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C. F. Fisher

# THE LOBSTER FISHERY IN NEWFOUNDLAND

## STATISTICAL PROFILE OF THE NEWFOUNDLAND LOBSTER FISHERY — AN OVERVIEW — LOBSTER DISTRICTS 11-14 —



(Report No: 1 in a Series of Five Reports)

C. F. FISHER
ECONOMICS AND INTELLIGENCE BRANCH
FISHERIES AND MARINE SERVICE
DEPARTMENT OF ENVIRONMENT
ST. JOHN'S, NEWFOUNDLAND

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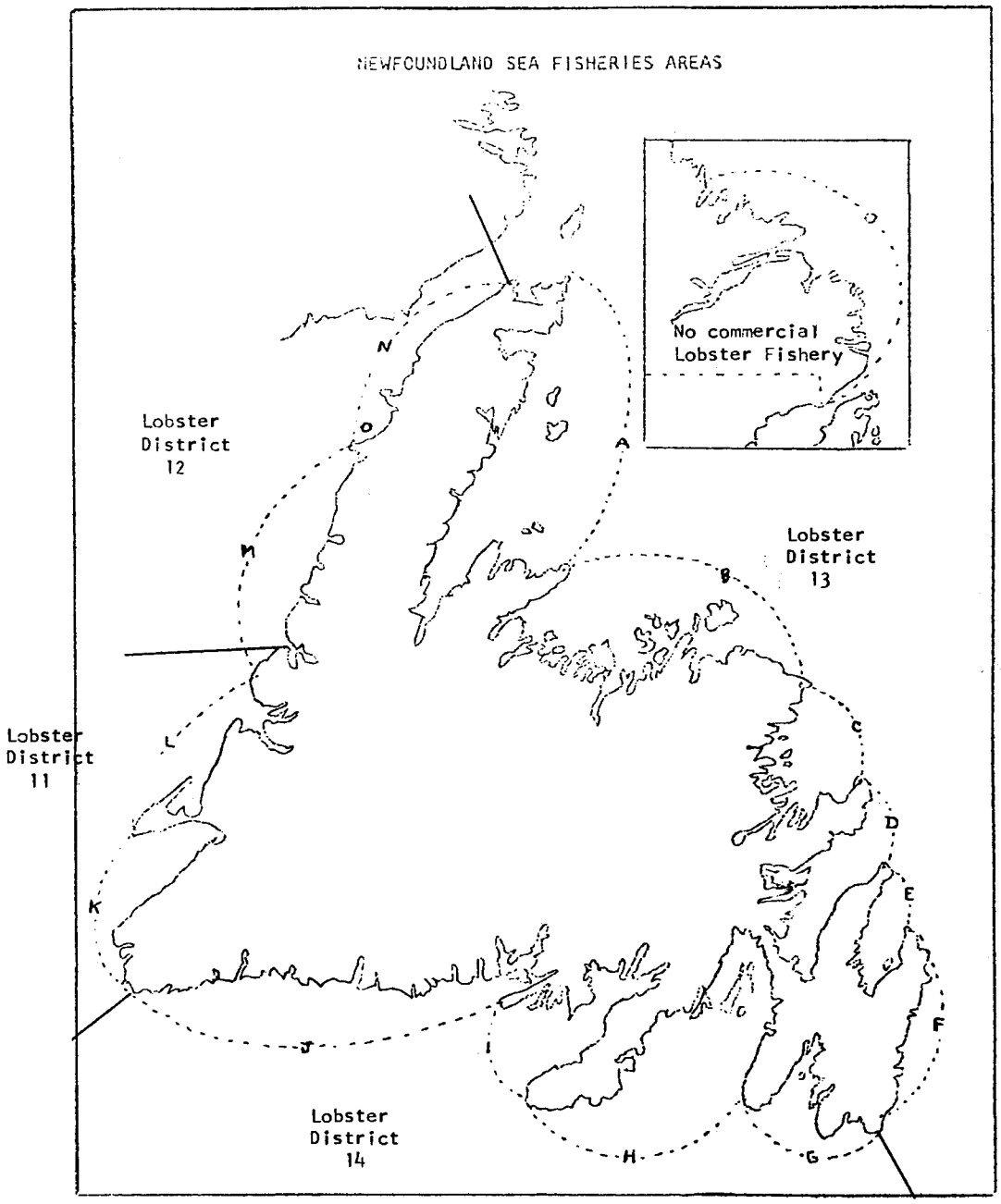
## SERIES OF FIVE REPORTS

