A Study of the Probable Future Fishery Usage of the Ports of Burghead, Buckie and Macduff

Technical Report No.324
October 1987

SEA FISH INDUSTRY AUTHORITY
Industrial Development Unit

A STUDY OF THE PROBABLE FUTURE FISHERY USAGE OF THE PORTS OF BURGHEAD, BUCKIE AND MACDUFF

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SUMMARY

A study of the fish business at the three Moray Firth ports of Burghead, Buckie and Macduff has identified the usages, both present and near future of these harbours.

Grampian Region, the landlords, are aware of the relative decline in white fish landings when these ports are looked at in relation to Fraserburgh, Peterhead and Aberdeen. Income from fish landings related dues is the most important source of revenue to fishing port landlords.

The study however indicates that both shellfish landings and repair and maintenance facilities as well as boatbuilding, are significant within the UK and particularly the Scottish industry. In particular the shellfish trade has yielded significantly increased revenue for Buckie in recent years. Macduff provides a layby harbour for a large fleet of trawlers which mainly land fish elsewhere but make use of Grampian Region's slipway and other engineering facilities.

The importance of Burghead is as a uniquely sheltered haven adjacent to a large nephrops fishery. Buckie in particular must however update and upgrade its market and ice supply facilities in line with its lucrative shellfish trade. The future for the fishery and its services appears to be assured though it would be unrealistic to assume that

significant increases in trade ae likely. Nevertheless some improvement in G.R.C. revenue is possible if service facilities are upgraded.

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1. INTRODUCTION

Grampian Regional Council inherited the ownership of thirteen small ports with the reorganisation of local Government in 1973. These ports had previously been owned by the former County Councils. Virtually all of these ports originally provided havens for local fishing fleets and a few also provided for the coastal cargo trade associated with the timber and agriculture industries. They thus served the needs of these individual communities and in the days of sailing smacks indeed offered the minimum requirement for large numbers of boats.

With the changes in trade brought about by different requirements for raw materials and the improvement of road communications the cargo trade changed drastically this century. Similarly the fishing industry moved from large numbers of sailing boats to fleets of deeper draft herring drifters and latterly to expensive and sophisticated white fish vessels. The former herring trade disappeared to be replaced by the centralised processing trade and the export trade handled by mainly Eastern bloc factory ships.

As a result, fishing activities have tended to concentrate on the deepwater ports of Fraserburgh, Peterhead and Aberdeen. These are trust ports not owned by G.R.C.

A feature of the region has been however that the fishing population communities in the small ports have tended to remain within these towns and villages and in many cases to use some of these ports as their bases although landing fish elsewhere. The ports of Burghead, Buckie and Macduff are therefore very much in the latter category and indeed specific fisheries have developed independent of the three large Grampian ports.

Grampian Council have therefore to reassess their investment policy towards their harbours in the light of these changed usages bearing in mind the social consequences of purely financial rationalisation. A previous consultants report dealt with the ten ports now of no particular fishery significance and Seafish were asked to study the fish business in the three fishery ports within the context of future GRC policy.

2. OBJECTIVES

The three fishery ports provide sources of income to offset operational costs incurred by GRC. Income from fishery usage comprises harbour dues and wharfage dues for fish landed. Additionally facilities provided as in the case of the Macduff slipways provide substantial income.

Clearly however the wharfage charge of 2.5% of the gross value of fish landed is the most significant contributor in a fishery harbour provided of course that fish landings are made and the harbour is not just a layover base or harbour of refuge.

As stated in the introduction, all three ports have significant landings in the case of Burghead and Buckie, predominantly of shellfish and mainly supplying a major local processor.

Macduff handles a regular supply of white fish again due to local involvement in wetfish filleting with connections to distant markets. The objectives of this report must therefore be to study in the main the

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future prospects for development of these particular trades bearing in mind other possibilities which may be identified to attract increased fish landings and therefore harbour revenue.

3. THE STUDY HARBOURS

3.1 BURGHEAD

3.1.1 Physical Characteristics

Burghead Harbour consists of a single basin approximately 200 metres long with width varying from 40 metres to 24 metres as shown in Figure 1. Much of the North Quay dries out at low tide and is used by small boats for minor repairs and for beaching in emergency. Water depth within the harbour and entrance channel at M.L.W.S. is four feet (1.2m) and twelve feet (3.6m) at H.W.N, but the approach is subject to silting due to sand movement and is maintained by dredging. The entrance which is 18 metres wide is protected on the north/west by a breakwater and spur jetty approximately 210 metres in length. The harbour is a good all-weather port and is used on occassion by Lossiemouth boats in bad weather conditions when the approach to Lossiemouth harbour can be hazardous due to reflected wave action.

The South Pier provides a useful open area for net and gear repairs, much of it being surfaced.

The harbour is connected by the B9040 to Lossiemouth (8 miles) and by the B9013/A96 to the east and west.

3.1.2 Facilities for the Fishing Industry

3.1.2.1 Landing and market

Burghead harbour is used mostly by small prawn (nephrops) boats that land their own catches, usually daily, to the South Pier. Landing times are not fixed and depend on whether boats are fishing by day or night and on tidal conditions. There is no auction or fish market building although a recently constructed simple holding shed 8m x 5m sited on the South Pier offers security and protection for landings prior to consignment by salesmen to Lossiemouth or the West Coast.

Agency work is handled from Lossiemouth.

3.1.2.2 Fish Processing

There are no known fish processors at Burghead, either within the harbour or the town, although there was at one time a curer on Station road.

3.1.2.3 Fuel, Ice, Water and Box Supply

Fuel oil is available via a road tanker delivery service or from a small fixed installation on the end of a jetty within the harbour. Fresh water is available on the South Pier and on the jetty. There is no facility for the supply of ice to the boats except by arrangement. Supply of fish boxes is arranged by the boats' salesmen.

3.1.2.4 Repairs and Newbuilding

There are no boat repair, boat building yards or facilities at Burghead. Minor repairs may be undertaken afloat at the quay or below the water-line by beaching the boat on the shelving section alongside the North Quay.

3.2 BUCKIE

3.2.1 Physical Characteristics

Buckie harbour comprises of four basins as shown in Figure 2. The former west basin is now mostly filled-in and currently used in part for storage of commercial cargoes. Fishing vessels share the use of No. 1 basin with the commercial vessels, that usually land to piers No. 1 or 2.

The entrance channel is dredged to a maximum depth of 13 feet (4 metres) MLWS. Within the harbour, No. 1 pier provides water depth of 19 feet (5.9 metres) at MLWS and can accommodate a maximum size of vessel of 80 metres length and 12 metres beam. No. 2 pier can accommodate dimensions of 70 metres length, 12 metres beam and 3.8 metres draught but the vessel would require to lie on a soft mud bottom for one hour either side of low water at spring tides.

The harbour is a good all-weather port although it is claimed by some users that the infilling of the west basin has resulted in a little more wave-action in the harbour under certain weather conditions. Other than

the storage area provided by the in-filling of the west basin opportunity for shore-based developments at the harbour are limited by the A942 (Commercial Road) that runs the length of the harbour.

Basins No. 2 and 3 are used mostly for lay-by and basin No. 4 for repairs maintenance and boat building. Pier 3 is used for the storage of boxes which occupy most of it's length.

3.2.2 Facilities for the Fishing Industry

3.2.2.1 Landing and Market

With the exception of shrimp (pandalids); landings are made direct to the market in No. 1 basin for auction. Shrimp landings are delivered direct to the local processor Moray Seafoods from the quay by lorry and need not pass through the market building. The shrimp landings are scheduled through the week by Moray Seafoods to suit process requirements but other landings are not controlled in any way. As at other ports, peak landings tend to be at the end of the week on a Thursday and Friday which can cause congestion in the port, particularly if it coincides with use of the port by commercial cargo vessels.

The market building is some 160m x 7m although part is given over to net repair and gear storage at the western end and to a small cafe at the eastern end. The structure itself although serviceable is of antiquated design and construction and inadequate by modern standards of quality control and food hygiene for the handling and holding of fish.

The re-surfacing of Commercial Road to the rear of the market over many years has resulted in the road surface now being at a higher level than the market floor which in wet weather results in road debris being washed toward the rear of the market. This is a potential source of contamination of fish if boxes are lifted first to road level then to waiting transport on which they are stacked one box upon another.

The market also suffers from problems of access with restrictions on parking to the rear along Commercial Road, and having only a narrow quay apron to the other side of the building. This apron serves as a 'one way' lorry loading area.

All the main Scottish fish sales offices are represented in Buckie with United Fishselling based there.

3.2.2.2 Processing

Two major and a number of smaller processors are based at Buckie producing a relatively wide range of fish and shellfish products and providing local employment. Moray Seafoods International is a major processor of shellfish and to a lesser extent of whitefish, and Coxfish a major processor of whitefish and to a lesser extent of shellfish. Both produce frozen products for retail and catering markets and operate their own cold stores. Other smaller companies produce fillets for the wet trade and smoked and kippered products.

Moray Seafoods buys extensively on contract from boats landing at Buckie and at other Scottish ports, Coxfish buys from Buckie and from Peterhead, Aberdeen, Fraserburgh and Macduff as well as Lossiemouth, Mallaig, Kinlochbervie and Lochinver on occasion. Conversely processors located outwith the town may buy on Buckie market.

The prospects for Morayfish appear good. The shellfish market in general is buoyant with consumer spending having grown by 45 per cent over the past three years according to AGB Attwood Research. Volume sales are up by 31 per cent over the same period.

The latter half of 1986 saw volumes beginning to fall. Sales of analogue shellfish products manufactured from surimi have had some impact on shellfish sales, but it appears that the surimi market has a different consumer profile with sales based towards the more downmarket C2's and older age groups compared to the upmarket ABC1 social groups that are the heaviest purchasers of shellfish.

What impact the recent opening of a Danish processing plant at Peterhead may have is as yet difficult to tell, but it has attracted a significant increase in landings to that port. Last year only 80 cwt of prawns and 2,180 cwt of shrimps were put ashore, but both Scottish and Danish boats, attracted by the new factory have pushed up landings in 1987 (to mid September) to 2,065 cwt of nephrops and 7,300 cwts of shrimp. In

discussion with Moray Seafoods, it would appear that that company is not concerned with increased competition from the plant but is concerned that the Danes landing to the Peterhead plant (mostly ex-industrial fishermen from Esjberg) could overfish the stock.

Prospects for the markets in which Coxfish operate also appear good although the companies prospects depend on how well they perform in a competitive market. Recently they have had to lay off forty of their full and part-time staff. A spokesman for the company attributed this to internal reorganisation at the plant and to lack of fish supplies, but it is also believed that the companies cold store stocks of product are high. Smaller merchants and primary processors supplying wet fillets are also effected by problems of lack of fish supplies but in many cases are better able to pass on price increases and maintain their level of business.

3.2.2.3 Ice, Fuel, Water and Box supply

Ice quality and availability is reported by fishermen to be a major problem in Buckie and has led to some local boats going to Fraserburgh for ice. Fishermen require to land, and to take ice, water, fuel and provisions etc, at one port and not be involved in loss of time and extra expense in having to call at another port for services.

The Buckie ice plant on pier no.2. is privately owned and can produce approximately 40 tonne of flake ice per 24hrs with storage for 60 tonne. It was designed to store 80 tonne but is restricted to 60 tonne because of problems experienced with the stored ice freezing solid in the silo with greater quantities. It is likely that it is a fault of design (height of silo) rather than of operation. It was reported to the project team by fishermen that the ice could be dirty, and that it did not last well. With respect to the comment that it was dirty this was not found to be the case when inspected on a number of occasions during the teams' visits to Buckie. With regard to the ice not lasting, this is possibly true compared with tube ice due to the physical characteristics of the ice particularly when used by boats without fishroom cooling. Flake ice is thinner than tube ice with a higher surface area. For this reason it melts quicker but has the same cooling capacity for a given

weight. As a generalisation, in the North-East, tube ice is preferred for use at sea for the above reason and flake-ice preferred for on-shore use by merchants because it causes less marking and damage to fillets.

With regard to availability it is probably true that the plant is not operated with the flexibility that it might to service the requirements of its customers. Demand from boats tends to be heaviest at the end of the week and over the weekend and with only one operator employed at the plant problems sometimes arise in obtaining supply. To employ a second operator at the plant however would require an increase in the price of ice which is already £21 per tonne. Fraserburgh and Peterhead ice costs between £15 and £17/tonne.

Fuel is available by road transport, or from a supply point on No.3. pier. Water is available on all piers. Boxes are arranged for the boats by the salesmen who subcontract the collection and washing to another company. Boxes are stored on pier no.3. and take up much of the available space. Boxes for Danish shrimp trawlers however tend to be stacked randomly along quaysides adjacent to these vessels.

3.2.2.4 Repairs and New Building

Buckie has a strong boatbuilding tradition presently represented by three yards, these are Jones Buckie shipyard, Herd and MacKenzie and Thompsons respectively. The latter yard is presently on a care and maintenance basis due to lack of business.

Messrs. Jones of Buckie also went through a difficult period recently mainly due to the delay in the confirmation of the new round of vessel building grants. Orders are now confirmed and work has started thus avoiding layoffs. Both Herd and MacKenzie and Jones enjoy a useful repair and maintenance contract with RNLI to augment their regular fishing vessel work. They also carry out work on commercial vessels including small car ferries. These yards have slipways capable of taking all but the largest 'whitefish' boats in the Scottish fleet i.e. those in excess of 80' in length.

Herd and MacKenzie have a slipway with a nominal capacity of 450 tonnes. It is presently rated at about 250 tonnes due to wear and tear and subsequent weakening of the structures. The company would very much like to carry out the necessary work to bring the slip to its nominal capacity. The work would clearly be expensive and would probably put the slip out of commission for some time.

Owing to the geographical location of Buckie, outwith the nominated areas for preferential grant aid the company are frustrated in their attempts to get financial support. Nevertheless as slipping facilities for the largest seiners and purse seiners are at a premium in North East Scotland considerable importance is indicated towards the refurbishment of this slipway.

The owners have in fact leased a slipway at Inverness in collaboration with the Mallaig Boatbuilding Company. This latter facility though apparently rundown is said to be capable of slipping vessels up to about 600 tonnes displacement and could therefore handle large seiners and the older purse seiners.

There are limitations in Buckie's No. 4 basin due to depth restrictions at the slipways which restrict the slipping of the largest vessels to H.W. Springs conditions.

Jones of Buckie slip and launch vessels into their privately owned dock outside the GRC harbour limits. This dock is however exposed to Northerly and Westerly wind conditions thus restricting its use particularly during the winter.

Boats fitting out have of course to use the main harbour and at times berthing space is at a premium.

Messrs. Jones have recently invested of the order of £¾M in a large new building shed and other facilities after fire destroyed the original building.

They have obtained extra business in recent years fitting out steel boats built in the South.

Within the comprehensive range of marine engineers and service facilities available in Buckie is F.A.L., Scottish Propeller Service an important facility for the fishing industry.

The boatbuilding industry claim that they encounter considerable problems particularly within the inner basins of the harbour from floating and submerged rubbish. It is felt by some that this problem has been exacerbated since the former 'spending beach' in the West basin was filled in.

The boatbuilders would like to have access to mains power on the North pier, presently unavailable.

3.3 MACDUFF

3.3.1 Physical Characteristics

Macduff harbour comprises of two basins as shown in Figure 3, the outer of which is shared with commercial vessels carrying general cargoes. The Princess Royal Basin (the inner basin) is used largely for maintenance, repair, lay-by and for boat building.

Depth of the entrance channel and the outer basin is 10 feet (3.04 metres) below MLWS while the inner or Princess Royal Basin is 8 feet (2.43 metres) below MLWS. Maximum operational vessel length is 200 feet (61 metres). Most fishing vessels can enter at any state of tide during neap tides but large vessels may be restricted from entering one hour either side of low water at Spring tides. The harbour is a good all-weather harbour.

3.3.2 Facilities for the Fishing Industry

3.3.2.1 Landing and Market

Landings are made direct to the fish market in the outer basin for auction. If this coincides with low water however, some of the new larger vessels cannot land and divert to Fraserburgh. The market

building is approximately 53m x 10m inclusive of an office and public toilets at one end. The building is structurely sound with reasonable access to the rear. The floor surface at one end is pock-marked. This is understood to have been done in an attempt to provide a non-slip surface. As at Buckie, facilities become congested towards the end of the week and over the week-end.

All the main Scottish fish sales offices are represented in MacDuff either through local offices or by local fish sales companies.

3.3.2.2. Fish Processing

A wide range of fish/shellfish processing is undertaken by small/medium sized companies within Macduff and at Banff, Whitehills, Portsoy and Sandend. Most are concerned with the primary processing of whitefish although some shellfish and value-added frozen fish products are produced. Pelagics are also cut on contract. Most processors who buy at Macduff also buy at other ports as well, depending on supplies, requirements and prices.

Given reasonable supply these processors should continue to prosper. The wet-fillet trade supplied by local merchants is steady and the frozen and shellfish trade reported to be growing. One merchant after making minor improvements to his premises is now supplying Sainsburys with frozen retail products and another has rapidly expanded his dressed-crab business.

The quality of fish supply at Macduff is generally agreed to be good with one processor prepared to pay £3/stone more for local supply in preference to Peterhead supplies.

The main competitor for fish supply is Whitehills. That port has established a considerable reputation for quality fish landed daily from seine net boats.

3.3.2.3 Fuel,Ice, Water and Box Supply

Fuel oil is available via road tanker delivery service from two local companies.

Flake ice is produced at a plant in the inner basin owned and run by a private company, some of whose shareholders are from the local fishing industry. It can produce approximately 20 tonne/day and has storage for 40 tonnes. There is no direct delivery to the quay for icing of boats. The Company would like to deliver direct from the factory to boats at a designated icing berth and are currently looking at a means of pneumatic delivery. There are advantages and and disadvantages associated with a dedicated berth but if the decision is to create such a berth, great care should be taken with the design of the pneumatic system. Although pneumatics are used for ice delivery extensively in North America and elsewhere they have been specifically designed to do so after many years of development. To the authors knowledge there is only one such installation in the U.K. and that is not used for icing of fishing boats. The specification by Fredrick Grimalkin & Nephew Ltd. as supplied to Arch Henderson & Parners does not include for refrigerating the air or for silencers. Without refrigeration of the air some melt of the ice is inevitable which apart from producing a wet slushy ice of lower cooling capacity, also tends to block the delivery lines by ice sticking on bends and building up.

Water is only available in the outer basin on the fish market and on the quay along Shore Street. There is no supply in the Princess Royal Basin (other than a standpipe in front of the ice plant) or on the breakwater pier.

Supply of boxes to boats is organised by the boats salesmen with boxes stored alongside the fishmarket and on the breakwater pier.

3.3.2.4 Repairs and Newbuilding

Macduff has a well earned reputation as a first class provider of a range of engineering services and boat building. Access to the slip owned by G.R.C. to local engineering companies encourages healthy competition that assists in keeping prices favourable compared with Peterhead and elsewhere. The slip has a capacity of 200 tonnes with boat size limits of 24ft. beam and 80ft. length O/A. There are seven berths.

The Macduff slipway undoubtedly offers a unique facility locally in terms of capacity and its availability to users independent of the local boatbuilders. This aspect is amply illustrated by the high volume of usage typically around 130 berth/days/month between May and October. The length restriction and depth of water in the inner basin prevents work on the newer, larger 80' + class of vessels but the yard and local engineers are kept busy with repair and conversion work, particularly the fabrication of shelter decks, engine work and deck gear.

Macduff Boat building have traditionally built in wood, but will soon be taking on twenty skilled men when they also go into steel fabrication. Swales and Kerr provide joinery services and aluminium fabrication, Dauntless Eng. deck gear and winches and J. Joiner general engineering services. Plans in hand by G.R.C. for development of the Low Shore Road area will greatly improve access and provide much improved facilities for Macduff Boat building and J. Joiner. The scheme also provides for a new rock-armoured revetment behind the slipway with further development for fish processing, net stores and other uses.

4. THE LOCAL FISHING FLEET & FUTURE DEVELOPMENT

4.1 An Analysis of the Fleet and Current Port Usage

The activities of the locally based fleets exert an influence on the services required at the various ports whether they be by way of harbour facilities or supplies and technical servicing. By itself this could indicate the need for development or otherwise however it would be dangerous to consider this question without taking into consideration the activities by foreign vessels and "stranger' (U.K. vessels based elsewhere) vessels at the ports. Elsewhere it will be discussed that developments at other harbours whether or not they are within the geographical bounds of Grampian Region or outwith the ownership responsibilities of Grampian Region, will have an influence on the operations of these fleets. This section looks at these particular aspects.

4.1.1 In the Buckie Fishery District there has been a reduction in the home based fleet of 17 vessels between 1972 and 1986 (Table 1). The fleet currently stands at 105 vessels.

N.B. D.A.F.S. fishery statistics list all vessels nominally based within a 'district' though in reality a vessel may be based elsewhere throughout most if not all of the year.

4.1.2 In the Macduff Fishery District the fleet has remained constant over the same period at 116 (Table 2).

4.1.3 At Burghead the fleet has remained more or less constant at 10 vessels (Table 3).

However, an important change in composition has taken place in both Macduff and Buckie fishery districts. The proportion of vessels over 60ft. in length has increased from 34% to 41% in the case of Macduff and from 49% to 63% in the case of Buckie. Because Burghead is a Fishing "Creek" and not a district and also due to a change in style of the statistics it is not possible to make a similar comparison in the case

of Burghead but it can be stated that in 1986 nine out of the vessels listed were over 60ft. and it is more than likely that the average length during the period has also increased.

When reference is made to D.A.F.S. official statistics it must be noted that it is convenient for the Department to group ports in relatively close proximity under a "Fishery District".

As regards the ports under consideration the current position is: -

BUCKIE DISTRICT INCLUDES:	BUCKIE
	PORTNOCKIE
	FINDOCHTY
MACDUFF DISTRICT INCLUDES	MACDUFF
	GARDENSTOWN
	WHITEHILLS
	PORTSOY

BURGHEAD is a "Creek" within Lossiemouth Fishery District. So far as Buckie District is concerned, because there is little fishing activity at Portnockie and Findochty (the official statistics show that there were no fish landings at these ports in 1986), reference to Buckie District would relate also to the port of Buckie. In the case of Macduff however an analysis of the four harbours makes interesting reading which has a bearing on the overall study. The official statistics show that fishing activity at Gardenstown and Portsoy were insignificant during 1986. While it could be said that this reflects the true position at Portsoy, it is misleading in terms of the investment in fishing vessels by persons domiciled at Gardenstown.

