

Environmental Impact Statement

For a raised pool associated with existing
residential development

145 McCarrs Creek Road, Church Point

*Prepared by Ecological Consultants Australia Pty Ltd
TA Kingfisher Urban Ecology and Wetlands*

May 2024 updated July 2024



About this document



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Statement of Authorship

This study and report were undertaken by Ecological Consultants Australia for the client. The author of the report is Elaway Dalby-Ball with qualifications BSc majoring in Ecology and Botany with over 25 years' experience in this field and Brooke Thompson with qualifications BSc majoring in Conservation Biology.

Limitations Statement

Information presented in this report is based on an objective study undertaken in response to the brief provided by the client. Any opinions expressed in this report are the professional, objective opinions of the authors and are not intended to advocate any particular proposal or pre-determined position.

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Summary

Ecological Consultants Australia Pty Ltd has been engaged by the property owner, Luke Anglicas. Geraldene Dalby-Ball of ECA has been the project Ecologist for 145 McCarrs Creek Road, Church Point has inspected the site numerous times over the past 4 years and most recently May 2024.

Purpose of the latest inspection was to review the proposed pool location, construction methods proposed and related long-term management in relation to biodiversity and previous approvals. This EIS provides the findings.

Methods

- Most recent on-ground surveys were conducted in May 2024 and included the entire area of the proposed development, areas that may be impacted downslope and the access way (inclinator and stairs).
- Flora and fauna surveys were conducted as a random meander across the subject site and surrounds, whilst recording all visible flora and fauna species and their habitats.
- BioNet searches were performed to identify threatened flora, fauna and endangered populations observed during previously ecological surveys within a 10 km radius surrounding the subject site.
- The proposed development was evaluated for potential ecological impacts.
- All methods added to the original, and on-going, ones associated with the previous approval and building of the dwelling. This was one of 2 (143 and 145).

Results

- The site is mapped as Littoral Rainforest and fits the description of the EEC.
- The site is on the BV map including the proposed works (the whole house is in the BV map). Noting that a BV map update would most likely exclude the area of the house.
- Proposed works (pool and spa construction), including access and construction are within already cleared areas, or infrastructure such as the inclinator. No additional direct impacts to native vegetation need, or are planned to occur.
- The construction plan and long-term maintenance process confidently indicate that pool water will not enter the environment.
- Indirect impacts with pools include drowning of native fauna. Less likely in this example as the pool is on the balcony and only accessible from the house or flight. A thick rope or equivalent will be left partially in water and partially on the deck so any fauna can get out should it enter the pool.
- The design and location fulfil the avoid and minimise principles as the design is off the ground and small in size, within the existing dwelling foot print.
- No native vegetation will need to be removed.
- Long-term impacts are low-risk are managed via procedures.
- Vegetation on-site is already managed under a VMP – in progress and will continue to apply to this new work.

- A landscape plan has been provided showing native species planting as per the recommendations in this EIS. Ferns (such as Bracken and Rasp Fern) are the most common here and already in the local area.

Recommendations

1. The following mitigation measures are to be implemented with any approval.
2. CEMP for pre CC including the existing Construction Plan
3. Siltation fencing and vegetation protection fencing
4. Recommendations from the Arborist and Land scape reports
5. Tool-box training for all working on the project with a very high emphasis on keeping in approved development area only. Noting this was executed very well in the existing build.
6. Light levels will; be kept low with Dark Sky Friendly lighting for any outdoor lighting.
7. See the recommendation section for a detailed explanation as to how these measures improve biodiversity values.
8. The existing exposed compacted area is to be managed to not erode and mobilise soils in runoff. No additional native vegetation clearing is required.
9. Include Phytophthora Management techniques in all works

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1 Introduction

1.1 Purpose of report

Northern Beaches Council have requested an EIS, based on the site having mapped Littoral Rainforest. Developing / impacting Littoral Rainforest being one of the triggers for designated development.

(8) A development application for State significant development or designated development is to be accompanied by an environmental impact statement prepared by or on behalf of the applicant in the form prescribed by the regulations.

Proposed works are a pool/spa above ground (raised off ground and within the first floor balcony). Purpose of this report and the most recent site inspection is to review the proposed pool/spa location and surrounds, construction methods proposed and related long-term management in relation to biodiversity and previous approvals.

The proposed works have been assessed as not triggering the Biodiversity Offsets Scheme (BOS) under the NSW *Biodiversity Conservation Act 2016* (BC Act):

1. The proposed development does not trigger the area clearing threshold.
2. The proposed development does not require the clearing of native vegetation or other biodiversity impacts prescribed by clause 6.1 of the Biodiversity Regulation 2017 on land identified on the Biodiversity Values (BV) Map and therefore, the BV Map threshold is not triggered.
3. Threatened species and Endangered Ecological Communities are not significantly impacted. A 5-part test has been conducted for Littoral Rainforest.

This EIS assesses the potential impacts of the proposed development, including direct and indirect impacts on threatened species, populations, ecological communities and their habitats, according to Section 5A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

Where applicable, the 'test of significance' has been undertaken to determine whether the proposed development is likely to significantly affect threatened species or ecological communities, or their habitats.

The test of significance is set out in s. 7.3 of the BC Act.

1.2 Legislative and planning requirements

Commonwealth and State legislation and policies, and local policies apply to the assessment, planning and management of the environment within the study area.

1.2.1 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is Australia's main national environmental legislation, which provides for the protection and management of nationally and internationally important plants, animals, habitats and places. The EPBC Act refers to the living things (including plants and animals), habitats and places that need protecting as 'matters of national environmental significance' (MNES). MNES include:

- World Heritage areas

- Commonwealth Heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and listed ecological communities
- listed migratory species (protected under international agreements)
- Commonwealth marine areas
- Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)

Under the EPBC Act an action will require approval from the minister if the action has, will have, or is likely to have, a significant impact on any of the above listed MNES.

