

FISHING INDUSTRY RESEARCH AND DEVELOPMENT COUNCIL

National Seafood Consumption Study:

Trade Supplies to the Public for In-home Consumption
(Retailers, Fishmongers, Wholesalers and Warehouse
Withdrawals Data)

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1. Summary

This report represents one part of a National Seafood Consumption Study commissioned by the Fishing Industry Research and Development Council (FIRDC). The principal objectives of this Study were to collect relevant statistics on current fish and seafood consumption in Australia, including data on consumer attitudes, with the purpose of determining a range of market enhancement options.

This report focuses on data and attitudes gathered from those segments of the fishing industry considered to supply fish and seafood primarily for consumption by the public in the home (ie Trade/In-Home report). (Separate reports cover a review of the recent literature on the local and global fishing industry, a review of perceptions held by leaders in the local industry, qualitative investigations with 'focus groups', a report on data and attitudes from those segments of the industry which supply fish and seafood primarily for consumption by the public outside the home (ie Trade/Out-Of-Home report). Furthermore, these investigations are complemented with data and attitudes offered by consumers themselves on their in-home and out-of-home consumption of fish and seafood).

This Trade/In-Home report draws on interviews with three trade segments, ie

- retailers (supermarkets, food stores, convenience stores)
- fishmongers (outlets selling mainly “fresh” product)
- wholesaler (general wholesalers and fish and seafood “specific” wholesalers).

All weights and volumes referred to in the three sections of the report dealing with these trade segments are purchased weight.

Data are also reported on the volumes and value of canned and frozen fish and seafood distributed through Australia's major food and grocery wholesalers and chain retailers (AC Nielsen Pty Ltd warehouse withdrawals data). All weight referred to in discussing AC Nielsen Pty Ltd warehouse withdrawals data is net product weight excluding packaging.

The methodology of the study employed a Literature Review, Industry Leader Interviews and Focus Group Discussion to identify major issues and approaches. The resulting questionnaires were tested in a pilot study and modified as required before the main study was undertaken. Two samples of interviewees were selected and interviewed face to face during separate survey times in 1991, so as to collect data of seasonal relevance. The total number of businesses surveyed across both surveys comprised 202 retailers, 200 fishmongers and 151 wholesalers. Business were drawn from the five mainland State capitals (and including Hobart for retailers and fishmongers) proportionately on the basis of national business demographics.

Interviewers were successful at identifying personnel with the required level of knowledge and responsibility in these businesses, with at least 80% of respondents being manager/director or owner/partner. The levels of independence found in the retailer and fishmonger trade segments were similar, with 90% or more businesses in each buying goods for that store alone. This figure dropped to 81% for wholesalers.

All three trade segments gave their main problem in selling fresh fish and seafood as its availability and unreliability of supply. The short shelf-life of fresh fish was the second foremost problem for retailers, while fishmongers saw the price level for fish (perceived as high) and price fluctuations as the second most frequent problem. Wholesalers cited "none" as their second most frequent problem, but the issue of price (level and fluctuations) was the third most frequently cited problem.

Further questioning on retailers' reasons for not selling fresh, chilled or frozen fish and seafood identified the chief justifications as physical constraints (lack of display/refrigerator/freezer space) and no perceived customer demand for these products. It must be noted that 'chilled fish' is a term used in the retail trade, and is not encountered in fishmongers. Most retailers considered that no inducements would encourage them to sell these lines, whereas a secondary group suggested that increased customer demand would lead to more wide scale ordering from retailers.

A quantitative study on the degree of significance attached to recognised industry issues identified common concerns over price and supply. Retailers considered that the high price of seafood (and to a lesser extent fish), the integrity of the supplier (risk of buying fish and seafood "sight unseen"), and the difficulty of getting continuous supply at steady prices were a priority over other concerns, but on average did not merit being rated as "quite significant" problems. Fishmongers' degree of concern was higher, rating as "quite significant" problems the same supply/price issue, and other issues such as the customer's lack of knowledge about fish and seafood, business profitability and the customer's dislike of bones in fish. Wholesalers attached greatest quantitative significance to "low margins necessary to remain competitive", and "credit terms that have to be offered to customers".

There were major differences between retailers and fishmongers in the types of fish and seafood sold, the form in which these were purchased, the degree of reliance on imported products, and the volumes purchased. The most frequent species/types of finfish purchased by retailers were smoked cod, whiting and shark; these and other leading finfish purchases were principally in the form of fillets. Retailers' most frequently cited seafood purchase was "none", with prawn and seafood sticks the next most popular purchases.

By comparison, fishmongers gave orange roughy, flathead and mullet as their three most frequently purchased finfish. These and other leading species/types were principally bought as whole fish, indicating quite a different business focus from retailers.

Fishmongers' purchases of seafood were far more extensive than those of retailers, with prawns, oyster and crab as the most frequently purchased types.

Wholesalers' data on types of fish and seafood sold reflected both the above purchasing patterns.

Retailers reported a significant reliance on imported fish and seafood, whereas fishmongers' and wholesalers' purchases were predominantly Australian.

A major contrast between the segments was the volumes of fish and seafood purchases. The sample base of 202 retailers together purchased only one fish type (smoked cod, predominantly imported) and one seafood type (prawns) in quantities greater than one tonne* per month. In contrast, 200 fishmongers together purchased as many as a dozen fish types in 5 - 10tonne* quantities per month, and numerous seafood items in tonne per month volumes. The impact of the difference in these purchase volumes really takes on significance when speculating on the amount of trade done by each segment (whether measured as number of shoppers or sales turnover). The sample of 151 wholesalers also bought about 20 fish and 12 seafood types in quantities exceeding 10tonnes per month*.

* purchased weight

To complete the picture, AC Nielsen warehouse withdrawals data revealed that during 1990, warehouses in the five mainland capitals distributed 24,474tonnes[†] *canned* fish and seafood with a retail value of \$233.6million; similarly 11,336tonnes[†] of *frozen* fish with a retail value of \$87.6million, were distributed. The major items in each of these two categories were tuna and miscellaneous portions (oven fry and battered/crumbed portions, bites, burgers, cakes and snacks), respectively, each constituting almost half the volume sold.

Retailers predominantly used general wholesalers as their suppliers of fish and seafood; fishmongers relied primarily on wholesale fish markets for supply. Wholesalers indicated that the major proportion of their sales of the leading fish and seafood species was to restaurants, social clubs, hotels and motels.

The average volumes of fish and seafood sold by the three segments also presented substantial differences. The volume of *fish* sold by wholesalers, averaged across a very diverse sample, was 13,500 - 15,500kg per month per business (seasonal ranges), whereas volumes for fishmongers and retailers were 3,440kg and 123kg per month per business, respectively. In the case of *seafood*, comparative data are 9,000 - 9,500kg, 1,300kg and 29kg per month per business for surveyed wholesalers, fishmongers and retailers, respectively.

Retailers and fishmongers presented understandable consensus when questioned on their reasons for buying their leading fish and seafood items; both said “popular/customers prefer it” most frequently. (Recalling that for retailers, this equates principally to smoked cod, but for fishmongers focuses on orange roughy, one is left asking whether these two trade segments are supplying quite different market segments.) The majority of wholesalers selected their fish and seafood stock on the basis of past experience with customers’ preferences.

[†] net weight excluding packaging

The principal attributes which both retailers and fishmongers sought in an ideal supplier were identified as “honesty and fairness in doing business” and “good service and quality product” (the latter two switching priority between the two segments). When respondents subsequently rated their main suppliers against the same criteria, these neither matched the ‘ideal’ in terms of quantitative level nor priority of attributes, which recognised service and quality ahead of honesty.

The three trade segments were asked to give a quantitative assessment of their perceived customers’ requirements in terms of these same attributes. Retailers saw that customers would seek a fish and seafood supplier who emphasised cleanliness and friendliness. Fishmongers, on the other hand, believed that their customers would seek quality first, cleanliness second. Wholesalers believed that customers would favour a supplier who was honest in doing business, had a reputation for quality, and who serviced orders promptly.

As part of its objective to improve the efficiency and effectiveness of resource allocation, the FIRDC employed this survey to explore attitudes on the potential of a range of so-called under-utilised species (seven farmed, four wild catch). Retailers were far more negative than fishmongers or wholesalers about the potential for increased usage of these species. Their most frequent comment was that ‘none’ had potential; the next most frequently cited species with potential were farm barramundi and rainbow trout. Fishmongers saw most potential for squid, farm prawns and Atlantic salmon. Wholesalers favoured the potential of farm prawns ahead of farm barramundi and squid.

Perhaps reflecting previously voiced concerns over continuity of supply, all three segments tended to favour the potential of farmed species ahead of wild catch (squid was the exception). Furthermore, Jack mackerel was seen by all segments as having the least potential.

When these trade segments were asked what initiatives their businesses could take to increase their sales of fish and seafood the leading responses from retailers and fishmongers were similar, ie “nothing”, “resolve the physical constraints” (display area, refrigerator and freezer capacity, etc), and “build customer demand”. Most wholesalers saw stimulating customer demand as the best initiative, linked to more advertising and lower prices.

Similarities again emerged when retailers and fishmongers were asked what actions the fishing industry itself could take to increase sales through their stores. “More advertising” was the priority given by the three segments. Retailers suggested “nothing” as their second most frequent advice, with actions to curb prices and price fluctuations as the third. Fishmongers’ second most frequently sought action from the industry was “more information on the healthy benefits of fish”, with attention to price levels and price fluctuation third. Wholesalers’ second priority initiative sought from the fishing industry was a reduction in prices and price fluctuation.

In a quantitative assessment of the likelihood that particular industry actions would enhance sales, the majority of retailers, fishmongers and wholesalers all perceived that “more advertising support for fish and seafood” would have greatest impact.

All three segments of the industry were generally optimistic for its future outlook; the majority of respondents predicted increased sales of fish and seafood over the next five years. Retailers, fishmongers and wholesalers alike attributed this optimism to public attention to the health benefits of fish as a regular part of our diets.

2. Summary of Methodology

The Fishing Industry Research and Development Council (FIRDC) is responsible for the funding and administration of Australian fisheries R&D, in order to improve the efficiency and effectiveness of resource application.

In 1989 the FIRDC commissioned a National Seafood Consumption Study from a consortium comprising PA Consulting Group (management and technology consultants), and Yann Campbell Hoare Wheeler (YCHW; consumer and market research consultants). Ruello & Associates provided specialist industry knowledge to the consortium.

The objectives of the study were:

- to collect detailed and meaningful statistics pertaining to present fish and seafood consumption within Australia from the retail sector, the institutional sector and all other areas
- to collect detailed statistics upon consumer attitudes to fish and seafood both in the short and long term
- to determine from these statistics and survey techniques what is the Australian fish and seafood market today, and how this market might be improved both in terms of utilised and unutilised species.

Note that within this report the term 'fish' is used to refer to finfish, while 'seafood' refers to all forms of shellfish, squid, prawns, lobster, crabs, etc (marine molluscs and crustaceans).