| REPORT NO: | TITLE |
|---|---|
| 1. | STATISTICAL PROFILE OF THE NEWFOUNDLAND LOBSTER FISHERY - AN OVERVIEW - LOBSTER DISTRICTS 11-14 |
| 2. | STATISTICAL PROFILE OF LOBSTER DISTRICT 11 - SUB-AREAS K-L (CAPE RAY TO CAPE ST. GREGORY) |
| 3. | STATISTICAL PROFILE OF LOBSTER DISTRICT 12 - SUB-AREAS M-N (CAPE ST. GREGORY TO CAPE NORMAN) |
| 4. | STATISTICAL PROFILE OF LOBSTER DISTRICT 13 - SUB AREAS A-F (CAPE NORMAN TO CAPE RACE) |
| 5. | STATISTICAL PROFILE OF LOBSTER DISTRICT 14 - SUB-AREAS G-J (CAPE RACE TO CAPE RAY) |




| | | |
|---|---|---|
| Lobster District 13 | A. | Cape Norman to Cape St. John |
| | B. | Cape St. John to Cape Freels |
| | C. | Cape Freels to Cape Bonavista |
| | D. | Cape Bonavista to Grate's Point |
| | E. | Grate's Point to Cape St. Francis |
| | F. | Cape St. Francis to Cape Race |
| Lobster District 14 | G. | Cape Race to Cape St. Mary's |
| | H. | Cape St. Mary's to Point Crewe |
| | I. | Point Crewe to Pass Island |
| | J. | Pass Island to Cape Ray |
| Lobster District 11 | K. | Cape Ray to Cape St. George |
| | L. | Cape St. George to Cape St. Gregory* |
| Lobster District 12 | M. | Cape St. Gregory to Point Riche* |
| | N. | Point Riche to Cape Norman |

* Note the separation point between Lobster Districts 11 and 12 does not coincide with the separation point between Area 'L' and 'M'.

# PREFACE

## Purpose of the Study

Since the early sixties, fishermen engaged in the lobster fishery were required to be licenced for that fishery. This requirement was generally perfunctory in nature in that anyone wishing a licence merely had to apply, and the request was approved. This condition continued up to and including 1975. In 1976, as a first step in matching the catching capacity to the lobster resource, persons with full-time employment outside the fishery and fishermen who did not have a lobster licence in 1975, were denied a licence in 1976. As a further step in this direction, fishermen with licences to engage in the 1976 lobster fishery were restricted to utilizing only the number of lobster traps for which they were licenced in 1975. Future steps to be taken for the better resource management of the lobster fishery will depend to a large degree on the acquisition and availability of adequate economic and biological information. This study was undertaken in April 1976 as an attempt to consolidate the economic data currently available in scattered form. The ultimate aim is to provide input into resource management decisions directed towards making the lobster fishery viable and self-sustaining.

## Scope and Format of the Study

This study is restricted to the analysis of economic statistical data based on the long-term conditions existing in the lobster fishery on the Island portion of the Province. There is no commercial lobster fishery in Labrador. The analysis is based on existing economic data and does not incorporate relevant external factors affecting the data such as biological factors and environmental conditions, such as ice conditions, storms, etc. Consequently the study deals with four major areas - the participation of fishermen in the lobster fishery - the extent of lobster landings - the extent of lobster landed values - the utilization of lobster traps and their interrelationships. The Study basically examines the trends established for the ten year

period, 1964-1973, a period for which statistical data are available. Information is included also for 1974 and 1975, where data permits.

