1944

NEW ZEALAND

MARINE DEPARTMENT

ANNUAL REPORT FOR THE YEAR 1943–44

Presented to both Houses of the General Assembly by Command of His Excellency

Marine Department, Wellington, 30th June, 1944.

YOUR EXCELLENCY,—

I do myself the honour to transmit for Your Excellency's information the report of the Marine Department for the financial year ended the 31st March last.

I have, &c.,
J. O'BRIEN,
Minister of Marine.

His Excellency the Governor-General of the Dominion of New Zealand.

REPORT

THE SECRETARY, MARINE DEPARTMENT, to the HON. the MINISTER OF MARINE.

SIR,— Marine Department, Wellington, 9th June, 1944.

I have the honour to submit the annual report on the activities of the Marine Department for the year ended 31st March, 1944.

The revenue of the minor ports in the Dominion has suffered as a reaction to centralization of shipping, particularly that from overseas, in the four main ports. Recognizing this, Government considered it desirable to render financial assistance to those Harbour Boards whose revenue had been directly affected by war conditions. The Boards themselves have also reacted by dispensing with, or deferring, capital expenditure and by reducing maintenance-costs to a minimum in the meanwhile. Several Harbour Boards received assistance during the past year, and this coming year will no doubt necessitate similar assistance on a greater scale.

The comfort in port of our New Zealand seamen and of British seamen has received the utmost consideration of appropriate authorities, as also has the rehabilitation of New Zealand seamen employed under the British Ministry of Shipping or any other spheres of the Mercantile Marine. The exigencies of war on the sea have also made it necessary for the Department to undertake the repatriation of British seamen who have met with mishap in this quarter of the globe. The co-operation of the shipping companies in arranging this has been most praiseworthy.

Our lighthouses continue to function as necessary units for navigational aids and also for express war purposes, the personnel at the stations having carried out during the war years a most important duty without complaint as to their isolation or the long hours entailed in these extra duties. Where possible the Department has continued with the programme of improving the amenities at light stations, including the provision of better mail-services and improved access. In many cases road access has had to be provided due to the transfer of the Department's lighthouse vessel to other important duties.

NAUTICAL

The adjustment of compasses, particularly during the war years, has continued to be an important function of the Department and the extraordinary demand for Admiralty charts has been met by the provision of photostat copies in cases where the demand for charts from the United Kingdom has at times exceeded the supply.

During the year the Department took over the School for Navigation at Auckland, previously carried on by Captain Keane in a private capacity, this officer having been seconded for other duties. The advantages of a Government school are threefold in that it ensures a continuity of competent

officers progressing from grade to grade, and gives an opportunity for members of crews to improve their studies and eventually sitting for certificates for officered rank and also provides an avenue for rehabilitating men of the services who have previously been employed on the sea or have expressed a liking therefor on their return from active service.

The forty-second edition of the "New Zealand Nautical Almanac and Tide Tables" was published again on the due date, the breaking of the publication into two parts, which was given effect to last year, proving in no way an inconvenience to mariners. The abnormal shipping activity in our ports during the past year has brought about an increased sale of this publication. Notices to mariners, so necessary under wartime conditions, were published as required during the year, and our shipping officers in the various ports have maintained an excellent service to shipping in general by assisting in the provision of crews when necessary, and particularly when required urgently, by providing for immediate return of personnel to their home ports, the provision of pocket-money to British seamen awaiting transport back to their homes, and generally by ensuring that any member of the Merchant Marine in any matter at all is dealt with expeditiously, particularly those who have met with the misfortunes of war.

Prosecutions

Prosecutions instituted under various statutes of the Department during the year amounted to 20 cases, of which 14 were concerned with breaches of the Fisheries Act, 1 of the Inspection of Machinery Act, and 5 in reference to the Shipping and Seamen Act.

Sick and Injured Seamen

The total amount paid by shipowners to sick and injured seamen under the provisions of the Shipping and Seamen Act, 1908, and amendments, was £15,064, as against £15,583 for the previous year.

Registration of Shipping

As at 31st December, 1943, there were on the register of vessels in the Dominion 45 sailing-vessels of 3,553 net tons register, 130 steamers of 62,264 net tons register, and 280 motor-vessels of 18,342 net tons register, as compared with 45 sailing-vessels of 3,553 net tons register, 134 steamers of 70,426 net tons register, and 295 motor-vessels of 19,197 net tons register at the end of the previous year. The number of seamen employed on board was 2,506, as compared with 2,585 for the year 1942.

Harbours

The Department has continued to control the harbours at Westport, Picton, and Dargaville.

At Picton a satisfactory service has been maintained, and work there has been added to by the maintenance of lights in the Cook Strait area, which at times has to be carried out under fairly hazardous conditions. At Dargaville also our staff have maintained the harbour services, including the replenishment of navigation lights.

At Westport early in the year, due to the absence of freshes in the river and predominating westerly weather, there was an appreciable increase in retrogression in working depths at the entrance. In May, 1943, a depth of 18 ft. was, except for 17 ft. 7 in. in March, 1934, the poorest for any month for many many years. By early June improvement in bar depth was being effected as a result of continued dredging on the bar when practicable, and in an effort to maintain a satisfactory depth the dredge "Rubi Seddon" was reconditioned with a view to this dredge and the "Eileen Ward" being employed on the shoaling at the entrance, and it is pleasing to report that at the close of the year the satisfactory depth of 13 ft. at low water had been achieved.

It must be remembered that spells of dry and bad weather have an adverse effect on the bars of river harbours, but serious consideration is being given to the question of substantial improvement to Westport and Greymouth Harbours, upon the efficient working of which our North Island railways and industries largely depend. There were two distinct adverse periods during the past year where a continuance of bad conditions for a few more days would have meant retarding industry at a critical war period, and the Department has arranged for an inspection and report by Mr. F. W. Furkert, an eminent harbour engineer, with a view to steps being taken, particularly at Westport, to ensure normal inwards and outwards coal traffic for the future. This may well mean increased expenditure, which it is hoped will be more than justified by the results obtained. The main export item from Westport is, of course, coal, which showed a reduction in the past year compared with the four previous years, the figures being as follows:—

	Shipments. Tons.
1939-40	408,380
1940-41	486,960
1941-42	487,450
1942-43	446,500
1943-44	401,370

For portions of the year when Greymouth bar was unworkable the coal was railed to Westport for shipment, and it is interesting to note that, notwithstanding this, the coal shipments from Greymouth were 28,600 tons in excess of the previous year as against a decrease of 45,130 tons in the case of Westport. Bunkering trade has been almost negligible due to the phosphate-vessels being off this run. Dredging operations for the year amounted to 675,180 cubic yards an increase of 125,200 cubic yards on the previous year. The bucket dredger "Maui," which had been released for urgent defence work elsewhere at the end of the previous year, was returned for her normal pursuits during the year.

Examination of Masters and Mates

During the year examinations were held in Auckland and Wellington on the scheduled dates. Examinations were also held in Wellington at other irregular dates to meet the convenience of candidates who, under present conditions, were unable to present themselves on the scheduled dates.

Examinations were conducted in a satisfactory manner and, in the case of foreign-going certificates, in accordance with the requirements of the Imperial Ministry of Shipping. Seventy-five examinations were held during the year, the percentage of foreign-going and home-trade certificates being as follows :—

	Per Cent.
Foreign-going—	
Full pass	47·8
Partial Pass	28·3
Failure	23·9
Home-trade—	
Full Pass	68·0
Partial Pass	12·0
Failure	20·0

Examination of Marine Engineers

During the year 236 candidates were examined for Marine Engineers' Certificates of Competency at the various centres throughout the Dominion. Of these, 109 candidates sat for Certificates of Imperial Validity, 63 for Certificates of New Zealand Validity, the remaining 64 candidates being examined for River Engineer and Restricted Limits and P.V.O.S. Certificates of Competency.

Shipbuilding

A section of the Department known as the Shipbuilding Division has been responsible for the construction of wartime vessels for New Zealand purposes and for our Allies. For obvious reasons details cannot be published at this juncture, but suffice it to say that shipbuilding has been a splendid wartime achievement of New Zealand and that our organization and product have met with the commendation of competent judges from other countries. Over seventy vessels of various types have been completed since the war began.

Ship Repairs Costing Service

With most of the British vessels under the control of the Ministry of War Transport, and similarly the American vessels under the control of the War Shipping Administration, it was deemed expedient during the year to put into operation an organization known as the Ship Repairs Costing Service to ensure adequate supervision and recording of ship repairs throughout New Zealand, particularly those for vessels owned by Government or for which Government was responsible for payment of costs. This service is also available to private owners, some of whom have taken advantage of it.

Staff

The whole staff of the Marine Department has reacted most satisfactorily to the increased burden imposed on it by the wartime conditions. Such burden is increasing as time progresses. I would particularly mention those who, though over the normal retiring-age, have uncomplainingly carried on. It is interesting to note that voluntary deductions from salaries from the staff of the Department towards the National Patriotic Fund have amounted to approximately £800 to date.

Examination of Land Engineers, Engine-drivers, and Electric-tram Drivers

These examinations were held during the year at the various offices of Inspectors of Machinery at the regular intervals provided for in the regulations. The total number of candidates examined was 406, of which 310 were successful.

Survey of Ships

Survey certificates were issued during the year for 8 foreign-going motor-ships, 1 foreign-going sailing-ship, 6 foreign-going steamships, 45 home-trade motor-ships, 43 home-trade steamships, 42 restricted-limits steamships, and 206 restricted-limits motor-ships and launches. Equipment certificates were also issued for 6 foreign-going-classed cargo-ships, 1 foreign-going-classed sailing-ship, 16 home-trade-classed cargo-ships, and 1 restricted-limits-classed cargo-ship. The total number of survey and equipment certificates issued was 374, against 423 survey certificates issued last year.

In addition to the annual surveys for survey and equipment certificates, 219 seaworthiness, efficiency, tonnage, radio-telegraphy, and other surveys were made during the year. Twenty-nine of these surveys were made to overseas ships not registered or normally surveyed in the Dominion.