The National Seafood Consumption Study has involved five methodological phases:

- review of literature and analysis of published statistics
- industry leader interviews
- Qualitative Investigation using focus groups (exploration of the main issues concerning the consumption of fish and seafood, knowledge of aquaculture species, etc)
- pilot *and* main in-home and out-of-home consumption study
- pilot *and* main retail, catering, wholesale and institutional studies.

The main studies have gathered data from two perspectives, ie:

- consumer purchase of fish and seafood for in-home or out-of-home consumption, and
- trade supplies to the public for either in-home or out-of-home consumption

Two 'trade' reports have been prepared, of which this is one. As shown on the next page, these reports cover the following segments of fish and seafood supply.

	Consumption	Trade Suppliers to Public
Report 1	In-home	<ul style="list-style-type: none"> • retailers (supermarkets, food stores, convenience stores) • fishmongers (outlets selling mainly “fresh” product) • wholesalers (general wholesalers, fish and seafood specific wholesalers) • warehouse withdrawals data from AC Nielsen Pty Ltd⁽¹⁾
Report 2	Out-of-home	<ul style="list-style-type: none"> • caterers (contract caterers, function caterers, and in-house catering by organisations) • “restaurants” (restaurants, social and sporting clubs, hotels and motels, selling cooked product) • 'take-away' outlets (fish and chip shops, and other 'take-away' outlets, mainly selling cooked product).

(1) the AC Nielsen warehouse withdrawals data relates to canned and frozen processed product rather than this report's emphasis on fresh and frozen fish and seafood..

A further trade report has been prepared, covering the institutional catering segment (defence forces, schools and colleges, welfare homes, hospitals and prisons). This is incorporated into the 'consumer' report because of its data's contribution to national *per capita* consumption figures.

Seven slightly different questionnaires were developed for each of the above trade categories, seeking relevant attitudinal and numerical data. 1,254 personal interviews were conducted, 400 for wholesale and institutional sectors and 854 personal interviews with the remaining five trade supply segments. The latter were completed in the locations shown below.

	Total	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
Retail (super markets/ foodstores/ convenience stores)	202	70	52	32	20	16	12
Fishmongers	200	69	51	32	20	16	12
'Take-away' outlets	149	51	38	24	15	12	9
Restaurants/ clubs/hotels/ motels	202	75	47	31	20	18	11
Caterers	101	35	26	16	10	8	6
Sub-Total	854	300	214	135	85	70	50

Prior to a final decision on the distribution of the 1,254 interviews, population figures for each segment, and sub-segments within the seven nominated segments were collected. This information enabled PA and YCHW to allocate interviews on a proportional basis within segments to ensure the collection of reliable and valid information for each segment. Attention is drawn in the reports to selected findings of statistical significance, though these references are not exhaustive.

A group of interviewers forming the interviewing team was carefully selected in each State on the basis of past experience with business-to-business studies. Actual questionnaires used in the interviews are included as Appendices (I, II and III).

Interviews were evenly split between two survey periods, ie:

15 April 1991 - 9 July 1991 (called May 1991 in reports)

9 September 1991 - 4 October 1991 (called September 1991 in reports).

This provided some insight into seasonal (autumn and spring) impact on data.

YCHW, with its expertise in market and consumer research, was responsible for data gathering, computer entry of questionnaire responses, and management and manipulation of the database. PA, with its expertise in management and strategy, was responsible for analysis and interpretation of data, and preparation of reports. Ruello & Associates provided specialist industry input.

Note that in Sections 3, 4 and 5 of this report dealing with the trade segments: retail fish and seafood outlets; fishmongers and wholesalers, all weights and volumes referenced are purchased weights. That is, in the case of fish purchased whole, for example, the total weight is given rather than the edible weight.

However, in Appendix IV providing details of warehouse withdrawals for canned and frozen (pre-packaged) fish and seafood products compiled by AC Nielsen Pty Ltd, all volumes and weights refer to net product weight excluding packaging.

Readers who want direct access to the National Consumption Study data, so as to pursue interests relevant to their particular organisation, are able to subscribe to the full database through the FIRDC.

It must be noted that although data have been collected on the basis of national business demographics, this does not make for random sampling of trade participants within the retail value chain for fish and seafood. Thus it may be misleading to attempt to use trade data to scale-up to 'whole trade segment' values.

3. Detailed Findings - Retail Fish and Seafood Outlets

3.1 Retail Respondents - Store Type, Position and Purchasing Responsibility

The 202 respondents for the retailer study were drawn from Sydney, Melbourne, Brisbane, Adelaide, Perth and Hobart in proportion to national business demographics. Three broad types of retail outlets formed the sample base for the study:

- supermarkets (eg Coles New World, Safeway, Woolworths, Franklins, Riteway, Bi Lo)
- foodstores (eg Cut Price, Budget Rite, Scoop)
- convenience stores (7 - 11, Food Plus).

The distribution of retailers across the three categories of outlet (supermarket, foodstore and convenience store) shifted across survey 1 (May 1991) and survey 2 (September 1991) of the Study. Whilst each survey targeted 101 respondents, supermarkets were more frequent in September 1991 interviews (58 versus 39) at the expense of both other outlet types.

Over 95% of questionnaire respondents held positions of sufficient significance in the stores (managing director, owner/partner, or manager of a relevant department) to have good insight into the operations of their store. 97% of respondents were responsible for purchases at that particular store only. The remainder generally held purchasing responsibility for two stores only, while one exception took purchasing decisions for five stores (Question 1, Appendix I).

3.2 Type of Store - Initial Data

In addition to the broad store groupings already discussed, further overview data were gathered on the type of store (Question 2, Appendix D), particularly whether it formed part of a chain or was independent and also whether liquor licences were held (Figure 3.2.1).

The September 1991 survey contained marginally more outlets with liquor licences and the proportion of 'chain' supermarkets was higher at the expense of independents.

Irrespective of 'chain' ties, retail outlets were extensively fragmented in terms of their name or 'banner' affiliations (eg Coles New World, Safeway, SSW, Woolworths, Franklins, Foodtown, Foodland, Riteway, Bi Lo, Good Fellows, etc). No respondent's banner name made up more than 7% of the retail sample base. In the May 1991 survey, 50% of respondents identified their store as having no commonly recognised banner name, whilst this dropped to 28% in the September 1991 survey. The questionnaire database supplements these data with information on the numbers of full time and part time employees at stores.

When stores were characterised according to whether or not they sold fresh, chilled or frozen fish/seafood or not (Question 4a, Appendix D), some strong patterns emerged. A higher proportion of supermarkets sold fresh, chilled and frozen fish/seafood, by comparison with other store types (Table 3.2.1a). Food stores were more likely to sell none of these items. In the case of frozen fish/seafood, the number of retail outlets selling this in Sydney was below average, but above average in Melbourne (Table 3.2.1b).

Table 3.2.1a: Type of Fish or Seafood Sold by Each Store Type: All Six Cities

Type of fish or seafood	Total	Store Type		
		Supermarket	Food Store	Convenience Store
Respondents	202	97	85	20
Fresh	35	31 (+++)	4 (---)	
Chilled	47	41 (+++)	6 (---)	
Frozen	84	56 (+++)	27 (-)	1
None	112	36 (---)	57 (++)	19
Totals (responses)	278	164	94	20

Table 3.2.1b: Type of Fish or Seafood Sold by All Store Types: by City

Type of fish or seafood	Total	Frequency of Response, by City					
		Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
Respondents	202	70	52	32	20	16	12
Fresh	35	6 (-)	13	5	4	3	4
Chilled	47	13	16	4	8	3	3
Frozen	84	18 (---)	28 (+)	11	13	11	3
None	112	48 (++)	23	21	7	5	8
Totals (responses)	278	85	80	41	32	22	18

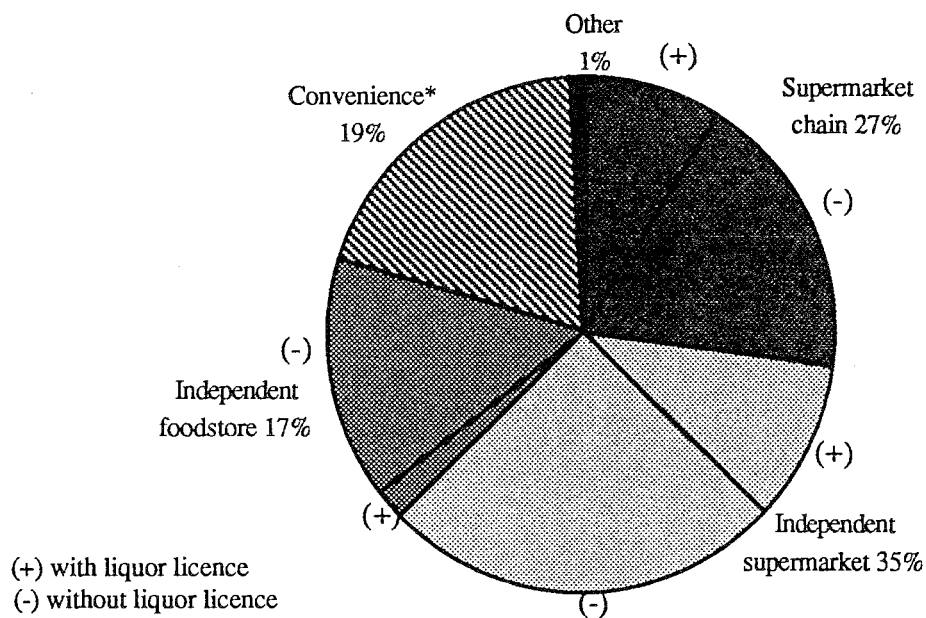
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(+++), (++) , (+) denotes frequencies of responses for a species/type which are significantly greater than would be expected for that location (at 99.9%, 99% and 95% confidence limits, respectively)

(---), (--) , (-) denotes frequencies of response for a species/type which are significantly lower than would be expected for that location (at 99.9%, 99% and 95% confidence limits respectively)

Absence of an '+' or '-' indicates that these values were not significantly different from the value expected statistically for that location across that row

Figure 3.2.1: Type of Retail Store Sampled



202 respondents were sampled across May 1991 and September 1991 surveys (see Question 2a, Appendix I).

* these outlets did not hold liquor licences.

3.3 Retailers' Perceptions of Protein Sources

This section analyses the perceptions which the 202 respondents (managers generally, not shop floor operators) held on six protein sources (meat, pork, poultry, fresh or frozen fish, prepared fish products, canned fish and seafood, or none of these). Respondents were asked (Question 3, Appendix I) to associate a statement or attribute with one or more of the six protein sources. This was repeated for 22 industry-relevant statements, and the resulting data analysed by a correspondence analysis algorithm. This process produces a 'perceptual' map (Figure 6.2.1) and is discussed in Section 6. Nevertheless, several preliminary observations on the data arising from responses can be made, as follows:

Homogeneity of responses

In qualitative terms there is little difference between responses given in the May 1991 and September 1991 surveys. The one possible exception is the far more assertive support given to the statement that 'fresh or frozen fish needs more trade marketing support' by September 1991 respondents. This assertion could arise from the higher proportion of chain supermarkets in the later study sample.

