

1943
NEW ZEALAND

MARINE DEPARTMENT

ANNUAL REPORT FOR THE YEAR 1942-43

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

YOUR EXCELLENCY,—

Marine Department, Wellington, 27th April, 1943.

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.,
JAS. 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, 15th April, 1943.

I have the honour to submit the annual report on the activities of the Marine Department for the year ended 31st March, 1943.

Centralization of shipping in the interests of quick despatch is already showing its effect on some of the minor ports, and consideration is being given to the matter of financial assistance where necessary. The necessity for keeping shipping on the move has led to consideration of relaxation in the regulations governing load-lines, cargo gear, &c. On the other hand, the present risks at sea undertaken by merchant seamen in all phases of sea traffic to-day have been recognized by measures calling for increased life-saving equipment on all vessels for the purpose of ensuring greater safety in the event of a war mishap and for better facilities in life-boats after such mishaps have actually occurred.

Our lighthouse-keepers continue to perform special services apart from their normal duties and deserve special mention for their war effort. As machinery and equipment is available from the United Kingdom, radio beacons and electrical installations are being progressively improved. Alterations to navigational aids have been made from time to time. The transport of stores and materials to lighthouses has been difficult since the transfer of the G.s.s. " Matai " to other duties. These difficulties have been overcome in all cases, and in some cases have necessitated the provision of access by road to land stations.

NAUTICAL

The adjustment of compasses has received the careful administration of the Department, the necessity for this being accentuated by the placing of protective armament on many of our vessels. The demand for Admiralty charts has assumed greater proportions than ever, but the extraordinary demand has been met by taking photostat copies of charts and this service has been appreciated by the mercantile marine.

During the year nautical examinations were held in Auckland and Wellington on the scheduled dates, with special examinations in some cases to meet the convenience of candidates to whom the scheduled dates were not convenient under present urgent conditions of shipping. The forty-first edition of the " New Zealand Nautical Almanac and Tide Tables " was published on the due date, and this year opportunity was taken to break the publication into two parts, Part I containing the former first portion giving data as to sun and tide-tables, &c., and the second portion containing the information as to Harbour Boards. Under this arrangement Part I will be reprinted each year, and Part II only as necessary to keep the information up to date.

During the year Notices to Mariners were published as usual, and, as may well be imagined, the present conditions call for a greater number of these Notices than under normal circumstances.

Our shipping offices in the various parts of the Dominion have maintained service to shipping interests at a high level. Vacancies for seamen have been filled with as quick despatch as possible, and the treatment of sick and distressed seamen has called for a high measure of efficiency, combined with the rehabilitation of those of our seamen who have been unfortunate enough to meet with war mishaps in other quarters of the globe.

PROSECUTIONS

Prosecutions instituted under various statutes of the Department during the year amounted to 32 cases, comprising Fisheries Act, 29; Inspection of Machinery Act, nil; Shipping and Seamen Act, 2; and Harbours Act, 1.

SHIPBUILDING

A vigorous programme of requirements for New Zealand Navy and later the effort to fulfil the requirements of our Allies in small ships led to the necessity for the setting-up of a Shipbuilding Division within the Department with separate office accommodation in the north, where the major part of the programme will be prosecuted.

SURVEY OF SHIPS

Survey certificates were issued during the year for 11 foreign-going motor-ships, 17 foreign-going steamships, 1 foreign-going sailing-ship, 71 home-trade motor-ships, 36 home-trade steamships, 46 restricted-limits steamships, and 241 restricted-limits motor-ships and launches. The total certificates issued were 423, against 450 issued last year.

In addition to the annual surveys for certificates, 222 seaworthiness, efficiency, tonnage, radio-telegraphy, and other surveys were made during the year. Of these surveys, 24 were made to overseas ships not registered or normally surveyed in the Dominion.

