Received 26.8.08

Department of Lands
Land Administration & Management
Property & Spatial Information

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Eco Logical Australia
84 Albany Street
COFFS HARBOUR NSW 2450

Date 12 August 2008

Our Ref: DOC08/26458
Your ref: 0225-0001

Attention: Simon Williams
Senior Consultant
Environmental Planning and Assessment

Dear Simon,

Re: Killick Creek Estuary Management Plan – Strategy H

I refer to your letter of 29 July 2008 to assess the impacts of implementing the proposed strategy and preparation of environmental impact assessment.

In general terms as a stakeholder and member of the Killick Creek Estuary Management Committee, the Department has no further comment on the proposed dredging in accord with Strategy H. However, with regard to the potential dredge spoil sites, the Department requests an additional site be included in your assessment as shown by purple hatching on the attached *Figure 2.*

The subject area forms part of reserve R63725 for Public Recreation (Lot 7011 in DP 1055574) managed by Kempsey Shire Council as the *Crescent Head Caravan Park and Recreation Reserve (R63725) Trust*. It is a disturbed area of about 2 hectares identified for tourism/recreation development in the Department's *Maria River Regional Crown Reserve Plan of Management* adopted on 27 June 2008 after review of community and stakeholder consultation in accord with the requirements of the Crown Lands Act 1989 and Regulations.

Should you need to discuss the matter further, I may be contacted directly on tel. 6591 3504 during normal business hours

Yours sincerely

R.W. Birse

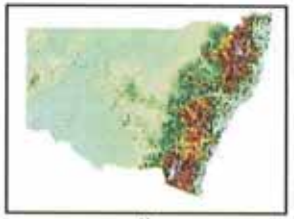
Bob Birse
Team Leader
Land Management
Crown Lands Division, Taree

Figure 2

MARIA RIVER REGIONAL CROWN RESERVE

Killick Waters Precinct Shown by Red Edge

Area for Tourism/Recreation Development subject to further invesigation shown by Purple Hatch



N

0 40 80 160 240 320

Metres

Projection: Transverse Mercator
Zone: 56 Datum: GDA94
Prepared By: Tony Hasselbyrne/

Department of Lands

Received 2/9/08

NSW MARITIME AUTHORITY

28th August 2008

Mr Simon Williams
Senior Consultant
Environmental Planning and Assessment
Eco Logical Australia
84 Albany Street
COFFS HARBOUR 2450

RE: Sediment Shoal Removal Killick Creek

Dear Simon

I refer to your letter of 29 July 2008 regarding the environmental impact assessment for the relocation of a sand shoal in the Killick Creek Estuary in accordance with Strategy "H"of the Kiliick Creek Estuary Management Plan.

NSW Maritime wishes to advise that it has no objection to maintenance dredging of the waterway under SEPP 35 policy.

NSW Maritime is cognisant of the dynamics of the creek which can frequently change due to seasonal conditions, and navigation by all types of vessels is sometimes hampered. Dredging works will hopefully enhance navigation within the Creek and facilitate improved access from the existing boat ramp to offshore waters. Upstream from the boat ramp is very rarely navigated by powered craft and the area is popular with passive craft and swimmers who pursue other water related activities.

As such at the completion of dredging works NSW Maritime may re-assess the vessel usage patterns within the Creek and may consider restricting powered craft upstream from the Killick Creek boat ramp to the western foreshore extremity of Crescent Head Caravan Park. Any boating or navigational issues arising after the proposed works will be referred to the Kempsey Shire Estuary Management Committee before NSW Maritime enacts any changes.

Yours faithfully

Rod McDonagh
Boating Officer
South West Rocks

NSW MARITIME
Shop 1, 1 Livingstone Street South West Rocks NSW 2431
Locked Bag 156 South West Rocks NSW 2431
T 02 6566 7204 F 02 6566 7208 www.maritime.nsw.gov.au

Northern Rivers CMA CATCHMENT MANAGEMENT AUTHORITY

17 November 2008

Sarah Wain
Environmental Planner
Eco Logical Australia Pty Ltd
PO Box J433
Coffs Harbour Jetty NSW 2450

Dear Sarah

Killick Creek Estuary Management Plan dredging environmental impact assessment

Thank you for the opportunity to comment on the environmental impact assessment of the implementation of Strategy H of the Killick Creek Estuary Management Plan (EMP), which proposes dredging near the entrance of the Creek.

The Northern Rivers Catchment Management Authority (NRCMA) notes that the proposed works form part of the Killick Creek EMP, developed in accordance with the NSW Government's Estuary Management Program in consultation with relevant stakeholders. The Northern Rivers Catchment Action Plan C2 Coastal Management Target supports the completion of management plans for the region's estuaries and coastal lakes, and implementation of priority actions that contribute to improved natural resource condition.

In considering such works, the NRCMA's primary concern is that natural resource condition is maintained or improved. The NRCMA requests consideration of the following issues:

- This strategy was included in the Killick Creek EMP to address economic and social impacts as well as environmental impacts associated with limited tidal flushing in the Creek.
- Killick Creek is an Intermittently Closed and Open Lake and Lagoon (ICOLL) which has been substantially modified over the past 60 years (including connection to the flood mitigation scheme, realignment and training of the entrance and mechanical opening). Dredging in such an environment is a complex issue which is likely to be costly and may have short-lived benefits.
- The NRCMA trusts that the Department of Primary Industries has been consulted regarding potential impacts on fish and fish habitat.
- Should the dredging proceed, the NRCMA encourages ongoing monitoring to evaluate the effectiveness of the work and its impact on the surrounding environment, as outlined in the EMP.
- EnviTE is conducting a project for the NRCMA in 2008-09 to enhance and rehabilitate native vegetation on the dunes adjacent to the Creek and in the vicinity of the proposed sediment disposal area. This project has the support of Kempsey Shire Council. The NRCMA requests that Council liaise with EnviTE regarding the timing and possible implications of any dredging activities. EnviTE's contact for this project is Maree Thompson (02 6621 9588).