Provides a good margin to retailer

Meat (meaning beef and lamb) was perceived as the best protein source for providing retailer margin, with canned fish and seafood following. Fresh or frozen fish was rated more highly than prepared fish products and pork.

Given good promotional support by supplier's associations

Perceptions here were fairly diverse, although the attribute was most frequently associated with canned fish and seafood (20.4% of responses). Fresh or frozen fish and prepared fish products were the least frequently associated protein sources (11.1% and 10.6% respectively).

Well supported by advertising

Again, canned fish and seafood was chiefly perceived as well supported by advertising (20.3% of responses). Conversely, fresh or frozen fish and prepared fish products ranked poorly in retailers' perceptions (9.1% and 9.4% of responses).

Supply often cannot be guaranteed for future in-store promotions

The strongest perception amongst respondents was that this applied to none of the protein sources under examination (52% of responses). On an aggregate basis the marine products were seen as a less reliable supply than meat, pork or poultry taken together (29.8% *versus* 12.9% of responses).

Is often too expensive to buy

The strongest perception was that this applied to none of the protein sources (46.4% of responses). Fresh or frozen fish was the most frequently associated protein source, though only registered 16.5% of responses for this statement.

Offers the customer good value for money

Poultry was the strongest (23.6% of responses) and pork the least favoured as offering customer value (10% of responses). Canned fish and seafood was rated more favourably than meat, fresh or frozen fish and prepared fish products.

Needs more consumer marketing support

The strongest association here was with fresh or frozen fish (23.5% of responses), followed by canned fish and seafood and prepared fish products.

Needs more trade marketing support

Associations with this attribute followed the same pattern as seen for “needs more consumer marketing support”, with fresh or frozen fish leading with 21.7% of responses.

Is likely to go off in store and have to be thrown out

The most frequent perception was that this applied to none of the protein sources (29.3% of responses), although fresh or frozen fish was the most frequent selection of the protein sources ahead of poultry (21% and 20%, respectively).

Presents a problem in waste disposal

Again, this was most frequently associated with none of the protein sources (65.7% of responses). Fresh or frozen fish was then selected ahead of the remainder (11.6% of responses).

Staff dislike packing or handling it

The most frequent association was with none of the protein sources (62.1% of responses). Fresh or frozen fish ranked as the protein source selected most often (16.1% of responses) ahead of poultry (7.6%).

Customers request more information about its presentation or cooking

'None' was the most frequent association (43.1% of responses), with fresh or frozen fish following ahead of meat (18.2% and 12.8% of responses, respectively).

Our staff don't have the knowledge to recommend it to customers

'None' was the most frequent association (44.4% of responses), followed by fresh or frozen fish (16.3% of responses). Remaining responses were very evenly distributed amongst the other four protein sources.

Takes up little storage space

Canned fish and seafood was perceived as a leading retail item on this feature (25.5% of responses). Fresh or frozen fish was also linked frequently to this positive attribute (17.9% of responses).

Considered too dear by many customers

Retailer perceptions on this statement most favoured the view that none of the protein sources was considered too dear (25.5% of responses). Canned fish and seafood and fresh and frozen fish (19.3% and 17.6% of responses, respectively) were more frequently linked with this statement than were other protein sources.

Preferred by more of my customers

Perceptions of customer preferences favoured meat, poultry and canned fish and seafood (24.4%, 24.1% and 21% of responses, respectively). By comparison, fresh or frozen fish attracted only 9.8% of responses on this attribute.

Our staff don't have the knowledge to buy it confidently

Respondents most frequently associated this with none of the protein sources (61% of responses), although fresh or frozen fish (10.8% of responses) was more often associated with this attribute than other protein sources.

Is easily available to buy

Perceptions confirmed this for all protein sources, more so for canned fish and seafood than any others (19.6% of responses). Fresh or frozen fish was the second least favoured, with pork least associated with the statement (14.6% and 13.9% respectively).

Looks good in the store

Canned fish and seafood was most frequently associated with this attribute (19.5% of responses) ahead of meat, poultry and fresh or frozen fish (18%, 17% and 15.8% of responses, respectively).

Its quality varies

The predominant perception here was that this statement applies to none of the protein sources (24.3% of responses). Meat quality was perceived as more variable than that of fresh or frozen fish (20.8% and 16.2% respectively).

Price fluctuates too much

The most frequent perception was that this statement applies to none of the protein sources (36.5% of responses). Of protein sources, fresh or frozen fish was rated ahead of meat (15.5% and 14.4% respectively).

An essential part of the range we offer customers

Retailers responded strongly on this statement to all protein sources, with preference shown for canned fish and seafood, followed by poultry (22.5% and 18.8% of responses, respectively). Fresh or frozen fish (14.9% of responses) ranked beneath meat, but ahead of prepared fish products and pork.

3.4 Fish and Seafood Sales - Problems, Reasons and Solutions

At the time of the study, just over half of the retail outlets surveyed did **not** sell fresh, chilled or frozen fish and seafood as shown in Table 3.2.1a and b (Question 4, Appendix I). Note that the term 'chilled' fish is one used in the retail trade, and is not encountered in fishmongers.

Respondents who sold **fresh** fish mentioned a number of problems in selling fresh fish and seafood, principally its lack of availability or unreliability of supply (Figure 3.4.1).

By comparison, respondents who sold **chilled** fish/seafood principally claimed that there were no problems with the chilled products and that these must be used or sold quickly before going off. About a dozen other problems were referred to but at reduced frequency (four or fewer times out of a total of 54 responses; Figure 3.4.2).

Similarly, respondents who sold **frozen** fish/seafood claimed strongly that there were no problems in selling this category of seafood. (50 out of 91 total responses). Again, numerous problems were referred to at much lower frequency (each 6% or fewer of total responses).

The freedom of retailers to select their suppliers for fresh, chilled and frozen fish/seafood products was varied, with 54%, 47% and 57% of respondents saying 'yes' to being free to choose their supplier of each of the three forms of fish/seafood, respectively.

The main reasons offered by retailers for not selling **fresh, chilled or frozen** fish/seafood point clearly to a physical constraint; the primary reason raised was “lack of freezer/refrigerator or display space”. Whilst “no demand/doesn’t sell” was the second most frequently cited reason for not selling these products, the frequency of “no room/not enough space in the store” as a reason reinforces the physical constraints suggested in the primary reason (Figures 3.4.3, 3.4.4 and 3.4.5).

A higher-than-average number of Melbourne outlets said a reason for not selling fresh fish/seafood was that there was no demand for it (95% confidence limits). An above average number of Sydney outlets gave the reasons ‘not a fish shop’ or that this state of affairs was ‘a head office decision’ (99% confidence limit). Sydney outlets were above average in citing these two reasons for not selling chilled fish/seafood (99% and 95% confidence limits, respectively). In the case of frozen fish/seafood, Sydney outlets again cited the ‘head office decision’ more frequently than other regions (99% confidence limits).

Possible solutions to reduce these problems and reasons drew a clear response. The response that “nothing” would encourage the store to sell fresh, chilled or frozen seafood was given with twice the frequency of any alternative response (Figures 3.4.6, 3.4.7 and 3.4.8). “Customer demand” was the second most frequently sought encouragement across all products.

The far lower ranking given to factors such as “more storage space/shop area” and “supply subsidised refrigerators/freezers” is in contrast to the previous reasons for not selling fresh, chilled or frozen fish or seafood. This suggests more than just one factor is at work in preventing the sale of fresh, chilled or frozen fish/seafood.

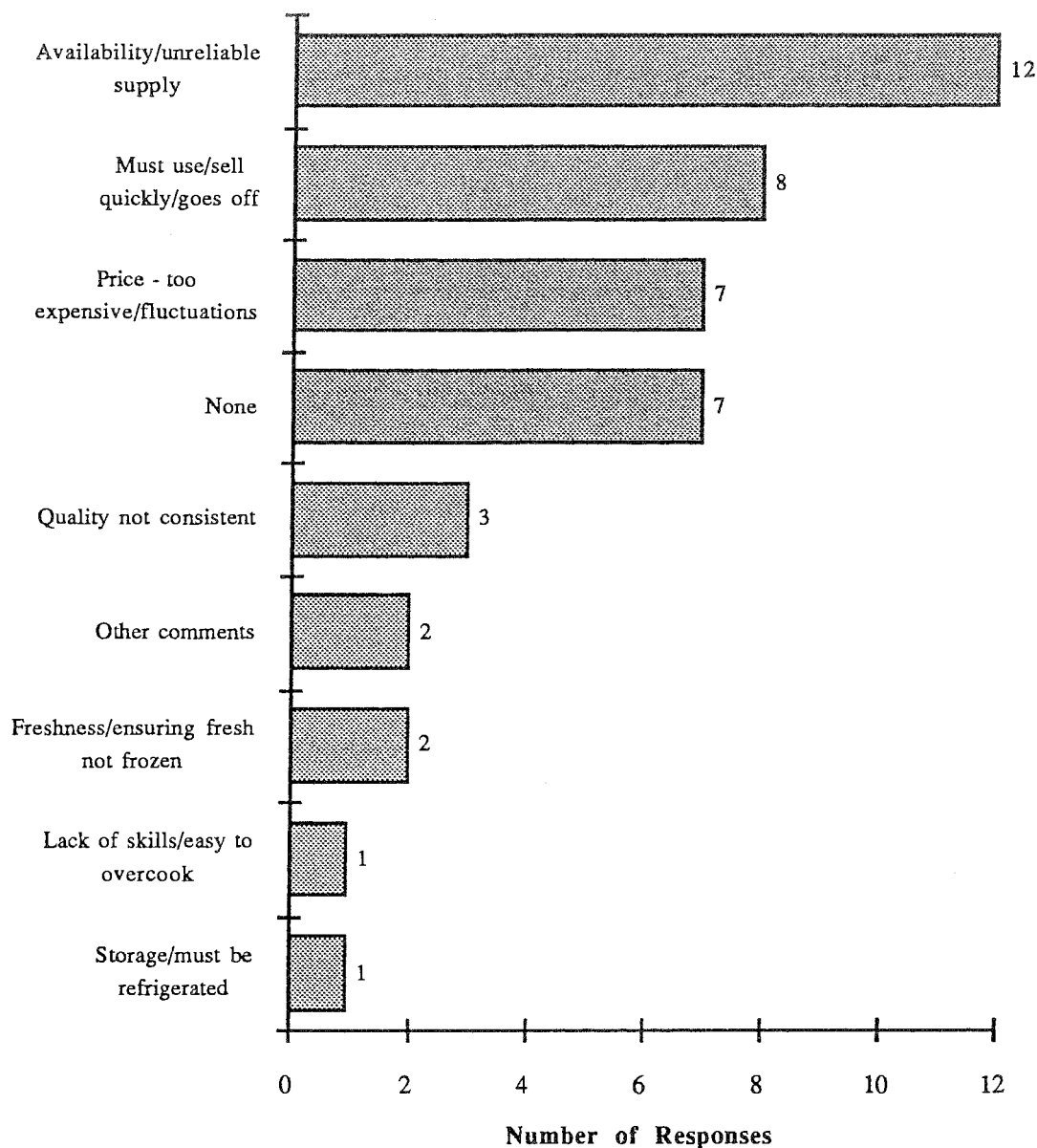
The study offered respondents the opportunity to express their views on the degree to which a range of factors contributed as problems with selling fish and seafood (Question 4f, Appendix I). Responses were weighted according to whether problems were regarded as very significant (weighting of 3), quite significant (2), not very significant (1) or not a problem (0).

