FISHERIES DEPARTMENT, WESTERN AUSTRALIA

MONTHLY SERVICE BULLETIN

Vol. III, No. 7 July, 1954

STAFF NOTES

The Superintendent (Mr. A.J. Fraser) will leave Perth on Sunday July 4 to attend a conference in Sydney.

On June 18 Miss Carol Paramor was farewelled at an informal afternoon tea. She had tendered her resignation from the Service to enter Nurses' Training School. Carol was presented with an Onoto pen and pencil set and subjected to a spate of good wishes.

Miss Paramor was replaced by Miss Pam Pegrum who came to us from the Superannuation Board.

On April 5 Miss Val Hogan was sent to us as a forward replacement for Shirley Norwood and it just shows how well Val fitted into our family that we overlooked welcoming her at the time of farewelling Shirley.

Inspector F.A.L. Connell handed over the p.v. "Kooruldhoo" to Inspector Neil McLaughlan on June 15 and came to Perth to assume the duties of Fauna Warden.

Inspector H.J. Murray had proposed to take his leave last month but it was found necessary to postpone it until July 5.

Inspector A.V. Green plans to take his annual leave commencing July 26. Inspector A.K. Melsom will relieve at Bunbury during Mr. Green's absence.

Cadet Inspector David Wright left Pemberton for Geraldton and on June 14 joined p.v. "Kooruldhoo" as crew.

Assistant Inspector B.A. Carmichael proceeded to Pemberton on June 9 to assist in the hatcheries.

Assistant Inspector J.C. Thair has taken over the p.v. "Garbo" and has Cadet Inspector J. Milne as crew.

Technical Officer J. Traynor returned from annual leave on June 29.

PERSONAL PARS

Mr. G.W. Rayner, M.Sc., Deputy Chief of the Division of Fisheries, Cronulla, N.S.W., who for a year or two after his arrival from England in 1947 was accommodated at the Fisheries Department, Perth, and consequently became very well known to the staff of the Department, has severed his connection with C.S.I.R.O.

Dr. K. Sheard, Officer-in-charge of the W.A. Regional Laboratory of the Division of Fisheries, will leave for the eastern States by air on July 2. He will spend some time at the Division's headquarters at Cronulla, near Sydney, and visit Melbourne, Brisbane, Adelaide and Canberra before returning to Perth about July 29.

Mr. T.W. Houston, B.Sc., Research Officer, Division of Fisheries, Cronulla, who visited Western Australia some little time ago to study the results of the ill-fated trawling venture operating from Albany in recent years, has now published Technical Paper No. 2. of the Division entitled "Commercial Trawling Tests in the Great Australian Bight". The paper, which is a very valuable contribution to our fisheries knowledge and is written in a most attractive form, is reviewed elsewhere in this issue.

Miss Dorothy Osborne, of the Administration Staff of the C.S.I.R.O. in Western Australia, has resigned from that Organization and left on June 26 by the "Orontes" for a lengthy trip to England. Miss Osborne joined the Fisheries Division of the C.S.I.R.O. as a typist in March 1946, and almost ever since that date has

served in a secretarial capacity to Dr. D.L. Serventy when he was successively Officer-in-charge locally of the Fisheries Devision and of the Wildlife Survey Section. Her associates in the C.S.I.R.O. farewelled her at an afternoon function on Friday, June 11, and presented her with a travelling alarm clock.

Congratulations are extended to Mr. Rex Spencer, Research Officer of the Division of Fisheries, Perth, and Mrs. Spencer on the birth of a daughter on June 11.

TROUT

The Pemberton-Warren Trout Acclimatisation Society has received advice that the Government has agreed to contribute the sum of £500 as its share in the cost of maintenance and replacement of ponds at the Pemberton hatcheries.

In spite of unfortunate events last year orders for trout have been plentiful. To date 150,000 fingerlings have been ordered for delivery in November'54, and 25,000 advanced fingerlings have been ordered for May'55.

At this stage it is not certain whether there will be sufficient fry available to make the usual distribution from the Department's boat shed in September. A public announcement will be made at the arliest possible date, if fry is to be distributed.

The Clerk-in-charge and Technical Officer J.S. Simpson will this month attend meetings at country centres to discuss propagation and distribution problems with local bodies and interested persons.

The centres are as follows:-

West Pingelly — Kondinin
Lake Grace — Corrigin
Wickepin — Ardath
and Dangin

The information on the next four pages has been compiled for, and will be issued to, prospective purchasers of trout.

TROUT CULTURE

Hints for Stocking Pools and Dams

General Requirements.

(a) Cool, deep water. Perhaps the most important requirement for trout is cool, deep water. Permanent stream-fed ponds where there is a movement of water are ideal.

Mr. H. Green, of the Springfield Nursery, Pemberton, has had excellent results from one of this type. Built originally for irrigation purposes, this pond now also supplies fish for the household and for sport.

In the Great Southern area there are catchment dams which would carry trout. Many would require considerable improvement prior to stocking.

The first essential is low temperature. The surface temperature during the hottest summer months should not exceed 70°F., as trout will live for a short period only in waters that rise above this. The temperature can be lowered by shading a portion of the pond and this will also cause a certain amount of circulation by reason of the colder bottom waters mixing with the warmer surface waters.

One third of the area in a catchment dam should contain water at least eight feet in depth, as the fish will benefit by having cool, deep water available to them during the hot summer months. Deep water will also prevent plant life from taking control of a pond. Care should be taken in selecting the right types of plants and, indeed, expert advice should be sought before introducing any plant life, particularly where it is being transferred from one district to another. Advice on this matter, as on others, is obtainable from the Fisheries Department and local trout acclimatisation societies.

(b) Oxygen. Trout require more oxygen in the water than most other fishes, their lowest limit of tolerance being about five parts per million of dissolved oxygen. To ensure that a pond will have sufficient oxygen, the water must be well aerated, and natural water movement is the best method of securing aeration. Where a pond is stream-fed, there should be no oxygen deficiency, but this danger is ever present in a catchment dam. Plants act as oxygenators and are most important in a catchment dam where there is little water movement owing to the surface area being so

small that the wave action is reduced to a minimum.

(c) Food. The fish will require food. This can be supplied to them by or through the agency of suitable aquatic plants which will also encourage other water animal life such as dragon flies, damsel flies, cattle flies, minute crustaceans (water fleas, scud and shrimp), and water beetles (water boatman, backswimmer, etc.).