Statistics show that persons based on Portsoy owned only 3 vessels over 30 ft. in length all being between 60ft. and 80-ft. Similarly that persons based on Gardenstown owned 38 vessels over 30ft. 71% of them being between 60ft. and 80ft.

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Clearly neither Portsoy nor Gardenstown Harbour could cater for these vessels but they make a valuable contribution to the overall Grampian Fishing Industry particularly in so far as this relates to activities at Fraserburgh and Peterhead.

Of the 99 vessels over 30ft. based within the Macduff Fishery District 42 relate to owners based in Macduff itself, 38 to Gardenstown 3 to Portsoy and 16 to Whitehills.

Although Whitehills is within the Grampian Fishery District its harbour does not belong the the Regional Council but an analysis of its fleet is interesting (Table 4). Practically all the vessels lie within the 40 - 70ft. class and 62% of the total fleet are between 40 and 60 ft. That is to say it does not show the significant increase in the proportion of larger vessels demonstrated at the neighbouring ports yet the quantity of fish landed has virtually remained the same over the past 6 years, viz. 1960 tonnes in 1981 and 1854 tonnes in 1986.

While the D.A.F.S. vessel statistics give an accurate account of the vessels based on particular ports in so far as the "base port" is the place of where the main owners have their residence by no means do they indicate the amount of traffic activity at each base port. In short each port has two fleets - one which works elswhere most if not all of the year and one which regularly operates at home. In addition to an examination of the "base port fleet" it is essential to set this against the "regular user" fleet. The following analyses this:-

MACDUFF 'CREEK'	**NO. OF VESSELS**
As listed by D.A.F.S. (Table 5)	42
Regular users as defined by Harbour Master (Table 6)	8
Pursers (which operate away from home)	3
Deducting the above 11 vessels from total gives a fleet fishing away from home of	31

BUCKIE AS LISTED BY D.A.F.S.

Which includes 4 vessels with Portnockie base and 3 vessels with Findochty base (Table I)	105
Regular users as defined by Harbour Master (Table 7)	36
Away from Home Fleet	69
In addition, some 43 Danish Shrimpers land regularly at Buckie	

BURGHEAD 'CREEK'

Vessels as listed by D.A.F.S. (Table 3)	10
Of the above list only two named vessels are regular users	2
Regularly fish away from home	8
Regular users as defined by Harbour Master (Table 8)	30
Regular users based elsewhere	28

In Summary the Fleet activities at the three ports are:-

BUCKIE

Locally based regular users	36
Locally based operating mainly away from home	69
Regular Danish vessels	43

MACDUFF

Locally based regular users	8
Locally based operating mainly away from home	34

BURGHEAD

Locally based regular users	2
Locally based operating mainly away from home	8
Regular users based elsewhere in U.K. (mainly Moray Firth)	28

Clearly each port supports a much greater fleet than it can service regularly. While this servicing is not regularly called for, the fact

presents problems at certain times of the year and at most weekends, certainly in Macduff. In short "garaging" problems do occur. There are also consequently, peak demands for ice, fuel stores and repair work with longer periods of relatively low activity between the peaks.

4.2 Trends in Port Usage by the Fleet

Clearly the three ports support an effective itinerant fleet of some 121 vessels (all large and modern) whose production contributes considerably to the economy of ports away from home. The section of the overall report on Marketing and Economics gives this activity in detail. It is known that a considerable section of the "away" fleet has fished regularly into W. of Scotland ports and continues to do so. However, during the past year developments have taken place nearer home at Fraserburgh and Peterhead and to some extent this must have some attraction to the itinerant fleet. There is no real effect on the locally based fleet, with the exception of the provision of an alternative efficient ice supply for Buckie vessels.

Some indication of this is given in Table 17 of the section dealing with marketing where it is shown that there appears to have been a movement away from landings into West Coast Ports in favour of landings into Aberdeen, Peterhead, and Fraserburgh. Indeed at Macduff landings at home have increased by nearly 7% and landings into Aberdeen, Peterhead and Fraserburgh by Macduff vessels have increased by 25% against a reduction of some 21% in landings at West Coast ports.

At Buckie landings at home have increased by 8% and landings into Aberdeen, Peterhead and Fraserburgh have increased 8% against a reduction of some 14% at West Coast ports.

It would appear, therefore, there has been a switch of effort away from the West Coast - 35% to an increase of some +35% in Grampian ports and so whilst the harbours of Buckie and Macduff have gained little in fish landings dues, from their large locally owned fleets at least their loss is to a large extent is Grampian Regions' gain. Considerable income is however received from those vessels landing in the large N.E. ports, but paying dues to layover at Macduff and Buckie at weekends.

In the case of Buckie it might be said that the "lost" activity of the part of its fleet which works away from home is partly offset by the landings of foreign vessels - in particular Danish Shrimpers.

Table 30 indicates the importance of this foreign landing to Buckie where it can be seen that in 1985 the value of shrimps by Danish shrimpers worth £1,143,000 was practically equal to the value of the landings of Nephrops made by U.K. (mainly Buckie) vessels, This trade is obviously vital to the economy of Buckie. However, early in 1987 a shellfish market commenced business at Peterhead. This in itself could have a magnet effect on shellfish trawlers from the Moray Firth and this possibility was exacerbated when a Danish firm commenced shrimp processing at Peterhead. For the first time Danish shrimp vessels started landing at Peterhead and so it was a matter of concern that some of the Danish vessels which had been landing regularly at Buckie might have been attracted to the 'premier' port.

An examination of the Danish vessels which regularly landed at Buckie against a list of Danish shrimp vessels which landed at Peterhead in 1987 shows that of the 43 vessels listed only 13 vessels made landings at Peterhead.

At this stage it is difficult to forecast what effect the establishment of a Danish shrimp processor at Peterhead will have on Buckie. Anecdotal information is that the processor in question is one of five Danish processors who handle shrimp and that most of the vessels landing to him at Peterhead are vessels which normally carry out industrial fishing but because they have been denied this activity have turned to shrimp trawling. Whether the reverse movement takes place in the event of the restoration of industrial fishing is a matter for conjecture. It has been further stated that because of technical trouble at the shrimp processing plant in Buckie some of the regular vessels landing there switched temporarily to Peterhead.

In any event the setting up of a shellfish market at Peterhead and the establishment of shrimp processing factory there must pose some threat to Buckie even if it is merely potential at this stage.

landings of foreign vessels - in particular Danish fishermen.

Table 2 illustrates the importance of this foreign landing to Poole ... it can be seen that in 1985 the value of shrimps by Danish ... amounted to £1,142,000 was exceptionally equal to the value of the landings of shellfish made by U.K. (mainly Poole) vessels. This trade is clearly vital to the economy of Poole. However, early in 1987 **an official verbal communication was received that Esbjerg fishermen would no longer be allowed to land shrimps at Peterhead. This is itself could have a marked effect on shellfish landings from the Army Bight and this possibility was exacerbated when a Danish firm commenced trading at Peterhead. For the first six Danish shrimp vessels started landing at Peterhead and so it was a matter of concern that some of the Danish vessels which had been landing regularly at Poole would have been attracted to the 'previous' port.**

In comparison of the Danish vessels which regularly landed at Poole against a list of Danish shrimp vessels which landed at Peterhead in 1987 shows that of the 43 vessels listed only 13 vessels made landings at Peterhead.

It is very easy to be critical of foreigners who apparently usurp our ... Danish shrimp processors at Esbjerg will have no British. Apparent information is that the processor in question is one of five Danish processors who handle shrimp and that most of the vessels landed in at Peterhead are vessels which normally carry out **inshore fishing but because they have been having this activity have turned to shrimp trawling. Whether the reverse movement takes place in the event of the termination of industrial fishing is a matter for conjecture. It has been further mooted that because of technical troubles at the shrimp processing plant in Esbjerg some of the regular vessels landing there switched temporarily to Peterhead.**

In any event the setting up of a shellfish market at Peterhead and the establishment of shrimp processing factory there must have some ... in Poole even if it is merely perceptual at this stage.

4.3 The History of the Local Fishery to the Present Day.

The Southern shore of the Moray Firth supports a series of fishing harbours all of which have a long fishing tradition and are the homes of a considerable strength of traditional fishing families (see Economics section).

This tradition became established last century and at the beginning of this century when herring fishing was a considerable activity. The pattern was set then whereby the fleets of herring fishing vessels supported by these harbours were by and large itinerant. This was a consequence of the migratory movements of the herring around the coast. Each of these harbours had a locally based fleet of a strength much in excess of the volume of herring which could be harvested from the Moray Firth alone.

Following the Second World War the fishermen of the Southern Coast of the Moray Firth did not hesitate to invest in new white fish vessels when the great herring fishery went into decline and they took full advantage of Government grant and loan schemes to build up a strong and efficient white fish fleet. Statistics show the gradual development of a fleet with an increasing average length (and consequently greater catching capability). These vessels were more and more costly to maintain and clearly the limited resources of the Moray Firth were insufficient to sustain such a fleet and so as was the case with the herring fisheremen many of the men of the southern shore of the Firth sought their fortune away from home. Coincidental with this movement was a decline in the U.K. Near, Middle Water and Distant Water trawler fleet. To a large extent the Moray Firth fleet (and other U.K. inshore fleets) inherited not only some of the grounds but the markets vacated by the trawler fleet.

Out of this transformation in the U.K. fishing industry there evolved a new pattern of inshore fishing around the U.K.coast affecting fishing communities particularly those along the Southern shore of the Moray Firth and N.E. Scotland in general.

Firstly Peterhead has risen to become the premier white fish port in the U.K. and Fraserburgh has acquired a new role in demersal fishing and marketing. The hamlet of Kinlochbervie on the N.W. Coast of Scotland shot up into the top ten white fish landings worth £9½M (predominantly from landings by Moray Firth based vessels). The metamorphosis of the fishing industry in so far as it affects the activities at the fishing ports is by no means complete. As we have seen earlier, a movement of landings of Moray Firth itinerant vessels from West to East Coast is of course dictated by the availability of fish, quotas etc. but it does highlight the marketing attraction of Peterhead and Fraserburgh coupled with a fight back of Aberdeen to recapture some of its former trade.

Practically all the southern shore Moray Firth fishing harbours and communities provide itinerant fleets and in some cases such fleets have grown to such an extent that the local harbour could not possibly, even on a seasonal basis cater for their needs. Gardenstown is a classic example where domiciled fishermen have invested in large expensive vessels including purse seiners which could only operate away from home. Other former fishing harbours now provide principally a leisure and recreation amenity.

The fishing harbours which have retained a fishing activity of some significance are:-

Whitehills
Macduff
Buckie
Lossiemouth

Off all the fishing harbours Whitehills has retained most of its traditional form where 63% of the fleet remain between 40 ft. and 60 ft. in length and where landings, 1,827 M.T. during 1987, were only slightly less than the 2,000 Tonnes landed in 1977 and the role of the itinerant fleet in a minor one.

Following harbour improvements works at Macduff the local white fish market continued to expand but the topography of the harbour sets

constraints on the extent to which further development can take place. At Buckie where greater investment has been made in the larger class of vessel (over 70 ft.) - now accounting for 22% of the fleet strength, (Macduff has 16% of its fleet in the top class and 72% remain in the 50 to 70 ft. class), the effect on home landings has tended to fluctuate (see section on Economics). However, Buckie has continued to display a large expansion in shellfish landings which follows the expansion of shellfish processing ashore.

At Lossiemouth a decline in demersal landings has been accompanied by an expansion in shellfish (principally nephrops) landings.

Burghead has found a new trade which is reflected in the expansion of the nephrop landings over the past few years. This trade arrives out of the change in fishery by-law legislation in the Moray Firth. Table 3 shows, however, that the expansion of trade at Burghead has been due mainly to the activities of stranger vessels which must find the relatively sheltered water of the upper reaches of the Moray Firth (where Burghead is situated) to be much more conductive to fishing in the winter than the more open waters off Helmsdale or the East Coast ports.

4.4 Fleet & Port Usage Conclusions

While there has been no great increase in the number of vessels joining the fleet based on Macduff and Buckie, (there has been a recent slight decrease at Buckie) there has been a change in style. The Macduff fleet has tended to expand in the 50 to 70 ft. size band whereas Buckie has tended to expand in the over 70 ft. band. A proportion of the expansion at Macduff is reflected in the increase in home landings since 1981 but at the same time it also reflects the more closely knit relationship between catching and marketing, existing at the port. The Government has now clamped down through its licensing policy on the ability to replace a vessel with one in a higher size band and so the change in composition of the fleet is not likely to continue.

At Macduff there are also physical constraints on the size of vessel which can use the port.

At Buckie the increase in the larger size band with associated economic requirements dictates that these vessels will require to fish away from local waters and land at ports other than their home port.

The indications are therefore that neither port is likely to expand its home trade in demersal fish by winning back more landings by its itinerant fleet.

By the same token it is unlikely that there will be any significant change in the numbers of boats working out of the home ports.

At Buckie, however, the shrimp trade could be expanded but it would seem in the short term that this would have to be achieved by the activities of the Danish fleet. In this connection developments at Peterhead pose questions of competition.

Any development work at the three ports should therefore be designed to consolidate the use of these ports by the regular visitors by improvements to facilities where there is competition from improved facilities at the two large Buchan ports.

5. HARBOUR COSTS AND REVENUE

5.1 Financial Analysis

Examination of the 1982 - 1986 income and expenditure for the ports of Buckie, Burghead and Macduff highlights an increase in income at Buckie and Macduff from fish dues (Figs. 11 and 12).

The effect of shellfish prices in particular is reflected in the dramatic increase in revenue at the major shellfish port of Buckie. Burghead whilst experiencing an increase in income dues from shellfish landings has seen that growth offset in 1985 - '86 by the decline in vessel dues and cargo landings.

The trend in expenditure at the three ports over the period 1982 - 1986 reflects the inflationary increase associated with the period together with the high debt servicing costs associated with the capital investment undertaken within the respective ports.

5.2 Trading Analysis 1985 - 1986

In order to define more clearly the current trading position at the three ports an inter-port comparison of the income and expenditure at the respective ports is highlighted in Table 12.

The joint income generated in 1985 - 1986 by the three ports amounted to £427547. This income derived from the following four sources:-

	%
Vessel dues	24
Cargo dues	23
Rent & Other	9
Fish landing	44
	100

The total expenditure incurred at the three ports within the year 1985 - 1986 amounted to £633351.

The distribution of the costs were as follows:-

	%
Direct costs	
Repairs/Maintenance	11.3
Premises	5.0
Dredging	14.8
	31.1
Overhead Costs:-	
Staff	23.0
Administration	10.0
Debt Service Costs	35.9
	68.9

The excess of expenditure over income in the year 1985 - 1986 amounted to £205804 or 48.1% above this accumulated income generated. The distribution of this loss within the three ports was as follows:-

	Loss 1985-1986	%
Buckie	43,649	21.2
Burghead	73,496	35.7
Macduff	88,659	43.1
	205,804	100.0

The major item of expenditure was that associated in servicing the cost of capital investment. The debt servicing cost of £227,362 overshadowed the trading profit of £21,558 generated by the three ports.

5.3. Allocation Of Cost Centres Against Income

The trading profit of the three ports is analysed in Table 13. This identifies the major sources of trading income and expenditure associated with the respective ports activities. The trading activities in the main are catagorised into three divisions namely commercial trade, estate management and fishing. The trade activities associated with each individual port is analysed as follows:-

5.3.1 Buckie

At Buckie the major income sources of the port during 1985-1986 were almost equally divided between that from commercial cargo interests and that from the fishing industry. The commercial landings generating £110,000 and fishing £142,000 of income during this period.

The operating expenses associated with these two trading interests has for the purpose of the exercise been estimated on the basis of allocating the dredging, repair and maintenance and staff costs in proportion to the income generated from both activities, i.e. commercial 44% and fishing 56%. It should be emphasised that this is a purely arbitrary division of costs in the absence of a detailed breakdown and as such can only be regarded as an estimate.

Administration costs have been also allocated to commercial, fishing and estate management, again on the respective share of total income.
The expenditure associated with the trade cargo operations was estimated at £64,000. Of this expenditure £26,000 (41%) was incurred in dredging and repair/maintenance. The balance of £38,000 was incurred in staff and administration expenses.

The estate management expenses are estimated at £20,000 of which £18,000 was associated with repairs and maintenance and the balance £2000 was an estimated allocation of administration costs.

The expenses associated with the ports fishing activities are estimated at £83,000. The allocation of direct costs to dredge and maintain the port are estimated in the region of 41% (34,000). Staff costs are also

estimated at 41% (34,000) with an administration cost estimate at £14,000.

The estimated trading profit, before interest and taxation (P.B.I.T.), of the three trade sectors within the port can be summarised as follows:-

	£	P.B.I.T %
Commercial Cargo Trade	46,029	41.8
Estate management	1,300	6.0
Fishing industry	59,484	41.9

The ratio of profit before interest against income, shows that both the commercial and fishing activities are very buoyant with both returns in the region of 42% of income generated.

The return in the estate section within Buckie is at 6.0% and well below a realistic return.

5.3.2 Burghead

The analysis of Burgheads' income for 1985-1986 highlights the dependancy of the port on fishing. During the year the fishing interest income of £16,000 represented 69% of the total ports income. The estate with £1,400 (6%) and the commercial trade £6,000 (25%) supplying the balance.

The high cost of dredging and repairs/maintenance £47,000 contributed to 75% of the £63,000 associated with keeping the port open to the fishing industry. Similarly £17,000 of dredging and repair costs attributed to the cargo trade, accounted for 74% of the £23,000 commercial cargo trade operating costs.

5.3.3 Macduff

The £130,000 of revenue generated at Macduff in the year 1985 -1986 was derived through the fishing industries activities £87,000 (67%), commercial cargo etc £30,000 (23%) and estate £13,000 (10%).

The operating expenses associated with the trade operations of fishing were estimated at £101,000 and cargo trade £35,000. Of these expenses approximately 30% accounted for the direct costs of dredging and maintenance.

The higher staff costs at Macduff £75,000 reflect the cost of staffing the slipway, which at Macduff, unlike Buckie, is operated by the Port Authority. Viz Grampian Regional Council. The costs associated with estate department activities is estimated at £16,000. After allocation of expenses, the trading profit before interest and taxation showed the following trading losses:-

	£	P.B.I.T %
Commercial	(4,910)	(16.3)
Estate	(2,836)	(21.1)
Fishing	(14,050)	(16.1)

5.4 Inter-Port Comparison - Fish Related Business

An in depth analysis and comparison of the fishing activities at the three ports (Table 14) highlights the distinct role which each port offers the industry. Buckie is the principal shellfish port in the Moray Firth with an active ship building and repair service facility.

Macduff has centred its fishery around the demersal trade and is actively servicing a small local fleet. The income from vessels seeking week-end berthage at the port is estimated in the region of £38,000 per annum. Income from the GRC owned slipway is of the order of £250,00/annum.

Burghead, whilst offering berthage and a fish landing to a fleet of approximately 25 vessels catching prawns, offers a harbour of refuge during periods of bad weather to vessels fishing in the Western Moray Firth area. The species mix differential between Macduff and Buckie is reflected in the average value per tonne at market sale. The £578/Tonne at Macduff, increases with the high prawn/shrimp mix at Buckie to

£1057/Tonne. Burghead with its sole concentration on shellfish averages £1,400/tonne.

The average weight landed at each port varies from .26/tonne per vessel at Burghead, to 2.34 tonne/vessel at Buckie and 4.26 tonne/vessel at Macduff. The landings at Macduff in 1986 have shown a dramatic increase, with the volume increasing by 17% and values by 38%.

The higher prices in 1986 on haddocks 56% and whiting 62% is the result of a buoyant demand and a reduced supply due to quota cut-backs.

The 1986 price increase is not reflected in the 1985-86 port income as this was in the main accumulated at the end of the calendar year.

The projection of the higher vessel grossings in 1986 on the income from fish dues to the harbour would increase income by an estimated £17000 per year.

The modification undertaken at the Macduff slipway during 1985-1986 reduced this income potential of the port by an estimated £25,000.

Taking into consideration the increase in income potential at Macduff through additional slipway income and increased income from fish dues turns the fishery activities of the port from a £14,000 loss maker into an £11,000 profit earner, a return on income of 21.7%.

The direct costs associated with Burghead reflect the high cost of dredging required to keep the channel into the port open. In terms of cost per landing the dredging costs allocated to the fishing industry of £30,000 is equivalent to approx £19 per vessel landing in 1985-1986. The contribution received from the fleet towards the whole cost of the port is estimated at £10 per vessel landing.

If it were policy, to more nearly cover operational costs at Burghead to keep open the port, particularly as a port of refuge to the fishing fleet in the Moray Firth area then a fish due levy contribution of 5%

would be a more realistic contribution to maintain that facility. Whilst it would not turn the port operation into a profitable situation at least it would ensure that the dredging costs would be recovered.

5.5 Comment

The financial trading base at Buckie with both the commercial and fishing industry is extremely buoyant. Both trade sections are producing strong operating profit returns before any interest charges as the 42% on income generated indicates.

The trade base at Macduff particularly the commercial cargo trade needs examination. However the fishing trade activities, after allowing for areas of increased income from the slipway, could return a trade operating profit before interest of 21.7% on the fisheries income generated in the port.

The high appeal of Macduff to the Grampian fleet is the week-end berthage facility, this generates a welcome income to the Council but does not reflect the external trading profit being extracted by independent commercial operators for services for ice, fuel, boxes, market agencies etc. all contributing to the local economy. Operations which could not operate without the basic structure of the port.

Future capital investment at both Buckie and MacDuff should be viewed in light of the commercial viability of such an investment. The possible involvement of the Regional Council in on-shore service developments such as ice, and slipping facilities could, if developed in conjunction with private capital enhance the ports over-all profitability. Certainly by the Harbour Acts the dues levied must equate to quayside costs. However entry into a joint-venture activity associated through a port subsidary on-shore service company, is an area into which ports similarly structured to those in Grampian are already looking in order to develop financial strength and maintain the long-term viability of the facility.