As a resource management scheme must be responsive to local needs and conditions, the study centres on statistical data obtained and analysed on a Statistical Area basis, each area approximating each Bay on the Island. These statistical areas are grouped into four Lobster Districts, and each District is analysed in terms of the interrelationships between Statistical Areas. Finally, a Provincial overview is provided by consolidating and analysing the interrelationship between the four Districts.

Keeping in mind the ultimate users of this study; the Economics Branch, Licencing Division, District Offices and District Lobster Advisory Committees, the study has been prepared as a series of five reports: A Provincial Overview, and four at the Lobster District level, the latter incorporating the separate analyses of the Statistical Areas associated with each Lobster District.

## Limitations of Data

1. The statistical data used in this study were collected during the past decade under different methodologies, envolving from estimates at the community level to individual interviews with fishermen. No attempt was made to adjust the data, given these different methodologies.

2. Prior to 1969, the number of lobster traps reported by fishermen referred to the number owned, while subsequent to 1969, they referred to the number used. No attempt was made to adjust this data.

3. Averages have been used throughout this study. This may tend to understate the mode, and reduce certain values to a ridiculously low figure.

4. Owing to the difficulty of determining the number of boats engaged in the lobster fishery, due to their multi-use nature, this variable has not been included in this study.

5. The separation point between Lobster Districts 11 and 12 does not coincide with the separation point between Statistical Areas 'L' and 'M'. As there is only minimal overlapping, no attempt was made to adjust the data.

## Definitions

1. All references to lobster fishermen include 'helpers'.

2. An inshore fishermen is one who fished from a boat less than 25 tons.

3. All references to "Province' refers to the Island portion of the Province.

4. All references to Districts mean "Lobster' Districts.

5. The references to 'utilized' lobster traps is for convenience only as prior to 1969 the number of traps reported by the Fisheries Officer was the number 'owned' and not necessarily used or 'utilized', while subsequent to 1969, they were the number used. No attempt, therefore, was made by the Writer to distinguish these differences.

## LIST OF TABLES

TABLE OF CONTENTS

# PROFILE OF PROVINCIAL LOBSTER FISHERY

## (DISTRICTS 11-14 INCLUSIVE)

### GENERAL

The following comments are based on the 10 year average profile for the Province - Table 11, Page 12.

### FISHERMEN

The number of inshore fishermen in the Province (exclusive of Labrador) has been continually declining since 1964, at which time there were 19,670. This was reduced to a low of 11,845 in 1972, increasing to 12,334 in 1973, well below the ten year average of 15,557. Similarly, the number of lobster fishermen has been declining, but with annual fluctuations, decreasing from 8,090 in 1964 to 5,319 in 1973 as compared to the ten year average of 6,843. In summary, since 1964, th number of inshore fishermen declined by 37%, while the number of lobster fishermen declined by 34%.

The participation rate of inshore fishermen in the lobster fishery ranged from a high of 49% in 1967 to 43% in 1973, just below the ten year average of 44%.

A detailed breakdown of the above variables (as well as the percentage distribution of lobster fishermen) by Lobster District as of 1973 is presented in Table 1 on the next page.

Table 1 indicates that Lobster District 11 is the only District in the Province that is experiencing increases in the number of inshore fishermen and lobster fishermen. These facts combined with the high participation rate indicates the relative importance of the fishery, particularly the lobster fishery, in that District.

