

HEBERLE FAMILY SALMON FISHING

DOUBTFUL ISLAND BAY

VOLUME 1 1946-1961

Greg Heberle, October 1985, slightly amended January 2001.

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1. INTRODUCTION & ACKNOWLEDGEMENTS

The Heberles have been salmon fishing at Doubtful Island Bay on the south coast of Western Australia for the last forty years. This booklet provides some background information about fish, Australian Salmon, the Salmon Fishing Industry and the Bremer Bay region as well as details of the Heberle family salmon fishing seasons from 1946 to 1985. During compilation of this booklet many of the records were found to be contradictory and incomplete so that some points made could easily be wrong. Further research and access to Fisheries Department records might be illuminating.

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2. FISH BIOLOGY, ENVIRONMENT & BEHAVIOUR

2.1 FISH CLASSIFICATION

The scientific classification of animals and plants follows the scheme: phylum, class, order, family, genus and species. The most advanced and complex phylum of the animal kingdom is the Phylum Chordata. They have a nerve cord which runs under the back or dorsal surface of the animal. Those animals in which the supporting rod is developed into a complex skeletal structure, the vertebral column form the Subphylum Vertebrata. Fish make up two of its classes:

Class Chondrichthyes which includes the sharks, rays and skates. Class Osteichthyes which includes the bony fishes (Sub class Actinopterygii).

2.2 FISH STRUCTURE & PHYSIOLOGY (based on Pulley, 1974)

2.2.1 Skeleton and fins

The bones of the Actinopterygii are hard and contain Calcium carbonate. Their fins are thin and flexible and supported by fin rays, see [figure 1](#).

2.2.2 Muscles and movement

Bony fish have large slabs of flesh on each side of the backbone. These are the main swimming muscles which are arranged in blocks along each side of the body.

2.2.3 Gut

The gut is a tube running through the body. Food is taken in through the mouth, digested and the waste passed out through the anus.

2.2.4 Gills and respiration

Gills extract oxygen from the water and simultaneously release waste products from the body.

2.2.5 Circulation system

Blood transports materials to and from various Parts of the body.

2.2.6 Reproduction

Each species has two sexes, a female which produces eggs and a male which produces sperm cells to fertilise the eggs and initiate their development into young fishes. It is generally difficult to distinguish the sexes of bony fishes unless the female happens to have a swollen belly with ripe roes, Fish sperm is microscopic and tadpole like. Many millions are produced by each male. The eggs are larger than sperm, typically ranging in size from 0.05mm to 5mm. Pelagic (surface) fishes discharge eggs by the million, leaving them to float about amongst the plankton. Fertilisation occurs when a sperm cell penetrates an egg and the genetic material of the two combine. The fertilised egg then becomes an embryo, see [figure 2](#).

2.3 FISH HABITATS

Each species of fish, like most organisms, prefer particular kinds of habitats eg. estuaries, open sea, weed, sandy areas, rocks etc. Each species has characteristics that best suit it to certain habitats. The sea varies in light intensity, temperature, salinity, oxygen, nutrients, pressure, current movement etc. See [figures 4 & 5](#)

2.4 MARINE FOOD CHAIN

Plants and some bacteria are the only organisms which can take their food as inorganic materials and convert it to organic substances that build the organism itself. Animals can only live by eating plants or other animals which in turn eat plants. This can be represented by food chain, see [figure 3](#).

2.5 FISH BEHAVIOUR

Particular kinds of behaviour may lead to a greater ability to cope with the environment. Some species live most of their lives in schools, for various reasons eg. discouraging predators, co-operative behaviour when feeding, breeding. Many fishes migrate seasonally for spawning or seeking food. These movements may be triggered by change in temperature, light intensity, salinity, currents etc. Little is known about the methods of navigation used by fishes in these travels.

3. AUSTRALIAN SALMON

3.1 CLASSIFICATION

The Australian Salmon ([figure 6](#)) is not a true salmon, but a sea perch of order Perciformes = perch like fishes. Its scientific name is *Arripis trutta*. Australian Salmon, like many other fish (animals and plants) can be grouped into several different races or populations. There is a western subspecies (*Arripis trutta esper*) and an eastern subspecies (*Arripis trutta marginate*). The western subspecies has 25 to 31 rakers on the first gill arch (see [figure 8](#)). The eastern subspecies has 33 to 40 rakers. In recent years some scientists have suggested that the two subspecies cannot interbreed and are therefore different species.

3.2 DISTRIBUTION OF THE TWO "SUBSPECIES"

The typical distribution of the two subspecies of Australian Salmon is shown in [figure 7](#). Populations of "Australian Salmon" occur in New Zealand waters and near Lord Howe, Norfolk and Raoul Islands, as well as in W.A., S.A., Tasmanian, Victorian and N.S.W. waters. Occasionally eastern subspecies fish are caught in W.A. and western subspecies fish in N.S.W.

3.3 REPRODUCTION OF THE WESTERN SUBSPECIES.

i) Female salmon lay planktonic size eggs about 0.9mm diameter with an oil globule of about 0.3mm diameter (Munro, 1963), which float near the surface of the sea and are fertilized by sperm that males release into the water. The fertilized egg probably takes about 36 to 40 hours to develop into a larva. The larva grows into a small free swimming fish.

ii), Spawning of the western subspecies is believed to occur mainly from Cape Leeuwin to Busselton during the period February to May, see [figure 9](#). Probably some spawning occurs throughout the adult range. from about Ceduna S.A. to Perth and is related to chemical and physical conditions of the environment, which vary from year to year.

