

THE COORONG - A MULTI-SPECIES FISHERY

PART 1 - HISTORY AND DEVELOPMENT

BY

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ABSTRACT

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The Coorong is a 100 km long, marine dominated, shallow relic estuary divided into two interconnected lagoons. The physical properties of the aquatic environment vary considerably from year to year. The more productive North Lagoon has salinities ranging seasonally between 25°/oo and 60°/oo, whereas the South Lagoon in different years varies between 90°/oo and 140°/oo. Water temperatures range between 11° and 25°C seasonally.

The marine scalefish stocks were an important food source for centuries for the more than 3,000 resident aboriginal inhabitants. The new settlers have continued to utilise the stocks of the same species in the Coorong.

The history of land development around the Lakes and Coorong by white settlers is well documented but there is a paucity of historical records and official data on the development of the fishing industry in South Australia generally, and the Coorong in particular. This study is an attempt to redress that situation regarding the marine scalefish resources of the Coorong.

The growth and industry of the two ports of Goolwa and Milang, which served the River Murray steamer trade, reflect the development of the commercial fishing industry of the Coorong. Both ports served as bases for fish catches consigned for sale in the Adelaide Fish Market, the traditional market for these fishers. The main marine species fished in the Coorong and Murray Mouth were yellow eye mullet (Aldrichetta forsteri), mulloway (Argyrostomus hololepidotus) and the tommy ruff (Arripis georgianus) in Encounter Bay.

Fishing enterprises were operating in the River Murray Mouth and Coorong from as early as 1846.

In 1887, 85.59 tonnes of fish were railed to Adelaide from Goolwa and Milang, increasing to 167.29 tonnes in 1908 and 209.68 tonnes in 1912-13. The mean annual production of the Coorong for the years (1908-1913) was 187.44 tonnes which represented between 11 to 14.3% of the State's mean marine scalefish production of 1,504.6 tonnes. There were 43 fishers operating from Goolwa and 11 from Milang.

In 1935, the annual catch taken by 40 fishers in the Coorong was estimated at 191 tonnes. A year later, 231.6 tonnes of mulloway and 135.1 tonnes of mullet, representing 28.8% of the State's scalefish production of 1,270 tonnes, was sold through the Adelaide Fish Market. Three years later (1939-40), after promotion of netting and a very favourable season, catches rose to 595.8 tonnes of mulloway and 447 tonnes of mullet representing 58% of total scalefish production of 1,794.2 tonnes.

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1940 was a very significant year because the barrages across the western section of Lake Alexandrina were completed and the flow of freshwater out of Lake Alexandrina controlled. Thereafter the annual catches of mulloway in the Coorong declined until in the six year period, 1984-5 to 1989-90, the mean annual catch was only 29.8 tonnes. During the 50 year period between 1939-40 and 1989-90, there have been only five occasions when there have been sudden increases in mulloway annual catches in the Coorong, namely 1944-5, 1951-2, 1957-8, 1966-7 and 1977-8. All rises followed periods of high flow in the River Murray when fresh water was released from Lake Alexandrina.

The barrage system had a devastating effect on the mulloway fishery whereas the stocks of mullet and tommy ruff were not adversely affected by the closing of the barrages or the fishing pressures of commercial and recreational fishers.

Monthly catch and effort data supplied by individual fishers only became available from January, 1972. The number of commercial fishers operating in the Coorong varied between 43 and 65. A maximum of about 100 fishers operated during the depression years (1930-35). In 1989-90 there were 42 fishers holding Lakes and Coorong fishing permits.

Conversion of avoirdupois tons to metric tonnes was by factor 1.016.

KEY WORDS: Coorong, mulloway, yellow eye mullet, tommy ruff, Goolwa, Milang.

INTRODUCTION

The purpose of this paper is to record the history of the development of the exploitation of some of the scalefish resources of this State with particular reference to the utilisation of certain species from the Coorong Lagoons and Murray Mouth.

In order to trace the development of the fisheries resources of the Coorong, the fisheries of both Goolwa and Milang were considered to be useful indices in this study.