### LANDINGS

The landings of lobster in the Province has generally been declining, decreasing from 4,510,000 lbs. in 1964 to 2,785,000 lbs. in 1973, well below the ten year average of 3,443,000 lbs. (Increases have been experienced in 1974 and 1975, however, when 2,924,000 lbs. and 3,738,000 lbs., respectively were landed. The 1975 landings

TABLE 1

STATUS OF FISHERMEN IN PROVINCE (ISLAND PORTION)

BY LOBSTER DISTRICT - 1973

| District | No. of Lobster Fishermen | Percentage Change - Base Year 1964 | | Participation Rate* | Distribution of Lobster Fishermen |
|---|---|---|---|---|---|
| | | Inshore Fishermen | Lobster Fishermen | | |
| 11 | 1,251 | + 8% | + 20% | 92% | 24% |
| 12 | 810 | - 16% | - 24% | 68% | 15% |
| 13 | 2,303 | - 44% | - 44% | 32% | 43% |
| 14 | 955 | - 38% | - 48% | 37% | 18% |
| Province | 5,319 | - 37% | - 34% | 43% | 100% |

* % of inshore fishermen engaged in lobster fishery.

have been the highest since 1968).

The landings for 1973, 1974 and 1975 by District and the percentage change in landings using 1964 as the base year are as shown in Table 2 below.

TABLE 2

LANDINGS AND PERCENTAGE CHANGE IN LANDINGS

BY DISTRICT - BASE YEAR 1964

(Landings in '000 lbs.)

| Dist. | 1973 | | 1974 | | 1975 | |
|---|---|---|---|---|---|---|
| | Landings | % Change Base Year/64 | Landings | % Change Base Year/64 | Landings | % Change Base Year/64 |
| 11 | 735 | - 9% | 730 | - 10% | 614 | - 24% |
| 12 | 814 | - 26% | 826 | - 25% | 994 | - 9% |
| 13 | 645 | - 65% | 544 | - 71% | 986 | - 47% |
| 14 | 591 | - 22% | 824 | + 9% | 1,144 | + 51% |
| Prov. | 2,785 | - 38% | 2,924 | - 35% | 3,738 | - 17% |

The above table shows that Lobster District 11 is the only District in the Province that did not improve its landings position in

1975 over the previous two years, nor its relative position vis-a-vis the 1964 landings. District 14, however, is the only District which had landings in 1974 and 1975 which exceeded the 1964 landings. While Provincial landings of lobster in 1973, 1974 and 1975 did not reach the level of 1964, there was progressive improvement in each of these three years.

Table 3 below provides information on the percentage distribution of lobster landings in the Province by District for 1973, 1974 and 1975.

TABLE 3.

PERCENTAGE DISTRIBUTION OF PROVINCIAL LANDINGS, BY DISTRICT

| District | 1973 | 1974 | 1975 |
|---|---|---|---|
| 11 | 26% | 25% | 16% |
| 12 | 29% | 28% | 27% |
| 13 | 23% | 19% | 26% |
| 14 | 21% | 28% | 31% |
| Province* | 100% | 100% | 100% |

* Figures may not add up to 100% due to rounding.

The above table shows that Districts 11 and 12 are losing some ground with respect to their shares of the total Provincial landings of lobster, while District 14 has been consistently gaining. The share of District 13 has been fluctuating.

The average landings of lobster per fisherman in the Province has been fluctuating annually. The average was 524 lbs. in 1973, slightly above the ten year average of 503 lbs.

Table 4 on the next page gives the average landings of lobster per fisherman for 1973 by District as well as the statistical area within the District recording the highest average.

TABLE 4

AVERAGE LANDINGS PER FISHERMAN, BY DISTRICT AND STATISTICAL AREA OF HIGHEST AVERAGE - 1973

| District | Average Landings Per Fisherman | Area of Highest Average | Highest Average |
|---|---|---|---|
| 11 | 587 | Area 'L' | 699 |
| 12 | 1,005 | Area 'M' | 1,123 |
| 13 | 280 | Area 'F' | 381 |
| 14 | 619 | Area 'I' | 958 |
| Province | 524 | | |

LANDED VALUE

The total Provincial landed value of lobster, though fluctuating in some years, has been increasing, moving from $2,129,000 in 1964 to $2,980,000 in 1973. (Further increases were recorded for 1974 and 1975 when it was $3,176,000 and $3,913,000, respectively). The landed value for 1973, 1974 and 1975 by District, and the percentage change in landed value, using 1964 as the base year, are as shown in Table 5 below.