6. THE THREE HARBOURS WITHIN THE LOCAL ECONOMY

6.1 Introduction

Last year (1986) Buckie, Macduff and Burghead together accounted for 6 percent of the total value of fish landed into Grampian region. Of the £8m revenue, these ports accounted for 64 per cent, 29 per cent and 6 per cent respectively. The fisheries districts in which these ports are situated include two other ports of significance, namely Lossiemouth and Whitehills. These combined, contribute a further 2 per cent of the total revenue contribution to Grampian.

It would seem clear therefore that any developments in one harbour will have an influence on the operations of the others both affecting the operations of the fleet and the marketing of the landings of that fleet. The purpose of this section therefore is to indicate the character of the fishing industry in three ports, particularly in relation to the major ports of Peterhead and to a lesser extent Fraserburgh and Aberdeen.

6.2 Employment in the Fishing Industry (Tables 15 and 16)

Employment within the fishing industry is dependent on activity in the catching sector, the processing sector and ancillary industries such as boat building and repair, icing and other vessel supplies, harbour staff and salesmen. In addition, the income accuring to these groups further contributes to the economic wealth of the area through "multiplier" effects; the income gained within the fishing industry generates income and employment within other sectors of the economy.

Adjusting the figures to reflect full time equivalent (FTE[1]) employment in the fishing industry in Grampian region amounts to 12,000 people and accounts for 6 per cent of the total working population. The significance of fishing related employment in Buckie, Macduff and Lossiemouth is even greater.

1. Convert by using a factor of $\frac{21.1}{37.5}$ (as used by the Central Statistical Office).

Table 16 identifies the structure of fisheries related employment in the three ports. In FTE terms fish catching accounts for around half the total, processing a quarter and other occupations the rest. The table shows a fish catching/onshore support ratio of 1;0.8, the average for Grampian being 1:1.2. Whitefish processing is significant in Macduff and to a lesser extend in Buckie and Lossiemouth, but the regions main processing centres are in Aberdeen, Fraserburgh and Peterhead. On the other hand, both Buckie and Lossiemouth are the main centres for shellfish processing in the region (accounting for 60 per cent of total capacity).

The level of employment in vessel support i.e. boat builders, repairers, net mending and chandlers accounts for around 10 per cent of the total employment in the industry. This is especially significant to Macduff and Buckie which together account for 20 per cent of vessel support capacity in the region.

Comparing employment in 1986 with 1980 it appears that there have been respective increases in onshore FTE employment of 27 per cent. This is largely attributed to fish processing and boat building in Macduff which more than doubled between the two periods.

While FTE employment increased onshore, employment in fish catching remained relatively stable, although with changing fishing patterns in the last five years, the fleet use of the three ports tends to restrict landings to local stocks.

6.3 Recent Trends Affecting the Economic Base

The Grampian fleet principally lands into the ports of Peterhead, Aberdeen and Fraserburgh. Table 17 illustrates that the landings of the Moray Firth vessels are concentrated in other ports within Grampian and on the West Coast ports of Kinlochbervie, Ullapool, Lochinver and Mallaig. Between 1981 and 1986 the percentage of total landings into home ports showed marginal increases, catches by Moray vessels rose by about 20% overall.

The period analysed shows a shift of Moray vessels landings from West coast ports Kinlochbervie & Lochinver to Peterhead and Fraserburgh respectively. The majority of the vessels making these N.E. landings do however layover at Macduff or Buckie and so contribute to GRC income through port dues. Landings from foreign and stranger vessels accounted for a further 2 per cent, 28 per cent and 31 per cent by volume for Macduff, Buckie and Lossiemouth (includes Burghead) respectively. In the case of Buckie the bulk of stranger/foreign landings were derived from the Danish shrimp trawlers (1198 tonnes or £1.1M - 1985) with the remainder consisting of both demersal and nephrop trawlers from Wick and Denmark. In the case of Lossiemouth, or more particularly Burghead, stranger vessels were predominantly from Wick, Orkney, Inverness and Helmsdale.

Figures 4, 5 and 6 show the distribution of catches by vessels landing into Grampian ports for demersal, pelagic and shellfish species by weight. The bulk of activity is predominantly demersal orientated with the principal demersal ports being Peterhead and Aberdeen. The principal pelagic port is Fraserburgh and the shellfish ports Buckie, Fraserburgh and Lossiemouth (including Burghead).

The distribution of demersal catches shows that activity for Grampian vessels extends north to the Shetlands and east to the 'North East rough' However, much of the fishery effort associated with Macduff and Buckie landings is restricted to the 'Mithcowie bank' the Moray Firth and Pentland skerries grounds Fig. 8 and 10. This goes some way to highlighting the low landings at these ports relative to their fleets since the majority of the fishing effort in the North Sea[1] is in offshore areas (Shetland, Forties and Viking grounds).

Shellfish catches comprise nephrops and pandalids (more commonly known as prawns and shrimps). Catches by British vessels are from two areas notably the 'Fladens' for pandalids and the Moray Firth coast for nephrops.

1. R.M. Cook and D.W. Armstrong "Changes in the catchability of cod, haddock and whiting associated with the Scottish seine-net fleet.

The input of Danish vessel effort on the "Fladens" and other adjacent areas (not included on the diagram) would illustrate a more concentrated catch level in this area. Figures 7 and 9 show landings of shellfish by British vessels into Buckie and to Lossiemouth district harbours respectively.

6.4 Long Term Fish Supply Patterns

The value of Grampian landings in 1986 amounted to £127m with demersal, pelagic and shellfish species accounting for 90, 4 and 6 per cent respectively. This represents an increase of 29 per cent from 1981. The composition of catches in the three relevant fisheries districts (Table 18) shows the relative importance of demersal species to Macduff, accounting for 96 per cent of the total value in 1986; of shellfish to Buckie, accounting for 60 per cent of the total value; and shellfish to Lossiemouth changing between 1981 to 1986 to the most significant species (78 per cent) in value terms.

The quantity and value of Grampian landings from 1981 to 1986 are shown in Table 19. In the case of demersal species the table shows an overall rise in landings by British vessels into Grampian region from 1984 onwards. This development has also occurred in Macduff, with volume increases above the mean of 14 per cent for both 1985 and 1986. The situation for demersal species in Buckie shows a slight fall in landings between 1985 and 1986 but prior to 1985 the mean landings increased by 21 per cent in 1984 and 1985. Buckie's share of demersal species, has therefore fallen off significantly, accounting for 0.3 per cent of the total landings in 1986, falling from a 1 per cent share in 1981, although the tonnage landed was virtually the same in 1986 as in 1981.

The respective changes in shellfish landings show large scale increases in 1985 and 1986. Of this the shellfish landings by British vessels into Buckie have increased by 74 per cent since 1984.

6.5 Landings into the Three Ports

Macduff

Including foreign landings, of the three ports Macduff accounts for 28 per cent and 43 per cent of the total value and volume respectively. Figures 13 and 14 illustrates the percentage share by species for both value and volume. The main species comprised haddock (2,000 tonnes), whiting (1,300 tonnes) and cod (300 tonnes). Other fish caught were by catch species, mainly plaice, dabs and dogfish.

Buckie

Including foreign landings Buckie accounts for 64% and 53% of the total value and volume respectively. Figure 15 and 16 illustrates the percentage share by species for both value and volume. The main species comprised nephrops and shrimps, although landings of haddock, cod, whiting and monks were not insignificant.

Burghead (Figs 17 and 18).

The value of landings into Burghead amounted to £560,000 in 1986, and accounted for 7 per cent of total revenue from fishing into the three ports. The composition of the catch (Figure 18) comprised almost entirely of nephrops with an insignificant by catch (mainly plaice).

6.6 Prices

6.6.1 Average Prices

Table 20 gives a comparison of prices for the main species in 1981 with percentage increase in real terms. The table shows that prices have increased significantly in real terms over the six year period, with the exception of shrimps which demonstrate a fall. Also significant is the large scale increase in nephrops prices particularly in Buckie and Lossiemouth.

In terms of white fish price comparisons by district, with the exception of cod which is very close to the regional average, prices in Macduff are always lower than the average for Grampian, and Buckie lower than Macduff. This feature is illustrated more readily by the monthly price variations for selected species (£/tonne) Table 20.

6.6.2 Short Run Average Prices

6.6.2.1 Demersal Species

The structure of the buying sector and the dependence of the industry on purchases in more than one port is reflected by similar prices in all three ports (using Peterhead to reflect average Grampian prices).

Prices vary seasonally, low prices corresponding with peak landings, and high prices with relative product scarcity. In times of product scarcity short-term port price variations tend to be greater. For example Fig. 19 shows the prices for haddock in Peterhead to be higher in Peterhead over the years 1985 and 1986. Prices in Buckie and Macduff tend to vary with generally higher prices accruing to Buckie in periods of scarce supply and higher prices in Macduff during peak periods. Higher purchasing power concentration in Peterhead means that the level of competitiveness is much higher and is ultimately reflected in relatively high prices.

Port price variations reflect purchasing power by port and one of the main influences may be the number of buyers and the relative buyer concentration. There are other influences viz:

Availability of particular species by port and/or size of species: variations often occur with the different fishing methods, seine net as used in Macduff as compared with nephrop/other trawls as used in Buckie. Landings show that with seine netters, demersal catches are consistent in size and quality. It should be noted that white fish caught by nephrops gear tends to be damaged and thus landed as inferior quality.

Quality of species: some ports have a better reputation for fish quality than others.

Some important observations can be made from the price analysis:

Haddock Fig. 19

(a) In periods of scarcity for haddock, Peterhead attains the highest market prices and is usually higher throughout the year.

(b) Prices in both Macduff and Buckie are relatively high but always less than those achieved in Peterhead. There were however, some notable differences in the early part of 1985. Market starting prices in Peterhead often determine prices in Macduff and Buckie.

Cod (Figure 20).

(a) Prices for cod appear to have been higher in Macduff, although to some extent the difference may be attributed to inaccurate box weight conversions in Peterhead. The higher prices attributed to Macduff, as opposed to Buckie, are again in response to the superior quality of fish caught by the seine netters, and in part due to lower buyer concentration with the influence of the 'kedgers'.

(b) Comparative prices for cod achieved in Buckie appear to be much lower, particularly in periods of abundant supply. This is in part in response to the presence of fewer buyers and also the detrimental effect on quality of cod taken with nephrops gear.

Whiting (Figure 21).

(a) The dominance of Peterhead is again reflected in whiting prices but Macduff still exhibits trends which are consistent with those of Peterhead.

(b) Price variations for whiting in Buckie are like cod, fairly high with prices generally lower than those in the other two ports. This difference can again be attributed to buyer concentration and fishing method.

6.6.2.2 Shellfish Prices

Shrimps (Figure 22).

Prices have fallen in real terms since 1981. This has been due to high buyer concentration levels, i.e. one single buyer, increased competition from imports and falling average sizes. Significantly from April 1986 to June 1987 prices in Buckie were higher than in Peterhead, representing

an annual difference of 5%. Peterhead has over the past two years managed to attract significant landings of shrimp. The pattern of landings into Peterhead rather than moving further into Buckie relates to three factors:-

(a) the firm recently established in Peterhead is a subsidiary of a Danish company with existing links with the Danish fleet. Since many of the new vessels landing into Peterhead were Danish and were vessels which had changed from fishing for industrial fish, there was no incentive for them to establish contracts with other buyers, whether in Buckie or other Grampian ports. These vessels similarly exhibited loyalty to the one company;

(b) the inability of the established firm in Buckie to absorb greater supplies from both local or contracted Danish vessels; and

(c) the increased steaming distance to Buckie from the Fladen ground as opposed to Peterhead.

Once established the new firm may demonstrate increased competition, as has been the case latterly. The return of a proportion of the Danish vessels to the industrial fishery may result in the Peterhead buyer offering competitive prices to attract the established Danish and British shrimp trawlers. It is likely therefore that as a result of increased competition the price fall as seen from historic data may be curtailed.

6.6.3 Future Price Trends

The level of price changes demonstrated in Table 20 would suggest that in future years prices would increase. However, since the level of these increases have been significant over the past three years, it is more than likely that prices would assume to stabilise if not decline, even with slight adjustments in stock availability. For this purpose

therefore for projective purposes, the average prices for white fish is assumed to remain constant viz:

	£/tonne
Haddock	560
Cod	890
Whiting	460

It is more than likely that the competitive levels which exist in the shellfish industry should lead to increasing prices. The levels assumed are:

	£/tonne
Shrimps	970
Nephrops	1,650

6.7 FACTORS POTENTIALLY AFFECTING DEVELOPMENT

6.7.1 Introduction

Investment decisions for infrastructural developments must be made, taking into consideration a number of variables. Among the priorities, naturally, are recent trends and actual requirements at the present time. However, there are a number of variables which may exert an influence on the efficiency of any investment and indeed the sagacity of carrying that investment out. Three potential influences have been identified as possibly affecting the size of the Grampian catch and/or fleet, and therefore the facilities needed to service the catch. These are the future potential catch, the influence of vessel licensing and fleet restructuring, and potential development in the three ports of Peterhead, Aberdeen and Fraserburgh.

6.7.2 Resource Availability

The availability of fish stocks is clearly basic to the future of the fishing industry. An understanding of the potential landings and the parameters influencing those landings is necessary in order to be able to effectively consider infrastructural requirements in the shape of port facilities.

It is perhaps useful to make some initial explanation of the systems utilised in stock determination. In a managed fishery, total allowable catches (TAC's) are established in relation to the level of abundance of stock being exploited. Such abundance for each stock is determined by both natural factors and by the level of fishing effort extended.

Until relatively recently, access to fisheries was open, with little restriction on operations. However, with increased catching power associated with a growth in the number of vessels, and more sophisticated catch techniques, there was a move towards 200 mile fishing limits.

Overfishing of stocks has led to conservation measures to protect species, which varied between minimum mesh sizes and minimum landing lengths to protect young fish, and also TAC's to reduce overall fishing mortality. The aim of general fisheries management policy has been to adjust the level of fishing effort to that which maximises fish catches in the long term without affecting the level of spawning stock.

To avoid disruption of supplies and attempt to maximise the net present value of the catch, TAC's have been implemented as a matter of course sine 1983. Despite the difficulties encountered since, there is now a greater degree of certainty about what the level of capture will be in the short and medium term.

As was noted in Section 6.4 the most important stocks to the Grampian fleet are haddock, cod, whiting, nephrops, shrimp and herring. Since herring does not feature greatly in any of the three ports it is omitted from any further comments. Of the above species haddock, cod and whiting are deemed pressure stocks and are therefore subject to TAC's. Nephrops and shrimps in Area IV are deemed non-pressure stocks at present and are not subject to TAC's.

The following conclusions can be drawn from Table 21 and general scientific findings:-

(1) Haddock: More recently this stock has been associated with poor recruitment with a below averge year class. This has led to a gradual reduction since 1985, although stabilising in future years to around 150,000. Catches have reiterated the falling TAC's after 1985, since landings have reduced overall.

(2) Cod: The fishing mortality rate for cod has been at its highest level in 20 years and the spawning stock has decreased to the lowest level. As such, fairly restrictive TAC's have been established, These are expected to increase to around 130,000 tonnes in the next three years. It is likely that in order to protect the young cod stock, a 90mm mesh size will be established. This measure if implemented will not however be regarded as a substitute for a lower TAC.

(3) Whiting: The spawning stock appears to be extremely sporadic over short time periods, decreasing between 1980 and 1984 and increasing in 1985 and 1986 with falls again in the 1987 year. Since catches are often well below the recommended TAC in this case whiting is often used as the political buffer to counter shortfalls in other pressure stocks. It is likely therefore that in future years the recommended TAC will increase to 150,000 tonnes.

(4) Nephrops and Shrimps: Catch forecasts are not carried out for nephrops or shrimps but there is concern over the small size of nephrops in the Moray Firth. The position for nephrops is expected to improve with the recently introduced 80mm mesh and minimum tail length regulation.

6.7.3 Long Term Prospects

The ability to forecast in excess of three to five years is not possible since much of the biology can depend on a number of factors such as sea temperature, climate, availability of food etc. As such it is reasonable to assume that stocks will remain in their present state.

However, since the location of the white fish stocks studied are very much related to distant inshore grounds where recruitment is higher, it is quite possible that landings from waters within close proximity to Macduff and Buckie will fall off. This may require some seiners to work from stranger ports in forthcoming years.

6.7.4 Management Measures

Due to overfishing and overcapacity of the UK fleet, the questions of vessel licensing and fleet restructuring have increasingly come into focus during recent years. Many see the root cause of the problem in the industry to be the open access nature of the fishery with a consequent need to limit or restrict entry. Licensing of vessels is aimed at stabilising the fleet at existing levels.

The government has recently announced that pressure stock licences are to remain for vessels of at least 10 metres in length where national catch quotas may be expected to be fully taken by the national fleet (i.e. the North Sea). The transfer of licences is also restricted to vessels between 10 and 24 metres. As such it is unlikely that there will be any significant expansion in the fleet working from Macduff. This situation could however, increase the pressure on non pressure stocks namely nephrops and shrimps if access to pressure stocks becomes severely limited on other grounds i.e. the West Coast of Scotland.

6.7.5 Other North East Port Development

Recent construction works in Peterhead and Fraserburgh have led to increased access and berthing facilities at these busy ports. This could encourage vessels from the three ports to increase the amount landed into Peterhead and Fraserburgh. Clearly the fishing activities at the Grampian harbours are interdependent to some extent. Any further improvements to Peterhead, Fraserburgh or Aberdeen would tend to confirm the unlikliehood of increased landings at the three ports studied.

7. SUMMARY OF CONCLUSIONS

7.1 Prospects for the Fishing Industry Utilising the Three Ports

The long awaited conclusion of E.C. Common Fisheries Policy (CFP) whilst imposing International rather than National fishery conservation policies at least offers a better opportunity of assessing the likely available catches within a short biologically dictated timescale into future years. As a result, an overview of the likely Total Allowable Catch recommendations is possible. The eventual quota allocation to the various EC countries does not of course necessarilly follow these guidelines owing to political/social pressures.

The picture for the immediate future for those whitefish stocks fished by vessels out of the three Moray Firth ports studied indicates little overall change for cod with a slight improvement in haddock availability. There is a possibility of an increase in the whiting quota.

The shellfish stocks of prawns (nephrops) and shrimp (pandalids) are not listed as pressure stocks and therefore not subject to quotas.

Some concern is being expressed as to the smaller average size of nephrops being landed locally, similarly for the shrimp.

Little scientific information is however available on the stock biomass. Nephrops have an apparent natural ability to escape capture by existing fishing methods and this appears to account for both variable catch rates and also their continued availability despite increased fishing effort.

There has been a considerable increase in Danish effort on Fladen shrimp this year although this may be shortlived and related to temporary fishing restrictions on the industrial fishery.

With the exception of the sprat stocks in the upper Firth, pelagic stocks are not studied as no significant landings are made at these ports.

Discussions with DAFS indicate no likliehood of removal of the restriction prohibiting sprat fishing in the Western Firth in the immediate future.

In summation, therefore, with a strong market for shellfish and little change likely in whitefish quotas, the future for landings in the three ports looks like maintaining the status quo for whitefish with the possibility of increased shellfish landings, the latter dependent upon the ability of local processors to handle an increased supply.

7.2 Port Facilities and Fishing Industry Usage

7.2.1 Burghead

Only basic facilities are provided. There is no justification for major development expenditure within the foreseeable future. One suggested improvement is the provision of additional quayside ladders as the small boats presently using the harbour tend to congregate at ladders spaced at distances more appropriate to the large drifters formerly accommodated. This inconvenience does tend to reduce the useful usage of the quays available.

The harbour serves an important function as a safe all weather landing place for vessels fishing in the Western Moray Firth and the local Firths.

The major landings are of prawns (nephrops) and the provision of the new fish holding shed is a most useful facility.

There appears to be no short-term likliehood of a relaxation of the ban on sprat fishing due to the designation of herring nursery areas locally. The requirement for the provision of a safe harbour with landing quays West of Lossiemouth and convenient to the Moray Firth processors is confirmed.

The heavy cost of dredging to maintain sufficient entrance channel depth is clearly creating a budget deficit.

It is sugggested that a concentration of dredging effort on Burghead bar immediately prior to the onset of the winter gales might allow a greater depth throughout the winter with the scouring effect of the associated wave action. There is no question however that the requirement to dredge frequently will be a continuing burden on GRC finances. On the other hand such an increase would affect Burghead's competitiveness vis a vis other ports.

G.R.C., must consider whether an increase in fish landing dues to say 5% which would not in fact amount to an onerous burden on users, in our opinion, is justified. Such a contribution would go a long way to meeting dredging costs.

Apart from some limited additional use as yacht berthage, limited by the requirements of the prawn fleet, there seems no likliehood of additional revenue.

The prawn market is however buoyant and there seems every indication of maintaining the recent pattern of landings and income.

Burghead cannot be looked at in isolation from consideration of the neighbouring port of Lossiemouth. Little development has taken place there for some considerable time and it is thought unlikely that income from greatly decreased landings is adequate to allow works to take place. The approaches to the harbour are untenable in North East/South East weather and this drives local boats to Burghead. If the harbour company should find it necessary to reconsider its position owing to financial problems the position of Burghead might have to be reconsidered in parallel, particularly as regards the provision of a fish market at Burghead. Lossiemouth presently provides the market for Burghead landings.

7.2.2 Buckie

It is clear that Buckie by any standards shows an attractive operating profit, on recent operations. Having said that, previous extensive harbour works and costs mean that a considerable burden of debt charges puts the 'bottom line' of the financial statement in deficit.

Again the main strength of the income source is obtained from shellfish landings predominantly to one large processor. This market as previously stated is strong and despite the lack of scientific knowledge of prawn stocks the history of the fishery gives no cause to assume other than that the supply will be maintained. The other main supply is of shrimp (pandalid spp).

There is considerable effort on the North Sea stock at present and there is some concern over the smaller size of shrimp being taken. Much of the extra effort, particularly by the Danish fleet is understood to be by vessels normally engaged in industrial fishing. This could mean that the extra effort is temporary. A Danish processor has established in Peterhead but this is currently having little effect on Buckie landings. The fishery is predominantly by a different fleet from that landing at Buckie.

