Department of Primary Industries

Our Ref: IDA#17/48

Mr Marc Daley
The Secretariat
NSW Coastal Panel
PO Box A290
SYDNEY SOUTH NSW 1232

4 August 2017

Dear Mr Daley

Re: Development Application CP17-005 Coastal Protection Works, 46 Arrawarra Beach Road Arrawarra, Coffs Harbour LGA

Thank you for your letter of 17 May 2017 requesting that DPI Fisheries, a division within the Department of Primary Industries assess the subject proposal and if appropriate provide General Terms of Approval on the subject development application.

Receipt of the proscribed $320 fee under cl253 of the *Environmental Planning and Assessment Regulation* 2000 (EP&A Regulation 2000) is acknowledged. I also acknowledge receipt via email on 22 June 2017 of the public submissions in relation to the subject development. I apologies for the significant delay in my response.

DPI Fisheries manages two acts relevant to the subject assessment, the *Marine Estate Management Act 2014* and the *Fisheries Management Act 1994.* This response addresses the provisions of these two pieces of legislation under relevant headings below. It is relevant to add that the three differences as, described by the proponent in the SEE (pg 2), between DA CP16-001 and the subject DA CP17-005 do not directly influence the footprint or potential impact of the proposed development on the Solitary Islands Marine Park or Key Fish Habitats generally.

Marine Estate Management Act 2014

The *Marine Estate Management Act 2014* and subordinate legislation regulates the operation of the Solitary Islands Marine Park but also establish objectives for the sound management of the marine estate beyond managed protected areas. Outlined below are concerns identified by DPI Fisheries has with regards to this proposal cognisant of provisions within the MEM Act 2014.

Background

Arrawarra Creek forms an important part of the Solitary Islands Marine Park and functions as a food source, nursery and breeding area for many marine and estuarine species. The site proposed for the seawall is located where an Intermittently Closed Open Lake or Lagoon (ICOLL) meets the ocean. This is an

area where the location of the water course continually changes within a defined break out zone and where water levels change according to local conditions such as berm height, local rainfall, ocean conditions, whether the estuary is open to the ocean and where the opening has occurred. The lower sections of estuaries are naturally in a state of flux and attempts to change or stabilise the landform will likely have other unintended impacts.

Arrawarra Creek forms part of the Habitat Protection Zone of the SIMP. The SIMP is managed under the *Marine Estate Management Act 2014*, the *Marine Estate Management Regulation 2009* and the *Marine Estate (Management Rules) Regulation 1999*.

The objects of the Act are as follows:

(a) to provide for the management of the marine estate of New South Wales consistent with the principles of ecologically sustainable development in a manner that:
- *(i) promotes a biologically diverse, healthy and productive marine estate, and*
- *(ii) facilitates:*
  - *economic opportunities for the people of New South Wales, including opportunities for regional communities, and*
  - *the cultural, social and recreational use of the marine estate, and*
  - *the maintenance of ecosystem integrity, and*
  - *the use of the marine estate for scientific research and education,*

(b) to promote the co-ordination of the exercise, by public authorities, of functions in relation to the marine estate,

(c) to provide for the declaration and management of a comprehensive system of marine parks and aquatic reserves.

The objects of the habitat protection zone are:

(a) to provide a high level of protection for biological diversity, habitat, ecological processes, natural features and cultural features (both Aboriginal and non-Aboriginal) in the zone, and

(b) where consistent with paragraph (a), to provide opportunities for recreational and commercial activities (including fishing), scientific research, educational activities and other activities, so long as they are ecologically sustainable and do not have a significant impact on any fish populations or on any other animals, plants or habitats.

Effects on Marine Biodiversity

The ecological assessment contained within the Statement of Environmental Effects is limited to terrestrial ecosystems and does not address the marine and estuarine environment. The likely impacts of the proposed seawall can be fully determined when the impacts on the marine and estuarine environment have not been considered, as described above.

The proposed seawall is significantly different to the natural stream bank (coffee rock, overhanging trees and undercut banks) that is present over much of the site boundary. Replacing natural streambanks with artificial seawalls can have significant environmental consequences on species. Seawalls can change the natural habitat in many ways including changing hardness, surface texture, slope, microhabitats and hydrology. Changes in habitat type also lead to changes in species community composition and abundance, and these changes may not reflect the natural ecosystems of the area.