Weighted averages of the responses on degree of problem are shown in Figure 3.4.9. The most highly ranked problem was “seafood is too expensive to buy”. It was said to be a very significant problem by 26% of respondents and quite a significant problem by another 27% of respondents. Hence, over half of retail outlets had a problem with the price of seafood, in spite of the relatively low averaged response of 1.6 shown in Figure 3.4.9. More attention, should be given to rank rather than the averaged score. Hence, the top ranked six problems relate to:

- perceived high price of fish/seafood
- price and supply fluctuations
- uncertainty about quality and freshness.

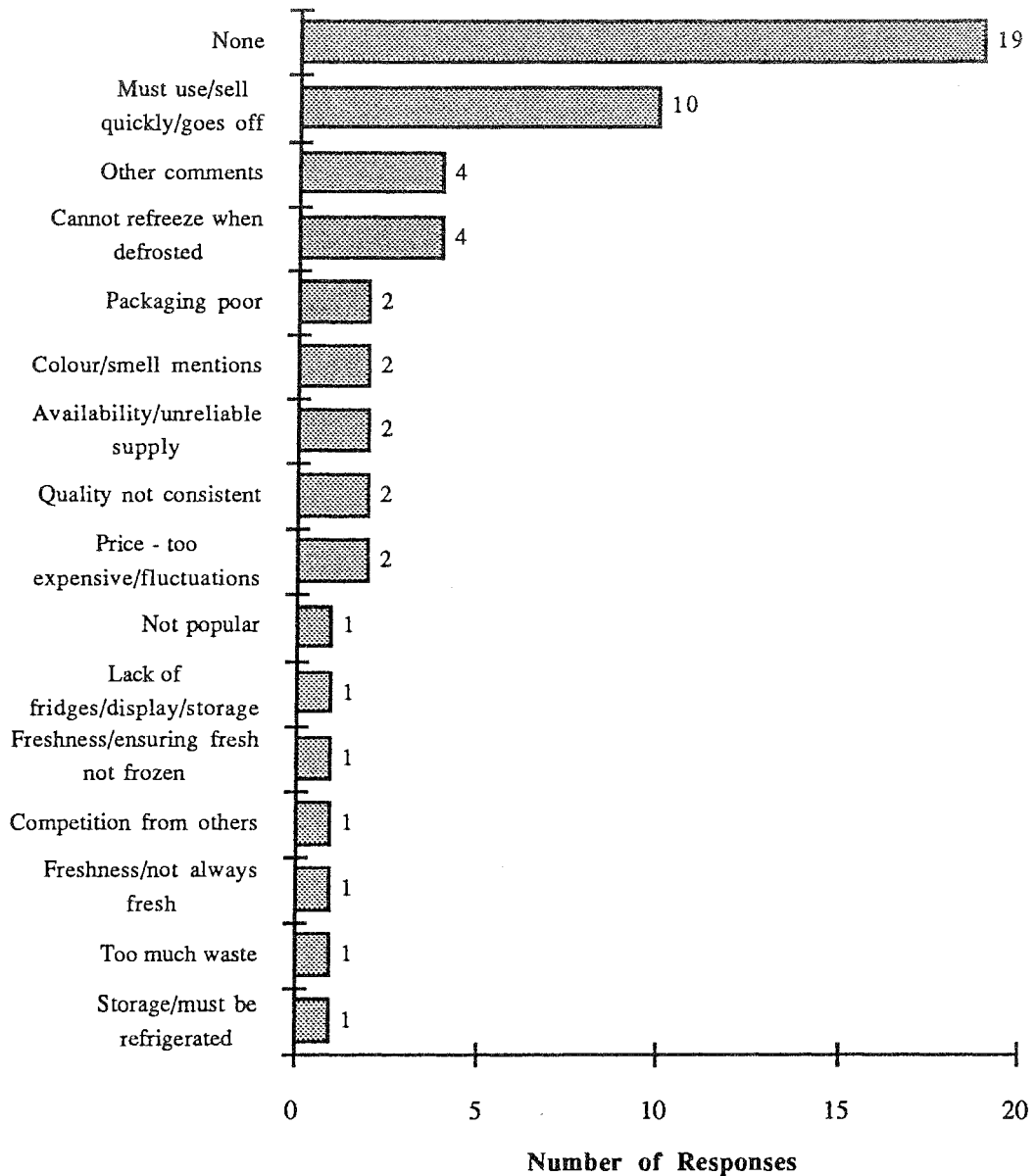
Of the next four highest ranking problems three relate to a lack of staff training or low levels of consumer product knowledge. The other problem is “low margins necessary to remain competitive”.

Figure 3.4.1: Retailers' Problems in Selling Fresh Fish/Seafood



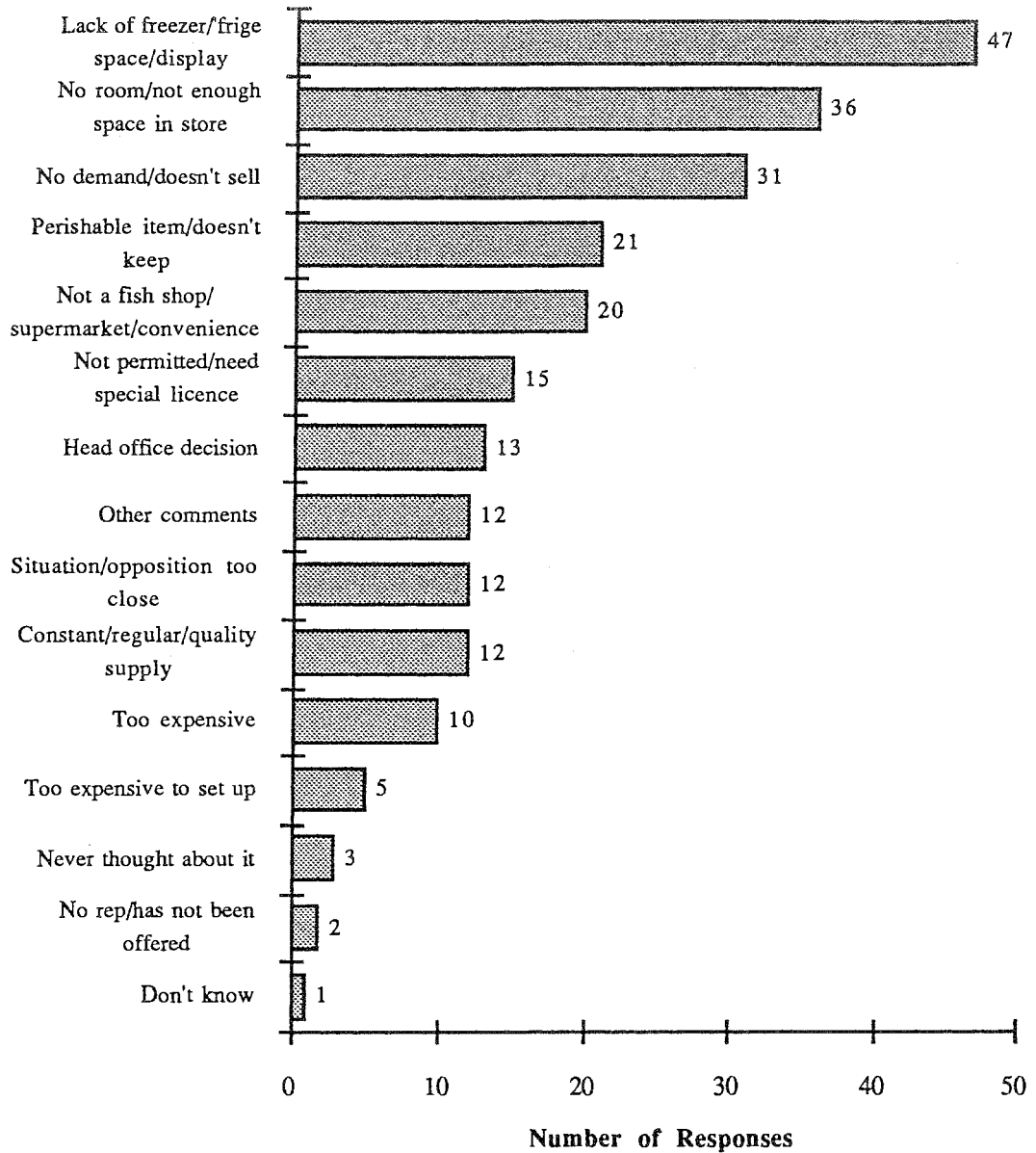
35 respondents offered 43 responses for May 1991 and September 1991 surveys (see Question 4b, Appendix I).

