

D. J. JELLYMAN



NEW ZEALAND MARINE DEPARTMENT

FISHERIES TECHNICAL REPORT  
NO. 75

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**TOHEROA SURVEY  
WELLINGTON WEST COAST BEACHES**

**1971**

**D. WILLIAMSON**

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WELLINGTON, NEW ZEALAND  
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## CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	2
AREA SURVEYED	2
METHODS	3
RESULTS	3
COMPARISONS WITH PREVIOUS SURVEYS	6
CONCLUSION	6
ACKNOWLEDGEMENTS	7
REFERENCES	7

SUMMARY

Toheroa populations have decreased greatly throughout the total survey area.

The total estimated population in June 1971 is 56,000, constituting a 30% drop in population since June 1970. Only three undersized toheroa were found. There is no evidence of recent successful spatfall.

Toheroa are most abundant on Hokio Beach which carries 33,000 (about 60% of the total population).

INTRODUCTION

In May 1971 a survey was undertaken to determine whether any changes in toheroa (Amphidesima ventricosum Gray) stocks had taken place on Wellington West Coast beaches since the June 1970 survey.

Distribution, abundance, and size range of toheroa found are outlined in this report.

AREA SURVEYED

The area surveyed is shown in Figure 1.

The total beach has been divided into nine parts, covering a total area of 46 miles (73.6 km), for easier representation of results.

Beaches surveyed are listed from south to north.

BEACH	LENGTH (MILES/km)	BOUNDARIES
Te Horo	5½ (8.8km)	Waikanae R. to Mangaone Stm.
Otaki	3¾ (6.0km)	Waitohu Stm to Ohau R.
Hokio South	3½ (5.6km)	Ohau R. to Waiwiri Stm.
Hokio North	2¼ (3.6km)	Waiwiri Stm to Hokio Stm.
South Waitarere	3 (4.8km)	Hokio Stm to Waitarere.
North Waitarere	5 (8.0km)	Waitarere to Manawatu R.
Foxton	6 (9.6km)	Manawatu R. to Himatangi.
Tangimoana	6¼ (10.0km)	Himatangi to Rangitikei R.
Moanaroa	11 (17.7km)	Rangitikei R. to Koitiata R.

No toheroa have been found north or south of these boundaries.

The position of the Ohau River mouth changed during the year, and Hokio Beach was therefore considered in two sections for easier surveying.

### METHODS

As in previous surveys, a one foot wide trench was dug at right angles to the sea. Digging started at about mid-tide level, and continued towards the high and low tide levels until no more toheroa were present. Trenches were dug for a minimum of 14 yards (12.8 m), even if no toheroa were found in initial diggings. Trenches were dug at quarter mile intervals and the intervals between trenches examined visually for signs of toheroa. The total number of toheroa present on each beach was calculated in proportion to the numbers in the trenches.

### RESULTS

Figures two and three show the position of trenches dug and number of toheroa in each trench in comparison to 1969 and 1970. The positions of the trenches are not exactly the same in each year.

Table 1 shows estimated numbers of toheroa on each beach.

TABLE 1     ESTIMATED NUMBERS OF TOHEROA ON WELLINGTON WEST  
COAST BEACHES

BEACH	NO. DUG
Te Horo	2
Otaki	9
Hokio South	16
Nokio North	9
South Waitarere	-
North Waitarere	4
Foxton	2

No toheroa were found on South Waitarere, Tangimoana or Moanaroa Beaches; Hokio has the largest population calculated at about 30,000 toheroa. Otaki is calculated to have about 12,000 toheroa. Few toheroa were taken on other beaches. Figures 2-3 show numbers of toheroa per trench in 1969, 1970 and 1971. Figure 4 shows the length composition of the toheroa found. Figure 4 contains data from toheroa not taken in the survey trenches, but measured to increase the usefulness of the figure.

#### Te Horo Beach

Two toheroa were found on this beach, the first a half mile from the Waikanae River and the second one and a half miles from the river. They measured 11.5 and 12.0 cm long.