Riparian vegetation plays a significant role in the natural functioning of an estuary. Construction of the seawall will require the removal of all the existing vegetation.

It is noted that the E2 zone will be vegetated, however the location and type of vegetation proposed will not provide the creek with the same benefits, e.g. shading of the water, that the existing vegetation does. It will also take some time for the planted vegetation to mature and be capable of providing some of the benefits of the existing mature vegetation.

Stated Purpose of the Seawall

According to the Statement of Environmental Effects the stated purpose of the seawall is "*to retain the site boundary and prevent coastal erosion caused by wave activity. The sites boundary has been eroded over time by coastal processes as can be seen in the site detail survey*".

The lower reaches of ICOLL's naturally change over time and much of the land can be of an ephemeral nature. Dunes and beaches build and then are eroded under different conditions. This process is natural and is how the coast remains stable over the long term.

These natural processes may give the impression that the site is eroding and needing protection when it is in the long term fairly stable. It is the opinion of the DPI that a seawall of the type and scale proposed at this site is not suitable.

The current physical boundary of the site is fairly stable, being in part vegetated and consisting of coffee rock. It has not in recent times suffered from sudden erosive events. Historic aerial photos, included below, confirm this. The yellow dotted line on the photos represents the current land water boundary and the red line the surveyed boundary. An exception was when a failure in a stormwater pipe from the roof of one of the sites buildings waterlogged the high bank. This resulted in some localised bank slumping.

Effects on Stream Morphology

It is difficult to accurately predict the impact of a large seawall in this location. A general principle is that, if you create a hard wall you are most likely going to see erosion occur around the toe of the wall. In an estuary like Arrawarra Creek, that effect could result in the normally meandering stream channel moving to a more permanent location against the seawall.

The construction of a small gabion wall along part of the subject site boundary in the early 1990's is an example of where this has occurred. Observations and aerial photos taken since the rock gabion seawall was constructed seem to indicate that construction of the wall has resulted in changed stream flow and significant erosion of the coastal dunes located to the north of the walking bridge. A midden located in these dunes has been destroyed and the opening of the northern branch of Arrawarra Creek has been widened. A wider opening appears to have increased the ability for waves to enter the creek which has in turn increased bank erosion for houses located in Ellem Close to the west of the bridge. These houses have subsequently found it necessary to construct protective walls along their property boundaries.

DPI Fisheries is very concerned that the construction of the proposed seawall around the entire surveyed MHWM boundary will have significant impacts on other areas of Arrawarra Creek. Of particular concern is the proposal to build the seawall 13 metres out into what is currently Arrawarra Creek. This part of the proposal is likely to redirect stream flows, particularly during flood events. Additionally, the impact of wave deflection resulting from the construction of the proposed wall on adjacent land is also likely to be significant.

Setting a Precedent

If the current proposal for a seawall is granted consent it will set an unfavourable precedent. This precedent may be the catalyst for the owners of similar sites to seek consent to build a seawall along the cadastral boundary so that land located behind the wall can be reclaimed.

Replacing natural bank conditions with stone walls will change the nature of estuaries such as Arrawarra Creek. This is not consistent with the objective of the Habitat Protection Zone which aims to "provide a high level of protection for biological diversity, habitat, ecological processes, natural features and cultural features (both Aboriginal and non-Aboriginal) in the zone".

The precedents that this proposal may set are something that the DPI would like to avoid within the SIMP.