The Shipping Survey and Deck Cargo Emergency Regulations, issued on 31st August, 1943, provide that a cargo-ship which holds a valid certificate of an approved classification society, such as Lloyds Register of Shipping, may proceed to sea without having a Certificate of Survey under Part IV of the Shipping and Seamen Act. The regulations require, however, that the owner of such a ship shall at least once a year cause a survey to be made by a Surveyor of Ships of the external hull and underwater fittings, the life-saving and fire-extinguishing appliances, compasses and other navigational equipment, boilers, steering-gear and cargo gear, and propelling and other machinery while the machinery is being operated. On completion of the annual survey of the equipment an equipment certificate, which states the limits within which the ship may ply, the number of crew, the number of passengers, if any, and the amount of equipment provided, is issued.

Subject to accommodation being available and the necessary life-saving appliances being provided, a foreign-going-classed cargo-ship may carry up to twelve passengers. A classed cargo-ship operating in the home trade cannot carry passengers.

The regulations allow a more flexible survey in regard to time and place than the annual survey of Part IV of the Act. A portion of a survey may be made abroad by the classification society, and on the whole it is considered that the regulations will provide for minimum delay which, during the present shortage of tonnage, is to be desired.

Further attention has been given during the year to the development of additional precautionary and life-saving measures for the protection of seamen and ships. The provisions follow closely those of the Ministry of War Transport, London. Arrangements were made by the Ministry at the outbreak of hostilities to obtain all possible information regarding casualties resulting from enemy action, and a close study of this information has been made to ascertain in what respect peacetime safety arrangements and equipment were insufficient for war conditions. By this means problems of safety in ships, due to war conditions, have been considered as they have arisen, and measures have been developed to cope with them.

Careful consideration has been given to ships which proceed overseas. Every seaman in this class of ship is now provided with a protective suit made of tough, light, rubberized material specially manufactured for the purpose. It is intended for use in a lifeboat or on a raft and will keep the wearer dry and warm in the most adverse conditions. All lifeboats are provided with a set of charts, a protractor, pencil, rubber, and paper in a waterproof wallet. The charts cover the navigable globe and give much useful information and guidance, including simple hints on navigation. All overseas ships are now equipped with portable wireless transmitting and receiving apparatus for use in lifeboats. One lifeboat on each side of the ship is rigged with a topmast and aerial for transmission purposes, and the wireless apparatus is stored in a convenient place on deck from where it can be readily transferred to a boat if the ship must be abandoned. Both transmitter and receiver are packed in handy watertight cases, which will float if they must be dropped overboard when being transferred to a boat. The transmitter will send distress signals automatically. The receiver may be used as an aid to navigation by taking bearings. The portable wireless apparatus may also be used on board if all the ship's apparatus is put out of action. Portable petrol-driven power-pumps have been placed on board foreign-going ships. They are intended for use when the ship's normal fire-fighting water service is put out of action. This type of pump was effectively used recently for saving a ship in New Zealand waters when a fire in the engine-room stopped the use of the ordinary fire-pumps. Portable electric drilling-machines for drilling holes in decks and bulkheads to provide means of access to fires are being distributed to overseas ships. Orders placed in the United Kingdom for additional life-saving equipment include motor-engines for lifeboats and hand distress rockets for lifeboats and rafts.

Inspection of Machinery

Boilers

The following statement shows the number of inspections of fired boilers, unfired pressure vessels, and air receivers made during the year with the corresponding figures for the previous year shown in parentheses :—

Fired boilers	4,600	(4,363)
Unfired steam-pressure vessels	6,319	(5,363)
Air receivers	3,228	(2,762)
Total inspections	14,147	(12,488)

The inspections include 112 new power-boilers, aggregating 3,950 horse-power, manufactured in the Dominion, and 23 new power-boilers, aggregating 1,059 horse-power, imported from abroad. They also include 798 new steam-pressure vessels and 47 new air-receivers manufactured in the Dominion and 46 new steam-pressure vessels and 8 new air-receivers imported from overseas.

Machinery

The following statement shows the number of machines, machinery plants, lifts, cranes, hoists, and tractors inspected during the year, with the corresponding figures for the previous year shown in parentheses :—

Machines not driven by steam-power in 10,815 (10,392) plants	82,760	(77,752)
Machines driven by steam-power in 1,825 (1,777) plants	9,595	(9,322)
Electric-supply stations	109	(102)
Lifts	3,470	(3,364)
Cranes	545	(539)
Hoists	1,768	(1,675)
Tractors	353	(359)
Total machinery inspections	98,600	(93,113)

The number of machinery inspections made during the year shows an increase of 5,487 inspections over the previous year. Included in the inspections are 32 lifts and 30 power-cranes inspected for the first time.

The number of accidents reported during the year in connection with boilers, cranes, lifts, hoists, and general machinery inspected by the Department was 124, of which 6 were fatal and 118 non-fatal. These figures compare with 9 fatal and 138 non-fatal accidents reported during the previous year. The cause and circumstances of every accident were fully investigated by the District Inspector of Machinery as soon as possible after the accident occurred and all practicable steps taken to eliminate hazards and to introduce new safeguards or improve the existing safeguards of the machine or plant concerned. The safeguards of similar machines were also looked into and improvements made where possible.

Many of the machines with which accidents occurred were fully guarded, and the accidents can only be attributed to lack of care, inattention to the work in hand, incorrect clothing, and other personal factors which, it is considered, can only be corrected by educational methods. In this connection the safety poster has high educational value and is regarded as one of the most important means, next to mechanical safeguards, that can be adopted for the prevention of accidents.

It was decided during the year to proceed with a safety-poster campaign, and for this purpose twenty-five attractive posters, each with a different appeal or lesson, have been printed. It is intended to display one type of poster each week in the larger factories, and the number available will provide a weekly display for about six months without repetition. They will be displayed at selected points most frequented by workers, such as time and pay offices, store and cloak rooms, and canteens, and, in the case of a poster dealing with a special hazard of a machine or process, at or near the machine or process where the work is being carried on. It is considered that by showing one poster for a short period the lesson is reimposed on the mind and more likely to be retained, whereas a number of different posters displayed at the same time is likely to create a muddled impression. The managers of the larger factories have been interviewed and their co-operation sought. The reaction has been very favourable, and it is considered that the safety-poster campaign for the prevention of accidents will prove well worth while.

Two of the six fatal accidents of the year were concerned with lifts certificated for the carriage of goods only and not for the carriage of persons. In one case a workman was riding with the load in the lift car and met his death when the load fouled the enclosure and threw him to the side, where he was crushed between the car and the building. One fatal accident occurred when a workman attempted the dangerous practice of putting a belt on running machinery. The other three fatalities occurred with a haulage winch in a shipyard, a dredge screen, and a sawmilling circular saw. In the latter case the safeguards which were provided had been removed from the saw.

The number of non-fatal accidents reported during the year (118), was less than last year and also less than the average for the preceding five years. The number of plants and machines in operation exceed that of other years, and under wartime conditions, when many of the workers are young and inexperienced and many are working long hours under strain, an appreciable increase in the number might be expected. Eighteen of the accidents occurred with circular saws, 12 with planing-machines, and 11 with power-presses. The number of saw and power-press accidents, although a little less than usual, is still high. The safeguarding of these machines receives particular attention, and the hazards connected with them are stressed by the display of safety posters. Thirty-four out of the total of 124 accidents occurred in the woodworking industry.

The following table shows the number of accidents, both fatal and non-fatal, which occurred during the year. The various machines at which the majority of the accidents occurred are mentioned, together with the leading industries in which they are engaged.

ACCIDENTS, 1943–44

Industries

Machines.	Sawmilling and Woodworking.	Textile.	Refrigerating.	Printing.	Metal-working and Engineering.	Laundry.	Butchery.	Confectionery and Baking.	Boxmaking.	Other Industries.	Total (Machines).
Circular saws	15	..	1	..	..	..	..	..	..	2	18
Planers	10	1	..	..	1	..	..	..	..	..	12
Shapers and moulders ..	1	..	..	..	..	..	..	..	..	..	1
Power-presses	1	..	..	..	9	..	..	1	..	..	11
Guillotines	..	..	..	..	..	..	..	..	..	2	2
Laundry machinery ..	..	..	..	..	..	2	..	..	..	..	2
Cranes and hoists ..	..	..	1	..	2	..	..	1	..	2	6
Lifts	..	1	1	..	1	..	..	..	..	4	7
Belting	..	1	..	..	..	..	..	..	..	1	2
Shafting	2	..	..	..	..	..	..	..	..	..	2
Gearing	..	..	..	..	..	..	..	..	..	2	2
Mincers	..	..	1	..	..	..	2	..	..	..	3
Other machines	5	3	5	3	8	..	..	4	3	25	56
Total (industries) ..	34	6	9	3	21	2	2	6	3	38	124

NEW ZEALAND STANDARDS

The Department was represented on the Executive Committee of the Standards Council, the Mechanical Engineering Divisional Committee, the Fire-extinguishing Sub-committee, and the Rot Proofing Committee of the New Zealand Standards Institute, and meetings were attended throughout the year. A number of specifications and war emergency specifications were examined and written comments furnished.

General Harbour Regulations

The number of accidents to persons engaged in loading or unloading or repairing ships, together with the failures of gear used in loading or discharging ships, notified under Regulation 103 of the General Harbour Regulations was 270, of which 2 were fatal accidents.

The following is a classification of the accidents and failures:—

Handling goods	101
Persons slipping or falling	49
Persons struck by falling or swinging load	61
Persons stepping on or striking fixed objects	3
Contact with power-driven machinery	4
Failures of gear	30
Not otherwise classified	22
Total	270

Fisheries

An abridged report on the working of the Fisheries Branch of the Department follows hereon.

I have, &c.,
W. C. Smith, for Secretary.