The landings of commercial fish species at these two ports were deemed to represent the development of a commercial fishery for the predominantly marine species of the Coorong Lagoons and Murray Mouth. It is recognised that fishers from both ports fished, initially in marine and freshwaters, before the closing of the barrages at Tauwichee in 1940. A higher proportion of the landings at Goolwa and Milang came from marine sources. The term Coorong therefore is used to represent the area covered by the western portion of Lakes Alexandrina and Albert and the whole Coorong Lagoon until the closing of the barrages, and thereafter, the marine dominated Coorong North lagoon and Murray Mouth. Fishers based at Meningie are deemed to be mainly fishers of freshwater species for the purposes of this study.

At this stage it should be emphasised that there are no reliable annual total fish production figures available for South Australia before the introduction of the Fisheries Act 1971 on December 1, 1971. Thus the data used to illustrate the development of the commercial fishery of the Coorong and the Murray Mouth have been garnered from a wide variety of sources such as

newspaper reports, articles, diaries, Customs reports, railway freight records, Royal Commission evidence, Parliamentary Papers and the Annual.

Reports of the Department of Fisheries particularly the early reports from 1936 until 1945-46 of Mr F W Moorhouse, Chief Inspector of Fisheries. He used fish market tallies and annual totals of different species purchased by the various fish buyers and/or their organisations, submitted voluntarily to the Department of Fisheries and Game, to obtain annual species totals.

DESCRIPTION

The Coorong is a unique area situated in the upper south east region of South Australia (Fig. 1).

It is a shallow relic estuary. On its western side it is separated from the sea by a barrier of vegetated high sand dunes - the Younghusband Peninsula. The eastern side is contained by a 100 km long calcrete limestone ridge capped with sand, which has been cut back into low cliffs and small embayments. This eastern flanking ridge represents a previous shoreline behind which are a number of parallel ridges that geologists consider were former coastlines (Sprigg 1959, Von der Borch 1975). The interdunal areas are 3-7 km wide. The northern end of the Coorong is contained within the flood plains of the River Murray and the Lake Alexandrina whereas the southern extremity, which once emptied into the sea, has silted and infilled to form a few shallow salt pans which merge into an interdunal land area.

These salt pans dry out in summer and fill during winter. The 100 km long estuary is divided into a North Lagoon and a South Lagoon by a land extension from the eastern shore located some 60 km south east of the River Murray Mouth. This land barrier limits water exchange and movement through the narrow connecting channel. As a consequence there are considerable hydrological differences between the two lagoons both seasonally and in times of strong River Murray flow (Geddes and Butler 1984, Geddes 1987). Waters from the Coorong North Lagoon empty into the sea through the Coorong Channel and the Murray Mouth.

Since the Pleistocene period both lagoons have been infilled with carbonate and dolomite muds to a depth of 2-3 metres. The shallow lagoons are 1-3 metres in depth. Between summer and winter regimes, the maximum difference in depth is 1-1.25 metres (Noye 1975).

HYDROLOGY

The Coorong Lagoons have always had a marine dominated environment and with periods of low flow in the River Murray sea water has penetrated widely into Lake Alexandrina and also extended into the lower reaches of the River Murray. During periods of high flow (flooding) the upper layers of the North Lagoon show increasing gradients in salinity to the bottom sea water. The rate of change of salinity from surface to bottom waters depends on the distance of the sampling site from the Murray Mouth.

Both lagoons are subject to wind-induced short period changes in water level. Increases in levels occur from flooding in the North Lagoon when the barrages are opened for several days or by high tides in Encounter Bay (Noye 1975).

