FISHERIES DEPARTMENT, WESTERN AUSTRALIA

MONTHLY SERVICE BULLETIN

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STAFF NOTES

The Superintendent, Mr. A.J. Fraser, is at present visiting the eastern States on official business. He is expected to return to Perth on June 7.

On Sunday, May 19, the Superintendent, the Clerk-in-Charge, Mr. B.R. Saville, and the Research Officer, Mr. B.K. Bowen, attended the quarterly meeting of the Trout Acclimatisation Council at Dwellingup.

Assistant Inspector M.J. Simpson, who had been assisting Inspector R.M. Crawford at Geraldton, was transferred to duties on the p.v. "Kooruldhoo" on May 21. Assistant Inspector R. McKay, whom he had relieved, is at present stationed at Perth and will leave for Carnarvon on June 12 to act as Whaling Inspector for the duration of the humpback season.

Assistant Inspector T.B. Baines will leave Fremantle on June 10 to take over the Bunbury district from Relieving Inspector G.C. Jeffery, who will return to duties in the metropolitan area.

On June 6 Cadet Inspector G. Hanley will be transferred to Pemberton for three months to assist at the trout hatchery.

The influenza epidemic was felt by the Department during the month when the Clerk-in-Charge, Mr. B.R. Saville, Technical Officers L.G. Smith and J. Traynor, and Inspector H.J. Murray were all afflicted.

OBITUARY

We regret to report that Samuel George Daws, Police Sergeant, Pinjarra, passed away at his residence in West Leederville on May 29, after a long illness. Sgt. Daws was an old friend of the Department and a close personal acquaintance of many Inspectors. To his bereaved wife and daughter we offer our sincere sympathy.

PERSONAL PARS

During the month Dr. Jesse D. Skoss, Agronomist of the Chase Syndicate, called at the Office. He was accompanied by Dr. G.R. Moule who was recently appointed General Manager of the Esperance Plains Company's project.

ABROLHOS CRAYFISHERY

In the previous issue of this Bulletin a record catch of crayfish for the Abrolhos Island area during March was reported. It has since been established that the Island production for April reached the record figure of 1,092,644 lb.. The previous record established for April last year was 1,016,000 lb. Figures prepared indicate that the increased catch this year was taken from waters outside the Abrolhos area proper, production from which has remained fairly constant.

Taking the Island groups separately, and including the catch taken in outlying waters, production during April this year showed an increase in the Rat Island and Southern Group areas and a decrease in the Wallaby and North Island areas, as can be seen in the accompanying table. It will be noted that the catch at North Island fell by only 18,000 lb., while the number of men dropped from 36 to 26, which confirms reports of an increased catch-per-man in this area. Generally, however, the catch-per-man is down on last year's figures, as would only be expected when an increased number of men fish a limited fishery.

AREA	APRIL 1956			APRIL 1957		
	No. of Men	Total Catch lb.	Catch Per Man	No. of Men	Total Catch	Catch Per Man
North Island	36	175,989	4,888	26	157,594	6,061
Wallabi Group	38	293,483	7,722	47	288,161	6,131
Southern Group	38	199,737	5,256	48	231,107	4,814
Rat Island	41	347,619	8,478	64	415,782	6,496
Totals ...	153	1,016,828	6,646	185	1,092,644	5,906

TROUT DELIVERIES

During June 24,000 yearling trout will be transported from Pemberton to centres in the South-West. 4,000 will be delivered to Beverley and to Harvey and to Bridgetown and 12,000 to Jarrahdale.

Technical Officer J. Traynor will be in charge of deliveries but, for part of the period at least, will be assisted by Fauna Warden S.W. Bowler.

DUCK SEASON CLOSES

The attention of all officers is directed to the closure at midnight on May 31 of the 1956/57 open season for wild ducks. Until the season opens again on the Sunday preceding Christmas, the taking of wild ducks will be totally prohibited. From reports it is understood that shooters enjoyed a good average year. Although many complained of poor opening shoots, conditions improved as the summer progressed and towards the close of the season good bags were obtained.

SCORECARDS

The Minister for Fisheries (Mr. Kelly) recently appealed to all sportsmen to continue to co-operate with the Department in its duck research programme. Scorecards have been widely distributed again this year and further supplies are available at this Office. It is essential that a large number of correctly completed cards be returned to allow an assessment of the seasons' results to be made and to establish the present status of the duck population.

DUCK BANDING

With the start of the winter rains the banding programme has been temporarily suspended as usual. A permanent trap has however been completed and a further one is to be constructed, also in the Metropolitan area, and if these traps are successful banding will be continued practically throughout the year.