#### Otaki Beach

A major change in length of this beach has occurred due to a shift of some three quarters of a mile in the position of the Chau River mouth. Toheroa occur in small numbers from three quarters of a mile north of the Waitohu Stream until a mile south of the Chau River mouth. Lengths of the nine toheroa dug range from 6 cm to 12.5 cm as shown in Figure 4. One undersized toheroa was found on this beach.

#### Hokio Beach

Because of the change of length on this beach, the area was sub-divided into two lengths; from Hokio Stream to Waiwiri Stream, and from Waiwiri Stream to Ohau River.

Hokio North - Scattered toheroa were found all along this beach. Sizes ranged from 10.5 to 14.0 cm and are shown in Figure 4.

Hokio South - Toheroa occurred from about one quarter mile south of Waiwiri Stream to two miles south. Lengths, shown in Figure 4, ranged from 5 cm to 14 cm.

South Waitarere

No toheroa were found on this beach in the transects, although signs of toheroa were seen about a half mile from the Hokio Stream.

North Waitarere

A small population of toheroa was found a mile and a half from the Manawatu River to two and a half miles south. Length of the four found were 11.5 cm, 11.0 cm, 10.5 cm and 10.5 cm.

Foxton

Two toheroa were found on this beach; one, measuring 11.5 cm,  $1\frac{3}{4}$  miles from Himatangi, and the other, 12.5 cm, a mile from the Foxton Ramp.

Tangimoana and Moanaroa

No toheroa were found.

General

Once again there is no evidence of a successful spatfall. Populations of burrowing polychaetes and the decapod crustacean Callianassa filholyi have increased greatly, undermining almost the total length of beach surveyed from mid-tide to low-tide levels.



COMPARISON WITH PREVIOUS SURVEYS

Table 2 compares the 1971 population estimates with those made in earlier years.

TABLE 2      NUMBER OF TOHEROA 1968-71

Beach	1968 Williamson (1969)	1969 Williamson (1969)	1970 Williamson (1970)	1971
Te Horo	140,000	13,000	4,000	3,000
Otaki	141,000	33,000	8,000	12,000
Hokio	610,000	301,000	50,000	33,000
Sth Waitarere	24,000	19,000	1,000	-
Nth Waitarere	153,000	148,000	12,000	5,000
Foxtton	106,000	41,000	5,000	3,000
Tangimoana	84,000	8,000	-	-
Moanaroa	13,000	1,000	-	-
Total	1,271,000	564,000	80,000	56,000

Toheroa stocks are now at their lowest level for several years. Some newly dead toheroa were found during the survey period; the cause of their death was unknown.

CONCLUSION

The number of toheroa on these beaches has decreased markedly, leaving seriously depleted stocks. A marked lack of undersized toheroa was also noted.



