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DEPARTMENT OF PARKS AND WILDLIFE

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DEPARTMENT OF
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WESTERN AUSTRALIA.



MARCH, 1967
VOL. XVI, No. 3

DEPARTMENT OF FISHERIES AND FAUNA
108 Adelaide Terrace, Perth, Western Australia

DEPARTMENT OF FISHERIES AND FAUNA

MONTHLY SERVICE BULLETIN VOL. XVI NO. 3.

AMATEUR FISHERMEN

An amateur fisherman appeared before Magistrate W. Blackwood in the Fremantle Police Court during February. He was charged with being in possession of undersize crayfish. He was found guilty and suffered the minimum mandatory penalty, \$100 plus \$2 for each of the undersize crayfish.

The Magistrate's comments were widely reported by the local press and drew comments from a number of people.

The Minister for Fisheries and Fauna, Mr. MacKinnon, was reported as having said "This is the law of the land, passed by Parliament and administered by the Department of Fisheries and Fauna with a great deal of sympathy and consideration particularly where amateurs are concerned. Only two amateurs had been prosecuted over the past two years."

Dr. R.G. Chittleborough, of the Division of Fisheries and Oceanography, C.S.I.R.O., is reported to have said that there could not be one law for amateurs and another for professionals and that the damage done by amateurs could easily be underestimated.

Dr. Chittleborough's views were supported by Mr. J.C. Bowes, Chairman of the Rock Lobster Crayfish Development Association. Mr. Bowes expressed the view that some so-called amateurs were pseudo-professionals and could endanger the livelihood of professional fishermen.

The necessity for these laws, and the severe penalties associated with them, cannot be ignored. They were introduced by the Government, acting in the interests of a vital, but vulnerable, multi-million dollar industry. They received the sanction of Parliament and are being administered in the best interests of the whole community.

While it is extremely unfortunate that a few amateur fishermen have been caught, it must be recognised that the law must be applied equally to all.

Inspectors should endeavour to see that every amateur acquaints himself with the rules governing the industry. They are basic and should not prove difficult to anyone.

- * Hold a current Amateur Fisherman's License.
- * Paint this current license number on his pot floats.
- * Fit his two pots with escape gaps.
- * Avoid close waters.
- * Take only legal size crayfish.

If he does this he has nothing to fear from the Department.

TUNA SURVEY

The survey flight schedule for January 14-18 (Survey II) was cancelled due to a cyclone in northern areas. The survey was terminated at Port Hedland. The rough weather made sightings poor and only bait fish were seen. 120 schools were seen on the western side of Shark Bay.

Survey III was run during the period January 31 to February 8. The large run-off of water after the cyclone made coastal waters extremely muddy and the water offshore, to the edge of the continental shelf, was of a milky green colour. A temperature inversion with an associated cloud layer of approximately 4,000 feet in thickness, with the base at 800 feet - at times at sea level - was found along the edge of the continental shelf in the North-West. This made tracking difficult.

Fish sighted ranged from an estimated 10 lb. to greater than 60 lb. The following tables summarise the results of the flights.

Table I.

Area	Outward Flight			Inward Flight			Area
	No. of Schools sighted			No. of Schools sighted			
	Small	Medium	Large	Small	Medium	Large	
Perth-Carnarvon	14	5	-	1	5	-	Derby-Broome
Carnarvon-Onslow	5	3	1	6	10	2	Broome-Port Hedland
Onslow-Port Hedland	29	14	9	6	-	-	Pt. Hedland-Carnarvon
Port Hedland-Broome	2	9	2	-	1	-	Carnarvon-Perth
Broome-Derby	1	-					
TOTALS	51	31	12	13	16	2	

Baitfish - 286 schools.

Table 2.

* Small - under 15 lb.
Medium - 15-40 lb.
Large - over 40 lb.

* Fish Size	No. of Schools		
	Small	Medium	Large
Small	40	26	3
Medium	5	31	5
Large	9	5	1
TOTALS	54	62	9

PRAWN CONFERENCE

Research Officer R.J. Slack-Smith will attend the World Scientific Conference on the Biology and Culture of Shrimps and Prawns to be held in Mexico City in June. The Premier, on the recommendation of the Minister, has approved his participation.

The Conference has been organised by the Food and Agriculture Organisation (F.A.O.) and will enable scientists from all over the world to discuss problems associated with the prawn fisheries. Mr. Slack-Smith's attendance at the conference should be of particular benefit to Western Australia in the development of our own prawn fishery.