3.4 BEHAVIOUR OF THE WESTERN SUBSPECIES

3.4.1 Young salmon

Most of the salmon larvae and small fish are believed to move eastwards with the prevailing currents (see figure 5). Some small salmon, about 5cm long and believed to be about 6 months old appear in Tasmanian waters in October - November (Malcolm 1967). Certainly some go into estuaries in W.A. eg. Broke, Irwin, Pallingup, Bremer, Gairdner in some years. Probably small salmon develop throughout the entire range of the subspecies. Most young fish (0-2 years old) probably remain in sheltered areas (Stanley, 1979).

3.4.2 Mature fish in the spawning "run"

i) Each W.A. "salmon season" (February to April) a proportion of the mature fish move westwards and on to beaches in the W.A. fishery in the spawning run" or "front run".

ii) Tagging reported by Stanley (1979) suggests that S.A. salmon move to W.A. from the age of 3 years onwards with a proportion staying in S.A. waters at all ages (see figure 12). If it is correct that western subspecies salmon do not spawn east of Ceduna S.A. (Malcolm, 1961) then it is likely that all surviving mature salmon (that breed) from S.A., Victoria and Tasmania eventually move into W.A. waters.

3.4.3 Proportion of W.A. catch from eastern states

i) The proportion of the W.A. catch originating from the eastern states is uncertain. Tagging suggests that the proportion from Tasmania is very small (Malcolm, 1961). FINS (1968) suggested that in the 1965 salmon season only 3% of the W.A. catch was eastern states recruits, with 45% from bight waters and 52% resident (W.A.) stock. However this estimate may have been based partly on incorrect assumptions.

ii) Later tagging and catch data has suggested that the proportion of eastern states recruits in the W.A. catch may be much higher eg. 50%. There may well be a large variation from year to year. If mature western subspecies salmon are spread more or less equally throughout their range than the proportion of the W.A. catch originating from W.A. waters might be about 50%, S.A. 35%, Western Victoria 10% and Western Tasmania about 5%.

3.4.4 Mature fish in the "back run"

After spawning, there is a "back run" (post spawning run)/magnitude from west to east, see [figures 11 and 112](#) This occurs anytime between the end of the front run in April to the start of the next front run. Often quite small schools may be involved.

3.4.5 Salmon "schools" (from FINS, 1968)

i) It's possible that during the salmon season, schools of salmon move along the coast and when ready to spawn they move into shallower sometimes brackish water to spawn. At this time some schools of salmon are seen in a doughnut formation moving around in a circle. This might be spawning behaviour. Salmon typically feed away from beaches during the salmon season.

ii) In the off season, schools of salmon do not often move On to beaches in W.A. in recent years anyway. At this time schools are more likely to be seen near reefs and rocky coast line.

3-5 FOOD CHAIN

3.5.1 Eastern subspecies

Eastern subspecies salmon is reported as feeding mainly on plankton (Malcolm, 1967). Its larger number of gill rakers (better for straining) would be of advantage if this is correct.

3.5.2 Western subspecies

The western subspecies feeds mainly on small fish such as pilchards (*Sardinops neopilchardus*), blue sprats (*Spratelloides robustus*), sandy sprats (*Hyperlophus vittalus*), herring (*Arripis georgianus*) and scaly mackerel (*Amblygaster posteris*). The larvae and smallest fish presumably feed on plankton.

3.5.3 Predators of Salmon

Salmon are eaten by sharks, dolphins and in general carnivorous fish larger than themselves.

3.6 GROWTH RATES

Figure 10 shows a possible typical growth pattern in length and weight for the western subspecies. Eastern subspecies fish are believed to grow much slower.

4. AUSTRALIAN & N.Z. SALMON FISHERIES

4.1 Commercial catches

4.1.1 Age and size of fish

i) Salmon are caught commercially in W.A., S.A., Victoria, Tasmania, N.S.W. and New Zealand. Typically, large quantities were not caught until canning of salmon commenced in each state. Juvenile fish are found mainly in S.A., Victorian and Tasmanian waters (both subspecies and adults typically only in W.A., eastern Victorian and N.S.W. waters (Malcolm, 1967).

ii) Data from a number of years shows wide variation in the apparent age composition of the catch (Stanley, 1975).

Approximate averages may be of the following order, by numbers not weight.

Age	1+	2+	3+	4+	5+	6+	7+	Ave. weight/fish
W.A. fishery			24%	64%	10%	2%	0.2%	4.3 kg
S.A.	6%	25%	26%	25%	15%	3%		2.1 kg
Victoria	40%	30%	20%	8%	2%			1.0 kg
Tasmania	40%	30%	20%	8%	2%			1.0 kg

4.1.2 Annual catch by weight and numbers

Annual commercial catches in the period 1975 - 1980 were of the following order.

State	Subspecies	Catch-whole tonnes	No. of fish	Ave. weight/fis
W.A.	99% + W	1,200	280,000	4.3 kg
S.A.	99% W	700	330,000	2.1 kg
Victoria	30% W/70% E?	220	220,000	1.0 kg
Tasmania	15% W/85% E?	500	500,000	1.0 kg
N.S.W.	99% + E	350	150,000	2.7 kg
Australia		2,970	1,480,000	2.0 kg
New Zealand		3,200	1,070,000	3.0 kg

For annual catch data for 1941 onwards see [Appendix 1](#).

4.1.3 Timing of commercial catches

Most catches are usually made in the following months: W.A. Front run: mid February to early April on south coast, March to late April on west coast. Back run: mainly May to August. S.A. whole year. Most fishing is between the tuna seasons. Victoria Main season: March to May. Secondary season: November to January. Tasmania Whole year. Main season is October to March. N.S.W. Main season: April to July. Secondary season: November to February.