Whitefish, though representing a smaller total value of landings is nevertheless significant and is being maintained with little change in recent years despite prices being lower on average than Fraserburgh, Peterhead and Aberdeen. Buckie has considerable facilities in terms of boatbuilding, repairing and general engineering with useful slipway facilities adequate for the local fleet.

Extra income in terms of vessel dues could be attracted if in fact the largest slipway were brought back to full weight capacity and as a result could accommodate vessels too large for other local slipways. The fish market is not really acceptable as a fish holding area both from the point of view of hygiene requirements and transport accessibility, mainly due to its location.

The ice plant is working under difficulties mainly inherited from its original design. Ice cannot be stored to anything like hopper capacity and therefore vessels cannot ice at the rate required particularly at the end of the week. Skippers also claim that the ice supplied "soon melts away" in comparison with other supplies. This problem could not be identified by the Seafish team and it is possible that the

comparison is made with other types of ice. There is evidence of a lack of flexibility in arrangements for the supply of ice outside of 'working hours'.

The lack of sufficient power supply points on quaysides, the North pier in particular is found to be an inconvenience.

The present box storage situation is inefficient in terms of quayside space taken-up particularly the storage of Danish shrimper boxes.

Access to the harbour is possible for all but the largest fishing vessels at all states of the tide. It is understood that it is unrealistic to dredge to a greater channel depth owing to the existence of rock under a thin layer of sand.

As is the case with Macduff and Lossiemoth the percentage of fishing related employment is high at Buckie, at 38% as opposed to its nearest rival Fraserburgh at 35%.

7.2.3 Macduff

The fishing industry utilising Macduff provides a viable income (1985-86 figures are misleading in this respect).

Landings of whitefish have remained fairly constant over recent years and prices paid certainly for codstuff compare well with the larger ports.

There is a small fleet of the larger seine netter class landing regularly. The fishing activities and catch potential of these vessels is unlikely to change in line with other large North East ports. In addition there is considerable income from locally owned vessels 'weekending' at the port despite having landed at the larger Buchan ports.

The harbour entrance is regarded as tenable in most weathers when other ports in the North East corner of Grampian are closed. Facilities are up to date with a modern market and a good ice supply.

There are depth limitations for the largest fishing vessels using the port but these only restrict movement over relatively short periods and are not a major problem for 'tripper' vessels. Dredging to a greater channel depth is understood not to be feasible owing to bedrock.

The local boatbuilding company and several engineering concerns have an enviable reputation and enjoy full order books. Considerable expenditure is currently commited to improving the Council owned slipway facilities and adjacent engineering premises. Undoubtedly one of the strengths of the port is the availability of substantial public slipway facilities. The general picture is of a viable fishing industry supported by both service facilities and fish processing adequate for the existing landing and fleet usage. Fishing related employment is estimated at 14% of the total working population which is less than half of that at Buckie but more than twice the regional average.

7.3 Summary of Recommendations

7.3.1 Burghead

The port should be maintained as a landing place and harbour of refuge for small fishing vessels fishing the Western Moray Firth. This requirement obliges the Regional Council to regular dredging and revenue currently and for the foreseeable future cannot go anywhere near meeting costs. It is suggested that a concentration of dredging effort prior to winter gales could allow a greater depth over the bar during the winter.

Vessels landing shellfish could be asked to pay a higher percentage on landings to take advantage of the uniquely sheltered facility. A contribution of up to 5% would go a long way towards recovering dredging costs. This proposal must be considered however against the background of competition from other local ports with competitive dues. Provision of additional quayside ladders would allow boats better utilisation of quayside.

The future status of Lossiemouth harbour must be monitored in so far as it provides a fish market facility for Burghead landings. Whilst there is no real case for fish sales at Burghead as long as these are carried

out at Lossiemouth, should this facility be withdrawn or local usage decline significantly, the case for a market at Burghead should be reconsidered.

7.3.2 Buckie

Buckie derives most of its harbour income from shellfish landings and every encouragement should be given to increase this trade.

Recent developments at Peterhead have indicated the interest of Danish processors in establishing themseves in Scotland.

In line with encouraging shellfish processing development it is recommended that the Regional Council consider the building of a new fish market hall specifically designed to hold fish and shellfish in cool (chilled) condition.

The present market is located in a position such that it cannot easily meet the requirements of proper hygiene and access for vehicles.

It is recommended that consideration be given to utilising part of the reclaimed land in the West basin for a new market building and for box storage compounds. There would appear to be no alternative site although it is acknowledged that this would mean a reallocation of cargo vessels berthing allied to additional dredging.

The shellfish trade in particular must carry some priority in view of its existing contribution to harbour revenue and the local economy and due to its apparent potential for development.

The ice plant is providing the minimum acceptable service. The problems are that the type of ice is not that preferred by a majority of fishermen, the full hopper capacity cannot be utilised due to an original design fault and there are problems of supply outside of normal working hours.

Many fishermen would prefer tube or plate for fishing vessel usage and in our opinion the provision of a new plant would (a) provide a better

service and type of product for the existing fleet and (b) might well attract vessels to ice at Buckie which are now having to go to Fraserburgh. This would however entail major investment as a completely new plant would be required. It is however an investment worthy of consideration by the Council or other body. An alternative and probably more easily justified approach in terms of financial viability would be to upgrade the capacity of the existing plant and to provide service over and above normal working hours on a regular basis.

The largest capacity slipway at Messrs. Herd & MacKenzie's yard is presently underutilised because it has been downgraded to a maximum capacity of about 250 tonnes.

There is clearly a need for larger capacity slips in North East Scotland due to the investment in vessels of over 80' length. It is recommended that the Council discuss with the owners the possibility of helping to finance improvement or possibly a GRC investment in the facility.

7.3.3 Macduff

The provision of direct delivery of ice to boats has been discussed.

It is our opinion that there are advantages and disadvantages in creating a dedicated berth. If however it is decided that on balance a dedicated berth is required then the suggested provision of pneumatically delivered ice must be very carefully considered due to technical problems re. heat gain and degradation of ice within the system.

The floor surface over part of the market is pockmarked and this could constitute a dirt trap. It is recommended that this is rectified by the application of a non-slip surface to replace the requirement for the holes.

Future maintenance work on the market building should be carried out bearing in mind the benefits of insulation when panels or doors have to be replaced.

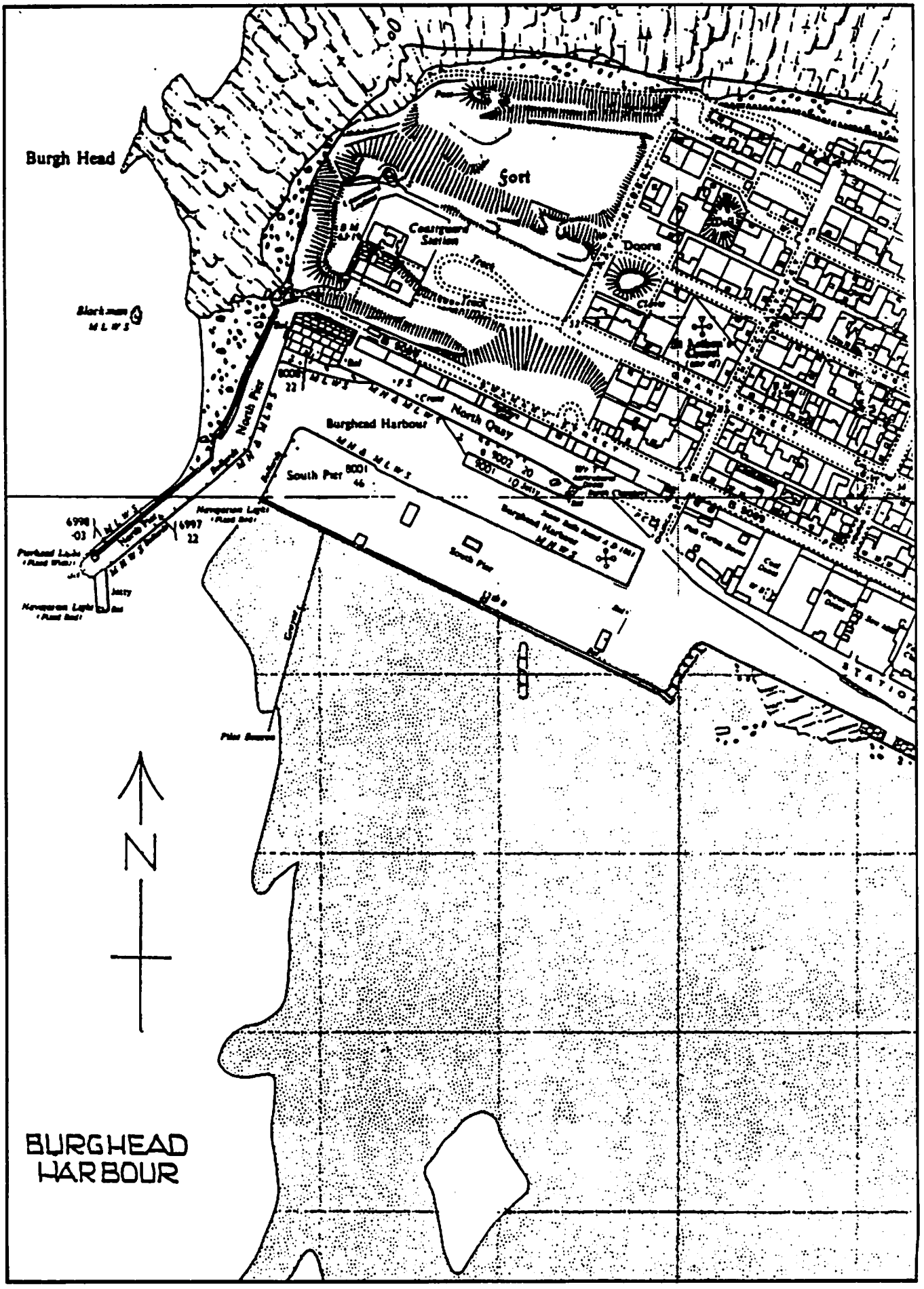
The vertical integration of catcher and processor as is the case with one company does ensure regular landings at the port and similar arrangements should be encouraged.

This factor, combined with a number of small successful processors would tend to ensure continuity of supply of white fish particularly as quayside prices at Macduff are much closer to those at the larger North East ports. There is a lack of freshwater supply points for boats at the quays and these should be provided.

Otherwise, we are impresssed with development scheme planned for the area East of the harbour and this scheme which will provide modern premises with adequate working areas should be implemented.

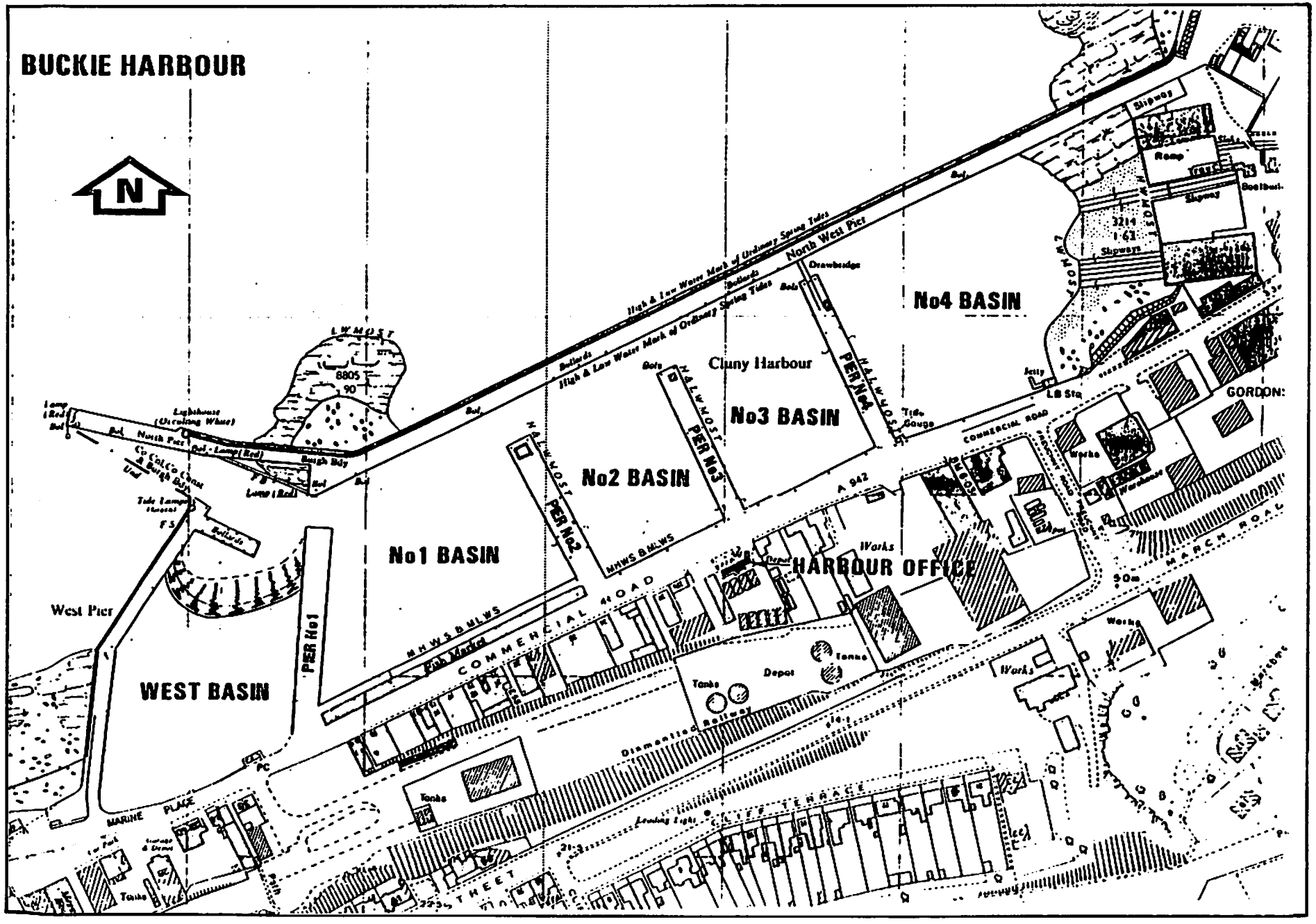
8. ACKNOWLEDGEMENTS

The authors wish to express thanks for the advice and assistance readily given by GRC Dept. of Roads and harbour masters, Captain's Wood, Bullen and Main. Also to the people from the fish trade and from service industries in Buckie and Macduff and to the boatbuilders in these ports as well as local Council officials without whose help this report could not have been written.