If you wish to discuss these issues further, please contact Roger Stanley, Catchment Coordinator, on 6561 4964.

Yours sincerely

Michael Pitt

Michael Pitt
General Manager

All Correspondence to the General Manager – PO Box 618 GRAFTON NSW 2460
Tel: 02 6642 0622 - Fax: 02 6642 0640
Email: northern@cma.nsw.gov.au Web site: www.northern.cma.nsw.gov.au

Appendix 4 – Weather and tidal information

Table 7: Weather conditions during and in the week preceding field surveys

Date	Minimum temperature (°C)	Maximum temperature (°C)	Rainfall (mm)	Direction of maximum wind gust	Speed of maximum wind gust (km/h)
16/07/2008	7	18	0.4	SW	28
17/07/2008	4.5	20	0.4	WNW	28
18/07/2008	4.5	21.9	0.4	WNW	57
19/07/2008	1.4	20.4	0.4	ENE	26
20/07/2008	4.6	21.2	0	NE	24
21/07/2008	7	21	0.2	NW	61
22/07/2008	2.5	17.5	0.2	SW	41
23/07/2008	4	15.5	0	S	28

NB. Weather data for Kempsey courtesy of the Bureau of Meteorology (www.bom.gov.au).

Table 8: Tidal data for the week of field surveys

Sun 20		Mon 21		Tue 22		Wed 23		Thu 24		Fri 25		Sat 26	
Time	Ht	Time	Ht	Time	Ht	Time	Ht	Time	Ht	Time	Ht	Time	Ht
344	0.3	417	0.3	453	0.3	529	0.3	606	0.3	12	1.4	105	1.2
918	1.2	1000	1.2	1044	1.2	1130	1.3	1219	1.3	645	0.3	731	0.4
1459	0.3	1539	0.3	1622	0.4	1710	0.4	1806	0.5	1316	1.3	1422	1.4
2145	1.7	2219	1.6	2252	1.6	2330	1.5			1914	0.6	2037	0.6

NB. Tide times are for the nearest tidal station at Yamba courtesy of the Bureau of Meteorology (www.bom.gov.au).

Appendix 5 – Field Survey (Species List)

FLORA

Acacia longifolia var. *sophorae*
*Avicennia marina**
Banksia integrifolia ssp. *integrifolia*
*Baumea juncea**
Bryophyllum delagoense (Mother of Millions)
Carpobrotus glaucescens
Casuarina glauca+
Caustis flexuosa
Chrysanthemoides monilifera (Bitou Bush)
Cyperus laevigatus
Glochidion ferdinandi var. *ferdinandi+*
Hydrocotyle bonariensis (Fairy's Tables)
*Isolepis nodosa**
Juncus kraussii ssp. *australiens**
Melaleuca quinquenervia+
Myrsiphyllum scandens (Asparagus Fern)
Sarcocornia quinqueflora ssp. *quinqueflora**
Schoenoplectus sp.*
Spinifex sericeus
*Sporobolus virginicus**
*Triglochin striata**
Zostera capricorni
*Zoysia macrantha**
*Key indicator species of Coastal Saltmarsh Endangered Ecological Community
+ Key indicator species of Swamp Oak Floodplain Forest Endangered Ecological Community

FAUNA

Aquatic Fauna:

Ascidian
Australian salmon (*Arripis trutta*)
Beach worms (numerous Polychaetae)
Chitons
Common Toadfish (*Tetractenos hamiltoni*)
Gaspid crab (*Sesarma erytrodactyla*)
Juvenile fish
Molluscs (*Bembicium nanum, Littoraria luteola, Salinator solida)*
Sea Mullet (*Mugil cephalus*)
Seastar (*Patiriella calcar*)
Soldier crab (*Mictyris longicarpus*)
Stingray (*Dasyatis* sp.)
Sydney Rock Oysters (*Saccostrea commercialis*)
Yabby (*Trypaea australiensis*)

Birds:

Australia White Ibis (*Threskiornis molucca*)
Australian Pelican (*Pelecanus conspicillatus*)
Australian Wood Duck (*Chenonetta jubata*)
Crested Tern (*Thalasseus bergii*)

Eastern Reef Egret (*Egretta sacra*)
Pied Cormorant (*Phalacrocorax varius*)
Silver Gull (*Larus novaehollandiae*)
White-bellied Sea Eagle (*Haliaeetus leucogaster*)
White-faced Heron (*Egretta novaehollandiae*)
Willy Wagtail (*Rhipidura leucophrys*)

Appendix 6 – Threatened species

Threatened Fauna and Flora Species (EPBC Act and TSC Act) recorded within 10 kilometres of the site and an assessment of their likelihood of occurrence at the site.