Figure 3.4.2: Retailers' Problems in Selling Chilled Fish/Seafood



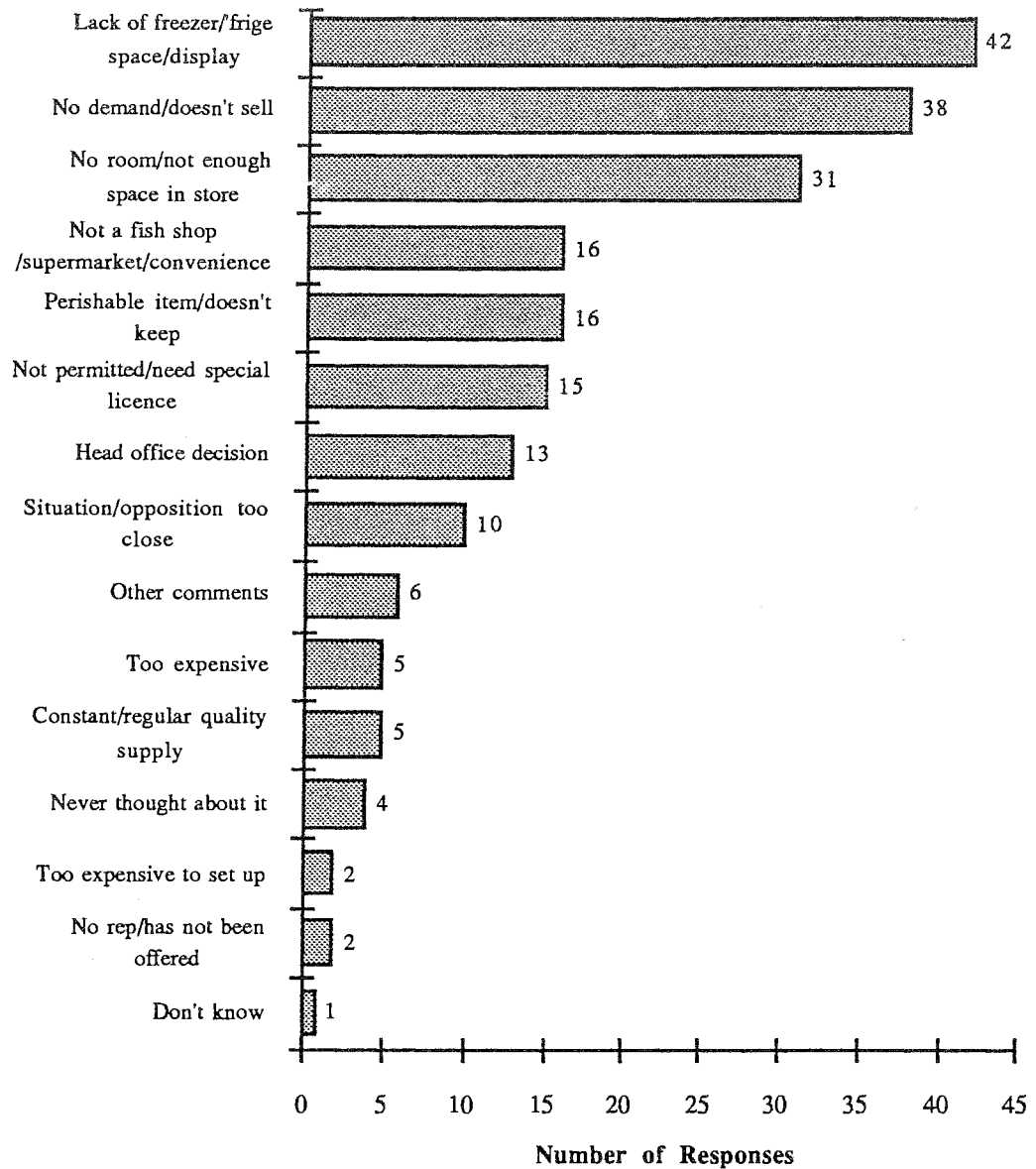
47 respondents offered 54 responses for May 1991 and September 1991 surveys (see Question 4b, Appendix I).

Figure 3.4.3: Main Reasons for Not Selling Fresh Fish/Seafood



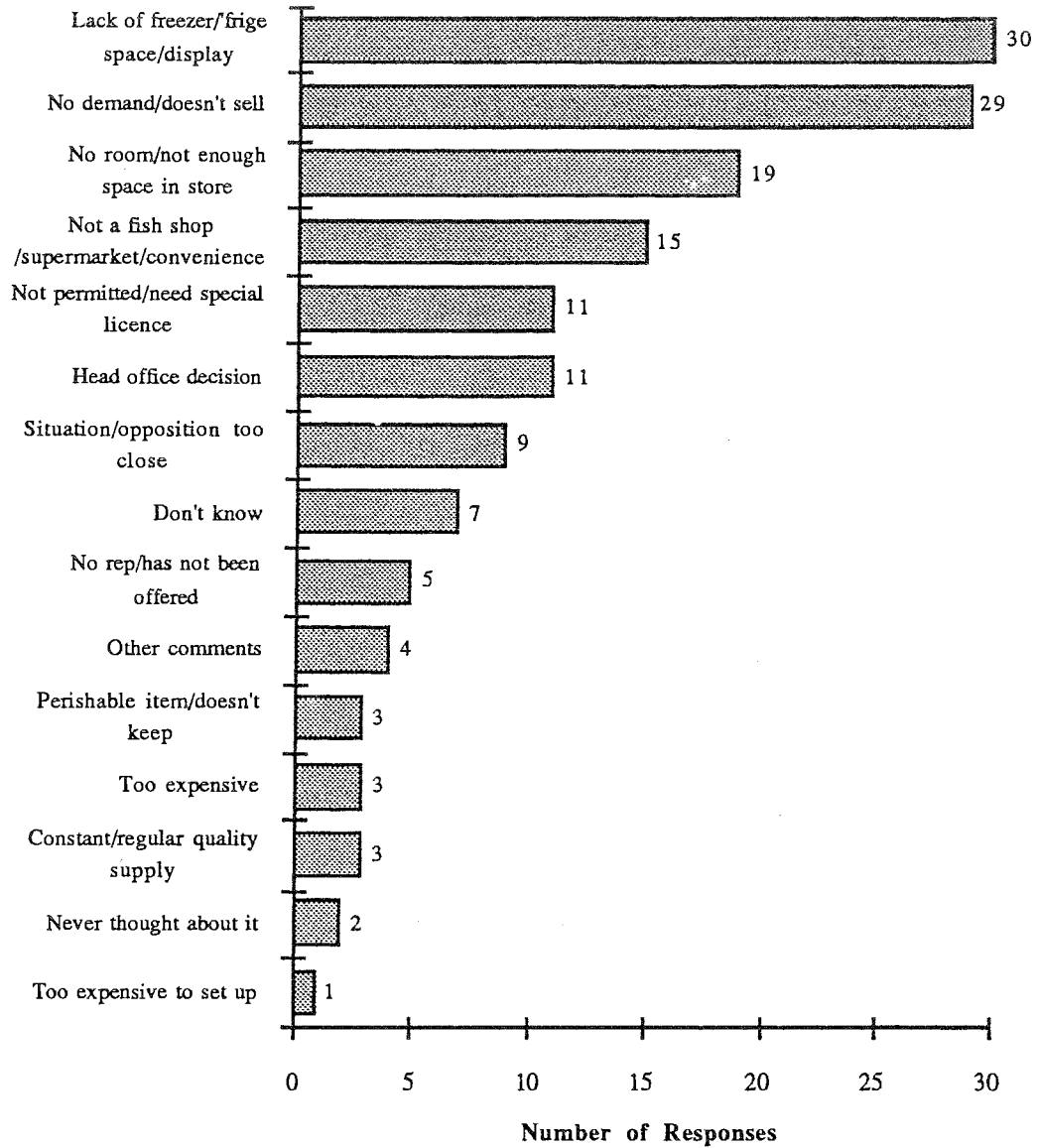
167 respondents offered 240 responses for May 1991 and September 1991 surveys (see Question 4d, Appendix I).

Figure 3.4.4: Main Reasons for not Selling Chilled Fish/Seafood



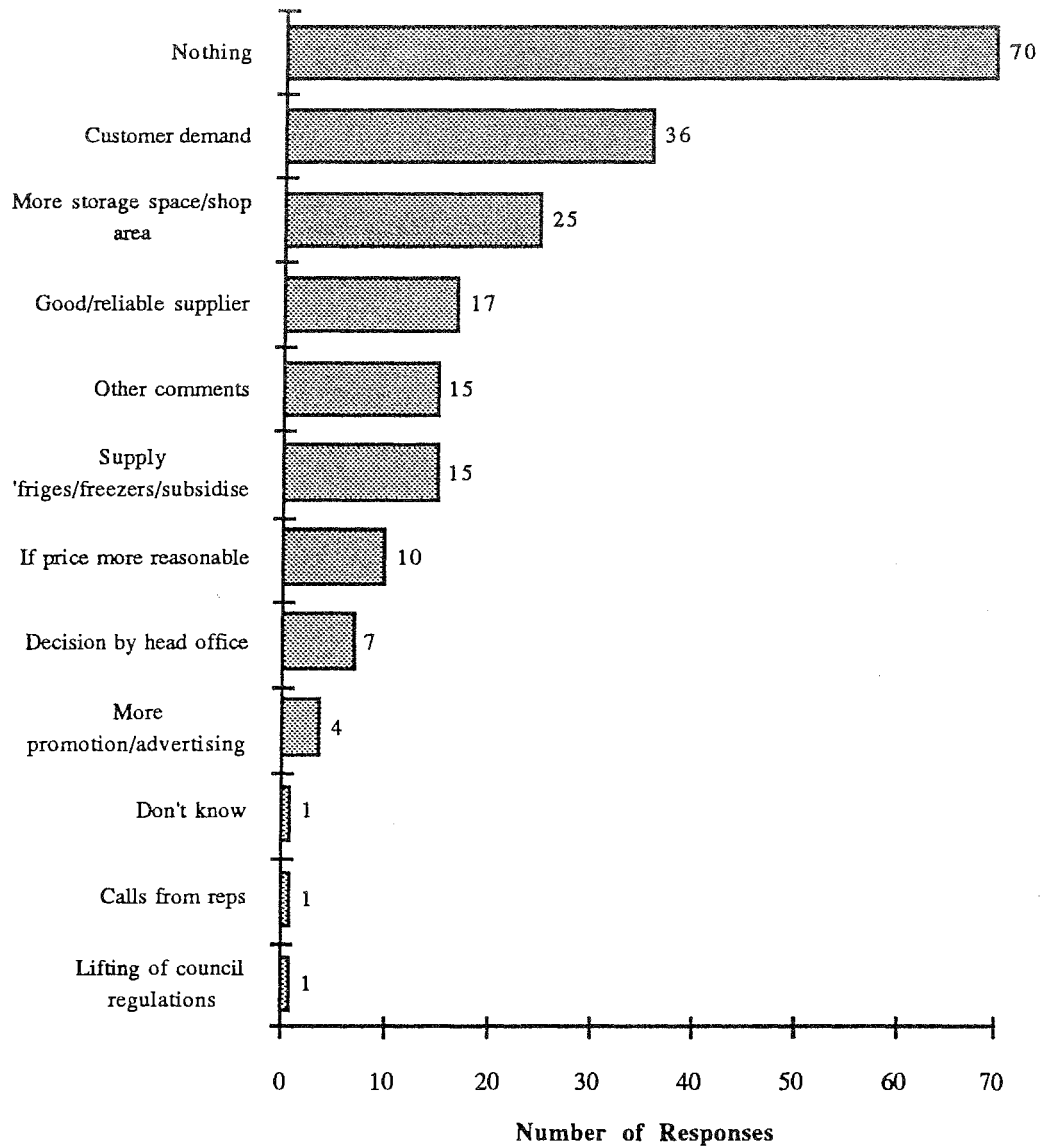
155 respondents offered 206 responses for May 1991 and September 1991 surveys (see Question 4d, Appendix I).