Consent

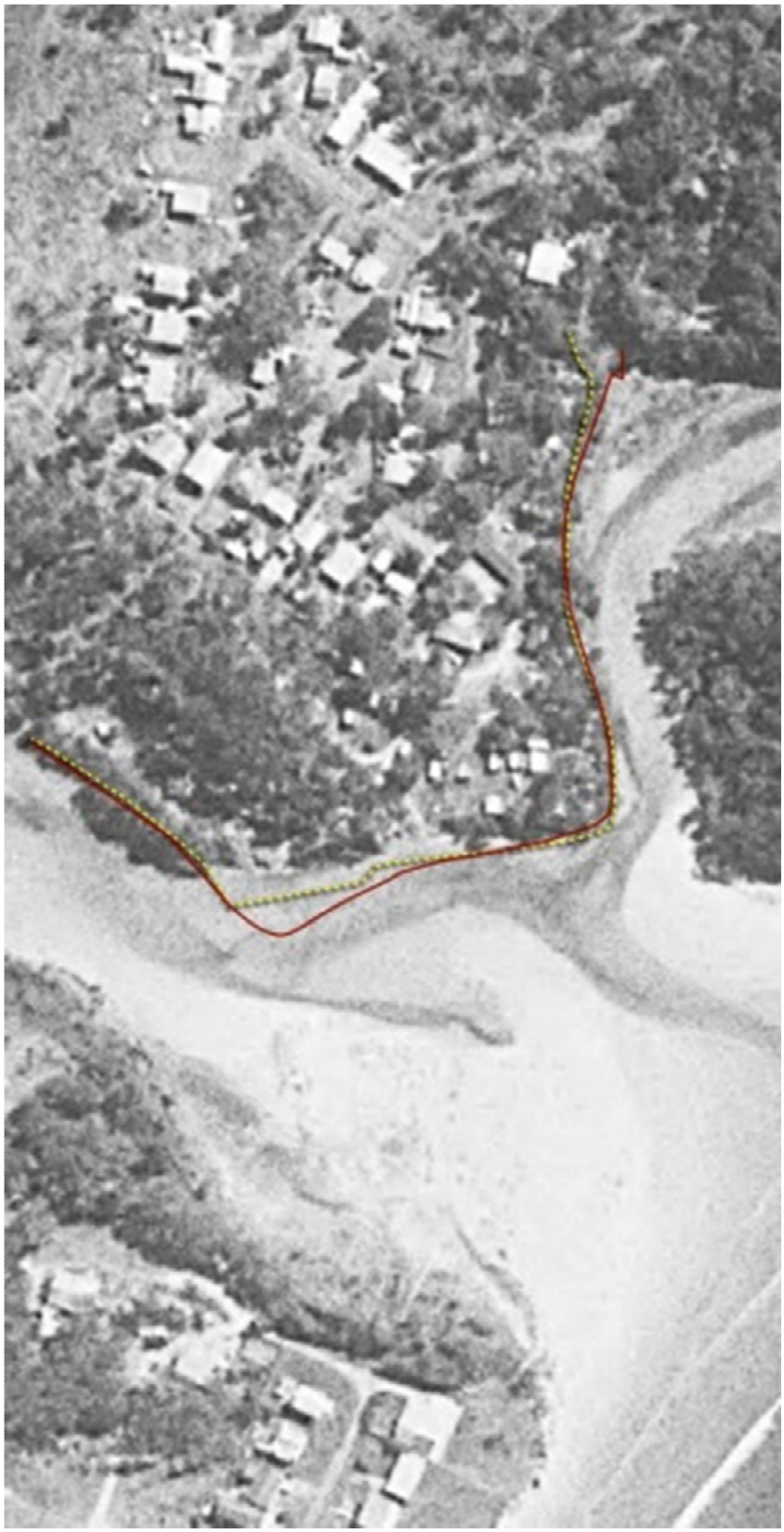
If the proposed seawall gains consent from the Coastal Panel, some parts of the wall are likely to be located within the SIMP. Consent must then be sought under the *Marine Estate Management Act 2014*. If the seawall is not located within the SIMP the proponents will still need to consult with DPI Fisheries and DPI Water as an approval may require authorities under either the *Fisheries Management Act 1994* or the *Water Management Act 2000*. The marine estate legislation requires agencies considering issuing relevant authorities would need to operate cognisant of the objects of the marine estate legislation.

Conclusion

Arrawarra Creek is an ICOLL and is an important nursery and breeding ground for many commercial and recreational fish species. The Statement of Environmental Effects does not adequately address the likely impacts and changes the proposed seawall will have on biodiversity, community composition and stream morphology. Additionally, the seawall will set an unfavourable precedent for future bank protection work within the SIMP.