Recoveries :

Since the previous issue of this Bulletin the following bands have been returned :-

Band No.	Banding		Recovery		Distance Flown
	Date	Place	Date	Place	
			Black Duck		
6687	26/2/57	Queen's Gardens	12/5/57	Butler's Swamp (found dead)	6 miles
6628	19/2/57	do.	do.	Chittering Lake	45 "
6742	27/3/57	Karrinyup Lake	25/4/57	Watson's Lake, Wannamal	50 "
3425	8/2/55	Cape Riche	12/5/57	Waterloo	195 "
6119	30/4/56	Queen's Gardens (Retrapped April'57)	28/5/57	Shot on Pool near Preston River, about 8 mls E. of Donnybrook	110 "

Band No.	Banding		Recovery		Distance Flown
	Date	Place	Date	Place	
			Grey Teal		
3181	23/1/55	Yealering Lake	9/3/57	6 mls n.w. of Moora	175 miles
1344	12/2/53	Wardering Lake	28/3/57	Yalka Pool, Meekatharra	450 "
3118	4/12/54	Meckering	4/5/57	Taarblin Lake	100 "
3876	25/3/56	Wardering Lake	27/4/57	do.	45-50 "
4001	11./4/56	Yatheroo Station, Dandaragan	21/5/57	Wannamal	30 "
1653	21/3/53	Big Bootine Swamp, Beermullah	6/4/57	Dam north of Burracoppin	165 "
3033	23/11/54	Lake Mears	about 20/5/57	Taarblin	50 "
3890	25/3/56	Wardering Lake	15/2/57	Shot on Blackwood River, near Duranillin	25 "

In addition to the above, a particularly interesting band was returned by Mr. L.R. Tuckey, of 10 Sutton Street, Mandurah. It was No. 090-01126 which had been placed on a grey teal at Griffith in southern New South Wales, on January 18, 1957, under the Australian Bird Banding Scheme conducted by the Wildlife Survey Section, C.S.I.R.O. When shot at Boggy Bay, Mandurah, by Mr. L.R. Tuckey on April 30, the bird must have flown approximately 1,900 miles, even if it came by a fairly direct route. The interval between banding and recovery, 103 days, was the shortest yet recorded to demonstrate a trans-continental flight by a duck.

A teal banded at Lara, near Melbourne, in January 1953, was shot at Rowle's Lagoon on January 10, 1954, and another banded under our own scheme at Lake Karrinyup on April 15, 1954, was shot at Menindee, River Darling, New South Wales, on January 2, 1956.

Another very interesting recent recovery was that of a grey teal banded at Wardering Lake (in the Woodanilling District) on February 12, 1953, and shot at Yalka Pool, 53 miles south east of Meekatharra, by Mr. T.J. Carmody. The band had been eroded and one of the numbers was quite invisible. Through the co-operation of the Inspector in Charge of the Police Department's Scientific Bureau (Inspector A.J. Baird), the band was chemically treated and established as 1344. This was the northernmost recovery and the longest recorded flight of a duck within this State.

COMMITTEE'S TOUR OF INSPECTION

Led by the Superintendent (Mr. A.J. Fraser) as Chairman, members of the Fauna Protection Advisory Committee, Mr. J.B. Higham and Mr. A.J. Milesi, accompanied by the Secretary (Mr. H.B. Shugg) and Fauna Warden S.W. Bowler, visited areas in the South-West from May 13-18. After a brief inspection of lakes south of Perth, the party visited areas from which complaints had been received of damage caused by kangaroos and emus. As well as visiting the properties of affected farmers, the party met representatives of the Preston, Nannup, Manjimup and Plantagenet Road Boards to discuss the situation generally, and to receive recommendations from the local authorities.

Before completing their tour, a meeting of the Committee was held at Narrogin on the evening of May 17, when the evidence obtained was reviewed. Owing to the widespread nature of the damage and the ineffectiveness of previous short open seasons, it was decided to recommend a long open season as an experiment, provided that the effects were observed carefully by departmental officers and a close check kept on the pet-food trade.

OPEN SEASON FOR KANGAROOS AND EMUS

The Minister for Fisheries (Mr. Kelly) recently announced that he had accepted a recommendation from the Fauna Protection Advisory Committee and that a long open season for grey kangaroos and emus had been proclaimed in a number of road districts in the lower South-West. The season will open on June 1, 1957, and will not close until May 31, 1959, unless control measures prove more effective than was anticipated.

The effect of the open season will be to allow property owners to destroy kangaroos and emus without having to apply for a license, although it will not relieve the necessity for any person to be in possession of a license before he can legally sell the meat or skins. Any person desiring to take kangaroos or emus for gain or reward in the open areas will have to obtain a professional hunter's license, the fee for which is £2.

It is anticipated that in addition to professional hunters operating solely for skins, others who desire to sell kangaroo and emu meat to the pet food processors will be attracted to the open areas.

The road districts included in the open season for both kangaroos and emus are as follows -

Albany, Augusta-Margaret River, Balingup, Bridgetown, Collie, Cranbrook, Denmark, Greenbushes, Kojonup, Manjimup, Nannup, Plantagenet, Preston, Upper Blackwood, and West Arthur.

