FISHERIES DEPARTMENT, WESTERN AUSTRALIA

MONTHLY SERVICE BULLETIN

Vol. VI, No. 10. October, 1957

STAFF NOTES

The Superintendent, Mr. A.J. Fraser, resumed duty in September after annual leave.

The Clerk in Charge, Mr. B.R. Saville, as deputy Chairman, and Mr. H.B. Shugg, as Secretary, will accompany members of the Fishermen's Advisory Committee to Geraldton on October 15. The Committee will meet on the following two days to take evidence from fishermen and discuss conservation of the Geraldton, Abrolhos and Shark Bay crayfish fisheries.

Inspector R.M. Crawford, of Geraldton, will commence annual leave on October 21. Inspector G.C. Jeffery (who is at present at Mandurah) will relieve in the Geraldton District during Inspector Crawford's absence, and then commence annual leave himself on November 11. Other officers on annual leave at the moment include Inspector A.V. Green, of Mandurah, Inspector G.H. Lyon and Assistant Inspectors M.J. Simpson and R.J. McKay who will all resume duty on October 14.

Inspectors A.K. Melsom, A.J. Bateman and N.E. McLaughlan each resumed duty last month after annual leave.

Assistant Inspector K. Brooks will go to Geraldton on special duties for a fortnight from October 7. Technical Officer J. Traynor and Cadet

Inspectors E. Barker and G. Hanley will leave for Rottnest on October 10 for special duties associated with the Rottnest Biological Research Station.

Congratulations and good wishes are extended to Inspector B.A. and Mrs. Carmichael, of Albany, on the birth of a daughter on October 3.

OBITUARY

Mr. A.W. Crawford, father of Inspector R.M. Crawford, passed away at his home at Cottesloe on September 15. To all the bereaved family we extend our sincere sympathy.

FARM DAMS AND TROUT

During September the Research Officer, Mr. B.K. Bowen, assisted by Technical Officer L.G. Smith, commenced experiments on a farm at Walebing to see what really happens to animal and plant life in dams after treatment with fertilisers. A fertiliser mixture recommended by overseas authorities, comprising chloride of potassium, sulphate of ammonia, superphosphate and powdered limestone, was used. It is said very greatly to improve both the productive and carrying capacity of bodies of fresh water. The Boolardy Pastoral Company has very kindly agreed to two dams on its property at Cranmore Park being used for the purpose of the experiment. The dams, which are separated by only a three-yard embankment, are sunk in similar soil and are filled by the run-off from the same fields. Because of this, the plant and animal life of the two dams should have been similar for all practical purposes before the experiment was commenced, although possibly there may have been minor, probably negligible, differences. One of the dams has been fertilised at the rate of 120 pounds of mixture per acre, while no fertiliser has been added to the other, which will be used as a control. At monthly intervals throughout the summer the dams will be inspected, and a series of water and mud samples collected. The living organisms in the samples will be measured to allow comparisons

to be made as between the two dams and as between each month of the year. At the same time light penetration and temperature, oxygen and acidity levels will be noted. When this information has been tabulated and analysed it should not only indicate the manural effects of the mixture, but also lead to an understanding of the various factors which may affect trout planted in inland farm dams throughout the State.

TROUT DELIVERIES

In a recent issue of this Bulletin (Vol. VI, No. 8; August, 1957) it was reported that trout fry would be kept in a holding pond at Craig's Lake, Kewdale (a Perth suburb) and distributed from there in plastic bags. The holding technique has proved extremely successful, and many buyers have praised the plastic bag method of delivery. On the morning of delivery an officer of the Department goes to the pond and secures the required amount of fry in a dip net. The fry are then weighed and bagged in the manner previously described, and taken either to Head Office, to await the arrival of the purchaser, or to the road bus depot for transport. In all, 87 bags have been despatched, and in all but two cases the fish have been liberated in the farm dam in perfect condition. On the two unsuccessful occasions it was found that the inside bag of the set had been punctured and a portion of the water and oxygen had leaked into the outer bag. Although nothing can be done on our part to prevent the bags being punctured in transit, they are now tested to ensure that there are no leakages before the fish are placed inside them.