1.2.2 NSW Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000

The NSW Environmental Planning and Assessment Act 1979 (EP&A Act 1979) and the Environmental Planning and Assessment Regulation 2000 (EP&A Reg.) institutes and sets out a system for environmental planning and assessment in NSW and includes Part 4 which deals with development applications on private land and state significant development.

This proposal falls under a Part 4 development and requires development consent and associated environmental assessment.

1.2.3 NSW Biodiversity Conservation Act 2016 and Biodiversity Conservation Regulation 2017

The *Biodiversity Conservation Act 2016* (BC Act) is the key legislation that enables the conservation of biodiversity within the state of NSW. The BC Act facilitates the assessment and on-going protection of flora and fauna, including threatened species and ecological communities. The BC Act outlines assessment and offsetting requirements for activities with the potential to impact threatened species and ecological communities in NSW, and the clearing of native vegetation.

The *Biodiversity Conservation Regulation 2017* (BC Reg.) sets out the threshold level for when the Biodiversity Offsets Scheme (BOS) will be triggered. The threshold has two elements:

1. Whether the amount of native vegetation being cleared exceeds an area threshold

Minimum lot size associated with the property	Threshold for clearing, above which the Biodiversity Assessment Method and Biodiversity Offsets Scheme apply
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1,000 ha or more	2 ha or more

2. Whether the impacts occur on an area mapped on the Biodiversity Values Map published by the Environment Agency Head

The BV Map identifies land of high biodiversity value, as defined by clause 7.3(3) of the BC Reg. The BOS applies to the clearing of native vegetation and other biodiversity impacts prescribed by clause 6.1 of the BC Reg. on land identified on the BV Map.



Figure 1.1 Biodiversity values map accessed June 2024

1.2.4 Relevant SEPPs

SEPP Resilience and Hazards applies to the site. The Resilience and Hazards SEPP maps the 4 coastal management areas making up the coastal zone for the purposes of both the Coastal Management Act 2016 and the Environmental Planning and Assessment Act 1979. Of these four areas only point 1 Littoral Rainforest was triggered as can be seen in Figure 1.2.

<https://www.planning.nsw.gov.au/policy-and-legislation/coastal-and-marine-management/coastal-management/resilience-and-hazards-sepp>

The NSW coastal zone is made up of the following 4 coastal management areas.

1. coastal wetlands and **littoral rainforests area** – areas that display the characteristics of coastal wetlands or littoral rainforests previously protected by State Environmental Planning Policy (SEPP) 14 and SEPP 26.
2. coastal vulnerability area – areas subject to coastal hazards such as coastal erosion and tidal inundation.
3. coastal environment area – areas with natural coastal features such as beaches, rock platforms, coastal lakes and lagoons, and undeveloped headlands. Marine and estuarine waters are also included.
4. coastal use area – land next to coastal waters, estuaries and coastal lakes and lagoons, and where urban coastal development may be found.

The Coastal Management Act 2016 specifies management objectives for each area and these have been assessed.



Figure 1.2. Littoral Rainforest Mapping from NSW Planning Portal Spatial Viewer Access June 2024. SEPP (Resilience and Hazards) 2021 Source: <https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address>

SEPP No 19—Bushland in Urban Areas 1986 is also mapped on site in the Terrestrial Biodiversity map (same as Littoral Rainforest map above).

Figure 1.2. Littoral Rainforest

As per this Act (*italics is verbatim* and non italics is the situation of this proposal at 145 McCarrs Creek Road).

Both the coastal wetland and littoral rainforests areas have distinctive hydrological and ecological characteristics, as well as a surrounding proximity area to manage impacts of adjacent development on coastal wetlands and littoral rainforests.

Agreed

The Act specifies that the management objectives for this area are:

- *to protect coastal wetlands and littoral rainforests in their natural state, including their biological diversity and ecosystem integrity*

The proposed pool/spa will be attached to an existing dwelling and suspended off the ground (in first floor balcony with support poles to the Earth. Support poles are not impacted vegetation nor tree roots. Proposed works, through design, plans for implementation and on-going use have been done to not harm the littoral rainforests in their natural state, including their biological diversity and ecosystem integrity. No native species will be lost and on-going management will keep pool water out of the natural environment.

- *to promote the rehabilitation and restoration of degraded coastal wetlands and littoral rainforests*

The site had previous building approval and a dwelling is present. While the site is built on the previous approval included high level requirements for on-going bush regeneration and these have been occurring to the extent that there are very few exotic species. The non-built upon areas (most of the site) are in high quality condition due to on-going removal of weeds including Lantana and Private. Works are part of a VMP and being implemented by the owner with guidance from the project ecologist.

- *to improve the resilience of coastal wetlands and littoral rainforests to the impacts of climate change, including opportunities for migration*

The rainforest here is not adjoining the sea – no direct sea-level rise impacts. Increased severity of weather events could impact the rainforest – particularly increased hot dry days. Having access to water (pool) could be part of risk management if there was ever an extreme condition of potential fire. A water source such as this could result in saving the rainforest as fire is known to heavily impact rainforest. In this case likely converting it to a Eucalypt and She-oak forest area if it burnt.

- *to support the social and cultural values of coastal wetlands and littoral rainforest*

The land owner has a very high regard for the native vegetation and native fauna and a detailed VMP with proven application.

- *to promote the objectives of State policies and programs for wetlands or littoral rainforest management.*

Promotion of objectives of relevant State Policies are fulfilled by having the pool/spa within the existing footprint area and constructed and operated without impacting the area of native vegetation nor their processes that contribute to natural resilience and sustainability. The Avoid, minimise, mitigate steps have been followed and this location Avoids all native vegetation and minimises impact through construction and operations requirements (as per the construction plan).

Managing development in the coastal wetlands and littoral rainforests area.

Development in coastal wetlands and littoral rainforests, regardless of land zoning, has been controlled since the 1980s. The Coastal Management SEPP largely carries forward pre-existing controls from the now repealed SEPP 14 (Coastal Wetlands) and SEPP 26 (Littoral Rainforests).