In addition, an open season for grey kangaroos for the same period has been proclaimed in the Gingin Road District.

EASING OF FREEZER-BOAT RESTRICTIONS

The Minister for Fisheries (Mr. Kelly) has amended the direction to licensing officers restricting the operation of freezer boats. It will be

remembered that freezer boats were prohibited from processing the catch of other boats north of the 28th parallel and south of the 33rd parallel of south latitude.

Following on an application by a company operating both catcher and freezer boats, it has been decided to permit freezer boats with catching units to operate north of the 27th parallel. This decision is to take effect immediately.

The restrictions on freezer boats might be re-stated now to clarify the position for licensing officers.

South of the 33rd parallel, freezer boats may operate and process their own catch, but not that of other boats;

Between the 33rd parallel and the 28th parallel, (excluding the Abrolhos Islands and the surrounding waters which are closed from August 15 to March 14) freezer-boats may operate and may process their own catch and the catch of other boats;

Between the 28th and 27th parallels, they may only process their own catch;

North of the 27th parallel, they may process the catch of other boats as well as their own.

DIRK HARTOG CRAYFISHERY

Inspector N.E. McLaughlan reports that the L.F.B. "Saturn", whose development of a new crayfishery at Shark Bay was reported in the January and March issues of this Bulletin, is continuing to fish with success in that area.

Apart from occasional visits to either Geraldton or Fremantle, Inspector McLaughlan says that the "Saturn" has been crayfishing constantly in an area west of Dirk Hartog Island. Although the average daily catch is not as good as was originally expected,

he believes that it has been quite satisfactory and that if anything the catch in recent months was an improvement on the average obtained last December.

No white crayfish had been caught, but spawners were in evidence throughout October, November, December and January, and had ceased spawning by the middle of February.

Very few undersize fish had been taken at any time.

Inspector McLaughlan anticipates that the "Saturn" will leave Shark Bay at the end of May to spend some time in Fremantle undergoing a refit before she joins the snapper fleet. Subsequently, she is expected to recommence crayfishing on her newly proven grounds.

TRAWLING EXPERIMENTS

Technical Officer Simpson has reported some excellent trawling results by the research vessel "Lancelin" in the Shark Bay area.

On May 7, the "Lancelin" trawled in 14 fathoms of water off Carnarvon and during one trawl of 30 minutes duration, 110 lb. of prawns was captured. The capture consisted of 95 lb. of tiger prawns, 10 lb. of Western Australian king prawns and 5 lb. of Endeavour prawns.

On May 21, three excellent hauls of saucer scallops were made in Shark Bay. Each trawl was of approximately half an hour's duration and 2,600 lb. of scallops was landed.

TROUT TRANSPORT IN PLASTIC BAGS

In a previous issue of this Bulletin (Vol. V, No. 9., September, 1956) the results of experiments aimed at testing the possibility of transporting trout fry in plastic bags were discussed. It was concluded that the plastic bags would successfully transport trout fry, although further experiments would have to be carried out with fingerlings, advanced fingerlings and yearlings.

During the period September 1 to December 7, trial bags of fish were carried on the normal transport deliveries. There were seventeen trial bags in all, of which 10 were successful and seven unsuccessful. In four of the unsuccessful cases the fish were in poor condition before being placed in the bags. In another the fish were in the bag for 47 hours while it was thought that the fish in the remaining two bags died as a result of excessive heat. The longest journey travelled by fish during a successful trial was that of a parcel of 527 fry consigned to Mr. F.E. Daw, of Ravensthorpe. The journey took 37 hours and only 20 fish died in transit.

During January, Messrs Bowen and Simpson carried out further experiments at Pemberton. Their main purpose was to determine the effect of temperature on fingerlings placed in a plastic bag. The result was clear cut as the fish became distressed as the water temperature approached 86°F., at which temperature they died. The time interval in this case was approximately 2 hours.

A similar volume of fish (16 oz. displacement) was placed in a second bag and the water temperature controlled at 71°F. The fish showed no signs of distress after being in the bag for 20 hours.

From these experiments it appears that fingerlings and advanced fingerlings can be transported in plastic bags for at least 20 hours without loss, provided the water temperature does not rise to lethal limits.

GERALDTON FISHING BOAT WRECKED

During the night of May 29, the licensed fishing boat "Moyne" (G.144), owned by Michael Yamanis, of Geraldton, broke adrift from the Geraldton wharf. She came ashore the next morning near the railway yards and was completely wrecked. The diesel engine dropped into the sea through the smashed hull and wreckage from the boat and her equipment was washed ashore on a half-mile stretch of the beach. When last licensed the "Moyne" was valued by its owner at £3,000, but it was believed to be insured for approximately only half that amount.