FAUNA

Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Birds					
Botraurus poiciloptilus	Australasian Bittern	Vulnerable	TSC	Freshwater wetland, occasionally estuarine. Prefers heavy vegetation	Unlikely
Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	TSC	She-oaks in forests, woodlands, timbered watercourses.	No
Diomedea amsterdamensis	Amsterdam Albatross	Endangered	EPBC	Marine forager	No
Diomedea antipodensis	Antipodean Albatross	Vulnerable	EPBC	Antipodean Albatross breeds biennially in colonies on ridges, slopes and plateaus of isolated subantarctic islands, usually in vegetation such as grass tussocks. This species regularly occurs in small numbers off the NSW south coast from Green Cape to Newcastle during winter where they feed on cuttlefish.	No
Diomedea dabbenena	Tristan Albatross	Endangered	EPBC	Marine forager	No
Diomedea exulans	Wandering Albatross	Vulnerable	EPBC	Marine forager	No
Diomedea gibsoni	Gibson's Albatross	Vulnerable	EPBC	Marine forager	No
Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	TSC	Coastal wetlands, mangroves, tidal mudflats, floodplains, open woodlands.	Yes

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Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Grus rubicunda	Brolga	Vulnerable	TSC	Inhabits dry grassland or ploughed paddocks or even desert claypans. Also ependent on wetlands, especially shallow swamps, where they will forage with their head entirely submerged.	No
Haematopus fuliginosus	Sooty Oystercatcher	Vulnerable	TSC	Intertidal rocky and coral reefs, mostly on ocean shores, breeds mostly on offshore islands, occasionally frequents sandspits and tidal mudflats.	Yes
Haematopus longirostris	Pied Oystercatcher	Vulnerable	TSC	Undisturbed sandy beaches, sandspits and sandbars, tidal mudflats and estuaries, coastal islands.	Yes
Irediparra gallinacea	Comb-crested Jacana	Vulnerable	TSC	Floating vegetation of permanent, well-vegetated wetlands and dams.	No
Ixobrychus flavicollis	Black Bittern	Vulnerable	TSC	Well vegetated swamps, estuaries, wetlands.	Yes
Lathamus discolor	Swift Parrot	Endangered	EPBC TSC	Breeds in Tasmania, but winters on mainland in diverse timbered habitats, including forests, woodlands, plantations, banksias, street trees and gardens	No
Lophoictinia isura	Square-tailed Kite	Vulnerable	TSC	Diverse habitats from woodlands to timbered watercourses	No
Macronectes giganteus	Southern Giant-Petrel	Endangered	EPBC	Marine forager	No
Macronectes halli	Northern Giant-Petrel	Vulnerable	EPBC	Marine forager	No

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Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Monarcha leucotis	White-eared Monarch	Vulnerable	TSC	Coastal rainforests, also mangroves, swamps and water-course thickets	No
Ninox strenua	Powerful Owl	Vulnerable	TSC	Pairs occupy large, probably permanent home ranges in forests to woodlands. Nest in large hollow.	No
Oxyura australis	Blue-billed Duck	Vulnerable	TSC	Densely vegetated freshwater lakes, swamps and dams	No
Pandion haliaetus	Osprey	Vulnerable	TSC	Coasts, estuaries, bays, inlets, islands and surrounding waters.	Yes
Pterodroma leucoptera leucoptera	Gould's Petrel	Endangered	EPBC	Marine forager.	No
Pterodroma neglecta neglecta	Kermadec Petrel (western)	Vulnerable	EPBC	Marine forager.	No
Ptilinopus magnificus	Wompoo Fruit-Dove	Vulnerable	TSC	Rainforests and fringes, scrubs, mangroves, wooded stream margins, fruiting trees.	No
Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	TSC	Rose-crowned Fruit-doves occur mainly in sub-tropical and dry rainforest and occasionally in moist eucalypt forest and swamp forest, where fruit is plentiful	No
Puffinus carneipes	Flesh-footed Shearwater	Vulnerable	TSC	Marine forager	No
Rostratula australis (Rostratula benghalensis)	Australian Painted Snipe	Vulnerable	EPBC	Well-vegetated shallows and margins of wetlands, dams, sewerage ponds, wet pastures, marshy areas, open timber.	Unlikely
Sterna albifrons	Little Tern	Endangered	TSC	Coastal waters, bays, inlets, saline or brackish lakes.	Likely

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Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Thalassarche bulleri	Buller's Albatross	Vulnerable	EPBC	Marine forager	No
Thalassarche cauta	Shy Albatross	Vulnerable	EPBC	Marine forager	No
Thalassarche impavida	Campbell Albatross	Vulnerable	EPBC	Marine forager	No
Thalassarche melanophris	Black-browed Albatross	Vulnerable	EPBC	Marine forager	No
Thalassarche steadi	White-capped Albatross	Vulnerable	EPBC	Marine forager	No
Tyto novaehollandiae	Masked Owl	Vulnerable	TSC	Occurs in forests, open woodlands, farmlands with large trees.	No
Xanthomyza phrygia	Regent Honeyeater	Endangered	EPBC TSC	Densely timbered woodlands and forests, particularly ironbark, yellow box, yellow gum.	No
Mammals					
Balaenoptera musculus	Blue Whale	Endangered	EPBC	Marine.	No
Chalinolobus dwyeri	Large-eared Pied Bat, Large Pied Bat	Vulnerable	EPBC	Uncommon but observed in wet and dry eucalypt forests.	No

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Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered Vulnerable	EPBC TSC	Occurs in wide variety of habitats in large remnants. Dens in tree hollows, hollow log or rock crevice.	No
Eubalaena australis	Southern Right Whale	Endangered	EPBC	Offshore waters	No
Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	TSC	Usually roosts in tree hollows in the higher rainfall forests within its range.	No
Megaptera novaeangliae	Humpback Whale	Vulnerable	EPBC TSC	The population of Australia's east coast migrates from summer cold-water feeding grounds in Subantarctic waters to warm-water winter breeding grounds in the central Great Barrier Reef.	No
Miniopterus australis	Little Bentwing-bat	Vulnerable	TSC	Well timbered areas including rainforest, wet and dry sclerophyll forests, Melaleuca swamps and coastal forests.	No
Miniopterus schreibersii oceanensis	Eastern Bentwig Bat	Vulnerable	TSC	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures	No
Myotis adversus	Large-foot Myotis	Vulnerable	TSC	Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage	No
Nyctophilus bifax	Eastern Long-eared Bat	Vulnerable	TSC	Lowland subtropical rainforest and wet and swamp eucalypt forest, extending into adjacent moist eucalypt forest	No
Petaurus australis	Yellow-bellied Glider	Vulnerable	TSC	Patchily distributed in wet sclerophyll forest.	No