Harming or removing native or marine vegetation, draining the land, constructing a levee, environmental protection works and all other development within a mapped coastal wetlands and littoral rainforests area requires consent, and is generally designated development, meaning that an environmental impact statement must be prepared to support any development application. Neither exempt or complying development is permitted on land identified as coastal wetland or littoral rainforest.

As there is no direct work impacting Littoral Rainforest the DA can be considered for approval.

This Environmental Impact Statement has been provided with information on how the development application has worked to avoid and minimise impacts, short and long-term.

Development for the purpose of environment protection works may be carried out by or on behalf of a public authority without development consent, if the development is identified in a certified coastal management program, or a plan of management under the Local Government Act 1993 or a plan of management approved and in force under the Crown Lands Act 1989.

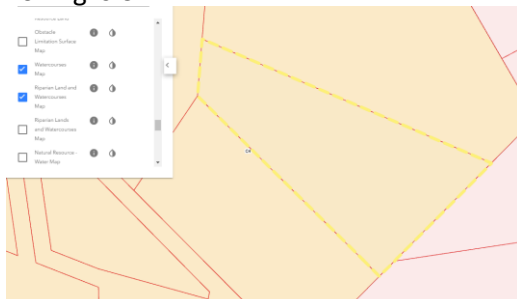
NA

Development within the mapped proximity area is not designated development, but any development requiring consent cannot be approved by a consent authority unless they satisfied that the development will not significantly impact on the biophysical, hydrological or ecological integrity of the adjacent coastal wetland or littoral rainforest, or the quantity and quality of surface and ground water flows to and from the adjacent coastal wetland or littoral rainforest.

As this development does not directly impact, and construction and management will ensure there are no direct impacts, this proposal will not significantly impact on the biophysical, hydrological or ecological integrity of the adjacent coastal wetland or littoral rainforest, or the quantity and quality of surface and ground water flows to and from the adjacent coastal wetland or littoral rainforest

1.2.5 Pittwater (Northern Beaches) LEP Zoning

Zoning is C4

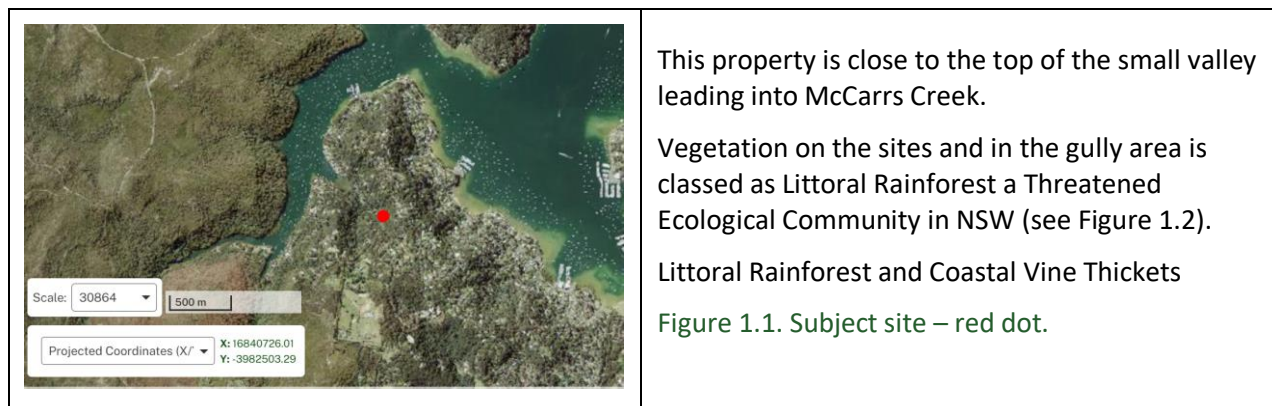


1.3 Information sources

Databases reviewed in the assessment:

- BioNet Vegetation Classification, BioNet Threatened Biodiversity Data Collection
- NSW BioNet Atlas, Directory of Important Wetlands in Australia
- Biodiversity Values Map and Threshold tool, Protected Matters Search Tool, NSW Planning Portal Spatial Viewer, SEED, eSPADE v2.2, Site description

The site that is the subject of this report is located at 145 McCarrs Creek Road Church Point NSW 2105, Northern Beaches of Sydney. An E2 living area close to the National Park. A residential area with high canopy cover.

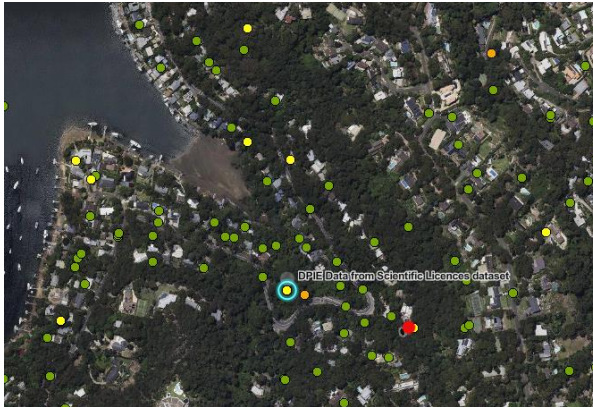
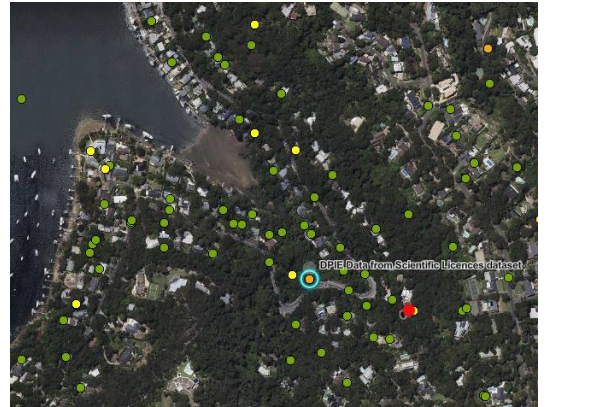