To ensure that the pond carries sufficient food to support the fish and other necessary aquatic life, the use of fertilisers may be necessary. One type of commercial fertiliser recommended is the following:-

Material	Parts by Weight
Pottassium Chloride	5
Ammonium Sulphate	40
Superphosphate	60
Ground Limestone	15

This should be introduced to the pool at the rate of 120 lb. per acre. It should be applied once a month during the summer. If the fish continue to make good growth, only very occasional additional applications will be necessary.

Organic fertilisers such as sheep, cow or fowl manure can also be applied using 1 cubic yard per acre of water.

So far so good. If you are thinking of introducing trout to your dam or pool, first do some stocktaking, bearing in mind the abovementioned requirements.

The water must be deep enough, cool enough and sufficiently oxygenated all the year round. There must be adequate supplies of food for the fish.

Keep the water as clear as possible. See that no waste matters pollute the stream or dam. To assist in this, leave as much natural grass, trees and shrubs around the pool as possible. These will help to bind the soil and prevent erosion by wind and rain. It is a good idea, too, to fence the area to prevent livestock from damaging the banks and fouling the water - that is, of course, if other arrangements can be made for watering stock.

Delivery.

Once one has satisfied himself that fish may be reasonably expected to thrive, make arrangements with the Fisheries Department for delivery. Do not over-stock. It is a popular misconception that better fishing is achieved by simply placing more fish in the pond. It is capable of producting only a certain amount of fish food, and over-stocking reduces the amount available per fish. If there were two dams exactly alike and one were stocked with a thousand fish and one with ten thousand fish, it would be found that the dam planted with the smaller number would maintain good supplies of takable fish while the other would be stocked with runts.

Having decided on the number of fish required, contact the Department, and advice will be furnished as to the delivery arrangements. Generally speaking, deliveries are made to certain distributing centres throughout the Great Southern and South-West and applicants will be notified several days in advance at what time and on what day they can pick up their fish at the nearest centre. The trout will arrive at the centre in good condition. Whether they reach your pond in good condition will be entirely up to the buyer. The cleanliness of the container used is most important. It is simply no good turning up with a drum still containing tar or grease, or some such offensive substance, although a lining of hard tar would be quite all right so long as the tar is set hard. A properly cleaned 10-gallon milk can or 44-gallon drum free of rust is a suitable container in which to transport fish. It must be realised that the shorter the time that elapses between taking delivery and releasing the fish in the pool, the greater will be the survival. This is most important - do all your shopping and enjoy you social activities before you accept delivery. Don't stop at the tavern for a noggin afterwards and don't wait for Mum if she is nattering at the local C.W.A. Just get home!

A bumpy passage won't harm the fish. It will help to aerate the water in the container. The water must be kept cool, and if possible, have some ice on hand as the temperature of the water with which you fill your containers may be much higher than that in the transport tank. Water temperature tends to rise rapidly and must be prevented, so stand your vehicle in the shade if you have to wait for delivery or if you must stop on the way home.

Releasing.

Too abrupt a change in water temperature will kill your fish. When planting the fish, take a little time and equalise the water temperature in the container and that of the dam. When a 10-gallon can is being used, stand the can in the shallows and bale water out of the dam into the can, allowing it to over-flow for a few minutes, then turn the can on its side and allow the fish to swim out. When a large container is being used, rather than allow it to over-flow, bale water out of it and replace with water from the dam until the water in the tank has been renewed and is the same temperature as the dam water. You should then fill a small container - a tub or a bucket - with pond water (or water from the large container) and remove the fish from the tank by means of a small hand dip net covered with mosquito netting and place them in the small container. They may then be released gently into the dam or stream.

DON'T carry the fish from the large container to the pond in the net as they will jump about and de-scale themselves. From any injury such as this, they will be likely to suffer fungoid growths.

Payment.

The funds obtained from the sale of trout are forwarded by the Department to the Trout Acclimatisation Council of W.A. They are not Government monies and, therefore, we must insist on payment on delivery.

Mr. J.S. Simpson will be in charge of the distribution and settlement must be made with him before you leave with your fish. The current prices are as follows;-

Fry	£5 per thousand
Fingerlings	£12 " "
Yearlings	£5 " hundred

Final Word of Advice.

Try to anticipate all requirements and obtain advice on your problems before you order your fish.

MULLET TAGGING IN WESTERN AUSTRALIA

The Division of Fisheries, C.S.I.R.O., has decided to discontinue the tagging of mullet in Western Australia, and this Department, which feels it is important that the tagging programme be maintained, has secured internal belly tags of its own. These are of white plastic, serially numbered, and with the caption "Return to Fisheries Department, Perth" stamped on them.

Technical Officer L.G. Smith will leave for Shark Bay early in July and, assisted by Inspector R.J. Baird, will endeavour to tag 2,000 fish over a period of 3-4 weeks. At the same time he will tag snapper with C.S.I.R.O. tags. In addition, if ruffs are still available in the Bay, as they were towards the end of May, he will tag as many as possible with a view to determining their movements after they leave the area.

Arrangements are also being made for Inspector Baird to measure not less than 200 mullet weekly from now on until the end of the current season.

FISH MARKETING AND DISTRIBUTION

The Minister for Fisheries (Mr. Kelly) called a meeting in McNess Hall on June 9, 1954, to discuss with representatives of all sections of the fishing industry possible improvements in the marketing and distribution of fish in Western Australia. Among those present were the Superintendent of Fisheries (Mr. Fraser), Messrs B.R. Saville, and J.E. Bramley, of the Fisheries Department, Dr. K. Sheard, of the Division of Fisheries, C.S.I.R.O., and representatives of fishermen's co-operatives, licensed fishermens associations, crayfish exporters, the Freezer Boats Association, as well as wholesalers and retailers.

Mr. Kelly welcomed the visitors and outlined the systems in operation in New South Wales and Queensland. He said that he and the Superintendent (Mr. Fraser) had, through the extreme co-operation of the respective administrations, been able to obtain a good deal of information on the two systems. Outlining N.S.W. system, which was a mixture of Ministerial and co-operative control, Mr.

Kelly said that there appeared to be some dissatisfaction among sections of the industry concerning the central markets. He thought the co-operatives were doing a reasonably satisfactory job, although he wondered whether dual control was really wise. At least some of the existing dissatisfaction seemed to stem from the duality of control.