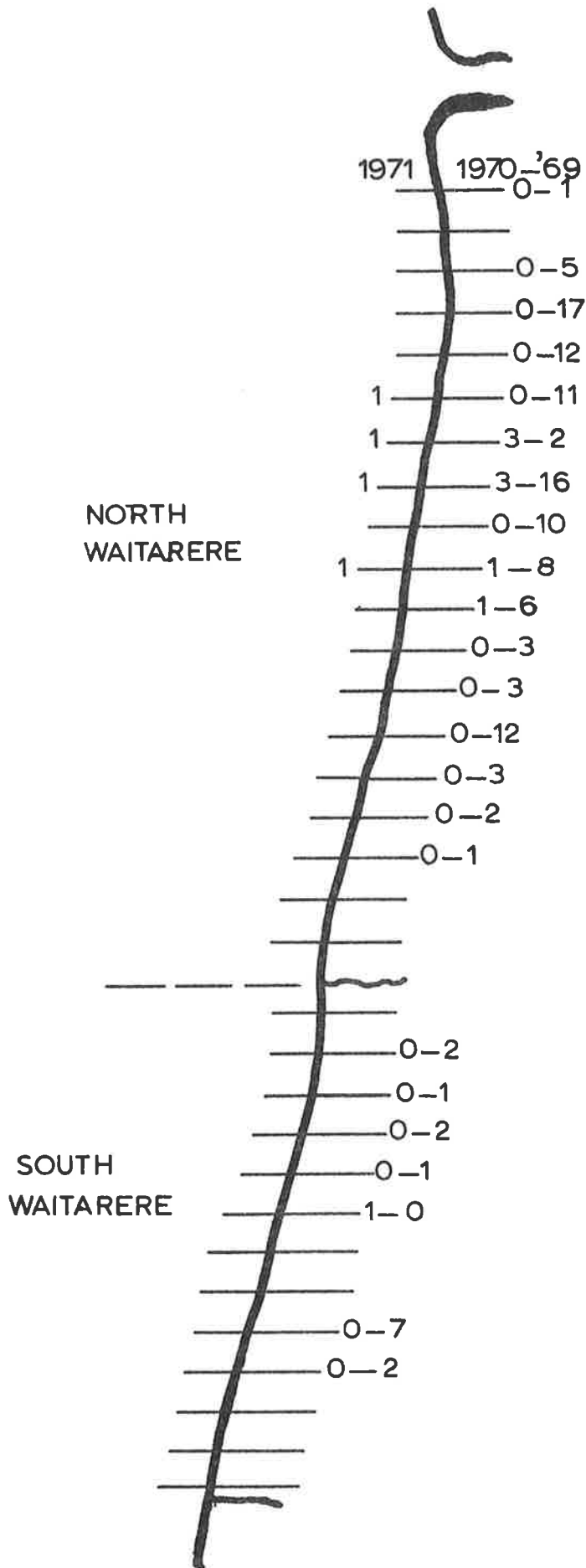


FIG. 3 TOHEROA  
PER TRAVERSE

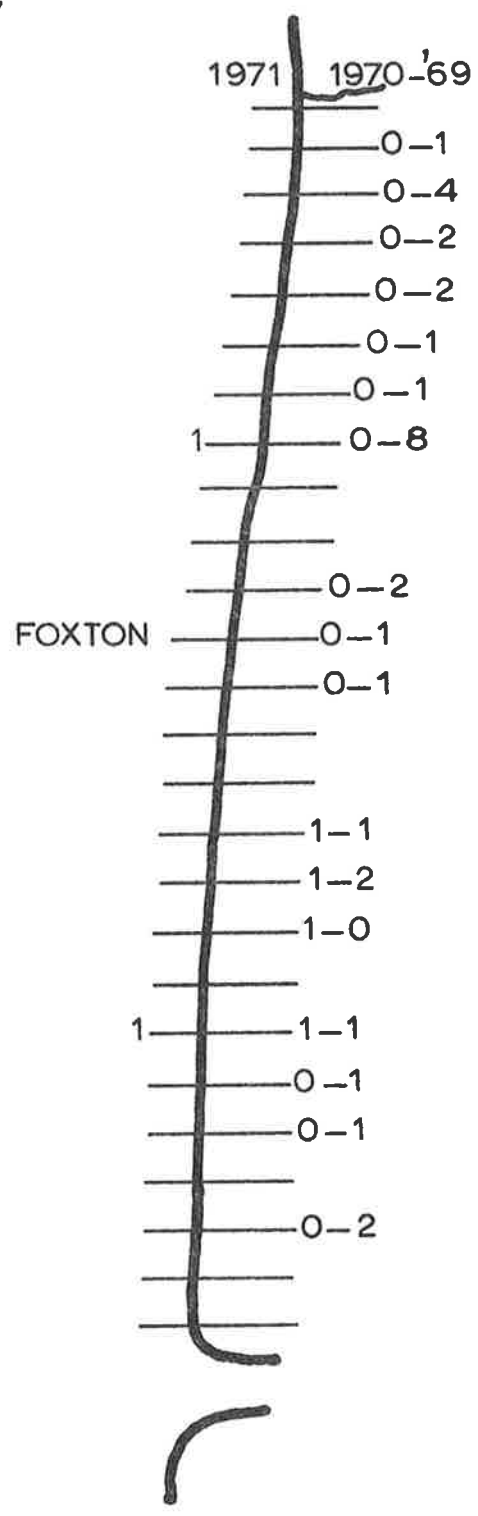