At the conference he will present papers dealing with the prawning industry, prawn biology and mathematical modes to explain the behaviour and population dynamics of prawns in Shark Bay.

A paper will also be presented jointly with Mr. Allen Stark of the Division of Mathematical Statistics, C.S.I.R.O. This will deal with computing methods and data analysis in prawn research.

Mr. Slack-Smith is expected to be away for two months and will spend some time studying prawn research and management activities in a number of centres in Mexico, San Salvador and the United States of America.

Centres he is scheduled to visit are :-

Mexico City - The conference will occupy 12 days.

San Salvador - An inspection will be made of this area and discussions will be held with Mr. R. Ellis, who is the F.A.O./U.N.S.F. fisheries biologist in this area.

Brownsville, Texas - Brownsville is the most important prawn port in the U.S.A. Inspection will be made of prawn handling facilities and the fishing fleet.

Corpus Christi, Texas - A visit will be made to the Port Aransas marine research station and Mr. Slack-Smith will go to sea in a commercial prawn trawler.

Galveston, Texas - The U.S. Fish and Wildlife service fisheries biological research laboratory is undertaking comprehensive studies of the prawn fishery which will be of particular interest to Mr. Slack-Smith.

New Orleans, Louisiana - A visit will be made to the U.S. Fish and Wildlife Service statistical centre and marketing news office.

Pascagoula, Mississippi - The U.S. Fish and Wildlife Service exploratory fishing and gear research base is located here.

Miami, Florida - Some time will be spent at the Institute of Marine Science where important work in population dynamics and computing methods is being carried out. The biological field station, where nursery area research is being undertaken, will be visited.

INSPECTION FLIGHT

Supervising Inspector J.E. Branley and Senior Inspector Carmichael made an inspection flight of the coast between Fremantle and Geraldton and across to the Abrolhos on February 15. They were accompanied by Mr. R.E. Baker, of Head Office, who went with them as observer.

Few boats were operating, probably due to the blustery conditions near the coast. However, a few pots were seen in the closed area near the coast between Green Head to Fremantle. The numbers of boats operating near these pots were taken.

The aircraft proceeded from Geraldton out to the Abrolhos and a detailed survey was made of the waters surrounding all groups.

R.v. "Lancelin", which was en route from Shark Bay to Fremantle, was seen just off Wallabi Island. P.v. "Pelsart" had been sighted earlier patrolling the closed area along the coast.

After a brief stop over in Geraldton for discussions with Senior Inspector McLaughlan, the patrol returned to Perth along the coastal waters.

ABROLHOS SEASON

Senior Inspector Neil McLaughlan has reported that fishermen in the Geraldton area are preparing for the Abrolhos season which opens on March 15.

Some skippers have already made trips across to the islands, transporting equipment in preparation for the opening of the season.

MISS LEXIE NICHOLLS

Miss Lexie Nicholls, well known to all those concerned with our wildlife, has submitted her annual report to the Department. She has had a difficult time over the past year in caring for injured and sick birds brought to her bird hospital.

Because of the amount of time she has had to put in and the costs involved she has been compelled to cut down on her activities.

The Department is perturbed that this is necessary and appreciates that the work being done by Miss Nicholls is invaluable.

During the year she treated 646 birds, representing 67 species - a formidable list considering the difficulties under which she works.

Currently she has over 200 birds receiving care. During 1966 she was able to release over 300 birds after they had recovered their strength. One hundred and thirty birds died because of the severity of their illness or injuries.

I.U.C.N.

Mr. G.A. Kennedy, a Perth solicitor, has been nominated as a correspondent to the International Union for Conservation of Nature and Natural Resources. Mr. Kennedy, a former Rhodes Scholar, was instrumental in the preparation of the report of the Western Australian sub-committee of the Australian Academy of Science in relation to National Parks and Reserves in Western Australia. The Director (Mr. Fraser) served as a member of that committee.

BUSTARDS

A representative of a party of shooters approached a northern wheatbelt farmer recently for permission to shoot game on his land.

The farmer was quite amicable and asked what they were after.

"Ducks and turkeys", was the reply.

"In that case," said the farmer, "you had better watch out for the local Honorary Fauna Warden - he is a bit of a 'bustard' himself."

The shooter expressed his thanks for the timely warning and enquired who the Warden was.

"I am," said the farmer.

OVERSEAS VISITOR

Mr. Candido Gil Rosado, Fisheries Officer, Department of Agriculture British Honduras, has been awarded a fellowship in Fisheries by the Food and Agriculture Organisation of the United Nations. He has been in Australia since January and will remain here until mid May.