The position in Queensland was, he thought, very satisfactory and the Fish Board set up by the Government functioned very smoothly. It comprised representatives of fishermen, consumers and distributors, with a Government nominee as Chairman. The Board appeared to operate to the general satisfaction of all sections and, with a system of licensing hawkers, could deal with any surplus during glut periods. Profits from the Board's trading went back to the industry in the shape of local depots, cold storage facilities, ice-making plants, jetties, cranes and so on. Mr. Kelly said he realised there were big differences between Queensland and Western Australia in relation to transport facilities, anchorages, distribution of population, etc. While the Board functioned satisfactorily in Queensland, he thought this was made possible by the conditions obtaining there, and he was not perfectly clear in his mind that a similar organisation here would function as well. In Western Australia conditions were practically the opposite of those in Queensland.

From the general discussion which followed, it was apparent that among fishermen's organisations only one, the South-West Licensed Fishermen's Association, favoured the setting up of a Board similar to that operating in Queensland. The representative of the Mandurah Licensed Fishermen's Association said his members desired some form of "organised marketing and distribution", but they were not greatly concerned with the method adopted. He said that was a matter for the Government. All other fishermen's representatives, i.e., from Fremantle, Geraldton and Albany-Denmark, said they desired a co-operative system similar to that in N.S.W., but with co-operative control of any central market which may be established. While one wholesaler was of the opinion that a Board should be established, the majority of the non-fishermen's representatives expressed the opinion that little benefit would flow from an alteration of the existing state of affairs. Some thought, and this view was to some extent shared by departmental officers, that the removal

of price controls had benefited the industry. One thing it had done was to bring more fish into the metropolitan market.

NET FISHING AT BREMER BAY

From April 28 to May 4, Supervising Inspector J.E. Bramley and Inspector A.K. Melsom carried out investigations into complaints of fish mortality in Wellstead Estuary, and illegal netting in South-West Bay River at Bremer Bay. The position is that under its by-laws the Gnowangerup Road Board controls the estuary, whereas the Fisheries Act and Regulations apply to the river fishery.

Mr. Bramley reports that during the period of his stay no illegal netting was observed, but information received indicated that there had been extensive netting during the Easter vacation, when approximately 300 campers were present.

The estuary was at its lowest ebb for a number of years, he says, the bar having been closed for 18 months. The water in the estuary, and up the river for 8 miles where there is a dry sand bar, was very salty, and from this area all fish taken during the investigation were badly affected by sores. On some of the fish the sores were raw, scaleless areas comprising one-third of the total body area. The principal species affected were mullet, yellow-eye mullet, salmon trout and black bream. Mullet and yellow-eye seemed to have been affected in greater numbers than any other species.

From the dry sand bar to the head of the river the salinity of the water did not appear to be excessive, and the fish there were in much better condition. A few showed traces of sores, but they were not losing their scales. Mr. Bramley reported that in one section of the estuary there was quite a lot of evidence of mortality amongst mullet, but during their visit only 2 distressed yellow-eye mullet were observed. These were swimming on the surface.

With the development of the Gairdner River land settlement project and the expected increase in pop-

ulation following the opening up of 6 million acres of adjacent land, the maintenance of a stable fishery at Bremer Bay is of some importance.

OPENING OF WILSON'S INLET BAR

Immediately after his return from the public meeting at Denmark reported in last month's Bulletin, the Minister (Mr. Kelly) made representations to the Minister for Works (Mr. Tonkin) concerning the serious threat to the future of the Inlet through its being sealed off from the sea for such long periods. Mr. Kelly has now informed the Denmark Road Board that the Public Works Department has listed for consideration either the dredging of a channel through the bar or some other appropriate action to ease the position. Mr. Tonkin has stated that this work will be considered in the light of the total funds available and its relative importance.

AUSTRALIAN WHALING PROSPECTS

All around Australia quotas for this season's catch remain the same as for last year, and all stations expect that they will have taken their quota by early September. On the east coast activities in the Moreton Bay area began on May 31, while at Byron Bay in northern N.S.W., a new company is expected to be in operation this month and has been allowed an initial quota of 120 whales.

At Point Cloates the 3 chasers "Point Cloates", "Haeremai Star" and "Vigilant" arrived on June 13 and the first whale was taken at 7.15 next morning. The Cheynes Beach Company took their first whale on June 1.

The whole of the Australian output of whale oil has been sold forward, the principal buyers being Holland and Germany at an undisclosed price. The current world price of whale oil is about £E86 per ton which compares favourably with the £E75 paid last season. A market for baleen, which for some time has only been a waste product, has now been found in Belgium, and its sale should add considerably to the company's receipts.

It is understood that the Australian Whaling Commission at their Carnarvon site recently installed a spray drier for converting solubles into stock feed. It is expected that this plant will achieve considerable economies in production and at the same time raise the protein content of the product.

Assistant Inspector V.J. Sinclair, stationed at Point Cloates, reports that some important additions and improvements have been made to the Nor'West Whaling Company's station and its equipment since the last whaling season. Included among these is a new hauling ramp which was found necessary as the supports of the old one had been damaged by the teredo worm. The flensing deck has also received extensive repairs. Additions made to the plant, to avoid the shortage of storage space encountered last season, include another Grax Flash Tank, a new Grax pump, a second mincer and super decanter together with a new water separator. Additional plant is also being set up for the handling and packing of baleen. Ten tons of baleen were exported by the Company last year and it is hoped that the entire production will be exported this season.