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Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Petaurus norfolcensis	Squirrel Glider	Vulnerable	TSC	Mostly in dry sclerophyll forest on inland slopes and nearby riverine corridors. Also in damp coastal eucalypt/banksia forest and woodland.	Unlikely
Phascolarctos cinereus	Koala	Vulnerable	TSC	Swamp Mahogany and Tallowwood are of primary importance to this Koala population. Other local native tree species used by Koalas include Broad-leaved Paperbark, Blackbutt, Red Bloodwood, Flooded Gum and Smooth-barked Apple	No
Physeter macrocephalus	Sperm Whale	Vulnerable	TSC	Marine	No
Potorous tridactylus tridactylus	Long-nosed Potoroo (SE mainland)	Vulnerable	EPBC	Known from coastal heathy woodland but also occurs in rainforest, wet sclerophyll and coastal wallum. Dense cover for shelter adjacent to open areas for foraging.	No
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	EPBC TSC	Roosts in large camps in Botanic Gardens.	No
Saccolaimus flaviventris	Yellow-bellied Sheathtailed Bat	Vulnerable	TSC	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows	No
Syconycteris australis	Common Blossom Bat	Vulnerable	TSC	Roost in littoral rainforest and feed on flowers in adjacent heathland and paperbark swamps.	Unlikely
Fish					

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Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Carcharias taurus (east coast population)	Grey Nurse Shark (east coast population)	Critically Endangered FE	EPBC FM	Grey Nurse Sharks are often observed just above the sea bed in or near deep sandy-bottomed gutters or rocky caves in the vicinity of inshore rocky reefs and islands. The diet of the adult Grey Nurse Shark consists of a wide range of bony fishes such as jewfish and kingfish, other sharks and rays, squids, crabs and lobsters.	No
Carcharodon carcharias	Great White Shark	Vulnerable	EPBC	Open water marine	No
Epinephelus daemelii	Black Cod	FV	FM	They are found in warm temperate and subtropical parts of the south-western Pacific. Adult black cod are usually found in caves, gutters and beneath bommies on rocky reefs. They are territorial and often occupy a particular cave for life.	No
Pristis zijsron	Green sawfish	Vulnerable Endangered	EPBC FM	Shallow estuaries on sandy or muddy bottoms. The last confirmed sighting of the green sawfish in NSW was in 1972 from the Clarence River at Yamba.	Unlikely
Rhincodon typus	Whale Shark	Vulnerable	EPBC	Open water marine	No
Reptiles					
Caretta caretta	Loggerhead Turtle	Endangered	EPBC	Offshore and coastal waters, nesting on sandy beaches on islands and coast	No
Chelonia mydas	Green Turtle	Vulnerable	TSC EPBC	Offshore and coastal waters, nesting on sandy beaches on islands and coast	No
Dermochelys coriacea	Leathery Turtle, Leatherback Turtle	Vulnerable	EPBC	Offshore and coastal waters, nesting on sandy beaches on islands and coastal beaches.	No

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Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Amphibia					
Crinia tinnula	Wallum Froglet	Vulnerable	TSC	In acid Melaleuca swamps and wallum areas with poor drainage.	No
Litoria aurea	Green and Golden Bell Frog	Vulnerable Endangered	EPBC TSC	Large permanent freshwater wetlands, with dense stands of reeds.	No
Mixophyes balbus	Stuttering Frog, Southern Barred Frog (in Victoria)	Vulnerable	EPBC	Found in mountain areas in rainforest.	No

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FLORA

Scientific Name	Common Name	Legal Status	Act	Habitat	Likelihood
Chamaesyce psammogeton	Sand Spurge	Endangered	TSC	Grows on fore-dunes and exposed headlands, often with Spinifex (*Spinifex sericeus*). It was not located within the very small aerial disposal site (<0.0002 ha) during field surveys.	Unlikely
Cryptostylis hunteriana	Leafless Tongue Orchid	Vulnerable	EPBC	Grows in swamp-heath on sandy soils, chiefly in coastal districts.	Unlikely
Cynanchum elegans	White-flowered Wax Plant	Endangered	EPBC	Occurs mainly at the ecotone between dry subtropical rainforest and sclerophyll forest/woodland communities. Is a clonal species and suckers in response to disturbance.	Unlikely
Taeniophyllum Muelleri	Minute Orchid, Ribbon-root Orchid	Vulnerable	EPBC	Grows on outer branches and branchlets of rainforest trees; coast and coastal ranges, from sea level to 250 m alt	No
Thesium australe	Austral Toadflax	Vulnerable	TSC EPBC	Occurs in grassland or grassy woodland. Often found in damp sites in association with Kangaroo Grass (Themeda australis).	No

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Appendix 7 – Marine and Migratory Species

Listed marine and/or migratory species (EPBC Act) recorded within 10 kilometres of the site and an assessment of their likelihood of occurrence at the site.