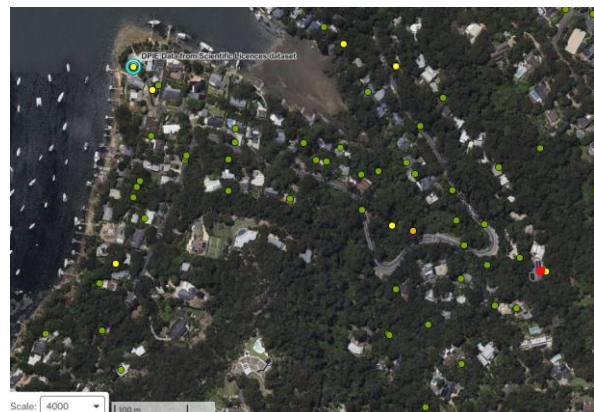
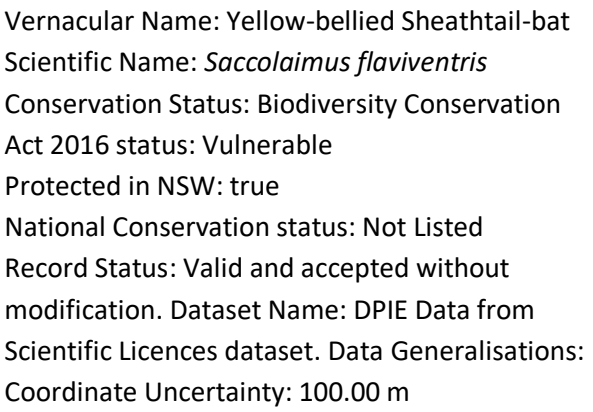
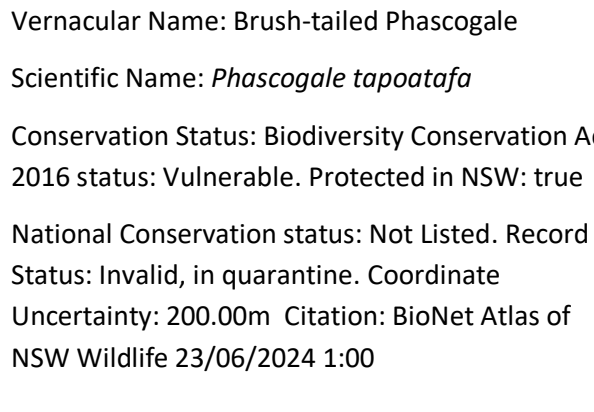


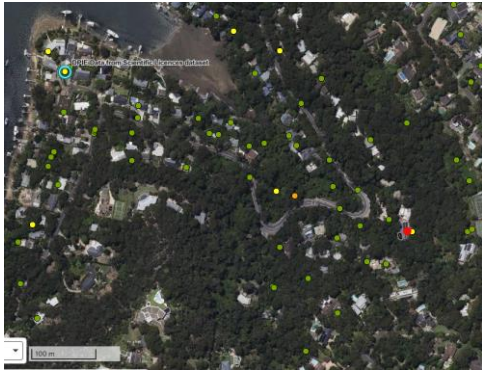

The site is mapped as *Lilly Pilly - Cabbage Tree Palm littoral rainforest on escarpment slopes and gullies of the Sydney basin* on the Vegetation Map - Sydney Metro Area V3.1 2016 PCT 1833. A vegetation type dominated by Lili Pili, Cheese Tree and Pittosporum. (*Acmeana smithii*, *Glychidion.ferdinandii* and *Pittosporum undulatum*). Equivelent to Threatened Ecological Community *Littoral Rainforest*. Though not meeting the characterises though of the EPBC Act listed *Littoral Rainforest and Coastal Vine Thickets*



Figure 1.2 Vegetation Map - Sydney Metro Area V3.1 2016 E - VIS 4489. Source Seed accessed June 2024

A diversity of Threatened Species, including microbats, Owls, GHFF, Phascogales and plants including Magenta Lily Pili, are in the area. Extracts of locations of those closest have been included below.

	
<p>Vernacular Name: Eastern Coastal Free-tailed Bat Scientific Name: <i>Micronomus norfolkensis</i> Individual Count: 1.00. Conservation Status: Biodiversity Conservation Act 2016 status: Vulnerable. Protected in NSW: true. National Conservation status: Not Listed Dataset Name: DPIE Data from Scientific Licences dataset. Data Generalisations: Coordinate Uncertainty: 10.00 m</p> 	<p>Vernacular Name: Magenta Lilly Pilly Scientific Name: <i>Syzygium paniculatum</i> Individual Count: 6.00 Conservation Status: Biodiversity Conservation Act 2016 status: Endangered Protected in NSW: false National Conservation status: Vulnerable Record Status: Valid and accepted without modification. Dataset Name: DPIE Data from Scientific Licences dataset. Data Generalisations: Coordinate Uncertainty: 100.00 m</p> 
<p>Vernacular Name: Yellow-bellied Sheath-tail-bat Scientific Name: <i>Saccolaimus flaviventris</i> Conservation Status: Biodiversity Conservation Act 2016 status: Vulnerable Protected in NSW: true National Conservation status: Not Listed Record Status: Valid and accepted without modification. Dataset Name: DPIE Data from Scientific Licences dataset. Data Generalisations: Coordinate Uncertainty: 100.00 m</p> 	<p>Vernacular Name: Brush-tailed Phascogale Scientific Name: <i>Phascogale tapoatafa</i> Conservation Status: Biodiversity Conservation Act 2016 status: Vulnerable. Protected in NSW: true National Conservation status: Not Listed. Record Status: Invalid, in quarantine. Coordinate Uncertainty: 200.00m Citation: BioNet Atlas of NSW Wildlife 23/06/2024 1:00</p> 

	
<p>Vernacular Name: Grey-headed Flying-fox</p> <p>Scientific Name: <i>Pteropus poliocephalus</i></p> <p>Conservation Status: Biodiversity Conservation Act 2016 status: Vulnerable. Protected in NSW: true. National Conservation status: Vulnerable.</p> <p>Record Status: Valid and accepted without modification. Dataset Name: DPIE Data from Scientific Licences dataset. Data Generalisations: Coordinate Uncertainty: 100.00 m</p>	<p>Vernacular Name: Greater Broad-nosed Bat</p> <p>Scientific Name: <i>Scoteanax rueppellii</i></p> <p>Conservation Status: Biodiversity Conservation Act 2016 status: Vulnerable. Protected in NSW: true. National Conservation status: Not Listed</p> <p>Dataset Name: DPIE Data from Scientific Licences dataset. Coordinate Uncertainty: 100.00m</p>

1.4 Proposed development

The proposed pool area is raised off the ground and not in direct impact with any vegetation (see design drawings). The footings/ supports are not in an area of native vegetation.