4.1.4 Method of catching- (commercial)

i) In W.A. its all shore based seine netting. Row or jet boats shoot a net from the shore around the fish and back on to shore. The net (is then pulled in by hand and/or vehicle/tractor with the fish in the bunt (central deepest and heaviest part of the net).

ii) In other states a proportion of the fishing is from large carrier vessels from which a net boat is launched. Since about 1965 large quantities (less in recent years) have been caught by purse seinin from large vessels.

4.2 AMATEUR CATCHES

No data is available for amateur catches but estimates can be made by professional and amateur fishermen in W.A. at least.

In the 1950s amateur fishing was relatively slight-under 10% of the total catch?

In the 1960s about 20%?

In the 1970s about 33%?

In the late 1970s, 1980s about 40%?

5 WEST AUSTRALIAN SALMON FISHERY

5.1 COMMERCIAL SALMON BEACHES

Recently occupied salmon fishing beaches are shown in Figure 14 from Walker (1982). In the past, large quantities of salmon were caught near Hopetoun (at the 12 and 13 mile beaches) and small quantities in the Esperance area.

5.2 ANNUAL CATCH FIGURES

Annual catches since 1939 are shown in Figure 15 for the south and west coast. Appendix 2 shows some of the fishermen involved on the south coast by years and beaches. The commercial fishery virtually dates from when canning commenced in 1943.

5.3 SALMON CANNING

5.3.1 Before 1950

The first canning of salmon in W.A. was in 1943 by Vincent Gardiner of Ocean Canning Co. in Perth. Dan Hunt's Albany cannery commenced operations in 1946, with a capacity of 20 tonnes/week.

Also in 1946, Young opened a small cannery near Hopetoun (capacity 50 tonnes/year. In 1948 "Sea Foods" cannery Simonsen) opened i(n Albany, Hunt opened a cannery in Esperance and a cannery opened in Busselton.

5.3.2 Since 1950

In 1977 Southern Ocean Fish Processors built a fish handling installation on the foreshore at Albany. Hunts took over this instillation in 1981. In August 1977 West Ocean Canning was granted permission to receive fish at Albany for transport to Perth for processing in their new cannery which had replaced their Busselton factory. In 1984 Hunts Foods encountered financial difficulties which saw them go into receivership after the 1985 salmon season.

5.4 RESTRICTIONS ON SALMON FISHING

5.4.1 Up to 1970

Fishing and fish processing in W.A. is controlled by the Fisheries Act.- In 1964 the Fisheries Act (section 12A) was amended to allow sections of coastline to be gazetted as "Proclaimed Fishing Zones". This restricted activities in these zones during the fishing season. Under section 12B, particular fishermen could be given exclusive fishing rights within specified P.F.Z.s. A number of salmon fishing beaches were so gazetted on 19/3/65, 11/2/66 and 16/9/66. In the gazette of 21/1/66 the use of block nets was prohibited.

5.4.2 1970 to 1980

Prior to the 1973 salmon season, netting was prohibited in waters adjacent to Rottneest Island. This greatly reduced the annual salmon catch (mainly for bait) in the Fremantle area. In 1975, the Act (Section 32) was amended to allow for "Limited Entry Fisheries". In the salmon fishery this has meant that fishermen cannot enter the industry and existing fishermen cannot fish on other beaches, without permission from the Department of Fisheries. For details see the gazettes of 29/8/75 and 30/4/76. Regulations in the gazette of 28/1/77 banned purse seining for salmon in W.A. waters. In 1978 a bag limit of 5 salmon per day was put on amateurs.

5.4-3 Since 1980

The policy on transfer of salmon concessions since 8/10/81 was: When the present holder retires a decision is taken by the Department as to whether salmon fishing should continue. If yes, the concession may pass to a team member if that person is clearly the most appropriate and this is agreed to by the current holder. If there is no obvious person to take over the availability of the beach will be advertised and a selection made by the Department. Under this policy Coombes and Guest have taken over from their fathers.

Current conditions (1985) on Limited Entry Salmon Licences were:

- i) Salmon not to be taken from any other beaches.
- ii) No fishing when the licence holder absent from the beach.
- iii) Only to catch salmon by beach seining.
- iv) Not to use guns or explosives to redirect fish.
- v) Not to use block net.

5.5 RESTRICTIONS ON HERRING FISHING

i) It has been recognized that Herring trap nets affect the movement of salmon. From 1980 until 1982 the use of Herring traps was prohibited in the months December to March inclusive. During April and May they were only to be set 11 hours or less before sunset and pulled in 1j hours or less after sunrise. In the period February 15 to April 30 salmon fishermen authorised to operate on a particular beach were to be the only ones who could fish for herring on that beach.

ii) In 1982 the rules were changed to prohibit the use of Herring traps from February 10 to March 24 inclusive each year. Traps could be used outside that period but only by fishermen authorised to fish on specified beeches.

6. BREMER BAY AREA NATURAL BISTORY

6.1 GEOLOGY

6.1.1 ROCKS

There are three classes of rocks in the Bremer Bay area:

i) Igneous rocks formed by cooling underground or at the surface of hot fluid material (magma). Examples are:

Granite - high silica content - light coloured - white to grey.

Adamellite - intermediate silica content

Granodiorite

Diorite - lower silica content - dark grey

Dolerite - blackish/greenish colour

ii) Sedimentary rocks formed by deposition of rock or mineral particles derived from igneous or pre-existing sedimentary rocks or by chemical precipitation from aqueous solutions or by the activity of organisms.