Scientific Name	Common Name	Legal Status	Act	Habitat	Impact
Haliaeetus leucogaster	White-bellied sea eagle	Migratory terrestrial species	EPBC	Marine flyover.	Not significant
Hirundapus caudacutus	White-throated Needletail	Migratory terrestrial species	EPBC	Marine flyover.	Not significant
Merops ornatus	Rainbow Bee-eater	Migratory terrestrial species	EPBC	Open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation.	Not significant
Monarcha melanopsis	Black-faced Monarch	Migratory terrestrial species	EPBC	Rainforests, eucalypt forests and coastal scrubs.	Not significant
Monarcha trivirgatus	Spectacled Monarch	Migratory terrestrial species	EPBC	Rainforest	Not significant
Myiagra Cyanoleuca	Satin Flycatcher	Migratory terrestrial species	EPBC	Temperate forests and subtropical or tropical moist lowland forests	Not significant
Rhipidura rufifrons	Rufous Fantail	Migratory terrestrial species	EPBC	Rainforest, dense wet forests, swamp woodlands and mangroves. Usually seen in dense shade near the ground.	Not significant
Ardea alba	Great Egret, White Egret	Migratory wetland and marine species	EPBC	Wetlands with shallow water, wet grasslands.	Not significant
Ardea ibis	Cattle Egret	Migratory wetland	EPBC	Grasslands, woodlands and wetlands, and is not common in arid areas. It also	Not significant

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Scientific Name	Common Name	Legal Status	Act	Habitat	Impact
		and marine species		uses pastures. Often seen with cattle and other farm animals.	
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	Migratory wetland species	EPBC	Usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies.	Not significant
Apus pacificus	Fork-tailed Swift	Migratory marine species	EPBC	Marine flyover	Not significant
Calonectris leucomelas	Streaked Shearwater	Migratory marine species	EPBC	Marine flyover	Not significant
Thalassarche chlororhynchos	Yellow-nosed Albatross, Atlantic Yellow-nosed Albatross	Migratory marine species	EPBC	Marine flyover	Not significant
Mammals					
Caperea marginata	Pygmy Right Whale	Migratory marine species	EPBC	Open ocean.	Not significant
Lagenorhynchus obscurus	Dusky Dolphin	Migratory marine species	EPBC	Open ocean.	Not significant
Orcinus orca	Killer Whale, Orca	Migratory marine species	EPBC	Open ocean.	Not significant
Arctocephalus forsteri	New Zealand Fur Seal	Listed	EPBC	Open ocean.	Not significant
Arctocephalus pusillus	Australian Fur Seal	Listed	EPBC	Open ocean.	Not significant

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Scientific Name	Common Name	Legal Status	Act	Habitat	Impact
Balaenoptera acutorostrata	Minke Whale	Listed	EPBC	Open ocean.	Not significant
Balaenoptera edeni	Bryde's Whale	Listed	EPBC	Open ocean.	Not significant
Delphinus delphis	Common Dolphin	Listed	EPBC	Open ocean.	Not significant
Grampus griseus	Risso's Dolphin, Grampus	Listed	EPBC	Open ocean.	Not significant
Stenella attenuata	Spotted Dolphin, Pan-tropical Spotted Dolphin	Listed	EPBC	Open ocean.	Not significant
Tursiops aduncus	Indian Ocean Bottlenose Dolphin	Listed	EPBC	Open ocean.	Not significant
Tursiops truncatus s. *str.*	Bottlenose Dolphin	Listed	EPBC	Open ocean.	Not significant
Reptiles					
Hydrophis elegans	Elegant Seasnake	Listed	EPBC	Marine – deep water between reefs.	Not significant
Pelamis platurus	Yellow-bellied Seasnake	Listed	EPBC	Marine - pelagic, sometimes found in drift lines; slicks of floating debris brought together by surface currents.	Not significant
Fish					
Acentronura tentaculata	Hairy Pygmy Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant

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Scientific Name	Common Name	Legal Status	Act	Habitat	Impact
Festucalex cinctus	Girdled Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Filicampus tigris	Tiger Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Heraldia nocturna	Upside-down Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Hippichthys heptagonus	Madura Pipefish, Reticulated Freshwater Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Hippichthys penicillus	Beady Pipefish, Steep-nosed Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Hippocampus whitei	White's Seahorse, Crowned Seahorse, Sydney Seahorse	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Histiogamphelus briggsii	Brigg's Crested Pipefish, Brigg's Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant

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Scientific Name	Common Name	Legal Status	Act	Habitat	Impact
Lissocampus runa	Javelin Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Maroubra perserrata	Sawtooth Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Solignathus dunckeri	Duncker's Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Solegnathus spinosissimus	Spiny Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Solenostomus cyanopterus	Blue-finned Ghost Pipefish, Robust Ghost Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Solenostomus paradoxus	Harlequin Ghost Pipefish, Ornate Ghost Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Stigmatopora nigra	Wide-bodied Pipefish, Black Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Syngnathoides biaculeatus	Double-ended Pipehorse, Alligator	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures	Not significant

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Scientific Name	Common Name	Legal Status	Act	Habitat	Impact
	Pipefish			such as jetties or mesh nets.	
Trachyrhamphus bicoarctatus	Bend Stick Pipefish, Short-tailed Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Urocampus carinirostris	Hairy Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant
Vanacampus margaritifer	Mother-of-pearl Pipefish	Listed	EPBC	Variety of habitats ranging from deep reefs to coastal algae, weed or seagrass habitats, or around man-made structures such as jetties or mesh nets.	Not significant

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Appendix 8 – Assessments of Significance (7-part tests)

The Assessment of Significance (7-part test) is applied to species, populations and ecological communities listed on Schedules 1, 1A and 2 of the TSC Act and Schedules 4, 4A and 5 of the Fisheries Management Act. The assessment sets out 7 factors, which when considered, allow proponents to undertake a qualitative analysis of the likely impacts of an action and to determine whether further assessment is required via a Species Impact Statement (SIS). All factors must be considered and an overall conclusion made based on all factors in combination. An SIS is required if, through application of the 7-part test, an action is considered likely to have a significant impact on a threatened species, population or ecological community.

