Assessment of
Recreational Fishing and Bait Collection

Proposed Extension
to Sand Extraction Area

Shoalhaven River Estuary
Adjacent to Pig Island

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1 INTRODUCTION

Peter Dalmazzo was commissioned by Terara Shoalhaven Sands to prepare this assessment of recreational fishing and bait collection in a proposed extension to the existing sand extraction area near Pig Island in the Shoalhaven River estuary at Terara. Figure 1 shows the location of the proposal. Figure 2 shows some bait collection and fishing locations in central Shoalhaven estuary. Unless other sources are cited, the following information is based on experience and personal observation made by the author of this report.

2 RECREATIONAL FISHING

Recreational fishing in the Shoalhaven region represents an important leisure activity for the local population, as well as a major tourist attraction for visitors and a significant economic resource for local industries (Miles and West, 2011). Fishing occurs in major estuaries within the region, namely the Shoalhaven River and St Georges Basin, as well as in Jervis Bay, several smaller coastal lakes and the ocean foreshore and nearshore waters.

A survey of recreational fishing in the Shoalhaven River estuary by Miles and West (2011) found that the majority of fishing effort was from boat fishers and was focused in the lower part of the estuary, for example in Berry's Canal and near Greenwell Point (Figures 3 and 4). Recreational fish catches were dominated by bream and flathead and the catch rates of most species were comparable to those estimated for other estuaries in central and southern NSW.

Most fishing around Pig Island occurs in the channels to the north and south of the island. Recreational fishing on the sand flats in the proposed extraction area is limited by tidal water depth. At mid to low tide levels there are limited opportunities for fishing but at higher tidal levels a small number of people fish from small boats for common estuarine species such as Mullet, River Garfish, Yellowfin Bream, Sand Whiting and Dusky Flathead. Luderick are caught near the seagrass bed along the drop off into the channel to the north of the proposed extraction area. In the deeper water areas that have previously been dredged there are recreational fishing opportunities for various species including Mulloway. Fishing can be carried out in these areas at any time in the tide cycle.

The proposal would convert several hectares of shallow water fishing area to deep water fishing area over a period of several years. During extraction operations there would be little impact on fishing activities as people in boats could fish quite close to the dredge.

