FISHERIES DEPARTMENT
WESTERN AUSTRALIA
MONTHLY SERVICE BULLETIN

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STAFF NOTES

The Superintendent of Fisheries (Mr. Fraser) will recommence duties on June 9 after completion of long service leave.

Mr. B.R. Saville, as Acting Chairman, attended a meeting of the Fisherman's Advisory Committee held at Denmark on May 16 and 17.

The Supervising Inspector will visit the Shark Bay district early in June.

Mr. W. Johnson has returned to the Chief Secretary's Department after relieving in the Records section.

Research Officer B.K. Bowen and Technical Officer J. Simpson will carry out studies at Pemberton hatchery during the coming season in relation to the fertility of trout eggs.

Technical Officer J. Traynor will be working at the Rottnest Biological Station during June.

Relieving Inspector G.C. Jeffery has returned to duty after completion of annual leave. He will be stationed in the Fremantle district for the time being.

Inspector H.J. Murray, after relieving in the Fremantle district, has returned to headquarters.

Inspector R.J. Baird, of Broome, is visiting Brecknock Harbour, to inspect the pearl culturing operations of Pearls Pty. Ltd.

Inspector S. Stokoe is now on duty in the Fremantle district. Assistant Inspector E. Forster is temporarily assisting on the p.v. "Kooruldhoo".

Inspector A.J. Bateman will shortly be visiting the Bunbury, Mandurah and Shark Bay districts in connection with the maintenance of departmental boats.

Assistant Inspector D. Wright will act as Whaling Inspector at Carnarvon during the coming season.

Cadet Inspector D. Smith has been transferred to Pemberton for the trout hatching season.

Cadet Inspector G. Hanley has been attached to Perth office since his return from annual leave.

DEPARTMENTAL VESSELS

The research vessel "Lancelin" has commenced operations in the Shark Bay area.

The new research vessel "Halimah" has been stripped ready for refitting.

P.V. "Silver Gull" has been slipped for minor repairs to the centre plate.

NEW PERTH BOATSHED

The main construction work on the new departmental boatshed and office at Victoria Park has been completed. It should be ready for occupation within the next few weeks.

PERSONAL PAR

Congratulations and best wishes are extended to Inspector Geoff. Lyon of p.v. "Kooruldhoo" on the occasion of his engagement to Miss Mary Davey, of Swanbourne.

FISHING IN SHARK BAY

The Regulations under the Fisheries Act have been amended by the addition of a new Regulation 12e, which reads - "No person shall use for the purpose of taking fish any net comprised wholly or in part of mesh of less than one and seven-eighths inches in the Western Australian waters of Shark Bay.

TAG RECOVERY

An interesting recovery of a fish tag has resulted in the reward of Kr. 10 (about 12s. 4d. Aust.) for Mrs. W. Riley, of Collie. Last March Mrs. Riley read of a sardine tag recovery in Victoria. Just prior to Christmas she found a tag in a tin of sardines. She took note of the details and kept portion of the label. The details were then passed on to the Norwegian Fisheries Research Institute, who not only gave the actual details of the tag, but forwarded a booklet describing tagging experiments in Norway. The information together with the reward was being sent also to Mrs. Riley. A brief note on Norwegian "sardine" tagging appears overpage.

FISH TAGGING IN NORWAY

Although records published in 1654 mention the tagging of fish, it was not really successfully accomplished on a large scale until 1872. Since then many varieties have been tagged as a means of studying migrations and of demonstrating the effect of fishing pressure.

The economically important herring of the European and American waters is one such variety which the fishery biologist has successfully tagged, but only after a number of failures. In 1892 the Scottish Scientist, T. Fulton, attempted to mark herring by punching holes in the caudal fin. These experiments, however, were unsuccessful, as no marked fish were recovered. There were no further attempts during the next 30 years as it was generally assumed that, because of their delicate structure, herrings were unsuitable for marking. Even if a successful mark could be achieved, it was considered unlikely that the marked fish would be detected, as most of the fish caught were mass-handled in reduction plants. Then in 1922 the Danish Scientist, A.C. Johansen, experimented with external tags, but again without success.

Scientists in America had also been attempting to tag herring, and in 1933 Rounsefell and Dahlgren published a paper describing a solution to the difficulties previously encountered. They used metal belly-tags and overcame the problem of detection by the use of strong electromagnets installed in the reduction plant.