During the year the Department has kept constantly under consideration the question of development of additional precautionary and life-saving measures and the provision of additional life-saving and other equipment to meet the conditions arising from enemy attacks on ships and seamen. Particular attention has, in the case of overseas ships, been given to watertight doors, protection of cast-iron fittings liable to damage from mine, bomb, or torpedo explosion, bilge pumping arrangements, emergency controls to main engines and to pumps which may discharge into boats during launching operations, warning to ships' crews that a ship is about to be abandoned, tunnel, engine-room, and crew space emergency escapes, emergency lighting, security of anchor cables, and additional fire-fighting appliances. All members of crews have been provided, in addition to the standard life-jacket, with a life-saving waistcoat which can be worn whilst on duty. The waistcoats are filled with kapok, which, in addition to great buoyancy, provides warmth for those who may be subjected to exposure in life-boats or on rafts. Each waistcoat is equipped with an electric light and a battery for the purpose of attracting attention in the water during the hours of darkness. Life-boats have been provided with bilge rails to enable persons to cling to upturned boats, and with canvas hoods over the fore part and side weather cloths for protection of the occupants from seas and weather. Additional equipment now carried in life-boats includes a first-aid outfit, blankets, an electric torch, a hand-pump, plugging and patching gear, and a bright-coloured flag and smoke signals for attracting attention. The sails of the boats have been coloured red for the same purpose. Additional fresh water is now carried, and biscuits, hitherto ordinary ships biscuits carried loose in fairly large containers, are of a new type of high nutritive value packed in sealed tins each containing 18 oz.

All ships, other than very small coastal ships, now carry emergency rafts. Where practicable the rafts are stowed in launching-ways on the sides of the ships, from where they can readily be put into the water. Rafts are equipped with a lifebuoy, paddles, food and water, and means for attracting attention in the shape of bunting material, red flares, and smoke signals. All life-boats are now being fitted with runners or skates on one side to provide means of launching the boat against an adverse list.

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	..	..	..	..	..	4,363	(4,641)
Unfired pressure vessels	..	..	..	..	..	5,363	(4,705)
Air receivers	..	..	..	..	..	2,762	(3,025)
Total inspections	..	..	..	..	..	12,488	(12,371)

The inspections include 67 new power-boilers, aggregating 1,050 horse-power, manufactured in the Dominion, and 15 new power-boilers, aggregating 128 horse-power, imported from abroad. They also include 355 new steam-pressure vessels and 43 new air-receivers, of which numbers, 69 steam-pressure vessels and 7 air-receivers were imported.

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 10,392 (11,227) plants	77,752	(81,323)
Machines driven by steam-power in 1,777 (1,983) plants	9,322	(10,074)
Electric-supply stations	102	(138)
Lifts	3,364	(3,642)
Cranes	539	(525)
Hoists	1,675	(1,691)
Tractors	359	(389)
Total machinery inspections	93,113	(97,782)

Included in the inspections are 22 lifts and 17 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 147, of which 9 were fatal and 138 non-fatal. These figures compare with 3 fatal and 119 non-fatal accidents reported during the previous year.

In every case the cause and the circumstances leading to an accident were fully investigated by an Inspector of Machinery as soon as possible after the accident occurred, and steps were taken, where practicable, to improve the conditions under which the machine was being worked and to introduce new safeguards or extend existing safeguards. The Inspector's report on each accident and the action taken to eliminate hazards were carefully checked in Head Office and the matter not closed until the Department was satisfied that everything reasonable had been done to prevent a recurrence of a similar accident.

Five of the nine fatal accidents were connected with belting or shafting of transmission machinery. The danger of this class of machinery is not fully apparent, and often the most complete system of safeguards fails to keep the worker from making contact with belt, pulley, or shaft. In two of the accidents workmen deliberately climbed inside the safeguard to put on a belt or work near running shafting.

In another accident a man climbed 12 ft. from the floor to nail a batten near a belt, and in another case a workman attempted to repair a belt in a confined space below the floor of a mill with machinery running. In the remaining fatal accident with transmission machinery the person killed climbed on a platform and slipped on to a running belt. All these accidents would not have occurred if the workmen had taken the elementary precaution of stopping machinery before attempting to work with or near running belts and shafting. The Department's posters which are freely issued to owners call attention to the hazards of transmission machinery.

The other four fatal accidents were connected with a circular saw, the hopper of a lime-crushing plant, the skidding of a mobile crane, and a runaway steam road-roller.

Twenty-two of the non-fatal accidents occurred with circular saws and 17 with power presses. These two types of machines are the most hazardous used in industry, and every effort is made to improve their safeguards and to bring under the notice of operators by means of posters the importance of safe practices. Thirty-nine of the total number of accidents occurred in the wood-working industry, 28 in the sheet-metal and engineering industry, and 17 in the textile industry. The remaining accidents were well distributed among other industries.