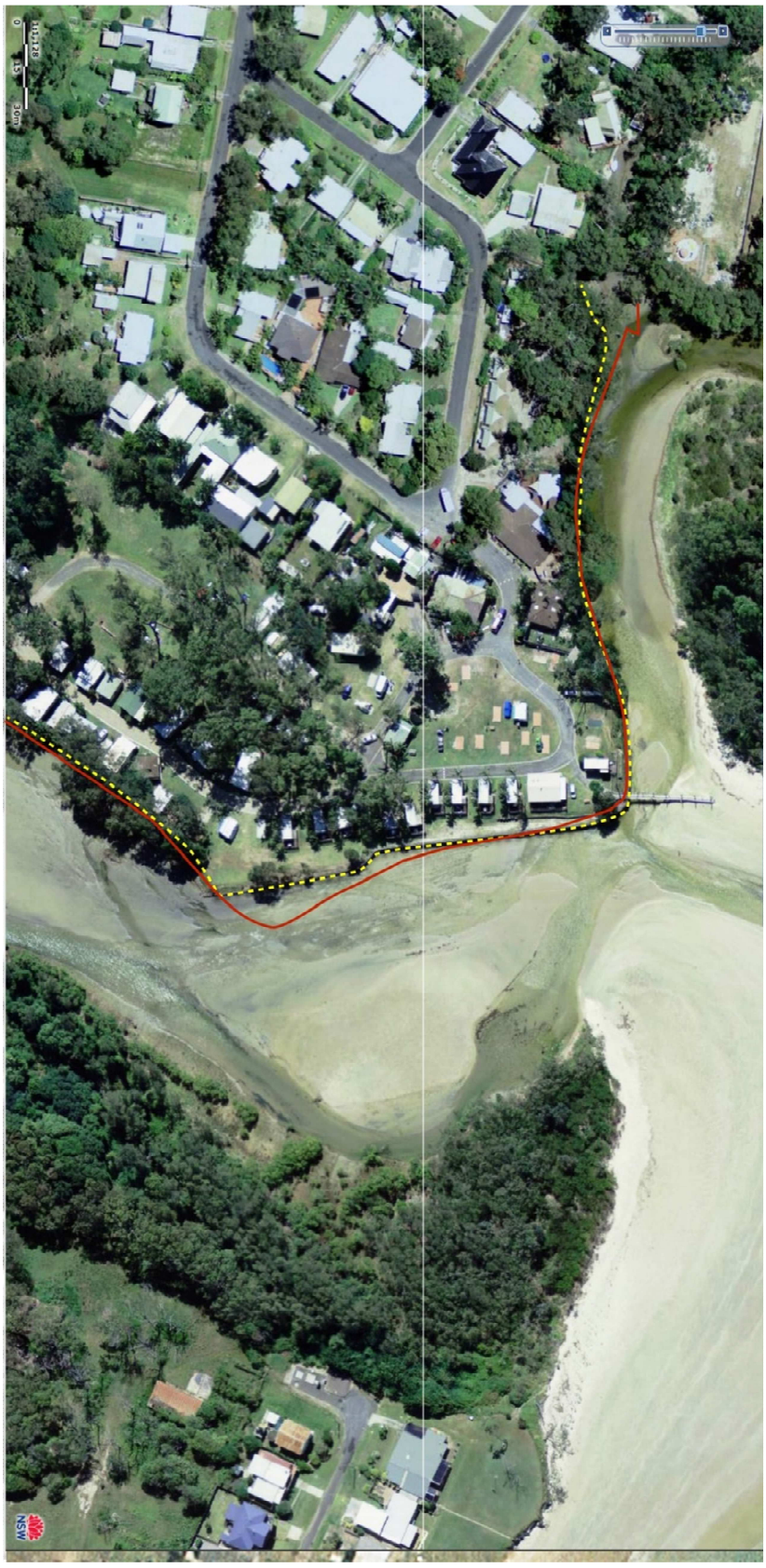
After considering the information supporting the development application, the significance and sensitivities of Arrawarra Creek and the requirements of the *Marine Estate Management Act 2014* the DPI cannot support the proposal as it is presented in the Statement of Environmental Effects and accompanying documents. Aerial photos from 1981 and ~2016 have been included in the following pages to support the statements above.