CONVICTIONS RECORDED

April 1 to June 30, 1954

Date	Defendant	Court	Charge	Result
28.4.54	Collett, D.	Busselton	Unlicensed sale of fish	Fined £8
28.4.54	Smith, R.W.	do.	do.	" £8
6.5.54	Katnio, S.	Fremantle	Undersize crayfish	" £3
6.5.54	Cicerello, S.	do.	do.	" £15
6.5.54	Robertson, J.J.	do.	do.	" £3
3.5.54	Paparello, V.	do.	do.	" £6
3.5.54	Paparello, L.	do.	do.	" £6

CONVICTIONS RECORDED

April 1 to June 30, 1954

Date	Defendant	Court	Charge	Result
2.6.54	Blanchard, E.	Fremantle	Undersize Crayfish	Fined £2
28.6.54	Pitterino, U.	do.	do.	" £2
28.6.54	Correia, F.	do.	do.	" £2
28.6.54	Renfrey, C.	do.	Undersize Fish	" £2
14.5.54	Glass, W.A.	Geraldton	Undersize Crayfish	" £5
1.6.54	Attwater, A.	do.	do.	" £10
1.6.54	Hitchins, H.	do.	do.	" £10
1.6.54	Attwater, A.	do.	do.	" £10
1.6.54	Woolhouse, C.W.	do.	do.	" £ 4
1.6.54	Basile, V.	do.	do.	" £5
1.6.54	Kijena, M.	do.	do.	" £5
1.6.54	Wheatley, H.	do.	do.	" £5
1.6.54	Wheatley	do.	do.	" £2
14.4.54	Bowra, J.W.	Perth	Illegal netting	" £5
14.4.54	Ray, E.	do.	do.	" £5
14.4.54	Hall, C.	do.	do.	" £5
14.4.54	Siggins, L.E.	do.	Undersize Crayfish	" £2/10/-

CONVICTIONS RECORDED

April 1 to June 30, 1954.

Date	Defendant	Court	Charge	Result
14.4.54	Pell, J.A.	Perth	Undersize Crayfish	Fined £2/10/-
14.4.54	Rhodes, R.H.	do.	do.	Fined £5
22.4.54	Kosturellus, E.	do.	Undersize Fish	" £4
22.4.54	Tuckey, A.	do.	Fish in closed waters	" £3
22.4.54	Katounis, G.	do.	Undersize Fish	" £3
22.4.54	Kim Manufacturing Co.,	do.	Undersize Crayfish	" £5
29.4.54	Reynolds, T.J.	do.	do.	" £3
11.5.54	Cowley, B.A.	do.	Unlicensed Sale of Fish	" £2
11.5.54	Cowley, B.A.	do.	Illegal netting	" £5
18.5.54	Leigo, V.	do.	Undersize Crayfish	" £5
2.6.54	Smith, P.F.	do.	Assault Inspector	" £10
2.6.54	Ranken, J.	do.	Hindering Inspector	Cautioned
2.6.54	Ranken, J.	do.	Assault Inspector	Fined £10
9.6.54	Langley, F.	Pinjarra	Illegal netting	" £5
9.6.54	Langley, G.	do.	do.	" £5

COMMERCIAL TRAWLING TESTS IN THE GREAT AUSTRALIAN BIGHT

The Technical paper by this name prepared by Mr. T.W. Houston, B.Sc., of the C.S.I.R.O. Division of Fisheries, provides a wealth of comparative information on the subject, and presents it in an easily assimilable form.

In his summary Mr. Houston describes the paper thus:-

> " A historical review of previous trawlfishing enterprises in the Great Australian Bight leads on to the presentation of the general results of the combined trawlfishing operations conducted by Anglo-Australian Fisheries (Pty.) Ltd. and Anglo-Australian Trawlers (Pty.) Ltd. in the same area. The results are compared with those of past ventures in the Great Australian Bight and past and present trawlfishing operations in eastern Australian waters. "

There are six different tables incorporating the statistical data under comparison. The results of operations in the Bight by the F.I.S. "Endeavour" and the S.T. "Bonthorpe" are set out. The "Endeavour's" operations in east Australian waters are also shown together with a summary of commercial trawlfishery catches.

In a section titled "Discussion" Mr. Houston broadens the basis of comparison and draws attention to different causes which affected the companies' operations. He likens the 1949-1952 venture to the early trawling operations in eastern Australia, and draws the conclusion that catches from the Bight might be expected to improve as knowledge of fish movements accumulates and fishing grounds are charted.

Although the analysis necessarily does not include the reason for cessation of activities, nor the results in terms of payable quantities, nor yet the biological aspect, it should serve as a guide to any further developments of trawlfishing in the Great Australian Bight.

A copy of the paper is available at Head Office for any staff member desiring to borrow it.

AIR LIFT FROM SHARK BAY

Advice has been received from the W.A. Transport Board that a license has been granted to Messrs Taylor and Johnson to fly fish regularly from Shark Bay to Perth. It is understood that an Anson plane will be used with a freight capacity of 2,000 lb. The licensees propose to obtain supplies from their own fishermen and to fly them direct to buyers in the Metropolitan area. This should enable fish to be on the table of the consumer within 24 hours of their being landed at Denham.

PARRY'S HARBOUR

It has been decided that the proclamation closing the waters to net fishing should be allowed to lapse. The population of fish is believed to be so small as to render netting there a waste of time. In the middle of winter the depth of water is not more than 2'6", and in summer it recedes into small pools, sometimes completely drying up, as in February of this year.

No angling is carried out, and it seems that no useful purpose would be served in keeping the estuary closed.

THOSE MYSTERIOUS BEADS

When Inspector Alf Melsom was relieving in Broome earlier this year, he was intrigued by what appeared to be a bag of pearl like beads which gave every indication of having long been domiciled in the office there.

Inquiries indicated that they were the "seeds" used to obtain cultured pearls, but nobody he asked knew how or when they had got into the Fisheries office at Broome.

Ex Inspector A.O. (Andy) Ferguson has now unravelled the tale. He says that at Broome about 1920 or 1921 a local identity applied for a lease of an area of shallow water near where the quarantine station is now situated: ostensibly the lease was to be used to cultivate mother-of-pearl shell. A copy of the application was posted outside the Fisheries office for some time, but no one took much notice of it. With no opposition the application was granted and the leaseholder, partnered by a Japanese, was soon at work. It was not long, however, before he was found to be cultivating pearls, not shell, and there was an immediate outcry from every pearler in W.A. The then Chief Inspector of Fisheries, Mr. Fred Aldrich, paid a visit to Broome, and the lease was duly cancelled and the shell and beads confiscated. It was believed that the beads were brought from Japan by the Japanese partner, who apparently had made a special trip home to learn the trade secrets.

CRAYFISHING - ABROLHOS ISLANDS

The table hereunder compares production for the month of May, 1954, with the May, 1953, figures.