Black-necked Stork (*Ephippiorhynchus asiaticus*)

The Black-necked Stork inhabits coastal wetlands, mangroves, tidal mudflats, floodplains and open woodlands, where it actively forages for prey items such as fish and crustaceans. This species is restricted mainly to coastal and near-coastal areas of northern and eastern Australia. Throughout the monsoonal areas of northern Australia, the Black-necked Stork is still widespread, but fewer numbers appear southwards to eastern Australia. In the past the species was found in much of eastern New South Wales, but is now extinct throughout much of this area.

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.

The Black-necked Stork has not been recorded on site in recent field studies but is known from several database records within 10km of the site. The Black-necked Stork would use the Killick Creek dredging and disposal sites for foraging, and this area presents only a very small area of the foraging range. Ample foraging area is available in areas surrounding Killick Creek, including both the SEPP14 wetland area immediately westward and Hat Head National Park wetland ecosystems northward of the dredging and disposal areas. Consequently, Killick Creek dredging will have little impact the foraging of the Black-necked Stork and no likely impact on the Black-necked Stork's life cycle.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- **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**
- **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.**

This is not an endangered ecological community.

d) in relation to the habitat of a threatened species, population or ecological community:

- **i. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and**
- **ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and**
- **iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,**

i. Dredging and spoil disposal activities will temporarily modify a very small area of the foraging habitat of the Black-necked Stork (i.e. by relocating small volumes of sand within the creek). Once dredging activities have ceased, the foraging habitat of the

Black-necked Stork within Killick Creek will be undisturbed and therefore the dredging will have no long-term significant impact on Black-necked Stork foraging habitat.

ii. Black-necked Storks are mobile and nomadic species and the dredging and spoil disposal will not isolate or fragment areas of habitat in the area.

iii. Dredging and spoil disposal activities will not remove or modify the habitat of the Black-necked Stork in the long term and will therefore not impact on the long term survival of the species.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

No recovery plan has yet been developed for this species. No relevant threat abatement plans have been prepared for this species.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the Black-necked Stork

The impact of this proposal on the Black-necked Stork, as determined through the above 7-part test, is not considered to be significant.

Black Bittern (*Ixobrychus flavicollis*)

The Black Bittern inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, this species may occur in flooded grassland, forest, woodland, rainforest and mangroves. The Black Bittern forages on reptiles, fish and invertebrates, including dragonflies, shrimps and crayfish. It generally feeds at dusk and at night. During the day, the Black Bittern roosts in trees or on the ground amongst dense reeds. The Black Bittern has a wide distribution, from the southern NSW north to Cape York and along the entire northern coast to the Kimberley region. The species also occurs in the south-western corner of Western Australia. It is most commonly recorded at low elevation, primarily below 200m above sea level

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.

The Black Bittern has not been recorded on site in recent field studies but is known from several database records within 10km of the site. This species would use the Killick Creek dredging and disposal sites for foraging, and this area presents only a very small area of the foraging range. Ample foraging area is available in the adjacent areas of Hat Head National Park and within Killick Creek upstream of the proposed dredging area. Neither of these areas will be impacted by the proposed dredging. Furthermore, the Black Bittern forages mostly at night, when dredging operations will not be occurring. The activity will therefore have little impact the foraging of the Black Bittern and no likely impact on the Black Bitterns's life cycle.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- **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**
- **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.**

This is not an endangered ecological community.

d) in relation to the habitat of a threatened species, population or ecological community:

- **i. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and**
- **ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and**
- **iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,**
- i. Dredging and spoil disposal activities will temporarily modify a very small area of the foraging habitat of the Black Bittern (i.e. by relocating small volumes of sand within the creek). Once dredging activities have ceased, the foraging habitat of the Black Bittern within Killick Creek will be undisturbed and therefore the dredging will have no long-term significant impact on Black Bittern foraging habitat.
- ii. Black Bitterns are mobile and widespread species and the dredging and spoil disposal will not isolate or fragment areas of habitat in the area.
- iii. Dredging and spoil disposal activities will not remove or modify the habitat of the Black Bittern in the long term and will therefore not impact on the long term survival of the species.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),
No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,
No recovery plan has yet been developed for this species. No relevant threat abatement plans have been prepared for this species.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.
This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the Black Bittern
The impact of this proposal on the Black Bittern, as determined through the above 7-part test, is not considered to be significant.

Little Tern (*Sterna albifrons*)

The Little Tern is mainly found in coastal environments, including beaches, sheltered inlets, estuaries, lakes, bays and harbours, especially where exposed sandbanks or sand spits occur. It is sometimes found on offshore continental islands or coral cays. Breeding habitat includes sand spits or islets in sheltered coastal environments such as estuaries and inlets, and also sandy ocean beaches, with nests occasionally built in sand dunes. It may also occasionally nest on coral cays. Its distribution includes all continents. In Australia, it occurs in all coastal areas except the south-west and southern parts of Western Australia, the western half of South Australia and western shores of Tasmania. It is scarce in south-eastern Australia in winter, apparently because Asian birds depart to breed and local birds migrate north along coast.

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.