Immediately after World War II the Icelandic and Norwegian authorities discussed the possibilities of a herring tagging programme to test an earlier hypothesis that the herring off the north coast of Iceland intermingled with the Norwegian stock. Using the American technique, separator-magnets were installed in the reduction factories of both countries and in 1948 a programme was initiated. Fish were tagged in both Norwegian and Icelandic waters and in

the following year one Iceland-tagged fish was recovered off Norway and one Norwegian-tagged fish off Iceland. Since then many more recoveries have been obtained, and the earlier postulation that the Iceland and Norwegian stocks intermingle has been proved correct.

The programme has continued since its inception, and the techniques are still basically the same. However, a tagging gun has been constructed allowing the operator to tag 1,200 fish per day. The growth of events leading up to the successful use of the tagging gun and the electromagnet separator, is another example of the advances being made in the sphere of technology as an aid to fisheries research.

FISHING MADE EASY

On Friday morning, May 16, the bar at Mandurah Estuary opened for a brief period. Large sea mullet and yellow-eye mullet were seen attempting to pass through to the sea. In no time at all men, women and children appeared with all types of crude fishing gear to scoop up the fish. People were running around soaked to the skin, some even throwing themselves at the fish and catching them with their bare hands. Some mullet weighed up to 5 or 6 pounds, with mostly 2 to 3 pounders being caught. The bar closed again on the Saturday afternoon, although surf was still running into the estuary. Since then the bar has completely opened.

LOSS OF FISHING VESSEL

On May 21 the fishing boat "Flying Dutchman" sprang a leak and sank off Lancelin Island. All members of the crew were rescued, but the vessel was a total loss.

SWAN RIVER

It has been reported that several big schools of Perth herring have been sighted in the Perth Water, Swan River. At the same time large cobblers are being caught in increased numbers.

THE RURAL AND INDUSTRIES BANK OF W.A.

The attention of all officers is drawn to the following statement issued by the Premier :-

" From a commencement in 1945, the 'R.&.I.' is to-day well up with the leaders in the banking field in Western Australia, and the support of Government employees has contributed in no small measure to this success.

The Government is appreciative of the support already extended, but at the same time I would like to point out how desirable it is that all Western Australians should bank with their State Bank and how appropriate it is that Government employees, who have such a vital interest in Western Australia, should give the lead.

If all members of the Government Service conducted their banking business, both cheque and savings accounts, with the 'R.&.I.', the Bank would receive a tremendous impetus in the task it has set itself of marshalling its funds for the urban and rural development of the State.

I would therefore urge you to lend your personal support to these views and to encourage your staff to do the same. I would appreciate your circulating this letter amongst your staff, displaying copies of it on your office notice boards, and publishing it in any departmental domestic magazine you may issue.

(sgd) A.R.G. Hawke,
PREMIER. "

SPERM WHALING

On May 13 the largest ship to use the new wharf arrived at Albany to lift the first major shipment this year of sperm oil. The drums (717, of a total weight of 126 tons) were transported by road from the Cheynes Beach Whaling Station.

Good catches of sperms of good condition and size have been recorded. The total take as at May 31 was 73 whales.

ABROLHOS ISLANDS CRAYFISHERY

In the previous issue of this Bulletin a record catch of crayfish for the Abrolhos Islands area during March was reported. This increased trend was continued in April when the production reached 1,246,000 lb. The total production for the six weeks since the season opened is 1,983,000 lb.

Taking the Island groups separately, production has increased in all areas except the Southern Group, which is the only area to show an increase in the catch per man. Generally the catch per man has decreased slightly, while the number of men fishing is still increasing.

AREA	APRIL, 1957			APRIL, 1958		
	No. of Men	Total Catch	Catch per Man	No. of Men	Total Catch	Catch per Man
		lb.	lb.		lb.	lb.
North Island	26	157,594	6,061	34	194,348	5,716
Wallabi Island	47	288,161	6,131	65	379,870	5,998
Southern Group	48	231,107	4,814	41	228,073	5,554
Rat Island	64	415,782	6,496	71	444,551	6,261
Totals ..	185	1,092,644	5,906	211	1,246,842	5,861
1956 Totals .	153	1,016,828	6,646			

DUCK BAND RECOVERIES

Since the previous issue of the Bulletin several more recoveries have been made. This brings the total recoveries to 229 black duck, 128 grey teal and 20 others; in all 377. As 5740 ducks have now been banded, this represents a recovery rate of 6.56%.