GROUP	MAY 1953			MAY 1954		
	Total	Catch per man	No. of men	Total	Catch per man	No. of men
	lb.	lb.		lb.	lb.	
Easter	143,220	3,253	44	178,843	3,975	45
Wallabi	138,672	3,934	35	151,297	3,782	40
Pelsart	72,403	3,291	22	107,513	5,658	19
North Is.	25,492	3,642	7	38,624	2,575	15
TOTALS .. for month	379,787		108	476,277		119
PROGRESSIVE TOTALS .. March to May	1,202,707			1,539,577		

It will be seen that the total production was stepped up almost 100,000 lb. as the result of an increased take from all Groups. The catch per man increased in two areas but decreased in the other two. The month was unexpectedly good, but so far no convincing reason has been propounded to account for the improvement. The progressive totals show that for the period to the end of May this season there is an increase of 336,870 lb. over the production for the same period last year.

FAUNA PROTECTION ADVISORY COMMITTEE

At a meeting of the sub-committee on bird banding the Chairman (Mr. Fraser) read a letter received from the C.S.I.R.O. Wildlife Survey Section which set out the Council's plan regarding centralisation of bird banding. Mr. Fraser said that at the recent Interstate Fauna Conference in Melbourne some States opposed the idea of centralisation on the grounds that they would lose their identity with current banding programmes and also lose the contacts and goodwill established after considerable effort and expenditure.

After some discussion it was decided to recommend to the full Committee that complete State control be maintained over the banding of traditional game birds. With regard to all other species of birds it was considered that while permits should be issued to approved personnel, it was felt that it should be a condition of the permits issued that copies of all records and information supplied by them to the C.S.I.R.O. should be forwarded at the same time to this Department. It was decided to make a recommendation accordingly. The Chairman stated there would be no administrative objection to the Department advising whether applications for permits made by C.S.I.R.O. operators would be approved before similar application was made to C.S.I.R.O. Any C.S.I.R.O. operators working on the State's duck banding programme would be required to use the Department's own rings and record forms.

Mr. Fraser said that the duck banding season just concluded was a disappointing one in that only just over 800 ducks had been banded as against the target of

2,000. He pointed out that the decline in the banding figures was not the result of any lessening of activity, but rather because of a number of unavoidable causes, the principal one being the abnormal seasonal conditions, which caused ducks to congregate in a different pattern from last year. Mr. Traynor said that next season he would commence early in the Three Springs area and gradually work southwards. He considered the size of the present bands was satisfactory for mountain duck, but needed to be $\frac{1}{8}$" shorter for black duck and $\frac{1}{4}$" shorter for grey teal. Mr. Fraser said that the required sizes would be procured before the next banding season commenced.

The full Committee met on June 24, when the recommendation of the sub-committee was approved.

At this meeting the acting Chairman, Mr. B.R. Saville, announced that the Governor in Executive Council had appointed Mr. John Bateman Higham, of "Minigin", Narrogin, as a member of the Committee in place of the late Major H.M. Whittell. It is understood that Mr. Higham is at present on the high seas on his way to England and will be away from Western Australia for about six months. It will be remembered that Mr. Higham was some time ago appointed an Honorary Warden of Fauna for the Narrogin District.

HONORARY WARDENS OF FAUNA

The Governor in Executive Council has appointed a further six Honorary Wardens and their names and addresses are listed below. Mr. C.A.S. Stark, late of Collie has been transferred and has tendered his resignation. These alterations bring the number appointed and currently holding office to 161.

Colliver, S.G.	159 Victoria Avenue, Claremont.
Day, E.H.	Carradine Road, Armadale.
Loveridge, R.	Box 65, Narembeen.
Powell, A.G.	Chillinup, via Borden.
Quartermaine, F.L.	"Palomar", Northam.
Warham, J.	C/- Mrs. James, "Coringa", Upper Kalgan River, Albany.

ECHIDNA OR SPINY ANT-EATER

Inspector S.W. Bowler reported last month that two natives captured one of these interesting little animals close to the town of Geraldton. Local residents told Mr. Bowler that they were the first seen for a number of years. It should be understood however that the echidna, like the numbat or banded ant-eater, is a shy and more or less nocturnal creature and is rarely seen because of its nature and habits rather than its rarity. Mr. L. Glauert states that numbers of specimens have been forwarded from Geraldton to the Perth Museum in the past.

DUCK BANDING

Banding activities concluded for the winter, at least in the South-West, on Mr. Traynor's return from Cape Riche last May.

Recoveries to hand since the publication of the last Bulletin are as follows:-

No.	Date Ringed	Place Where Ringed	Date of Recovery	Place Where Recovered	Distance Travelled
		Black Duck			
2207	19/1/54	Lake Karrinyup	9/5/54	Dale River, Beverley district	60 miles
2427	18/2/54	Cook's Farm Moora	22/5/54	Wannamal, Gingin District	35 "
1932	1/5/53	Gwelup Swamp, Wanneru	16/5/54	Duck Pool near Lake Clifton	60 "
1084	20/1/53	Queen's Gardens	24/5/54	Gwambygine Pool on Avon River, 7 miles sth of York	55 "

No.	Date Ringed	Place Where Ringed	Date of Recovery	Place Where Recovered	Distance Travelled
			Black Duck (Contd)		
2189	15/1/54	Lake Karrinyup	26/5/54	In paddock at Waroona	65 miles
2246	21/1/54	do.	27/3/54	Wokalup	85 "
2315	13/2/54	Cook's Farm Moora	14/5/54	1 mile N.E. Mogumber	30 "
2338	15/2/54	Cook's Farm Moora	28/5/54	5 miles Nth of Mogumber	25 "

The following table sets out the different species of ducks banded, bands recovered from each species, and the percentage of recoveries up to June 30, 1954.

	Black Ducks	Grey Teal	Mountain Duck	Maned Geese	Others	Total
Banded	1414	318	33	21	33	1819
Recovered	75	18	3	-	-	96
Percentage of Recoveries	5.3%	5.66%	9.09%			5.28%

ODDS AND ENDS

The Hippopotamus is a valuable aid to commercial fisheries in Uganda. He is an inhabitant of rivers and lakes, and his excreta contributes to the formation of phytoplankton, which serves as food for tilapias, those fish which are an indispensable part of native economy.

DISTRICT INSPECTORS' MID-YEAR CONFERENCE

From June 28 to 30 at the Courthouse at Albany the annual mid-year conference of district Inspectors took place. In addition to the Superintendent, who presided, Messrs Saville (Clerk-in-charge), Bramby (Supervising Inspector), Munro (Senior Inspector), Davidson (Inspector Fremantle), Murray (Inspector Mandurah), Bowler (Inspector Geraldton), Melsom (Inspector Relieving), Jeffery (Inspector Albany), Green (Inspector Bunbury), and Baird (Inspector Shark Bay), were present.