Examples are:

Sandstone - consolidated sand

Siltstone - consolidated silt

Shale - consolidated clay with distinct bedding

Spongolite - consolidated sponge spicules

Conglomerate - made up of rounded pebbles

Limestone - Calcium carbonate from animal or plant remains

iii) Metamorphic rocks which were originally igneous or sedimentary but have been altered by heat and/or pressure.

Examples are:

Slate - slightly metamorphosed shale

Phyllite - medium metamorphosed shale

Schist - highly metamorphosed

Quartzite - metamorphosed sandstone

Gneiss - banded or layered metamorphic rock

6.1.2 Geological map

Figure 16 is the Geological map of the area produced by Thom and Chin (1984).

i) Cainozoic Geology (0 to 60 million years old)

Rocks of the "Plantaganet Group" (yellow to grey siltstone, spongolite and conglomerate of Eocene age (40 to 60 million years old) outcrop widely but are largely covered by sandplain, limestone etc. of Quaternary age. (0 to 1 million years old).

ii) Pre - Cambrian Geology (over 600 million years old)

The oldest rocks in the area are of Archaeozoic age, probably between 2,600 to 3,100 years old, which were metamorphosed in the Proterozoic age (600 to 2,000 million years ago). The hard rock at each end of the Reef Beach is foliated, banded and unbanded gneiss.

6.1.3 Economic Geology

Mineral occurrences in the area such as lignite, montan wax, manganese and heavy minerals have been investigated but judged uneconomic. Manganese deposits occur at Copper Mine Creek and Naendip. Heavy mineral deposits (ilmenite, zircon, garnet, rutile etc) occur at Cape Riche and Gordon Inlet. Lignite (and montan wax) occurs in the Fitzgerald River. In 1921 an exploratory oil well was drilled to 108m near the Fitzgerald lignite deposit but was dry. Spongolite has been quarried near Twertup Creek for building stone. Lead ore occurs 8 km north of Bremer Bay and near the Hamersley River and Naendip.

6-2 PHYSIOGRAPHY

Figure 17 is a Physiographic Map of the area from Thom and Chin (1984).

i) The south coast is fringed by hills of limestone and dune sand and rocky headlands of gneiss rise steeply from the sea often to an elevation of over 100m.

ii) Inland is a flat coastal plain. The surface of the plain has numerous often circular depressions. The rivers Pallinup, Bremer and Gairdner have cut some steep sided trenches in this plain.

iii) North of the Gairdner River there are three groups of Barren Ranges named by Flinders. The West Mount Barren Group, south of the Fitzgerald comprises West Mt Barren (371m), Mt. Bland (329m) and the lower Mt. Maxwell. The middle group includes Mid Mt Barren (457m) and Thumb Peak (about 450m). The eastern group includes Annie Peak (about 450m) and East Mt Barren (about 275m).

6.3 CLIMATE

Rainfall figures are available for Bremer Bay (figure 21). Temperature figures are not available but have been estimated from Albany and Esperance data (see figure 21). Climate zones and rainfall isohyets from Beard (1972) are presented as figures 18 and 19.

6.4 VEGETATION

6.4.1 Beard (1972) recognizes three vegetation systems in the Bremer Bay area (see figure 20).

- i) The Bremer System Along the coast including gneiss bosses and drift sand.
- ii) The Qualup System Coinciding with the "Plantaganet Group" rocks behind the coastal dunes.
- iii) The Barren Ranges System North of the Gairdner River.

6.4.2 Beard's Vegetation Map (figure 22) shows eight formations in the area

- i) Low scrub An open community of dwarf shrubs under 1m high on exposed coastal gneiss.
- ii) Scrub heath Two layered. An open upper layer of tall shrubs (under and a closed lower layer of small shrubs (mainly Proteaceae and Myrtaceae).
- iii) Mallee heath Two layered. Upper layer of mallee, often *E. tetragona*
- iv) Scrub Open community of tall shrubs over 1m high. Several types:
E. angulosa/ *Agonis flexuosa*/ *Acacia* on coastal drift sand; Tea tree scrub of swamps, either Boree (*Mel. thyoides* 2.5 - 3-5m tall) or Paperbark (*Mel. parviflora*) up to 6m tall.
- v) Mallee Open community of tall shrubs over 1m high with mallee dominantV mainly *E. redunca* - *E. uncinata*.
- vi) Thicket Dense closed tall shrub community notably in Barren Ranges. Up to 1.5m tall. Often *E. pressiana* and *Dryandra quercifolia*.
- vii) Sclerophyll woodland Tall or medium height open tree communities up to about 18m tall. Mainly dominated by *E. occidentalis*.
- viii) Low forest Small patches occur in the mallee areas. Typically with *E. platypus*, *E. annulata*, *E. spathulata*.

6-4.3 For a list of common plant species in the area see appendix 3.

6.5 ANIMALS, BIRDS, FISH

For lists of common animals, birds and fish in the Bremer Bay area see appendices 4,5 and 6, respectively.

7. BREMER BAY AREA HUMAN HISTORY (Mainly from Bignell, 1977)

7.1 ABORIGINALS

- i) Aborigines are believed to have lived in the south west of W.A. for at least 38,000 years. There is some evidence of habitation as long ago as 150,000 years. (W.A. Year Book, 1983). At the time of white settlement the Goreng (Koreng) tribe occupied the Gnowangerup Bremer Bay area. (W.A. - An atlas of human endeavour, 1979).
- ii) The local population was probably quite small as the aboriginal population of the entire south west corner in 1829 is estimated as 6,000. (Berndt, 1973). The language spoken was Noongar (Nyungar).