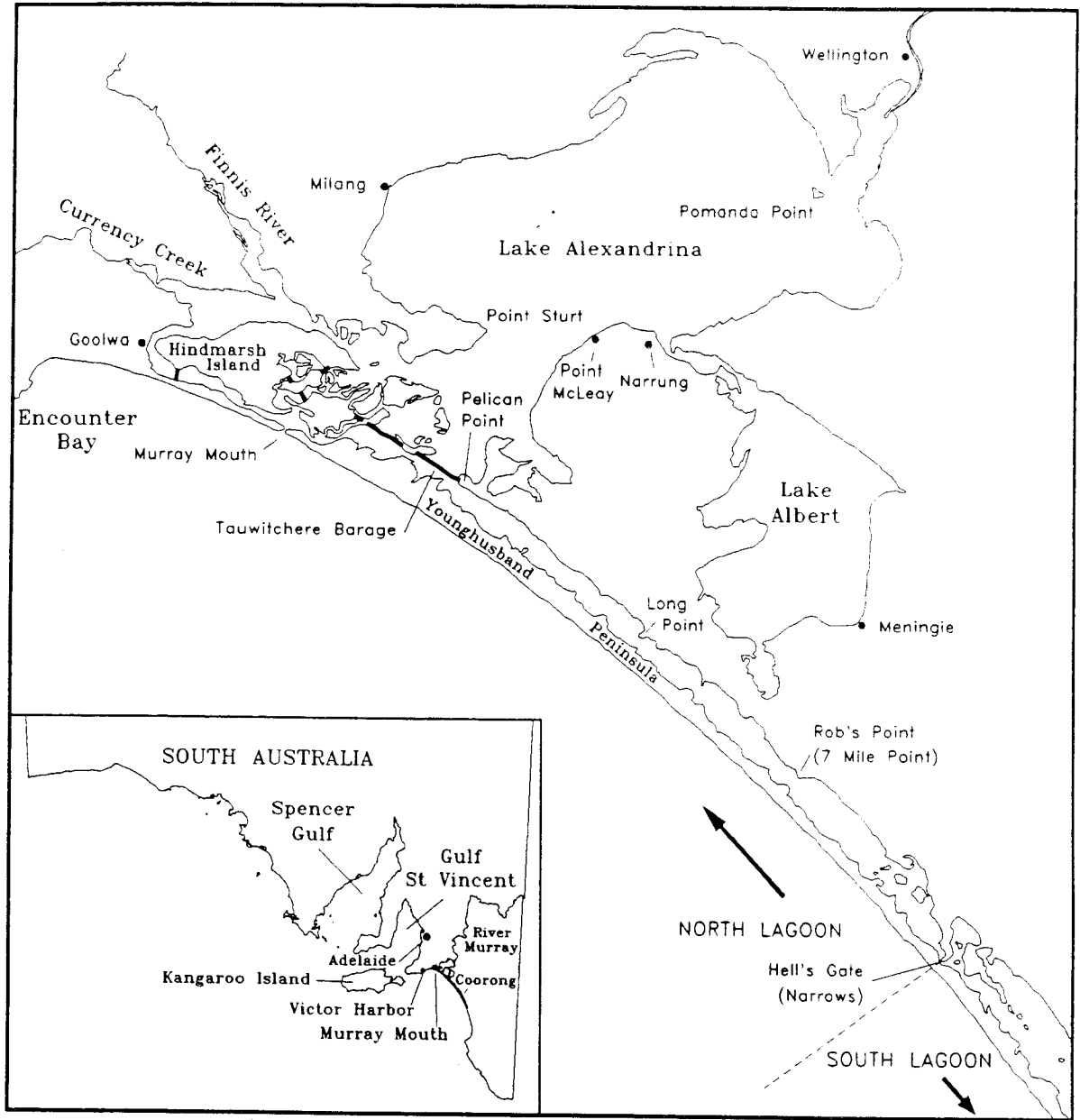


Figure 1. Map of the lakes, Murray Mouth and Coorong

The completion of the barrages across the channels between the barrier islands and the mainland on the western perimeter of Lake Alexandrina in 1940 made Lakes Alexandrina and Albert permanently fresh and the marine environment is now restricted to both lagoons and all waters seaward of the barrages. Only very rarely, and under exceptional conditions, does the heavier sea water of the Goolwa Channel cross the barrage gate foundations and flow along the floor of Lake Alexandrina when the barrage gates are raised to allow excess water to flow seawards.

During their physiochemical studies of the Coorong, Geddes and Butler (1984) and Geddes (1987) encountered wide variations in salinity profile recordings between stations in any one year. They recorded the lowest salinity values of 25‰ at the most northerly station which increased to 60‰ at the most southerly station of the North Lagoon. Similarly the South Lagoon registered salinities from 90‰ to 140‰.

Salinities in 1982 were particularly high compared with those of the 1970's when the North Lagoon was more estuarine from release of flood waters (Geddes 1987). The North Lagoon is more productive fisherywise than the South Lagoon.

