Two fish traps located on the mid-north coast of New South Wales

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The phenomenon of stone constructions is not an uncommon one in prehistoric Australia; all students of the Aborigines are aware of the unusual ceremonial stone arrangements throughout the country. The stone fish traps reported from widely distributed sites around and across the continent therefore come as little surprise.

Roth (1901:23) has described the damming of the Russel, Barron and Mulgrave Rivers of Queensland in order to catch fish while other traps have been reported on Lake Condah, western Victoria (Massola 1968:197-200) and near Blanchetown on the Murray River in South Australia (Pretty 1970:46). Probably the most famous of these sites is the vast network of traps in the Darling River at Brewarrina in northern New South Wales. First described by Narland in 1888 (Allen 1968:109) these have subsequently become the standard example of complex economic organisation amongst the Australian Aborigines. A smaller example of a similar construction existed on the Bogan River and was described by Sturt as early as 1833 (Allen 1968:109).

A fish trap has been reported in the Nepean River at Castlereagh (Mr Ian Sim 1971: pers. comm.). Described as consisting of 'long stone walls', this site was frequently visited by Aborigines and provided a ford across the river. The trap was destroyed by floods earlier this century.

However, this article is not concerned with these inland examples of fish traps but with those along the perimeter of the continent. Stone fish traps have been reported on the islands of Hinchenbrook (Stephens 1946:1), Sweers, Bentinck, Mornington and the Wellesley Group off the Queensland coast, as well as on the mainland itself (Colliver 1970:7-8). McCarthy lists fish traps along the south-western coast of Western Australia, at La Grange Bay, Cambridge Gulf and Wilson's Inlet (McCarthy 1970:83). A complex of traps has been described at Mount Dutton Bay on the western side of the Eyre Peninsula in South Australia (Mountford 1939:169). Another extensive trap on the opposite side of the same peninsula, at Louth Bay, has recently been reported and photographed (Mrs Gladys Byfield 1975:pers. comm.). The site appears to consist of a series of square enclosures connected by meandering stone walls. The South Australian Museum holds small collections of stone artefacts from middens in the same area as these two traps.

There is only one published account of stone fish traps on the New South Wales coast. This is Enright's (1935:8) discussion of the site on Broughton Island, north of Port Stephens. He describes a rock floor platform, covered at high tide at the southern end of Coal Shaft Beach, on which '. . . there is a line of stones arranged in horse-shoe shape, with the toe facing the sea, and in that there is a small opening within which is a similar shaped but smaller structure'.

Fish traps have been reported at three other localities along the north coast of New South Wales. Two of these have been investigated in detail and form the subject of this paper.

Because of the paucity of information on stone fish traps the writer was cautious in accepting the first site as a fish trap. Located at Point Plomer, north of Port Macquarie (fig. 6), it was almost covered by sand when first visited in 1968. Since then the site at Arrawarra (fig. 6), north of Woolgoolga, has been surveyed and there can be little doubt of the authenticity of the two sites. A third site has been reported at Angourie, south of Yamba (see fig. 6).

The ethnohistorical evidence from the northern coast of New South Wales is rich in references to the importance of fish to the native inhabitants of the area. Clement Hodgkinson, government surveyor, and one of the most astute observers in the area, wrote that fish 'formed a never failing article of food for the blacks' (Hodgkinson 1845:223). This observation is borne out by the many descriptions of fishing. Despite the numerous sources which can be cited for fishing activity, there is only one reference to the use of stone fish traps (Henderson 1851,II:136-7). There are many references to the spearing of fish in the estuaries and along the coast (e.g. Henderson 1851,II:137; Ainsworth 1922:30; Hodgkinson 1845:53,223); and in 1968 Mr J.B. Beilby, an elderly resident of Stuart's Point on the lower Macleay River, described to the writer how 'smart-weed' was placed in small pools to stupefy fish and drive them to the surface where they were easily caught.

More significant for the problem in hand is the large number of references to the use of nets in the catching of fish. Ainsworth (1922:29) describes the Ballina Aborigines using a finely woven net, about eight feet across, into which the fish were driven.