Overall it can be said that the establishment of the holding pond and the large scale delivery of trout fry in plastic bags has been an outstanding success. It not only avoids the occasional heavy losses of fish experienced by the mobile delivery unit in past years, but has also proved far more economical.

MOVEMENTS OF DEPARTMENTAL VESSELS

The p.v. "Kooruldhoo", which arrived from Geraldton on September 3, will go on the slips at Fremantle on October 21 for her annual refit prior to the commencement of the 1957/58 Fremantle-Lancelin crayfishing season.

The r.v. "Lancelin" was still in Carnarvon waters when this issue went to press. She is continuing the whale-marking programme, but Mr. K. Godfrey, Whaling Officer, Division of Fisheries and Oceanography, C.S.I.R.O., who is at present on board, will return to Perth on October 4.

The "Garbo" is still at Shark Bay, the "Leschenault" at Geraldton, and the "Misty Isle" and the "Silver Gull" at Fremantle.

FISHING BOATS WRECKED

L.f.b. G.51, the "Bengazi", owned by Messrs G. Clee and L. Akerstrom, was swamped by a breaker and wrecked on a reef south of Dongara on August 27, but fortunately her crew escaped serious injury. The "Bengazi", which was valued at £1,500 by her owners when last registered, had a length of 24' and a beam of 10'. It is understood she was insured for at least part of that amount.

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On Sunday, September 29, the l.f.b. "Blue Wave", owned by Mr. J. Willers, foundered at Drummond's Cove, about 8 miles north of Geraldton. After being swamped by a big sea she hit a reef and broke up, her owner having a hard swim to the shore and safety. The "Blue Wave" had only recently been purchased by Mr. Willers. She was 18' in length with a 7' beam and was powered with an 8 h.p. motor. When last registered she was valued at £1,000. It is understood she was only partly insured.

CONVICTIONS RECORDED

July 1 to September 30, 1957

Date	Defendant	Court	Charge	Result
2.9.57	Contorinis, G.	Bunbury	Undersize fish	Fined £5
15.7.57	Correia, F.	F'tle	U/size C/fish	" £10
do.	Tropical Traders & Patersons Ltd.	do.	do.	" £5
do.	Ayre, D.S.	do.	do.	" £5
23.9.57	Donatti, P.J.	do.	do.	" £5
do.	do.	do.	do.	" £10
do.	Collins, F.B.	do.	do.	" £3
12.8.57	Correia, F.	Ger'ton	do.	" £7/10/0
do.	do.	do.	do.	" £ 5
do.	Iannello, C.	do.	do.	" £10
do.	Locantro, G.	do.	do.	" £5
do.	Ogston, A.C.	do.	do.	" £3
19.8.57	Collins, A.	do.	do.	" £2
do.	Walton, K.	do.	do.	" £2
do.	Wilkes, L.	do.	do.	" £2
23.8.57	Valenti, M.	do.	Closed waters Abrolhos	" £5
do.	Miragliotta, O.	do.	do.	" £5
do.	Grego, A.	do.	do.	" £5
10.9.57	Kyjenia, M.	do.	U/size C/fish	" £15

Date	Defendant	Court	Charge	Result
10.9.57	Novakovic, M.	Ger'ton	U/size C/fish	Fined £3
do.	McVicars, E.G.	do.	do.	" £3
do.	Hams, W.C.	do.	do.	" £8
24.9.57	McAullay, G.	do.	do.	" £4
do.	Hennerberry, J.	do.	do.	" £4
do.	Baker, H.	do.	do.	" £2
do.	Finlay, A.S.	do.	do.	" £4
do.	Christie, E.	do.	do.	" £3
do.	Morrice, A.	do.	do.	" £4
do.	Ayling, R.	do.	do.	" £2
do.	Davis, A.E.	do.	do.	Withdrawn
do.	Valenti, M.	do.	do.	Fined £4
4.7.57	Wimbridge, P.	Perth	Spawning crayfish	" £3
1.8.57	Barrass, W.T.	do.	Unlicensed	" £5
4.7.57	Kristiansen, G.N.	do.	U/size C/fish	" £3
do.	Nunn, W.	do.	do.	" £3
do.	Teague, W.	do.	Fishing in closed waters	" £10
29.8.57	Fletcher, P.	do.	U/size C/fish	" £3
do.	Kramer, N.	do.	do.	" £10
do.	Sweetapple, F.A.	do.	Obstruction	" £10
do.	do.	do.	Refusing to give name & address	" £5