CONFERENCE OF COMMONWEALTH AND STATE FISHERIES OFFICERS

On May 28 and 29, at Canberra, a conference was held to discuss problems connected with the disbursement of funds standing to the credit of the newly-created Fisheries Development Trust Account. The Account comprises the net sums received, and to be received, from the sale of the assets of the Australian Whaling Commission at Carnarvon, W.A. It will total something like £740,000 when all payments are received and adjustments made.

Those present included Mr. R.W. Wilson, Assistant Secretary (Agriculture and Fisheries), Department of Primary Industry, who presided, Mr. F.F. Anderson, Director, Commonwealth Fisheries Office, Dr. G.F. Humphrey, Chief, Division of Fisheries and Oceanography, C.S.I.R.O., Mr. H.K. Grubb, Commonwealth Treasury, and Mr. R. White, Department of Trade. These gentlemen comprise the inter-departmental committee appointed to scrutinise applications for assistance from the Account and to make recommendations to the Minister for Primary Industry. Other Commonwealth officials in attendance were Messrs J.C. Bowes, senior project officer of the secretariat of the Department of Primary Industry, C.G. Setter, Assistant Director, Commonwealth Fisheries Office, and F. Grainger, Department of Territories. The respective States were represented by Messrs. F. O'Neill (N.S.W.), A.D. Butcher (Victoria), B.E. Riding (Queensland), T.F. Rice and F.W. Moorhouse (S.A.), F.W. Hicks, L.S. St. Leger and J. Andrews (Tasmania) and A.J. Fraser (W.A.).

In his opening address the Chairman thanked the representatives of the States for past co-operation and expressed the hope that this happy relationship would continue. He said that the fisheries of Australia were making a valuable contribution to the national economy. Any moves to increase production so as to step up the volume of exports and reduce imports would be most welcome, and the Fisheries Development Trust Account was created with that end in view.

Mr. Wilson went on to say that legal advice had been taken to ascertain the type of project which could be undertaken with moneys in the Trust Account. The advice received was to the effect that as

the Commonwealth has power to legislate with respect to fisheries in Australian waters - i.e., waters beyond State limits - and in Australian Territories, it could appropriate and spend moneys to implement any laws made by the Commonwealth Parliament. But so far as the fishing industry in other waters, e.g., State waters, was concerned, money could be spent solely on technical, scientific and economic research. Because of constitutional limitations, direct financial assistance could not be made available to a State or a State Department.

In order that the objectives might be attained, continued the Chairman, it would be necessary to undertake investigation and research into the major fisheries which appeared to offer potentialities of large scale development. A considerable amount of scientific research had been undertaken in many Australian fisheries. Before the Commonwealth could think of investing the developmental funds available, however, it would want this extended to investigation into the prospects of commercial fishing operations, experimentation in handling and processing the catch, and survey of the market, marketing prospects and the probable economics of the fishery. Some of this information was already available. Other could only be obtained by actual trial operations that would be financed from the Fisheries Development Trust Account. An economic survey of the tuna industry in south-east Australia had recently been completed and was now being studied. The commercial prospects of pilchard and anchovy fishing were at present being investigated with the use of a chartered vessel and the co-operation of certain fish canners and fish meal processors. Consideration was being given to undertaking practical investigation of additional prawning grounds in eastern Australia by a specially equipped vessel. Enquiries were being conducted into the possibilities of operating a large trawler capable of operating in the Great Australian Bight. Development under the Trust Account would be by means of the investment in companies or co-operatives of share capital or of loans to private enterprise. In some cases, of course, it might be necessary for the Government itself to undertake the establishment of a fishery as was done in connection with whaling. The Commonwealth Fisheries Division had been besieged with applications from individuals seeking assistance for the purchase of equipment

and the purchase or conversion of vessels. The Department of Primary Industry understood that many States already operated funds for these purposes, and that loan facilities were provided by banks and other financial institutions. It was neither the desire nor the intention of the Government that the Fisheries Development Fund be used for such purposes, except perhaps where this was necessary as part of a programme of major development of a new fishery or the co-ordinated organisation and expansion of an existing one.

"The Commonwealth does not desire to trespass on the responsibilities and functions of State Fisheries Departments," concluded Mr. Wilson. "It believes, however, that there is a field in which it can pursue developmental activities complementary to the work being carried out by the States, whose goodwill and co-operation are essential to the successful implementation of the programme of development and expansion."

A great deal of discussion took place in regard to the order in which developmental projects should be put in hand. There was general agreement that trawling in the Great Australian Bight, development of the tuna and pilchard fisheries, and the search for new prawn fisheries, offered the best scope for investigation. At the same time serious doubts were expressed as to whether it was desirable to investigate the fisheries concerned before finding sure markets for the increased production. Several State representatives felt that to step up production without a complete knowledge of the marketing situation and the economics of marketing might be somewhat akin to putting the cart before the horse. It was mentioned that an intensive sales campaign conducted in the eastern States had recently boosted the sale of canned tuna, but some doubts were still felt as to Australia's capacity to absorb greatly augmented production, and suggestions were made that any survey which might be undertaken should cover also overseas markets.