Once more a grey teal has journeyed from West to East. This carried band no. 2973, which was placed on the duck at Lake Mears, east of Brookton, in November, 1954. The teal was shot at Colignan, near Red Cliffs, on the New South Wales/Victoria border, a distance of some 1,468 miles from the point of banding. The bird was in its fourth year of banding.

Band No.	BANDING		RECOVERY		Distance Flown
	Date	Place	Date	Place	
		Black Duck			
7465	3/4/58	Near Murapin Lake, Woodanilling District	3/5/58	Near Woodanilling	10 miles
7394	2/4/58	do.	19/5/58	Yarloop	87 "
6718	19/3/57	Bennecke Swamp	18/5/58	Bald Rock	4½ "
7832	21/2/58	Cape Riche	11/4/58	Warriup	20 "
7826	18/2/58	do.	25/4/58	do.	20 "
7846	26/2/58	do.	25/4/58	do.	20 "
7974	9/5/58	Queen's Gardens	17/5/58	Lake Monger	3 "

Band No.	RECOVERY		BANDING		Distance Flown
	Date	Place	Date	Place	
		Black Duck (contd.)			
6068	17/4/56	Yeri Yeri Station, Dandaragan District	4/4/58	Recovered at Namming Lake	about 20 miles
7530	5/4/58	Near Murapin Lake, Woodanilling District	early April 1958	150-mile peg, Albany Highway	3 "
7589	5/4/58	do.	5/5/58	Bennecke Swamp	11 "
2485	6/3/54	Wardering Lake	5/5/58	do.	11 "
7474	3/4/58	Near Murapin Lake, Woodanilling District	18/5/58	do.	15 "
7572	1/4/58	do.	3/5/58	Rushy Pool, 15 mls W. Woodanilling	2 "
7339	31/3/58	do.	3/5/58	do.	2 "
7772	11/4/58	do.	3/5/58	do.	2 "
7432	3/4/58	do.	29/5/58	On Property at Ferguson	85 "
		Grey Teal			
4363	7/11/57	Koomberkine	3/5/58	18 mls W. Laverton	350 "
2973	19/11/54	Lake Mears, Brookton District	5/4/58	Colignan, near Red Cliffs, NSW/Victoria border	1468 "

DIRECT ORDER FORMS

Inspectors are notified that in future, when obtaining petrol and oil through Government Depots outside the metropolitan area, the following proceedure must be adhered to :-

The original and duplicate order are to be lodged with the attendant in charge of the depot.

Particulars of each order issued, number, depot and quantity of fuel, must be forwarded immediately by memorandum to Head Office.

INVENTORIES

Inspectors in charge of patrol vessels and districts are required to furnish an inventory of all Government property under their charge as at June 30, 1958. The inventories are to be forwarded to Head Office by July 15, 1958.

WHALE QUOTAS

It was recently announced in the local press that the quotas for the 1958 humpback whaling season would be - Nor'-West Whaling Co., 1,000; Cheynes Beach Whaling Co., 120. These have remained unchanged from last year.

CRAYFISH CONSERVATION

The Ministerial direction regarding the operation of freezer boats in the Abrolhos Islands area has been amended as hereunder -

> No freezer-boat shall engage in the taking of or processing, including wrapping, packing and freezing of crayfish in the Abrolhos Islands area.

THE CLEARING HOUSE

Protest on Small Prawns

State Fisheries Department has circularised all fishermen's co-ops asking for opinions on a decision to lift restriction on the minimum legal size of prawns.

Dr. Racek, the departmental biologist, has recommended that legal size limits be lifted.

The official view is that once a prawn is caught he'll die, anyway, so why throw him back for the sea birds and sharks to eat?

Along with this train of thought is a move to close the estuaries to fishing.

The official view appears to be that since Dr. Racek is being paid a big salary to "advise" the Government, it would be foolish not to take his advice.

Dr. Racek is probably right on his prawn recommendation.

Fishermen, however, are opposing lifting of minimum sizes because they'd get less for their prawns.

They claim they cannot fish for less than the high prices they've been getting for the past two years.

Fish merchants are against the move, too, because they know from experience that small prawns don't sell and will kill the trade.

("Fish Trades Review" Sydney May, 1958.)