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, 1942-43

Industries

Machines.	Sawmilling and Woodworking.	Textile.	Refrigerating.	Printing.	Metal-working and Engineering.	Laundry.	Butchery.	Confectionery and Baking.	Boxmaking.	Other Industries.	Total (Machines).
Circular saws	18	..	1	..	1	..	..	1	..	2	23
Planers	8	..	..	..	..	..	..	..	..	..	8
Shapers and moulders	5	..	..	..	..	..	..	..	..	..	5
Power presses	..	..	1	..	13	..	..	..	..	3	17
Guillotines	1	..	..	..	1	..	..	..	..	1	3
Laundry machinery	..	..	..	..	..	..	..	..	..	1	1
Mincers	..	..	..	..	..	..	1	..	..	1	2
Cranes and hoists	..	..	1	..	1	..	..	..	..	3	5
Lifts	..	..	..	1	..	..	..	..	..	4	5
Belting	1	..	..	..	..	..	..	..	..	3	4
Shafting	2	..	..	..	1	..	..	..	..	..	3
Gearing	..	..	..	..	..	..	..	..	..	1	1
Other machines	4	17	3	3	11	1	..	10	..	21	70
Total (industries)	39	17	6	4	28	1	1	11	..	40	147

GENERAL HARBOUR REGULATIONS

The number of accidents to persons engaged in loading or discharging 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 234, of which 6 were fatal accidents.

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

Handling goods	75
Persons falling or slipping	44
Persons struck by falling or swinging load	62
Persons stepping on or striking fixed objects	4
Contact with power-driven machinery	1
Failure of gear	32
Not otherwise classified	16
Total	234

NEW ZEALAND STANDARDS

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

EXAMINATIONS OF LAND ENGINEERS, ENGINE-DRIVERS, AND ELECTRIC-TRAM DRIVERS

These examinations were held during the year at the various offices of the Inspectors of Machinery at the regular intervals provided for in the regulations. The total number of candidates examined was 447, of which 376 were successful.

FISHERIES

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

I have, &c.,

L. B. CAMPBELL, Secretary.

REPORT ON FISHERIES FOR THE YEAR ENDED 31st MARCH, 1943

This report cannot, for various reasons, contain the detailed information that is customary, but it may be useful to reiterate that the general purpose of fishery legislation and administration is to ensure as far as possible that the exploitation of our fishery resources is kept on a rational basis—that the harvests of the sea are reaped without waste, and especially that the depletion of stocks to the detriment of future supplies is prevented. The *fishing* industry, not the fish *trade*, is the object of this Department's administration under the powers conferred by the Fisheries Acts.

Our functions, to be effective, should be concerned not only with the recording of production, but should have regard to the methods of production, which are liable to variation and expansion in the course of time, and more especially to the effects of such developments on the stocks of fish in our waters. This last consideration involves investigational work which the exigencies of the times have necessarily reduced to a minimum.

The collection and tabulation of fishery returns have been kept up, and this work has acquired a special importance in relation to problems of man-power and other factors of national economy.

The following statement gives the total quantity and value of the principal classes of fishery products marketed during the year :—

	Quantity.	Value. £
Wet fish	311,971 cwt.	442,976
Whitebait	1,206 cwt.	25,984
Oysters—		
Dredged	73,475 sacks	55,106
Rock	5,850 sacks	8,775
Mussels	19,726 sacks	6,959
Crayfish	12,910 cwt.	19,305
Toheroa (canned products)	87,480 lb.	6,198
Whale products:—		
Oil	500 tons	12,000
Bone-dust	30 tons	
Quinnat salmon (taken by selling licensees): Angled fish	2,784 lb.	250
Total values		<u>£577,553</u>

The total quantity of wet fish landed during the previous year was 326,863 cwt., valued at £458,393. Some decline in production for all other classes except crayfish is shown.

EXPORTS AND IMPORTS

The value of imported fishery products totals £3,549. Canned fish of the sardine class made up the bulk of this total.

Exports declined in total value from last year's total of £138,029 to £116,523. Among the different classes of fish exported, only blue cod (frozen) and crayfish (canned) show an increase on the figures for the previous year.

ROCK OYSTERS

Though labour and transport conditions provided some difficulties, the total yield of the northern rock-oyster beds of 5,850 sacks (or 17,550 bushels) fell little short of the previous season's total of 5,939 sacks.

They were obtained from the following areas: Bay of Islands, 2,211; Whangarei Harbour, 110; Kaipara Harbour, 1,077; Coromandel, 600; Great Barrier, 251; Hauraki Gulf, 1,601 sacks.

The quota from the Hauraki Gulf was obtained from the several areas as follows: Takatu to Gull Point, 122; Motutapu, 86; Rotoroa Island, 206; Pahihi Island, 19; Waiheke, 752; Ponui, 416 sacks.