Figure 3.4.5: Main Reasons for not Selling Frozen Fish/Seafood



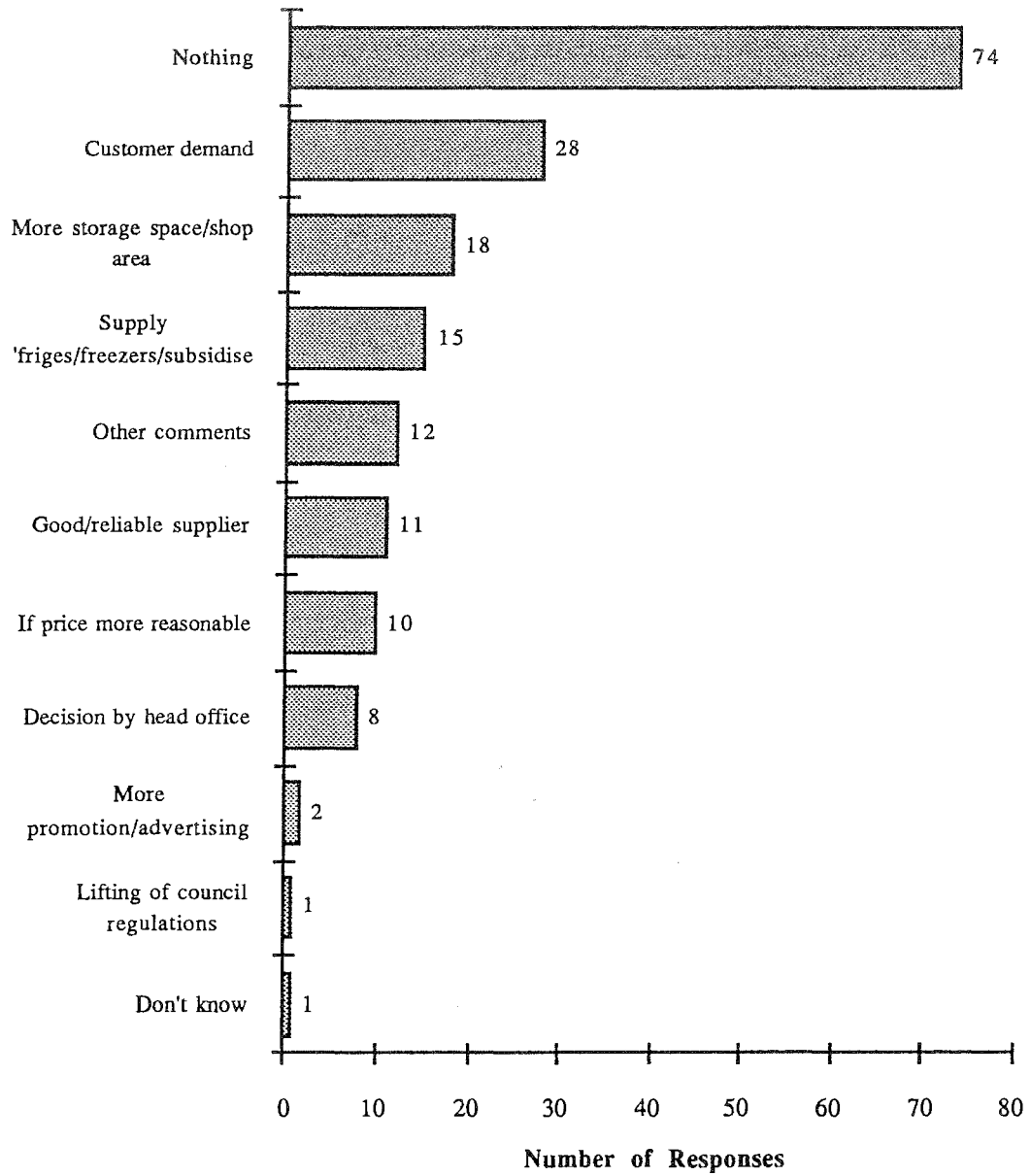
118 respondents offered 152 responses for May 1991 and September 1991 surveys (see Question 4d, Appendix I).

Figure 3.4.6: How to Encourage Store to Sell Fresh Fish/Seafood



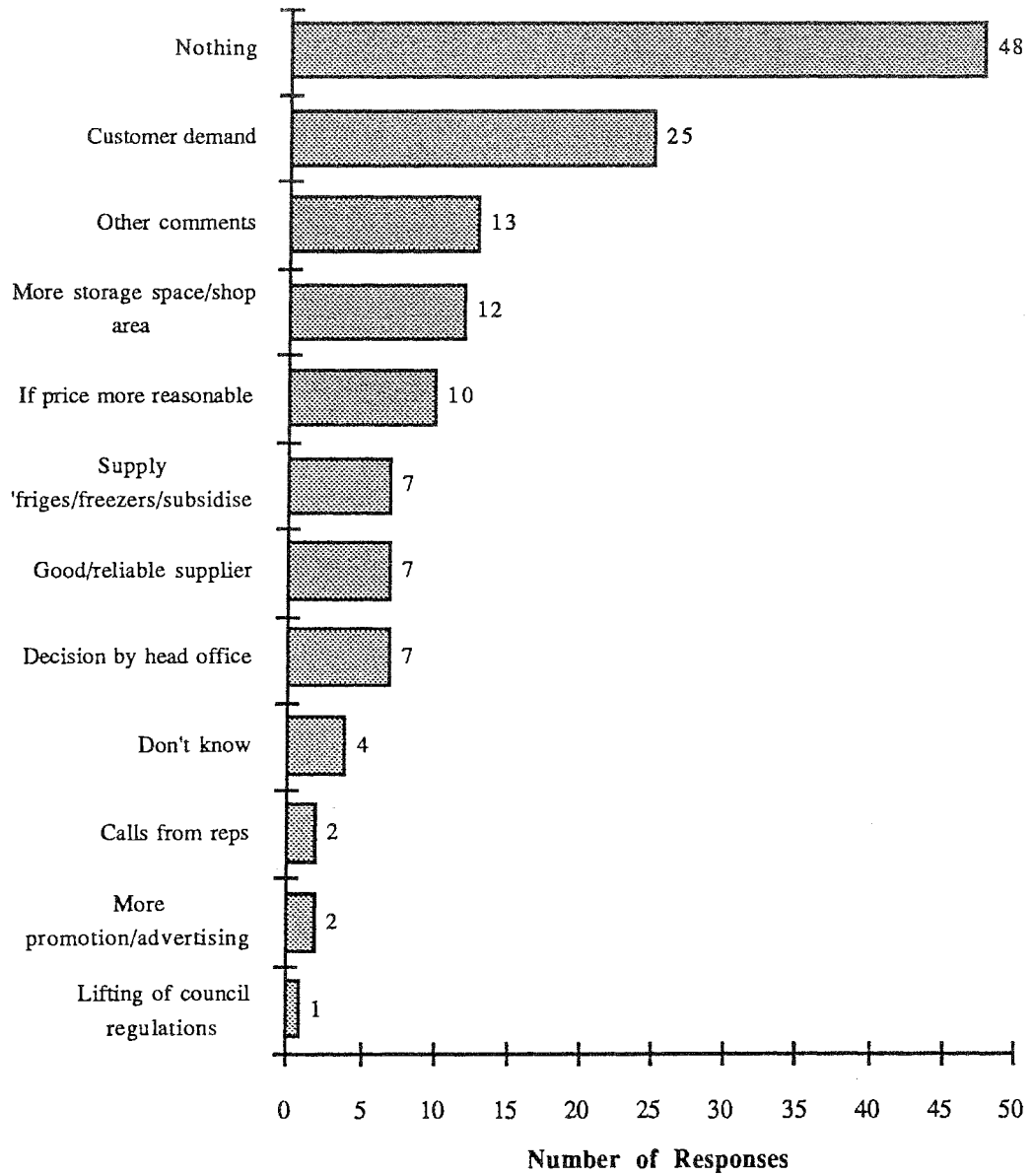
167 respondents offered 202 responses for May 1991 and September 1991 surveys (see Question 4e, Appendix I).

Figure 3.4.7: How to Encourage Store to Sell Chilled Fish/Seafood



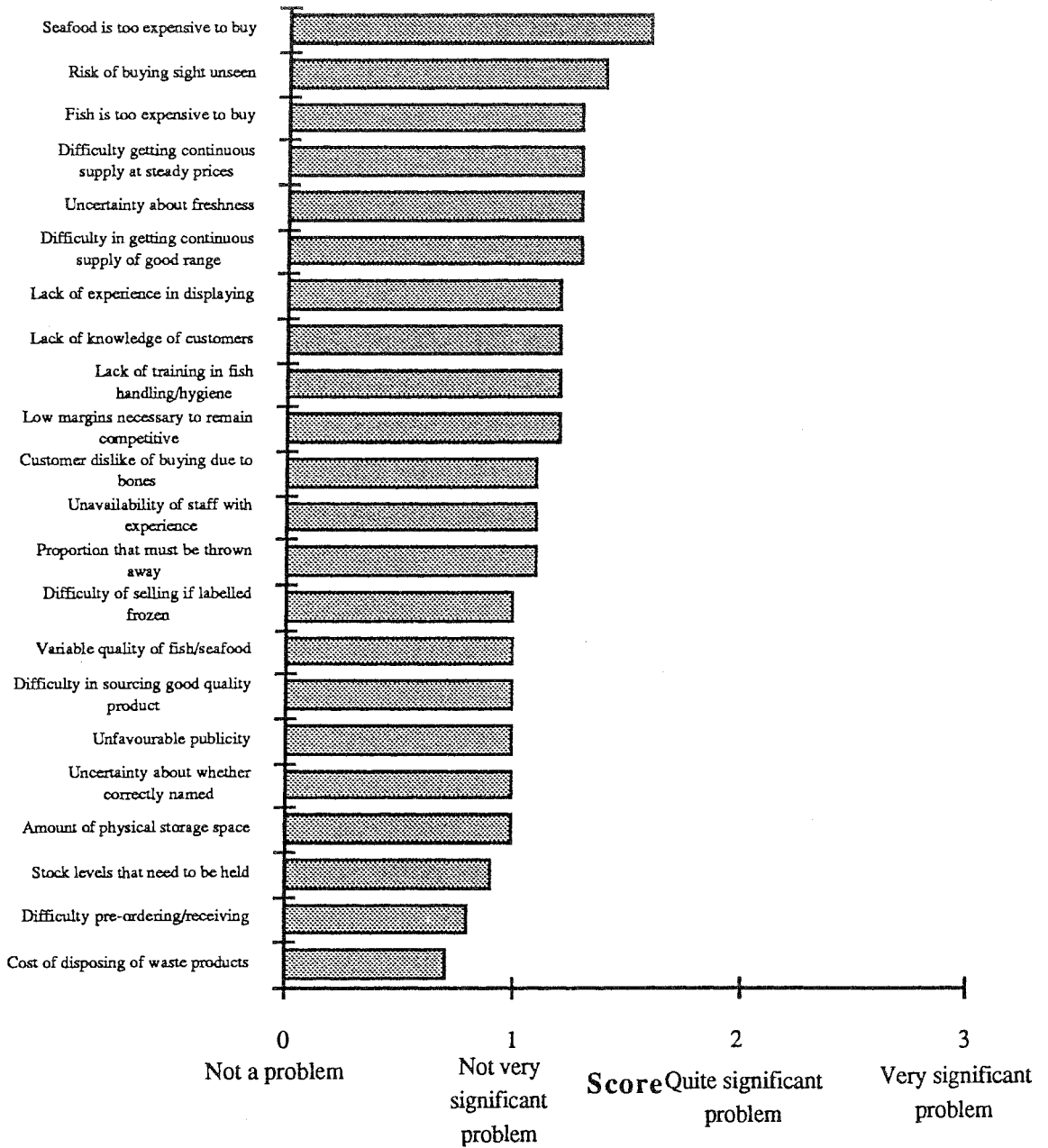
155 respondents offered 180 responses for May 1991 and September 1991 surveys (see Question 4e, Appendix I).