REPORT ON FISHERIES FOR THE YEAR ENDED 31st MARCH, 1944

Fishery production for the year is summarized in the following statement giving total quantities and values of the main classes of fish, &c., marketed:—

	Quantity.	Value. £
Wet fish	294,445 cwt.	489,268
Whitebait	5,002 cwt.	42,011
Oysters—		
Dredged	73,119 sacks	54,839
Rock	5,828 sacks	8,742
Mussels	16,741 sacks	5,771
Crayfish	10,849 cwt.	17,344
Toheroa (canned products)	103,819 lb.	4,468
Whale-oil	630 tons	13,000
Quinnat salmon (taken by selling-licensees):—		
By eleven rods	1,398 lb.	140
By one net	423 lb.	
Total values		£635,583

The total value for all fishery products shows a substantial rise from last year's total of £580,553*.

The total quantity of wet fish landed is 17,526 cwt. below last year's total. Its value, however, reaches a higher figure—£489,268, compared with £442,976 for 1942–43.

Of other classes, whitebait alone shows a substantial rise from the previous season's total of 1,370 cwt. (revised figure). The quantity of oysters produced was very slightly below that of last year for each class, rock oysters marketed being 22 sacks and dredge oysters 119 sacks below the 1942–43 totals. The differences shown in other classes are: mussels 2,985 sacks, crayfish 2,061 cwt., and quinnat salmon 963 lb. below the previous year's totals.

Fishing Vessels and Personnel

The number of licensed fishing-vessels operating was 751, an increase on last year's figure of 725. Eight steamers and 98 motor-vessels engaged in trawling, 52 motor-vessels operated the Danish seine, while 433 motor-vessels and 71 dinghies fished with nets and lines. Six oil-engined and 3 steam-vessels engaged in oyster-dredging and 3 motor-vessels in mussel-dredging, and the total number of boats employed for crayfishing was 102.

Fishermen engaged continuously in the industry number 856, with 638 part-time workers. Besides these, the industry (exclusive of retailers) gave full employment to 322 other workers and part-time employment to 116. Particulars for the several ports are given in Table I.

Fish Landings

Total landings of the main categories are shown for the various ports in Table II.

Of the total fish marketed, snapper comes easily first, providing 100,542 cwt., or 34·15 per cent. of the whole, and 25·1 per cent. of the total value. Next come tarakihi (29,311 cwt. = 9·96 per cent.) and groper or hapuka (22,144 cwt. = 7·52 per cent.). The statistically very unsatisfactory class termed "mixed round fish" represents 7·02 per cent. of the total, and presumably contains a large proportion of tarakihi and gurnard. Flounders constitute 6·42 per cent., soles 5·09 per cent., and "mixed flats" (another unsatisfactory class made up of a mixture of different species of flounders and soles) constitute 1·63 per cent. of the total.

The total quantity of snapper has increased over last year's figure of 94,300 cwt., which represented 30·22 per cent. of the whole landings. Tarakihi landings have appreciably declined from 40,948 cwt. (13·12 per cent. of the whole) to 29,311 cwt. Groper (hapuka) shows a very slight decrease, from 22,415 cwt. to 22,144 cwt. Blue cod landings totalled 19,060 cwt. (6·47 per cent.), an increase on last year's total of 14,930 cwt.

* This is a revised figure (including an additional return (for whitebait) which was not to hand when last year's report was written) raising total from £577,553 to £580,553.

Weights and values of all the various kinds landed are given below in descending order of quantity :—

Kind or Class of Fish.	Quantity.		Value.	
	Hundredweight.	Percentage of Total.	£	Percentage of Total.
Snapper	100,542	34·15	122,822	25·10
Tarakihi	29,311	9·96	43,583	8·91
Groper (hapuka)	22,144	7·52	62,988	12·87
Mixed rounds	20,659	7·02	24,983	5·11
Blue cod	19,060	6·47	35,413	7·23
Flounders	18,909	6·42	58,473	11·95
Sole	14,986	5·09	41,592	8·50
Gurnard	14,450	4·91	18,680	3·81
Ling	8,093	2·74	18,136	3·71
Red cod	8,013	2·72	8,540	1·75
Barracouta	5,927	2·01	3,147	0·64
Sardines	5,679	1·93	3,997	0·82
Mixed flats	4,803	1·63	14,502	2·96
Trevally	4,524	1·54	3,277	0·67
Elephant-fish	4,329	1·47	9,639	1·97
Mullet	2,524	0·86	3,056	0·62
Pioke	2,002	0·68	1,484	0·30
Kahawai	1,458	0·50	977	0·20
Butterfish	1,421	0·48	3,965	0·81
Warehou	1,322	0·45	2,722	0·56
Hake	1,175	0·40	3,170	0·65
Moki	782	0·27	1,356	0·28
Kingfish	666	0·22	692	0·14
John-dory	430	0·15	525	0·11
Herrings	265	0·09	263	0·05
Parore	249	0·09	122	0·02
Swordfish	228	0·08	288	0·06
Conger	158	0·05	171	0·03
Trumpeter	89	0·03	162	0·03
Brill	73	0·02	305	0·06
Mao-mao	56	0,02	59	0·01
Bonita (*Brama*)	33	0·01	92	0·06
Skate	37	0·01	30	0·01
Whiptail	23	0·01	26	..
Garfish	11	..	12	..
Frost-fish	8	..	15	..
Mackerel	6	..	4	..

Exports and Imports

A further decline is shown for both these categories. The total value of fish imported during the year was £302, out of which tinned fish to the value of £209 was re-exported.

Exports of fish and shell-fish amounted to a total value of £98,075, comprised as follows: fresh oysters, £20; frozen fish, £69,409; smoked, dried, pickled, or salted, £4,574; tinned fish and shell-fish, £24,072. Over twenty different species of fish were exported in the frozen state, with blue cod (4,104 cwt., value £21,057), soles (1,898 cwt., value £9,229), snapper (1,112 cwt., value £6,487), barracouta (1,895 cwt., value £6,074), flounders (1,038 cwt., value £5,408), tarakihi (1,398 cwt., value £4,473) and red cod (1,441 cwt., value £3,906) together representing 78 per cent. of the total weight and 82 per cent. of the total value.

Landings at Ports

The total quantities and values of wet fish landed at the principal ports are given for comparison alongside those for the previous year :—

Port.	Quantity.		Value.	
	1942–43.	1943–44.	1942–43.	1943–44.
	Cwt.	Cwt.	£	£
Auckland	105,106	103,382	114,681	129,904
Thames	12,641	18,302	21,094	28,044
Tauranga and district	7,926	9,546	8,117	9,913
Gisborne	7,034	5,275	7,348	6,179
Napier	21,694	16,615	29,242	25,244
Wellington	22,599	14,775	37,467	36,054
Lyttelton	16,504	14,050	34,383	34,755
Timaru	14,548	15,898	33,849	42,960
Port Chalmers	33,603	21,523	36,843	32,621
Bluff, with Stewart Island	9,418	12,416	16,375	22,748

Auckland maintains its dominating position as the leading port of the Dominion. Its landings have declined by 1·6 per cent. in quantity, but show an increase of 13 per cent. in value. Increases are shown for Thames (66·8 per cent. in quantity and 32·9 per cent. in value), Tauranga and district (20 per cent. in quantity and 22·1 per cent. in value), Timaru (9·2 per cent. in quantity and 26·9 per cent. in value), and Bluff with Stewart Island (31·8 per cent, in quantity and 38·9 per cent. in value). Fish landings at Lyttelton declined by 17·5 per cent., but total value showed a slight rise of 1·1 per cent. Wellington shows a fall of 34·6 per cent. in quantity landed and of 14·1 per cent. in value. Gisborne is down in quantity by 25 per cent. and in value by 15·9 per cent. Napier's landings are 23·4 per cent. less than those of last year, with a decline of 13·7 per cent. in value. The landings at Port Chalmers were 38·1 per cent. less in quantity and 11·5 per cent. lower in value.

The very interesting question as to why landings have increased or decreased, as the case may be, is one that cannot be answered simply or briefly; the results are usually due to various factors. In the case of Thames the number of vessels and fishermen engaged has declined, but the quantities of fish caught have been appreciably augmented. The marked increase has been in the landings of snapper—from 5,125 cwt. to 9,911 cwt. In some cases losses of fishing-time through the difficulty of making replacements and repairs under wartime conditions have had a substantial effect in reducing supplies. The most significant light is thrown on the figures representing fish catches when they can be correlated with the time spent in actual fishing. So far as possible, data on this factor have been collected, but the task of working them up cannot be undertaken at present.

Methods of Capture

The quantities of each kind of fish caught by each of the principal methods of fishing are shown in detail in Table IIB.

The following table gives a general summary:—

Method of Fishing.	Quantity.		Value.	
	Hundredweight.	Percentage of Total.	£	Percentage of Total.
Trawl	69,105	23·47	137,204	28·04
Danish seine	113,033	38·39	150,522	30·76
Long- and hand-line ..	68,850	23·38	138,291	28·26
Set and drag net or seine	43,457	14·76	63,251	12·93
Totals	294,445	..	489,268	..

In the year 1938–39 corresponding percentages of fish taken by each method were: trawl, 33·7; Danish seine, 33·75; lines, 24·5; seine and set-net, 8·1 per cent. To-day's differences may be ascribed chiefly to wartime conditions.

Whaling, 1943 Season

Operations from the Tory Channel station were attended by unfavourable weather with bad visibility and further hampered by a serious mishap which caused the death of a harpoon-gunner. The total catch was ninety humpback whales, the first being captured on 12th May and the last on the 10th August. The yield of oil amounted to 630 tons.