A resolution, expressing the desire of the meeting that moneys in the Trust Account be used only for developing and expanding major fisheries; that assistance to individual fishermen be limited to those desirous of participating in such development and expansion; and that a marketing survey be made, was

carried unanimously. It was also agreed by the State delegates that a recommendation would be made to their respective Governments that, subject to an assurance of complete co-operation and continuous consultation by the Commonwealth authorities, full co-operation be extended by the States in the implementation of the development and expansion policy.

Some discussion took place concerning the delegation to State fisheries officers of powers and functions under the Fisheries Act of the Federal Parliament. As all licensing officers have been supplied with detailed instructions on this matter, the questions dealt with need not be repeated here, although one point made by the Chairman and the Director of Fisheries was of much interest to the State officers. That was a statement that it would not be necessary to refer to Canberra for approval to prosecute for any breach of the Commonwealth law, but that action could be taken by the chief fisheries officer of the State on his own initiative, subject to the receipt of advice from the Commonwealth Crown Solicitor for the State concerned that sufficient evidence was available. The Crown Solicitor would prosecute in all cases.

A full-scale discussion in relation to the Bass Strait school shark fishery took place, the participants being the States of Victoria, South Australia and Tasmania and the Commonwealth itself. It would seem, as a result of the very frank exchanges of opinion which took place, that complete co-operation between the States concerned is nearer now than at any time in the past.

Before the conference rose, Dr. Humphrey gave a most lucid and informative report of the functions of his division, indicating that one of its major activities in the future would be a comprehensive study of the productivity of the sea and of the general behaviour of several more important species of fish. Most other work had either been completed or was in process of completion, although some attention would be paid to the violently fluctuating barracouta fishery of Victoria and Tasmania.

THE CLEARING HOUSE.

Nylon Purse Triumph is Seen in Action

by A.C. Sanctuary.

Having lived among nets all my life, I was astonished on going to Norway recently to see a practical demonstration at sea of the use of the nylon purse seine net and by the bulk of the cotton netting the Norwegians are now in process of abandoning.

As I walked down the Aalesund jetty to join the 129ft. trawler Giskoy which was to take me on my voyage of conviction in the triumph of nylon nets, I kept dodging great curtains of cotton netting draped from poles 30ft. overhead. The jetty roof was 50 yd. long and quite 10 yd. wide.

No Wonder

"How many nets can you fit in here?", I asked and the casual reply was : "Four with luck. They won't dry if they are too close together. A piece of cotton netting of these dimensions, well tanned and saturated with water, would frighten a professional weightlifter. No wonder the fisherman's mind is turning towards synthetics.

The 177-ton Giskoy lay across the end of the jetty. Her skipper Aakre made me feel at home from the start, though my companion and I spoke no Norwegian and he no English. Soon we passed the home of the Norwegian herring fishery and headed for the open sea. Once clear of the islands we anchored for a couple of hours before moving on to the fishing grounds to try our skill and fortune.

At 10 a.m. we approached the fishing fleet. Kipling's story of the Grand Banks sprang to life as we pressed into a swirling mass of 150 to 200 fishing vessels and their net-boats clustered over a large shoal of herring.

Lashed Together

The enormous net is carried by two net-boats. Each takes one wing, while the bag of the net is laid between them. The net is usually 180 fathoms on the head-rope and the net-boats are lashed together until the moment of shooting.

The fishing boss, working from his own motor boat, locates the fish and gives instructions to shoot the net. When the net has encircled part of the shoal, the net-boats meet again and draw the purse line taut, thus closing the bottom of the net and trapping the fish. At this point, the mother ship picks up the centre of the cork line, from which hangs the heavy netting of the bag, and the net-boats haul in the wings until the fish have been collected and brought to the surface. The catch is then brailed out of the net into the mother ship.

Suddenly, there was a great shouting and waving of arms. Our net was being shot. The unwritten law of the fishing grounds lays down that once a fishing boss has shot his net everybody else must keep clear. The chaos subsided and, when we looked again, there were three nets laid out. It was soon apparent that the other two had failed and that the Boss Seavek of Giskoy, who was the second man to shoot, had judged the movement of the fish correctly and filled his net.

Into Position

We rushed to the top bridge over the wheel-house and joined in cursing other boats out of the way, while Giskoy worked her way into position to pick up the centre of the cork line. With our hearts in our mouths, we saw the net-boats part. What was happening? We were reassured: "He has more fish than he dare try and take." We later learned that the Boss's estimate was 800 tons, and he was wise to let a lot of them go. When several hundred tons of herring decide to move, nothing will stop them, unless it be the steep rugged coast of Norway itself.

Now began the tricky job of bringing the catch to the surface. Four helping boats (those which

stand by the fishing vessel and draw 50 per cent commission for carrying excess catches to the factory) had sent their small boats to assist in hauling the net. Hauling began. The surface began to move. Thousands of dark shadows could be seen moving to and fro within the decreasing circle of the floats.