Cousins (1933:22), writing generally about the north coast, simply states that fish were netted, while Dawson (1831:67) comments that women were responsible for making the fishing nets. Henderson, writing of the Macleay River Aborigines, gives us the most detailed description of these nets. They were made from the 'curryjong' bark, stretched on boughs so that the net was in 'size and shape like two large kites . . . joined together down one side' (Henderson 1851,II:122).

There are a number of reports of the building of some form of obstruction across tidal creeks, and parts of rivers made shallow by drought. Mr Beilby's account of fencing off parts of streams to prevent the escape of fish is supported by Rudder (1925:11) and by a description from Burns who visited the Macleay in the early 1840s. He records a 'matted fence' on the tidal part of the Wilson River, which enabled fish to be speared as the tide retreated (Burns 1844 Book 3:93). Mary Bundock (1898:5) describes similar structures erected on the Richmond River during the summer. Further evidence of the widespread and frequent use of this fishing technique comes from Enright's article (1935:9) in which he refers to traps erected in Fishery Creek in the Maitland district. Henderson (1851,II:137) provides additional evidence for the damming of shrinking summer streams but adds that stone fish traps were used. No further details are given but his remark lends credence to the idea that stone fish traps were still in use along the New South Wales coast during the nineteenth century.

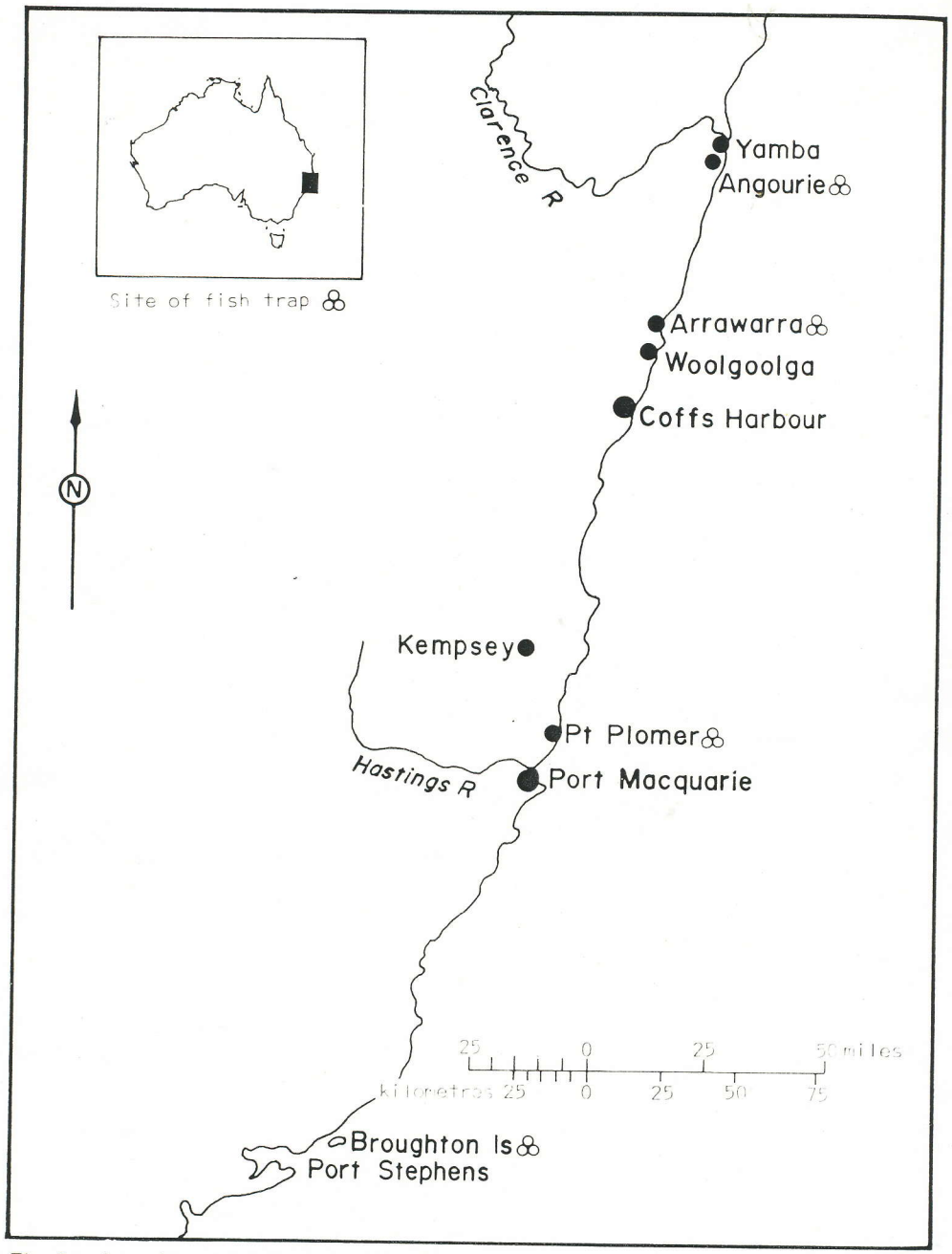

Fig. 6: Location of fish trap sites on the North Coast

In addition to the written sources there is the local tradition that surrounds the sites. The trap at Point Plomer is well away from the mainstream of European activity. Some tourists are attracted to this quiet spot and local fishermen net large loads in the wide bay, but relatively few people are acquainted with the area, or with the structure. Mr Thurgood of Kempsey, who showed me the site, has known of its existence for fifty years and there has long been a local tradition of its use by the Aborigines as a fish trap. While this is not definite proof of its construction and use by the Aboriginal population, it lends strong support to the notion.

On the other hand, the site at Arrawarra is widely known locally and there is a prevailing tradition in the area of its Aboriginal origins. Mr Ian Sim has collected some invaluable evidence on Aboriginal life along the north coast from Aboriginal informants and has been able to provide some excellent information relating to the Arrawarra fish traps. He believes that they were used until 1900 (and perhaps later) by local Aborigines, and his Aboriginal informant indicated that their use was a regular feature of Aboriginal life in the previous generation. Mr England of Coffs Harbour has reported meeting an Aboriginal party in the 1930s that had just collected about one hundred pounds of fish from these traps.