Sardines

The fishery for sardines or pilchards (formerly known popularly as the "Picton herring") is carried on mainly in Queen Charlotte Sound, and of late years has been growing in importance. Since they have been found to be by far the most satisfactory bait for groper, the Cook Strait long-line fishermen have made a practice of making periodic visits to Queen Charlotte Sound to catch sardines, which are then kept in cold storage till required. With the establishment of the fish cannery at Picton one boat has confined its operations exclusively to sardine-fishing for the cannery, though a small proportion of its catches has occasionally been made available to the line-fishermen for bait. The cannery has been in operation since 1942. During the past year the industry has been considerably hampered by the uncertainty of supplies and the decline in the quantity of the fish landed. Returns of the sardines for the year 1942–43 totalled 8,228 cwt.; the corresponding total for this year is 5,679 cwt., a decline of 30 per cent. Pelagic fish of the sardine kind are particularly liable to variation in their local and seasonal distribution, and the effect of this on an industry depending on them for its raw material is likely to be intensified when supplies are drawn from a very restricted fishing area and with very limited fishing-power. It has been stated that the fish have often been present in the Sound, but have been so widely scattered as to be catchable only in small quantities and at the expense of considerable effort. The movements and density of the sardine shoals must necessarily be due to natural causes: probably the distribution of the small organisms (plankton) on which they feed; and this again will depend on the occurrence of the microscopic plant and other organisms on which the animal plankton must feed, which will be affected by such physical factors as the presence of nutrient salts in the water, on temperature, and on sunshine; and all of these may be and probably are due to other than local causes,

such as the variation in the amount of water derived from the melting of Antarctic ice or the varying intensity and duration of trade-winds which influence the movements of water masses in the oceans.

When we know more about such phenomena in this part of the world, and the extent to which they show variation from year to year, we shall be able to understand more about the goings and comings and the variation in abundance of sardines and other fishes.

Toheroas

For obvious reasons it is a good thing, conservationally speaking, that our toheroa-beds are rather remote from the more densely populated places. This advantage to conservation, nullified by the coming of the motor-car, is again effective under conditions of wartime motor-fuel restriction, although these conditions have limited departmental activities for investigation and protection rather more than they have hampered exploitational operations. However, the Marine Biologist has been able to make periodical though brief visits to the principal toheroa beaches, and it is mainly from his reports that our information about existing conditions is derived.

On the Ninety-mile Beach the toheroa-beds have not yet returned to the well-stocked condition in which they were when decimated by the great mortality that occurred in 1938. Some improvement, however, has been shown over successive years, and at present there are moderately good beds developing over about twenty miles of this beach which were almost barren of sizeable toheroas a year or two ago; but their average size is low—very close to the minimum that is suitable for commercial supplies. A degree of restraint in exploitation is more necessary for these beds than for those on the beaches farther south. The recent appearance of dense and extensive beds of *tuatua* (the common pipi) is likely to have an adverse effect on the well-being and abundance of toheroa.

On the North Kaipara Beach the beds appear to be increasing in the southern part of the area and were well stocked with fat toheroas of good average size, together with a satisfactory proportion of younger stages, when inspected recently. The beds in the northern part of the area, which appear to be subject to more variation from year to year, are not so densely populated, but contain molluscs of large size in more than usual abundance. Depletion is evident on those parts of the beach in the vicinity of roads and tracks.

The beds on the Muriwai Beach are well stocked, apparently not so numerous as a year or two ago, but some of them are of considerable area. The larger sizes appear to predominate, and thus it would appear to be safe, and even expedient, to allow a greater degree of exploitation here than, for instance, on the Ninety-mile Beach.

Rock Oysters

Oyster-picking for the 1943 season commenced in the Bay of Islands and Kaipara Harbour on the 13th May, and in other areas on the 17th May, and closed on 3rd August. A total of 5,828 sacks (17,484 bushels) was obtained from the various areas, as follows: Bay of Islands, 2,193; Whangarei Harbour, 127; Kaipara Harbour, 1,338; Coromandel, 650; Hauraki Gulf, 1,520 sacks.

The quantities obtained from the several areas of the Hauraki Gulf were: Mahurangi, 275; Rakino, 83; Tamaki Strait, 223; Motutapu, 41; Waiheke, 574; Ponui, 245; Pahiki, 19; Pakatoa, 60 sacks.

Difficulties were encountered through the prevalence of adverse weather for the greater part of the time, and by the fact that labour shortage necessitated the employment of some inexperienced pickers. The total brought to market fell short of the 1942 season by 22 sacks.

Area. *Oyster-cultivation for the Year ended 31st March, 1944*

I. Bay of Islands: 4,526,000 borers and 1,910 pupu destroyed, 50 square yards of rock cleared of dead shell and 5,389 square yards cleared of weed, 800 square yards of oyster-bearing rock moved down to a better position, and 600 square yards of clean rock distributed on the beds. Cost, £609 6s. 6d.

II. Whangarei Harbour: 87,700 borers and 50 pupu destroyed and 824 square yards of rock cleared of dead shell. Cost, £38 5s.

V. South Shore, Tamaki Strait: 33,000 borers and 15 pupu destroyed. Work done by staff. No cost.

XIII. Waiheke: 754,500 borers and 367 pupu destroyed and 743 square yards cleared of dead shell. No cost.

XIV. Ponui: 299,500 borers and 103 pupu destroyed and 574 square yards cleared of dead shell. No cost.

XV. Pakihi: 119,000 borers and 80 pupu destroyed. No cost.

XVI. Great Barrier Island: 500,000 borers destroyed and 441 square yards cleared of weed. Cost £84 12s. 6d.

Total for all Areas: 6,319,700 borers and 2,525 pupu destroyed, 2,632 square yards cleared of dead shell, 5,389 square yards cleared of weed, 800 square yards of oyster-bearing rock shifted, and 600 square yards of clear rock distributed. Cost, £732 4s.

Dredge Oysters: Foveaux Strait, 1943

In the 1943 season nine vessels operated and landed a total catch of 73,118 sacks. Practically throughout the season the industry was favoured with fine weather, which no doubt contributed to the high total catch for the season. Seven of the vessels exceeded the 7,000-sack limit imposed under the conditions under which Industrial Efficiency Act licenses were held, and after reaching that catch were allowed to continue operations west of a line drawn from Barracouta Head on the mainland to Gull

Rock off Stewart Island. This resulted in a total of 10,457 sacks being taken from these most westerly beds. The purpose of the limit is to save undue exploitation of the beds which are normally used—*i.e.*, the East and West Beds and the smaller beds contiguous thereto. It now appears from the Oyster Inspector's observations over a number of years that there is a definite drop in the catch per day from the Saddle Bed, the most extensive bed to the westward of the line mentioned above, and this, in conjunction with the disturbing fact that the average size of the oysters being dredged is declining—a sack of oysters used to contain from sixty-two to sixty-five dozen, whereas now the same sized sack contains seventy to eighty dozen—raises the question as to whether or not the Department is wise in approving any extension to the 7,000-sack limit. The Foveaux Strait oyster-beds are the last of the large natural oyster-beds of the world, and it is the duty of the Government to prevent the depletion of these natural resources. It has been suggested that, instead of a seasonal limit of 7,000 sacks per vessel, a limit of 70 sacks per vessel per day's dredging should be imposed so as to (*a*) prevent excessive catches, and (*b*) ensure more careful cultching so as to avoid waste of those oysters which, although above the legal size, are not sufficiently mature to be marketable.

Whitebait

The total production for the 1943 whitebait season is estimated at approximately 5,002 cwt. on the basis of returns sent in by local Inspectors at the most important centres, which, however, do not cover all whitebait-fishing waters. The usual details for comparision with previous years are given in the summary that follows:

Whitebait Fishery, 1943 Season

Inspector's Centre.	Rivers fished.	Method of Fishing.	Fishing began.	Best Month.	Number of Fishermen. (Approximately.)		Total Quantity caught (approximately).
					Whole Time.	Part Time.	
							Cwt.
Auckland ..	Waikato	Hand-nets ..	..	September ..	100	50	482
Auckland ..	Kaituna	Hand-nets ..	Mid-August	..	25	..	67
Auckland ..	Tarawera, Rangitaiki	Hand-nets ..	2nd August	September ..	16	..	85
Napier ..	Ngaruroro, Tukituki	Set and scoop nets	July ..	October ..	30	25	50
New Plymouth and Waitara	Waitara, Mokau, Awakino, Waiongona, Mimi, Waiwakaiho, Onaero	Hand and set nets	July ..	September–October	..	250	42
Wanganui ..	Turakina, Kai Iwi, Wanganui	Hand-net ..	September	October ..	..	18	8
Foxton ..	Manawatu ..	Hand-net ..	July ..	October ..	..	10	10
Blenheim ..	Wairau, Opawa, Tuamarina	Hand-net ..	August ..	October ..	3	20	45
Christchurch	Waimakariri, Ashley, Styx, Salt-water Creek, Waipara, Avon, Halswell	Hand and set nets	August ..	October ..	50	..	134
Temuka ..	Opihi, Orari ..	Set-nets ..	August ..	November ..	..	30	16
Dunedin ..	Molyneux, Puerua, Waikawa, Owaka, Taieri, Shag, Waikouaiti, Tokomairiro, Pleasant, Kakanui, Waitaki, Waiunakarua	Hand-nets ..	September	October–November	10	20	67
Dunedin ..	Mataura, Oreti, Aparima, Titiroa, Otakau, Waiau, Waikiwi, Makarewa	Hand and set nets	August ..	October–November	25	30	186
Wataroa ..	Big Wanganui, Karangarua, Waiatato, Maori, Mahitahi, Okuru, Poerua, Wataroa, Waitangi	Set-nets ..	September	October ..	60	36	1,991
Hokitika ..	Hokitika, Mahinapua Creek, Waimea Stream, and neighbouring tidal streams	Hand and set nets	August ..	October ..	..	127	988
Greymouth ..	Teremakau, Grey ..	Hand-nets ..	August ..	October–November	..	130	116
Westport ..	Buller, Orowaiti, Nile, Totara, Little Wanganui, Mokihinui, Karamea	Hand-nets ..	August ..	October	50	40	656
Karamea ..	Karamea, Little Wanganui	Hand-nets ..	1st August	September ..	1	12	6
Takaka ..	Takaka	Hand-nets ..	August ..	September ..	3	4	15
Motueka ..	Motueka, Moutere ..	Hand and set nets	August ..	October ..	9	6	38
				Total	..	..	5,002