Date	Defendant	Court	Charge	Result
3.7.57	Jones, C.	Pinjarra	U/size fish	Fined £2
4.9.57	Thomas, L.F.	do.	Unlicensed	" £5
do.	Thomas, L.F.	do.	Fishing in closed waters	" £5
do.	Whitfield, T.G.	do.	Unlicensed	" £5
do.	do.	do.	Fishing in closed waters	" £5
do.	Nicholas, H.	do.	Using a prohibited net	" £3
do.	Patterson, A.H.	do.	Fishing in closed waters	" £5
do.	do.	do.	Unlicensed	" £5
do.	Layton, J.	do.	U/size fish	" £2
		Game Act		
4.7.57	McDougall, N.	Perth	Using illegal devices	" £5
15.7.57	Kukulj, M.	F'tle	Taking protected fauna	" £5

SWAN RIVER NOTES

Senior Inspector J.E. Munro reports the presence of small prawns in good quantities in the Swan River. There is every prospect, he says, of another good season, although it might be too much to hope that it will be as successful as last year's.

Mr. Munro also reports that there has been a limited revival of the Perth herring fishery in

the River this winter. Some fishermen, he says, took advantage of the welcome re-appearance of this species which showed up when other fish were scarce. One fishermen caught almost 9,000 lb. which, it is understood, were all sold to a local cannery.

ABROLHOS CRAYFISHERY

Final returns confirmed the prediction in the last issue that production of crayfish at the Abrolhos during the 1957 season would total almost 3,000,000 lb. The table at page 143 reveals that the actual total exceeded 2,900,000 lb., an increase of approximately 456,000 lb. on the previous season.

The record number of men - 177 - operating in the greater Abrolhos area was no doubt responsible for the increase in production but, rather surprisingly, the average catch per man this year was slightly above that of last year when only 151 men were operating. A study of the table suggests that, while an increase of production follows closely on an increase in the number of men operating, factors additional to fishing intensity appear to affect the average catch per man. Probably the main additional contributory factor would be the weather conditions, but other intangibles such as fish distribution, and the efficiency of men, boats and gear, no doubt play their part. It must also be remembered that the full impact of the intensive fishing of the last six years will not be evident until a period at least equal to that taken by the crayfish to develop from larval to marketable size has been experienced. Exactly how many years are involved is not definitely known, but there seems no doubt that fishermen are still reaping a harvest of fish which were spawned before fishing pressures became really intense. We must also bear in mind the ever increasing area of reefs being fished at the Abrolhos. Whereas fishermen once were content to operate in the shallows, increasing competition has forced them to prospect deeper waters. Consequently, each year there has been a certain percentage of fishermen working new grounds with accumulated stocks of fish which has helped to maintain the average catch per man. This

ABROLHOS CRAYFISH PRODUCTION

Year	North Island	Wallabi	Easter	Pelsart	Total
		No. of Men			
1952	8	20	32	24	84
1953	7	26	40	17	90
1954	15	36	41	21	113
1955	18	39	47	45	149
1956	31	42	38	40	151
1957	26	45	60	46	177
		Total Catch			
	lb.	lb.	lb.	lb.	lb.
1952	132,437	441,684	579,773	395,556	1,549,450
1953	123,243	573,081	647,967	294,020	1,638,311
1954	208,972	679,783	814,848	415,797	2,119,400
1955	278,681	717,699	802,879	672,885	2,472,144
1956	395,831	713,153	774,172	561,512	2,444,668
1957	433,185	774,926	1,042,910	653,685	2,904,705
		Catch per Man			
	lb.	lb.	lb.	lb.	lb.
1952	16,555	22,084	18,118	16,481	18,446
1953	17,606	22,041	16,199	17,294	18,203
1954	13,931	18,883	19,784	19,800	18,756
1955	15,482	18,402	17,082	14,952	16,592
1956	12,769	16,979	20,373	14,038	16,189
1957	16,661	17,221	17,382	14,211	16,411

continual extension of fishing grounds cannot be maintained indefinitely for the simple reason that the grounds are definitely limited. In other words, we must not lightly assume that, because the catch per man has not fallen to any marked degree in the last three years despite the increase in the number of men, the fishery can stand any further influx of men and boats or that even the present numbers can be maintained indefinitely at an economic level.