7.2 EXPLORERS

7.2.1 Before 1800

- i) The first recorded ship to visit the area was the "Guiden Seepaart" in 1627, captained by F. Thijssen (Dutch) and carrying P. Nuyts.
- ii) The first recorded British ships to visit the area were "Discovery" and "Chatham" in 1791, captained by George Vancouver. He named Point Hood and the Doubtful Islands.
- iii) The first Frenchman was B. D'Encrasteaux in 1792, who was in charge of two vessels "Recherche" and "Esperance". Aboard one of these ships was a Mr. Riche after whom Cape Riche was named.

7.2.2 After 1800

Mathew Flinders was in the area in January 1802 in the ship "Investigator". He named Cape Knob, west of Dillon Bay, and proved that the Doubtful Islands were islands by sailing between them. Flinders also named West, Middle and East Mount Barren. He landed at House Beach and dug a well to obtain water in "well corner" of Reef Beach. In July 1842 Edward Eyre (25) and Wylie passed through the area on their journey from Adelaide to Albany. Other early visitors were the botanist Drummond in 1943, Surveyor General J. Roe in 1848 (he named the Fitzgerald and Gordon Inlets) and the geologists Von Somner and the Gregorys in 1849.

7.3 SEALERS, WHALERS, FISHERMEN

7-3-1 Sealers

The first white men to stay more than a few days in the area were sealers in the late 1700s or early 1800s. In 1835, two youths (including Jimmy Newell) walked from Esperence to Albany, a distance of 640 km, after a disagreement with some sealers, including a negro called Jack Anderson. Evidently one of Anderson's crew was killed in a disagreement near Doubtful Island Bay. During the 1700s and 1800s rabbits and goats were landed on islands in the Albany to Esperence area to provide food for mariners. Sealers are believed to have been in the area up until about 1850.

7.3.2 Whalers

French and American whalers operated in the area as early as 1803. Whaling stations were established along the south coast in places such as Doubtful Island Bay, Cheyne Beach and Cape Riche from about 1838 onwards. The whaling station at House Beach, established by John McKenzie, operated from about 1846 to 1865.

7.3.3 Fishermen

i) There is little published information about commercial fishing in the early years. George Cheynes probably sold some fish to visiting ship calling at Cape Riche from about 1843. The Wellsteads caught fish at Bremer Bay for sale in the goldfields as early as 1895. By the 1820S there would have been a significant amount of amateur fishing by visitors to the Bremer Bay area.

The Heberle family has been professional fishing in the Cape Riche to Hopetoun area since 1936. Professional salmon fishing commenced at Hopetoun in 1944 and in the Bremer Bay area in 1946.

7.4 DEVELOPMENT

7.4.1 To 1860

In 1838 George Cheyne settled at Cape Riche and later established a port there. Sandalwood cutters operated in the area from about 1847. Captain John Hassell settled at Jerramungup in 1849. When regulation made provision for pastoral leases in 1851 the first claimants east of Albany were Cheyne and Hassell. The next settlers were the Barrett Brothers (1850) who settled on the Pallinup River at "Mongup". Relations of Mrs. Cheyne, the Moirs, eventually took over Cheyne's properties in the Cape Riche area and the Barrett's property at "Mongup". A relative of George Cheyne, W.A. Graham was another early settler in the area, in about 1858.

7.4.2 1860 to 1900

i) In 1860 John Wellstead settled in the Bremer Bay area, firstly at "South West Bay" and later at "Peppermint Grove". Construction of the overland telegraph line between Albany and Adelaide commenced in Albany on 1st January 1875 and was completed in less than three years. A telegraph station initially operated by Mary Wellstead was established at Bremer Bay.

ii) John Hassell had five sons. In 1877 two of the sons A.Y. and A.W. Hassell leased all of the properties except Kojonup from their father. A.Y. Hassell married in 1878. His wife and family (four sons and a daughter) sometimes stayed in a humpy at Doubtful Island Bay. By 1894 the Hassell estate had been divided between the brothers and it was no longer possible for the Jerramungup sheep to be shorn at Kendenup. A.Y. Hassell then (1894) built a shearing shed and living quarters at House Beach so that wool could be shipped from there to Albany.

7.4.3 1900 to 1920

i) The house at House Beach was built in about 1924. It was shifted from Albany and transported on the "Grace Darling".

ii) As early as 1897 rabbits were reported crossing the South Australian border into W.A. To halt their progress the government commenced constructing the No 1 Rabbit Proof Fence in 1902 from Starvation Bay near Hopetoun northwards. However by this time rabbits had already moved further westwards, so construction of a second fence (No 2) was commenced from Point Ann northwards. However this failed to stop the rabbits, which by 1914 were reported at Bremer Bay.

7.4.4 1920 to 1950

Ednie Hassell (one of A.Y. Hassell's sons) was the last Hassell to operate the Jerramungup - Doubtful Island Bay property. In 1927, Ednie Hassell blew off his right hand dynamiting for salmon at House Beach. By 1946, due to family differences, both of his sons had left the property. In 1948 the government commenced negotiations to purchase the Jerramungup - Qualup - Doubtful Island property for inclusion in the War Service Land Settlement Scheme. The deal was completed after Ednie Hassell's death in 1950.