The Dominion total for the year is the highest recorded since special returns for whitebait-fishing were first collected in 1931. The previous year's catch, which would total somewhere between 1,300 cwt. and 1,400 cwt. for the 1942 season, was the lowest. The phenomenally successful fishing in Westland,

especially in the southern rivers, provided about 74 per cent. of the production for the 1943 season, but for most South Island rivers reports of better runs than average were received. An exception was North Canterbury, where the fishing was not so good as last year. In the North Island inclement weather interfered with the fishing quite considerably. In the past thirteen years the estimated totals have three times exceeded 4,000 cwt. and closely approached 5,000 cwt. Five years have provided totals between 3,000 cwt. and 4,000 cwt., two between 2,000 cwt. and 3,000 cwt., and three times the total has fallen below 2,000 cwt. It is not possible to say with certainty what factors are responsible for these variations. It might be mainly a matter of successful survival of spawn or of total quantity of spawn deposited, which will depend on the number of adults (a matter of escapement from fishermen and other predators) that survive to spawn and that can find access to a suitable spawning-ground, in all of which weather plays an important part. Other factors concerned are the survival of the young during their period, presumably about half a year, of sea life. This will be affected by the abundance of suitable food organisms as well as by the presence of predators. All these factors are capable of being elucidated by appropriate methods of investigation which it is hoped to undertake in the future. The most immediate requirement is the provision of a really comprehensive record of the catches that are made by fishermen, as is now done in connection with sea-fishing operations. For this reason it is recommended that a system for whitebait-fishing licenses should be established as early as practicable. The majority of the whitebaiters themselves have for a long time expressed a desire for this, as well as the local Inspectors, who have the onerous duty of attending to the enforcement of regulations which, from the nature of this fishery, are necessarily somewhat complicated.

Fresh-water Fisheries

Quinnat Salmon

The quinnat-salmon hatchery at Hakataramea was not in operation for the 1943 season.

The 1943–44 fishing season opened promisingly with an early appearance of salmon at the mouths of some of the North Canterbury rivers, 2 fish being taken in the Ashley River mouth on 8th November. By the middle of January quinnat were running in fair numbers in the Waimakariri and Rakaia Rivers. During the months of February, March, and April, when the best runs normally take place, the big rivers were almost continuously in flood and very little successful angling was possible. In contrast to the rivers which are fed by the melting snow and mountain rains of the Southern Alps, the Opihi River, for instance, provided fairly good fishing throughout the season, 1 fish being caught in January, 31 in February, 111 in March, and 53 in April, the average weights for the successive months being 22, 14·9, 16·4, and 15·3 lb., with a general average of 16·0 lb. These figures relate to rod-fishing at the mouth of the river only, and are available from records kept by Mr. Owen Hanifin and reported by the local Inspector of Fisheries, Mr. F. W. Pellett.

The records obtained from returns sent in by persons holding licenses for selling salmon are summarized in the statement given below: —

Quinnat Salmon, 1944

——	Males.	Females.	Sex not given.	Totals
Returns from Rods				
Ashburton River, 4/4/44 to 17/4/44 (one rod) —				
Number of fish caught	..	2	..	2
Total weight	..	24 lb.	..	24 lb.
Average weight	..	12 lb.	..	21 lb.
Rangitata River, 15/1/44 to 15/5/44 (five rods)—				
Number of fish caught	14	11	8	33
Total weight	214 lb.	161 lb.	110 lb.	485 lb.
Average weight	15·3 lb.	14·6 lb.	13·5 lb.	14·7 lb.
Opihi River, 28/2/44 to 30/4/44 (one rod) —				
Number of fish caught	..	..	29	29
Total weight	..	..	438 lb.	438 lb.
Average weight	..	..	15·1 lb.	15·1 lb.
Rakaia River, 14/2/44 to 15/5/44 (six rods)				
Number of fish caught	12	22	1	35
Total weight	179 lb.	268 lb.	4 lb.	451 lb.
Average weight	14·9 lb.	12·2 lb.	4 lb.	12·9 lb.
Combined rivers, 15/1/44 to 15/5/44 (eleven rods)—*				
Number of fish caught	26	35	38	99
Total weight	393 lb.	453 lb.	552 lb.	1,398 lb.
Average weight	15·1 lb.	13 lb.	14·52 lb.	14·13 lb.
Returns from Nets				
Waimakariri River, 2/2/44 to 31/3/44 (one net) —				
Number of fish caught	25	15	..	40
Total weight	271·5 lb.	151·5 lb.	..	423 lb.
Average weight	10·86 lb.	10·1 lb.	..	10·6 lb.

* Two rods fished on two rivers during season.

The net-fishing catch is the poorest on record. This is ascribable not only to the check upon netting operations caused by the continuous floods, but also to the fact that recent changes in the contour of the river-bed in its lower part had caused a shoaling of the river where there was formerly deep water, in which the salmon found their first halting-place after entering fresh water, and which therefore afforded a favourable draught for netting. Only one net was operated this season.

Atlantic Salmon

The trapping season on the Upukororo River opened well with a slight rise of water which encouraged 65 salmon to enter the trap on 29th April. After that the river remained at a low level throughout May and continued low except for two slight freshes on the 11th and 22nd June and again on 5th and 27th July. Consequently no good runs took place and the majority of the fish spawned in the lower reaches of the river between the lake and the trap. This natural spawning could be expected to have fruitful results, provided that the bottom remained undisturbed by floods until the young fish had reached their free-swimming stage. Such occurrences, however, are not infrequent with this wayward river; and that is why the hatchery is worth while as an insurance against loss of the rising generation. The lake and the River Waiau also remained abnormally low, which, as is usual, induced more fish to spawn in the main river, where redds were observed to be fairly numerous.

The total number of salmon taken in the trap was 114, of which 72 were males and 42 females, yielding 101,000 ova. These were hatched out with very little loss, and the fry were fed in the hatchery boxes for six to eight weeks before being liberated. Nearly half the fry were planted in the lake margin to economize transport, instead of being taken to the river, the rest, about 8,000, being kept for pond-rearing. During the year 7,000 yearlings were raised in the ponds and marked before liberation.

The 1943–44 salmon-angling season was reported as fair; relatively few anglers visited the lake.

Trout

Information regarding trout-fishing conditions in the rivers and lakes of their several districts is given in the annual reports of acclimatization societies, and it is sufficient here to make a brief reference to certain points of general interest.

A good deal of comment has recently been made by experienced and observant anglers regarding the decreased population of the younger age-groups of trout in certain waters. It is said, for instance, that some of the rivers of Southland, Otago, and South Canterbury which formerly carried good stocks of trout of mixed age and size, with the smaller fish predominating in number, as is the normal and natural condition, have recently changed their character and become "big-fish" waters, holding some good fish but too few medium- and small-sized trout. One cause to which this dearth has been attributed is the increase of black shags, which are undoubtedly serious enemies of trout when they haunt nursery waters in appreciable numbers. Naturally, the lack of ammunition and the absence of many active men who before the war made a regular practice of shag-shooting has allowed these predators to seek their prey with impunity and to attain an augmented rate of reproduction in places where their presence is patently harmful. All reasonable measures for preventing them from becoming overabundant in the vicinity of trout and salmon waters should therefore be encouraged and facilitated. Under conditions of ideal fishery management there would be an organized system for investigating the habits of all trout-predators—in the case of the black shag I consider its harmfulness has now been thoroughly proved—and for keeping down their numbers and discouraging them from haunting waters where trout or young salmon provide, at least in the case of the black shags, almost the whole of the prey that their very vigorous appetites demand. Another important item in the list of trout-predators is the eel, about which something will be said later.

Rarely or never in Nature does one adverse factor operate to the exclusion of all others, and it must not be inferred that the killing off of shags would solve the problem of keeping trout waters well stocked. There is much investigational work to be done to ascertain the degree to which natural reproduction can be expected to maintain, or can be helped by cultural measures to maintain, an optimum trout population. There are also, besides the predatory birds and fishes, the inimical factors of water pollution and water abstraction, which play an increasing part in reducing the extent of natural and healthy feeding and spawning ground which the trout in earlier times enjoyed. Reduction in the volume and rate of flow of the water in a river involves reduction in trout-food supply and in the availability of suitable bottom for spawning. The development of irrigation has not only brought about such changes, but has also been the direct cause of substantial losses of trout, which find their way into the water-races and are unable to get back again to the river. These facts are mentioned not with any intention of criticizing the measures that have brought them into being, for we must all recognize that production on the land has to be developed; and there are, indeed, prospects of the creation of many valuable additional miles of fishing water in the Rangitata-Rakaia channel and an improvement in the character of the Lower Waitaki as angling water by reducing its flow in connection with hydro-electric works. What fishery interests have to recognize is that the changed conditions have to be understood in their full biological bearings and the practical management of fisheries adjusted accordingly. They must not run away with the idea that with the shooting of shags or the building of a fish-hatchery the job is done.

From the fisheries point of view there is also a prospect of beneficial results arising out of the newly-authorized—I don't know whether one can yet add *organized*—measures for dealing with erosion problems. Erosion of the hill country, with the consequent deposit of shingle and silt in the river-beds, the shifting of bottom material by heavy floods, and the low volume of water in times of drought—these are conditions in the environment of many of our trout which mean menace to their well-being and checks to their propagation to which their ancestors were certainly not subjected to the same extent. That is the position in general terms. A more precise analysis of biological relationships is necessary for the full understanding of the problem necessary as the basis of suitable fish cultural developments to meet the angling needs of the future.