The Little Tern has not been recorded on site in recent field studies but is known from several database records within 10km of the site. This species would use the Killick Creek dredging and disposal sites for foraging, and this area presents only a very small area of the foraging range. Ample foraging area is available in the adjacent areas along Crescent Head beach and within Killick Creek upstream of the proposed dredging area. Neither of these areas will be impacted by the proposed dredging and the activity will therefore have little impact the foraging of the Little Tern and no likely impact on the Little Tern's life cycle.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- **iii. 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**
- **iv. 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.**

This is not an endangered ecological community.

d) in relation to the habitat of a threatened species, population or ecological community:

- **i. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and**
- **ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and**
- **iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,**
- i. Dredging and spoil disposal activities will temporarily modify a very small area of the foraging habitat of the Little Tern (i.e. by relocating small volumes of sand within the creek). Once dredging activities have ceased, the foraging habitat of the Little Tern within Killick Creek will be undisturbed and therefore the dredging will have no long-term significant impact on Little Tern foraging habitat.
- ii. Black Bitterns are mobile and widespread species and the dredging and spoil disposal will not isolate or fragment areas of habitat in the area.
- iii. Dredging and spoil disposal activities will not remove or modify the habitat of the Little Tern in the long term and will therefore not impact on the long term survival of the species.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),
No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,
No recovery plan has yet been developed for this species. No relevant threat abatement plans have been prepared for this species.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.
This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the Little Tern
The impact of this proposal on the Little Tern, as determined through the above 7-part test, is not considered to be significant.

Osprey (*Pandion haliaetus*)

The osprey is found around coastal waters, estuaries, beaches, reefs, islands and they have been recorded following major rivers inland. They are common around the north coast but become uncommon in closely settled areas in south east Australia. Ospreys nest high up in tall dead trees or the dead crowns of trees, usually within one kilometre of the coast. Ospreys fish in clear waters, often using tall foreshore vegetation as hunting and feeding perches.

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.

The Osprey has not been recorded on site in recent field studies but is known from database records within 10km of the site. Ospreys commonly hunt along coastal streams and estuaries, utilising tall foreshore vegetation as hunting and feeding perches. The species is highly mobile covering large areas in daily foraging excursions. Ospreys would use the Killick Creek dredging and disposal sites for foraging, and this area presents only a very small area of the foraging range. Ample foraging area is available in areas surrounding Killick Creek, including immediately eastward over open ocean and northward within Hat Head National Park wetland ecosystems. Consequently, Killick Creek dredging will have little impact the foraging of Osprey and no likely impact on the Osprey's life cycle.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- **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**
- **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.**

This is not an endangered ecological community.

d) in relation to the habitat of a threatened species, population or ecological community:

- **i. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and**
- **ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and**
- **iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,**

i. Dredging and spoil disposal activities will temporarily modify a very small area of the foraging habitat of the Osprey (i.e. by relocating small volumes of sand within the creek). Once dredging activities have ceased, the foraging habitat of the Osprey within Killick Creek will be undisturbed and therefore the dredging will have no long-term significant impact on Osprey foraging habitat.

ii. Ospreys are highly mobile species and the dredging and spoil disposal will not isolate or fragment areas of habitat in the area.

iii. Dredging and spoil disposal activities will not remove or modify the habitat of the Osprey in the long term and will therefore not impact on the long term survival of the species.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,
No recovery plan has yet been developed for this species. No relevant threat abatement plans have been prepared for this species.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.
This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the osprey
The impact of this proposal on the Osprey, as determined through the above 7-part test, is not considered to be significant.

Pied Oystercatcher (*Haematopus longirostris*)

The Pied Oystercatcher is found in coastal areas throughout the Australian continent except for areas of unbroken sea cliffs such as the Great Australian Bight. It prefers mudflats, sandbanks and sandy ocean beaches and is less common along rocky or shingle coastlines. Although rarely recorded far from the coast, the Pied Oystercatcher may occasionally be found in estuarine mudflats and short pasture. Oystercatchers feed on bivalve molluscs, worms, crustaceans and insects.

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.

The Pied Oystercatcher has not been recorded on site in recent field studies but is known from several database records within 10km of the site. This species would use the Killick Creek dredging and disposal sites for foraging, and this area presents only a very small area of the foraging range. Ample foraging area is available along the entire beach at Crescent Head and upstream of the proposed dredging area. Neither of these areas will be impacted by the proposed dredging and the activity will therefore have little impact the foraging of the Pied Oystercatcher and no likely impact on the Pied Oystercatchers's life cycle.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- **v. 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**
- **vi. 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.**

This is not an endangered ecological community.

d) in relation to the habitat of a threatened species, population or ecological community:

- **i. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and**
- **ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and**
- **iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,**
- i. Dredging and spoil disposal activities will temporarily modify a very small area of the foraging habitat of the Pied Oystercatcher (i.e. by relocating small volumes of sand within the creek). Once dredging activities have ceased, the foraging habitat of the Pied Oystercatcher within Killick Creek will be undisturbed and therefore the dredging will have no long-term significant impact on Pied Oystercatcher foraging habitat.
- ii. Pied Oystercatchers are mobile and widespread species and the dredging and spoil disposal will not isolate or fragment areas of habitat in the area.
- iii. Dredging and spoil disposal activities will not remove or modify the habitat of the Pied Oystercatcher in the long term and will therefore not impact on the long term survival of the species.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,
No recovery plan has yet been developed for this species. No relevant threat abatement plans have been prepared for this species.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.
This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the Pied Oystercatcher
The impact of this proposal on the Pied Oystercatcher, as determined through the above 7-part test, is not considered to be significant.

Sooty Oystercatcher (*Haematopus fuliginosus*)

Sooty Oystercatchers can be seen singly or in pairs along the entire coastline of Australia, including offshore islands and estuaries. Their preferred habitats are rocky headlands, shelves and beaches. Occasionally, however, they can also be seen on sandy beaches and estuarine mudflats. At low tide Sooty Oystercatchers feed on mussels and limpets on exposed rocks. The birds breed in Spring and Summer in isolated spots above the high-tide mark, laying two to four eggs into a shallow depression. Breeding usually occurs on offshore islands.