TABLE 5

PERCENTAGE CHANGE IN LANDED VALUE BY DISTRICT - BASE YEAR 1964

| | 1973 | | 1974 | | 1975 | |
|---|---|---|---|---|---|---|
| Dist. | Landed Value | % Change Base Year/64 | Landed Value | % Change Base Year/64 | Landed Value | % Change Base Year/64 |
| | (Landed Value in '000 dollars) | | | | | |
| 11 | 788 | + 111% | 763 | + 105% | 642 | + 72% |
| 12 | 885 | + 67% | 944 | + 80% | 1,062 | + 102% |
| 13 | 738 | - 19% | 635 | - 30% | 1,034 | + 14% |
| 14 | 568 | + 75% | 834 | + 157% | 1,176 | + 262% |
| Prov. | 2,980 | + 40% | 3,176 | + 49% | 3,913 | + 84% |

It would be expected that as landings increased and the

price per lb. paid for lobster increased, landed value would not only increase, but it would increase at a faster rate than would the rate of landings. Similarly, it would be expected, assuming increased prices per lb. of lobster, that when landings declined, the rate of decline would be greater than the rate of decline of the landed value. This fact would be confirmed if the preceding table was compared to Table 2 (Landings and Percentage Change in Landings by District). However, it is interesting to note that in the preceding table, District 13 is the only District that failed during 1973 and 1974 to maintain (not to mention, surpass) the 1964 level of landed value. The District was successful in doing so in 1975, but only marginally compared to the other Districts. Similarly, District 11 has been losing some ground in this respect, but not to the extent experienced by District 13. District 12, and particularly District 14, have made quite substantial gains from 1973-75 as compared to the 1964 level. The Province as a whole has consistently improved its position.

Table 6 below provides information on the percentage distribution of the total lobster landed value in the Province by District for 1973, 1974 and 1975.

TABLE 6

PERCENTAGE DISTRIBUTION OF PROVINCIAL LOBSTER LANDED VALUE, BY DISTRICT

| District | 1973 | 1974 | 1975 |
|---|---|---|---|
| 11 | 26% | 24% | 16% |
| 12 | 30% | 30% | 27% |
| 13 | 25% | 20% | 26% |
| 14 | 19% | 26% | 30% |
| Province* | 100% | 100% | 100% |

* Figures may not add up to 100% due to rounding.

The above distribution is similar to the distribution of landings (Table 3 ), the figures varying by no more than 2%.

Similar to the landings situation, Districts 11 and 12 are losing some ground with respect to their shares of the total Provincial landed value of lobster, while District 14 has been consistently gaining. The share of District 13 has been fluctuating.

The average price per pound received by fishermen in the Province as a whole, as indicated, increased from a low of 47¢ in 1964 to a high of $1.18 in 1972, decreasing to $1.07 in 1973. (The equivalent figures for 1974 and 1975 were $1.09 and $1.05, respectively.)

The average landed value per fisherman increased from $262 in 1964 to $561 in 1973, substantially above the ten year average of $361. The average landed value per trap in the Province increased from $3.87 in 1964 to a high of $7.66 in 1972, declining to $5.96 in 1973. Table 7 below gives the average landed value per fisherman and trap for 1973 by District as well as the statistical area within the District recording the highest average.

TABLE 7 - 1973

| District | Average Landed Value Per Fisherman | Highest Average($) and Area | Average Landed Value Per Trap($) | Highest Average($) and Area |
|---|---|---|---|---|
| 11 | 630 | 759 (Area 'L') | 6.65 | 7.39 (Area 'K') |
| 12 | 1.093 | 1,219 (Area 'M') | 6.49 | 8.27 (Area 'M') |
| 13 | 320 | 429 (Area 'F') | 3.75 | 16.14 (Area 'F') |
| 14 | 595 | 907 (Area 'I') | 11.87 | 14.08 (Area 'I') |
| Province | 561 | | 5.96 | |