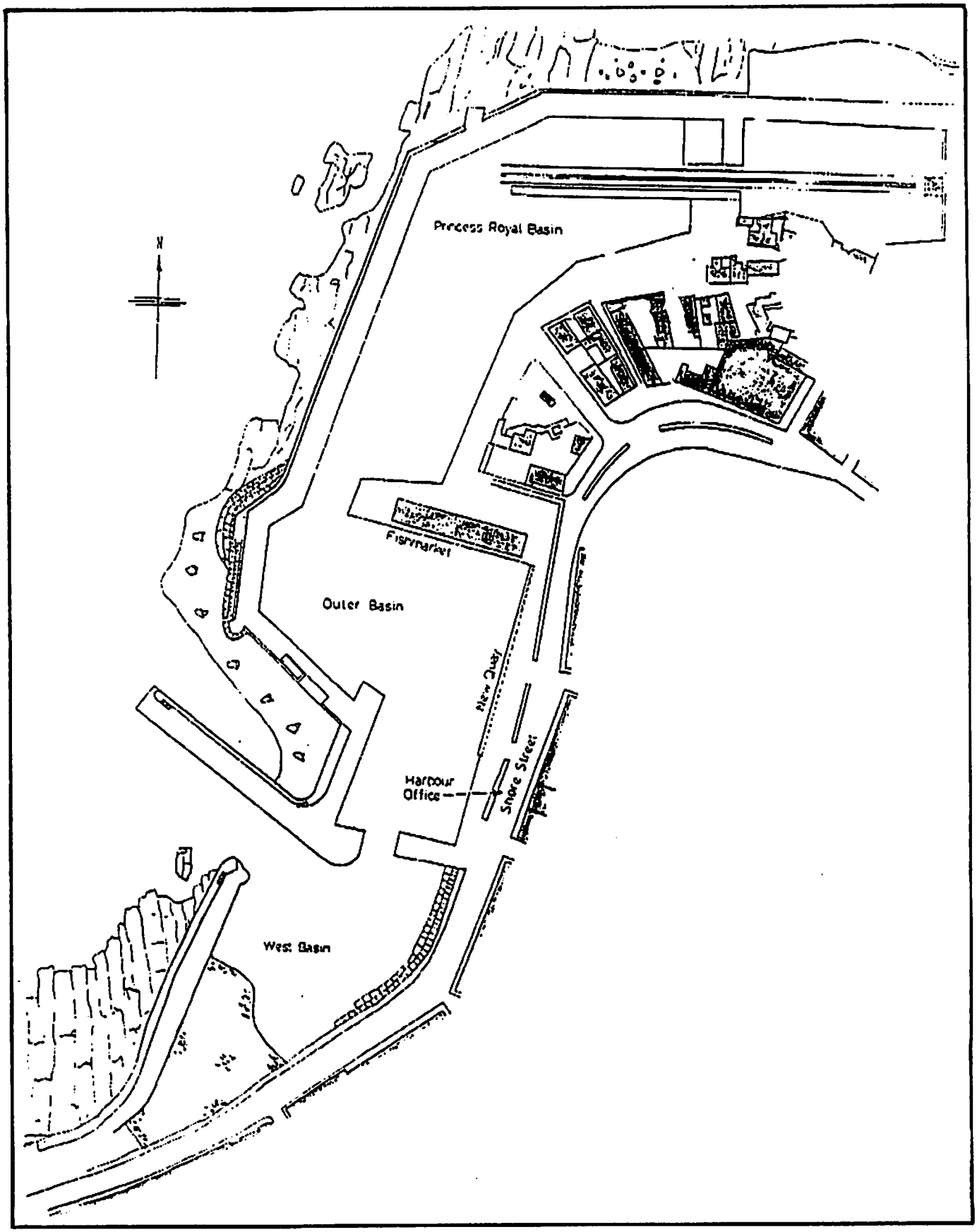
Plan of Burghead Harbour

Fig.1



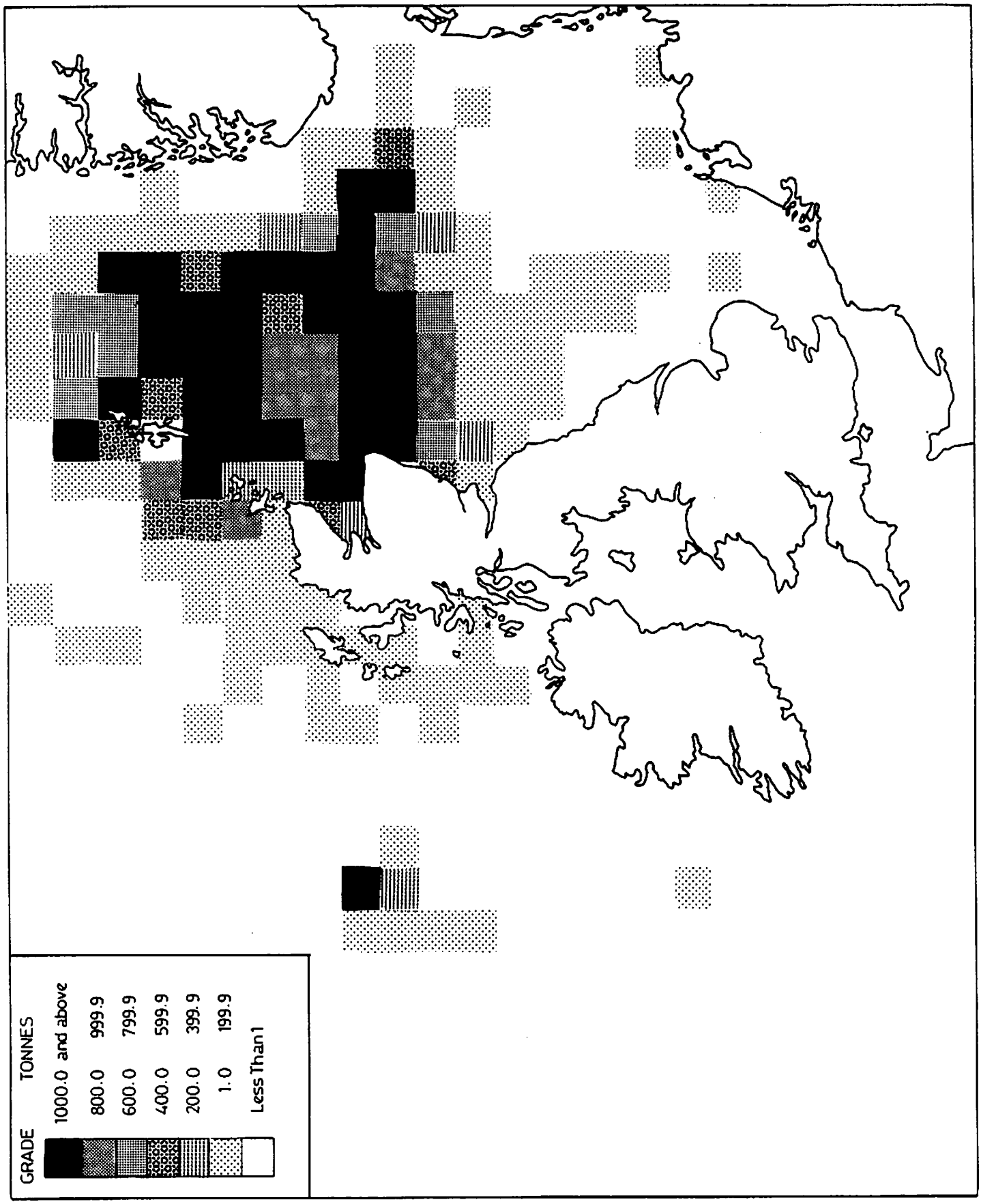
Plan of Buckie Harbour

Fig. 2

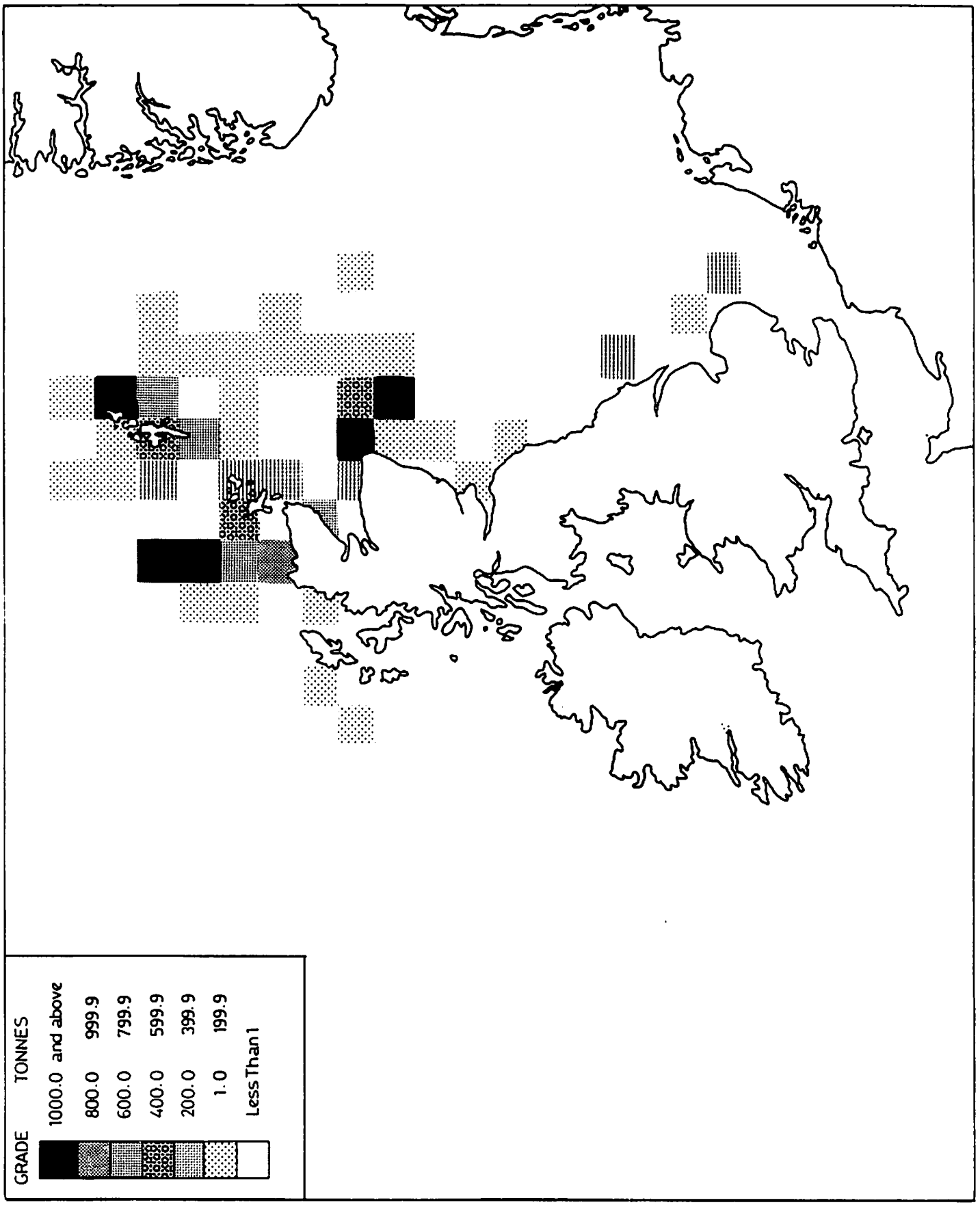


Plan of Macduff Harbour

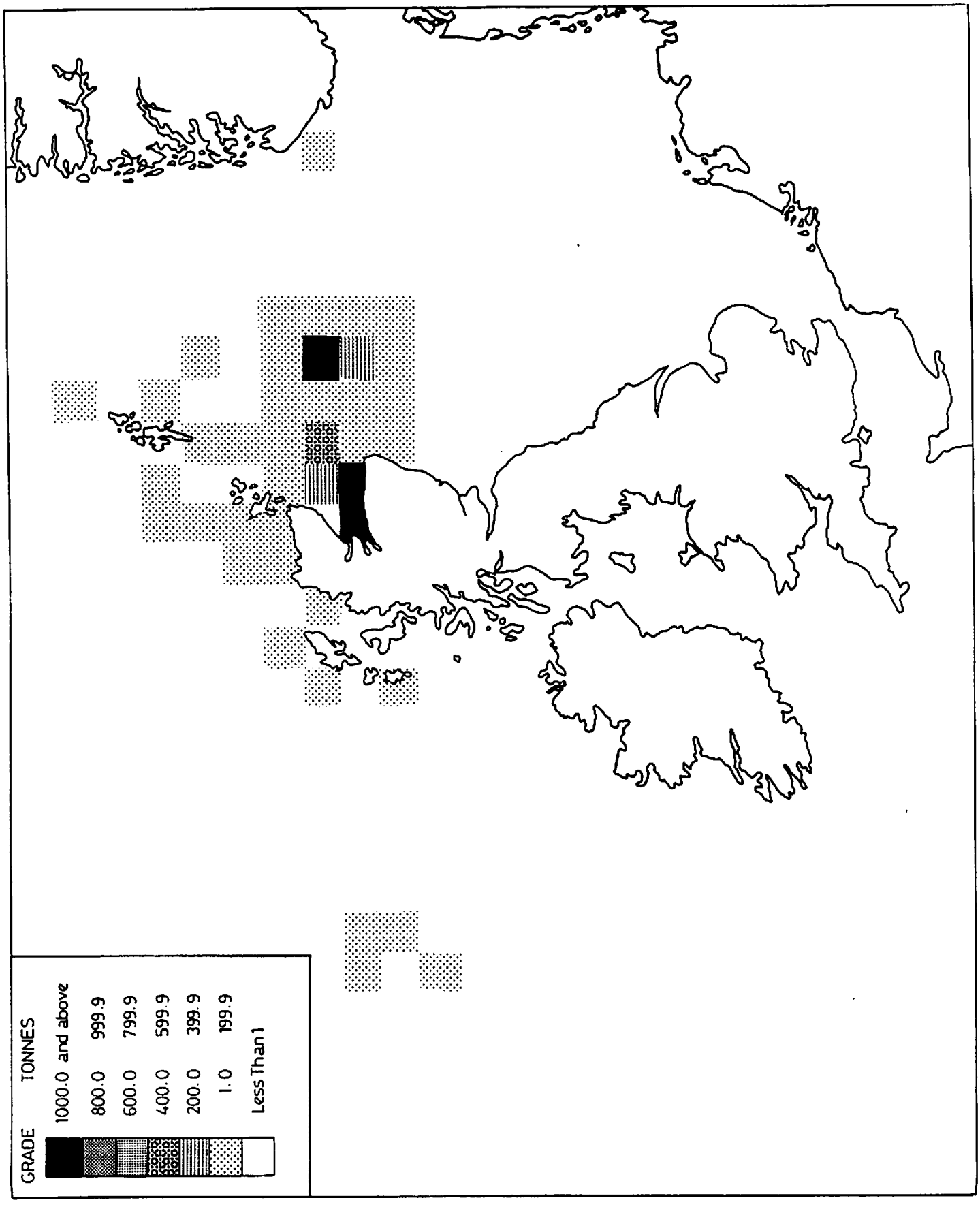
Fig.3



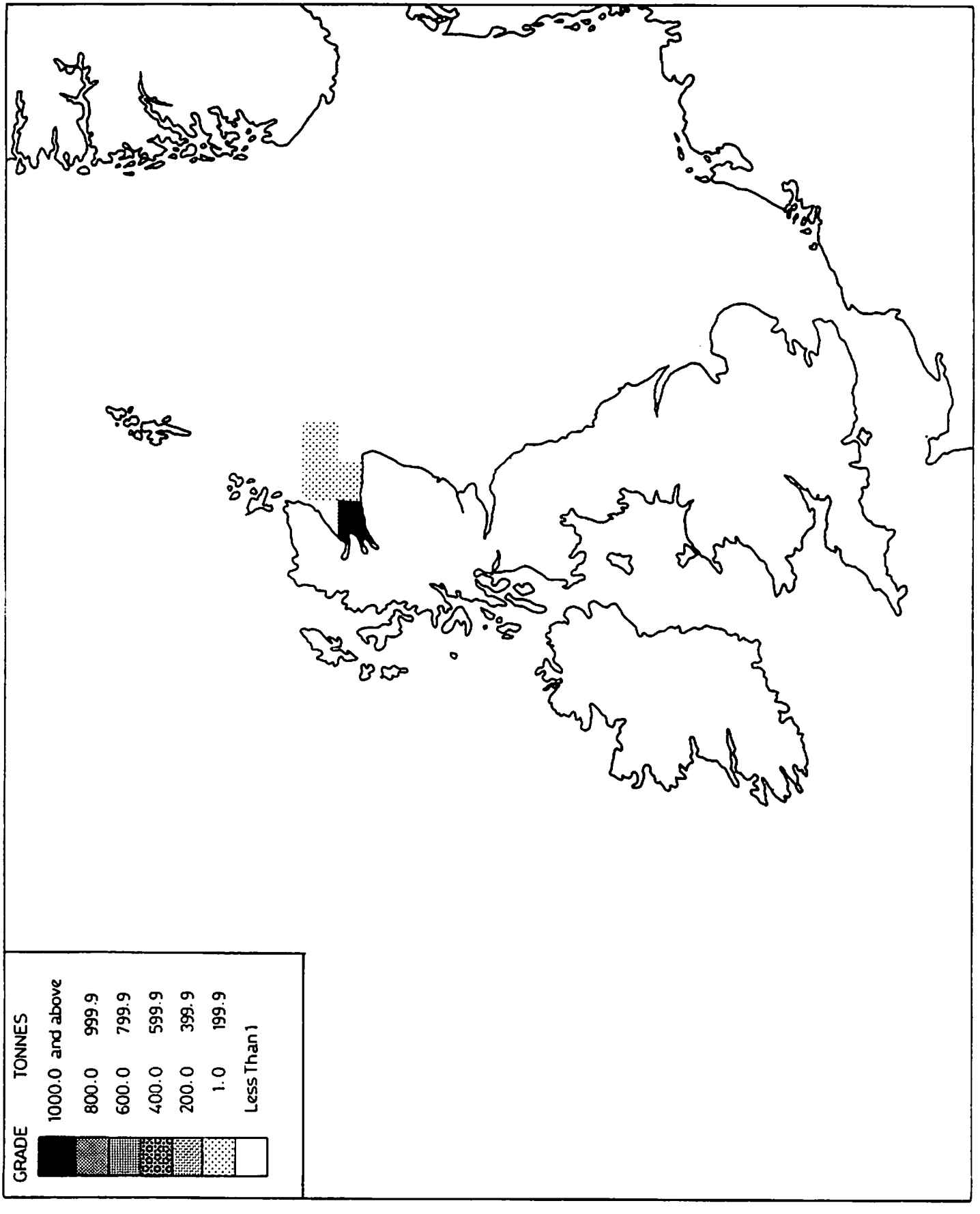
Catches by British Vessels off North East Scotland (Demersal) Fig.4



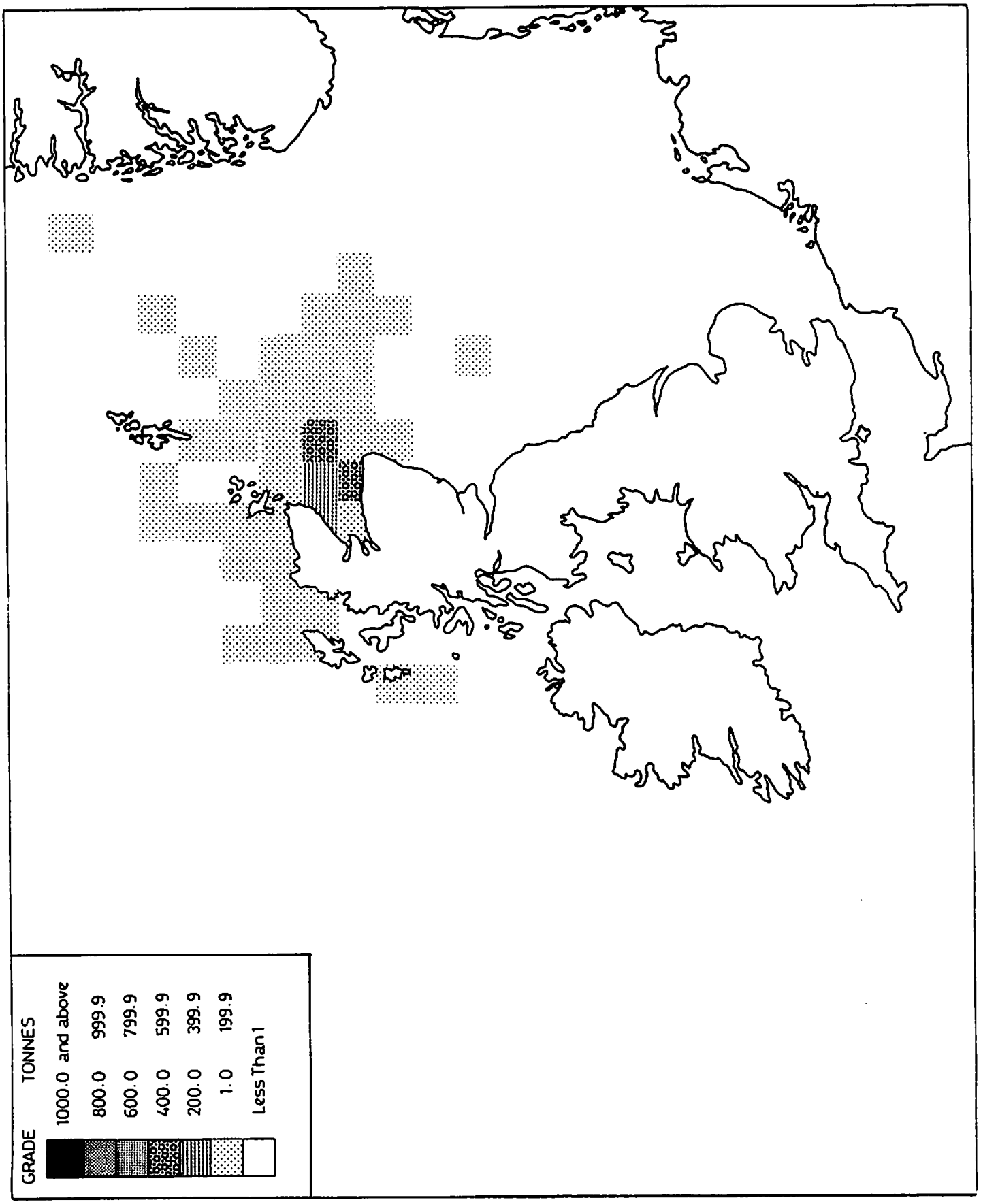
Catches by British Vessels off North East Scotland (Pelagic) Fig.5



Catches by British Vessels off North East Scotland (Shellfish) Fig.6

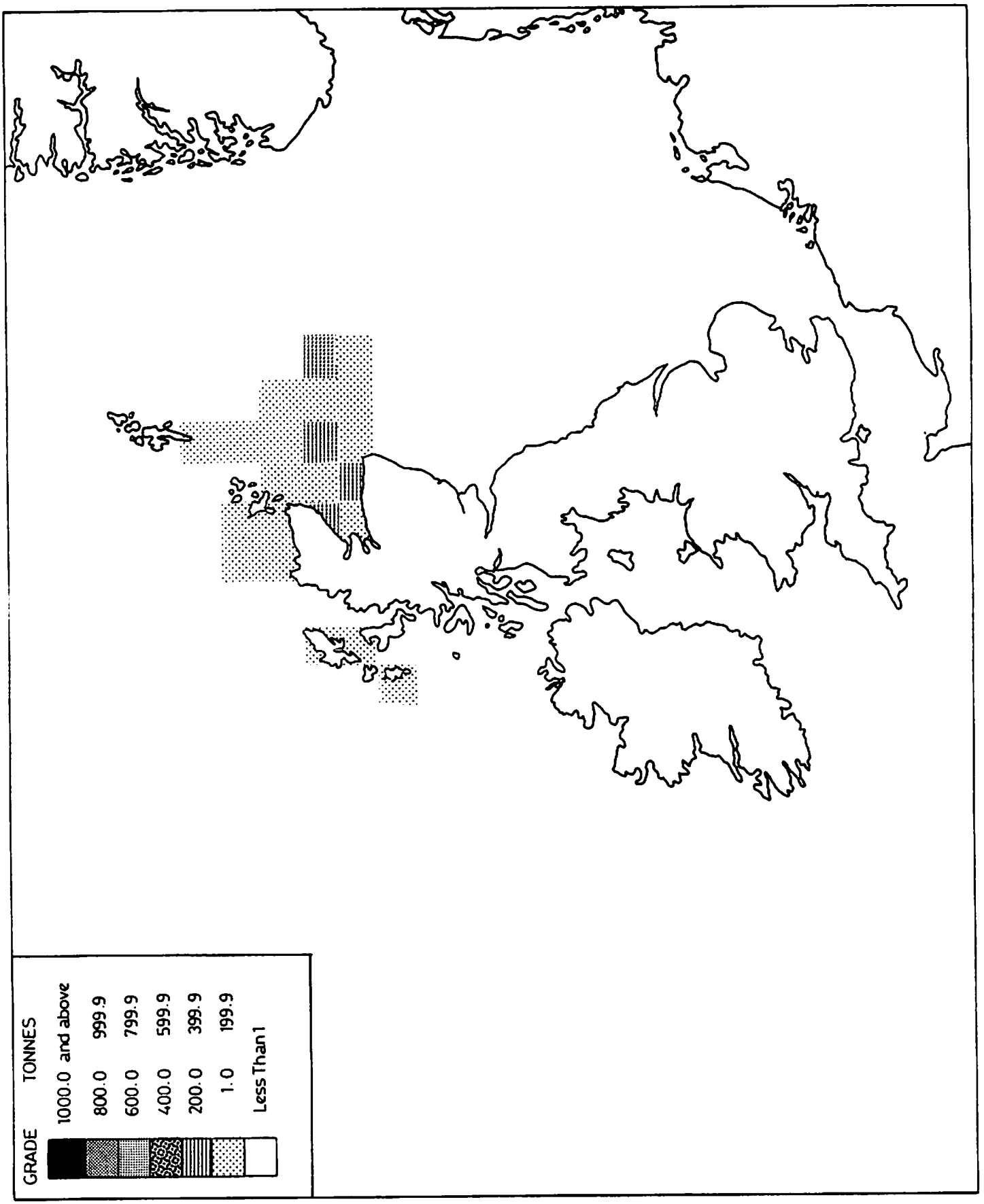


Catches of Shellfish by British Vessels Landing into Lossiemouth and Burghead Fig.7



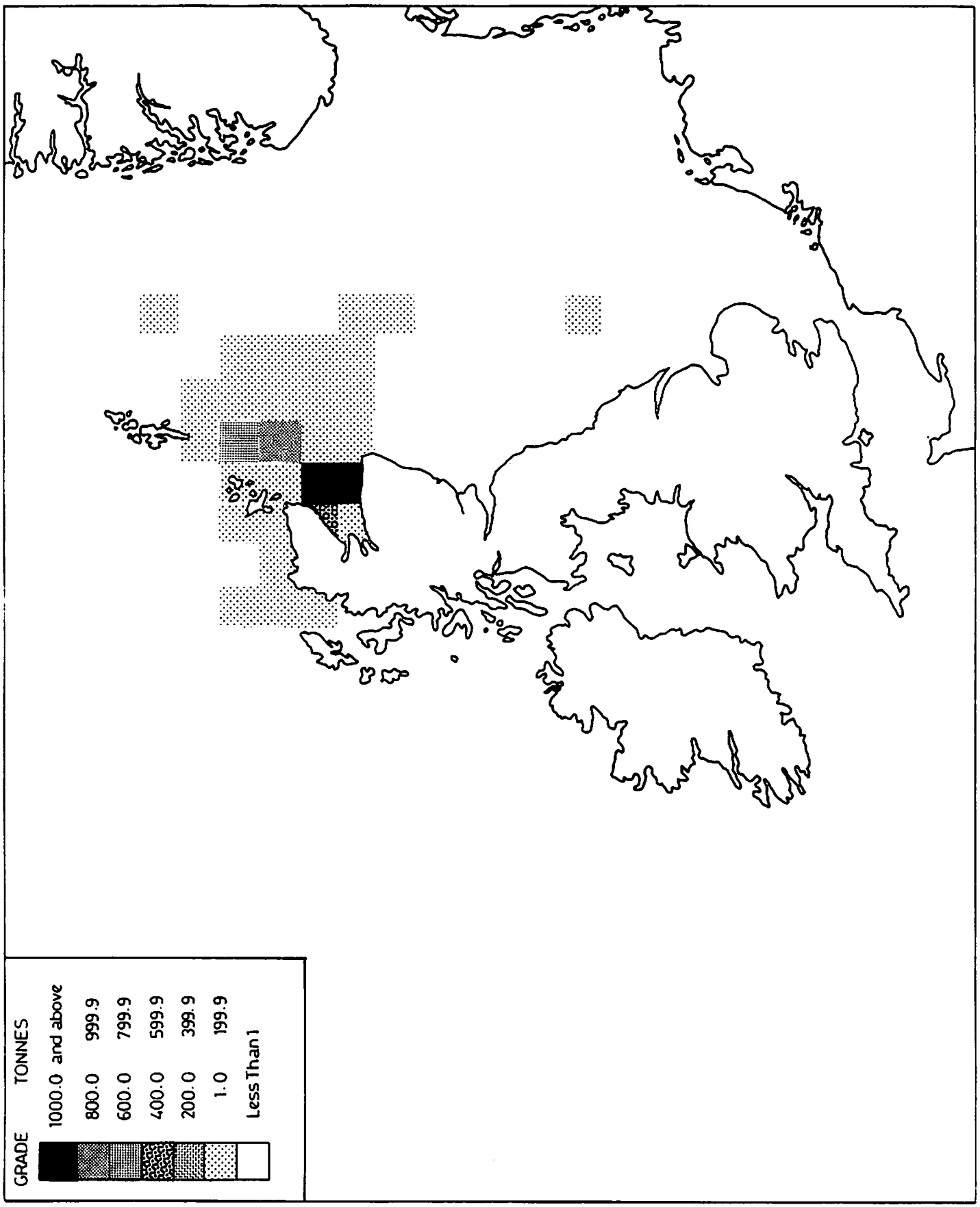
Catches of Demersal Species by British Vessels Landing into Buckie