Mr Laurie Ferguson, a member of the Yamba Aboriginal Community, has reported a third trap at Angourie in which he can remember large numbers of fish being caught about thirty-five years ago. These last two reports carry the use of fish traps by north-coast Aborigines well into the twentieth century. Certainly in other parts of the country fish traps were in use in historic times. The earliest account seems to be that of Dampier (McCarthy 1970:83) who records the use of a stone trap on the Kimberleys coast to catch small fish. In later times Mountford (1939:196) has reported the use well into the nineteenth century of the Mount Dutton fish trap on the Eyre Peninsula.

Whilst the upper limits of the date for the use of the traps is established as being well into the twentieth century, their origins must remain obscure. Dates for coastal middens in northern New South Wales are comparatively recent. A charcoal sample from a shallow but extensive pipi midden at Maguire's Crossing, a few miles north of Point Plomer, produced a date of 1210 ± 90 B.P. (GaK 2456, Campbell 1972). Geomorphological evidence from the same area indicates that the present dune system was established between 7,000 and 6,000 years ago, with the stabilising of sea levels in that region (Hails 1968:142). This natural development would give us the earliest possible date for the building of the fish traps.

The two sites to be described share many features. The Point Plomer trap is the smaller of the two, now consisting of only one square enclosure (fig. 7, Plate 7). It lies in the southern curve of the open Barrie's Bay and is on the northern side of the headland (see military survey map, Port Macquarie 051239). An extensive accumulation of boulders on the southerly curve of the beach has been used to provide the material for the stone walls of the trap. The trap itself is in a very poor state of preservation, with the rocks widely scattered within the square and the enclosure almost sanded up (see fig. 7). Nevertheless, a distinct line of rocks forming the southern wall runs up the beach to the high tide mark, making a wall about 156 feet in length. At the seaward end this wall rises to some three feet above the present level of sand, and at this point very large boulders have been used in the building of the wall. Despite the obvious displacement of rock that has taken place, the internal area of enclosure is 2,500 square feet, the original shape appearing to have been square with sides a little over 50 feet in length. The trap is almost completely submerged at high tide but is drained well before low tide.