His programme included visits to Canberra, Tasmania, Victoria, South Australia, New South Wales and Western Australia. He will be in W.A. for the period March 3 - 31.

Mr. Rosado will be studying all phases of fisheries administration and research and will no doubt have a particular interest in our prawn research programme at Shark Bay, as it seems likely that a prawn fishery could develop in British Honduras along lines somewhat similar to those of the Shark Bay fishery. He is also greatly interested in our crayfisheries. He hopes to be able, as a result of his investigations in W.A., to increase the production of crayfish in his native country. At present it is only about 1,500,000 lb. annually.

EXTENSION OFFICER

The title and classification of the position of Extension Officer P.II.2/8 which was advertised several months ago, and not filled, has been amended to that of "Extension and Publicity Officer, C.II.6" and was readvertised in the Government Gazette on February 17. Applications closed on March 3 and it is hoped that the position will be filled shortly.

75 APPLICANTS

Applicants for recently advertised vacancies in the Inspection Branch have been interviewed at Head office over the past few weeks. The positions advertised were detailed in an article in the last issue of this Bulletin.

Supervising Inspector J.E. Bramley, Assistant Supervising Inspector J.E. Munro and Chief Clerk A.J. Mearns have interviewed 75 persons. Applicants will be notified individually as soon as selections have been made.

AUSTRALIAN FISHERIES DEVELOPMENT CONFERENCE

The Director, Mr. A.J. Fraser and Senior Research Officers B.K. Bowen and J.P. Robins, attended the Australian Fisheries Development Conference held in Canberra during the period February 20 - 22.

Representatives of the fishing industry in Western Australia also attended.

ANNUAL STAFF CONFERENCESYNDICATE DISCUSSIONS

Matters arising out of syndicate discussions held during the last annual staff conference were considered by a branch heads meeting and the following outlines the decisions made and action agreed upon.

1. The view that field officers should be permitted to exercise discretion in policing the Acts and Regulations within the limits of departmental policy and common sense was endorsed.
2. It was agreed that it would not be practicable to send license renewal reminders to amateur or professional fishermen. However, it was decided to insert an advertisement in the 'West Australian', which is distributed throughout the State, reminding both amateur and professional fishermen of their responsibility to renew their licenses annually. Licensing officers will be required to report their observations on the effect of this advertisement and repetition of the advertisement in future years will depend on an overall assessment of the results obtained.
3. In relation to standards of dress, it is expected that members of the field staff will dress in a suitable fashion for the work in which they are engaged. At all times clothing must be neat and clean and when dealing with the general public, a collar and tie should be worn. Shorts and stockings are permissible.
4. The question of extending the one-mile closure for crayfishing north of the 30th parallel was referred to the research branch for investigation and report.
5. It was decided that hauling for salmon, mullet, and herring during the winter months between Rous Head and the cable station at Cottesloe could not be permitted and that the present closures should stand. The closures along metropolitan beaches had been made to secure recreational facilities for the general public, and this is still an important consideration. Permission has been granted, and very likely will be granted again, for netting to be undertaken upon special request for salmon fishing during closed periods.
6. The syndicate's recommendation that the inspector in charge at Albany should be responsible for some degree of supervision at Esperance and should make an occasional patrol, but that direct control was not necessary, was endorsed.
7. It was agreed that restrictions on amateur fishermen in relation to the quantity of crabs they may take was not necessary, and a reduction in the legal minimum size for crabs taken was also not required.

8.

8. It was agreed that a serious view would be taken wherever there was evidence of wilful damage to the carapace of a crayfish for the purpose of increasing the measurable length and that although there was no penalty provided in the Act, consideration would be given to cancellation of licenses in any instance reported.

9. On balance it was thought that the inclusion of southern crayfish (Jasus lalandei) on the Second Schedule would not serve any real purpose. The quantities taken and marketed in this State was negligible.

10. It was agreed that wilful concealing of registration numbers of fishing vessels should be construed as obstruction. A final decision as to the validity of such a construction would, of course, rest with the courts.

11. It was decided that the matter of providing a toilet and a shower for use with departmental caravans would be referred to the Public Service Commissioner and the obtaining of suitable land at the various centres would be pursued with the appropriate authorities.