7.4.5 1950 onwards

i) The Hassell, Qualup and Doubtful Island properties were sold to private buyers in 1952. (Lugg bought Doubtful). In 1953 Colin Cameron arrived at Jerramungup to supervise the W.S.L.S. scheme at Jerramungup. In 1954 the W.S.L.S. decided to develop a further 202,000 ha (141 farms) in the Gairdner River area. By 1959 virtually all of these farms were operational.

ii) In 1957 the townsite of Jerramungup was gazetted. In 1962 the Marra Bridge was constructed over the Pallinup River and the bitumenised Hassell highway from Esperence to Albany was opened. Also in 1962 the townsite of Bremer Bay was gazetted. It had previously been called Wellstead since 1951.

8. HEBERLE FAMILY PROFESSIONAL FISHING ACTIVITIES

8.1 BEFORE 1945

During the period 1930 to 1932 some of the family fished in the Furnisdale (Peel Inlet) area. Between 1932 and 1934 Heberles were fishing in the Esperence area for the Kaloorie market and later between Esperence and Hopetoun. By 1937 they were fishing in the Pallinup, Bremer and Gairdner River areas and by 1938 (when the family shifted to Katanning) at Cape Riche and Doubtful Island Bay also.

8.2 SINCE 1945

Since 1946, the Heberles have spent each salmon season at Doubtful Island Bay except for the flood year 1956. Section 9 shows details for each season. [Appendix 11](#) summarises Heberles salmon seasons.

8.3 SALMON FISHING TEAMS

i) Team members for each season, as far as is recorded or remembered are shown in section 9. Part seasons are shown with an asterisk*.

ii) A summary of salmon seasons by family members is as follows: Les Heberle 1946 - 64.

Ron Heberle 1946+. Greg 1965 - 66, 1969+. Ron inr 1967+. Grant 1973

Eric Heberle 1947 - 1948.

Norm Heberle 1946 - 47, 1972. Kevin 1979, 1981.

Cyril Heberle 1946 - 50.

8.4 CAMPS CLEANING SHEDS

Until 1955 the salmon team stayed in tents on Reef Beach. Between 1957 and 1963 the salmon team was based at the House Beach. From 1964 until 1972 the camp was on the top of a sandhill half way along the Reef Beach; with a shelter shed on the Reef Beach initially and then at the current location. Since 1972 the camp has been at the current location.

8.5 BOATS, NETS, CLEANING

i) The "big" 4.6m Clinker rowing boat LFB A91 was used from 1949 until 1973. The Derben 4.6m jet boat LFB A110 has been used since 1971. The Brooker aluminium 4-1m rowing boat LFB A 92 has been used since 1974 and the Stacer 4.2m LFB A87 since 1980.

ii) Hemp nets (8.9cm mesh) were used exclusively from 1949 until 1961 when a nylon bunt was introduced. All nets have been nylon since 1969. Three nets have been used since 1978.

iii) The first cleaning machine was introduced in 1949. It had a water pump, trough and brushes. A guillotine was added in 1950. The new cleaning machine was used from 1955 until 1978. All salmon have been sold whole since 1980.

8.5 VEHICLES

The 3 tonne "Forby" was used from 1947 until 1972. The first Landrover was introduced in 1970. The first tractor (Fordson) was used in 1973 and two tractors (Fordson + International) have been used since 1982. Five tonne road trucks were used until 1976 and a

8.6 ROUTE TO THE CANNERY

i) The first tracks into Doubtful Island Bay were presumably put in by the Wellsteads from Bremer Bay and/or the Hassells from Qualup and probably by about 1870. When the Heberles first went to Doubtful Island Bay in 1938 there was access by tracks to Bremer Bay and Qualup and beyond. The best access was via Bremer and Rams Head to Borden and Albany via Chester Pass Road or to Perth Via Katanning. When the Bremer Bar was open to the sea the route through Qualup was normally used.

ii) When the War Service Land Settlement scheme opened up the Gairdner River area, access was available first via Devils Creek and Swamp Roads (1957) and then via Gordon Inlet and Swamp or Bremer Road from 1961 onwards. The trip to Albany was shortened when the Hassell Highway and Marra Bridge across the Pallinup River was opened in 1962. Travelling times have been reduced with the progressive bitumenising of Bremer Bay Road (1971 - 1982).

iii) See appendices 7,8,9,10 for maps and aerial photos of the Bremer Bay area. The aerial photos show the sequence of new tracks opened up.

8.7 CATCH DETAILS

Daily catch figures for each season, if known, are presented in section 9. Figures for 1949 to 1961 are based on cannery receival data. Many of these catches were caught the day before. Figures for 1962 onwards are generally based on log book information and include the times that individual schools were caught, recorded in the comments column. All catch data is of Heberles share only eg if the catch was shared 50:50 then double the amount shown was caught.

ii) Appendix 12 shows Heberles total and average daily salmon catches for the period 1949 to 1985. Appendix 13 is a summary of tagged salmon caught at Doubtful Island Bay.

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Appendix 2

SUMMARY OF SOUTH COAST PROFESSIONAL SALMON FISHERMEN AND BEACHES 1946 - 1985.

YEAR	1946	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995
BEACH											
Esperence	----1949										
Hopetoun	1945-----1951										
Pt Charles/Ann					1966-----1973						
					Collett						
Trigilow				1960-----							
				Bentley							
House/Reef Bch	1946-----										
	Heberle										
Bremer	Chipperfie	1950--	1954-----					1985	1986-----		1995
	ld	Cullinane	Morris						Wilson		
Fisheries					1966-----						
					Swarbrick						
Dillon	Simpson--				1967-----						
	1948				Sharpe						
Pallinup		Swarbrick	1955-----								
		--1955	Cagnana								
Boat Harb E			1955-----								
			Guest								
Cape Riche		Cooper	1957-----								
		--1957	Moir								
Cheyne	Cheyne	Westerberg,	Birss & Wheatcroft,	Martin & Treasure,	Gomm	Eskett/Pri-----					
Betties											
2 People											
Nanarup											
Bendurg/Bon											
Goode											
Mutton B											
Cosy C											
Shelley											
Ocean B											
Parries											
Boat Harb W											
Peaceful											
Nornalup											
Windy Harb											

Appendix 3

SOME COMMON PLANTS OF THE BREMER BAY AREA.