There is no indication of occupation sites in the immediate vicinity. However a small cave opens onto a sheltered, sandy beach formed between the southern and central prongs of the trident-shaped Point Plomer (military survey map, Port Macquarie 053231). Although swept clean by very high tides this may have provided shelter for groups using the trap located about half a mile away. Certainly Aboriginal presence is indicated on the beach to the south of Point Plomer. In 1947, McCarthy reported an Aboriginal pipi midden and associated workshop located on this beach. Large numbers of heavy stone implements and waste flakes were collected as well as four edge-ground axes and one fish-hook file (McCarthy 1947:412-15). The beach has since been mined by a mineral sands company so only scattered shell and sand-blasted flakes and cores now remain to attest Aboriginal activity on this section of coastline (military survey map, Port Macquarie

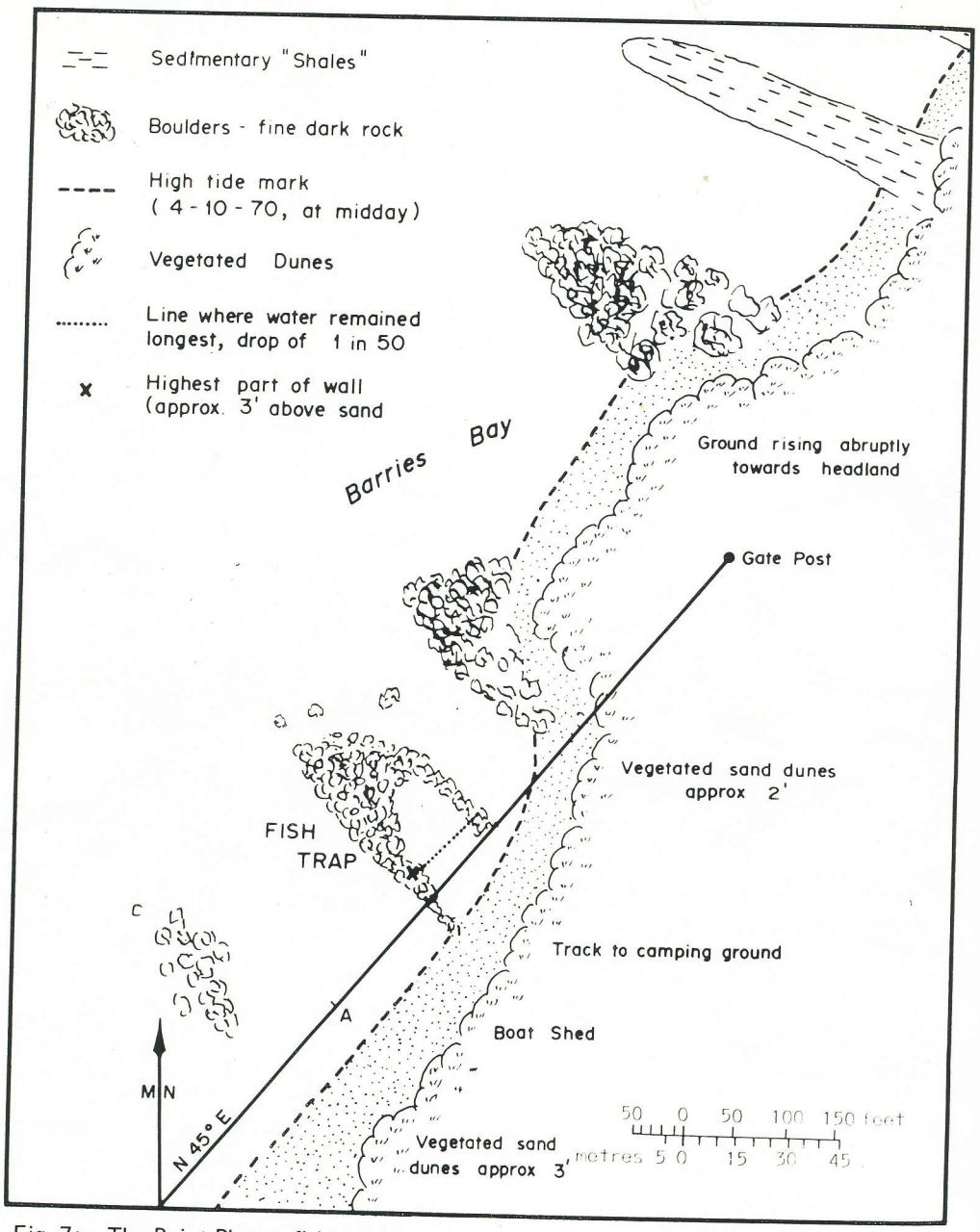

Fig. 7: The Point Plomer fish trap

050228). In the light of Mr Sim's comment already mentioned regarding the use of the Castlereagh fish trap in conjunction with an axe factory, the presence of the two sites within a mile or so of each other is surely more than coincidental. Some of the boulders on the beach near the trap also bear signs of working. At the northern end of Barrie's Bay, south of Big Hill, a small midden associated with waste flakes has been located. Two axe-grinding grooves were also found in this area, but it is impossible to establish any direct connection between these sites and the fish trap. The undisturbed low dunes that border Barrie's Bay almost certainly contain midden deposits. This concentration of sites indicates considerable Aboriginal activity along this section of the coastline.

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Plate 7: The Point Plomer fish trap