Figure 3.4.8: How to Encourage Store to Sell Frozen Fish/Seafood



118 respondents offered 138 responses for May 1991 and September 1991 surveys (see Question 4e, Appendix I).

Figure 3.4.9: Degree of Problem in Selling Fresh, Chilled or Frozen Fish and Seafood: Averaged Rating



(see Question 4f, Appendix I).

3.5 Fish and Seafood Sales - Types, Format, Volumes, Origin

Respondents were asked for the six “main” types of “wet” finfish (ie not prepackaged, or processed like fish fingers, not canned or bottled) sold in the month prior to the survey, by their store. Only the 90 retailers (of the total 202 sampled) who sold “wet “ fish were asked this question. The responses to the question were aggregated for all 90 retailers questioned. Those species sold by the highest number of retailers were ranked to produce Table 3.5.1. Also included in the Table is the retailers’ preferred form of purchase of each species and the retailers’ estimate of the proportion of the species that originates from Australian waters.

Smoked cod was sold by more retailers than any other finfish. Some respondents thought smoked cod originated from Australian water even though all smoked cod consumed in Australia is imported.

Table 3.5.1: Eight Main Types of Finfish which Retailers sold in the Preceding Month, Preferred Form and Presumed Origin

Type of Finfish	Rank	Number of retailers selling each species ⁽¹⁾	Preferred form bought ⁽²⁾ (number of retailers)	Origin - weighted average estimate (% local/Australian)
Smoked cod	1	33	Fillet (16) ⁽⁶⁾	16.5%
Whiting (unspecified) ⁽³⁾	2	30	Fillet (30)	55.8%
Shark	3	22	Fillet (23) ⁽⁴⁾	92.9%
Flathead	4	20	Fillet (18)	85.0%
Orange roughy ⁽⁵⁾	5	16	Fillet (16)	86.7%
Blue grenadier	6	14	Fillet (13)	55.4%
Hake	7	14	Fillet (14)	25.0%
Barracouta	8	11	Fillet (10)	85.6%

(1) 90 respondents offered 304 responses. Data were gathered on a total of 54 finfish or finfish products

(2) Alternative forms considered were: whole, fillet, cutlet, headed/gutted, smoked (plus: other, no answer)

(3) An additional 4 responses were received for grass whiting

(4) Some respondents offered responses in Question 6 not captured by species responses*

(5) Responses may be understated, since orange roughy is also known in NSW as sea perch. Perch (unspecified) received 5 responses (2 from Sydney, 1 from Melbourne, and 2 from Hobart)

(6) Apart from these 16 responses, another 13 said they purchased smoked cod in smoked form.

These data are re-presented in terms the number of retailers selling each species by city (Table 3.5.2). There are no differences of statistical significance for any species purchased by location. The frequency with which Melbourne retailers were involved in the purchase of the leading finfish species/types is of interest.

Table 3.5.2: Leading Finfish Species/Types Sold by Retailers, According to Location

Leading Finfish Species/Types	Number of retailers selling each species, by city					
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
Smoked cod	9	10	6	6	2	0
Whiting (unspecified)	5	8	3	8	6	0
Shark	0	15	0	2	2	3
Flathead	1	13	3	1	0	2
Orange roughy	3	10	3	0	0	0
Blue grenadier	0	6	2	1	4	1
Hake	0	4	1	5	4	0
Barracouta	0	6	0	0	2	3

As regards seafood (non finfish) products sold by retailers, data in Table 3.5.3 shows that 40 of the 90 retailers sold “none”. Prawns emerged as the seafood sold by the highest number of retailers although some confusion over product description is apparent, since retailers do not normally sell whole (in-shell head on) prawns. Similarly, to describe cooked and peeled shrimps as ‘whole’ seems contradictory.

Table 3.5.3: Main Types of Seafood sold by Retailers in the Preceding Month, Preferred Form and Presumed Origin

Type of Seafood	Rank	Number of retailers selling each species ⁽¹⁾	Preferred form bought ⁽²⁾ (number of retailers)	Origin - weighted average estimate (% local/Australian)
None	1	40	—	—
Prawn ⁽³⁾	2	31	Whole (20)	66.7%
Seafood Sticks	3	13	Other (7)	31.1%
Squid/calamari	4	12	Other (9)	50.0%
Mussels (unspecified)	5	7	Other (4)	58.3%
Seafood marinara	5	7	Other (6)	40.0%
Shrimp, cooked and peeled	5	7	Whole (3)	57.1%
Oysters	8	6	Whole (3)	60.0%
Seafood extender	8	6	Other (4)	25.0%

(1) 90 respondents offered 156 responses. Data were gathered on a total of 24 types of seafood (non finfish) products

(2) Alternative forms considered were: whole, fillet, cutlet, headed/gutted, smoked (plus: other, no answer)

(3) There were additional responses for king prawns (2), other Australian prawns species (1) and other prawn products (1).

The locations where these leading seafood species/types were purchased are shown in Table 3.5.4. The sample size was too small to draw conclusions of statistical significance, but again it is noteworthy that Melbourne was unique in being involved in the purchase of all leading types.

Table 3.5.4: Leading Seafood Species/Types Sold by Retailers, According to Location

Leading Seafood Species/Types	Number of retailers selling each species, by city					
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
None	11	15	6	4	2	2
Prawn	7	8	3	3	9	1
Seafood Sticks	1	3	3	4	2	0
Squid/calamari	1	4	1	1	5	0
Mussels (unspecified)	2	4	0	0	1	0
Seafood marinara	1	2	0	3	0	1
Shrimp, cooked and peeled	0	5	0	0	0	2
Oysters	1	2	2	0	0	1
Seafood extender	1	1	0	3	1	0

Respondents were also asked to estimate the number of kilograms they had purchased in the last month, of each of their cited six main species of finfish. The results of this question were aggregated across the retailers to provide the purchase data shown in Figure 3.5.1.

Estimates were also asked in similar fashion for the four main seafood types sold by each retailer to give the purchase data shown in Figure 3.5.2.

Figure 3.5.1 suggests some structural component of the finfish distribution system may drive the apparent preference for finfish purchases in even multiples (10, 20, 40, 80kg). Relatively few monthly purchases are made in the '150kg and over' range.

Figures 3.5.3 and 3.5.4 reproduce the data shown in Figures 3.5.1 and 3.5.2 but aggregate it over the two survey periods. In addition, the Figures show the number of **different** species/types of finfish or seafood represented in the monthly purchases recorded within each weight range. Hence, Figure 3.5.3 shows that of the 27 main species of finfish listed by respondents that were purchased in volumes of between 1 - 5kg per month, there were actually 15 different species/types of finfish. Figure 3.5.3 does indicate some overlap in the species/types of finfish purchased by retailers largely due to the tendency for a significant proportion of retailers to stock some of the leading species shown in Table 3.5.2.

Figure 3.5.4 shows retailers' "products ranges" overlap more in seafood lines than for finfish. In the 6 - 10kg weight range, just three different species/types of seafood (prawns unspecified, seafood sticks and squid/calamari) make up 22 of the 36 monthly purchases shown.

Purchases in higher volume ranges are far more frequently made for finfish than for seafood (Figure 3.5.3 and 3.5.4). In keeping with previously discussed findings the preferred seafood purchase volumes are low.

Tables 3.5.5 and 3.5.6 set out the leading types of finfish and seafood (respectively) bought for stores based on volume. An arbitrary cut off point of over 100kg finfish or 50kg seafood total volume purchased in either month preceding the May 1991 or September 1991 survey was applied for inclusion in the Table. There are several interesting points of comparison between Table 3.5.1 and 3.5.5, on frequency of sale of finfish and volumes purchased by retailers. First, there is the general correspondence between the number of retailers selling each of the main species, and the total volumes purchased (smoked cod, shark, flathead, for example). Second, the total and average volumes purchased for smoked cod across May 1991 and September 1991 surveys were almost unchanged, possibly reflecting both availability of supply to retailers and retailers' degree of comfort in stocking this 'shelf' line. Third, some species appear to be sold by few retailers (an absence from Table 3.5.1), yet are purchased in large volume (eg bream, mullet and trevally). Equally, some species were sold by many retailers (eg whiting, barracouta) and were purchased in relatively uneven volumes comparing May 1991 and September 1991 surveys.

For seafood, the general correspondence between the number of retailers purchasing a particular species/type (Table 3.5.3) and the volume purchased (Table 3.5.6) is less clear. Only with prawns is there the clear link between popularity (number of retailers purchasing), total volume purchased and comparability of average volumes purchased for May 1991 and September 1991 surveys. Shrimp (cooked and peeled) had lower popularity than seafood sticks, mussels, or seafood marinara, and yet was purchased consistently in larger volumes. Seafood extender rated below all these species/types in terms of the number of retailers purchasing, yet was purchased in large volume in a single transaction (Table 3.5.6).

As an indication of retailers' preference for a particular fish and seafood supply route, retailers were asked to specify the type of supplier used to supply each of the main species/type of fish and seafood bought. The popularity of a particular type of supplier (commercial fisherman/ aquaculture farmer, general wholesaler, fish/seafood wholesaler/ co-operative; wholesale fish market or retailer) was gauged by summing the number of times a particular type of supplier was referred to across the whole retailer sample.

An indication of the *range* of fish and seafood business done by particular types of suppliers was gained by summing the number of distinct species handled by a supplier type. The results are given as the bracketed figures in Table 3.5.7.

Retailers showed a strong preference for buying their main fish and seafood stocks from a general wholesaler and there was a general correspondence between this preference and the range of species/types of product supplied by the various alternative suppliers.

As a review of the fish and seafood purchasing data related by retailers, interviewees were asked to estimate what proportion of the total amount spent by the store on **all** fresh, chilled or frozen fish and seafood in the last month was covered by the range of main species they had discussed; on average, interviewees estimated this proportion as 82.5%.