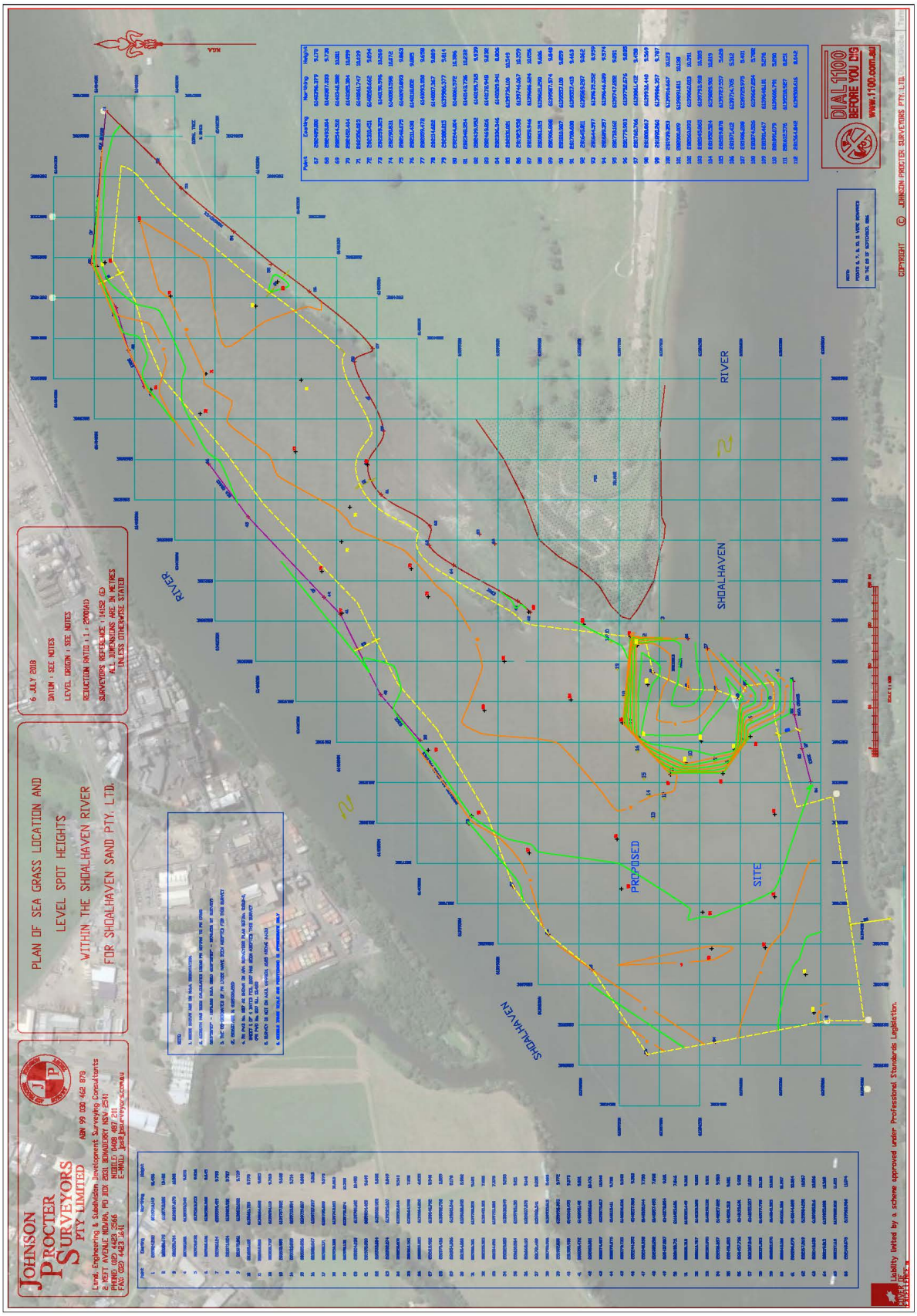

Figure 1. Location of proposed extension to sand extraction area.

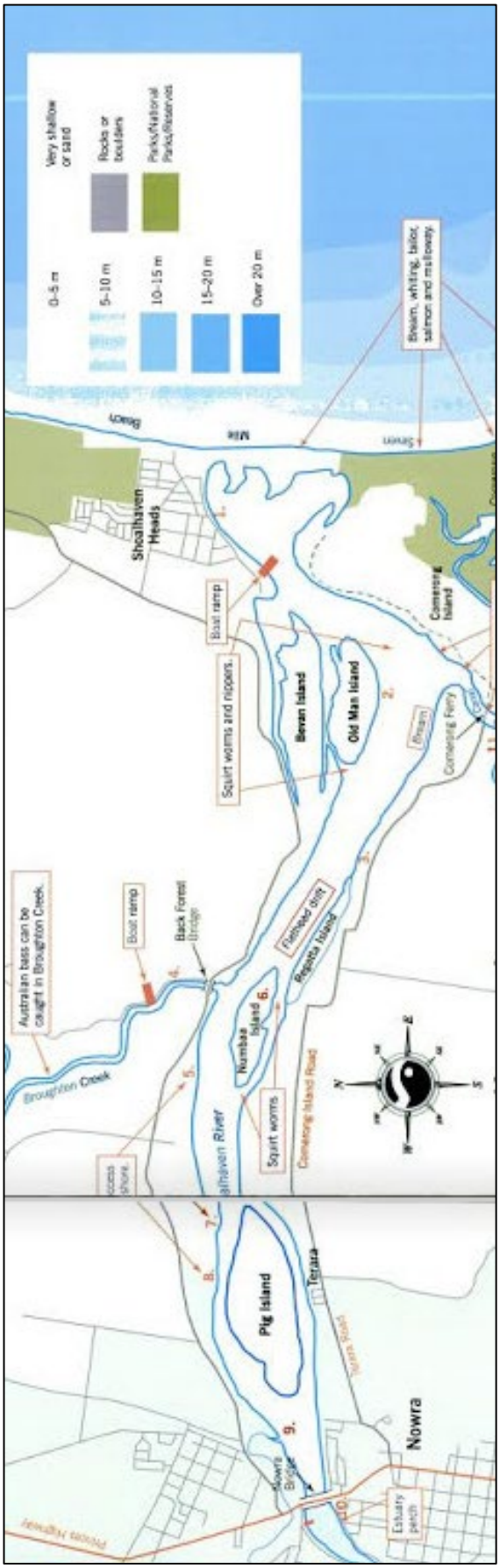

Figure 2. Bait collection and fishing locations in central Shoalhaven estuary.
Source: © Brown, 2010