Fig. 8



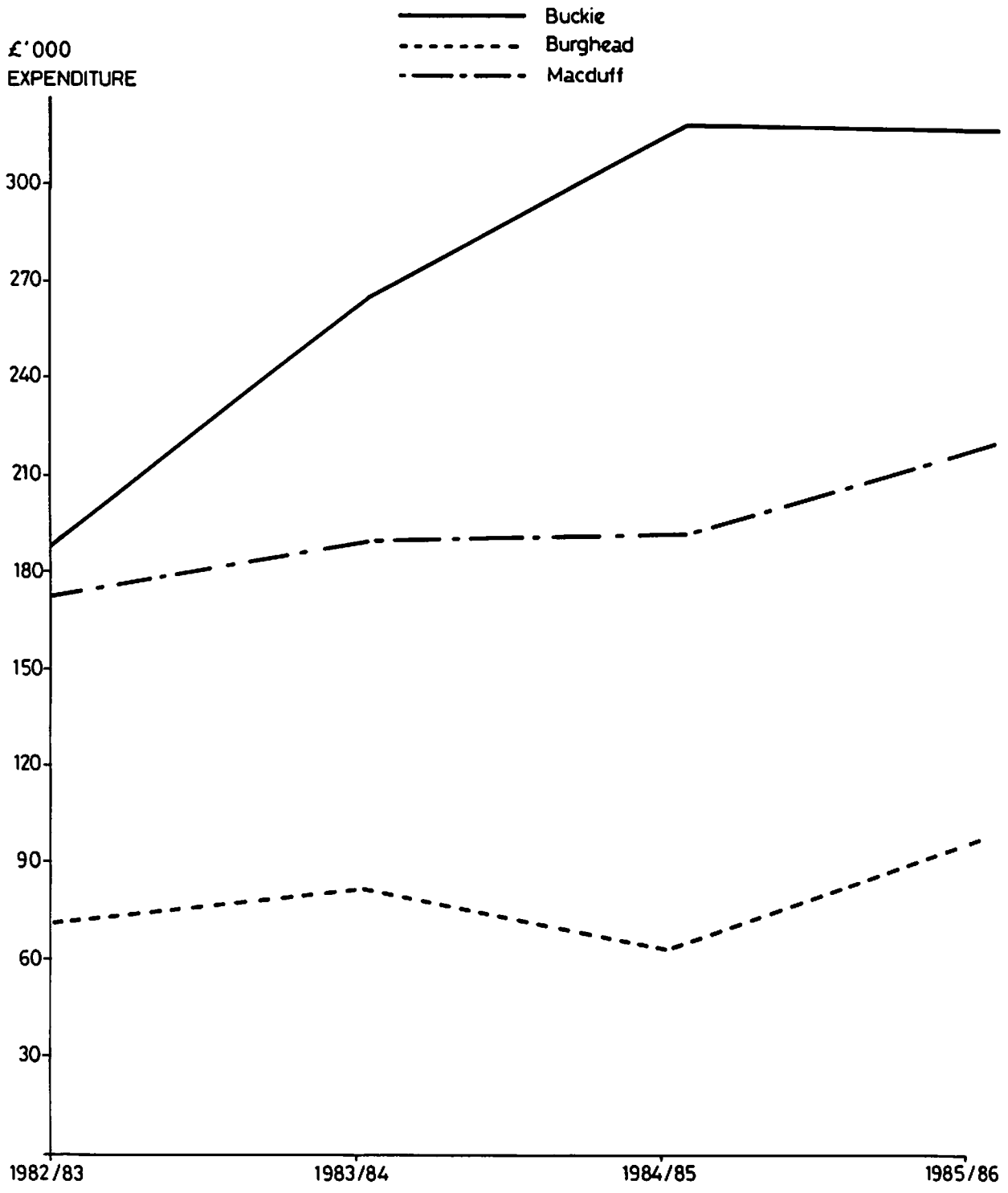
Catches of Shellfish by British Vessels Landing into Buckie

Fig.9



Catches of Demersal Species by British Vessels Landing into Macduff

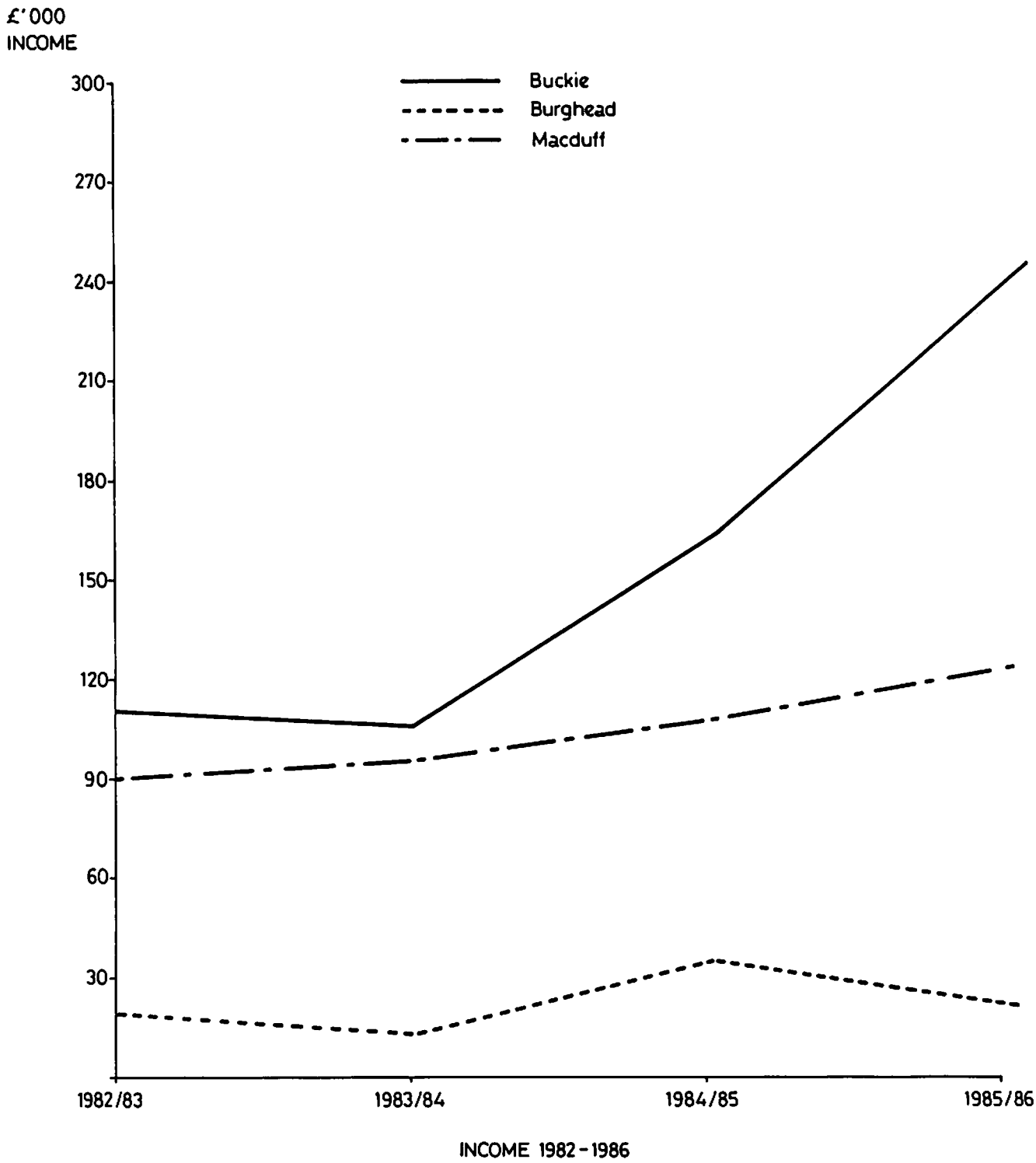
Fig.10



EXPENDITURE 1982-1986

Ports Expenditure 1982-1986

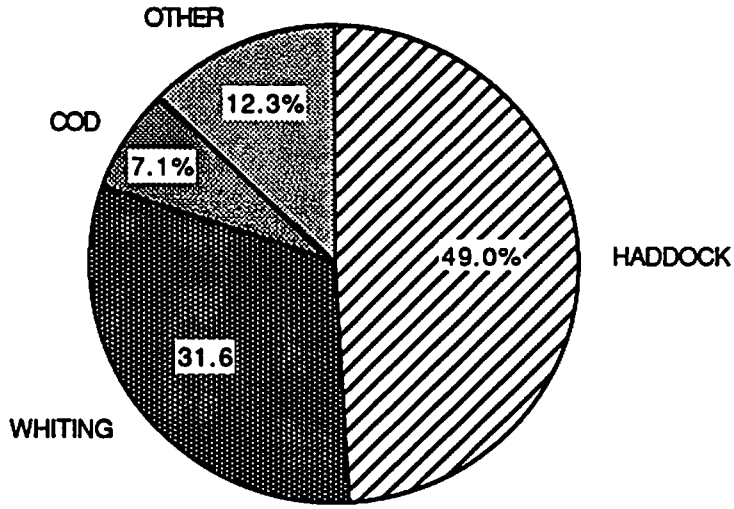
Fig.11



Ports Income 1982-1986

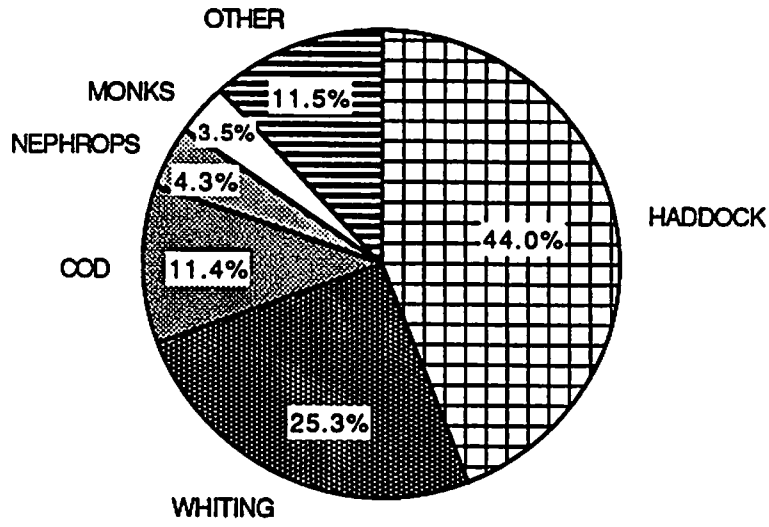
Fig.12

Fig.13 **MACDUFF - Landings by weight 1986**



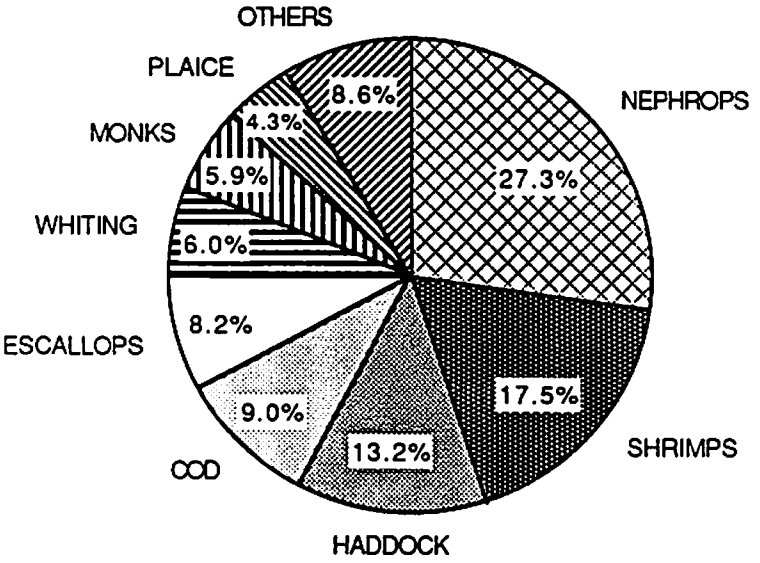
TOTAL WEIGHT 4053 Tonnes

Fig.14 **MACDUFF - Landings by value 1986**



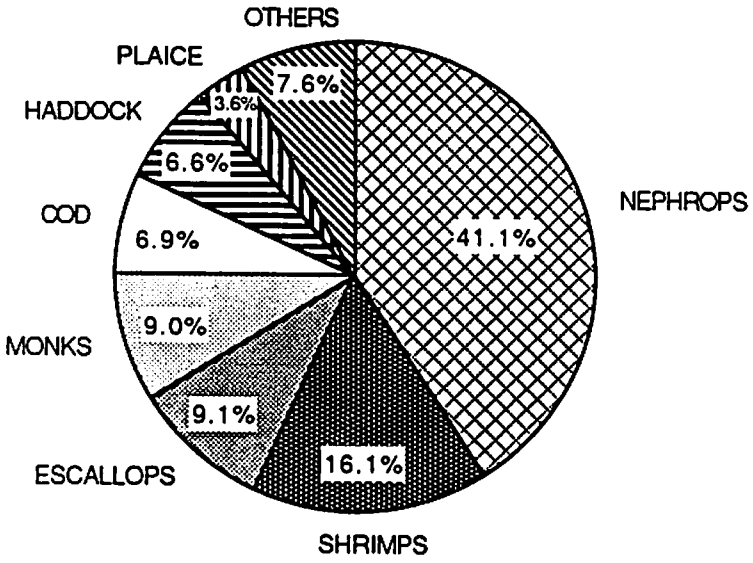
TOTAL VALUE £2.33m

Fig.15 **BUCKIE - Landings by weight 1986**



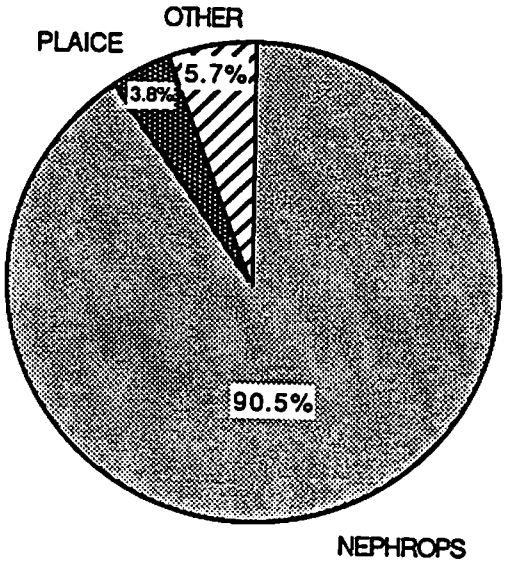
TOTAL WEIGHT 4965 Tonnes

Fig.16 **BUCKIE - Landings by value 1986**



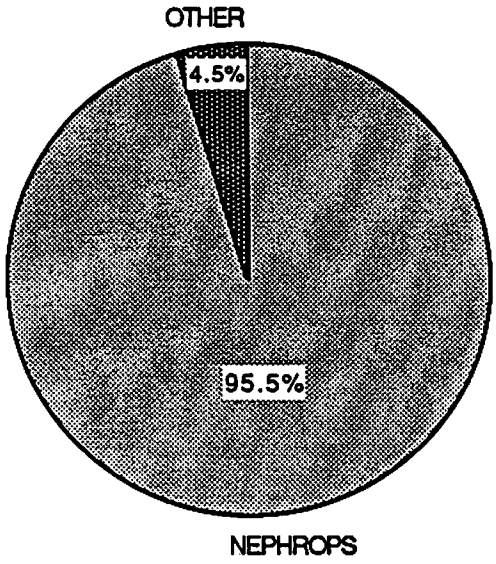
TOTAL VALUE £5.25m

Fig. 17 **BURGHEAD - Landings by weight 1986**



TOTAL WEIGHT 400 Tonnes

Fig. 18 **BURGHEAD - Landings by value 1986**



TOTAL VALUE £0.56m

Fig.19

H A D D O C K

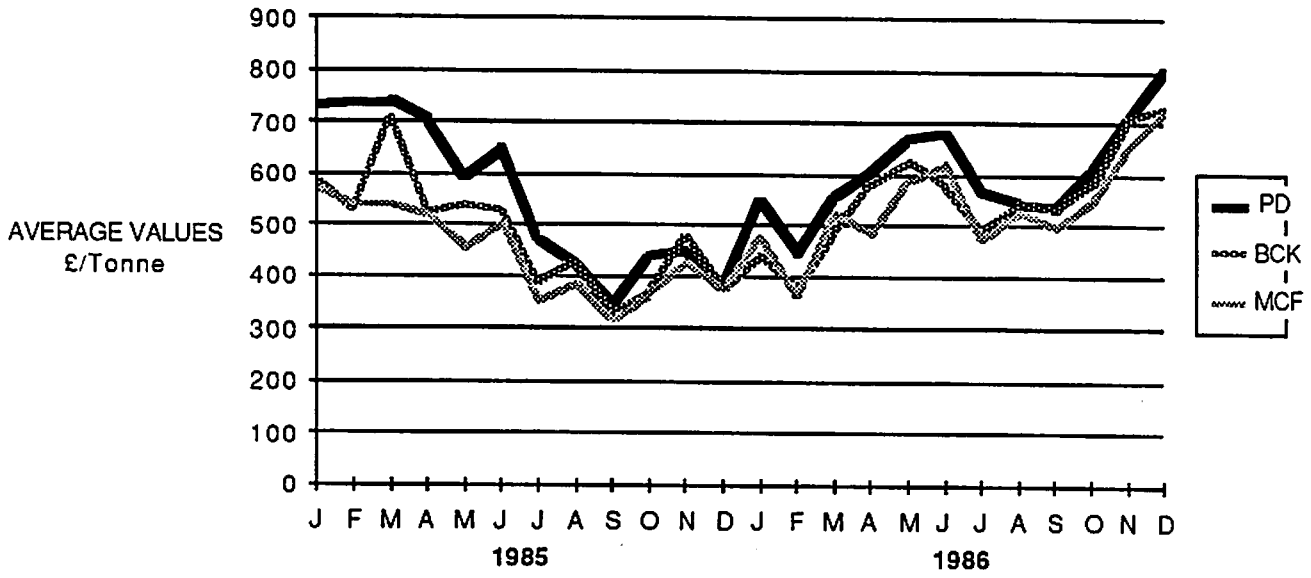


Fig. 19

Fig.20

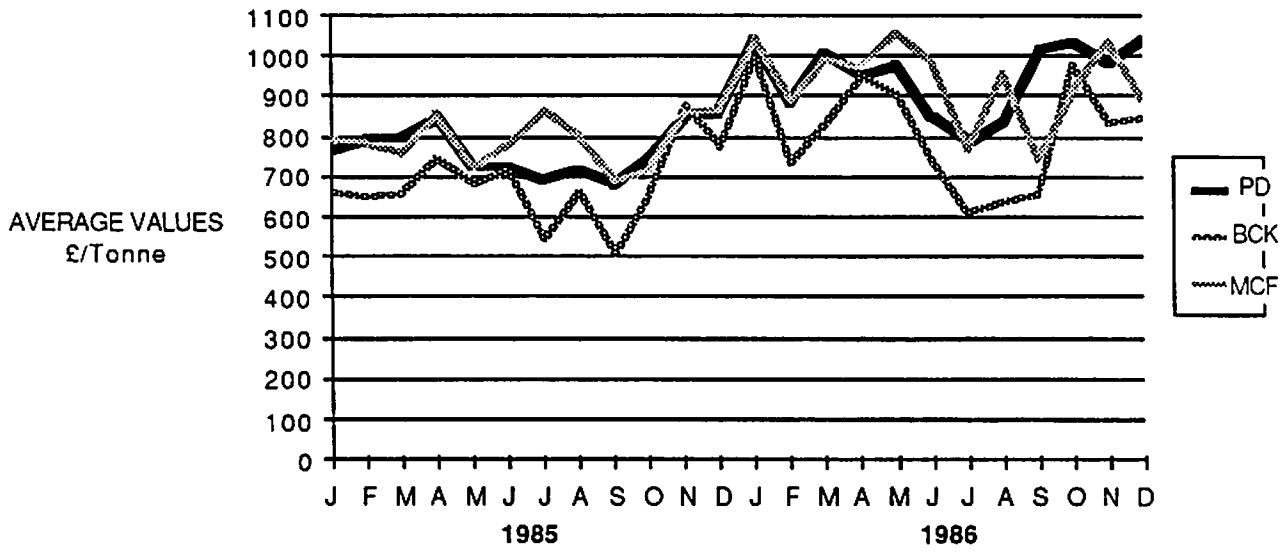

C O D
AVERAGE VALUES
£/Tonne
1100
1000
900
800
700
600
500
400
300
200
100
0
J F M A M J J A S O N D J F M A M J J A S O N D
1985
1986
PD
BCK
MCF

Fig. 20.