There is a striking resemblance between the setting of the Point Plomer trap and those at Arrawarra (military survey map, Woolgoolga 324693) (figs. 7, 8). At the latter, the site is similarly located in the southerly curve of a wide bay and flanked by a sheltering headland, where an extensive boulder beach has accumulated. However, a rocky floor of shaley material runs out into the sea forming a firm base for part of the structure (Plate 8). Natural bars of this bedrock have also been incorporated into the walls of trap A (see fig. 8).

A close examination of a plan of the site (fig. 8) reveals the complexity of the structures at Arrawarra. The first section to become visible about two hours after high tide is designated A on fig. 8. Here the skilful use of natural bars and boulders has enabled the construction of a square with sides measuring 60 feet, on the firm base of the rock platform. Though many rocks have been dislodged the care with which these walls have been built is evident in a 14 feet long section of the southern wall consisting of boulders 18 to 30 inches across and about 18 inches in height. These have been carefully aligned and packed.

Some four hours after high tide, just as trap A is almost drained, the second trap, designated B, becomes visible. The north-east corner of this structure, in fact, appears as a pile of rocks much earlier but its significance is not apparent until later. This pile of rocks forms a corner of two walls and is three feet in height and over six feet wide at its base. The two walls intersect at right angles and run 60 feet south and west to meet the other two walls that form the almost perfect square of the trap. Unlike trap A, trap B is built on the sandy floor of the bay and is made entirely from beach boulders. The landward wall of trap B is approximately 120 feet from the high tide line and runs almost parallel to the beach. Extending from the high tide line perpendicular to this wall, and aligned with the southern wall of trap B, is a smaller wall of boulders, some nine inches high. This wall, similar to the southern wall at Point Plomer, runs into the sea for 60 feet, and is