Temperatures ranged from a minimum of 11°C to a maximum of 25°C seasonally with never more than 1.5°C difference between surface and bottom temperatures at any one station. Total P. was steady at a mean value of 79mg.m⁻³ in the North Lagoon to 87.3 mg.m⁻³ to 110.5 mg.m⁻³ seasonally in the South Lagoon.

HISTORY

When the first British settlers arrived in South Australia in 1836 the Kurna people of the Adelaide Plains were using fish traps and hand hauled nets to catch fish. These new settlers were to learn subsequently that the Ngarrindjeri people of the Coorong used not only traps and nets of various lengths and different mesh sizes but also they built pounds and/or enclosures to hold live fish in excess of their immediate needs. These pounds provided fresh fish as required or until the fish could be cleaned and dried for future use. A specially modified boomerang was also used by Coorong tribes for killing schooling fish. No other aboriginal tribes outside South Australia were known to use boomerangs to kill fish. Spears were used but the use of hooks and lines were unknown to them. Fish were prominent in the diet of the aborigines as otoliths of mulloway, black bream and yellow eye mullet (in that order of frequency) are found in middens. Donax (Plebidonax) deltoides, a cockle, was the most common mollusc in middens (Luebbers 1981).

We are indebted to George French Angas (1847 a, b), who accompanied Governor Grey's expedition to Mt Schank (SE) in 1844, for detailed descriptions and informative drawings of fishing gear and methods used by coastal aborigines. In his diary of the expedition (Angas 1847 b p.65) wrote "the natives for a small piece of tobacco brought us a basket of excellent mullet". Anthropologists claim that "the early 19th century aboriginal inhabitants of the Coorong maintained one of the most vigorous fishing industries in late prehistoric southern Australia" (Luebbers 1981). It is estimated that the Coorong area then supported a population of about 3,200 hunter-gatherers ie about one person per square kilometre. This was probably "the largest population in prehistoric Australia which suggests by implication that the aborigines in the South-east had successfully manipulated their environment to stabilize population levels throughout the year" (Luebbers 1981).

Initially, the colonization of South Australia had little effect on the culture and practices of the aboriginal populations of the Coorong and Lakes Alexandrina and Albert. The new settlers were establishing themselves on the Adelaide Plains, the hills and the valleys behind. However, within 3 years the demand for stock to graze the cleared properties induced the 24 year old Charles Bonney and his team of 10 drovers in March, 1839, to bring a second herd, this time 300 cattle from Melbourne, by a faster route through western Victoria and the Coorong lands of the Ngarrindjeri to Adelaide. The first herd of cattle came from New South Wales, down the River Murray valley to reach Adelaide in 1838. The traverse of traditional aboriginal lands, along with subsequent grazing of cattle around the Coorong and Lakes, had a devastating effect on the delicate ecological and sociological balance between the different communities of aboriginal hunter-gatherers of the Coorong. Within a short span of five decades the new settlers had eliminated a culture which had existed for several centuries. The last resident aboriginal left the Coorong in about 1880 for the Point McLeay settlement (Luebbers 1981).

The aboriginal Ngarrindjeri were the first known people to exploit the fish resources of the Coorong and the early explorers and settlers also caught fish for their own use from these same sources.

The first settlers on the Adelaide Plains caught fresh fish for supplementing their food supplies and thereby began the competition for access to the fish resources of Gulf St Vincent in the vicinity of Adelaide. This competition was to lead, inevitably, to the breakdown and disintegration of the fishing patterns established by the aboriginal population. The newcomers introduced hook and line methods of fishing for whiting and snapper thus increasing their access to inshore fish stocks. Australian salmon were caught by beach seining off Glenelg within a couple of years of the establishment of the settlement (Wallace-Carter 1987).

The small fishing operations which began around the environs of Adelaide developed only slowly as most new settlers moved inland, shortly after arrival, to more favourable farming and grazing lands. Mineral discoveries and the opening of the mining fields inland attracted workers which limited demands locally for fresh fish. It has been claimed that, after the Port Adelaide-Glenelg limited commercial fishing operations, other fishing operations commenced at Port Wakefield (originally called Port Henry) in the late 1840's by crews of sailing vessels and wharf labourers employed there for loading of copper ore by Burra Burra mining interests. These fishers sold their catches both locally and at the more thickly populated mining fields. Transport was unavailable for forwarding fresh fish to the small population at Adelaide.