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.

The Sooty Oystercatcher has not been recorded on site in recent field studies but is known from several database records within 10km of the site. This species would use the Killick Creek dredging and disposal sites for foraging, and this area presents only a very small area of the foraging range. Ample foraging area is available along the entire beach at Crescent Head and within the rocky areas of the headland. Neither of these areas will be impacted by the proposed dredging and the activity will therefore have little impact the foraging of the Sooty Oystercatcher and no likely impact on the Sooty Oystercatchers's life cycle.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction

This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

- **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**
- **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.**

This is not an endangered ecological community.

d) in relation to the habitat of a threatened species, population or ecological community:

- **i. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and**
- **ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and**
- **iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,**
- x. Dredging and spoil disposal activities will temporarily modify a very small area of the foraging habitat of the Sooty Oystercatcher (i.e. by relocating small volumes of sand within the creek). Once dredging activities have ceased, the foraging habitat of the Sooty Oystercatcher within Killick Creek will be undisturbed and therefore the dredging will have no long-term significant impact on Sooty Oystercatcher foraging habitat.
- i. Sooty Oystercatchers are mobile and widespread species and the dredging and spoil disposal will not isolate or fragment areas of habitat in the area.
- ii. Dredging and spoil disposal activities will not remove or modify the habitat of the Sooty Oystercatcher in the long term and will therefore not impact on the long term survival of the species.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),

No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,
No recovery plan has yet been developed for this species. No relevant threat abatement plans have been prepared for this species.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.
This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the Sooty Oystercatcher
The impact of this proposal on the Sooty Oystercatcher, as determined through the above 7-part test, is not considered to be significant.

Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.
This is not a threatened species.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction
This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

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

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.

i. The area of spoil disposal is very small (<0.0002ha) and coastal saltmarsh is restricted to isolated plants within this area. The area of saltmarsh in the immediate vicinity of the disposal site is ~3.5 times larger than the entire aerial disposal site. Therefore any saltmarsh plant smothered during disposal will present only a very small fraction of the total community and this will not put the local saltmarsh community at risk.

ii. The saltmarsh community within the aerial disposal site is represented by isolated individuals, predominantly Juncus kraussii. All species found within the aerial disposal site are also located in larger, healthier patches of saltmarsh located to the west and south of the disposal site. Therefore the proposed activity is unlikely to alter the composition of the coastal saltmarsh.

d) in relation to the habitat of a threatened species, population or ecological community:

iii. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

iv. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

v. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,

i. Spoil disposal activities will involve dumping marine sand within the aerial disposal site. While this may smother some plants, it does provide suitable sandy habitat for re-colonisation and growth of saltmarsh plants. Spoil disposal will also smother weed species that currently dominate the aerial disposal area. Therefore the proposed activity will have no significant impact on saltmarsh habitat.

ii. Spoil disposal will occur within a very small area on already disturbed habitat. Given the small size of the aerial disposal site comparatively to the large area of saltmarsh to the west and south of the disposal areas, spoil disposal will not isolate or fragment areas of habitat in the area.

iii. Dredging and spoil disposal activities will not remove or modify the habitat of saltmarsh in the long term and will therefore not impact on the long term survival of the community.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),
No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,
No recovery plan has yet been developed for this EEC. No relevant threat abatement plans have been prepared for this EEC.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.
This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the Coastal Saltmarsh
The impact of this proposal on the Coastal Saltmarsh, as determined through the above 7-part test, is not considered to be significant.

Swamp oak floodplain forest of the NSW North Coast, Sydney Basin and South East Corner bioregions

a) in the case of a threatened species, whether the action proposed 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 the risk of extinction.
This is not a threatened species.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction
This is not an endangered population.

c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

iii. 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

iv. 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.

vi. The Swamp Oak Floodplain Forest community within the aerial disposal site is comprised of <30 mostly mature trees. Sand disposal will cover the base of these trees, but will not impact in any other way. The small increase in sand around the base of trees will not put the local Swamp Oak Floodplain Forest at risk.

vii. The Swamp Oak Floodplain Forest is comprised of mature trees, which will not be impacted by the proposed activity. There is no mid- or ground-storey for this community at the site. Therefore the proposed activity is unlikely to alter the composition of this community.

d) in relation to the habitat of a threatened species, population or ecological community:

viii. the extent to which habitat is likely to be removed or modified as a result of the action proposed, and

ix. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

x. the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species, population or ecological community in the locality,

iv. Spoil disposal activities will involve dumping marine sand within the aerial disposal site. This will only slightly modify the habitat of the Swamp Oak Floodplain Forest in that there will be a small increase in the amount of sand around the base of the trees. Smothering of weed species by sand may act to improve the overall habitat of the community.

v. Spoil disposal will occur within a very small area and will not isolate or fragment areas of habitat in the area.

vi. Dredging and spoil disposal activities will not remove or modify the habitat of Swamp Oak Floodplain Forest in the long term and will therefore not impact on the long term survival of the community.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),
No critical habitat of this species has been identified by the Director-General of the National Parks and Wildlife Service on the Register of Critical Habitat.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

No recovery plan has yet been developed for this EEC. No relevant threat abatement plans have been prepared for this EEC.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.
This action does not constitute a key threatening process.

Conclusion of the 7 Part Test for the Swamp Oak Floodplain Forest
The impact of this proposal on the Swamp Oak Floodplain Forest, as determined through the above 7-part test, is not considered to be significant.