Fig.21 W H I T I N G

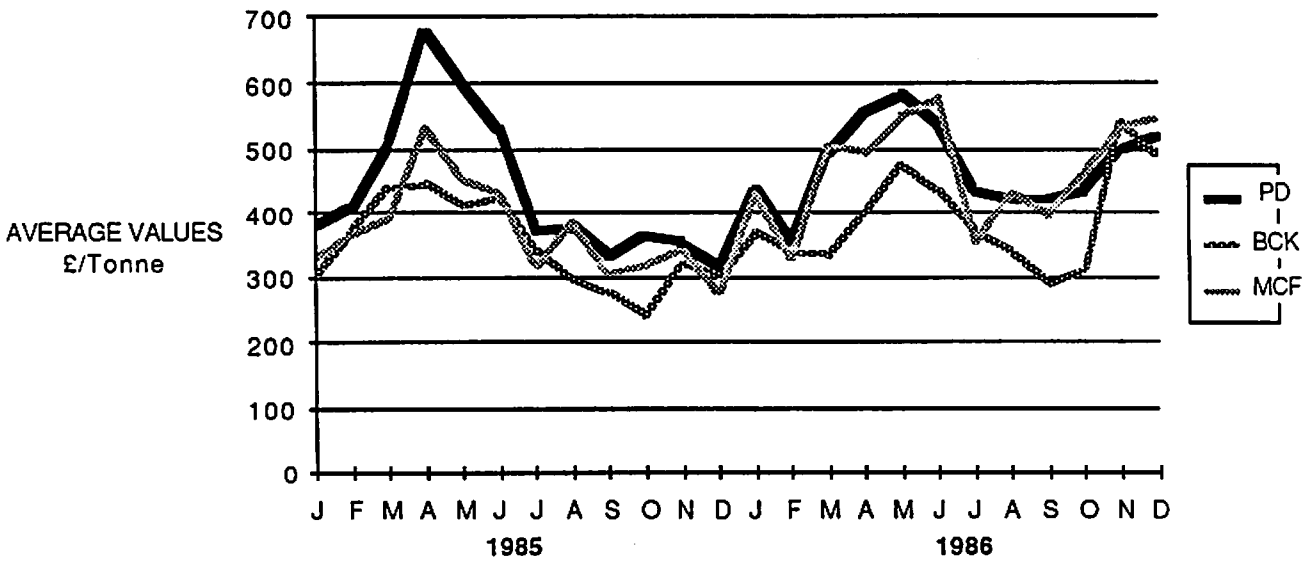
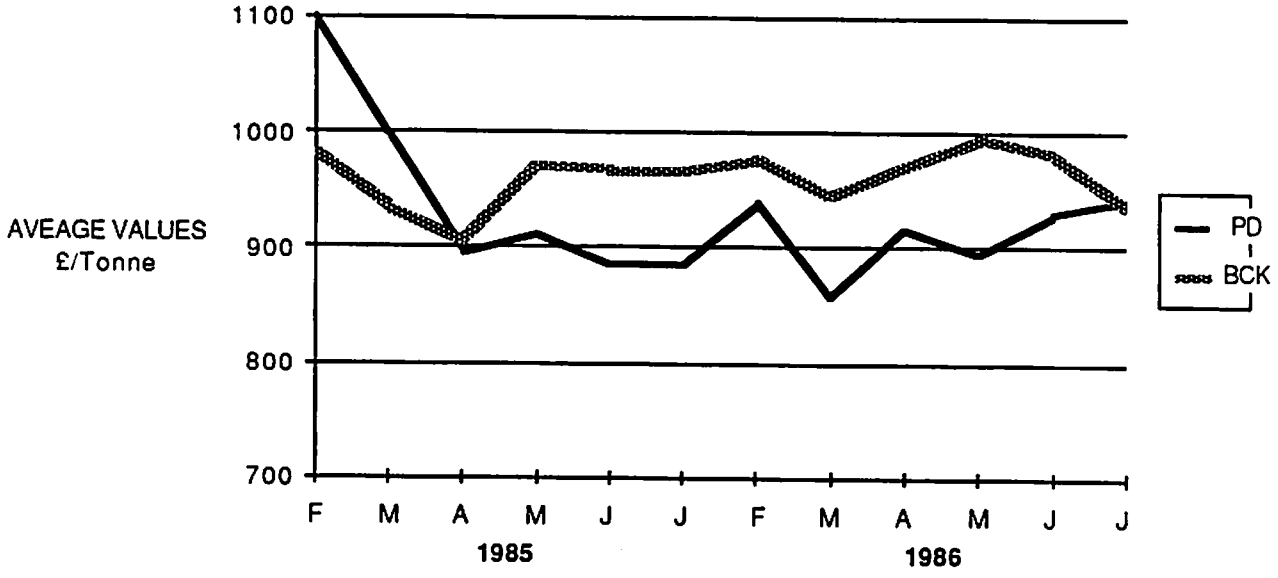


Fig.21

Fig.22 S H R I M P S*



*February-June only

TABLE 1

BUCKIE BASE DISTRICT FLEET

(INCLUDES PORTS OF BUCKIE, PORTNOCKIE AND FINDOCHTY).

FLEET AS EXTRACTED FROM D.A.F.S. STATISTICS

ANALYSIS BY SIZE

YEAR 1986			YEAR 1972	
REG. LENGTH	No.	%	No.	%
0 to 29.9'	5	5	-	
30 to 39.9'	1	1	11	8
40 to 49.9'	10	9	24	20
50 to 59.9'	23	22	28	23
60 to 69.9'	43	41	51	42
70 to 79.9'	22	21	8	7
80 to 109.9'	1	1	0	0
110'	0	0	0	0
Total	105	100	122	100

YEAR 1986 YEAR 1972

ANALYSIS BY AGE

YEARS	No.	%	No.	%
0 to 4	15	14	21	17
5 to 9	14	13	15	12
10 to 14	26	25	23	19
15 to 19	18	17	22	18
20 to 24	9	9	19	16
25 to 29	10	10	14	11
30+	13	12	8	7
Total	105	100	122	100

TABLE 2

MACDUFF BASE DISTRICT FLEET

(INCLUDES PORTS OF MACDUFF, GARDENSTOWN, WHITEHILLS AND PORTSOY)

FLEET AS EXTRACTED FROM D.A.F.S. STATISTICS

ANALYSIS BY SIZE

YEAR 1986			YEAR 1972	
REG. LENGTH	No.	%	No.	%
0 to 29.9'	17	15	-	
30 to 35'	)		4	3
35.1 to 40'	4)	3	9	8
40.1 to 60'	36	31	64	55
60.1 to 65'	)		17	15
65.1 to 70'	37)	32	18	16
70.1 to 80'	10	9	4	3
80'+	12	10	0	0
Total	116	100	116	100

YEAR 1986 YEAR 1972

ANALYSIS BY AGE

YEARS	No.	%	No.	%
0 to 4	13	11	24	21
5 to 9	19	16	23	20
10 to 14	38	33	28	24
15 to 19	13	11	15	12
20 to 24	8	7	11	10
25 to 29	14	12	8	7
Over 30	11	10	7	6
Total	116	100	116	100

TABLE 3

BURGHEAD FLEET 1986

HOME BASED FLEET AS DEFINED BY D.A.F.S.

	R. Length	Year Built	Fishing Method
ARGYLL	71.3	72	5 S.N.
DISCOVERY	69.5	81	5
EMINENT	69.8	57	5
FEAR NOT	73.9	76	5
JASILENE	67.9	59	5
NIMROD	60.5	57	30 N.T.
ODENSE	62.2	66	10 L.T.
PREMIER	73.9	74	5
SOLAN	78.8	85	5
MOON TAN	35.8	81	30 N.T.

The Harbour Master at Burghead gives a list of 30 vessels which regularly use the port.

There are only two vessels "NIMROD" INS.004 and "MOON TANK" K.007 which are common to both lists.

This indicates that some 28 vessels which regularly use Burghead are based elsewhere.

The composition of this "stranger" fleet using Burghead seems to be:-

Wick	5	Vessels
Avoch	7	"
South Shore Moray Firth	10	"
East Coast Scotland	6	"

TABLE 4

WHITEHILLS FLEET 1986

'CREEK' FLEETS EXTRACTED FROM D.A.F.S STATISTICS

NAME OF VESSEL	REG. LENGTH	FISHING METHOD
ACHIEVE	70'	P.T.
BERYL	61'	S.N.
BUDDING ROSE	50'	S.N.
CAVINA	52'	S.N.
CHRISONA	65'	P.T.
CO-WORKER	47'	S.N.
COMET	50'	S.N.
CONCORDE	50'	S.N.
DESTINY	59'	S.N.
DILIGENCE	49'	S.N.
FELICITY	45'	S.N.
FORTITUDE	61'	P.T.
JASPER	30'	C
OSPREY	52'	P.T.
PROGRESS	50'	S.N.
UTILISE	44'	S.N.

TOTAL VESSELS - 16

P.T. - Pair Trawl
S.N. - Seine Net
C - Creels
L.T. - Light Trawl
P.S. - Purse Seine
N.T. - Nephrop Trawl

TABLE 5

MACDUFF 'CREEK' FLEET 1986

'CREEK' FLEET EXTRACTED FROM D.A.F.S. STATISTICS

NAME OF VESSEL	REG. LENGTH	FISHING METHOD
ACHILLES	59'	P.T.
ADELE	63'	P.T.
ALLIANCE	51'	L.T.
ANNWOOD	79'	L.T.
ANTARES	61'	P.T.
ARNISDALE	68'	P.T.
ATTAIN	66'	S.N.
AURELIA	50'	P.T.
AURIGA	64'	S.N.
BE READY	71'	S.N.
CHARISMA	39'	L.T.
CHELARIS	62'	P.T.
CORONELLA	131'	P.S.
CRYSTAL SEA	66'	P.T.
CRYSTAL WATERS	62'	P.T.
ENDURANCE	68'	S.N.
FLOWING STREAM	50'	N.T.
GLEN ALVA	50'	S.N.
GLENDERVERON	50'	S.N.
HESPERUS	69'	P.T.
IMMANUEL	62'	S.N.
KEVELLA	65'	S.N.
KROSSFJORD	121'	P.S.
LINWOOD	69'	L.T.
LORENA	69'	L.T.
MAINSTAY	55'	L.T.
MAMRE OAKS	75'	S.N.
OCEAN CHALLENGE	68'	S.N.
OCEAN WAY	60'	L.T.

CREEK FLEETS EXTRACTED FROM D.A.F.S. STATISTICS

MACDUFF CONTD/...

NAME OF VESSEL	REG. LENGTH	FISHING METHOD
OPPORTUNE	61'	S.N.
POSEIDON	59'	P.T.
REGAL STAR	56'	L.T.
SCARLET CORD III	68'	S.N.
SEAGULL	53'	P.T.
SEAWARD QUEST	68'	L.T.
SILVER CLOUD	49'	N.T.
STRATHMORE	49'	L.T.
THIRLIT	79'	H.T.
TRANQUILLITY	53'	P.T.
VALONIA	51'	L.T.
WAVE CREST	91'	P.S.
WAYFARER	62'	P.S.

TOTAL VESSELS - 42

TABLE 6

BOATS LANDING REGULARLY AT MACDUFF 1986

	REG. LENGTH	AGE	FISHING METHOD
AURIGA	64'	1979	S.N.
BE READY	71'	1973	S.N.
MAMRE OAKS	75'	1975	S.N.
GLEN DEVERON	50'	1969	S.N.
GLEN ALVA	50'	1969	S.N.
STRATHMORE	54'	1965	L.T.
FLOWING STREAM	50'	1969	N.T.
CHARISMA	39'	1981	L.T.

Source: Harbour Master

TABLE 7

BOATS LANDING REGULARLY AT BUCKIE 1986

NAME OF VESSEL	REGISTERED LENGTH.
SUILVEN	52 ft.
MARELANN	51 ft.
STAR DIVINE	59 ft.
ARLANDA	54 ft.
HEATHERTY BRAE	52 ft.
SHIELONA	74 ft.
KILRAVOCK	61 ft.
OBERON	30-40 ft.
NOTRE DAME	62 ft.
INTERNOS	66 ft.
SEAGULL	55 ft.
KEDANA	50 ft.
LORANTHUS	52 ft.
LYNN MARIE	51 ft.
GOLDEN HOPE	50 ft.
INTREPID	59 ft.
INTEGRITY	58 ft.
MISTLETOE	56 ft.
FORTUNA	68 ft.
ODYSSEY	63 ft.
ARIES	62 ft.
STRATHPEFFER	67 ft.
CONTESTER	67 ft.
RIVAL	70 ft.
DEXTERITY	71 ft.
CROSSBY	48 ft.
PILOT STAR	50 ft.
HALLMARK	70 ft.
CRIMOND	68 ft.
DALMA	65 ft.
QUEST	50 ft.

TABLE 8

BOATS LANDING REGULARLY AT BURGHEAD 1986

Regular Boats mostly 40' - 50' some 30' - 40' some 50' - 65'

ALEX WATT INS.113
MOONTAN K.007
STROMA ISLE WK.408
HOMECLIFFE WK.349
ORION WK.112
EUTYCHES INS.214
FLOURISH INS.123
FAVOUR BF.043
NIMROD INS.004
VIKING QUEEN WK.510
EMBRACE INS.224
PRIMROSE INS.291
CONSTANT FRIEND INS.261
HOPE WK.038
DRUMBEAT INS.238
FAVOUR INS.235
SERENE DAWN FR.07
SIOBHAN FR.022
FRUITFUL FR.117
SAPPHIRE KY.217
CONCORD BF.68
BREADWINNER KY.42
FAIR RETURN BF.393
HEATHER SPRING INS.001
HESPERIAN INS.85
BEACON LIGHT AA.014
KIMBERLY ME.20
LADY J
CEANOTHUS UL.72
SHALIMAR INS.184

NAME OF VESSEL	REGISTERED LENGTH.
KAREN	53 ft.
QUIET WATERS	46 ft.
ANNA BHAN	46 ft.
TERRA NOVA	51 ft.
CRAIGHALL	68 ft.

(Source: Harbour Master)

TABLE 9

BUCKIE DISTRICT 1986

ARRIVALS

	Local	Other	Arrivals
JAN.	100	7	46
	100	4	22
	100	6	32
FEB.	100	4	23
	100	6	46
	100	5	23
	100	2	26
MAR.	100	-	20
	100	4	22
	100	-	8
	100	2	18
APRIL.	100	4	22
	100	1	18
	100	1	19
MAY	100	3	16
	100	3	15
	100	3	13
	100	3	13
	100	1	19
JUNE	12	2	17
	13	3	20
	13	3	19
	14	4	25
JULY	30	6	60
	26	8	59
	25	5	51
	29	5	38

TABLE 9 CONTD/...

	Local	Other	Arrivals
AUGUST	24	2	26
	25	6	39
	31	5	63
	33	5	71
	13	27	47
SEPT.	32	6	64
	24	2	38
	32	3	48
	22	2	30
OCT.	27	2	30
	24	3	29
	26	1	28
	27	3	42
NOV.	22	4	39
	29	9	74
	24	7	61
	27	4	45
	26	6	63
DEC.	26	8	63
	28	6	75
	36	7	53
	5	1	6

TABLE 10

MACDUFF HARBOUR ARRIVALS 1986

Total for year	1130	
Made up of	840	Demersal
	7	Pelagic
	283	Shellfish

TABLE 11

BURGHEAD HARBOUR ARRIVALS 1986

Total for year	1562	
Made up of	19	Demersal
	0	Pelagic
	1543	Shellfish

TABLE 12

INCOME AND EXPENDITURE BURGHEAD, BUCKIE AND MACDUFF, 1985-86

Income	Buckie	Burghead	Macduff	Total	%
	£	£	£	£	
Vessel dues	50,473	4,046	47,556	102,075	23.9
Cargo	74,021	3,340	23,037	100,398	23.5
	124,494	7,386	70,593	202,473	47.4
Rent	19,560	524	10,584	30,668	
Other	2,036	896	2,841	5,773	
Non-fishing Income	21,596	1,420	13,425	36,441	8.5
Total commercial Income	146,090	8,806	84,018	238,914	55.9
Fishing dues	127,707	14,447	46,479	188,633	44.1
Total Income	273,797	23,253	130,497	427.547	100.0
				£	%
Expenditure					
Staff	60,975	10,143	74,623	145,741	23.0
Premises	18,099	(322)	13,907	31,684	5.0
Dredging	30,000	38,010	26,028	94,038	14.8
Repairs/Maintenance	30,100	26,538	14,880	71,518	11.3
	139,174	74,369	129,438	342,981	54.1
Administration	27,810	12,344	22,854	63,008	10.0
	166,984	86,713	152,292	405,989	64.1
Debt Charges	150,462	10,036	66,864	227,362	35.9
Total Expenses	317,446	96,749	219,156	633,357	100.0
Profit/(Loss	(43,649)	(73,496)	(88,659)	(205,804)	

TABLE 13 **PORT ANALYSIS 1985-1986**

	BUCKIE			BURGHEAD			MACDUFF		
	Trade	Estate	Fishing	Trade	Estate	Fishing	Trade	Estate	Fishing
Tonnes Landed									
Demersal			2,315			36			3,937
Shellfish			2,650			364			89
			4,965			400			4,026
No. Vessel landings			2,124			1,562			945
Income	£	£	£	£	£	£	£	£	£
Vessel dues	36,098	-	14,375	2,546		1,500	7,000		40,555
Other + Fish Dues	74,021	21,596	127,707	3,340	1,420	14,447	23,037	13,425	46,479
Total	110,119	21,596	142,082	58,86	1,420	15,947	30,037	13,425	87,034
Operating Expenses									
Dredging	13,110		16,890	10,225		27,785	6,689		19,339
Reps + Maint.	13,154	18,099	16,946	7,139	(322)	19,399	3,824	13,907	11,056
Total Direct Costs	26,264	18,099	33,836	17,364	(322)	47,184	10,513	13,907	30,395
Staff	26,646		34,329	2,728		7,415	19,178		55,445
Administration	11,180	2,197	14,433	3,123	753	8,468	5,256	2,354	15,244
Total Operating Exps.	64,090	20,296	82,598	23,215	431	63,067	34,947	16,261	101,084
Profit before Interest + Taxation	46,029	1,300	59,484	(17,329)	989	(47,120)	(4,910)	(2,836)	(14,050)
P.B.I.T. - % Income	41.8	6.0	41.9	(294.4)	69.6	(295.5)	(16.3)	(21.1)	(16.1)

N.B. Expenses estimated on the basis of percentage income in absence of other detail.

TABLE 14

OPERATING INCOME AND EXPENDITURE - FISHING INDUSTRY 1986

	BUCKIE			BURGHEAD			Macduff		
No. Tonnes Landed	4965			400			4026		
1985-86 Value Landings - £M	4.60			0.56			1.77		
Av. Value/Tonne fish landed - £/tonne	£1057			1400			578		
No. Vessels Landings	2124			1562			945		
	£	C/o Fish Grossings	£/Tonne	£	C/o Fish Grossings	£/Tonne	£	C/o Fish Grossings	£/Tonne
INCOME:-									
Vessel Dues	14375	.3	2.9	1500	.3	3.8	40555	2.3	10.1
Fish Dues	127707	2.7	25.7	14447	2.6	36.1	46479	2.6	11.5
OPERATING EXPENSES:-									
Direct Costs	33836	.7	6.8	47184	8.4	118.0	30395	1.7	7.5
Staff	34329	.7	6.9	7415	1.3	18.5	55445	3.1	13.8
Admin.	14433	.3	2.9	8468	1.5	21.2	15244	.9	3.8
Total Expenses	82598	1.7	16.6	63067	11.2	157.7	101084	5.7	25.1

ANALYSIS PER BOAT LANDING			
AV. LANDING VESSEL - TONNES	2.34	.26	4.26
AV. TRIP INCOME VESSEL/GROSSING	£2166	£364	£1873
INCOME TO PORT/LANDING	£ 67	£ 10	£ 92
COST OF USING PORT/LANDING	£ 39	£ 40	£ 107

N.B. Expenses estimated on basis of percentage income in absence of other detail.