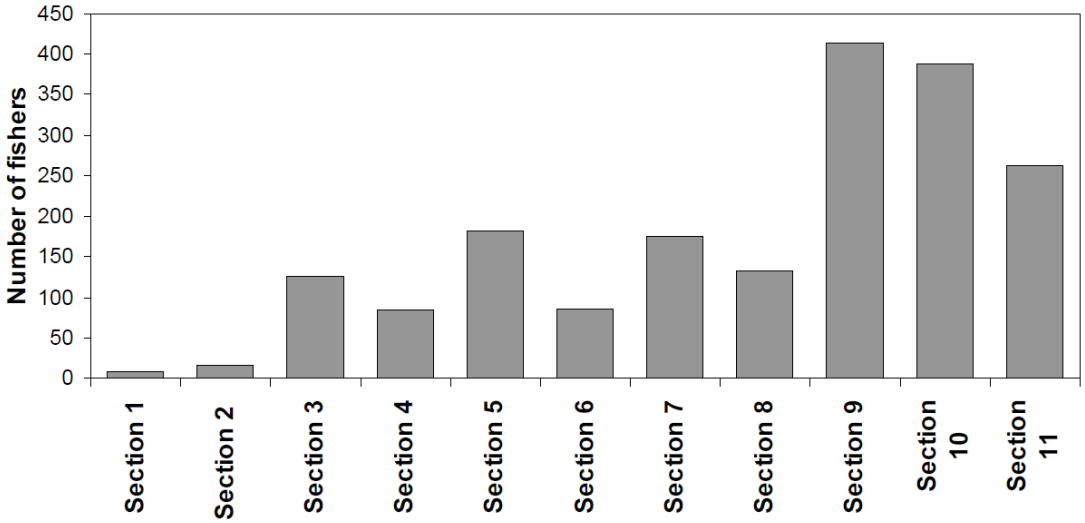

Figure 3. Total number of fishers recorded in each of the 11 sections of the Shoalhaven and Crookhaven Rivers. The proposed extraction area is at the junction of Sections 3 and 4 (see Figure 4).
Source: © Miles and West, 2011