By 1839 the settlers had extended their interests to the plains around the shores of the North Lagoon of the Coorong. To accommodate the needs of a settlement, an area on the bend of the channel leading to the Murray Mouth was surveyed by staff under Colonel Frome. This area was named Port Pullen after the master of Government cutter "Waterwitch" which successfully crossed over the bar at the Murray Mouth in 1841. Subsequently, the new town's name was changed to the aboriginal name Goolwa (meaning "elbow of river") when the surveyed site was proclaimed a town in March 1853. Milang was settled by a William Fowler in early 1847. In December 1853, 71 allotments were surveyed and within 7 months 20 of these had been sold thereby establishing the site of the new town (Manning 1986). Goolwa and Milang subsequently developed into

the main centres for the two areas and served also as ports for the River Murray steamer trade and bases for shipbuilding and fishing interests.

In 1841 a widespread drought struck South Australia causing severe financial difficulties (depression) for several years and assisted migration was suspended. The Board of Commissioners for South Australia was abolished in 1842 and South Australia became a Crown Colony like the other States. During these difficult times a horse drawn vehicle track was pushed through from Wellington to Mt Gambier via the Coorong, followed in 1842 by a coach service linking them. As a consequence of this greater accessibility, the area around the eastern ends of Lakes Alexandrina and Albert was opened up for grazing by the allocation of occupation licences to the South Australian Company in 1844. Meningie (aboriginal word for "mud") was established as an outstation by the Company also in 1844 (Manning 1986).

Initially these grazing and transport developments had little adverse effect on the fisheries resources of the Coorong as the thrust was for land usage. Torrens in 1852 wrote: "for the five years prior to 1850, the colony had progressed rapidly yet steadily, the capital and industry of its inhabitants being legitimately directed to increase the staple production afforded by its mines, its agriculture and its pastures" (Parker 1971). Even in 1856 Governor MacDonnell sent a request to the Colonial Office from the legislature "for agricultural labourers, farm servants, shepherds and miners, as migrants" (O'Donoghue 1950). Such communications serve to demonstrate the preoccupation with agricultural, pastoral and mining interests within the new South Australian community.

The first report of any kind of fishing enterprise in the Coorong area was that by Newland (1906) who reported that two men were fishing commercially to supply some of the fresh fish needs of the people of Goolwa and presumably preserved fish (smoked, dried or brined) for wider distribution. There was no demand for the flesh of mulloway (Argyrosomus hololepidotus) but the market was strong for their dried swim bladders which were processed for isinglass. A business recession, which began about 1841, caused a scarcity of employment and doubtless many men turned to fishing as a means of livelihood and a source of food. In times of low employment it has been almost a tradition in white society for people to take up fishing as a means of support and earnings.

In an attempt to overcome the business stagnation in the colony, the South Australian Government authorised the Governor (Sir Henry F E Young 1848-1854) to offer a prize of £2,000 for each of the first two iron vessels powered with over 40 horsepower (29.8kW) engines and drawing less than 2 ft (64 cm) to sail from Goolwa to the Darling Junction (New South Wales).

With the discovery of gold in Victoria in 1851, there was a drain on South Australian manpower when 16,000 men streamed to the gold fields (Pike 1958). The flow of gold brought back by Tolmer's police party in 1852 ended the recession. Even so, there was still little interest in fisheries developments coastwise, or in the Coorong, but grazing expansion continued inland from coastal areas.

William Wells wrote in his diary of 1852-55 that while traversing the Coorong en route to his shepherd outstation he camped overnight near an aboriginal encampment and sought to buy fresh fish from them but none was available that night. The next morning he was given fresh fish caught by the aborigines for breakfast and he commented that these fish had the appearance of herring

(yellow eye mullet?). Thus it was known that the aborigines living beside the Coorong were still utilising some of the fish resources and would sell or barter some of their catches.

In response to the 1850 incentive offer of the South Australian Government, in August 1853 two steamers left Goolwa for the Darling River Junction. Their departure inaugurated the River Murray steamer trade and the rapid development of both Goolwa and Milang as southern terminal ports for the river trade. Shipbuilding began, and, by 1857, 15 steamers and barges were operating from Goolwa and Milang (Linn 1988). During June 1856 Captain Cadell attempted to find a water route to the South Lagoon of the Coorong but navigational hazards and treacherous shallow waters made commercial development impossible ("Register" June 7, 1856). There were no reports of commercial fishing activity in that period but it is known that crews of vessels did fish for food during loading and unloading or when delayed waiting for cargoes at Goolwa and Milang.