Hearts Leap

Our hearts which had been jumping for some time, ceased to beat altogether for a moment. A large shoal rushed to one side of the ring, and the pressure on the netting sent spray flying. Would the nylon hold? Yes, it did. Long enough for the Boss in his boat to get to the danger point and, by racing his engine, scare the fish back into the centre of the net. Gradually the net was hauled into the net-boats, and the Boss came aboard Giskoy to direct operations, leaving his boat's crew to watch for any dangerous movement of the fish.

The herring could still break away if carelessly handled, but they were being forced to the surface and the water was "boiling" everywhere within the circle of floats. All went well. The sea was calm and the final stages of drying-out the fish went like clockwork.

This was the moment as both Skipper Aakre and Boss Seav k pointed out afterwards, when double-knotted netting is essential to prevent distortion during the intense strain of hauling such a colossal weight of fish bodily to the surface.

Boss Seavek was leaning over the starboard gunwale of the well-deck with the frenzy of a producer at a dress rehearsal, but his team were well trained and, after an anxious 3½ hours, the catch was safe and ready to be lifted aboard. The herring were brailed out of the net in a big landing net with a quick-release device which allowed the cascade of Norwegian silver-cod to pour over the deck 2 cwt. at a time.

Once we took a 20 deg. list because we were filling the port hold faster than the starboard one. We applauded the concentrated energy of Skipper Aakre in charge of the release line of the brailing net

even if he did misjudge one roll of the ship and empty 2 cwt. of herring into the sea.

We filled Giskoy. We filled the helping boat which, as first on the scene, laid alongside to take the surplus catch. We eventually sent the last five tons to the second helping boat because we dared not take any more fish aboard. Giskoy started for home while the net boats were delivering the final five tons, but we could not travel fast and the net-boats soon overtook us and made fast astern.

Deck Awash

I judged that the gunwale was 18 in. above the water when we started for home - certainly the deck was well awash - but as the surplus water was pumped away we gradually rose and we could claim 30 in. of freeboard when we steamed triumphantly into Aalesund to report our success.

Our load was officially stated as 250 tons, that of the first "helping" boat as 80 tons and, as we guessed, the runner-up carried five tons, making a total of 335 tons for one haul. Giskoy had several large hauls in the previous week or two, the next best being 300 tons, with a runner-up of 250 tons, and she is well in the running for top boat of the season.

("The Fishing News" London April 12, 1957)

Fish Finding from a Helicopter

A novel method of echo sounding from the air which is likely to have a wide application in salvage work, mine detecting and fish finding, has recently been tested by a U.K. company, P.Y.E. Ltd., of Cambridge.

During the tests a Pye "Fishfinder", fitted in a Westland helicopter, was flown over and indicated a number of submerged objects in the English Channel. The method employed was as follows: A "Fish-finder" in the cabin of the helicopter was attached by a cable to a transducer housed in a specially designed, bomb-shaped submarine body. This was towed on, or just

below the surface of the water at speeds up to 50 knots. In order to transmit the signal from the submarine body to the helicopter, considerable problems of cable strain had to be overcome. For safety reasons a "weak link" was provided which would break at a predetermined stress, so that the submarine body would part from the helicopter. if it became entangled with a submarine object thereby endangering the aircraft.

The obvious implications of the device, when used in mine location, is that of safety. Up to now mines have normally been located by surface vessels having to enter a suspected area. With this new method large areas of sea can be checked and those areas which are free from danger can immediately be indicated. It is only when a minefield has been positively identified from the air that minesweepers need to be called out.

For salvage work, the use of the "Fish-finder" for locating, say, a submerged submarine which is known to be within a certain area, is evident.

Plans are envisaged for a service to be established, on a co-operative basis, to assist fishermen to proceed to areas containing the largest concentrations of fish. While this will not necessarily relieve fishermen of the necessity of equipping themselves with echo sounders, it is hoped that it will considerably reduce unnecessary steaming time, thus making for more plentiful, fresher and cheaper fish.

Support is being sought to enable further trials, under normal conditions, to take place in conjunction with fishing vessels, so that the value of the system as an economical operation can be assessed.

("South African Shipping News and Fishing Industry Review" Cape Town April, 1957)

Highest Catch ever From East African Lake

Last year's catch of more than 5,000 tons of fish from Uganda's half of Lake Albert and from the Albert Nile is the highest catch ever recorded in the Lake. The reason, says the Game and Fisheries Department, is the fact that a growing number of fishermen there are now setting nets in waters they had previously thought were unproductive.

Of the 5,000 ton yield, 3,600 tons were smoked and exported to the Belgian Congo, bringing an income to the fishermen of more than £125,000.