Arrawarra Creek 1981



Division of Primary Industries, DPI Fisheries
1243 Bruxner HWY WOLLONGBAR NSW 2477
Tel: 0407 264 391 ABN 72 189 919 072 www.dpi.nsw.gov.au

Arrawarra Creek Current



Division of Primary Industries, DPI Fisheries
1243 Bruxner HWY WOLLONGBAR NSW 2477
Tel: 0407 264 391 ABN 72 189 919 072 www.dpi.nsw.gov.au

Fisheries Management Act 1994

DPI Fisheries also assesses proposals under the *Fisheries Management Act 1994*. Administering this legislation, DPI Fisheries is responsible for ensuring that fish stocks and key fish habitats are conserved and ensuring the sustainable management of commercial, quality recreational fishing and viable aquaculture within NSW. The Department assesses proposals according to DPI Fisheries' *Policy and Guidelines for Fish Habitat Conservation and Management 2013 Update* (P&G). Where a proposal is to be undertaken consistent with DPI Fisheries P&G the Department may authorise or prepare General Terms of Approval for dredging and reclamation works, harm marine vegetation or the obstruction of fish passage. The review of this development application involved consideration of the following matters.

Fisheries Policy and Guidelines: waterway classification

The DPI Fisheries Policy and Guidelines (P&G) are taken into account when assessing developments or activities affecting **key fish habitats**. DPI Fisheries recommend proponents of development submit proposals that address the policy and guidelines. The document is available to view at: www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/468927/Policy-and-guidelines-for-fish-habitat.pdf .

The P&G outline the types of areas considered as key fish habitats. **Key Fish Habitats** include waterways mapped as 3rd order and more significant and tidal waterways extending to areas the Highest Astronomic Tide limit (generally considered to be 1m AHD).

The P&G also rank the sensitivity of **Key Fish Habitats**. This is done by classifying the **functionality** of the waterway as fish habitat. This assessment relates primarily to freshwater and estuarine watercourses and classifies these waterways using indicators such as:

- hydraulic geometry (stream shape and size);
- frequency of stream flows (perennial, intermittent or ephemeral);
- presence of aquatic habitat units (pools, riffles, vegetation, snags);
- presence of threatened or protected fish species and other native fish, and
- connection to adjacent habitats (e.g. floodplain wetlands).

Waterway **CLASS** can be used to assess the impact of certain activities on fish habitats in conjunction with the habitat sensitivity **TYPE**. The sensitivity type is used with the P&G statements to differentiate between permissible and prohibited activities or developments related to the importance of the **TYPE** of key fish habitat. Waterway CLASS and habitat sensitivity TYPE are described in the P&G.

Fisheries Policy and Guidelines: waterway classification for the subject site

The subject site is considered by DPI Fisheries to be a TYPE 1 (Highly Sensitive) CLASS 1 Major Key Fish Habitat. TYPE 1 CLASS 1 are noted in DPI Fisheries P&G to be the most sensitive and the most functional Key Fish Habitat. The subject site fulfils the criteria includes areas TYPE 1 criteria as it is part of the Solitary Island Marine Park.

The subject site also meets a range of criteria for TYPE 2 (Moderately Sensitive) Key Fish Habitat including being located within 100m of a marine park, the site being an ICOLL managed via an agreed entrance management plan. Coffs Harbour City Council note with regard the Entrance Management Plan for Arrawarra Creek: "while Coffs Harbour City Council have artificially opened Arrawarra Creek a number of times in the past, the Interim Entrance Management Strategy for Arrawarra Creek has been developed to limit mechanical opening of the ICOLL unless clear risks to both ecological and human health are present". Such a regime of management almost elevates Arrawarra Creek into a TYPE 1 Highly Sensitive Key Fish Habitat for this criteria which requires 'coastal lakes and lagoons that have a natural opening and closing regime.'

The site is considered to be CLASS 1 Major Key Fish Habitat as the site is characterised as an estuarine waterway. Determining the TYPE and CLASS of Key Fish Habitat for a site informs the application of DPI Fisheries P&G for the site.