OYSTER-CULTIVATION

Oyster-cultivation work was on a reduced scale owing to the difficulty of obtaining satisfactory labour. Detailed reports are not yet available.

DREDGE OYSTERS

The oyster-beds in Foveaux Strait provided a total of 73,475 sacks for the season, a small decline from last year's total of 74,751. Eleven vessels comprised the working fleet, one of which operated for only four months of the season.

TOHEROAS

Helped by the fact that fewer digging parties now visit the toheroa beaches, the beds are now, generally speaking, well stocked. The general improvement in numbers and size of toheroas has not been so marked on the Ninety-mile Beach as elsewhere, and the supplies obtained for canning from this area were substantially less than in the preceding years.

WHITEBAIT

The whitebait fishery was disappointing in every part of the Dominion. In some districts adverse weather and flooded rivers were to some extent responsible for the failure of the fishery, but it is evident that the runs were everywhere smaller than ever before, and in most cases the season was pronounced to be the worst on record. It has not been possible to obtain complete reports on the fishing. The statement which follows, giving totals for the various districts as estimated by local inspectors, will serve to show the production in comparison with previous years :—

Whitebait Fishery, 1942 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.	
Auckland ..	Waikato	Hand-nets ..	27th July	October ..	100	50	Cwt. 482
Auckland ..	Kaituna	Hand-nets ..	6th August	August ..	20	10	29
Auckland ..	Tarawera	Hand-nets ..	25th July	September ..	..	17	99
Napier ..	Ngaruroro and Tuki-tuki	Set-nets ..	1st July ..	September ..	20	40	24
Blenheim ..	Wairau, Opawa, Tuamarina	Hand-nets ..	August ..	November ..	2	20	7
Motueka ..	Motueka, Moutere ..	Set and hand nets	August ..	October ..	6	..	18
Takaka ..	Takaka, Motupipi ..	Hand-nets ..	August ..	August ..	..	4	1
Westport ..	Buller, Orowaiti, Totara, Fox, Nile, Little Totara	Hand-nets ..	September	November ..	2	100	30
Greymouth ..	Grey, Teremakau, Camerons, Paroa	Hand and set nets	September	October ..	2	100	60
Wataroa (South Westland)	Big Wanganui, Karangarua, Waitoto, Maori, Mahitahi, Okuru, Poerua, Wataroa, Waitangi	Set-nets ..	September	October ..	20	30	155
Christchurch ..	Wainakariri, Ashley, Styx, Saltwater Creek, Waipara, Avon	Hand and set nets	August ..	November ..	10	40	161
Temuka ..	Opihi, Orari ..	Set-nets ..	September	November ..	..	40	45
Dunedin ..	Molyneaux, Kakanui, Owaka, Taieri, Waitaki, Shag, Waikawa, Waikouaiti, Pleasant, Tokomairi, Wainakarua	Hand-nets ..	August ..	Oct. and Nov. ..	12	5	44
Dunedin ..	Mataura, Oreti, Aparima, Waiau, Titiroa, Mararewa, Otautau, Waikiwi	Hand and set nets	August ..	Oct. and Nov. ..	15	7	51

FRESH-WATER FISHERIES

Quinnat Salmon

No quinnat salmon hatchery work was undertaken during the year. The 1942-43 fishing season was one of the best on record and under normal conditions the total production would have been fairly substantial, the average size of the fish being also above average, at least for the more northern rivers. Salmon appeared in the mouths of Canterbury rivers as early as November, and some were taken by fishermen in December and January. Continuous floods throughout February prevented successful fishing in what is usually the best fishing period, and the majority of the fish that were caught were taken between mid-March and mid-April.

Only fourteen selling licenses were taken by rod-fishers. The returns of catches from these licensees are summarized in the statement given below:—