ALLOWANCES AGREEMENT AMENDED

Administrative Instruction No. 1/67 shows that the rates for travelling, transfer and relieving allowances have been increased. The new rates, to be applied from January 1, 1967, are :-

Clause	Item No.	Daily Rate	
		31.12.66	1.1.67
6. Travelling Expenses	1	\$6.70	\$6.95
	2	6.25	6.50
	6	7.35	7.70
8. Transfer Expenses	1	6.70	6.95
	2	6.25	6.50
10. Relieving Allowances	1	6.70	6.95
	2	6.25	6.50

STAFF NOTES

Mr. Jeff Galbraith, clerk, Head Office, left the Department on February 17 to commence studies at the University of Western Australia. He has enrolled in the Faculty of Science and will be studying toward a Bachelor of Science Degree in Agriculture. We wish him every success in his new field.

With the commencement of yet another academic year, Pat Mahoney and Kurt Ammerer have enrolled for subjects in the Associateship in Public Administration. Both hope to complete the course this year. Bob Baker is continuing his studies toward a Diploma in Accountancy. Andy Skriener will be studying a unit in statistics at the University. All are Head Office clerks.

* * * *

Two members of our Head Office staff have been asked to conduct part time lectures in Public Administration subjects at Perth Technical College this year.

Jim Mearns has been asked to conduct lectures for a class in Public Administration I, while Pat Mahoney will be lecturing two classes in office administration. Both of these officers have completed their Diploma in Public Administration.

* * * *

David I. Heald has been selected as a Cadet Research Officer in the Fisheries Branch and will be commencing studies at the University of Western Australia this year.

Mr. Heald obtained passes in English, French, German, Mathematics A, Mathematics B, Physics and Chemistry in the Leaving Certificate examinations last year.

DOLPHINS IN THE RIVER

A dolphin was sighted in Blackwall Reach recently. The sighting was made by Des Gooding, of the Agriculture Protection Board. Mr. Gooding was fishing from a small boat when the dolphin appeared, accompanied by a solitary cormorant. The dolphin stayed in the area for 20 minutes. A further sighting was made several hours later.

Inspector Hammond has reported that a school of 8 dolphins was seen in the river near Claremont. The sighting was made about the same time as that reported by Mr. Gooding.

RESEARCH SECTION ACTIVITIES

Research Officer R.C.J. Lenanton returned from Shark Bay on February 10 after a 3-weeks trip collecting data on the whiting fishery.

* * * *

Grant Clifford, Skipper, r.v. "Dampier" (Geraldton), has been transferred to the research section and will assist Research Officer R.J. Slack-Smith in the prawn research programme.

* * * *

Senior Research Officer B.K. Bowen is lamenting that he has had to resort to the use of a diary to keep track of his activities and appointments from day-to-day.

* * * *

R.v. "Lancelin" arrived back in Fremantle on February 17 after a period in Shark Bay where she was engaged in research activities.

* * * *

Mr. B.K. Bowen, Senior Research Officer, has been appointed a member of the Swan River Conservation Board. The appointment of Mr. Bowen will enable the Board to have professional advice on matters affecting marine life in the river.

* * * *

Research Officer, R.J. Slack-Smith and Cadet Peter Wood returned from Shark Bay on February 16. Their programme was interrupted by the flooding of the Gascoyne River and they were forced to move to a location 35 miles farther south.

A number of prawns was collected in the channels leading from the nursery areas and by trawling outside the channel. A number of very small prawns was collected in the latter area and it is believed that these smaller prawns were entering the nursery area.

MARRON

Honorary Inspector F. Baldisseri, of Collie, has reported that in the quarter ended December 31, two people were warned for taking marron during the close season. Other offenders were apparent but could not be found. A bag containing 35 marron was found, apparently left behind by illegal operators.

9.08 CENTS PER MILE

Everybody has different views on just how much it costs to run a vehicle. In a series of articles in "The Road Patrol" the Royal Automobile Club of W.A. (Inc.) is showing just how much it does cost.

In the third article of the series, dealing with cars from 1500cc - 2000cc and costing under \$3,000, they have detailed standing and running costs based on a usage of 10,000 miles per year for 5 years.

Of course some of the expenses shown will vary from person to person - for instance you may not necessarily pay junior \$2.50 a time for a car wash; you may be able to get out of this expense by inflicting the job as a punishment. On the other hand when junior's big brother borrows the car and (out of your sight) does a few "wheelies for the boys" your tyre costs will soar.

The costs shown are based on average expenses met by motorists and overall can be taken as a fair estimate. The rate shown in their report coincides with the mileage rate now payable to inspectors using their own vehicle.