Fisheries Policy and Guidelines applicable to the proposal

Relevant items from DPI Fisheries Policy 5.2.2 General Policies for Foreshore Reclamation state:

1.) NSW DPI will generally not support or approval reclamation of TYPE 1 and 2 or CLASS 1 – 3 fish habitat for private development such as roads, walkways, housing or commercial development, foreshore or beach improvement.
2.) NSW DPI will generally not support or approve other reclamation activities impacting on TYPE 1 or 2 habitat unless the impacts can be mitigated or compensated.

The subject proposal involves foreshore reclamation which is described by DPI Fisheries P&G as being 'where existing aquatic habitat (land submerged by water intermittently or permanently), is filled in or drained to become dry land'. The P&G specifically note that 'some foreshore works (e.g. seawalls, groynes, channel realignment, beach nourishment and foreshore stabilisation works) are considered to be reclamation'. The subject proposal includes a seawall alignment that follows the property boundary rather than the current shoreline. DPI Fisheries have formed the view that the subject proposal satisfies the definition of reclamation works as described by s198A of the *Fisheries Management Act 1994*. The proposed reclamation will directly and indirectly impact on TYPE 1 (highly sensitive) Key Fish Habitat. The proposal does not include strategies to mitigate or compensate these impacts.

Relevant statements from Polices 5.2.4.1 Policies and guidelines for foreshore stabilisation works state:

1.) NSW DPI will generally not approve the construction of new breakwater, groynes, seawalls or retaining walls except where there are no feasible alternatives for erosion control and valuable assets are at risk. Modifications or repairs to existing walls or groynes should incorporate designs that reduce wave energy reflection and include restoration of the original shoreline
And
3.) NSW DPI will generally only approve foreshore stabilisation works (with the exception of groynes) that follow the natural contour of the shoreline. Unnecessary foreshore or stream realignment will not be approved.
5.) NSW DPI will generally not support the use of vertical retaining walls, gabion baskets or concrete lining for foreshore works. Steep retaining walls comprised of gabion baskets and concreted lined channels have little fish habitat value. Gabion baskets may also fail over time, infilling downstream habitats.

The proposed seawall alignment in the subject development application is to be located along the property boundary rather than the current shoreline places. This component of the proposal places it outside of DPI Fisheries policy. In addition, the proposed wall is steep (1v : 1.5h) and does not appear to incorporate elements of the document *Environmentally friendly seawalls: a guide to improving the environmental value of seawalls and seawall-lined foreshores in estuaries*. Constructing seawalls in accordance with this document is strongly recommended by DPI Fisheries and it is Guideline 5.2.4.1.C within DPI Fisheries P&G.

Conclusion

The subject proposal is located in a TYPE 1 (highly sensitive) Key Fish Habitat, specifically a habitat protection zone within the Solitary Islands Marine Park. The subject proposal is inconsistent with five of DPI Fisheries Policies (5.2.2.1; 5.2.2.2; 5.2.4.1.1; 5.2.4.1.3 and 5.2.4.1.5) described in the P&G.

The proposal is inconsistent with the objective of the Solitary Islands Marine Park Habitat Protection Zone which aims to "provide a high level of protection for biological diversity, habitat, ecological processes, natural features and cultural features (both Aboriginal and non-Aboriginal) in the zone".

These inconsistences, in particular, the alignment of the wall are not able to be resolved via the requirements of general terms of approval.

DPI Fisheries is, therefore, unable to provide general terms of approval for the subject proposal.

If you have any further enquiries regarding this response in relation the Solitary Islands Marine Park please call Mr David Greenhalgh on 6691 0604 or via email: david.greenhalgh@dpi.nsw.gov.au for matters relating to the Fisheries Management Act 1994 and DPI Fisheries Policy and Guidelines please contact me on 0407 264 391 or via email: patrick.dwyer@dpi.nsw.gov.au

Yours sincerely

Patrick Dwyer
Senior Fisheries Manager - Aquatic Ecosystems (North Coast)

Division of Primary Industries, DPI Fisheries
1243 Bruxner HWY WOLLONGBAR NSW 2477
Tel: 0407 264 391 ABN 72 189 919 072 www.dpi.nsw.gov.au