At its meeting at Geraldton later this month, the Fishermen's Advisory Committee will give consideration to all the known aspects and the needs of the fishermen before making any recommendation regarding the 1958 season and its contingent restrictions.

FREMANTLE-LANCELIN-CERVANTES-JURIEN BAY CRAYFISHERY

Recommendations that the 1957/58 crayfishing season should open on November 15 and close on August 15, and that the one mile off-shore closure should be reapplied from January 15, 1958, were made by the Fishermen's Advisory Committee following its meeting at Fremantle last month. The earlier closure of the season was recommended with the idea of bringing this area into line with the closing of the Abrolhos season. Members considered that, as the bad weather met with in winter months automatically closed the season in any case, there would be no untoward effect on either the production or the pockets of the fishermen. The closing of on-shore waters from high-water mark to one mile off-shore between the 30th and 33rd parallels from January 15, will allow crayfishermen to operate in the shallows during the "white" crayfish run.

Notification has been received that the Committee's recommendations have been accepted. The necessary proclamations will be issued shortly.

W.A. LEAGUE OF PROFESSIONAL FISHERMEN

The annual meeting of the League will be held in Perth on October 8 and 9.

THE CLEARING HOUSE

Co-ops Help Swedish Fish Industry

The recent announcement of the White Fish Authority's marketing scheme for the inshore fishermen of Scotland and Northern Ireland lends interest to an F.A.O. report on the scope and activities of fishermen's organisations in Sweden.

Fishermen there share alike as a team. The skipper approved by the State receives the same share as the rest of the crew, except so far as the factor of ownership operates.

The survey aims to give fisheries administrators and fishermen in other countries the benefit of experience in Sweden, where price regulations are administered in collaboration with the fishermen's organisations.

About 30 per cent of Sweden's sea fish is caught in the North Sea or more distant fishing grounds, nearly 40 per cent from the Kattegat and the Skagerrak, and over 30 per cent from the Baltic. Herring is the most important species, about 115,000 metric tons being landed annually, or almost 60 per cent of all fish caught.

Fishing Methods

Much more than 80 per cent of Swedish west coast fish is caught by trawl. Other gear includes the Danish seine for haddock and flatfish, the purse seine for herring and sprat, drift nets for herring, mackerel and salmon, anchored nets for herring and other species, long lines for cod and ling, floating lines for salmon and pound nets for eel.

Internal combustion engines provide main propulsion in Swedish boats. Steam trawlers disappeared two years ago. The fishing population has fallen from about 25,000 in 1945 to 20,000 now. Yet the volume of the catch reflects a big increase in the average for each fisherman.

Under favourable circumstances salmon and eel fishermen, and those in large modern trawlers, sometimes earn a substantial income. Most yearly net incomes are between £250 and £500.

Compared with other workers, Swedish fishermen have rather low incomes. Their economic standard has been raised, however, over the last 20 years. Private initiative, favourable market and government measures are mainly responsible. Development of strong fishermen's organisations has made a more essential contribution.

Trawlers working with hired crews no longer exist. There are hardly any fishing companies in the real sense of the word. With few exceptions, fishermen own their boats and gear.

All who work on a boat are not part-owners of the boat or gear. They are not engaged as wage-earners, but are usually members of the fishing team formed by all on board.

On small boats fishing near the coast, there are generally two men, three on medium-sized boats and six to ten on the largest boats.

Should all in a boat be part-owners, net income is divided according to each one's share. Should the crew consist of two and one be the owner, the net income is generally divded so that the owner receives a bigger share.

In large boats, part of the crew generally has a share in boat and gear. They alone are responsible for boat and gear operating and maintenance costs. All members of the crew collectively bear the costs of fuel, provision, fish boxes, ice, port fees, auction fees, etc.