Fresh-water Eels

Recent observations have tended to show that there is now abundant evidence to place the fresh-water eels in the position of "trout enemy No. 1" in many of our rivers. Largely on this account there has been a revival and increase of interest in the subject of eel-fishing. This is a welcome sign, for, apart from their position among the undesirables in a trout stream, the eels undoubtedly represent our most valuable source of food-supply in the fresh waters of this Dominion. With our abundant supply of other customary foodstuffs we have hitherto allowed prejudice and indifference to stand in the way of making general use of this potentially rich fishery. In actual nutritional value the annual harvest of eels would be worth a good deal more than our whitebait; and whitebait-supplies in an average year have a market value of over £20,000. In certain places limited supplies of eels have been sold in the fish-shops this year, both fresh and smoked, and there has also been a tentative beginning of an export trade, but the labour and transport difficulties peculiar to wartime conditions have impeded progress. The shortage of food in the world of to-day—and to-morrow—raises the obvious question as to whether, if we do not need or want the eels for ourselves, we cannot obtain supplies for sending to countries where such food is greatly needed and where even in pre-war times when generous supplies of other foods were obtainable eels were regarded not only as good food, but as delicacies.

Fresh-water Research

In the absence of both biologists, there has been no field-work during the year. Records and reports from anglers in connection with Mr. K. R. Allen's intensive study of the trout stock of the Horokiwi have continued to come in, and are being dealt with by the laboratory assistant, Miss Josephine Russell. A preliminary report on this work prepared by Mr. Allen two years ago, but not accepted for printing on account of the paper shortage, is being submitted as an Appendix to this report. Seeing that, by regulations made under the Fisheries Amendment Act, 1936, 10 per cent. (reduced since the war to 5 per cent.) of the revenue obtained by acclimatization societies from fishing-license fees is paid into the Consolidated Fund for the financing of fresh-water-fishery research, and seeing that anglers' representatives on the council of at least one acclimatization society have quite justifiably ventilated the question as to what they are getting for their money, it is hoped that no obstacle that is not absolutely inevitable will be placed in the way of publishing this brief report as suggested. It is one that will be of general interest and value to Departments and research workers overseas, to whom we are indebted for substantial gifts of their own publications, many of which are still being received, although it is a long time since we were able to make any return.

Marine Research

No fresh ground has been broken during the past year: not for want of problems that call for attention, but through lack of material facilities and staff, which one hopes is only temporarily inevitable. Mr. A. M. Rapson has been working at a general report on the life-history of the blue cod, and in the field has continued his observation on toheroa distribution, reproduction, and growth. He has paid occasional visits to Queen Charlotte Sound in connection with the study of the sardine fishery, and has continued to collect plankton samples when possible for the study of the pelagic eggs and larval stages of fishes.

A. E. Hefford,
Chief Inspector of Fisheries and Director of Fishery Research.

8th July, 1944.

TABLE I.—SHOWING THE NUMBER OF FISHING-VESSELS AND THE NUMBER OF FISHERMEN AND OTHER PERSONS ENGAGED IN THE INDUSTRY AT EACH PORT FOR THE YEAR ENDED 31ST MARCH, 1944

Name of Port or District.	Vessels licensed 1st January, 1943–31st March, 1944.			Vessels engaged in Fishing for Wet Fish.										Vessels engaged in Shell-fishery.						Number of Persons employed.					
				Steam Trawlers.		Motor Trawlers.		Motor-vessels Danish-seining.		Motor-vessels, Set-net and Line Fishing.		Rowing-boats.		Oyster-dredging Vessels.		Mussel-dredging Vessels.		Crayfishing Vessels.		Fishermen.		Others.		Total.	
	Total Number.	Number Fishing.	Number not Fishing.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.	Whole Time.	Part Time.
North Island																									
Awanui and district	9	8	1	..	..	..	..	..	..	3	5	..	..	..	..	..	..	..	..	6	9	15	..	21	9
Mangonui	15	12	3	..	..	..	..	..	..	..	11	..	1	..	..	..	..	..	..	2	14	..	..	2	14
Whangaroa	6	5	1	..	..	..	..	..	..	1	5	..	..	..	..	..	..	1	2	2	8	1	..	3	8
Russell	24	20	4	..	..	..	..	..	..	3	5	..	2	..	..	..	..	..	4	5	30	..	..	5	30
Whangarei	20	15	5	..	..	..	..	..	..	2	15	1	..	..	..	..	..	1	1	6	18	6	1	12	19
Auckland	90	81	9	..	..	..	..	35	6	6	27	..	5	..	..	1	..	5	3	220	70	117	19	337	89
Kaiaua	2	1	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..	2	..
Thames	29	26	3	..	..	..	..	2	..	15	6	..	3	..	..	1	..	..	..	44	14	..	..	44	14
Coromandel	3	3	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	1	3	2	7	3	10
Mercury Bay	5	5	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	3	1	6	3	6	1	12	4
Whangamata	6	4	2	..	..	..	..	..	..	..	3	1	..	..	..	..	..	..	1	..	5	..	..	..	5
Waihi Beach	9	9	..	..	..	..	..	..	..	1	8	..	..	..	..	..	..	..	..	1	11	..	..	1	11
Tauranga and district	39	31	8	..	..	..	..	1	..	10	23	..	1	..	..	..	1	..	3	21	42	5	2	26	44
Whakatane	5	4	1	..	..	..	..	1	..	..	3	..	..	..	..	..	..	..	..	3	4	2	1	5	5
Ohiwa Harbour, Opotiki, and Cape Runaway	8	5	3	..	..	..	..	..	..	1	3	..	1	..	..	..	..	..	..	1	4	..	..	1	4
Gisborne	16	12	4	..	..	3	1	..	..	1	3	..	..	..	..	..	..	2	7	3	11	4	..	7	11
Napier	33	29	4	1	..	10	7	1	..	1	10	..	5	..	..	..	..	5	10	45	20	11	5	56	25
Castlepoint	4	3	1	..	..	..	..	..	..	1	1	..	1	..	..	..	..	..	1	1	3	..	..	1	3
Wellington	36	28	8	..	..	1	..	..	..	14	10	..	3	..	..	..	..	6	3	65	22	..	..	65	22
Makara	3	2	1	..	..	..	..	..	..	2	..	..	..	..	..	..	..	2	..	4	..	..	..	4	..
Paremata	17	14	3	..	..	..	..	..	..	4	11	..	..	..	..	..	..	2	2	10	15	..	..	10	15
Paraparaumu Beach	6	5	1	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	2	4	..	..	2	4
Manawatu Heads	11	9	2	..	..	..	..	..	..	1	1	1	6	..	..	..	..	..	..	3	8	4	6	7	14
Tangimoana	6	5	1	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	10	..	..	..	10
Wanganui	15	11	4	..	..	..	..	..	..	2	9	..	..	..	..	..	..	..	..	5	13	..	..	5	13
New Plymouth	15	12	3	..	..	..	..	..	..	4	7	..	1	..	..	..	..	..	3	6	8	..	..	6	8
Kawhia	6	5	1	..	..	..	..	..	..	1	2	..	2	..	..	..	..	..	..	1	6	..	..	1	6
Raglan	6	6	..	..	..	..	..	..	..	1	5	..	..	..	..	..	..	..	..	1	6	..	..	1	6
Manukau Harbour	19	17	2	..	..	..	1	..	..	7	7	..	2	..	..	..	..	1	..	8	11	..	..	8	11
Kaipara	23	20	3	..	..	..	..	..	..	14	5	..	1	..	..	..	..	..	..	14	9	7	..	21	9
Hokianga	10	10	..	..	..	..	..	..	..	2	5	..	3	..	..	..	..	..	..	2	10	..	..	2	10
South Island																									
Havelock	20	19	1	..	..	8	4	..	..	2	8	..	..	..	..	..	..	..	..	14	16	..	..	14	16
Picton	17	14	3	..	..	..	..	..	..	9	4	..	..	..	..	..	..	..	..	19	7	34	..	53	7
Blenheim (Wairau)	3	3	..	..	..	2	1	..	..	..	1	..	..	..	..	..	..	..	2	4	2	..	..	4	2
Kaikoura	14	12	2	..	..	..	..	..	..	7	5	..	..	..	..	..	..	2	3	13	6	1	..	14	6
Lyttelton	28*	21	7	1	..	5	3	..	..	2	6	..	4	..	..	..	..	1	4	27	14	20	5	47	19

Akaroa	19	13	6	..	..	1	..	..	..	1	6	..	5	..	..	..	..	1	..	4	11	..	..	4	11
Lake Ellesmere	23	17	6	..	..	..	..	..	..	2	4	6	6	..	..	..	..	..	..	11	13	..	..	11	13
Timaru	25	24	1	..	..	10	2	2	..	9	3	..	..	..	..	..	..	..	..	40	6	2	1	42	7
Oamaru	10	5	5	..	..	..	..	..	..	4	1	..	..	..	..	..	..	..	..	9	2	1	..	10	2
Moeraki	13	12	1	..	..	..	..	..	..	9	3	..	..	..	..	..	..	2	5	11	3	1	..	12	3
Karitane	10	8	2	..	..	..	..	..	..	1	7	..	..	..	..	..	..	5	2	6	3	..	1	6	4
Port Chalmers	44	35	9	..	1	8	7	..	..	9	12	1	2	..	..	..	..	..	3	30	37	36	17	66	54
Taieri Mouth	4	4	..	..	..	2	1	..	..	1	1	..	..	..	..	..	..	..	..	7	..	..	1	7	1
Nuggets	7	7	..	..	..	6	..	..	..	1	..	..	..	..	..	..	..	..	..	10	..	..	1	10	1
Tautuku	2	1	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..
Waikawa	5	5	..	..	..	3	4	..	..	1	..	..	..	..	..	..	..	..	..	7	2	1	..	8	2
Invercargill	2	2	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	4	15	7	15	11
Bluff	23	15	8	..	..	..	1	..	..	5	11	..	..	9	..	..	..	..	..	11	33	15	30	26	63
Stewart Island	49	35	14	..	..	..	..	..	..	26	9	..	..	..	..	..	..	..	..	68	16	4	6	72	22
Riverton District	10	7	3	..	..	..	..	..	..	5	1	..	1	..	..	..	..	..	..	9	4	..	..	9	4
Hokitika	2	2	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	4	..	4	..	8
Greymouth	4	4	..	1	..	..	3	..	..	1	1	..	..	..	..	..	..	..	..	3	2	4	1	7	3
Westport	15	13	2	2	2	..	1	..	..	..	8	..	..	..	..	..	..	..	1	7	12	..	..	7	12
Golden Bay	4	3	1	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	1	4	1	..	..	4	1
Motueka	13	12	1	..	..	..	..	..	..	4	8	..	..	..	..	..	..	..	..	8	13	3	..	11	13
Nelson	14	9	5	..	..	..	2	4	..	2	5	..	..	..	..	..	..	..	1	11	5	5	..	16	5
French Pass	28	24	4	..	..	..	..	..	..	15	8	1	..	..	..	..	..	..	..	22	15	..	..	22	15
Chatham Islands	9	8	1	..	..	..	..	..	..	3	5	..	..	..	..	..	..	..	..	10	16	..	..	10	16
Totals	913	751	162	5	3	59	39	46	6	114	319	12	59	9	..	2	1	39	63	856	638	322	116	1,178	754
				8		98		52		433		71		9		3		102							

* Excludes fishing-boats licensed for whitebait.