The Superintendent in opening the conference said that following the rapidly expanding nature of the fisheries of Western Australia the Department had also expanded very rapidly. In 1938 there were at Head Office, one typist and one part-time junior clerk, and in the field 8 inspectors. Today there were 5 clerks, 2 typists, 4 technical officers and 23 inspectors, which represented an increase of over 200%. As the industry developed so did the work of the Department build up, and so wide and varied were our interests that it was becoming increasingly necessary to obtain information and opinions through well-defined and reliable channels. Opinions expressed by inspectors at these conferences would materially assist the Department in formulating its policy for the future development and management of our fisheries. The field staff was doing an excellent job and he greatly appreciated their support and co-operation.

A brief resume of some of the many subjects dealt with at the conference will be published in the August Bulletin.

FISH MEAL FOR US!

A report from The Hague, Holland, states that a chemist claims to have originated a process for manufacturing fish meal eminently suitable for human consumption. It is claimed that all the goodness of fresh sea fish is preserved and 70% of the original albumen retained.

THE CLEARING HOUSE

South African Lobster Tail Distributors Hold New York Meeting

On Wednesday evening, February 17th, at the Downtown Athletic Club, New York City, the South African Rock Lobster Association gave a premier showing of its motion picture titled "Tale of the Rock Lobster". The running time of the film is 14 minutes. The locale of the picture is the Union of South Africa and the opening scene shows a fleet of fishing boats in Fishermen's Harbour, Hout Bay, as they start out at daybreak for the fishing grounds. Arriving at the fishing grounds the nets are baited and lowered from dinghies. After the nets have been played out the fishermen return to the first net and transfer the rock lobsters into the dinghies, etc. These dinghies are fifty feet in length and are powered with American marine Diesel engines. The rock lobsters are placed in the holds of the dinghies under layers of crushed ice and in the afternoon they return to their piers. Boats are unloaded at piers adjacent to the factories.

At the factories the heads and canals of the rock lobsters are painlessly removed. The tails go through two cold water washes and then are graded according to size. In ratio to the lobster's size, a one pound tail would be two thirds of the lobster's weight. After grading as to size, the tails are then delivered to the packers who place on each tail the label "Genuine South African Rock Lobster". The next step is to wrap each tail in cellophane. Tails are then packed in 20 pound wooden cases, and nailed. The boxes are then placed in freezers made by the Frick Company, Waynesboro, Pa., equipped with General Electric temperature controls, and frozen at a temperature of 40° below zero.

This entire operation is conducted under sanitary conditions supervised by the Bureau of Fisheries, Department of Commerce and Industry of the Union of South Africa. Government regulations require that the tails must be completely processed within three hours after the boat lands.

To insure absolute quality all tails for

export are examined by the Fisheries Research Institute of South Africa.

All of the famous beauty of Cape Town and surrounding area are shown in this film especially the scene of Table Top Mountain. It is a most interesting and colourful film, and sustains interest until its very end.

After the tail has been removed the carcass is used for very high quality poultry feed since it is high in vitamin and mineral content, growth factors in poultry raising.

The next scenes show the transportation of the rock lobster tails from South Africa to New York in most modern refrigerated ships of the Robin and Farrel Lines.

Present at the affair was Mr. Basil Jarvie, Consul General, Union of South Africa and Mr. Frank Retief, Commercial Attache of Union of South Africa. In his remarks to the audience Mr. Jarvie stated that the Rock Lobster is the number one food export item of South Africa. And, to his knowledge it has become well known to American consumers and has enjoyed excellent acceptance. To insure continuation of supplies and quality, Mr. Jarvie stated, the South African Government will continue its programme of conservation and quality control.

Jumbo Rock Lobster Tail cocktails and Rock Lobster Tail meat in other appetizing forms were served to the gathering.

The film is available for distribution to colleges, TV stations, Womens and Advertising Clubs. Along with the film the association will provide a number of recipe books. To obtain the film address communications to South African Rock Lobster Association, 271 Madison Avenue, New York City.

("Fishing Gazette", New York, March 1954.)

New Labels

Hear about the new labels on fresh fish boxes? We saw one in a railway express station the other day. It read "If Not Delivered in 10 Days....Never Mind".

("Western Fisheries", Vancouver B.C., March, 1954.)

Whale Studies

Test-Tubing on the World's Biggest Mammal

The purpose of the whale study is essentially to contribute biological knowledge on the stocks of whales from this coast in conforming to requirements of the International Whaling Agreements to which Canada is a party. This, of course, is not an end in itself. We, in British Columbia, are concerned with the future of our resources and realize that an understanding of the life histories and population dynamics of the animals under exploitation is essential to conservation. Regulations should be imposed as contributions to industry and to posterity, not as restriction in the broad sense of the word. Knowledge of the natural histories must be accumulated and implications with regards to conservation, understood, if regulations are to be more than strict limitations.

From the commencement of the whale investigation it was realized that our studies of whales on this coast could not be approached by merely applying methods previously derived for study of whales in other parts of the world. We are dealing with a stock of whales about which nothing is known. The life histories would be expected to parallel those of similar species studied elsewhere, but we find that little is known of the life histories of whales in other localities. Many of the generally accepted concepts of whale biology are in need of revision. We have leaned heavily on work done on whales previously and in other localities, but we have found it necessary to enquire into basic concepts previously formulated on age, growth, maturity and distribution of whales, in general.

There are four general methods of studying the biology of whales: (a) examination of carcasses at a whaling station; (b) deductions from catch statistics; (c) observations of whales at sea; and (d) marking of whales. The study of whales on a whaling deck serves mainly to provide information on breeding, growth, age, food, and external characters. Deductions from catch statistics, when analysed with reference to results from the first method, provides further information on breeding, growth, and age, and, in addition, information on distribution and the effect of whaling on the stock. Results of the analysis of

catch statistics must be considered with reservation, as the catches are not truly representative of the population. Marking of whales and observations of whales at sea have been neglected in the present study because the methods are costly in time and expense. These methods, however, provide the soundest approach to problems on distribution, migration, numbers of whales, breeding, growth, age and habits. It is hoped that opportunities to take advantage of the benefits promised by whale marking will soon be available.