Quinnat Salmon, 1943

—	Males.	Females.	Sex not given.	Totals.
<i>Returns from Rods</i>				
Waimakariri River, 5/3/43 to 15/4/43 (two rods)—				
Number of fish caught	7	17	..	24
Total weight	78 lb.	182 lb.	..	260 lb.
Average weight	11.1 lb.	10.7 lb.	..	10.8 lb.
Rakaia River, 13/3/43 to 11/4/43 (three rods)—				
Number of fish caught	38	32	16	86
Total weight	327 lb.	368.5 lb.	184.5 lb.	880 lb.
Average weight	8.6 lb.	11.5 lb.	11.5 lb.	10.2 lb.
Rangitata River, 11/1/43 to 8/4/43 (five rods)—				
Number of fish caught	19	11	46	76
Total weight	258 lb.	136 lb.	568.5 lb.	962.5 lb.
Average weight	13.6 lb.	12.4 lb.	12.4 lb.	12.7 lb.
Opihi River, 3/2/43 to 15/4/43 (two rods)—				
Number of fish caught	..	..	46	46
Total weight	..	..	682 lb.	682 lb.
Average weight	..	..	14.8 lb.	14.8 lb.
Combined Rivers, 11/1/43 to 15/4/43 (twelve rods)—				
Number of fish caught	64	60	108	232
Total caught	663 lb.	686.5 lb.	1,435 lb.	2,784.5 lb.
Average weight	10.3 lb.	11.4 lb.	13.3 lb.	12.0 lb.

The Opihi River, less affected by floods than the larger rivers, provided good fishing. A total of 252 salmon, weighing 1,667 lb., caught between 14th February and 25th April has been recorded for this river. The Department is indebted to Mr. F. W. Pellett for forwarding these records.

No netting license for the Waimakariri River was taken out until April, when this fishery is normally at its close. Only a few odd fish were caught. Preparations were made by the Ashburton Acclimatization Society, under license, to trap the run of salmon that usually comes into the Ashburton River. Detritus brought down by floods, which carried away the trap, rendered their enterprise a failure.

Atlantic Salmon

The Hatchery Manager, Mr. C. E. McIvor, conducted the trapping, stripping, and hatchery operations without assistance, except for the valuable collaboration of Mr. Ward Beer, the Curator of the Southland Acclimatization Society's hatchery at Te Anau. The completion of the trap in the Upukoro River was delayed by floods and no fish were taken till May, in which month 108 salmon were trapped, which were subsequently lost by a flood on 19th May which carried away part of the trap and made a breach in the holding pound. In June 25 males and 27 females were taken; in July, helped by several freshes, 27 males and 35 females were trapped; and in August 15 males and 27 females came into the trap. The total catch for the season was 265 salmon (151 males and 114 females). Approximately 210,000 ova were provided for the hatchery, from which about 180,000 fry were reared.

The 1942-43 fishing season has been better than average, though the number of visiting anglers has declined. The largest salmon taken was one of 10½ lb. caught in the Eglington River.

RESEARCH

Mr. Hobbs continued his investigation of the fresh-water eel stocks of Lake Ellesmere during the autumn of 1942, the main object being to get an idea of the quantities available for commercial fishery in view of the possibility that this fish might be utilized to provide an additional supply of the fish oils required for various purposes that were previously imported. At the same time determinations of the actual yield and quality of oil from different classes of eel were made, Dr. Shorland and Mr. Coop, of the Chemical Section of the Department of Agriculture, collaborating in this phase. Mr. Hobbs also continued his historical study and analysis of fish cultural and fishery management operations in New Zealand, and had put together a substantial amount of material for subsequent publication before he left to enter naval service.

MARINE INVESTIGATIONS

The work of Mr. A. M. Rapson, Marine Biologist, has been confined mainly to problems of present-day importance. He has continued his investigations on the spawning, food, and distribution of the sardine, which, besides being an almost essential bait-fish in the Cook Strait long-line fishery, is also now beginning to be utilized for canning. There are prospects for the extension of this industry when certain existing difficulties have been overcome. Another wartime industry that is now in being is the extraction of oil from fish livers. Formerly large quantities of cod-liver oil were imported on account of their content of vitamins A and D and were largely used in the preparation of foods for infants and invalids as well as for stock and poultry rearing. The oil from the livers of some of our New Zealand fish species has been found to be richer in these vitamins than the cod-liver oil from the European and North American fisheries. The increasing demand for these food factors, which have been proved to be essential for normal growth and health maintenance, is still not yet as high as is desirable. Since the livers of most species of shark are especially rich in vitamin A, fisheries for these varieties, hitherto generally regarded by most fishermen as pests, have been developed in every part of the world. Small-scale fisheries for the supply of raw material to an Auckland fish-liver-oil factory have been in operation during the year. Mr. Rapson has further paid some attention to the identification of the species occurring in our waters, collaborating with the Agricultural Chemist in this work, so that information may be available as to the yield and quality of oils obtainable from the various species. Observations on the condition and density of distribution of toheroas on various beaches and on the food, spawning, and migration of blue cod have also been continued.

A. E. HEFFORD,

Chief Inspector of Fisheries and Director of Fishery Research.

20th May, 1943.