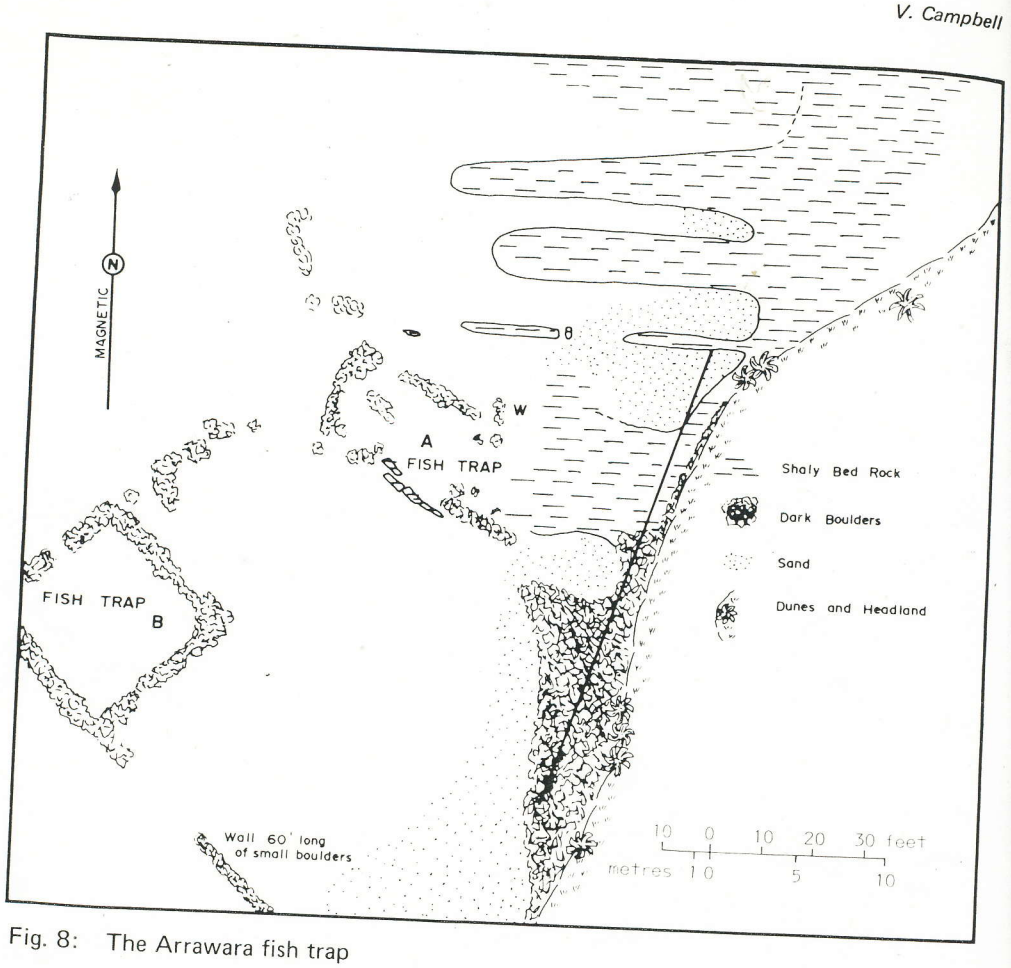

Fig. 8: The Arrawara fish trap

separated from trap B by about 60 feet of water. Although in line with trap B this wall appears to have no function now and may be the remnant of a third trap.

The final picture of the site at Arrawarra is not of a single trap as at Point Plomer, but of a total structure of at least two completed squares each with an internal area of 3,600 square feet, with an additional wall, which originally may have been 120 feet in length, enclosing the area between the shore and the two main traps. Other outcrops of rock shown on the map may represent additional building, but are now too disturbed for human activity to be identified with certainty.

The deterioration of these sites that has already taken place makes it difficult to be certain how they functioned. In referring to the use of the Mount Dutton trap Mountford states that the structure was placed,

> . . . at such a position on the sea-shore that, when the tide was flowing, the water would enter and fill the enclosure. The fish would either be swept into the trap by the current, or enter when searching for food. When the tide was at its height the natives placed stones across the opening and at low water collected the fish from the shallow pools. (Mountford 1939:196)

This is interesting in the light of its similarity in appearance to the site at Point Plomer. That the two east coast examples were used in this manner is indicated by Mr Sim's evidence. His Aboriginal informant said that the traps were baited with shellfish or scraps of meat to attract fish feeding in the area. The fish would enter the traps through an

Plate 8: The Arrawara fish trap

opening in the seaward wall, and once large numbers were inside this entrance was blocked with stones. Mr Sim believes that the traps may have been baited more than once, to accustom the fish to the area, before the entrance was closed. This last operation was often carried out during high tide at night so as to disturb the fish as little as possible. As the tide fell, stranding the fish, men entered the traps with nets and sticks to make their haul. Mr Sim comments that his informant described a 'rather crowded scene' as this took place. It is important to note the use of the fishing net in this operation as its presence and use on the coast is so widely documented.

The existence and use of these traps gives us valuable information about the Aboriginal way of life. It also poses some problems. Obviously their construction involved a considerable outlay of time and manpower, presumably demanding a high level of organisation. It is evident that a large network of traps such as those at Arrawarra could provide a large group of people with ample fish, and one could assume that they are the result of the combined labours of many people. To support this suggestion there are, from other parts of the north coast of New South Wales, reports of prolific sources of food resulting in semi-permanent settlements. We have records of such camps based on the availability of flying fox (Dawson 1831:309) and oysters (Ainsworth 1922:8, 29). It is possible that the fish traps provided another resource to be drawn upon in a similar manner. The Bunya pine festivals in southern Queensland and the exploitation of the aestivating Bogong moths in the southern uplands are famous examples of a single food item attracting large inter-tribal gatherings to an area. Extensive ceremonial activity was associated with the Bunya feasting. A well tended and carefully baited fish trap would secure huge catches, especially during the seasonal runs of fish up the coast. Yet there are no reports of large gatherings of Aborigines at either locality, as in the Bunya pine festivals. Assuming that large gatherings did occur, the absence of such reports may be the result of the isolation of the two sites.