Electrical Fishing Era?

A "paralysing" development

Electrical fishing gear may soon make it possible for fishermen to become farmers in the true sense of the word instead of hunters and trappers as they are now classified.

According to Professor P.F. Meyer-Waarden, director of the Hamburg Institute of Coastal and Inland Fisheries, "the efficiency of electrical fishing gear within its present limits is much greater than that of any other gear used up to now."

Professor Meyer-Waarden is internationally recognised as an authority on electrical fishing.

So says the Food and Agriculture Organisation (F.A.O.), an off-shoot of the United Nations' Organisation, which has published the professor's book.

In a chapter on the "Importance of the Electrical Fishing Technique in Fisheries", Professor Meyer-Waarden states :

"For instance, only by electrical fishing is it possible to take all fish and other animal life from closed waters and definite water areas.

"Undrainable ponds, lakes and pools can be fished out completely by using electrical gear. The gear can also be used for removing useless and predatory fish.

"Any water, particularly river areas, can be fenced against migrating fish, which enables fish culture to be carried on in selected water areas.

"Electrical gear can be also used to guide fish to new river systems and fish ways, or drive them, by frightening effect, into fishing gear, such as traps, etc."

The use of electrical gear is also developing in sea fisheries, and it is now possible to concentrate shoal fish by keeping an electrode before the aperature of a trawl net and to paralyse the fish so that they cannot escape the trawl.

"An electrode placed in front of a pelagic (midwater) trawl will attract shoal fish even from the lower area of the electrical field and guide them into the catching area", states Professor Meyer-Waarden.

"This means fish from the region beneath the net, which would otherwise not be taken, will be caught.

"An electrical midwater trawl also enables the otherwise 'unfishable' uneven bottom to be fished as the fish living near the ground are attracted toward the electrode."

Fencing Grounds

He says that the blocking effect of electric current can also be used in sea fisheries.

"Narrow areas, such as fiords, could be electrically fenced and the fish kept in them until required," writes Professor Meyer-Waarden.

"It might even be possible to drive fish shoals toward a destination much as a shepherd and his dogs drive flocks of sheep.

"An electrical shark barrier might also be constructed on that principle.

"And there is no doubt about the great importance of the improved quality of the flesh of fish which are paralysed or killed electrically, thus preventing the accumulation of lactic acid during the death struggle and delaying the onset and disappearance of rigor mortis.

"Despite these advantages, however, it should not be forgotten that the capital and energy expended for electrical fishing should be kept in reasonable relation to the practical results achieved by the gear," he concludes.

("Fish Trades Review" Sydney May, 1958.)

The Sea Was Never Warmer Than In 1957

Warmer water, a different sardine spawning pattern and the appearance of warm water fish in the north during 1957 are reported by California (U.S.) fishery experts who describe last year as "extraordinary in recent California fishing history."

They say that ocean temperatures on the whole were higher during 1957 than at any other time in history. The warming extended to a depth of at least a quarter-of-a-mile, in waters off California. In some areas, daily temperatures ran as much as 5.5 degrees above the 1949-56 averages, possibly caused partly by a decrease in northerly winds over the year compared with other years. There was an influx of warmer waters from the west or a northerly direction.

("The Fishing News" London April 18, 1958.)

Sharp Shots

Spawning among oysters occurs only when the water in which they live reaches a temperature of 68 to 70 degrees Fahrenheit.

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Despite the fact that their eyes are made up of as many as 30,000 parts, insects cannot see objects clearly. Their eyes, however, are quick to see anything that moves.

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Unlike the Atlantic salmon, which enters the fresh water streams to spawn and then returns to the sea, the Pacific species spawn in fresh water and then die.

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The Panda is one of the rarest of mammals with the face of a racoon, feet like a cat and a body similar to that of a bear.

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The Emperor penguin - the only natural form of life to winter each year in Antarctica, lays its eggs during the midwinter blizzards. To keep the egg off the ice during hatching the male and female take turns in holding the egg on their feet.

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The amazing archer-fish of south-eastern Asia shoots projectiles of water, nailing its insect prey at distances from four to ten feet.

("Ammohouse Bulletin" Wellington, N.Z. March, 1958.)

Pot Shots

SCATTERGUN pellets are sieved for size, passing through a series of hole-punched cylinders in a screening process that picks out dimensional variations as tight as .0025 .....

