

1943.

NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY.

DRAINAGE OPERATIONS IN HAURAKI PLAINS.

REPORT FOR THE YEAR ENDED 31ST MARCH, 1943.

Presented to both Houses of the General Assembly pursuant to Section 20 of the Hauraki Plains Act, 1926.

Department of Lands and Survey, Wellington, 1st May, 1943.

SIR,—

I have the honour to present herewith the report of the Chief Drainage Engineer on operations carried out during the past year on the Hauraki Plains in accordance with the provisions of the Hauraki Plains Act, 1926.

I have, &c.,

R. G. MACMORRAN,
Under-Secretary for Lands.

The Hon. the Minister of Lands.

REPORT OF THE CHIEF DRAINAGE ENGINEER.

SIR,—

I have the honour to submit the thirty-fifth annual report of the drainage and land-development works carried out on the Hauraki Plains. The report covers the year ended 31st March, 1943.

The season has been a satisfactory one for the settlers on the reclaimed swamp farms, and the volume of farm production is expected to be about normal, although exceptionally dry weather has had the effect of reducing the late summer returns from the dairy herds. Drainage conditions have been good as the only heavy rainfalls occurred in August and September, and these did not overtax the drainage system.

The rainfall at Kerepechi in 1942 was 36.15 in., which is considerably below the average rainfall of 44.10 in. over a period of twenty-seven years. The wettest month was August, with a fall of 6.13 in., and the driest March, 1942, with a fall of 1.07 in.

Sixty-two men employed on the Hauraki Plains drainage-works and land-development schemes have joined the armed forces or been taken for defence work or other essential undertakings. The Department's works' force, which would normally number about one hundred men, has been reduced to twenty-eight men. This reduced staff has been fully employed on maintenance of existing works and improvements, and practically no new construction or land-development work has been possible this year. Most of the 135 miles of main drains serving occupied farms and maintained by the Department have been cleaned during the year, but labour has not been available for reconditioning drains which periodically have to be enlarged because of subsidence of the peat-banks. Maintenance work on river-channels and large canals has also been deferred. It is particularly unfortunate that labour has not been available to control the regrowth of willows along the banks of the rivers and canals. The Department recently ring-barked and removed the willows for many miles along the banks of the Piako and Waitoa Rivers. By patrolling the cleared banks and cutting any regrowth annually the willows could now be controlled at reasonable cost. This annual cutting is specially important during the years immediately following removal of the willows. Growth is so rapid that in about two years young willows reach the stage when ringbarking is impracticable and then the only method of exterminating them appears to be to allow the trees to grow until the trunks can be ringbarked and the whole costly process of killing and removing the willows must be repeated.

This year saw a revival of the at one time important flaxmilling industry on the Hauraki Plains. About 1,000 tons of flax has been cut from an area of planted flax at Kaihere, where a mill is now being erected.

The following is a brief review of the works carried out during the year:—

DREDGES AND EXCAVATORS.

Since the commencement of the war the Department's earth-moving plant has been held "at call" for defence work. In May, 1942, two drag-line excavators were transferred from the Hauraki Plains works to urgent defence work and have not yet returned. Only two excavators have been continuously employed throughout the year.

No. 15 Bucyrus Excavator has been employed on stop-bank reconstruction at the mouth of the Piako River and along the foreshore of the Hauraki Gulf. This work was commenced on the 12th November, 1941, and by the 9th March, 1943, 2 miles 70 chains of stop-bank reconstruction had been completed. The stop-bank has a base of 30 ft. and initial height of about 10 ft., but considerable subsidence is to be expected. The material for the bank is obtained from a continuous borrow-pit 30 ft. to 40 ft. from the inland toe of the bank. In 221 working-days between 1st April, 1942, and 9th March, 1943, this machine placed 53,610 cubic yards of material in the construction of 2 miles 6 chains of bank at cost of 6·7d. per cubic yard.

No. 16 Bucyrus Excavator is widening and deepening the Maukoro Canal. The machine completed the eastern side road embankment between 4 miles 25 chains and 4 miles 36·5 chains and then continued the widening and deepening of the canal up-stream from this point. At the 5-mile peg the canal-bank caved in, partly filling the canal and leaving the excavator partly submerged and buried. The work of salvaging the 35-ton excavator occupied three and a half weeks in November and December, and when it had been replaced on the canal-banks it was decided to leave a 26-chain section of the canal through exceptionally treacherous ground undisturbed to allow time for consolidation. On the 8th March, 1943, the excavator was at peg 5 miles 45 chains. The output for the year was 23,638 cubic yards in 164 working-days at unit cost of 14·2d. per cubic yard.