Existing Condition and location

The proposed pool area is disturbed and gently sloping (see image below). Native vegetation surrounds the proposed build area and will be protected throughout works and maintained after works. The proposed works zone is in a high impact area (immediately adjoining the dwelling). The pool location will see the outer edge of the pool in-line with the existing deck to the east.

Pool construction will be raised off the ground, as is the house. There is no cutting (or fill) required. Large trees are downslope and will not have a change in hydrology, nutrients, erosion potential or root impacts due to the pool (see separate design report).



Area of footings for the proposed raised pool. Footings similar to those existing LHS photo. Area of original disturbance footprint from building the dwelling.



View from under existing deck towards the area of proposed pool. NB this area is within the proposed original impact footprint in the original DA.

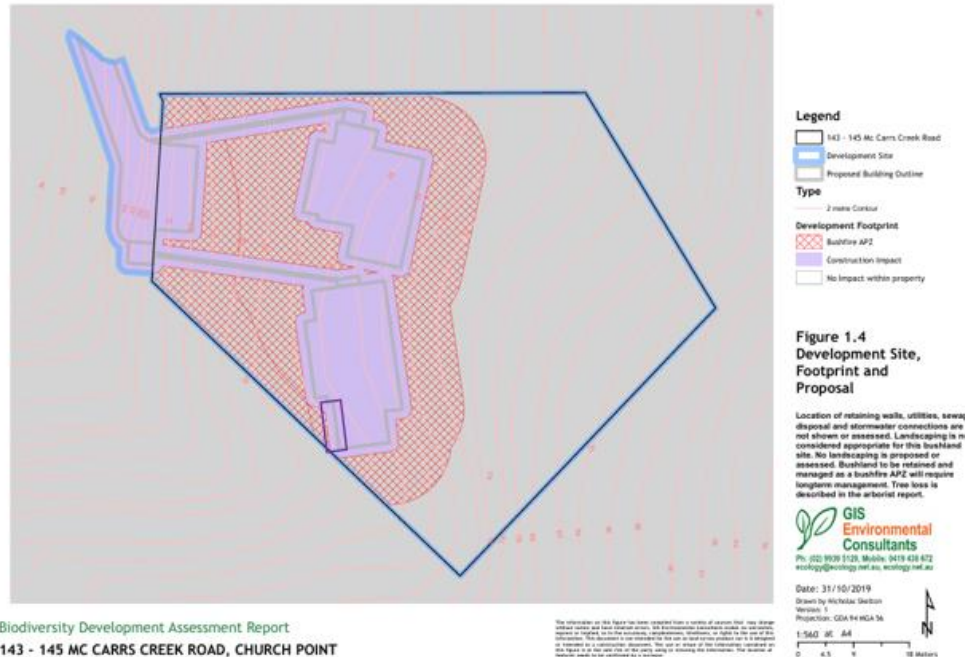


Looking up at house. Proposed pool to be to the right hand side (and in line with) of the existing deck.



Area under and right up to the pool will be revegetated with local ferns as can be seen in this image. Successful fern regeneration is in place post construction completion. The area to the right in this image will not be impacted. Works will be on the left hand side of image.

The proposed pool area is within the original footprint area of works as per the approved Biodiversity Development Assessment Report (GIS Environmental 31/10/19) see extract below (Figure 1.1), and Biodiversity Management Plan (GIS Environmental 3/3/20). See Figure 1.2 for precise location of proposed pool/spa.



Biodiversity Development Assessment Report
143 - 145 MC CARRS CREEK ROAD, CHURCH POINT

Figure 1.1 extract from Biodiversity Development Assessment Report (GIS Environmental 31/10/19) with addition of purple rectangle – general location of pool/spa.