FIG. 4 TOHEROA — LENGTH FREQUENCY

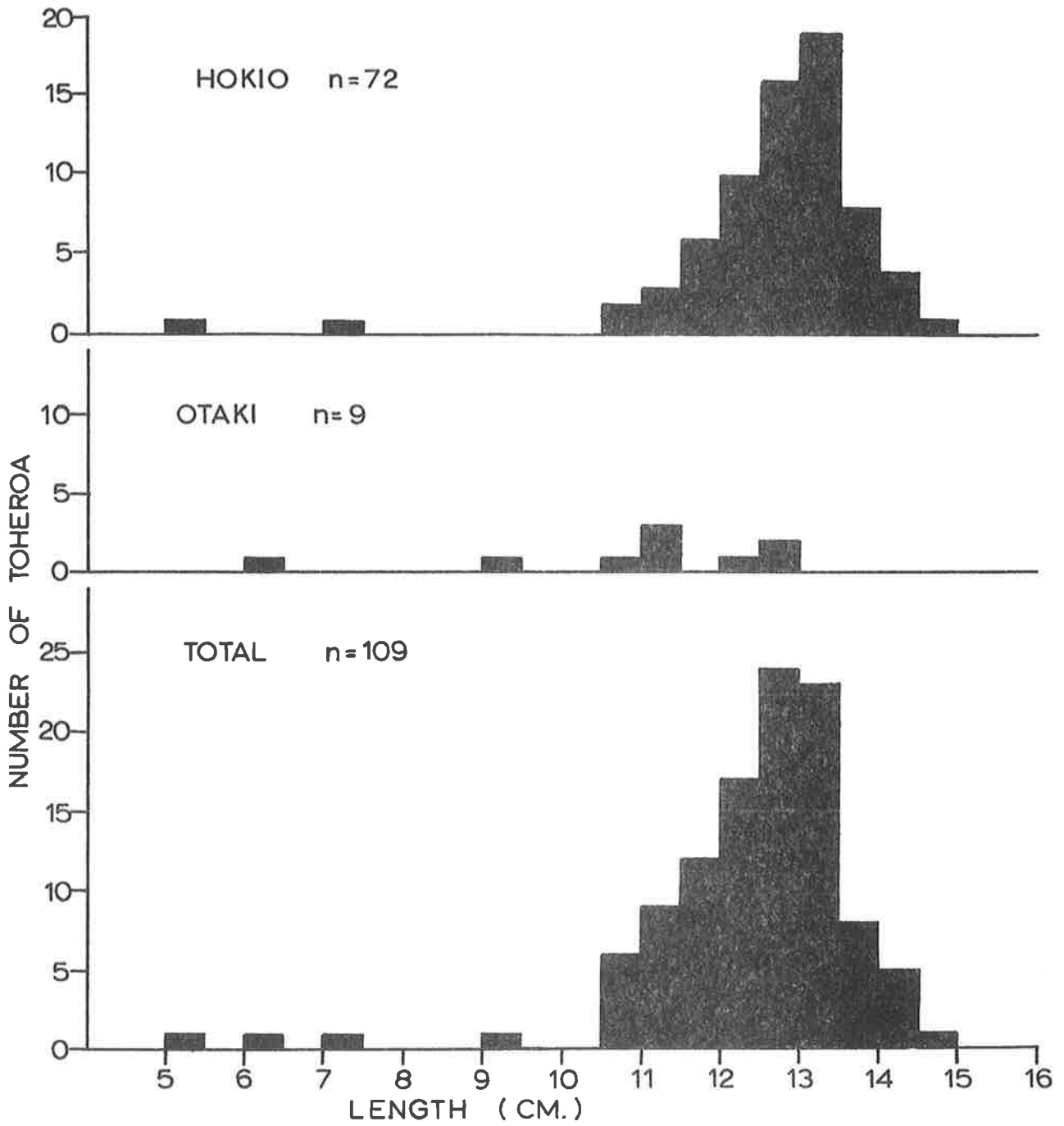
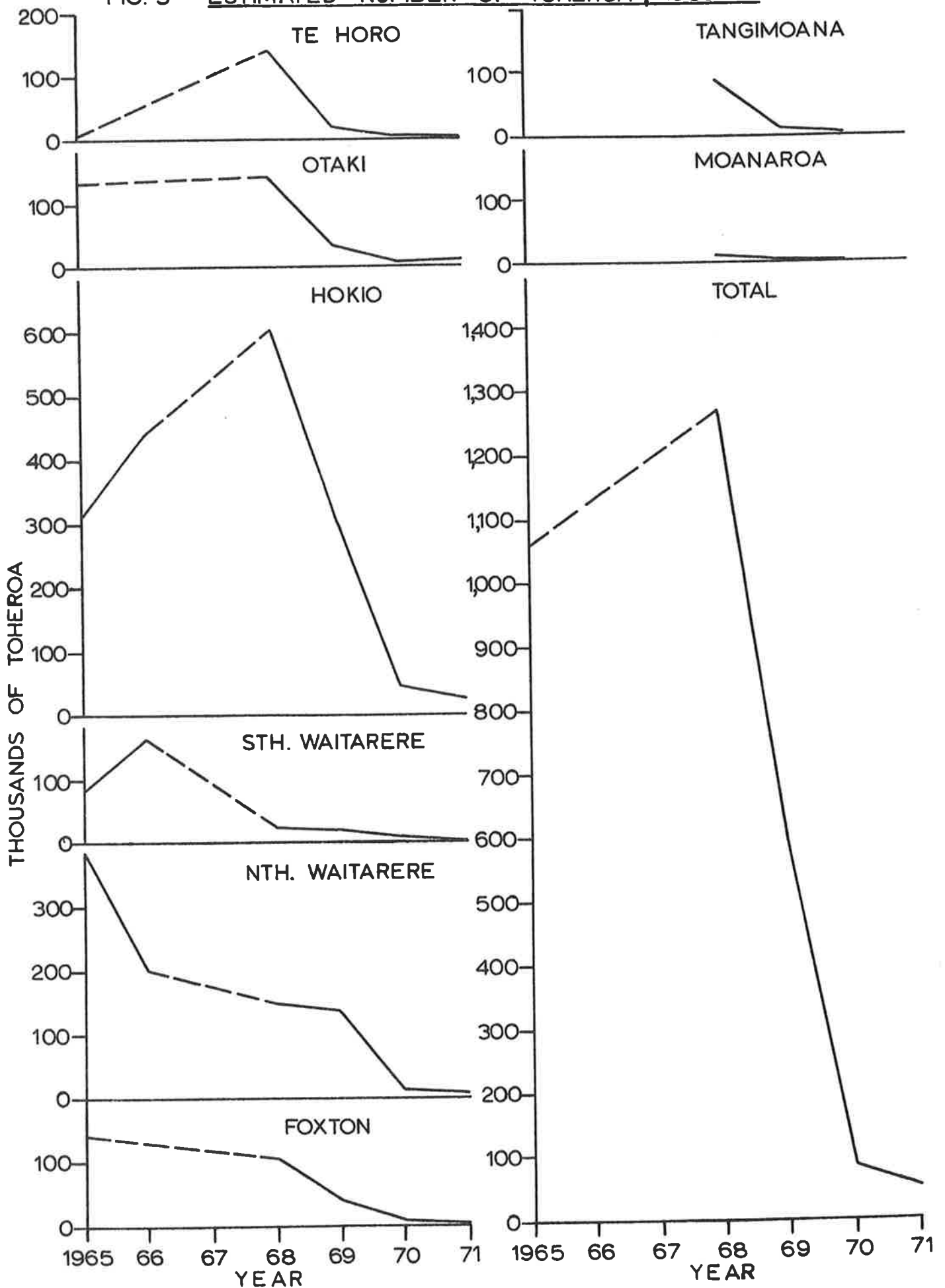


FIG. 5 ESTIMATED NUMBER OF TOHEROA, 1965-71



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