Cars (from 1500cc to 2000cc) costing under \$3000
Cost per mile based on 10,000 miles per year for
five years.

Standing Costs

	\$
Average purchase price including tax	2500.00
License and 3rd party insurance - 1st year	61.55
Comprehensive insurance cover - 1st year	61.75
	<hr/>
Price of vehicle on the road	2623.30
License and 3rd party insurance for a further 4 years	164.20
Comprehensive insurance premiums based on 25% No Claim Bonus -	
2nd year coverage for \$1900	44.60
3rd year coverage for \$1700	42.80
4th year coverage for \$1500	41.10
5th year coverage for \$1300	39.40
Driver's license at \$3.00 per year for 5 years	15.00
R.A.C.W.A. Subscriptions at \$5.00 per year for 5 years	25.00
Garage rental at \$2.00 per week for 5 years if applicable	520.00
Interest on 75% of loan at 6% p.a. flat rate for a maximum term of 42 months	394.00
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	3909.40
Less average trade-in allowance	985.00
	<hr/>
	NETT 2924.40

Average standing cost per mile 5.85 cents
Average annual depreciation rate 17 per cent.

Running Costs

	\$
Petrol: Cost of 1725 gals. premium fuel at 29 mpg	690.00
Oil: 25 refills of 8 pints at 26c per pint	52.00
Consumed in running at 26c per pint	
1 pint per 1000 between 0-25,000 miles	6.50
2 pints per 1000 between 24-40,000 miles	7.80
3 pints per 1000 between 40-50,000 miles	7.80
Rear axle and transmission oil renewals at 10,000 mile changes, plus additional oils	6.15
Servicing: Lubricating service based on 2,000 miles average including 5,000 mile services, tyre rotations and universal joint services	115.00
Tyres: (Tubeless) 1 set at 25,000 miles per set	90.00
Repairs: Decarbonise and valve grind, including tune-up, re-tighten head and adjust tappets at 35-40,000 miles	36.75
Overhaul clutch and service pressure plate, overhaul hydraulic system, fit new mufflet and tighten exhaust system	90.75
Two brake re-lines including master cylinder and wheel cylinder repairs. Adjust hand brake	103.05
Overhaul front end including alignment and wheel balances	74.85
Tune-ups: Service points, plugs, carburettor, timing, tappets and tune engine, etc.	33.75
Parking Fees: Average meter parking at \$20.00 per year	100.00
Car Wash: 12 car washes per year at \$2.50 ea. if applicable	150.00
Misc.: 1 battery, 1 sealed beam unit, tail light globes	28.30
3 sets spark plugs, points and carburettor kits	12.70
1 set radiator hoses, radiator cap, fan belt	8.50
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	1613.90
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Average running cost per mile 3.23 cents.

Standing Costs	5.85 cents
Running Costs	3.23 cents
Total cost per mile	9.08 cents

W.A. CRAY TAILS

Western Australia's lobster catch is slightly ahead of production for the corresponding period of last season, but prices on the American market have dropped by about 15 per cent, a report from Perth stated this month.

Fishermen this year are receiving 50c to 55c lb., liveweight compared with about 65c lb. in the 1965-66 season.

According to the report the price of frozen lobster tails in the U.S. has fallen to about \$1.70 lb. and there are NO signs of prices picking up.

Managing director of W.A. Fish Filleting Pty. Ltd., Mr. Jim Bowes, said the price drop was not unexpected, considering the trend in other years and the economic situation in the U.S.

The U.S. economy was not as bright as it had been. It was reasonable to assume that prices would drop. However, they were not down to a level that would be dangerous to the industry.

He thought prices might firm slightly later in the season.

At the end of October, 1966, an unsold, surplus of 7 million lb. of lobster tails was held in U.S.A. It is believed that few Australian tails were unsold. The carryover was made up chiefly of big tails (more than 12 oz.) and the less popular warm water lobsters.

America imports lobster tails principally from Australia, New Zealand, South Africa, Brazil, Costa Rica, Nicaragua, Florida, Haiti, India, Pakistan, British Honduras, Taiwan and Thailand. It also draws tails from Iceland, Denmark and Chile.

Western Australia and South Africa supply about 25 million lb. of the 40 million lb. of lobster tails imported annually by America.