George Taplin established a mission at Point McLeay in 1859 for the displaced Ngarrindjeri and was the first European to live with them. A year later, a police report (August 31, 1860) said fish were scarce and causing distress among the mission community. The absence of fish was probably due to low river flow which allowed an incursion of salt water into Lake Alexandrina thus adversely affecting the normal freshwater environment and causing a "fish kill".

The advent of the River Murray steamer-barge trade, initiated in 1853, provided a stimulus for the development of the Goolwa - Milang area. The Goolwa - Port Elliott horse-drawn tramway began to operate in 1854; cargoes unloaded at Goolwa were trans-shipped to the tramway and reloaded on waiting vessels at Port Elliott. The loss of skilled tradesmen, sailors, seamen and fishers to the gold fields was made good with migrants, some of whom had boat building or sea experience. Several such families of migrants settled at Encounter Bay and went fishing commercially (Wallace Carter 1987).

1860 was a dry year with a low flow in the River Murray. Crews of tied up vessels went fishing, and found a ready market for their catches of fresh fish. The population of Goolwa - Port Elliott area had increased to 2,055 persons representing 2% of the State population.

Although there is a Customs record at Port Adelaide for export of fish worth 110 pounds sterling to Mauritius in 1860, the place of origin of this preserved fish consignment is not known. There are no Customs records of preserved fish being carried as export by River Murray steamers into New South Wales or Victoria that year. However preserved fish (smoked or cured) were being produced for local consumption and customs manifests show that preserved fish were exported through Port Adelaide to Mauritius in 1860 and in 1868 steamers carried 9.80 tonnes of preserved fish to Victoria (Table 1).

Although the disastrous drought of 1864-65, followed by the virtual loss of the grain harvest in 1867 through rust infestation, seriously affected the agricultural and pastoral interests, there were no reports of diminution of fishing effort in the Coorong area. Goolwa and Milang were extremely busy with contracts for building river vessels as 132 steamers and 103 barges were built in 26 years (Linn 1988). Wholesale fish marketing in Adelaide was steady with 12 fish-mongers serving the Adelaide community in 1863 reducing to 10 three years later (P.P. 138, 1869-70). The last few years of the

decade, 1859-1869, ended in a depression and a loss of population by emigration of former settlers.

Griffin and McCaskill (1986) summed the situation succinctly when they wrote "before the 1860's droughts were scarcely noticed as most settlers were living in areas with reliable rainfall. The drought of 1864-65 which led to the drawing of "Goyder's line of rainfall" was the first shock to the complacency of the pastoralists and farmers".

From 1854 until 1869 any goods such as wool, merchandise or preserved fish exported from Goolwa and Milang had to be forwarded by horse drawn tramway, firstly from Port Elliott between 1854 and 1864, and then by the extended tramway through to Port Victor (later called Victor Harbor) until 1869. That year a horse drawn tramway connected Goolwa to the steam locomotive terminus at Strathalbyn.

The drought of 1864-65, and the disastrous crop yields of 1867-68, forced many of the adversely affected settlers into accepting Government relief work to cart stones for subsequent railway upgrading and extension of the steam locomotive service from Strathalbyn to Goolwa (O'Donoghue 1950). From 1869 until 1884 the horse drawn tramway was being constantly upgraded between these two stations.

In 1870 Messrs F W Cleland and Co established a fish curing plant near the Murray Mouth to utilise the catches of fishers operating in the Coorong area ("Advertiser" March 8, 1870). Mulloway up to 1.5 m (5 ft) in length and each weighing 28 kg were being caught at the Murray Mouth ("Southern Argus" August 1871). Fish of this size we now know (from otolith readings) to be about 24 years old (J. Fitch, pers. comm.).