TABLE H.—SHOWING THE VARIOUS KINDS OF FISH CAUGHT AND APPROXIMATELY THE TOTAL QUANTITIES OF FISH AND SHELL-FISH LANDED AT THE CHIEF FISHING PORTS FOR THE YEAR ENDED 31ST MARCH, 1944

Name of Port or District.	Principal Kinds of Fish caught.	Quantity landed (Fish).	Total Value (Fish).	Shell-fishery (excluding Toheroa).							Grand Total Value.
				Oysters.	Value.	Mussels.	Value.	Crayfish.	Value.	Total Value (Shell-fish).	
North Island		Cwt.	£	Sacks.	£	Sacks.	£	Cwt.	£	£	£
Awanui and district	A, Q, K, C ..	1,497	1,821	..	..	..	..	..	..	..	1,821
Mangonui ..	A, W, K, E ..	541	730	..	..	..	..	..	..	..	730
Whangaroa ..	A, C, K	321	473	..	..	..	..	368	564	564	1,037
Russell	A, E, C, K ..	1,136	1,785	..	..	..	..	64	118	118	1,903
Whangarei ..	A, Q, Y	3,858	4,046	..	..	..	..	164	260	260	4,306
Auckland	A, B, E, H, C, S ..	103,882	129,904	5,828	4,371	11,781	4,123	1,155	2,303	10,797	140,701
Kaiaua	A, E	193	310	..	..	..	..	..	..	..	310
Thames	A, E, H, Q, R ..	18,302	28,044	..	..	4,939	1,641	..	..	1,641	29,685
Coromandel ..	A, W, E	161	276	..	..	..	..	..	..	..	276
Mercury Bay ..	A, E, C	443	614	..	..	..	..	626	1,312	1,312	1,926
Whangamata ..	A, C	19	34	..	..	..	..	15	28	28	62
Waihi Beach ..	A, Q, B	768	829	..	..	..	..	1	1	1	830
Tauranga and district	A, Q, Y, E, C ..	9,546	9,913	..	..	21	7	52	114	121	10,034
Whakatane ..	A, H, Q	1,110	1,844	..	..	..	..	..	..	..	1,844
Ohiwa Harbour, Opotiki, and Cape Runaway	A, E	350	547	..	..	..	..	..	..	..	547
Gisborne	B, H, C	5,275	6,179	..	..	..	..	527	921	921	7,100
Napier	B, H, W, F, C, A ..	16,615	25,244	..	..	..	..	1,668	3,119	3,119	28,363
Castlepoint ..	C	38	125	..	..	..	..	36	67	67	192
Wellington ..	C, G, O, B, M, A ..	14,775	36,054	..	..	..	..	2,065	3,773	3,773	39,827
Makara	S, O, C	276	980	..	..	..	..	113	256	256	1,236
Paremata	C, S, A, M ..	2,498	7,004	..	..	..	..	107	253	253	7,257
Paraparaumu Beach	A, O, C	653	1,329	..	..	..	..	..	..	..	1,329
Manawatu Heads ..	E, A	187	545	..	..	..	..	..	..	..	545
Tangimoana ..	A	21	51	..	..	..	..	..	..	..	51
Wanganui ..	A, C	425	781	..	..	..	..	..	..	..	781
New Plymouth ..	A, C, Y	1,148	2,445	..	..	..	..	32	74	74	2,519
Kawhia	E, A	204	657	..	..	..	..	..	..	..	657
Raglan	E, A	169	520	..	..	..	..	..	..	..	520
Manukau Harbour ..	K, A, E	1,870	2,791	..	..	..	..	15	44	44	2,835
Kaipara	E, A, K	2,366	5,311	..	..	..	..	..	..	..	5,311
Hokianga	K, E	1,237	1,388	..	..	..	..	..	..	..	1,388
South Island											
Havelock	E, D, S, C ..	983	5,553	..	..	..	..	..	..	..	5,553
Picton	X, C, N, D ..	8,053	11,010	..	..	..	..	..	..	..	11,010
Blenheim (Wairau)	I, F	764	1,172	..	..	..	..	251	471	471	1,643
Kaikoura	G, C	1,737	5,461	..	..	..	..	260	638	638	6,099
Lyttelton	B, J, H, G, F, R ..	14,050	34,755	..	..	..	..	169	203	203	34,958
Akaroa	H, J, E	1,297	3,501	..	..	..	..	407	633	633	4,134
Lake Ellesmere ..	E	797	3,343	..	..	..	..	..	..	..	3,343
Timaru	G, H, F, E, C ..	15,898	42,960	..	..	..	..	..	..	..	42,960
Oamaru	C, I, D	1,595	2,947	..	..	..	..	..	..	..	2,947
Moeraki	C, D, G	1,717	3,845	..	..	..	..	998	713	713	4,558
Karitane	D, N, C	611	1,341	..	..	..	..	1,734	1,448	1,448	2,789
Port Chalmers ..	N, I, F, B, G, E ..	21,523	32,621	..	..	..	..	3	2	2	32,623
Taieri Mouth ..	F, C	1,156	3,539	..	..	..	..	..	..	..	3,539
Nuggets	F, E, C	2,701	4,998	..	..	..	..	..	..	..	4,998
Tautuku	C	191	431	..	..	..	..	..	..	..	431
Waikawa	F, D, C	2,896	5,411	..	..	..	..	..	..	..	5,411
Invercargill ..	E	55	57	..	..	..	..	..	..	..	57
Bluff	D, C	4,148	8,844	73,119	54,839	..	..	..	..	54,839	63,683
Stewart Island ..	D, C	8,268	13,904	..	..	..	..	..	..	..	13,904
Riverton district ..	D, C	859	1,858	..	..	..	..	..	..	..	1,858
Hokitika	K, F	74	135	..	..	..	..	..	..	..	135
Greymouth ..	F, I, H	962	2,253	..	..	..	..	..	..	..	2,253
Westport	F, C, H	1,434	2,990	..	..	..	..	17	26	26	3,016
Golden Bay ..	A, W, C	750	1,182	..	..	..	..	..	..	..	1,182
Motueka ..	A, H, D	895	1,476	..	..	..	..	..	..	..	1,476
Nelson	H, E, A, F ..	3,833	10,208	..	..	..	..	2	3	3	10,211
French Pass ..	D, C, A, S ..	2,988	7,567	..	..	..	..	..	..	..	7,567
Chatham Islands ..	D, C	4,326	3,332	..	..	..	..	..	..	..	3,332
	Totals ..	294,445	489,268	78,947	59,210	16,741	5,771	10,849	17,344	82,318	571,593

KEY TO SYMBOLS USED

A = Snapper.
B = Tarakihi.
C = Groper.
D = Blue cod.
E = Flounder.
F = Sole.
G = Ling.
H = Gurnard.
I = Red Cod.
J = Elephant-fish.
K = Mullet.
L = Moki.
M = Hake.
N = Barracouta.
O = Warehou.
P = John-dory.
Q = Trevally.
R = Pioke.
S = Butterfish.
T = Trumpeter.
U = Whiting.
V = Kingfish.
W = Herring.
X = Sardine.
Y = Kahawai.
Z = Conger-eel.

TABLE IIA.—SHOWING APPROXIMATELY THE QUANTITIES OF DIFFERENT KINDS OF FISH LANDED AT CERTAIN PORTS DURING THE YEAR ENDED 31ST MARCH, 1944