Some of the problems involved in an understanding of the nature of the whale stocks on this coast may be generally summed up as follows:-

(1) Are the whales from this locality specifically identical to their recognized counterparts from other localities? Are there subspecific or racial differences between whales from this locality and their specific counterparts from other localities? The answers to these questions are important. The limits of the populations we are dealing with must be recognized if regulatory measures are to have integrity. Changes in the characteristics of one population do not necessarily apply to all populations. The approach to the problems has been made through the accumulation of a large body of measurements and observational data on the external characteristics of each species and the changes in body form with increase in length.

(2) What is the nature of the reproduction and sexual cycles for each species? Answers to this problem provide knowledge on the life histories of each species and of the reproductive potential of the stock. The approach to the problem is made by studying the reproductive organs and the mammary glands. Each whale is categorized as to the state of maturity or sexual condition. Males are recorded as immature, maturing or mature. Females are recorded as immature, maturing pregnant, resting, lactating or ovulating. Average lengths at sexual maturity are estimated. It is on the basis of these average lengths that regulations affecting minimum sizes are designed for the purpose of protecting immature whales until they can replace themselves by at least one progeny. Length of the gestation period and season of maximum breeding can be obtained by plotting large numbers of foetus measurements on a time scale.

(3) How do we tell the age of whales and what is the age composition of the stock being exploited? Knowledge of age is important in that it provides information on the stability of the population under the pressure of whaling. No reliable method for telling the age of a whale has yet been evolved. Accumulations of scars from ovulations may be found in the ovaries to give some measure of relative age when dealing with averages from large numbers of animals. The baleen plates show an annual periodicity in growth and ages can be estimated for the first three or four years of life. Both of these methods are subjective and require checking by factual data obtainable only through whale marking. A collection of sperm teeth has been made with the object of studying their applicability to age determination.

The solution to these problems will never be complete. As in most biological problems we are faced with individual variations and the necessity to estimate population size and fluctuations by indirect methods. We still know practically nothing about the size of the population of whales frequenting this coast and about the migrations and distribution of these whales. An understanding of the life histories of each species is being realized. This information, if it can be supplemented by marking data, which provides checks on results on migration and distribution, will serve as a basis for recognizing signs of depletion of any species before serious damage is done. It will, furthermore, provide a basis for instituting effective regulation in order that maximum utilization of the resource may be realized without unnecessary limitations to current operations.

by Gordon Pike
Pacific Biological Station

("Western Fisheries", Vancouver B.C., March 1954.)

Russian Fishermen's £45,000

Russian whaling fishermen, with £45,000 sterling to spend, went ashore at Capetown last weekend on a buying spree and they said they did not need interpreters because "money will do all the talking".

The sailors are from the factory ship Slava and her 15 catchers, which arrived in Table Bay from the Antarctic after what Captain A.N. Solyanik of the Slava

described as the worst storm he had ever experienced.

For two days after leaving the Antarctic sixty-foot waves pounded the fleet, and a two-ton searchlight was torn from its stand on the bridge of the Slava.

The Russian fleet won the "Blue Riband" of the Antarctic for they killed more whales than the British Balaena expedition - over 3,000 whales - and they got 172,500 barrels of oil.

Each member of the crew received from £50 to £200 sterling to spend in Capetown where business houses engaged interpreters. When Captain Solyanik heard this he commented: "There will be no real need for interpreters - money will do all the talking".

Reporters and agents for Russian whalers in Capetown were lavishly entertained aboard the Slava when tables were laden with caviare, vodka and wines from the Crimea. A box of Russian cigarettes was given to each guest.

The Russians spent two days in Capetown before resuming their voyage to Odessa.

("The Fishing News", London, April 15, 1954.)

FAO Report

The World's Fisheries in Fetters

FAO experts are agreed that world fish-production could be doubled without any detriment to the resources. The increased yields would consist primarily of the kinds of fish which are taken at present, but species other than those which bulk largely in current catches could become important.

The immediate predictable increases could be obtained by the employment of existing types of equipment and techniques with, in some cases, refinements of kinds already in at least experimental stages. Further, some entirely novel changes in technique, amounting to intervention in basic productivity cycles of the waters, and to development of animal husbandry regarding the fish stocks and agriculture in respect of the plant resources, could be evolved out of current technical advances in other fields.

The fact that these increases are not taking place at a rate commensurate with the expansion of nutritional demands may be attributed to a number of deterrents applying in varying degree in different fishery situations.

In some cases the incentive to produce and sell more is restrained by the low level at which the fishermen's need for food, shelter and clothing can be satisfied; in others, ambition is frustrated by lack of financial resources or of profitable outlets; while in many, and particularly in certain underdeveloped areas, there is neither incentive, nor means, nor outlet.

For many reasons, fishing communities have tended to isolate themselves from the general economic and social life of a country. At the same time there has been a tendency to overlook these communities in over-all national policies. This situation, of course, cannot be permitted in the major campaign which must be fought now for food supplies.

The importance of the demand factor is almost an overriding one. It would be possible to point to many places where production could be increased, but is not, because there is no prospect of disposing of the catch. In some cases the problem is one simply of organisation and the provision of the physical means of transporting, storing and handling the fish. In other cases the situation is much more complex and related to problems of consumer preferences. In view of the fact that it is widely stated that fish-production should be increased because there is a great need for the animal protein which it can supply, it is paradoxical that lack of demand should be a deterrent. But the truth is that the demand in some cases is not an effective one (that is, purchasing power is inadequate or irrationally expended) although the need is very great.

The many factors which affect fish-consumption vary in their influence in different regions. Ignorance of nutritional value, lack of access to supplies, unfamiliarity with certain products, fastidiousness, taboos and habitual preferences for other and often competitive foodstuffs, have produced regional differences and great differences between countries in the same region and between districts in the same country. In many

parts of the world high prices, physical problems of distribution over long distances or difficult terrain and the failure to improve the appearance, quality and diversity of fishery products set up formidable barriers to expansion of the industries.

Marketing Problems

Many of the economically underdeveloped countries have serious difficulties in drawing up and carrying into effect their fishery policies and this is often due to the inadequacy of public administration and commercial organization and their inexperience of various measures whereby fisheries industries can be assisted to expand.

The problem of finding capital for the acquisition of essential equipment is particularly acute in fisheries. Development has depended either on courageous private speculation or on planned financial assistance in the form of cheap credit facilities, direct or indirect subsidy, tax concessions and other incentives. In the underdeveloped countries, the widespread indebtedness and poverty of the fishermen militate heavily against rapid development.