Table 15 Total Employment in Grampian Region by Fishery District, 1986

Fishery District	Shore Related	Fish Catching	Total Industry	Total Working Population	% Total Working Population
Aberdeen	3,394	328	3,722	103,350	4
Peterhead	1,446	802	2,248	8,575	26
Fraserburgh	2,013	796	2,809	8,079	35
Macduff	613	668	1,281	7,276	14
Buckie	582	622	1,204	639	38
Lossiemouth	500	480	1,085	500	22
Other Regions	-	-	-	86,638	-
Total	8,548	3,696	122,461	222,291	6

Source: DAFS and GRC

Table 16 Employment in Fishing Related Activities (full time equivalents), 1986

ACTIVITY	Macduff		BUCKIE		LOSSIEMOUTH		TOTAL	
		%		%		%		%
Fish Catching	668	52	662	52	480	49	1,770	51
Fish Processing								
Whitefish merchants	272	21	144	12	159	16	575	17
Shellfish merchants	3	-	158	13	78	8	239	7
Other Processors	-		-		65	7	44	1
Fish Retailers	25	2	40	3	100	10	165	5
Fish Salemen & Market Staff	21	2	29	2	21	2	71	2
Fishing Vessel Support	150	12	142	12	60	6	352	10
Others	142	11	69	6	17	2	228	7
Total	1,281	100	1,204	100	980	100	3,465	100

Source: DAFS

TABLE 17 PERCENTAGES OF FLEET LANDINGS AT VARIOUS PORTS 1981 & 1986

PORT OF LANDING	HOME PORT					
	Macduff		BUCKIE		LOSSIEMOUTH	
	1981	1986	1981	1986	1981	1986
Aberdeen	-	4.0	1.6	11.8	0.6	8.6
Peterhead	14.5	22.4	67.9	62.5	48.6	58.4
Fraserburgh	14.8	20.6	-	3.2	-	1.0
Macduff	8.6	15.3	-	-	-	-
Buckie	-	-	13.0	21.5	-	0.6
Lossiemouth	-	-	-	-	3.7	5.3
Kinlochbervie	-	20.0	-	-	-	-
*Ullapool	45.6	8.4	14.3	-	20.6	9.6
Other Ports	13.1	9.3	-	1.0	8.2	16.5
Total	100.0	100.0	-	100.0	100.0	100.0
Total Landings (tonnes)	52,901	69,988	26,650	29,732	28,378	32,765

*includes Lochinver

Source: DAFS

TABLE 18: PERCENTAGE OF TOTAL LANDINGS BY SPECIES GROUP (BY VALUE)

	GRAMPIAN		Macduff		BUCKIE		LOSSIEMOUTH	
	1981	1986	1981	1986	1981	1986	1981	1986
Demersal	65	90	95	96	39	39	57	22
Pelagic	32	4	-	-	-	-	3	-
Shellfish	3	6	5	4	64	61	40	78

Table 19 Landings of Demersal, Pelagic and Shellfish Species from British Vessels into Grampian Ports 1981-1986

		GRAMPIAN			MACDUFF			BUCKIE			LOSSIEMOUTH		
		tonnes	£'000	% Deviation from mean tonnage	tonnes	£'000	% Deviation from mean tonnage	tonnes	£'000	% Deviation from mean tonnage	tonnes	£'000	% Deviation from mean tonnage
Demersal	1986	170,890	113,810	+8.0	5,792	3,471	+14.8	2,091	1,550	-5.3	618	384	-37.9
	1985	172,281	98,056	+8.8	5,781	2,801	+14.5	2,680	1,542	+21.5	537	312	-46.0
	1984	157,997	92,731	-	4,506	2,253	-10.8	2,682	1,474	+21.6	693	423	-30.3
	1983	176,744	86,968	+11.6	4,538	1,977	-12.0	1,904	949	-57.0	989	523	-
	1982	122,233	75,529	-23.0	5,090	1,960	+1.0	1,805	786	-19.2	1,483	678	+49.2
	1981	149,570	64,294	-6.0	4,586	1,799	-9.2	2,075	821	-5.9	1,642	646	+65.2
Shellfish	1986	6,669	7,824	+51.6	137	154	+5.5	1,935	2,796	+25.8	2,174	1,440	+132.5
	1985	5,785	7,706	+31.5	143	163	+10.1	1,761	2,053	+14.5	1,175	1,128	+25.7
	1984	2,951	2,916	-33.0	126	137	-3.0	1,108	1,096	-28.0	579	587	-39.1
	1983	4,569	4,429	+3.9	66	63	-49.2	1,384	1,325	-11.1	597	621	-36.2
	1982	2,983	2,592	-32.2	157	121	+20.9	1,304	1,187	-15.3	500	516	-46.6
	1981	3,439	2,528	-22.0	150	92	+15.5	1,739	1,274	+13.0	583	453	-38.6
Pelagic	1986	49,645	5,696	+100.4	27	7	-	-	-	-	135	19	-
	1985	33,949	3,539	+37.0	-	-	-	-	-	-	-	-	-
	1984	20,765	2,278	-16.0	41	2	-	-	-	-	147	16	-
	1983	13,585	1,521	-44.2	11	2	-	-	-	-	-	-	-
	1982	12,308	1,061	-50.4	-	-	-	-	-	-	38	2	-
	1981	18,358	31,729	-25.9	-	-	-	60	5	-	964	37	-

TABLE 20 AVERAGE PRICES/SPECIES REGIONAL AND THREE PORTS

SPECIES	GRAMPIAN			Macduff			BUCKIE			LOSSIEMOUTH		
	1981	1986	*%	1981	1986	*%	1981	1986	*%	1981	1986	*%
Haddock	389	593	+19	350	559	+25	325	542	+31	-	-	-
Cod	579	916	+24	580	892	+20	518	831	+26	-	-	-
Whiting	344	468	+13	302	459	+19	216	357	+65	-	-	-
Nephrops	848	1,587	+46	716	1,424	+56	863	1,597	+45	864	1,480	+34
Shrimps	866	944	-15	-	-	-	913	961	-18	-		-

* Percentage increase in real terms.

TABLE 21: TOTAL ALLOWABLE CATCHES TAC'S FOR THE MAJOR NORTH SEA SPECIES (TONNES '000)

		1983	1985	1987	1988	Projected TAC 1989-1991
HADDOCK:	TAC	181	207	140	130	150
	Catch	232	252	-	-	-
COD:	TAC	240	250	125	130	130
	Catch	229	190	-	-	-
WHITING:	TAC	170	160	140	140	150
	Catch	154	96	-	-	-

Source: DAFS Fish Stock Record, 1987

Table 22

LANDINGS[1] & VALUES BY ALL VESSELS IN THE 'CREEK' OF BURGHEAD - 1985

MONTH	PLAICE		TOTAL DEMERSAL		NEPHROPS		TOTAL OF ALL FISH	
	Tonnes	£'000	Tonnes	£'000	Tonnes	£'000	Tonnes	£'000
January	2.1	1.2	4.7	2.6	20.8	22.3	25.5	25.0
February	4.2	2.2	8.7	4.5	20.7	23.3	29.4	27.8
March	1.7	0.9	4.7	2.8	11.8	12.7	16.5	15.5
April	0.4	0.2	2.6	1.4	18.8	21.8	21.4	23.2
May	0.1	0.1	0.9	0.4	28.4	38.0	29.3	38.4
June	*	*	0.9	0.4	33.1	41.1	34.0	41.4
July	0.8	0.3	4.4	1.4	67.2	71.4	71.6	72.8
August	0.7	0.4	1.9	1.0	94.3	110.5	96.2	111.6
September	0.8	0.5	3.8	1.9	46.7	57.9	50.5	59.8
October	1.2	0.7	5.8	3.1	70.3	84.6	76.4	88.2
November	1.2	0.9	7.0	4.2	26.1	32.6	33.2	37.3
December	0.8	0.5	3.1	1.5	27.1	33.7	30.2	35.3
YEAR	14.0	7.9	48.5	25.2	465.3	549.9	514.2	576.3

1 Expressed in terms of gutted weight in the case of demersal fish and whole weight in the cases of pelagic and shellfish.

* Less than 1 tonne or £50.

Table 23

LANDINGS BY ALL VESSELS IN THE 'CREEK' OF BURGHEAD - 1986

TONNES

Month	PLAICE	TOTAL DEMERSAL	NEPHROPS	TOTAL SHELLFISH	TOTAL OF ALL FISH
January	1	4	15	16	20
February	2	6	15	15	21
March	1	2	3	3	5
April	1	2	5	5	7
May	*	1	23	23	24
June	1	3	58	58	60
July	1	2	64	64	66
August	*	1	53	53	54
September	2	4	44	45	49
October	2	3	29	30	33
November	2	4	16	16	20
December	2	4	37	37	41
YEAR	15	36	362	365	400

1 Expressed in terms of gutted weight in the case of demersal fish and whole weight in the case of shellfish.

* Less than one tonne.

Source: DAFS Statistics

Table 24

VALUES OF FISH LANDINGS AT THE 'CREEK' OF BURGHEAD - 1986

MONTH	£ '000			
	PLAICE	TOTAL DEMERSAL	NEPHROPS	TOTAL OF ALL FISH
January	1.0	2.6	22.0	24.6
February	1.2	3.8	22.4	26.2
March	0.4	1.5	4.9	6.4
April	0.3	1.2	7.8	9.0
May	0.1	0.5	38.4	38.9
June	0.4	1.4	93.3	94.6
July	0.4	0.9	86.2	87.1
August	0.2	0.5	71.5	72.0
September	0.9	2.0	65.6	67.8
October	1.1	1.9	43.2	45.3
November	1.8	3.6	23.4	27.9
December	1.7	3.7	52.4	56.1
YEAR	9.5	23.6	531.1	555.9

Table 24

VALUES OF FISH LANDINGS AT THE 'CREEK' OF BURGHEAD - 1986

MONTH	£ '000			
	PLAICE	TOTAL DEMERSAL	NEPHROPS	TOTAL OF ALL FISH
January	1.0	2.6	22.0	24.6
February	1.2	3.8	22.4	26.2
March	0.4	1.5	4.9	6.4
April	0.3	1.2	7.8	9.0
May	0.1	0.5	38.4	38.9
June	0.4	1.4	93.3	94.6
July	0.4	0.9	86.2	87.1
August	0.2	0.5	71.5	72.0
September	0.9	2.0	65.6	67.8
October	1.1	1.9	43.2	45.3
November	1.8	3.6	23.4	27.9
December	1.7	3.7	52.4	56.1
YEAR	9.5	23.6	531.1	555.9

Table 25

LANDINGS[1] OF PRINCIPAL SPECIES BY ALL VESSELS IN THE 'CREEK' OF MACDUFF - 1985

TONNES

MONTH	COD	HADDOCK	PLAICE	WHITING	DOGFISH	HAKE	MEGRIMS	MONKS	NEPHROPS	TOTAL OF ALL FISH
January	30.7	118.7	5.9	142.6	4.5	3.6	4.2	11.4	7.3	343.2
February	27.5	120.0	4.7	81.4	0.7	4.0	3.3	10.4	2.5	270.7
March	16.8	97.4	4.0	55.5	0.6	3.2	3.8	7.0	1.2	199.6
April	13.3	64.3	5.2	72.7	16.2	3.5	4.4	6.0	1.2	199.8
May	23.4	54.5	4.5	61.0	76.2	4.4	3.5	5.0	2.1	249.7
June	37.1	42.5	2.8	39.3	1.6	3.5	2.8	2.6	1.7	156.0
July	18.5	144.8	3.1	69.4	0.3	2.5	2.2	1.2	25.5	291.9
August	23.3	201.5	1.7	79.7	6.1	1.3	1.7	1.6	20.1	343.1
September	2.9	158.9	1.5	65.8	1.1	0.8	1.1	2.2	15.8	254.6
October	18.3	275.6	2.1	129.9	20.8	3.4	2.8	3.8	4.8	469.9
November	32.3	160.2	3.9	94.0	12.8	2.4	1.5	6.9	10.1	334.5
December	49.8	116.5	7.7	128.3	13.6	1.5	1.9	8.9	11.9	350.9
YEAR	293.9	1,554.9	47.1	1,019.6	154.5	34.1	33.2	67.0	104.2	3,463.9

1 Expressed in terms of gutted weight in the case of demersal fish and whole weight in the cases of pelagic and shellfish.

Table 26

VALUES OF PRINCIPAL LANDINGS BY ALL VESSELS IN THE 'CREEK' OF MACDUFF - 1985

£'000

MONTH	COD	HADDOCK	PLAICE	WHITING	DOGFISH	HAKE	MEGRIMS	MONKS	NEPHROPS	TOTAL OF ALL FISH
January	24.3	67.6	4.3	46.6	0.7	3.8	4.8	12.4	9.1	181.3
February	21.5	64.6	2.7	29.8	0.4	5.0	4.5	13.3	2.7	155.1
March	12.7	52.7	2.3	21.8	0.3	4.2	4.4	9.2	1.2	116.1
April	11.4	33.3	3.2	38.7	6.7	4.8	4.1	7.9	1.4	119.2
May	16.9	24.6	2.2	27.6	11.4	5.0	2.2	5.9	2.6	104.7
June	29.1	21.3	1.3	16.9	0.5	4.1	1.9	3.0	2.0	89.0
July	16.0	50.8	1.3	22.0	0.1	2.9	1.5	1.3	26.3	132.0
August	18.5	77.6	0.9	30.8	2.7	1.7	1.0	2.2	22.7	161.7
September	2.0	50.1	0.7	19.9	0.2	1.0	0.7	2.7	21.3	102.0
October	13.2	100.9	1.0	41.1	2.4	4.5	2.6	4.8	13.7	189.8
November	27.8	68.3	3.1	32.2	2.9	3.6	1.7	9.2	13.3	169.8
December	43.5	43.5	5.7	35.4	2.6	2.1	1.8	13.3	15.2	171.6
YEAR	236.9	655.3	28.7	362.8	30.9	42.7	31.2	85.2	131.5	1,692.3

Table 27

LANDINGS[1] BY ALL VESSELS IN THE 'CREEK' OF MACDUFF - 1986

TONNES

Month	COD	HADDOCK	PLAICE	WHITING	DABS	DOGFISH	MONKFISH	TOTAL DEMERSAL	TOTAL PELAGIC	NEPHROPS	TOTAL SHELLFISH	TOTAL OF ALL FISH
JAN.	25	201	6	65	*	1	5	311	-	3	3	314
FEB.	29	267	4	71	2	2	9	401	-	4	4	404
MAR.	17	190	5	42	3	1	5	279	-	1	1	279
APR.	10	102	5	67	2	3	4	215	-	*	*	215
MAY	14	89	5	92	3	42	3	262	-	1	4	266
JUNE	12	52	4	88	4	2	3	177	-	5	5	182
JULY	3	157	5	126	2	1	1	302	-	8	8	310
AUG.	7	163	2	180	2	*	2	366	-	18	22	389
SEPT.	42	298	5	144	4	1	3	510	-	15	17	527
OCT.	62	212	3	211	1	17	3	520	-	5	7	527
NOV.	29	150	6	128	3	14	6	348	19	8	9	376
DEC.	39	105	5	67	2	19	3	246	8	2	9	264
YEAR	289	1,986	55	1281	28	103	47	3937	27**	70	89	4053

1 Expressed in terms of gutted weight in the case of demersal fish and whole weight in the cases of pelagic and shellfish.

* Less than 1 tonne

** Sprats

Source: DAFS Statistics

Table 28

VALUES OF PRINCIPAL LANDINGS BY ALL VESSELS IN THE 'CREEK' OF MACDUFF - 1986

£'000

MONTH	COD	HADDOCK	PLAICE	WHITING	DABS	DOGFISH	LEMON SOLE	MONKS	NEPHROPS	TOTAL OF ALL FISH
January	26.1	96.4	5.4	27.9	0.3	0.9	3.9	8.0	3.5	177.7
February	25.7	97.3	2.5	23.2	0.8	0.9	7.0	13.0	4.8	183.8
March	16.9	99.2	3.8	21.2	2.1	0.9	3.6	11.0	0.8	167.7
April	9.7	49.1	2.6	33.0	1.0	2.2	3.7	5.7	0.1	117.0
May	14.8	52.0	2.7	50.4	0.7	14.3	2.4	4.6	1.6	158.3
June	11.8	32.2	1.9	50.7	0.7	0.7	2.5	4.8	8.8	123.5
July	2.3	74.0	2.1	44.7	0.2	0.2	2.3	1.2	10.8	142.3
August	6.7	85.8	1.1	77.3	0.3	0.1	2.7	2.7	25.9	211.0
September	31.2	147.3	3.0	56.9	0.7	0.7	4.2	5.4	23.7	284.7
October	56.5	116.2	2.0	97.7	0.3	9.4	3.5	5.7	7.0	313.0
November	30.0	97.7	6.3	68.1	1.7	10.1	2.8	13.0	9.8	258.4
December	34.7	75.6	5.5	36.6	0.9	11.0	3.1	7.3	2.9	190.3
YEAR	266.4	1,022.8	38.9	587.7	9.7	51.4	41.7	82.4	99.7	2,327.7

Table 29

LANDINGS[1] BY PRINCIPAL SPECIES BY ALL VESSELS IN THE CREEK OF BUCKIE - 1985

TONNES

Month	COD	HADDOCK	PLAICE	WHITING	LEMON SOLES	MEGRIMS	MONKS	WITCHES	NEPHROPS	SHRIMPS	ESCALLOPS	TOTAL OF ALL FISH
JAN.	34.3	65.7	62.6	63.1	3.4	5.3	40.3	6.3	46.6	-	13.5	369.1
FEB.	53.2	78.5	63.1	45.4	5.8	8.7	42.1	8.6	33.7	46.4	42.1	472.5
MAR.	38.0	47.1	25.6	12.5	2.4	4.5	20.5	4.1	8.2	274.8	90.7	573.5
APR.	12.2	20.6	4.7	9.4	2.2	3.8	16.1	3.4	17.4	181.9	28.2	340.7
MAY	19.5	48.1	4.0	14.1	2.9	10.4	29.2	12.1	12.6	173.3	51.2	440.0
JUNE	17.6	83.1	3.5	14.6	2.1	5.0	13.8	4.5	27.1	617.0	-	862.3
JULY	18.6	150.8	3.4	15.2	2.4	6.8	13.9	6.7	200.5	280.7	37.0	771.3
AUG.	8.3	114.6	6.4	20.2	2.6	4.2	16.2	6.0	260.4	-	42.1	488.2
SEPT.	18.9	86.4	3.7	55.6	1.8	9.4	23.5	12.4	167.6	-	35.7	423.7
OCT.	20.2	133.4	3.6	24.3	2.1	1.4	17.9	12.0	144.2	-	31.1	407.7
NOV.	39.3	151.9	14.1	26.3	3.8	0.4	13.5	2.1	57.7	-	-	329.2
DEC.	66.5	108.5	37.9	41.2	3.0	2.9	29.1	3.2	52.7	-	39.8	404.8
YEAR	346.6	1,088.7	232.6	341.9	34.5	62.8	276.1	81.4	1,028.7	1574.1	411.4	5883.0

1 Expressed in terms of gutted weight in the case of demersal fish and whole weight in the cases of pelagic and shellfish.

Source: DAFS Statistics

Table 30

VALUES OF PRINCIPAL LANDINGS BY ALL VESSELS IN THE 'CREEK' OF BUCKIE - 1985

Month	COD	HADDOCK	PLAICE	WHITING	LEMON SOLES	MEGRIMS	MONKS	WITCHES	NEPHROPS	SHRIMPS	ESCALLOPS	TOTAL OF ALL FISH
JAN.	22.7	38.5	38.6	19.2	3.9	5.5	42.4	3.4	54.8	-	14.5	252.8
FEB.	34.5	41.5	34.7	16.9	5.5	10.5	48.6	4.7	40.2	45.5	42.1	350.5
MAR.	25.0	33.3	14.2	5.5	2.8	4.1	24.7	2.5	9.9	256.4	79.6	490.2
APR.	9.1	10.8	2.9	4.2	2.4	3.1	21.0	1.9	23.8	164.5	22.1	121.1
MAY	13.3	26.0	2.3	5.8	1.9	6.2	33.2	3.8	16.3	168.0	39.7	350.5
JUNE	12.6	43.7	1.7	6.2	1.6	2.4	16.4	1.6	33.4	596.1	-	769.3
JULY	10.1	57.8	1.6	5.2	1.9	2.8	16.0	2.3	230.5	271.1	28.5	647.7
AUG.	5.5	49.0	4.4	6.0	2.9	2.7	21.6	3.1	307.2	-	38.4	445.6
SEPT.	9.6	28.5	1.9	15.3	2.1	8.3	33.2	7.5	269.9	-	32.4	414.3
OCT.	13.4	49.1	2.5	5.8	2.7	1.3	22.4	5.7	228.4	-	28.6	377.3
NOV.	34.5	72.5	10.7	8.4	6.0	0.3	19.0	1.4	78.3	-	-	244.5
DEC.	51.5	40.7	27.0	12.4	4.5	2.4	40.3	2.0	72.8	-	40.0	302.0
YEAR	241.8	491.4	142.5	110.9	38.2	49.6	338.8	39.9	1,365.5	1501.6	365.9	4765.8

Table 31

LANDINGS[1] BY ALL VESSELS IN THE 'CREEK' OF BUCKIE - 1986

TONNES

Month	COD	HADDOCK	PLAICE	WHITING	SAITHE	SKATE	MONKFISH	WITCHES	TOTAL DEMERSAL	NEPHROPS	SHRIMPS	ESCALLOPS	TOTAL SHELLFISH	TOTAL OF ALL FISH
JAN.	31	84	31	22	1	7	23	3	**219**	37	-	-	**37**	**256**
FEB.	57	111	9	19	43	11	65	13	**334**	36	131	55	**222**	**556**
MAR.	30	37	7	9	4	3	22	7	**130**	8	110	-	**117**	**247**
APR.	31	40	5	9	3	7	26	10	**149**	59	88	62	**210**	**359**
MAY	24	25	4	4	1	2	19	6	**112**	19	65	30	**113**	**225**
JUNE	18	30	3	6	1	1	18	5	**92**	64	180	100	**344**	**436**
JULY	44	60	5	16	6	2	29	10	**191**	304	249	60	**613**	**804**
AUG.	12	57	2	35	1	2	16	10	**152**	315	25	18	**358**	**510**
SEPT.	25	60	7	92	2	2	17	10	**227**	238	19	20	**285**	**512**
OCT.	16	36	14	52	*	2	21	9	**169**	163	3	27	**196**	**365**
NOV.	60	66	34	24	1	6	20	3	**241**	86	-	21	**110**	**351**
DEC.	98	48	92	10	*	7	16	4	**299**	29	-	16	**45**	**344**
YEAR	446	654	213	298	63	52	292	90	**2315**	1,358	870	409	**2650**	**4965**

1 Expressed in terms of gutted weight in the case of demersal fish and whole weight in the case of shellfish.

* Less than 1 tonne.

Table 32

VALUES OF PRINCIPAL LANDINGS BY ALL VESSELS IN THE 'CREEK' OF BUCKIE - 1986

£'000

Month	COD	HADDOCK	PLAICE	WHITING	SAITHE	LEMON SOLE	MEGRIMS	MONKS	WITCHES	NEPHROPS	SHRIMPS	ESCALLOPS	TOTAL OF ALL FISH
JAN.	31.0	37.0	24.5	8.1	0.8	6.7	2.2	39.3	2.1	55.5	-	-	218.7
FEB.	41.8	41.8	5.6	6.4	14.2	2.9	8.6	65.1	6.9	65.0	128.0	62.4	464.8
MAR.	25.1	18.1	4.9	3.0	1.0	2.3	3.9	39.7	3.2	12.4	103.8	-	224.0
APR.	29.6	23.3	3.9	3.6	0.7	2.2	7.8	44.7	5.5	61.7	85.4	82.1	363.6
MAY	21.8	15.6	2.5	1.9	0.4	2.1	1.3	29.1	2.7	19.7	64.7	36.0	207.3
JUNE	13.3	17.3	1.3	2.6	0.1	1.7	1.5	30.3	1.5	111.9	176.4	122.0	484.3
JULY	26.7	29.6	2.9	5.9	1.1	2.9	1.5	44.4	1.5	493.0	232.7	46.1	895.3
AUG.	7.6	31.0	1.2	11.8	0.9	3.4	3.5	29.1	3.5	517.2	28.9	16.7	659.2
SEPT.	16.4	32.0	3.4	26.6	0.7	2.8	2.5	33.5	5.1	397.4	21.7	22.1	581.5
OCT.	15.7	20.9	10.6	16.2	0.3	3.5	2.3	40.2	5.0	266.0	3.2	36.0	431.6
NOV.	50.2	46.6	34.0	13.0	0.2	7.5	1.1	40.4	2.4	115.1	-	31.6	367.0
DEC.	83.8	35.0	90.9	4.9	-	8.2	0.9	37.3	3.8	41.8	-	23.5	349.8
YEAR	363.0	348.2	185.7	104.0	20.4	46.2	37.1	473.1	43.2	2156.7	844.8	478.5	5247.1