Only a few years ago the yield from Lake Albert was no more than 3,000 tons a year and it was said the Lake could never yield more for it was already overfished. But a survey carried out by the Game and Fisheries Department revealed that only 130 of the 1,300 square miles of water available to Uganda's fishermen were being exploited. In fact, more than 80 per cent of the fishermen were fishing in the delta of the Victoria Nile, in the very north of the Lake - an area covering only four per cent of the total water available.

Fishing Village

Recognising that the south end of Lake Albert was a great potential fishing ground, the Game and Fisheries Department and a model fishing village was set up at Rwengara.

The erection of suitable houses, porters' lines, stores, salting vats, and smoking pits to a specified plan was a pre-requisite to obtaining a license, but this did not deter prospective applicants and licenses were soon taken up and a new fishing community established.

The off-shore waters of the Lake are still being completely ignored by the fishermen, even though experiments with an echo sounder had indicated that these deep waters held large stocks of fish. This belief was confirmed last year during a survey of these unexploited waters carried out by the Fisheries Officer of the area, Mr. J. Stoneman, in the Game Department's launch, St. Clair.

With the aid of an echo sounder and using deep-set gill nets, as much as one ton of fish per thousand yards of netting were caught during a 12 hour period, a yield which is about 20 times greater than that obtained from Lake Victoria.

("South African Shipping News and Fishing Industry Review" Cape Town April, 1957)

Armed Planes to Seek Poachers

Iceland plan causes concern among trawlermen

Reports reaching Grimsby from unofficial sources that the Icelandic Government has authorised use of armed planes for fishery protection and the establishment of whether or not a trawler is inside territorial limits, has been received in the port with extreme disquiet.

Mr. T. Olgeirsson, Icelandic Vice-Consul, told Fishing News: "It may be a fact that our planes are to be armed but I have not yet had confirmation of it."

Captain Donald Scott, secretary of the Grimsby Trawler Officers' Guild, said "I have no reason to doubt the authenticity of these reports.

"The fact that the Icelanders have decided to ar their planes means a potential danger to British trawlers in borderline cases.

"The trawler skipper may be satisfied that his position is outside the limit and the plane may fire a warning shot.

"If the skipper disregards warnings and the plane fires to stop him, the vessel may be left disabled for hours with no one to care for wounded.

"The gunboat has facilities for attending to casualities if she has to fire to stop a ship.

"We will be interested to know the methods used by a plane to establish a trawlers' position. It must be directly above the vessel and, with the speed factor taken into account, the vessel would be difficult to plot accurately.

"The old method under which a plane reported to a gunboat seems much safer and more accurate."

A representative of the British Trawlers' Federation said: "Arms are used so infrequently by the fishery protection ships that it is extremely unlikely they will be used by planes except as a warning."

As long ago as 1954, the Grimsby trawler Lincoln City was adjudged to be inside Icelandic territorial limits after her position had been plotted by a plane. The vessel was subsequently fined and the appeal dismissed by a Reykjavik court.

It is understood that the Icelandic Government is using Catalina flying boats.

("The Fishing News" London April 5, 1957.)

Lobsters were Reared in Laboratory

Experimental rearing of lobsters under laboratory conditions in the U.S. from the earliest larval stages to market size are reported by National Fishermen. The lobsters were reared to full maturity, and two individuals from the four-year-old group were mated. A new generation, derived from laboratory-reared parents, is now hoped for.

The lobsters reared under experimental conditions developed a brilliant blue shell, quite different from the wild lobster with its usually darker and multi-coloured shell. At the lobster station where the experimental lobsters were confined, an abundance of food was provided. At various stages they were fed on finely ground beef liver, small fragments of alewife, a readily available species of fish, and various species of shellfish.

("The Fishing News" London April 5, 1957.)

Japanese to Develop Thailand Fishing Base

A new fishing base will be constructed on Terutea Island, off the western coast of South Thailand, with the help of the Japanese Overseas Fishery Co-operative Association. A group of Japanese headed by the chairman of the Co-operative Association were expected to survey the possibilities of developing new fishery resources, construction of a fishing base to accommodate 100 fishing vessels, and facilities for cold storage, processing, and canning.

("Pacific Fisherman" Portland, Ore. April, 1957.)

Policy, Principles and Philosophy of Alaska Fishery Regulation

Condensed from an address by Donald L. McKernan, Administrator of Commercial Fisheries, Alaska, delivered at the 19th Annual Salmon Cutting, Seattle, March 12, 1957.

What I want to discuss with you today is this: Are the severe restrictions on Alaska salmon fishing worthwhile? If we don't know precisely what has caused the decline in salmon runs in Alaska, what are the bases of our regulations?

Essentially, past regulations have been designed to reduce the total harvest. They have been based upon the assumption that management's responsibility ended with allowing 50 per cent of the run to escape. But the folly of this hypothesis has now become evident in the depleted salmon runs. It is obviously not enough to presume that we can conserve our salmon by simply limiting the catch. Other features must enter our regulatory formula. The total number of salmon escaping is not by itself insurance of a continuance of the runs.

What then is the basis for our management today?