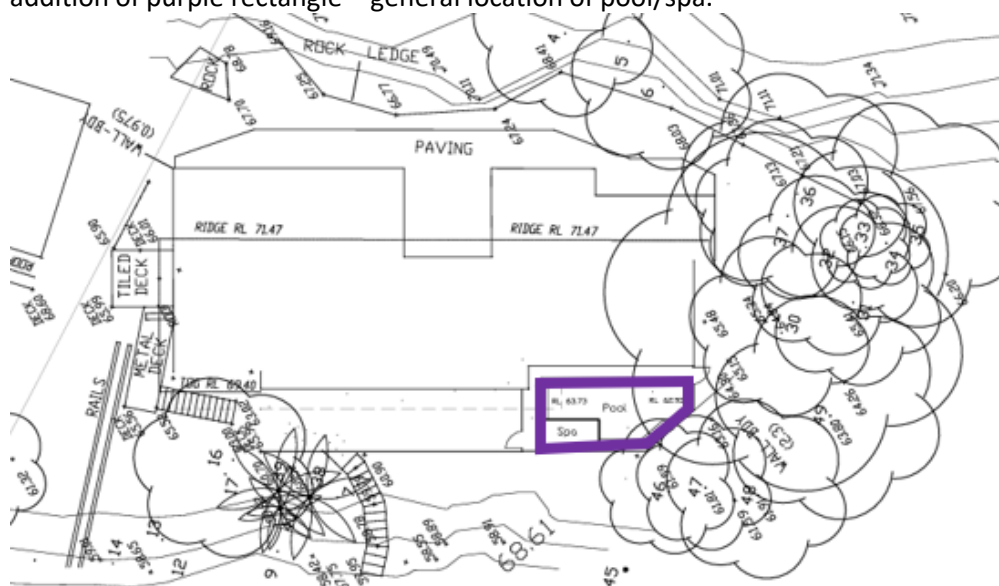
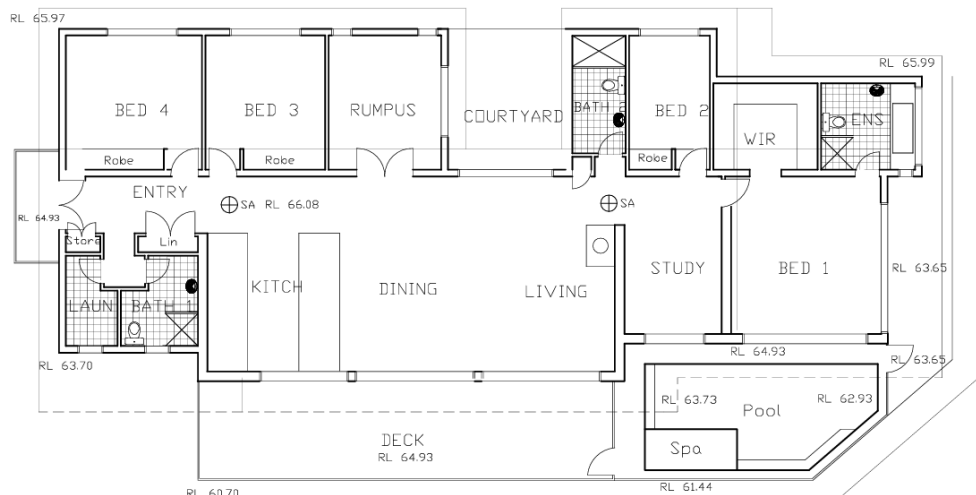


Figure 1.2 (above and below) precise location of proposed pool/spa relative to the existing build



The pool will be 1 to 2 m deep and not impacting the ground area (no cut/fill).

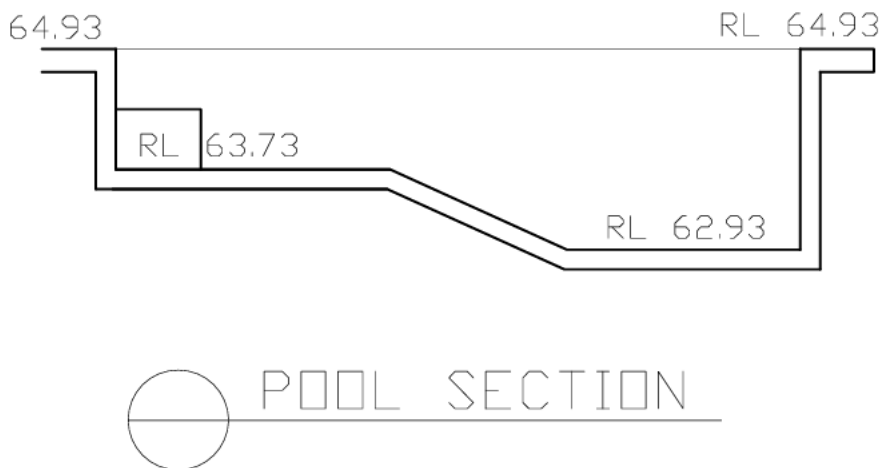


Figure 1.3 proposed pool depth (1-2m).

1.5 Construction Methods

Construction Method Plan is summarised in Figure 1.4 (for detail see high resolution copy submitted with the DA).

The Construction Method Plan (February 2024), the Environmental Management System EMS (May 2024) specifically written for the proposed pool works and bushfire management plan for the project have been reviewed. Screenshots from plans are included later in this report. The EMS has adequate coverage of managing potential impacts on water, air, environmental qualities. All are relevant to the site and include silt/wash-water control at source and back-up plans for managing on-site and off-site. This includes not working immediately before or in high rain fall events.

In terms of construction the pool will be above ground and the only excavation is for piers. Piers are away from the root zones of major trees/palms and upslope of them. Concrete will be pumped from the driveway and the existing stairs and inclinators used for access.

1.6 During Works

As the site ecologist we will continue to monitor and advise on works, before, during and after to ensure minimal impact and actions to maximise ecological outcomes including on-going weed management of any disturbed area.

Pervious survey's of people on site indicated that all were aware of the environmental values and works to be kept in work zones with no impact into Environmental areas. Environmental areas as defined in the VMP and any other areas not in immediate works areas.

During construction of the pool the original conditions will continue to be implemented including:

Condition 33 - Compliance with Ecologist's Recommendations – During Construction

All biodiversity-related measures are to be implemented during construction in accordance with the approved Biodiversity Development Assessment Report (GIS Environmental 31/10/19), relevant Biodiversity Management Plan (GIS Environmental 3/3/20), and these conditions of consent. Compliance with these measures is to be certified by the Project Ecologist in writing to the Principal Certifying Authority prior to issue of the Occupation Certificate.

Condition 52 – Weed Removal and Management

No weeds are to be imported on to the site. All invasive and priority weeds on the site are to be removed and managed continuously, in accordance with the Biosecurity Act 2015. Details demonstrating the removal and management of weeds are to be prepared by the project ecologist in writing and submitted to the Principal Certifying Authority prior to occupation certificate.

Condition 54 – Compliance with Ecologist's Recommendations – Post Construction

All biodiversity-related measures are to be implemented at the appropriate stage of development in accordance with the approved Biodiversity Development Assessment Report (GIS Environmental 31/10/19), relevant Biodiversity Management Plan (GIS Environmental 3/3/20) and these conditions of consent. Satisfactory establishment/initiation of post-construction measures is to be certified by the Project Ecologist.



Exclusion fencing with signage is in place was effective for all previous building works and will be used again for the pool. Sediment fencing will also be installed along the lower side of the pool and all disturbed areas re-habilitated in accordance with the existing approved BMP.