(Fish Trades Review)

January, (1967)

HYDROGRAPHY IN WESTERN AUSTRALIA

Hydrography is defined in the Oxford dictionary as the "Scientific description of the waters of the Earth", a broad field of endeavour indeed. However, by usage it has come to apply particularly to the charting of the sea, coastlines, rivers, estuaries and ports for the safety of shipping, coastal engineering and the fishing industry.

In Western Australia the history of hydrography dated back to before the First Settlement.

The very early explorers were seldom surveyors in the strict scientific sense, but in the period 1791-1827 both Britain and France sent well equipped expeditions and delineated the coastline of the whole continent before this State was founded.

Many landmarks are memorial to early hydrographic surveyors, captains and their vessels. Vancouver, Hamelin, Freycinet, Flinders, King and Discovery, Geographe, Naturaliste, Casuarina, Investigator, Bathurst and Success. When the colony was founded several important posts were filled from their ranks, notably that of the first Surveyor General, John Septimus Roe.

These early surveyors covered a tremendous amount of ground considering the means available to them and their instruments - compass, sextant, chronometer, lead and line and a good lookout.

After the settlement of W.A. in 1829 there was considerable activity around the coast, as the surveying ships H.M.S. "Herald" and "Beagle" continued the work.

In 1880 the W.A. Government and the Admiralty together purchased a 56 foot cutter, the "Meda" for survey work. A steamer "Cushie Do" was chartered for a short period. The Admiralty gave further assistance before the turn of the century by sending H.M. Surveying Ships "Myrmidon", "Rambler" and "Penguin" to the N.W. coast and later the "Penguin" and "Waterwitch" to Esperance.

Fifteen feet was the average draft for large sailing ships but by the end of the Nineteenth Century, steamships were drawing twenty-four feet and more. Shipping lanes considered clear by early surveys were found to contain dangers to larger draft vessels. All too often these were discovered the hard way.

The gold rush started an extensive programme of harbour construction and contract surveyors were employed for a time.

The last R.N. ship active on the W.A. Coast before World War I was H.M.S. "Fantome". After the war the Australian Government commissioned H.M.A.S. "Geranium" for survey work. This work was later taken over by the R.A.N. and generally integrated with the Navy.

Between World Wars I and II little work was done and during the depression years harbour authorities were unable to keep up their hydrographic establishments.

Following the second World War the R.A.N. carried out extensive surveys on the N.W. coast and the P.W.D. leased a 350 ton vessel, M.V. "Gunga Din" from the Navy. This vessel is currently undergoing a refit and is being equipped with the latest equipment. Electronic position fixing, special survey sounders, radar, automatic pilot, autotrack plotters, lane tracking devices V.H.F. and H.F. radio and other aids now in use are a far cry from the instruments used by our early hydrographic surveyors.

R.A.N. ships have made a return to local waters. The new H.M.A.S. "Moresby" and her tenders have been engaged in survey work in the N.W. for outer approaches to the N.W. ore ports.

The future is certain to bring bigger vessels. Ships drawing 35 feet already visit our shores and this will be shortly increased to 50 feet.

As shipping develops so the scope and accuracy of our charts must develop.

(Condensed from an article written by Captain D.P. Piggford, R.D., M.I.N., A.I.S. (Aust), Master Mariner, Hydrographic Surveyor, Marine Surveyor, Licensed Pilot for the publication "Cartography in Western Australia", produced by the Institute of Cartographers of Western Australia (Inc.)).

CAR FISHED

A South Devon fisherman had to pay \$200 for repairs to his net after having netted a car body near Start Bay, Brixham. In England it is an offence to dump car bodies within the 3-mile limit and offenders risk prosecution.

(Fishing News

England

December 23, 1966)

AUSTRALIAN FISHERIES MAP

Fewer than 200 of more than 2,000 Australian seafish are commercially exploited. Despite Australia's continental size, fishing forms only 0.2 per cent of national output, while its imports of fish form some 77 per cent of animal food imports. Indeed, its first 'fishing' industry was for whales in 1803. Biological data, chiefly for the southern continental shelf, is not yet very extensive; but the industry is not without some natural handicaps to its expansion effort.

Australia has relatively few good natural harbours while sandbars cross many estuaries. Beyond its shallow shelf-waters, zooplankton is relatively poor, excepting for occasional outbursts which attract pelagic fish. Chemically rich waters to the south are too disturbed for many fish. East and west the seas are too stable for chemical richness. Its flatfish are small, true cods form only a minor catch, it lacks ganoids, and despite its 'whitebait' (*Lovettia*) and some smelts, there are no true salmons and trouts, though its canning industry exports sea-perch labelled 'Australian salmon'.