However, the evidence that exists concerning the exploitation of fish along the north coast indicates that it was not used to support large gatherings or long term occupation, despite its general importance in the Aboriginal diet. This is possibly because fish are widely distributed, being available in all coastal and estuarine waters. The presence of fixed fish traps, such as those at Point Plomer and Arrawarra, could be expected to counter this by making larger quantities of food available in a restricted area, thus encouraging a concentration of population. This does not appear to have happened; Mr Sim

states that his Aboriginal informant's comments indicated that the use of the traps was related to neither seasonal gatherings nor to ceremonial activities. The tides were the only agent determining their use.

Mr Sim points out that 'a clear distinction needs to be drawn between any traditional arrangements whereby they [the traps] were used, and their use by Aboriginal groups . . . in the late 1800s and early 1900s when the Aboriginal way of life was broken down' (Sim 1971:pers. comm.). Nevertheless he believes that his information relates to the immediate post-contact period and therefore can be compared to other recollections of nineteenth-century life.

Amongst these other accounts from the early contact period we have frustratingly vague reports of Aboriginal movements. They are most imprecise when referring to seasonal movement of the tribes from the forested hinterland to the coast 'during the season favourable for fishing' (Oakes 1842:65). As seasonality is discussed elsewhere in this volume (pp.74-77, 88-89, 109), it is sufficient here to state that despite the evidence of ceremonial gatherings and regular movement to the coast, these sources corroborate Mr Sim's oral evidence relating specifically to the fish traps. However likely it seems from the European viewpoint that these structures would support large numbers of people for extended periods, in fact they did not. They appear to have been used inconspicuously by small groups during the period for which we have historical evidence.

It is possible that these traps occupied a more important place in the Aboriginal way of life prior to its disruption by Europeans. Our information relates to the most recent period when spasmodic use and maintenance of the structure may have replaced their more intensive use at an earlier time. It has already been suggested that the traps could have been built at any time over the past 7,000 years. Our records may relate to a period when their main function in Aboriginal society has been almost supplanted by the more mobile and widely distributed fibre nets.

Despite the denial of the seasonal element by Mr Sim's informant, other sources are insistent that some seasons were more favourable than others for fishing, and this resulted in a movement towards the coast by the Aborigines. Unfortunately most are vague as to the time of year involved. The most likely times of the year that people might come to use the fish traps can be inferred by examining the habits of the fish they caught.

Mr Laurie Ferguson of Yamba recalls that bream *(Areanthopagus australis)* were caught in the trap at Angourie and that winter was the best time for this fish. As bream spawn in the winter they are most plentiful in the shallow harbours in the colder months and are readily caught in baited traps along the foreshore (Roughley 1966:71). Both 'Australian salmon' *(Arripis trutta)* and sea mullet *(Mugil grandis)* come close to the shore when spawning; Ainsworth (1922:30) and Hodgkinson (1845:53) mention that these fish were valuable elements of the Aboriginal diet. Ainsworth (1922:30) tells us that the salmon appeared in the month of September. These fish spawn in September and become numerous again towards the end of summer (Woods 1882). Sea mullet are available throughout the year, but in April and May when spawning occurs they appear in large numbers close to the shore (Roughley 1966:24, 25). It is such an event that W. Scott describes at Port Stephens:

> The schools used to travel from west to east close inshore on the northern side of the harbour, at high water . . . the fishermen, generally about half a dozen at once would rush into the water up to their middles . . . then when the school was within striking distance the spears would all be landed at once. (W. Scott, quoted in Brayshaw 1966:61).

Local informants have mentioned five other species of coastal fish caught by the Aborigines: black bream, cod, groper, schnapper and drummer. Black bream *(Chrysophrys australis* and *sarba)* are suitable for netting, and therefore are likely to be readily trapped.

