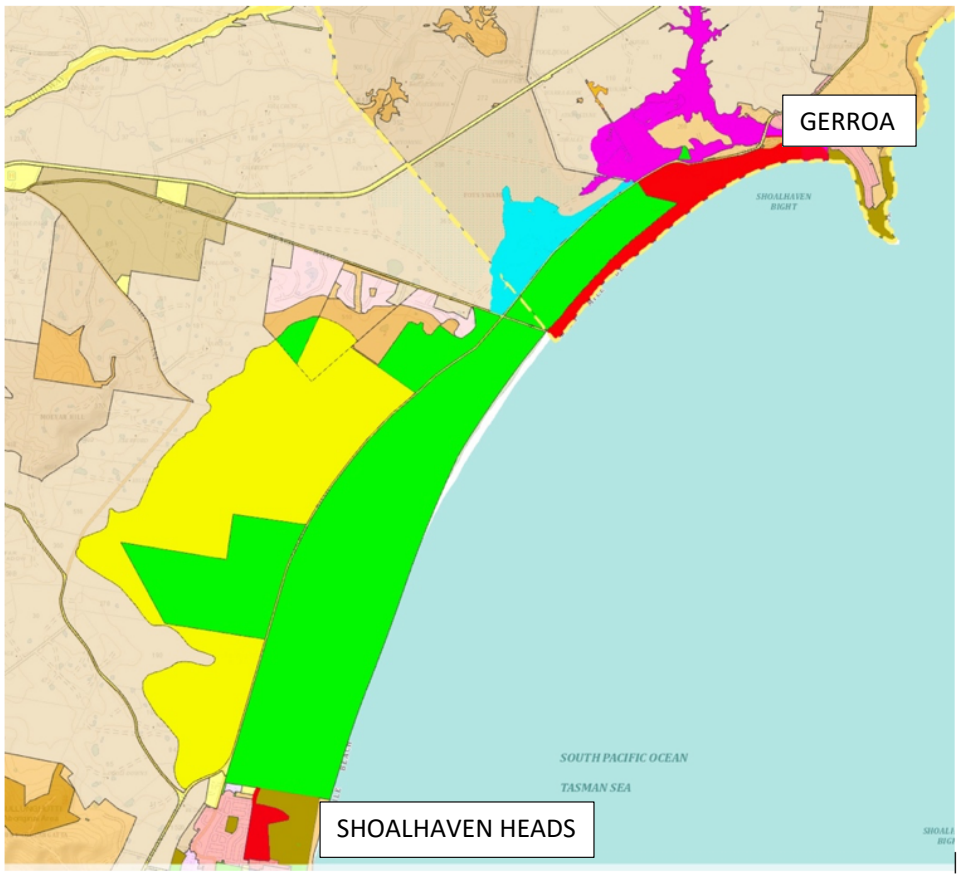

Image of Greater Glider – Reference 01

Image of Greater Glider – Reference 02 & 03

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