The absence, or low level, of private resources deters development in other directions; a considerable investment is required in harbour, market, processing, transport and ancillary undertakings, most of which will be a charge on public funds until the fisheries become established on a sound commercial footing. There is an urgent need to clarify the financial implications of fishery policy and to set up priorities.

The restrictive effect of unstable or low levels of demand has been aggravated by the many and complex international trade problems arising from adverse balance of payments, unfavourable terms of trade and the protection of domestic industry. There is a grave dilemma here, because the main export markets are in highly industrialized countries, where they also support heavily capitalized domestic industries.

Mention must be made here of the various barriers - geographical, commercial and governmental - between areas of strong demand and industries capable of

supplying them. While the problem is too complex to describe in general terms it is fairly evident that on the one hand temporary gluts occur undoubtedly as a result of imports, and on the other that some markets are starved of supplies as a result of protection.

On the question of research, there is an urgent need that experience gained in many related fields of research should be applied to fisheries more quickly and effectively than has hitherto been found practicable. Closer co-ordination than now exists of the many and various research activities at both national and international level is certainly called for.

Probably the basic item with which to break the vicious circle is knowledge and skill in its application. For this reason the greatest importance attaches to technical instruction projects; such measures must be directed not only at the fishermen but also at operatives in other phases of the industry and to the government officials on whom rests the responsibility of formulating, guiding and assisting the industry.

An Integrated Policy

One of the main difficulties is that of developing an integrated fisheries policy which will ensure that improvement and reform proceed uniformly in all sections with the direct participation of the fishing population. Such a policy must be governed by appraisals in a field in which comparatively few comprehensive economic analyses have been made, where the data are unreliable and uncertain, and where conflicting interests in different sectors challenge political expediency.

This is a serious problem for small and often inexperienced fishery administrations, which on the whole tend to avoid the structural reorganization which might be necessary if increased catches are to be utilized by means of superior methods of marketing and processing, so as to encourage the fishermen and attract the consumer.

("Fish Industry", London, March, 1954.)

Growth Beyond Belief

Growth beyond the wildest dreams of fancy was recorded by fish sticks in the first year of their in-

troduction - 1953.

The first half-year saw the sale of 483,500 lb. of breaded and fried fish sticks.

The next six months witnessed sales of 6,788,500 lb.

In December, fish sticks sold at the rate of 2,811,400 lb. and there is good reason to believe that during the first four months this spring the volume of sales ran at a rate exceeding that of December.

Continuation of the rate registered in December, 1953, through the current year would produce 1954 sales in excess of 30,000,000 lb.

It is not possible to give at this time the species composition of the fish stick sales, but there can be no doubt that cod accounts for perhaps 75% of the business in 1953.

Monthly sales of fish sticks in 1953, as compiled by the Fish and Wildlife Service were:

Month	Pounds
January	115,000
February	133,000
March	148,000
April	34,900
May	21,800
June	30,800
July	312,500
August	357,600
September	681,600
October	1,186,000
November	1,429,400
December	2,811,400
Total	7,262,000

("Pacific Fisherman", Portland, Ore., California, May 1954)

Japanese Catch Tagged Albacore Near Midway I.

The recovery of two more California-tagged Albacore by Japanese long-line fishermen has been an-

nounced by the California Fish and Game. A total of three Japanese-caught tagged Albacore has been reported thus far.

Both of the latest Albacore were caught on long-line gear in the vicinity of Midway Island and both were from the same group of Albacore tagged in August, 1953, near Guadalupe Island.

Surmising the migration of these Albacore, it might be estimated that the Albacore travelled the circle route, north from Baja California. It would appear that these Albacore travelled approximately 3600 miles. The last two Albacore were in the water after tagging about half as long as the first recovered tagged Albacore, which was tagged near Catalina and caught 324 days later.

From August 11, the date of tagging, to February 2, the date of recovery, the first of the recently recovered Albacore had grown from 33½", when tagged off Guadalupe, to 35" when picked up by long-line. Interestingly enough, the stomach of this first tagged Albacore was reported empty by the fishermen aboard the Konpira-Maru No. 1. This Albacore had been tagged with a Type F tag of clear vinylite tubing secured by braided nylon fishing line.

No. 2 tagged Albacore measured 36½" when tagged, 37½" when re-caught.

California Fish and Game acknowledges the fine co-operation of Hideyuki Hotta and Masakaza Yao of the Tohoku Regional Fisheries Research Laboratory, Shiogama, Japan, and Hiroshi Nakamura, Director of Nankai Regional Fisheries Research Laboratory, Kochi, Japan, for their part in the return of the tag.

The second tagged Albacore was caught by Sino Maru, while fishing with long lines at Lat. 30 deg. 10'N., Long. 178 deg. 54'W., 150 miles NW of Midway Island, February 23. It was tagged with a Type G vinylite tubing tag. The tagging of this group of Albacore was handled by the N.B. Scofield.

("Pacific Fisherman", California, May 1954.)

Undetected Diseases May Cause Fish Mortality

Scientists are inquiring into the possibility that hitherto undetected diseases may possibly be responsible for otherwise unexplained fluctuations in fish abundance.

At the Scripps Institution of Oceanography it has been found that certain lesions on the scale of fish could be detected by the human eye only when seen under water; and that these lesions held high bacteria concentrations.

Furthermore, an investigator working on the Pacific sardine programme in California reported "abnormalities in up to 45% of sardine eggs collected off the Pacific Coast." The possibility that these abnormalities may have been caused by marine bacteria is expressed. The author cites several other instances of high marine fish mortalities which may have resulted from marine bacteria or pathogens and expresses the opinion that fish diseases are a significant factor in the natural mortality of marine fishes.

("Pacific Fisherman", California, May 1954.)

Radioactive Fish Swim 2,000 Miles

Japanese scientists in Osaka, Western Japan, reported that fish caught 2,000 miles from Bikini, the United States hydrogen bomb test site, had been found to be radioactive.

They were caught in waters east of Formosa. After Geiger counter tests the scientists reported that the radioactivity was weak on the exterior of the fish but internal organs had a radioactive count ranging from 300 to 400 a minute.

Welfare Ministry experts consider 100 counts a minute to be the maximum standard for safety.

Only 18 fish were retained for examination by the scientists. The remainder were sent to local markets after health officials checked them externally and decided they were safe.

("The Fishing News", London, May 21, 1954.)