Phyllum etc. (s)	Family	Genus & Species	Common name
Thallophyta			algae & fungi
Bryophyta			mosses
Pteridophyta			ferns
Monocotyledoneae	Gramineae	Spinifex hirsutus	Ammophila arenaria

	Restionaceae		rushes
		<i>Lepidosperma gladiatum</i>	coast sword sedge
	Liliaceae	<i>Dasyogon bromeliaefolius</i>	
		<i>Xanthorrhoea gracilis, nana</i>	blackboys
	Juncaceae		reeds
	Amaryllidaceae	<i>Anigosanthus humilis, rufa</i>	kangaroo paws
		<i>Conostylis seorsiflora</i>	
	Orchidaceae	<i>Caladenia aphylla</i>	leafless orchid
		<i>Eriochilus dilatatus</i>	white bunny
Dicotyledoneae	Casuarinaceae	<i>Casuarina humilis</i>	
	Proteaceae	<i>Adenanthos cuneatus</i>	
		<i>Banksia media, nutans, repens</i>	banksias
		<i>Conospermum anoenum</i>	smoke bush
		<i>Dryandra cuneata, quercifolia,</i>	dryandras
		<i>Hakea oleifolia, victoriae</i>	hakea
		<i>Isopogon buxifolius, tridens</i>	
		<i>Petrophile ericifolia, teretifolia</i>	
	Loranthaceae	<i>Nuytsia floribunda</i>	xmas tree
	Chenopodiaceae	<i>Arthrocnemum, Salicornia</i>	halophytes
	Aizoaceae	<i>Carpobrotus aequilaterus</i>	pigface
	Mimosaceae	<i>Acacia cyclopis, decipiens</i>	wattle
	Papilionaceae	<i>Bossiaea rufa</i>	water bush
		<i>Gastrolobium reticulatum</i>	poison plant
		<i>Gompholobium knightianum</i>	
	Zygophyllaceae	<i>Zygophyllum apiculatum</i>	
	Rutaceae	<i>Boronia crenulata, viminea</i>	boronia
		<i>Eriostemum nodiflorus</i>	pepper & salt
	Euphorbiceae	<i>Phyllanthus calycinus</i>	
	Stackhousiaceae	<i>Stackhousia brunonis</i>	
	Dilleniaceae	<i>Hibbertia cuneiformis</i>	
	Thymelaeaceae	<i>Pimelea ferrunginea</i>	pimelia
	Myrtaceae	<i>Actinodium cunninghamii.</i>	Albany daisy
		<i>Agonis flexuosa</i>	peppermint
		<i>Calothamnus pinifolius</i>	
		<i>Chaemetaucium megapetalum</i>	wax plant
		<i>Eucalyptus angulosa</i>	ridge fruited mallee
		<i>Eucalyptus platypus</i>	round leaf moort
		<i>Eucalyptus occidentalis</i>	flat topped yate
		<i>Eucalyptus preissiana</i>	bell fruited mallee
		<i>Eucalyptus redunca</i>	black marlock
		<i>Eucalyptus sheathiana</i>	ribbon barked mallee
		<i>Eucalyptus tetragona</i>	tallerack
		<i>Melaleuca thyoides, parviflora</i>	boree, paper bark
		<i>Verticordia densiflora</i>	
	Epacridaceae	<i>Leucopogon flavescens</i>	
		<i>Lysinema ciliatum</i>	curry & rice
	Goodeniaceae	<i>Dampiera juncea</i>	
		<i>Scaevola crassifolia</i>	

Appendix 4
SOME COMMON ANIMALS OF THE BREMER BAY AREA...

Phylum etc	Order, Class	Genus & species	Common name(s)
Protozoa			plankton
Porifera			sponges
Coelenterata			jelly fish, coral anemones
Nematoda			worms
Brachiopoda			marine animal with 2 shells
Athropoda	Crustacea		lobsters, crabs, barnacles
	Chilopoda		centipedes
	Arachnoidea		spiders, ticks, scorpions
INSECTA	Orthoptera		grass hoppers, mantis
	Isoptera		termites
	Odonata		dragon flies
	Coleoptera		beetles
	Lepidoptera		butterflies, moths
	Diptera		flies, mosquitos
	Hymenoptera		ants, wasps, bees
Mollusca	Gastropoda		snails, slugs
	Pelecypoda		mussels, oysters, scallops
	Cephalopoda		squid, cuttlefish, octopus
	Asteroidea		star fishes
	Echinoidea		sea urchins
VERTEBRATA			
Chordata	Chondrichthyes		sharks, rays, skates
	Osteichthyes		bony fishes
	Amphibia		frogs
	Reptilia	Demansia nuchalis	dugite
		Notechis scutatus	tiger snake
	Aves		birds
	Mammalia	Macropus fuliginosus	western grey kangaroo
		Macropus irma	brush wallaby
		Macropus eugenii	tammar wallaby
		Tarsipus spencerae	honey possum
		Cercartetus concinnus	pygmy possum
		Rattus fuscipes	bush rat
		Isoodon obesulus	short nosed bandicoot
		Canis familiaris	dingo, dogs
		Oryctolagus cuniculus	rabbit
		Vulpes vuples	fox
		Felix catus	cat
		Bos taurus	cattle
		Megaptera noveangliae	humpback whale
		Physeter catodon	sperm whale
		Nephoca cinerea	sea lion
		Arctocephalus doriferus	fur seal
		Delphinus delphis	common dolphin

*See Appendix 6 for sharks, rays and fishes

*See appendix 5 for birds.