LEAD SHOT would seem to be about as simple a product as a factory could make, but even the pellets in a shotgun go through some thirty manufacturing operations, and to make the assembly of fourteen separate parts for a scattergun hull, over two hundred manufacturing steps are needed ...

("Field and Stream" New York May, 1958.)

Scope Shields

Scope shields for protection against rain and snow are being made on a new scheme - a soft rubber extension which slips over the ocular and objective ends of the glass, with spiral driprings inside the flexible rubber to drain off any water and snow before it hits the lens. Inexpensive and available in assorted sizes from a Saginaw, Michigan outfit on Gratiot Street, using the brand name PGS ... .

("Field and Stream" New York May, 1958.)

Research Cruise

Scientists and research workers of the Central Marine Fisheries Research Station at Mandapam, South India, and the Indo-Norwegian Fisheries Project at Quilon, are on a long cruise to Minicoy and the Laccadive Islands, organised under their programme of offshore scientific investigations introduced last September. It is intended to chart the oceanographic and biological conditions of the fishing ground off the west coast of India, and assess the possible scope of fishing in the area.

("The Fishing News" London April 18, 1958.)

Sea Water Temperature Chart of North Pacific

First of a series of water temperature charts covering the eastern side of the North Pacific Ocean have been issued by Pacific Oceanic Fishery Investigations, a U.S. government organisation.

The charts cover sea water temperatures for January, 1958, together with comparisons with the 30-year mean, and a similar chart for January, 1957. Comparisons can be drawn between January, 1958, the historical average and January, 1957.

Sea surface temperatures will be useful in plotting the distribution of albacore tuna. These temperatures are known to be one of the most important factors governing the movements of this species.

The charts can be obtained from the Bureau of Commercial Fisheries, Washington, D.C., and the local office in Seattle.

("Western Fisheries" Vancouver, B.C. March, 1958)

Depth-Temperature Telemeter Tested by "John N. Cobb"

A new device which transmits continuous depth and water temperature data to the pilot house was tested extensively in Juan de Fuca Strait last month by the U.S. exploratory fishing vessel "John N. Cobb".

The vessel returned to Seattle around the first of March after more than 2 weeks on the fishing grounds. A total of 54 bottom drags were made with a standard 400-mesh eastern-type trawl between Port Townsend and Port Angeles at depths of 10 to 60 fathoms. True cod were found to be most plentiful off Port Townsend, although small catches were also made off Port Angeles and west of Protection Island.

The modified electrical depth-temperature telemeter proved to be sufficiently accurate for commercial use. The device transmits data to the pilot house through an electrical trawl cable. On several occasions, however, the electrical conductors broke under the strain of trawling, and repairs were made aboard the vessel. It was apparent that a stronger type of transmission for the sensing unit will have to be developed if this instrument is to become a dependable aid in bottom trawling.

Over 1,100 true cod were tagged and released by Washington State biologists. In addition

about 100 sablefish, or black cod, were tagged. The biologists used plastic "spaghetti-type" tags and experimental dart tags. Incisions had to be made in most of the cod to release expanded gases to allow them to return to the bottom.

("Western Fisheries" Vancouver, B.C. March, 1958)

Conservation

WHAT do we mean, wetlands? We've been using the word for years, and yet not too many of us agree on definitions describing it. In its wetland inventory the Fish and Wildlife Service used four categories of value for waterfowl: high, moderate, low and negligible. But when the Service and the states got down to the business of deciding what areas they'd try to save first, these categories failed to serve. Consequently the flyway councils have busied themselves at refining the classifications, and perhaps adding some of their own. The Missippi and the Central groups are just getting started; the Atlantic Council has finished its chore.

These new tables will not only show how much of what quality natural wetland we have on hand, but will list the potential man-made wetlands that may be created by impoundments. This could be of special importance to groups of organised sportsmen who have the foresight to do something for themselves. With all the talk about cutting down Federal spending for so-called nonessentials, it may be that the acquisition of more marshes by public agencies will be even further restricted. Then if private agencies don't step in and try to fill the gap, our future outlook for waterfowl facilities may be dark indeed.

("Field and Stream" New York March, 1958)

The Shrimp spawn the first two or three years as males, reverse sex, and then spawn as females. Shrimp are somewhat erratic in their appearances and in their abundance from season to season.

("Western Fisheries" Vancouver, B.C. March, 1958)