—	Russell.	Kaipara.	Whangarei.	Auckland.	Thames.	Mercury Bay.	Tauranga and District.	Gisborne.	Napier.	New Plymouth.	Wellington.	Blenheim. (Wairau.)	French Pass.	Nelson.	Westport.	Greymouth.	Kaikoura.	Akaroa.	Lyttelton.	Timaru.	Oamaru.	Moeraki.	Chatham Islands.	Port Chalmers.	Bluff.	Riverton District.	Invercargill.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Barracouta ..	..	..	2	..	..	..	1	..	..	..	125	..	69	1	..	..	5	..	82	4	1	14	..	5,157	1	..	..
Blue cod	2	..	5	34	..	18	11	1	..	2	232	..	1,497	77	..	5	29	1	66	..	100	305	4,166	258	3,462	746	..
Bonita (*Brama*) ..	..	..	..	..	..	..	..	..	..	..	33	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brill	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	..	3	..	..	..	..	..	57	..	..	..
Butterfish	..	..	22	449	..	..	..	2	17	..	323	13	144	..	..	..	32	26	5	..	..	..	..	..	5	..	..
Conger-eel	..	..	..	..	..	..	..	..	..	..	61	..	37	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Elephant-fish ..	..	..	..	..	..	..	..	..	..	..	1	4	..	..	..	..	..	247	2,862	1,149	..	3	..	62	..	..	..
Flounder	72	1,187	36	5,489	4,472	40	347	14	101	1	1	15	..	644	2	..	..	197	617	2,209	..	..	..	885	115	11	38
Frost-fish	..	..	..	..	..	..	..	..	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Garfish	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Gurnard	..	5	..	1,361	1,095	2	3	607	4,263	9	..	4	7	1,199	41	36	..	356	2,383	2,634	..	..	..	164	..	..	..
Hake	..	..	..	1	..	..	2	..	..	..	756	..	3	..	..	..	14	..	99	3	..	56	..	120	..	..	..
Hapuka (Groper) ..	50	..	65	591	..	105	250	309	861	208	6,924	..	786	31	51	32	710	80	301	1,897	1,126	1,228	160	618	247	101	..
Herring	10	..	..	..	..	..	16	..	38	5	..	..	..	..	1	..	..	..	3	..	..	..	..	7	..	..	17
John-dory	..	..	1	235	..	..	..	28	..	..	13	..	1	101	..	..	5	..	3	..	..	2	..	41	..	..	..
Kahawai	7	4	247	30	211	..	649	..	21	52	57	..	2	65	..	..	5	..	..	..	..	1	..	1	..	..	..
Kingfish	14	..	37	183	2	6	315	..	..	14	55	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ling	..	..	..	..	..	..	..	..	2	..	2,217	..	19	1	9	10	896	73	864	2,887	46	68	..	929	..	..	..
Mackerel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Maomao	..	..	..	56	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Moki	..	..	..	..	..	..	..	47	52	..	397	21	23	..	..	..	..	8	136	..	..	..	..	69	..	..	..
Mullet	26	471	12	163	..	3	22	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Parore	..	..	48	5	3	..	193	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pioke	..	3	1	374	420	..	22	..	..	1	125	..	..	98	..	..	..	..	2	27	..	..	..	830	..	..	..
Red cod	..	..	..	..	..	..	..	..	..	..	145	427	4	43	22	123	13	103	451	1,672	308	28	..	4,501	13	..	..
Swordfish	34	..	..	..	..	..	194	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sardine	..	..	..	..	..	..	..	..	..	..	340	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Skate	..	..	..	..	..	..	..	..	..	..	33	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Snapper	788	642	1,290	75,153	9,911	215	4,032	86	580	841	517	11	144	381	23	4	8	..	6	..	..	..	..	..	..	..	..
Sole	..	..	..	8	..	..	..	3	914	..	3	144	..	326	204	654	..	98	584	2,511	..	..	..	4,240	..	..	..
Tarakihi	24	..	..	12,128	1	..	29	3,138	4,931	..	855	6	41	..	1	..	1	32	4,614	5	14	2	..	3,361	..	..	..
Trevally	..	8	1,108	36	771	..	1,826	..	..	..	46	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Trumpeter	..	..	..	..	..	..	..	..	..	..	10	..	..	..	..	..	5	40	..	26	..	..	..	5	..	..	..
Turbot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehou	..	..	..	..	..	..	..	..	..	..	1,100	..	..	..	..	..	..	..	..	..	..	..	..	36	..	..	..
Whiptail	..	..	..	..	..	..	..	..	..	..	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whiting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	..	..	..	..	..	..	..	..
Mixed flats ..	79	5	..	319	1,132	..	..	39	684	..	5	94	1	737	666	51	..	3	21	140	..	..	..	27	..	..	..
Mixed rounds and kinds not specified	29	41	1,032	7,267	275	54	1,634	999	4,151	15	370	25	207	129	414	34	14	30	931	734	..	10	..	143	305	1	..
Totals ..	1,136	2,366	3,810	103,882	18,302	443	9,546	5,275	16,615	1,148	14,775	764	2,988	3,833	1,434	962	1,737	1,297	14,050	15,898	1,595	1,717	4,326	21,523	4,148	859	55

TABLE IIB.—SHOWING THE QUANTITIES OF DIFFERENT KINDS OF FISH CAUGHT BY THE DIFFERENT METHODS OF FISHING FOR THE YEAR ENDED 31ST MARCH, 1944

—	Trawl.						Danish Seine.		Other Nets.						Lines.								Grand Total.	
	Steam.		Motor.		Total.		Motor.		Motor.		Row-boat.		Total.		Steam.		Motor.		Row-boat.		Total.			
	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£	Cwt.	£
Barracouta ..	861	422	92	61	953	483	..	..	119	133	1	1	120	134	..	..	4,851	2,527	3	3	4,854	2,530	5,927	3,147
Blue cod	37	75	54	185	91	260	4	11	..	..	..	..	..	..	..	..	18,872	34,880	93	262	18,965	35,142	19,060	35,413
Bonita (*Brama*) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33	92	..	..	33	92	33	92
Brill	13	24	60	281	73	305	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	73	305
Butterfish (greenbone)	..	..	..	..	..	..	..	..	1,416	3,945	5	20	1,421	3,965	..	..	..	..	..	..	..	..	1,421	3,965
Conger-eel	..	..	..	..	..	..	..	..	21	73	..	..	21	73	..	..	133	95	4	3	137	98	158	171
Elephant-fish ..	578	1,828	3,447	7,269	4,025	9,097	103	196	188	311	..	..	188	311	..	..	13	35	..	..	13	35	4,329	9,639
Flounders	..	..	3,869	15,079	3,869	15,079	7,208	20,059	6,791	19,607	1,041	3,728	7,832	23,335	..	..	..	..	..	..	..	..	18,909	58,473
Frost-fish	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	15	..	..	8	15	8	15
Garfish	..	..	..	..	..	..	..	..	7	10	4	2	11	12	..	..	..	..	..	..	..	..	11	12
Gurnard	705	895	8,555	12,748	9,260	13,643	3,925	4,009	852	624	1	2	853	626	..	..	412	402	..	..	412	402	14,450	18,680
Hake	176	338	50	211	226	549	1	1	3	3	..	..	3	3	..	..	945	2,617	..	..	945	2,617	1,175	3,170
Hapuku (groper) ..	191	580	424	1,194	615	1,774	273	903	2	3	..	..	2	3	..	..	21,211	60,254	43	54	21,254	60,308	22,144	62,988
Herring	..	..	..	..	..	..	..	..	138	143	127	120	265	263	..	..	..	..	..	..	..	..	265	263
John-dory	41	15	41	39	82	54	336	431	1	1	..	..	1	1	..	..	10	38	1	1	11	39	430	525
Kahawai	..	..	9	2	9	2	..	..	1,059	699	95	66	1,154	765	..	..	295	210	..	..	295	210	1,458	977
Kingfish	..	..	..	..	..	..	75	70	22	25	4	3	26	28	..	..	554	586	11	8	565	594	666	692
Ling	594	1,118	1,188	2,668	1,782	3,786	12	26	12	13	1	1	13	14	..	..	6,283	14,305	3	5	6,286	14,310	8,093	18,136
Mackerel	3	1	..	..	3	1	..	..	..	..	..	..	..	..	..	..	3	3	..	..	3	3	6	4
Maomao	..	..	..	..	..	..	..	..	56	59	..	..	56	59	..	..	..	..	..	..	..	..	56	59
Moki	185	338	394	680	579	1,018	..	..	186	307	14	26	200	333	..	..	3	5	..	..	3	5	782	1,356
Mullet	..	..	..	..	..	..	..	..	2,447	2,949	77	107	2,524	3,056	..	..	..	..	..	..	..	..	2,524	3,056
Parori	..	..	..	..	..	..	..	..	237	116	..	..	237	116	..	..	12	6	..	..	12	6	249	122
Pioki	715	250	119	133	834	383	358	458	559	385	19	15	578	400	..	..	232	243	..	..	232	243	2,002	1,484
Red cod	2,405	1,635	3,327	3,820	5,732	5,455	616	1,033	127	168	5	5	132	173	..	..	1,527	1,870	6	9	1,533	1,879	8,013	8,540
Sardine	..	..	..	..	..	..	..	..	5,769	3,997	..	..	5,679	3,997	..	..	..	..	..	..	..	..	5,679	3,997
Skate	..	..	8	6	8	6	..	..	4	4	..	..	4	4	..	..	25	20	..	..	25	20	37	30
Snapper	23	19	1,182	2,160	1,205	2,179	77,128	90,073	12,878	15,625	214	341	13,092	15,966	..	..	8,892	14,215	225	389	9,117	14,604	100,542	122,822
Sole	630	1,788	12,957	35,034	13,587	36,822	1,371	4,694	27	75	1	1	28	76	..	..	..	..	..	..	..	..	14,986	41,592
Swordfish (marlin) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	228	288	..	..	228	288	228	288
Tarakihi	5,981	10,439	10,516	17,314	16,497	27,753	12,471	15,308	48	82	11	20	59	102	..	..	275	406	9	14	284	420	29,311	43,583
Trevally	..	..	27	18	27	18	87	71	4,151	2,974	5	4	4,156	2,978	..	..	254	210	..	..	254	210	4,524	3,277
Trumpeter	..	..	45	60	45	60	..	..	..	..	..	..	..	..	..	..	43	101	1	1	44	102	89	162
Turbot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warehou	..	..	..	..	..	..	..	..	1,015	2,183	306	539	1,321	2,722	..	..	1	..	..	..	1	..	1,322	2,722
Whiptail	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	26	..	..	23	26	23	26
Whiting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mixed flat fish ..	708	1,762	1,670	5,337	2,378	7,099	1,941	6,016	477	1,370	7	17	484	1,387	..	..	..	..	..	..	..	..	4,803	14,502
Mixed round fish and all fish not specified	1,795	2,767	5,430	8,611	7,225	11,378	7,124	7,163	2,969	2,316	28	33	2,997	2,349	..	..	3,302	4,086	11	7	3,313	4,093	20,659	24,983
Totals ..	15,641	24,294	53,464	112,910	69,105	137,204	113,033	150,522	41,491	58,200	1,966	5,051	43,457	63,251	..	..	68,440	137,535	410	756	68,850	138,291	294,445	489,268

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