Appendix--5

SOME COMMON BIRDS OF THE BREMER BAY AREA.

Family	Genus & species	Common name(s)
Casuariidae	<i>Dromaius novaehollandiae</i>	emu
Podicipedidae	<i>Podiceps</i>	grebes
Spheniscidae	<i>Pelecanus conspicillatus</i>	pelican
Sulidae	<i>Sula bassana</i>	gannet
Phalacrocoracidae	<i>Phalacrocorax</i>	cormorants
Ardeidae	<i>Ardea</i>	heron
Anatidae	<i>Cygnus atratus</i>	black swan
	<i>Tadorna tadornoides</i>	mountain duck
	<i>Amas superciliosa</i>	black duck
Accipitridae	<i>Elanus</i>	kite
	<i>Aquila audax</i>	wedge tailed eagle
	<i>Haliaeetus leucagaster</i>	sea eagle
	<i>Pandion haliaetus</i>	osprey
Falconidae	<i>Falco peregrinus</i>	peregrine falcon
	<i>Falco cenchroides</i>	kestrel
Megapodiidae	<i>Leipoa ocellata</i>	mallee fowl
Turnicidae	<i>Turnix varia</i>	quail
Rallidae	<i>Fulica atra</i>	coot
Otididae	<i>Otis australis</i>	bustard
Haematopodidae	<i>Haematopus longirostris</i>	pied oyster catcher
Charadriidae	<i>Pluvialis squatarola</i>	grey plover
Recurvirostridae	<i>Cladorhynchus leucocephala</i>	white headed stilt
Laridae	<i>Larus novaehollandiae</i>	silver gull
	<i>Larus pacificus</i>	pacific gull
	<i>Sterna bergii</i>	crested tern
Psittacidae	<i>Platycercus spurius</i>	red capped parrot
	<i>Neophema petrophila</i>	rock parrot
	<i>Calyptorhynchus latirostris</i>	cockatoo
Cuculidae	<i>Cuculus, Chrysococcyx</i>	cuckoo
Strigidae	<i>Ninox</i>	owls
Podargidae	<i>Podargus strigoides</i>	tawny frogmouth
Alcedinidae	<i>Dacelo glgas</i>	kookaburra
Pachycephalidae	<i>Petroica cucullata</i>	hooded robin
	<i>Pachycephata</i>	whistlers
	<i>Colluricincla</i>	shrike thrush
Monarchidae	<i>Rhipidura leucophrys</i>	willie wagtail
Ploceidae	<i>Emblema ocellatum</i>	finches
Grallinidae	<i>Grallina cyanoleuca</i>	maggie lark
Cracticidae	<i>Cracticus torquatus</i>	grey butcherbird
	<i>Cracticus tibicen</i>	maggie
Corvidae	<i>Corvus coronoides</i>	raven

Appendix 6

SOME COMMON FISH OF THE BREMER BAY AREA.

Class	Family	Genus & species	Common name(s)	
Chondrichthyes	Heterodontidae	Heterodontus portusjacksonii	Port Jackson shark	
	Orectolobidae	Orectolobus	wobbegong	
	Odontaspidae	Odontaspis taurus	grey nurse shark	
	Lamnidae	Isurus oxyrinchus	mako	
		Furgaleus vantralis	whiskery shark	
	Triakidae	Mustelus antarcticus	gummy shark	
	Carcharhinidae	Carcharhinus brachyurus	bronze whaler	
	Rhinobatidae,	Trygonorhina fasciata	southern fiddler	
	Dasyatidae	Dasyatis brevicaudata	smooth stingray	
	Osteichthyes	Clupeidae	Sardinops neopilchardus	pilchard
			Sardinella lemuru	scaly mackerel
		Plotosidae	Cnidoglanis macrocephalus	cobbler
		Hemiramphidae	Hyporhamphus melanochir	Southern sea garfish
Syngnathidae		Phyllopteryx taeniolatus	common sea dragon	
Platycephalidae		Platycephalus speculator	flat head	
Serranidae		Epinephelides armatus	breaksea cod	
Teraponidae		Pelsartia humeralis	trumpeter	
Sillaginidae		Sillaginodes punctatus	King George whiting	
Pomatomidae		Pomatomus saltator	tailor	
Carangidae		Pseudocaranx dentex	skipjack trevally	
		Arripidae	Arripis trutta esper	Australian salmon (west)
		Arripis georgianus	Australian herring	
Sparidae		Acanthopagrus butcheri	black bream	
Kyphosidae		Kyphosus sydneyanus	buffalo bream	
Scorpidae		Scorpus aequipinnis	sweep	
Mugilidae		Aldrichetta forsteri	yellow eye mullet	
		Mugil cephalus	sea mullet	
Sphyraenidae		Sphyraena obtusata	sea pike	
Labridae		Achoerodus gouldii	blue groper	
Gempylidae		Leionura atun	barracouta	
Scombridae		Thunnus maccoyii	southern blue fin tuna	
Pleuronectidae		Ammotretis rostratus	flounder	
Monacanthidae		Scobinichthys granulatus	leather jacket	
Tetraodontidae		Torquigener pleurogramma	blow fish	