The major fisheries are for mullet (over nine per cent of the catch), tuna (seven per cent) and sea-perch (6.5 per cent), crustaceans are chiefly crayfish or crawfish (23 per cent) and prawns (five per cent), and shellfish are rock-oysters (nine per cent), scallops (five per cent) and recently abalone.

Research and development continue to expand, and a recently published mapsheet with section reproduction shows the concentration in the south-east and south-west, as well as the physical setting of the fisheries, tidal ranges and the continental shelf. The 20-page commentary accompanying the 71 miles-to-an-inch map shows how the future of the industry lies in the present efforts to expand the tuna fishery and raise production in unexploited fisheries like jack-mackerel, pilchard, anchovy, snoek and abalone as well as oyster-farming (as is being done in New South Wales) and the increase of pearl-shell culture.

More exploratory fishing is required to improve the knowledge of water-masses for comparison with those of ecological similarity supporting commercial fisheries in other parts of the world, and to find more prawlable areas of the seabed. Conservation may be necessary for overfished crayfish, schoolshark and tiger flathead.

There is also a need to complete publication of Ian Munro's authoritative Handbook of Australian Fishes which began serialization in 1956 and has not been continued since about half-way through, in 1961.

(Fishing News International

England

January 1967).

FRIONOR'S RECORD YEAR

Frionor, the marketing organisation set up to handle Norway's huge fish harvest, sold 58,000 tons of fish products in the year to June 30, 1966 - the highest turnover ever. Approximately 85 per cent of the sales were to export markets. In the first half of the current financial year, catches were up in Norway so that new sales records seem certain by June, 1967.

Frionor (Norwegian Frozen Fish Ltd.) is a publicly owned combine whose shares are held mainly by the 115 fishermen's co-operatives or firms which process and pack fish, and also by an insurance group and a private bank.

The Norwegian Government has no financial interest in the organisation but has absolute powers in the direction and control of all fish products.

Fishing is Norway's main industry and fish exports the nation's life-blood. The industry, despite the privately operated marketing machine, is strictly disciplined.

Fishermen are not free to dispose of their catches where they fancy but must do as they are told. This is to ensure that only the top-quality fish is exported and to enable premium prices to be maintained on overseas markets.

One of the big features of the Norwegian setup is that all products are marketed under a single brand. This has paid off in customer confidence. Frionor and quality have become synonymous wherever Norwegian fish is sold.

The Frionor group has associated, and subsidiary, companies in a number of countries including Australia.

For many years, the U.S.A. followed by Sweden was the principal market for Frionor fish. England, however, has now become Norway's best customer with Sweden running the U.S.A. a close second. Bigger sales are also being made to Iron Curtain countries, principally Finland, Russia, Czechoslovakia and Hungary.

News comes now from Frionor's headquarters, in Oslo, that since the visit last year of the organisation's chairman to Australia, sales of consumer packs are leaping ahead.

The grocery trade, which is taking a bigger slice of frozen food sales from fish merchants, butchers and greengrocers, is credited with the boom in Frionor consumer packs.

One interesting development is reported from the U.S.A. where the new fish finger plant commenced production in 1965, at New Bedford, Massachusetts. This plant is one of the most advanced production lines for pre-cooked fish products in the U.S.A., to which all supplies are shipped directly by the Norwegian shipping line of Wilhelm Wilhelmseon.

Frionor sends frozen fish to U.S.A. already processed and in huge blocks. The product is cut into required sizes and packed by American labour.

(Fish Trades Review

January 1967).

ARTIFICIAL REEFS

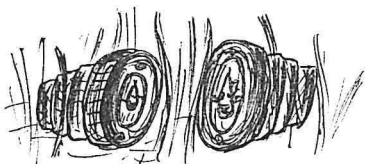
The Department has obtained a copy of a report on artificial reefs. The report originally formed part of a thesis by Iris Unger for the Department of Natural Resources Columbia University.

The report reviews the activities of various countries, in this field.

Car bodies were utilised in a number of places and a systematic check kept on fish populations during the experiments. However, with car bodies it was found that they rusted away, in most circumstances, within 9 years. Other groups have experimented with reject concrete pipes, coarse building rubble, oyster shells and rock - all with varying, but significant, success. Scrapped tramcar bodies were even used in California. This latter area was transformed from a barren sandy bottomed waste to a popular fishing spot within two years. However, as was expected, marine borers eventually took their toll on the wooden tramcar bodies.