Like salmon and mullet, black bream are most plentiful in the autumn months. Cod, groper and schnapper favour rocky headlands and reefs and so feed in the vicinity of the traps. However, Woods (1882:33-4, 74-5, 39-42) states that the usual method employed by Europeans to catch them is the hook and line, and he describes Aborigines spearing groper amongst the rocks in which it lives. This method seems best suited to the habits of all three fish. All are large species and careful baiting of the traps would be essential to attract them into the relatively shallow waters of the traps. Schnapper *(Pagrus unicolor)* arrives in schools in early summer (Woods 1882:39-42) and this would be the best time of year in which to trap them.

Table 1 lists fifteen common fish species caught in the coastal waters of New South Wales. Where possible, information regarding weight or size, European methods of catching, seasons in which fish are most commonly available, and favoured habitat have been included.

With the exception of bream no species of fish appears in large numbers during the winter, and some disappear. Similarly mid-summer is a period of surprisingly little activity, only the mackerel spawning at this time. Salmon and whiting are both available most plentifully in the spring months with schnapper reaching optimum numbers in the very early summer. Seven of the fifteen species occur most numerously between mid-February and the end of May. The failure of the sources to mention the use of mackerel is interesting. These fish would be available for trapping in large numbers during their mid-summer spawning. The absence of references to this species may well indicate a removal of people from the coast during that season when a variety fruits and vegetable products would be available in the forested country. Oyster beds would also be at their best in the early summer months.

The seasonal movements of these fish imply that the traps could have yielded a rich harvest throughout the year, but that fish were most abundant during the early spring and autumn. It is during this period that the Aborigines were most likely to have retired to the coast, as claimed by early observers, relying on the estuaries, swamps, rainforest and timbered hills for sustenance during winter and summer. In the archaeological data so far available for reconstructing the diet of the northern New South Wales coastal Aborigines, there is little evidence to enable the place of fish to be evaluated. These stone fish traps help to make good the deficiency.

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The maps were drawn by Mr Bruce Whan, of the Geology Department, University of New England.

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Table 1 Fish species available in New South Wales coastal waters and modern catching methods
(X = Optimum availability)

Fish	Size	Method of Catching (European)	Seasonal movements late (availability) Aug-Oct	Summer	Feb-May	Winter	Most favoured environment
* Jewfish *(Scioena)*	50–60lb	Line and hook		X			Deep sea
* Sea mullet *(Mugil grandis)*	8lb	Net					
* Salmon *(Arripis trutta)*	–	Speared (by Aborigines)	X		X		Coastal waters
* Black bream *(Chrysophrys australis; sarba)*	1 foot	Line, net	–	–	–	disappears	Coastal waters
* Bream *(Areanthropagus australis)*	–	Baited traps	–	–	X	X	Harbours, coastal lakes
* Drummer		–					
* Rock cod *(Serramus-damelii)*	30–40lb	Line and hook (never netted)	–	–	–	–	Shallow harbours
* Groper *(Cossyphus gould)*	3–4 feet	Speared (by Aborigines	–	–	–	–	–
* Schnapper *(Pagrus unicolor)*	30lb	Line and hook	–	early		–	Rocky coast and headland
Garfish *(Hemirhamus regularis)*	1 ft 6 in			X			Rocky coast and harbours
Mackerel family, e.g. tailor, Bulls Eye *(Priancanthus macrocanthus)*	3 feet	Net	X				Rocky points and reefs
Whiting	small			X			Coastal waters
John Dory	–	Net, line	X		X		Coastal waters
Pike	4–6 lb	–			X		Coastal waters
	–	–		X			Rocky deep water

* Species mentioned as being caught by Aborigines (N.B. Jewfish are mentioned but these references are to the small species found in inlets and estuarine creeks).

Note: Woods, J.E. 1882 *Fish and Fisheries of New South Wales* has been used extensively in compiling this table. Not only is it a thorough discussion of common fish species, it was also written closer in time to the period under consideration; local people claim that some changes have taken place within living memory in the seasonal behaviour of some fish.

Whiting	–	Net, line	X			
John Dory	4–6 lb	–		X	X	Rocky deep water
Pike	–	–		X		Coastal waters

* Species mentioned as being caught by Aborigines (N.B. Jewfish are mentioned but these references are to the small species found in inlets and estuarine creeks).
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