We can show conclusively that simple overfishing has not been the primary cause of depletion. Then, can we erect a working hypothesis which will stand the careful scrutiny of scientists and experienced salmon men? Can we draw up a broad framework upon which to base our regulations and, of greater importance, upon which to build and add scientific evidence as it becomes available? If we can derive such a formula, it will be possible to progress without change in direction, without change in policy, and with some assurance that the most probable results of further scientific study will fit into the framework and build a more sturdy and lasting management programme.

For purposes of our present management policy we are assuming that any run of salmon to a lake or river is constituted of a complex of sub-races or runs

which are characterised by returning to separate environmental niches within the single system year after year. We are assuming they are separate with little transfer with other sub-races within the same river system. They migrate as adults separately and may migrate through the fishery at a different time.

Using our known facts plus the assumptions just mentioned we then can evolve a principle upon which to base our regulation of the harvest. This principle is simply stated as a desire to allow a harvest of equal proportion from all discreet or separate units of a run. That can be stated in this fashion; escapement is needed from early, middle, and late portions of a run rather than from just the late members of the run or the middle or from the early part of the run. For the technical minded, we want an escapement which is normal with respect to the run itself composed of both catch and escapement.

How are we implementing this principle? Everyone in this room is familiar with our efforts to stabilise and reduce fishing effort by a number of means. In Southeast Alaska we have limited the number of traps and reduced efficiency of purse seine gear. In Prince William Sound and Cook Inlet fishing gear is being curtailed by various means. In Bristol Bay fishing effort was reduced about 40% last year over the previous year.

There are signs that this principle of "normal escapement" is paying off. Despite a very moderate run of salmon in most districts of Alaska, the escapement of most parts, early, middle and late runs showed distinct improvement. Even so, the ultimate test of this approach to fishery management will be found in the restoration of the Alaska salmon runs. Instead of the present 3 million-case pack, we will expect a consistent 5 to 6 million-case harvest each year.

What about the future? What can you, the Industry, reasonably expect in the way of improved salmon runs and improved management? It seems obvious that the most important result of our present increased efforts in research, management and enforcement will be restoration of the salmon runs.

What I am anxious to impart to you is this. The Service does have a "new look" in fishery management in Alaska. Our policy is to improve the "quality" of salmon escapement by providing escapement from all segments of a salmon run. Furthermore, we are looking towards the future; towards the time when we can not only manage a fully restored resource, but when we can predict the fluctuations in abundance of the runs with a high degree of accuracy.

("Pacific Fisherman" Portland, Ore. April, 1957)

Legal Limits for the Lobster

Bills introduced into the U.S. Congress to regulate lobster sizes and names would preclude lobsters less than 3-1/16in. from entering America, or being docked, landed, stored, distributed or sold there.

Only the lobster known as Homarus Americanus, ranging from Labrador (Canada) to Cape Hatteras (North Carolina), would use the word "lobster" in its common and usual name under the new Bills, says Fishing Gazette, commercial fishery journal.

The practical effect of this would be to preclude the use of the word "lobster" in the common and usual name of lobster tails, rock lobster, crawfish and crayfish.

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

Who Wants Free Ice!

Scientists are toying with the idea of towing large icebergs of the North Atlantic, which are a menace to the fishermen of the Grand Banks of Newfoundland who fish for cod and haddock, over to drought-stricken areas.

("Western Fisheries" Vancouver, B.C. March, 1957)

Alien Barnacle Harms Shellfish Beds

The alien barnacle which reached British shores on the bottoms of wartime convoy ships from Australia and New Zealand, quickly spread about the southern, south-eastern and western coasts of Britain, as well as crossing the Channel.

A recent survey of its Continental haunts has shown that it is common around the Hook of Holland and most of the Dutch and Belgian coasts. It is also numerous on the sandy and shingly shores of north France, from Belgium to the Cap de La Hague, and at Le Havre, and again on the rocky coast of Brittany.

The trouble with this barnacle is the harm it causes in shellfish beds, including those of oysters. It tends to smother other shellfish as well as compete for food.

The common native barnacle is still more numerous around most coastal regions of north France. The alien barnacle, known by its four sides instead of six, like the common acorn ship barnacle, is abundant along the North Wales coast, especially around Penmon and Puffin, as well as the Manx, Cumberland, Essex and south-west Scottish coasts.

("The Fishing News" London April 26, 1957.)

Dogfish Egg-Sacs in Zoo Aquarium

Dogfish egg-sacs sent from Plymouth have been on view recently in the London Zoo aquarium. They are known as mermaid's purses, for each egg is enclosed in a horny transparent envelope and is attached to seaweed to prevent it from floating around.

In the aquarium the eggs were placed at the front of the tank so that they could be examined by visitors, and as the sac was transparent the embryo fish and the yoke on which it feeds could be seen clearly. When hatched the baby dogfish will be about 3 in. long.

("The Fishing News" London May 3, 1957.)