Specially cast concrete "boxes" have been used with success, however costs have proved to be restrictive. Another test involved the use of used motor tyres bolted together and loaded at the bottom with concrete. They proved most effective, becoming barnacle encrusted and encouraging seaweed growth. Fishing improved considerably.

The report indicated that the effect of artificial reefs was to increase the fishing potential, but that costs were a substantial barrier to be overcome.



NATURE AND INDUSTRY

Until the Florida Power and Light Company bought Turkey Point in 1964 it was a desolate expanse of sun-cracked mud and mangrove thickets steaming in the sun, supporting little wildlife.

Today Turkey Point can be reached easily by car and by canoe. Where once mud oozed along the edge of Biscayne Bay, there is now a dazzling, white sand beach and blue lagoon, inviting to the swimmer. A boardwalk meanders into the mangroves, and there are miles of canoe-ways. There is now a Boy Scout camp, a picnic ground, an archery range and a laboratory for the Institute of Marine Science. All this and a power station too. But with all this the wilderness has only been slightly tamed, if at all.

Terns nest on some of the white rock roads causing the power station vehicles to crawl around them or take alternative routes. Tarpon splash in the man-made canals as they do in the river. Heron wade the sandy shallows and Ibis flutter in the tall grass. There are crocodiles and osprey.

When construction commenced, rock-fill was necessary for foundations and truck loads of sand rumbled in. The idea of spreading the sand to form a beach grew. The workmen began feeding the birds that frequented the area. When the terns began using the new road as nest building sites, the construction boss closed part of the road to protect them. Weeds were encouraged to grow on unused land on the site and sunflower and coconuts were planted. Wildlife was given every encouragement.

Today Turkey Point is the country's largest and most primitive wildlife preserve and bird sanctuary. Fauna is ever on the increase.

The visitor to the Point will find the power station the focus of the area, its stacks towering 400 feet into the sky. But it is surrounded by interlacing canals, green mangroves and white sand.

An incomplete list of fauna includes:-

Willet, pelican, gulls, tern, woodstark, white ibis, egret, heron, anhinga, roseate, spoonbill, limpkin, osprey and several species of duck. There are crocodile, turtle and lizard and raccoon, bobcat and otter. Fish include: shark, barracuda, mullet, tarpon, yellowtail, red snapper, grunt, grouper, needlefish, shrimp, crawfish, crab and snook.

Turkey Point is regarded as living proof that industry can be a creator, not a destroyer, of natural beauty.

(Florida Wildlife

December 1966).

PUSHED OUT BY NEW LIMITS

More than 160 foreign trawlers now operating on the herring fishing grounds off the south-east coast of Ireland, and affected by the new Irish fishing limits which have now come into force.

Previously all these vessels had been operating to within three miles of the recognised Irish base line. Now, with certain exceptions, it is illegal for them to fish within 12 miles of the base line. The exceptions are trawlers from Britain, France, Belgium, Spain, Holland and West Germany, which have traditionally fished off the Irish coast.

The bulk of trawlers now making big herring catches in the area are Dutch and West German. About 25 Polish and East German vessels are now prohibited from fishing within 12 miles of the Irish base line, as they had not traditionally fished off the Irish coast.

(Fishing News

London

January 13, 1967)

TEST BOATS HAVE SEACRETE HULLS

Three experimental fishing boats made from Seacrete are to go to Africa where they will be used as trawlers off Mombasa by a subsidiary of the Ross Group. The order for the vessel was placed by the Kenya Inshore Fisheries Ltd. with the Wroxham, Norfolk, boatyard which developed the use of Seacrete for boat hulls.

Windboats Ltd., builders of the vessel, say they will be the first fishing craft to be equipped with Seacrete hulls. Built at a cost of £2,200 each, they consist only of the basic hull and engines, and are to be fitted out in Africa.

Powered by 35 hp diesel engines, the boats have been specially designed with a beam of 13 ft. - unusually wide for the overall length of 30ft. - to test the potential of fishing in the area. The boats have a draught of 3 ft., and the top speed of seven knots.

The Ross Group chose Seacrete for their experiments because of its relatively low cost, its ability to withstand extremes of temperature and tropical marine borers, and the fact that it requires little or no maintenance.

It is the second African order for a Seacrete craft to be completed by Windboats Ltd. Last year they built a riot squad launch for the Nigerian police. The Norfolk firm has already built many cruisers from Seacrete, some for their own Broads Hire fleet, and others commercially.

(Fishing News

London

January 13, 1967)