It would be expected that as the total landed value increased and the number of lobster fishermen declined, that each fisherman would receive a greater dollar share. Similarly, it would be expected that as the total landed value increased and the total number of traps utilized declined, the average landed value per trap would increase. The average landed value per fisherman in 1973, as indicated in the above table, in all cases, is well above the

average recorded in 1964. The same can be said for the average landed value per trap, except in respect of District 13. The average in this District for 1973 is 6% below the 1964 figures. This District also had the lowest percentage increase in the average landed value per fisherman comparing 1973 to 1964. These two points can be explained by the fact that the number of traps utilized in District 13 in 1973 was only marginally lower than in 1964, and as well, the landed value in 1973 was lower than that in 1964.

The average landed value of the inshore fishery on the Island portion of the Province for the four-year period, 1970-73, was $17.4 million, with increases being experienced in each successive year. The average landed value of lobster on the Island for the same period constituted 16% of this amount. (The equivalent figures for 1974 and 1975 were $18.5 million and 17% and $20.5 million and 19%, respectively). The lobster fishery in the Province, therefore, contributes to almost one-fifth of the total inshore incomes derived from total fish landings on the Island. Table 8 below shows the relative importance of the lobster fishery in each District to the overall fishing incomes of fishermen generated within the District for 1975.

TABLE 8

| District | Landed Value of Inshore Fishery (i.e. Fishermen's Income) (1975) | Percent Contribution of Lobster Fishery (1975) |
|---|---|---|
| | Millions* | |
| 11 | 1.0 | 66% |
| 12 | 2.7 | 39% |
| 13 | 11.3 | 9% |
| 14 | 5.6 | 21% |
| Province | 20.5 | 19% |

* Rounded to nearest $100,000.

TRAPS

The total lobster fishermen in the Province on the average for the ten year period, 1964-73, utilized 518,300 traps annually. These ranged from a high of 588,700 traps in 1965 to a low of 418,800 in 1972, increasing to 499,600 in 1973. Table 9 below shows the number of traps utilized in 1973 by District, the percent distribution of traps in the Province and the percentage change in the number of traps utilized, using 1964 as the base year.

TABLE 9 - 1973

| District | No. of Traps* | % Distribution | % Change Base Year 1964 |
|---|---|---|---|
| 11 | 118,500 | 24% | + 55% |
| 12 | 136,300 | 27% | - 19% |
| 13 | 197,000 | 39% | - 13% |
| 14 | 47,800 | 10% | - 38% |
| Province | 499,600 | 100% | - 9% |

* Rounded to nearest one hundred.

From a comparison of the above table with Table 2 (Landings and percentage change in landings), it can be seen that in 1973, landings in District 11 were down 9% compared to 1964, while at the same time, the number of traps increased by 55%. In Districts 12 and 13, the percentage decline in landings for the same period was greater than the percentage decline in the number of traps. Only in District 14 was the percentage decline in the number of traps greater than the percentage decline in landings. It would be difficult from these limited statistics to conclude that total landings could be maintained with a reduction in the total number of traps utilized. However, Table 10 on the next page may clarify the matter further.

TABLE 10

AVERAGE NUMBER OF TRAPS PER FISHERMAN AND CATCH PER TRAP FOR 1973, AND PERCENT CHANGE IN THESE AVERAGES USING 1964 AS THE BASE YEAR

| District | Average No. of Traps Per Fisherman (1973) | % Change - Base Year 1964 | Average Catch Per Trap (lbs.) 1973 | % Change - Base Year 1964 |
|---|---|---|---|---|
| 11 | 95 | + 30% | 6.2 | - 41% |
| 12 | 168 | + 6% | 6.0 | - 8% |
| 13 | 86 | + 59% | 3.3 | - 60% |
| 14 | 50 | + 19% | 12.3 | + 26% |
| Province | 94 | + 38% | 5.6 | - 32% |

Table 10 shows that in the ten year period from 1964-73, the average number of traps per fisherman increased in varying degrees in each District, and therefore, in the Province as a whole. With respect to Districts 11, 12, and 13, such percentage increases were accompanied by greater percentage decreases in the average catch per trap over the same period. The exception is District 14 where both variables increased, with the average catch per trap increasing at a faster percentage rate than the average number of traps per fisherman. Excluding this latter District, therefore, these limited statistics would indicate that there is an inverse relationship between these two variables. For District 14, it appears that the opposite relationship applies. However, as no District has been experiencing a declining position with respect to the average number of traps per fisherman, a demonstration would be required before it could be resolved that a decreased average number of traps per fisherman would increase the average catch per trap, and maintain in some way, the overall total landings which normally could be expected.