No. 31 Ruston Bucyrus Excavator.—After completing a stop-bank on the Maioiro Block for the Hauraki United Drainage Board and 10 chains of stop-bank reconstruction on the Orongo Block, this machine was transferred to the Public Works Department for urgent defence work at the end of May, 1942. The machine excavated and placed 8,479 cubic yards of material in the reconstruction of 48 chains of stop-bank on the Maioiro Block and 10 chains on the Orongo Block at cost of 5·9d. per cubic yard.

No. 28 Bay City Drag-line Excavator.—This machine worked for thirty-one days during April, May, and June, and removed from the Torchape Road drain gravel to be used for road metalling. From 66 chains of drain 944 cubic yards of gravel was excavated at cost of 41·3d. per cubic yard. This is an old machine, and because of worn caterpillar traction it is now unable to move on soft ground and is therefore unsuitable for drain-excavation. For this reason the plant has been laid up until road-construction can be resumed, when, with shovel equipment, it will be used for filling trucks in ballast-pit.

No. 29 Bay City Drag-line Excavator was employed enlarging the spillway from the temporary dam in the Maukoro Canal and the drain on the western side of the Maukoro Canal Road until the 19th of May, when the machine was transferred to the Public Works Department for defence work. Some 2,196 cubic yards of material was excavated at unit cost of 15d. per cubic yard.

No. 11 Priestman Dredge completed the removal of the willows previously killed by ringbarking in the Piako River between 16 miles 48 chains and 15 miles 9 chains in April, May, and June. After removing a bar in the Piako River, the plant was laid up in accordance with the policy of confining work to essential undertakings for the duration of the war.

The total quantity excavated by the dredges and excavators during the past twenty-one years is 7,838,616 cubic yards at an average cost of 7·55d. per cubic yard. In 1942–43 the respective figures were—88,867 cubic yards, 9·23d. per cubic yard.

LAND-DEVELOPMENT.

Pre-settlement land-development work, which has been carried out during the past four years on the Kerepechi and Pouarua Blocks of 1,700 acres and 10,000 acres respectively, is showing good results where the land has been stocked. Additional areas could be stocked if labour and material was available for fencing. On the Pouarua Block there is over 180 miles of drains and most of these drains now require deepening.

KAIHERE FERRY.

The ferry service across the Piako River at Kaihere has been maintained with the exception of ten days in September, when repairs were necessary owing to the punt being damaged by a heavily-laden lorry.

PUMP-STATION.

The drainage-pumping station on the Kerepechi Block was in operation 156 hours in August and 54 hours in September.

SURVEYS AND OFFICE WORK.

Engineering surveys carried out on the Hauraki Plains during the year required 8 miles 66 chains of levels, 3 miles 34 chains of traverse lines, and the measurement of 2 miles 20 chains of drains and canals to determine excavation quantities.

The clerical staff of the Kerepechi office is responsible for the preparation of vouchers and fortnightly payment of wages and contract-moneys, ordering and distribution of stores,

and the accounts and works costs connected with drainage and land-development operations on the Hauraki Plains and Waihi Drainage Districts, and the management of twelve dairy-farms at Hoe-o-tainui.

SUMMARY.

The principal works carried out during the year on the Hauraki Plains are summarized in the following schedule:—

	Length.		Excavation.
	Miles.	Ch.	Cubic Yd.
Drains cleaned by manual labour	103	7	..
Drains cleaned by weed-cutting launch	11	78	..
Drains widened and deepened by manual labour	9	68	6,105
River-channel, canals, drains, and stop-banks improved by machines	4	70	88,867
Roads surfaced with metal	1	40	Metal. 615
Area of swamp harrowed or rolled with tractor	Acres. 469
Area swamp sown in grass	510
River-banks cleared of willows	1	8	..

The rates struck were £3,059, and £2,974 was collected on account of current and arrears of rates.

I have, &c.,

R. L. INNIS,

Chief Drainage Engineer.

The Under-Secretary for Lands, Wellington.

STATEMENT OF ACCOUNTS.

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