By early 1870 boat building was increasing at the shipyards of the two ports. There were signs that South Australia was beginning to recover from its economic depression and more permanent settlements were being established in areas serviced by the railways. The Municipality of Goolwa was proclaimed in 1872 ("Southern Argus" December 27, 1872) and four years later a census showed that the town of Goolwa had a population of 624 persons, 137 of whom were adult males (Statistical Register of South Australia, 1876). The shipbuilding industry at Goolwa and Milang provided more or less constant work for men domiciled there, whereas the steamer crews operating out of these ports were basically itinerants, who, while their vessels were idle awaiting cargoes or unable to navigate up river because of low river levels, continued to supplement incomes by fishing. The fish processing plants gave stability to about 30 permanent fishers located at Goolwa, and 11 at Milang, their number increasing to about 100 men during low river levels or "lay-ups".

So far as it is known, all exports of preserved fish were sent by steamer through Port Adelaide, even though there was considerable trade with New South Wales and Victoria by river steamers from 1853-54. The reason for the lack of cargoes of preserved fish to New South Wales and Victorian river ports between 1854 and 1868 is not known but it may have been due to the reluctance of masters of river steamers to carry money for immediate payment of duty to New South Wales authorities before any goods could be offloaded on to New South Wales soil. These problems were resolved by the 1873 Duties Convention between New South Wales and South Australian governments. South Australia agreed to pay a flat rate of £13,500 sterling annually for a three year period for the privilege of waiving the requirements for immediate duty payments on

goods destined for New South Wales ports. Accurate records (book entries) of goods landed were kept for subsequent examination after the 3 year trial period had ended (O'Donoghue 1950). Thus we have records of exports of goods, including fish products, sent to New South Wales by river steamers (Statistical Register for South Australia). The first record I have found was 39.01 tonnes worth £3,064 sterling in 1883. It is strange that 10 years had to pass before a large consignment of fish was forwarded by a river steamer (Table 2). However all fish exports may have been lumped together and not until 1883 were the routes taken indicated in statistical tables.

It is most likely that consignments of fish were carried which gradually increased in volume over the ten years to 39.01 tonnes in 1883. Freshwater fish from the River Murray would have been available at Victorian and New South Wales river towns during this period.

The death knell of the River Murray trade from Goolwa and Milang was sounded in 1878 with the completion and operation of the steam locomotive railway from Adelaide through Kapunda to the new river port of Morgan. This railway service to the new river port intercepted cargoes and diverted trade away from the more southern ports. With the completion of the railway bridge across the River Murray at Murray Bridge a few years later (1886) the train connection between Adelaide and Melbourne caused a further decline in development at Goolwa and Milang. Vessels unloaded cargoes from upsteam at Morgan for quicker transfer by rail to Adelaide thus saving time on the long run to Goolwa and return. Late in 1878 the last steamer passenger service left Goolwa for Darling Point, New South Wales (Mudie 1965).

While the extension of the railway systems in South Australia affected some developments adversely they also provided opportunities in other fields ie transport and farming.

From about 1870 to 1884 South Australia enjoyed its most prosperous years and over 32,000 assisted migrants had arrived in that decade to 1880 swelling Adelaide's population to more than 100,000 people which created a demand for increased consumption of fish products. 37.79 tonnes of preserved fish were imported in 1872 and these imports almost doubled by 1878 (Table 2). To meet the growing demand for fish products, a processing and fish smoking operation opened at Yilki in 1878 (Wallace Carter 1987), followed a year later by the Goolwa Fishing Company which made arrangements to deliver to the newly formed Cowrie Fishing Co of the Adelaide City Fish Market, regular supplies of fresh fish from the Coorong area. A Mr McConaghy's party was to forward fish caught between noon and midnight by steam launch "Portree" to Goolwa arriving about 0500 hours and then the consignment would be taken by wagon and horse relay team to reach Adelaide by noon ("Southern Argus" August, 1879). Already there were a number of auctioneers and fish buyers operating in the Adelaide Fish Market.

The Statistical Register of South Australia for 1878 showed that "no preserved fish produced in South Australia" was exported yet Table 2 shows that preserved fish was exported through Port Adelaide. It must be presumed that some of the products being exported had been imported and then re-exported. Confirmation of this assumption was obtained from an 1890 entry in which a consignment of 74.67 tonnes of sardines was recorded as imported from overseas and 1.32 tonnes of sardines were sent by River Murray steamers to interior New South Wales ports. Sardines were not caught or processed in South Australia. The provisions of the 1873 Duties Convention between New South Wales and South