Photo of inclinator showing great natural revegetation along the sides. Low level weed management is on-going along here to ensure no weed incursions into the bushland area.

Pool materials can be moved onto site using the inclinator and pumping (as was done for the house). So construction can occur with minimal on-ground impact.

2 Impact assessment

This section outlines the anticipated direct and indirect impacts of the proposal on flora and fauna.

2.1 Direct impacts

No direct impact on native vegetation or fauna habitat.

2.2 Indirect impacts

The proposal may result in a range of minor indirect impacts affecting species and communities. Table 5.1 provides a summary of potential indirect impacts to biodiversity values on the subject site.

Table 2.1. Indirect impacts.

Indirect impact	Duration	Consequence on biodiversity values
Noise	Short term during construction and long-term during operation	<p>Short-term:</p> <ul style="list-style-type: none"> All works to be undertaken during standard construction hours, that is: <ul style="list-style-type: none"> Mon to Fri, 7am to 6pm; Saturday 8am to 1pm; and No work on Sundays or public holidays. <p>Construction works will be temporary in nature and the risk of consequence is considered low.</p> <p>Long-term:</p> <ul style="list-style-type: none"> The proposal will not result in a significant increase in noise levels above that which already exists; Resident fauna within the vicinity of the proposed development would already be accustomed to residential noise. <p>The consequence of increased noise impacts is considered a low risk.</p>
Light spill	Long-term during operation	<p>The proposal will not significant result in an increase in light levels above that already existing.</p> <p>Dark Sky Friendly lighting will be used for any outdoor lighting.</p> <p>The consequence of increased light impacts is considered a low risk.</p> <p>Dark Sky lighting will focus light on areas where needed whilst reducing light spill into surrounding environmentally sensitive areas. This form of light provides the required 'safe lighting' of areas whilst greatly reducing upward escaping light.</p>

Indirect impact	Duration	Consequence on biodiversity values
Transport of weeds and pathogens to and from the subject land	Construction and operation	Construction activities have the potential to introduce and spread weeds and pathogens on machinery, equipment and clothing (e.g., boots). Include Phytophthora mgt techniques in all works. No pool wash water to be released to the environment.
Increased erosion and sedimentation	Short term during construction	No vegetation clearing is required. The area exposed compacted area is to be managed to not erode and mobilise soils in runoff.

3 Recommendations

Recommendations

6. The following mitigation measures are to be implemented with any approval.
7. CEMP for pre CC including the existing Construction Plan
8. Siltation fencing and vegetation protection fencing
9. Recommendations from the Arborist and Land scape reports
10. Tool-box training for all working on the project with a very high emphasis on keeping in approved development area only. Noting this was executed very well in the existing build.
9. Light levels will; be kept low with Dark Sky Friendly lighting for any outdoor lighting.
 - Australasian Dark Sky Alliance (ADSA) approved lighting
<https://www.australasiandarkskyalliance.org/adsa-approved>
 - Urban Nigh Sky Place – exhibition on Palm Beach as an UNSP
<https://yoursay.northernbeaches.nsw.gov.au/urban-night-sky-place>
 - NSW Department of Planning, Industry and Environment
<https://www.planning.nsw.gov.au/About-Us/Our-Programs/Dark-Sky>
10. See the recommendation section for a detailed explanation as to how these measures improve biodiversity values.
11. The existing exposed compacted area is to be managed to not erode and mobilise soils in runoff. No additional native vegetation clearing is required.
10. Include Phytophthora mgt techniques in all works

3.1 Appendix I– Test of Significance

3.1.1 Littoral Rainforest EEC (NSW)

As per the determination: *Littoral Rainforest in the NSW North Coast, Sydney Basin and South East Corner Bioregions is generally a closed forest, the structure and composition of which is strongly influenced by proximity to the ocean. The plant species in this ecological community are predominantly rainforest species with evergreen mesic or coriaceous leaves. Several species have compound leaves, and vines may be a major component of the canopy. These features differentiate littoral rainforest from sclerophyll forest or scrub, but while the canopy is dominated by rainforest species, scattered emergent individuals of sclerophyll species, such as Angophora costata, Banksia integrifolia, Eucalyptus botryoides and E. tereticornis occur in many stands. Littoral Rainforest in NSW is found at locations along the entire NSW Coast in the NSW North Coast Bioregion, Sydney Basin Bioregion and South East Corner Bioregion.*

Littoral Rainforest occurs in numerous, small stands and in total comprises less than 1% of the total area of rainforest in NSW. The largest known stand occurs in Iluka Nature Reserve, which is approximately 136 ha. Many, but not all, stands of Littoral Rainforest have been included in mapping for State Environmental Planning Policy 26 Littoral Rainforest (now Resilience SEPP), but degradation of the ecological community is still occurring.

7. Weed species that threaten the integrity of particular stands include Ambrosia artemisifolia, Anredera cordifolia, Arecastrum romanzoffianum, Asparagus spp., Cardiospermum grandiflorum, Chrysanthemoides monilifera, Coprosma repens, Ehrharta spp., Gloriosa superba, Ipomoea spp; Impatiens walleriana, Lantana camara, Macfadyena unguis-cati, Rivina humilis, Pennisetum clandestinum, Schefflera actinophylla, Senna septemtrionalis, Solanum mauritianum Thunbergia alata and Tradescantia fluminensis.

Other threats include loss of canopy integrity arising from salt and wind damage as a result of clearing or damage to stand margins; clearing of understorey (including for firewood collection); grazing and physical disturbance of understorey including by feral deer; inappropriate collection of a range of plant species (including, but not restricted to, epiphytes); fire, particularly fire incursion along boundaries: visitor disturbance including soil compaction, soil disturbance, erosion from foot, cycle, trail bike and 4 wheel drive tracks, introduction of pathogens, and disturbance from creation of new planned and unplanned tracks; increased visitation and resulting increased demand for and use of, visitor facilities such as walking tracks, viewing platforms, toilet blocks, picnic areas etc; dumping of garden waste causing weed infestation; car and other rubbish dumping. Loss of fauna due to predation by feral animals, road kill, loss of habitat and feeding resources, disturbance from human visitation (faunal elements are essential to the ecological functioning of littoral rainforest and loss, or reduction, in pollinators and seed dispersal agents will adversely affect long term vegetation health); fragmentation resulting in loss of connectivity and possibly reduced genetic exchange between populations.