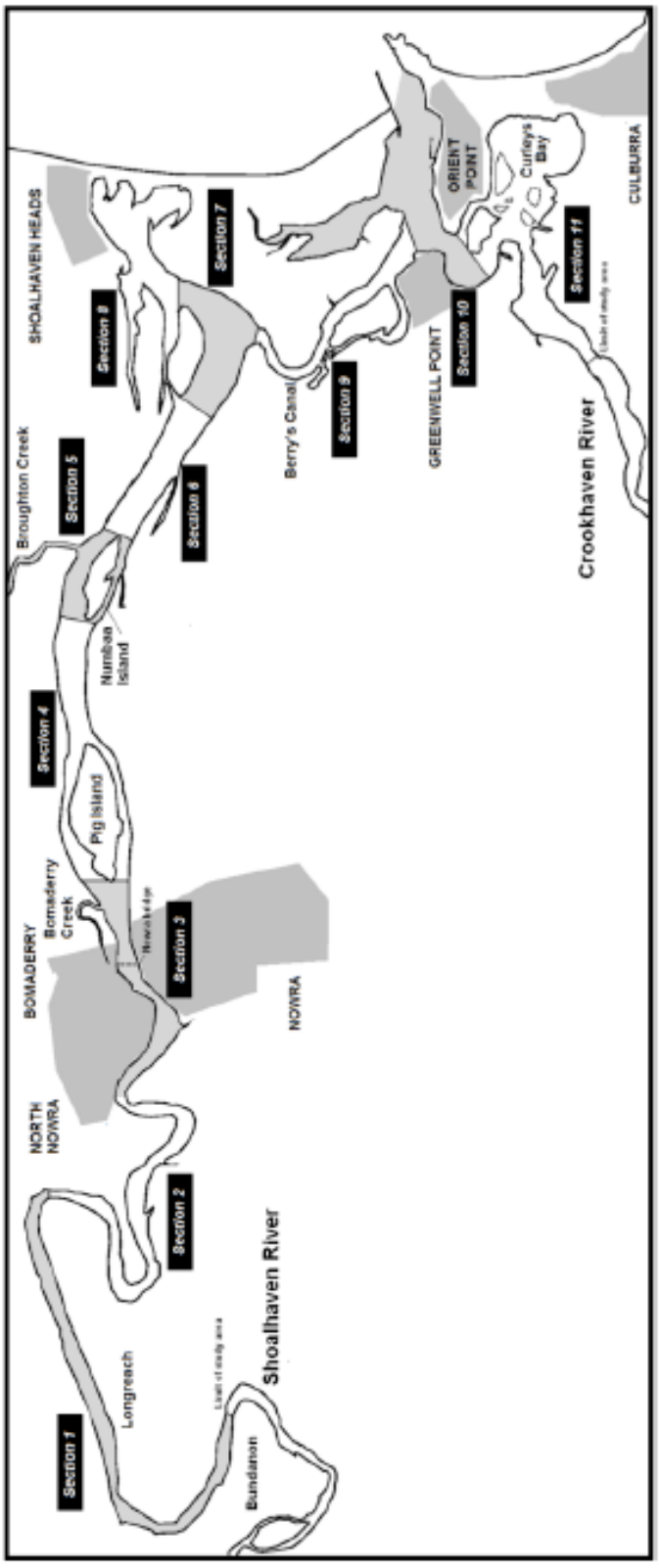

Figure 4. Map of the Shoalhaven River, Berry's Canal and Crookhaven River showing the 11 sections defined for sampling purposes.
Source: © Miles and West, 2011

3 BAIT COLLECTION

Recreational fishers collect a number of animal and plant species for use as live bait from the Shoalhaven estuary including nippers, poddy mullet, green weed and squirt worms. On the sand flats and intertidal sandy beaches around Pig Island, the most commonly collected bait is the squirt worm, although occasionally poddy mullet or green weed are collected.

Squirt worms are excellent fresh bait for a variety of estuarine fish species. In the Shoalhaven estuary, large populations of squirt worms can be present from time to time in the middle estuary between Nowra and Shoalhaven Heads but further downstream, nippers are numerically dominant as infauna in the sand flats in place of squirt worms. Squirt worms are collected from sand flats and intertidal sandy beaches around Pig Island, Numbaa Island, Bevans Island and Old Man Island near Shoalhaven Heads (Finney, 2005; Brown, 2010) and occasionally at Grays Beach, upstream of the Princes Highway bridge. The Numbaa Island and Greys Beach areas are accessible from the mainland shore but Pig Island is only accessible from the water.

Squirt worms are generally collected from intertidal areas and just below low tide level. Populations extend into shallow subtidal areas beyond the depth at which bait collectors can access them. The worms live in mucus-lined burrows in the upper layer of sediment, from which they feed on small particles of detritus (Connolly *et al*., 2005). The openings of the burrows are visible on the sediment surface as small holes a few millimetres in diameter. Squirt worms are patchy in their distribution and their abundance. Most successful bait collectors seek out dense aggregations of worm burrows and collect them during lower parts of the tidal cycle using a bait pump and sieve. The worms' locations vary from time to time in response to ecological factors including sand and water movement, salinity and reproductive success.

Around Pig Island, squirt worms may be collected from parts of the proposed extension to the sand extraction area as well as along sandy beaches on the northern and southern sides of the island. The southern shoreline of the island, adjacent to a previously dredged area, is a particularly important collection area (Witheridge, pers. comm.). Over recent years, several intertidal beach areas around Pig Island, Numbaa Island and adjacent mainland foreshore areas have been planted with mangroves which has rendered them unusable as worm collecting areas because of the density of mangrove roots in the sand. During recent protection/rehabilitation of the eroding foreshore on the southern shore of Pig Island in 2018 a decision was made to not plant mangroves to ensure the area remains available as a squirt worm collecting area.

The proposal would remove several hundred square metres of potential squirt worm collecting area over a period of several years. The 25 metre buffer to the shoreline would remain as worm collecting area. Intertidal sandy beach and shallow subtidal areas adjacent to the past extraction areas on the southern side of the island have remained viable as worm collection areas. During extraction operations there would be some impact on bait collecting activities as people would not be able to collect worms close to the dredge.

4 REFERENCES

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