By calculating and dividing net income, expenses common to the whole crew are first deducted from the gross income. The net income is then divided into a number of equal shares. A number of these shares corresponding, usually, to the total number of the crew, are divided equally between all

crew members. These shares represent remuneration for the work each member of the team has performed, including the owners of the boat.

The remaining shares, generally a smaller part, go to the owners of boat and gear, and cover the cost of maintaining the boat and gear as well as payments of interest and instalment of the capital invested in this property. This division of catch earnings usually takes place after each fishing voyage.

Significantly, the skipper of such a boat does not receive a higher income than the rest. One part-owner considered best suited for the task, and approved by the State as competent to serve as master, is generally chosen skipper.

Landings Concentrated

Dealing with trade and processing, the report describes how efforts are made to concentrate large landings in places where fish can be handled most conveniently. Instead of going home immediately after a trip is finished, boats first call at such a place of discharge to land catches. In this way, a number of big fishing harbours have grown up, particularly on the west coast, but also, to a significant extent, on the south coast. The largest is Gothenburg, where about 60,000 metric tons are landed annually or rather more than one-third of all the fish landed in Sweden. About half of all the fish landed in Sweden is distributed from the big fishing harbours.

In districts where fishermen still land catches at home villages, arrangements are made, usually through the fishermen's organisations, for the fish to be transported by lorries or boats to a central place, generally a town, to be marketed. Practically the whole coast is covered in this way, so that distribution is centred on relatively few places.

There are a few more than 200 wholesalers. Most operate at coastal centres, selling direct to inland retailers. Fishermen's sales organisations often act as wholesalers, and there are two wholesale enterprises owned half by fishermen's organisations and

half by the nation-wide Consumers' Co-operative Association.

At Gothenburg, and in other fishing harbours, auctions are arranged through municipal authorities. Fish dealers pay the auction master for fish they buy, and he renders an account to the fishermen after deducting auction fees.

The other business link between fishermen and dealers is the fishermen's organisation. Fishermen deliver catches to the associations which, in turn, sell fish to dealers.

Herring smokehouses and several freezing houses are owned by the fishermen's organisations, while a few canning factories are run by the Consumers' Association.

Governmental Part

Government administration is handled by two independent departments, the Royal Board of Fisheries and the State Agricultural Marketing Board. The Fisheries Board gives necessary assistance to fishermen, helps to improve fishing methods, promotes the sale of fish and fish products, fosters education and training, and makes scientific investigations and experiments.

The five members of the board include four former leading members of the fishermen's organisations. The fifth represents the trade.

To improve quality and avoid surpluses, it often happens that an organisation prescribes that during a voyage or a limited period, only an agreed quantity of fish may be landed. Minimum sizes have been prescribed for a number of species for which none has been prescribed by the State. Prohibition of fishing on Sundays has also been imposed.

Most trading organisations are without personal liability. Members pay a minimum as shares. Sometimes a member has to buy shares in proportion to his income from the sales of fish delivered over a period.

State Aid

The State has created a special fund to supply trading associations with capital. For two years, the loans are free of interest and repayments of principal. After that 3.6 per cent interest is charged and the loans have to be redeemed over 10 to 15 years.

Most sales associations carry on actual wholesaling, more or less in competition with private wholesalers. Smaller associations also do business on a retail basis at or near places where they receive catches from fishermen.

A system of minimum price regulation was introduced in 1946, and wartime import and export regulations have been retained.

("The Fishing News" London July 12, 1957.)

Pink Crayfish Being Found in Payable Quantities.

Pink crayfish from the rocky Natal coast may soon oust the common rock lobster of the Cape from the menu of the discriminating eater, and there are huge quantities of this species off the eastern seaboard of South Africa.

They are smaller than their Cape relatives, averaging about 1 lb. each but, what they lack in size, they compensate for in quality. Catching and marketing are included in the ambitious plans of the newly-formed Johannesburg Trawling Company. The company, which recently purchased five whale-catchers from the Union Whaling Co. Ltd., believes that Durban can become a great fishing centre. When the catchers are in full operation, it is hoped to land up to 50 tons of crayfish every three days.