<https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/nsw-threatened-species-scientific-committee/determinations/final-determinations/2004-2007/littoral-rainforest-north-coast-sydney-south-east-corner-endangered-ecological-community-listing>

- a) *In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,*

Not a threatened species

In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

No – no direct impact or significance indirect impact.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

No

In relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

No Habitat being removed.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

The pool/spa are being built in the existing disturbance zone of the dwelling – no additional fragmentation.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

None being removed.

b) Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No

c) Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

No clearing of native vegetation occurring no other KTP.

3.2 Appendix II – Bushland Hygiene Protocols for Phytophthora

- Always assume that the area you are about to work in is free of the disease and therefore needs to be protected against infection.
- Always assume that the activity you are about to undertake has the potential to introduce the disease.
- Arrive at site with clean shoes, i.e.: no dirt encrusted on them.
- If you arrive with shoes that are encrusted with dirt, they will have to be completely soaked in metho or disinfectant and allow a few minutes to completely soak in. NEVER scrape untreated dirt off your shoes onto the ground.
- Before you move onto the site spray the bottom of your shoes with 70 % metho. Bleach solution (1% strength) or household/commercial disinfectant (as per label) are also suitable.
- Check all tools and equipment that comes in contact with soil are clean before entering the area (they should have been cleaned on site at the end of the previous work session). If there is any dirt on them, spray them with 70% metho.
- Clean all tools at the end of each work session while still on site ensuring this is done away from drainage lines and adjacent work areas. Knock or brush off encrusted dirt and completely spray with 70 % metho. Replace in storage/transport containers.
- Preferably compost all weed material on site.
- Never drag vegetation with exposed roots and soil through bushland.
- When removing weeds from site, remove as much soil as possible from them in the immediate work area and carefully place vegetative material into plastic bags.
- Try not to get the bag itself dirty; don't put it on/in a muddy area.
- Always work from the lower part of a slope to the upper part.
- Always work in areas known to be free of the pathogen before working in infected areas.
- Minimise activities wherever possible when the soil is very wet.
- Vehicles should not be driven off track or into reserves (unless vehicle decontamination is carried out before and after entering a single work site)
- Only accredited supplies of plants/mulch to be used.

Kit should contain: 1 bucket, 1 scrubbing brush, 1 spray bottle (metho 70% solution), 1 bottle tap water, 1 bottle methylated spirits.

Facts about Phytophthora


Phytophthora cinnamomi (Phytophthora) is a microscopic, soil borne, water-mould that has been implicated in the death of remnant trees and other plants in Australian bushland.

Symptoms including Dieback

Often dieback is the result of a combination of factors such as changed drainage patterns and nutrient loads (e.g.: increased stormwater run-off) or changed soil conditions (e.g.: dumped fill or excavation of/near root zone). Plants that are stressed are more vulnerable to Phytophthora. Initial symptoms of Phytophthora include wilting, yellowing and retention of dried foliage, loss of canopy and dieback. Infected roots blacken and rot and are therefore unable to take-up water and nutrients. Severely infected plants will eventually die. Symptoms can be more obvious in summer when plants may be stressed by drought.

Statement of Authorship

This EIS is by Elaway (Geraldene Dalby- Ball) BSc Hons I. With over 25 years' experience in ecological matters and is familiar with the study area and has inspected the site.

Name	Signature	Date
Geraldene Dalby-Ball		19 th May 2024 and July 12 th 2024

Over 25 years experience in managing bushland in Sydney and was the manager of Environment and Education at Northern Beaches Council.

Qualifications	Experience
<ul style="list-style-type: none"> • BSc (Ecology) Hons I (Sydney University) • Over 20 yrs. Experience in Ecological Consulting <p>Positions</p> <ul style="list-style-type: none"> • Board Member of Ecological Consulting Association of NSW • Technical Advisor Sydney Olympic Park – WET Wetlands Education and Training <p>Accreditations / Licenses Accredited assessor number BAAS19008 (in renewal August 2024)</p>	<p>Geraldene's key areas are in urban ecology, riparian, waterway, and salt- and fresh-water wetland rehabilitation. She has over 15 years wetland experience and has presented papers on the topic at the NSW Coastal Conference, Sydney LLS and Hawkesbury Nepean forums.</p> <p>Having over 8 years local government experience as Manager of Environment and Education for Northern Beaches Council, Geraldene is skilled in experimental design and analysis; research; teaching (Sydney University and TAFE), environmental legal work, negotiating and strategic planning. She has also contributed to several community and professional workshops on topics of ecological importance.</p> <p>Geraldene is a joint author on Burnum Burnum's popular book, <i>Wildthings</i>, published by Sainty and Associates and author of the chapter on engaging community in rehabilitation projects in Estuary Book. During her early professional years, she worked with wetland expert Geoff Sainty of Sainty and Associates for over 5 years.</p> <p>Ecologist and key team member in award winning projects including: Multi-award winning (nationally and internationally) Sydney Park Water-Reuse Scheme.</p> <p>Excellence in Integrated Stormwater Design – Wangal Park: Where stormwater creates liveability – a joint project of Burwood Council, Alluvium Consulting, McGregor-Coxall, Dragonfly Environmental, Glascott Landscape & Civil and Neverstop Water.</p> <p>Sydney Ports Corporation's Port Botany Expansion project won the Australian Construction Achievement Award. The award included the major environmental rehabilitation works and the successful creation of the largest planted saltmarsh known globally. Geraldene, with the Dragonfly team, has been a key person in the rehabilitation and expansion of Penrhyn Estuary to create a secure estuarine environment</p>