SUMMARY

Over the ten year period generally covered by this study, the Province has been experiencing a declining position with respect to the number of inshore fishermen (dropped 37% between 1964 and 1973)

and the number of lobster fishermen (dropped 34% between 1964 and 1973). All Districts in the Province experienced this decline, except District 11, which actually experienced an 8% increase in the number of inshore fishermen and a 20% increase in the number of lobster fishermen. In 1973, 43% of all the inshore fishermen on the Island were engaged in the lobster fishery, with District 11 having the highest participation rate of 92%.

The landings of lobster have generally declined since 1964, with increases being experienced in recent years. The 1975 landings in the Province of 3.7 million pounds were the highest since 1968. Landings in recent years, however, though increasing, are still below the landings recorded in 1964, except for District 14 which experienced landings in 1974 and 1975 which exceeded the 1964 landings in that District.

The total landed value of lobster in the Province has been increasing, with all Districts except District 13 having a dollar value substantially in excess of the 1964 landed value for the District. District 14 has steadily increased its relative contribution to the total Provincial landed value of lobster. The average price paid to fishermen per lb. of lobster has been increasing, reaching a high of $1.18 in 1972, declining to $1.05 in 1975. The lobster fishery in the Province in 1975 contributed to almost one-fifth of the Island's income derived from inshore fish landings. The greatest impact in this respect was in District 11, where the lobster fishery in 1975 contributed to 66% of the District's income derived from inshore fish landings.

In 1973, lobster fishermen utilized approximately 500,000 traps, representing a decline of 9% from the number utilized in 1964. All Districts decreased their total trap utilization during this period except District 11 which had an increase of 55%. However, the average number of traps per fisherman in all Districts has been increasing since 1964, while the average catch per trap, with the exception of District 14, has been declining. From these limited statistics, one could conclude that an inverse relationship

exists between the average number of traps per fisherman and the catch per trap, and that a decrease in the former could lead to an increase in the latter. However, as no District in the Province has been experiencing a declining number of traps per fisherman, it would require a demonstration to verify the above statement.

TABLE 11

PROFILE OF PROVINCIAL* LOBSTER FISHERY

(DISTRICT 11-14 INCLUSIVE)

Averages for the 10 Year Period 1964-73

| | |
|---|---|
| **Fishermen** | |
| 1. Total Inshore Fishermen | 15,557 |
| 2. Total Lobster Fishermen | 6,843 |
| 3. Lobster Fishermen as % of Inshore Fishermen | 44% |
| **Landings** | |
| 1. Total Landings (lbs.) | 3,443,000 |
| 2. Landings (lbs.) per Fisherman | 503 |
| **Landed Values** | |
| 1. Total Landed Value | $2,469,000 |
| 2. Landed Value per lb. | 72¢ |
| 3. Landed Value per Fisherman | $361 |
| 4. Landed Value per Trap | $4.76 |
| 5. Total Landed Value of Inshore Fishery - All Species *** | 17,363,000** |
| 6. % Contribution of Lobster Landed Value to Inshore Fishery Landed Value | 16%** |
| **Traps** | |
| 1. Total Traps | 518,262 |
| 2. Number of Traps per Fisherman | 76 |
| 3. Catch per Trap (lbs.) | 6.6 |

* Refers to Island portion only.

** Average for 1970-73 only.

*** Groundfish, Pelagic and Estuarial, Molluscs and Crustaceans.