Unexploited Grounds

The catchers, converted for service as trawlers, will operate between Durban and Lourenco Marques, where many unexploited and rich grounds are

teeming with fish that might yet prove the basis of an expanding trawling industry which could be competitive with that in the Cape.

Demand for the canned and frozen rock lobster is firm and well in excess of production. The industry, however, continues to reduce production of canned lobster to increase the frozen output. The United States market for frozen tails shows a good demand.

("The Fishing News" London July 19, 1957.)

The Cost of Refitting an Office

If you are concerned with the cost of running your business, take a look at what it has cost the Department of the Interior to redecorate the offices of the top officials of the newly reorganised Fish and Wildlife Service - $38,287.33. As reported by one newspaper commentator, this included $540.98 for an oriental rug for the new Commissioner, Arnie Suomela, which he didn't even want.

It cost a total of $8,256.08 to refurnish Ross Leffler's office in a manner befitting his rank of Assistant Secretary according to bureaucratic protocol. This included scarlet-colored carpeting and oriental rugs for $2,320 draperies for $766; a desk and office chairs for $1,130; and two electric typewriters for $1,135. This refurnishing was ordered for Mr. Leffler even before he took over. Despite Mr. Suomela's insistance that he keep the furniture of his predecessor, the Department was successful in spending some $2,234 in his office.

Another $27,796 was spent on furnishing suites for the two Directors of the Service's new Bureaus, Commercial Fisheries, and Sport Fisheries and Wildlife.

("Fishing Gazette" New York June, 1957.)

German Factory-Trawler

The first German combined trawler and factory ship, the Heinrich Meins, has been delivered by Rickmerswerft, Bremerhaven, to the Gemeinwirtschaftliche Hochseefischerei (GHG), also of Bremerhaven. The vessel has a g.r.t. of 826, and her main dimensions are as follows :

Length o.a.	approx.	216 ft. 6 in.
Length w.l.	"	202 ft. 9 in.
Breadth	"	31 ft. 3 in.
Depth to upper deck	"	22 ft. 6 in.
Draught	"	12 ft.11 in.

The engine room is located forward, and the propulsion machinery consists of two supercharged Deutz Diesels, with a maximum of 750 h.p. each, working two Voith-Schneider propellers. With an engine output of 1,200 h.p., speed is 13 knots.

The net is hauled up the stern slipway and emptied through two hatches on to the lower processing deck, where, after sorting, the fish is filleted, Baader white fish and red haddock plants being installed on this deck. The fillets are taken by conveyor belts either into a vertical plate contact freezer or for salting. The waste is processed into fishmeal in a Schlotterhose plant, with a capacity of 20 tons a day, and there is storage room for fishmeal of 80 tons capacity, and bunkers for liver oil of about 47 tons capacity. The trawler has a refrigerated hold for fresh fish of 455 cu. m. and a deep-freezing room of 148 cu. m.

A sister ship has been ordered by GHG, and five more stern trawlers, two for British account, are building at this yard.

("World Fishing" London August, 1957.)

Spray Drug Used to Stun Fish

Anglers will have no excuse for the one that got away if they use a new water-pistol technique developed by two American scientists.

The technique involves an anaesthetic called "M.S.222". A sea-water solution of this drug is sprayed over a fish thrashing on the end of the line, stunning it within a minute.

Mr. Perry Gilbert and Mr. F.G. Wood, of Cornell University and the Marineland (Florida) Research Laboratory, reported on their research in the technical journal, Science.

They said they developed the technique to capture sharks and rays for use in scientific studies, but their findings might also be useful to anglers who catch fish for food or exhibition. The drug has no harmful effect on the fish, and does not spoil the flavour.

The drug, an amethan-sulfonate compound, is sprayed over the fish by means of a water-pistol, rubber-bulb syringe, or small, pump-type hand-sprayer. Within 15 secs., the M.S.222 solution begins to take effect and, as a rule, even a 400 lb. shark is anaesthetised in a minute or less, the article said.

The fish returns to consciousness in five to 30 minutes after being re-immersed in water, depending on its size and the amount of spray it received.

("The Fishing News" London August 9, 1957.)