Table 3.5.5: Leading Finfish Types Purchased by Retailers in the Month Prior to Survey⁽¹⁾

Species/type of Finfish	May 1991 Survey		September 1991 Survey	
	Total Volume Purchased (kg)	Average Volume Purchased ⁽³⁾ (kg)	Total Volume Purchased (kg)	Average Volume Purchased ⁽³⁾ (kg)
Barracouta	926	116	37	12
Bream (unspecified)	704	235	245	61
Cobbler	240	80	0	0
Cod, red	100	100	570	81
Cod, smoked	1433	84	1289	86
Cod (unspecified)	121	24	494	62
Flathead	692	63	749	68
Flounder, fillets	0	0	151	38
Flounder (unspecified)	120	40	20	20
Garfish	117	29	86	22
Gemfish	0	0	290	290
Grenadier, blue	750	75	220	44
Hake	305	44	243	30
Herrings (imported)	0	0	325	108
Mullet (unspecified)	5800	967	280	70
Orange roughy ⁽²⁾	445	56	1170	130
Perch (unspecified)	99	33	142	71
Redfin	115	58	40	40
Salmon	0	0	280	140
Shark	895	81	635	53
Snapper	180	60	230	77
Trevally (unspecified)	379	63	820	117
Trout, rainbow	268	67	160	40
Whiting, grass	43	43	112	37
Whiting (unspecified)	646	32	202	17

(1) An arbitrary cut off point of over 100kg total volume purchased in either survey was applied for inclusion in the Table

(2) Orange roughy purchases may be understated, since this species is commonly known as sea perch in NSW. Purchases under this name would be captured as perch (unspecified)

(3) calculated by dividing the total volume purchased in the month by the number of fishmongers who purchased the species.

Table 3.5.6: Leading Seafood Types Purchased by Retailers in the Month Prior to Survey⁽¹⁾

Species/type of Seafood	May 1991 Survey		September 1991 Survey	
	Total Volume Purchased (kg)	Average Volume Purchased ⁽²⁾ (kg)	Total Volume Purchased (kg)	Average Volume Purchased ⁽²⁾ (kg)
Crabmeat, Australian	0	0	200	200
Crab (unspecified)	160	80	0	0
Mussels (unspecified)	5	5	62	16
Oysters	1	1	63	16
Prawns	2,376	125	1,652	103
Seafood extender	400	400	208	35
Seafood sticks	86	17	46	8
Squid/calamari	26	9	205	23
Seafood marinara	33	8	68	23
Shrimp, cooked and peeled	92	18	70	23
Tuna (unspecified, canned)	0	0	100	100
Other catering products	60	60	0	0

(1) An arbitrary cut off point of over 50kg total volume purchased in either survey was applied for inclusion in the Table

(2) Calculated by dividing the total volume purchased in the month by the number of fishmongers who purchased the species.

Table 3.5.7: Types of Suppliers of Fish and Seafood to Retailers: Proportion of the Main Species of Finfish or Seafood Mentioned as Being Purchased in the Last Month from Each Respective Source Types

	Proportion of mentions:			
	Finfish ⁽¹⁾ (Number of Different Species)		Seafood ⁽²⁾ (Number of Different Species)	
Commercial fisherman/ aquaculture farm	1.3%	(4)	0.0%	(0)
General wholesaler	49.8%	(38)	51.7%	(21)
Fish/seafood wholesaler/ co-operative	23.0%	(29)	28.1%	(11)
Wholesale fish market	11.2%	(18)	9.6%	(9)
Retailer	3.5%	(8)	1.8%	(1)
Other	5.1%	(9)	-	(0)
Don't know	0.3%	(1)	0.9%	(1)
No answer	5.8%	(16)	7.9%	(7)
Totals	100%		100%	

(1) based on 313 responses

(2) based on 114 responses

Note: figures in brackets refer to the number of different species (range) handled by each supplier - based on the species mentioned by respondents as being purchased in the last month

Figure 3.5.1: Total Number of Cited Main Finfish Species/Types Purchased in the Monthly Volume Ranges Specified

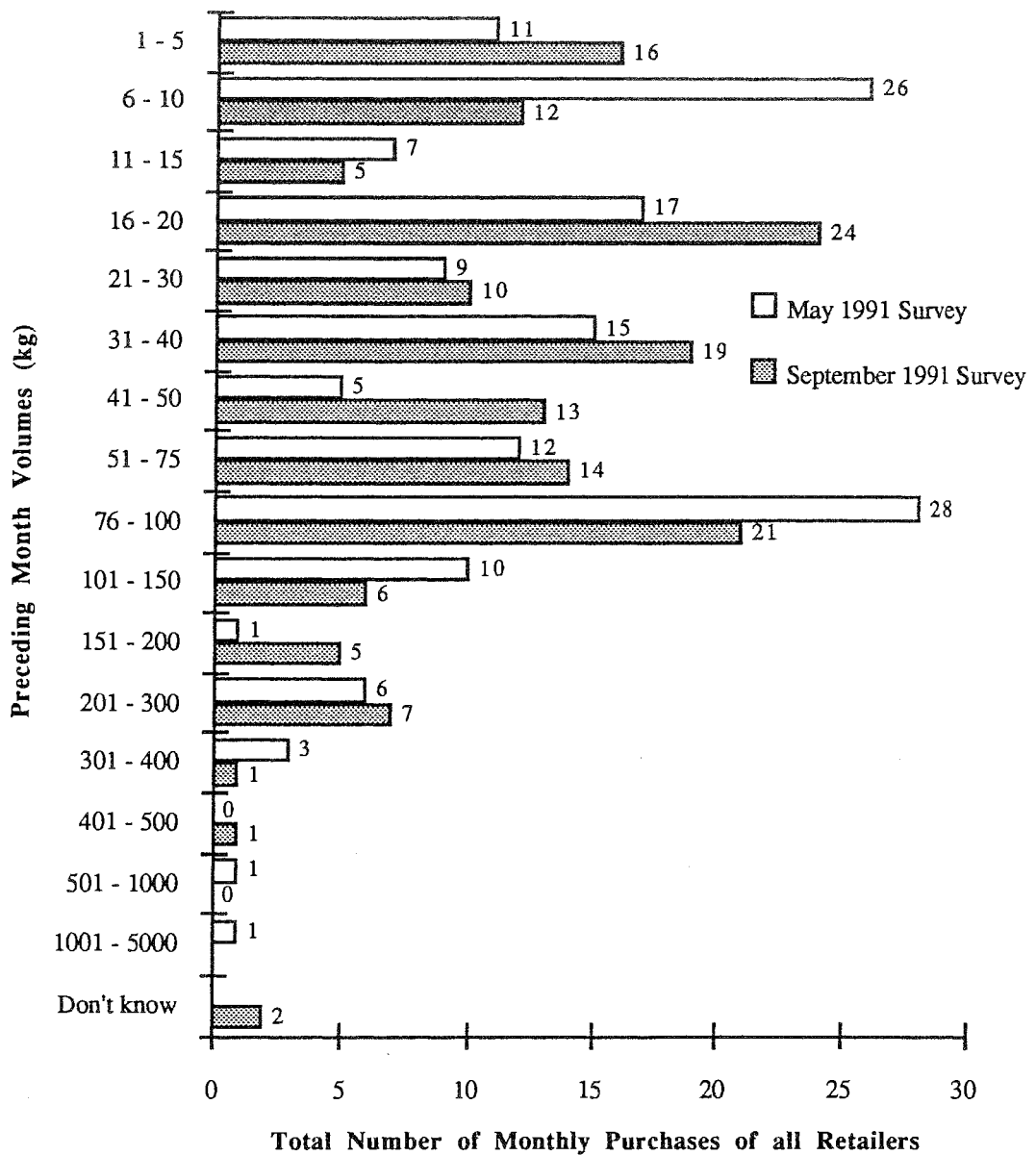


Figure 3.5.2: Total Number of Cited Main Seafood Species/Types Purchased in the Monthly Volume Ranges Specified

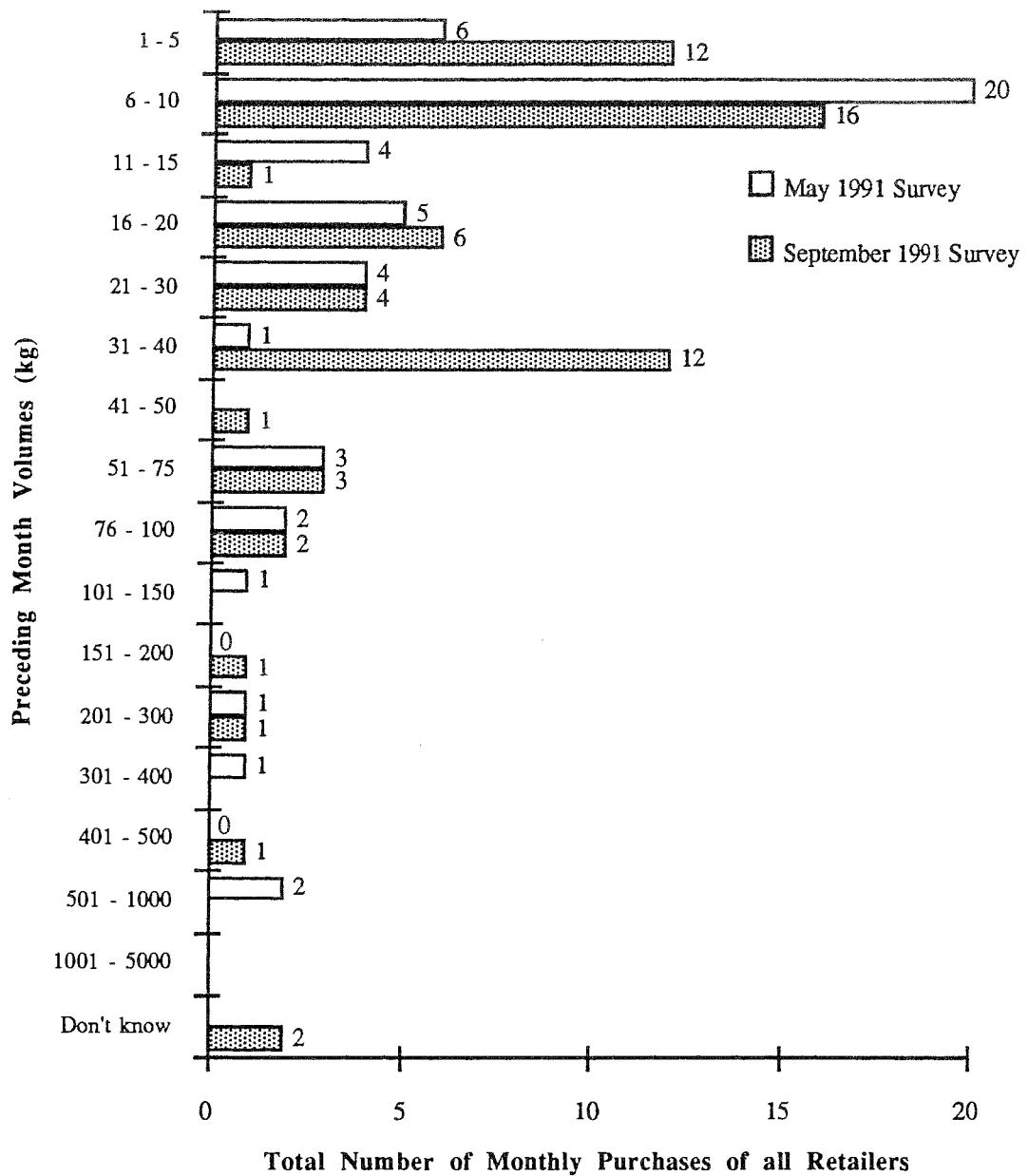


Figure 3.5.3: Total Number of Main Finfish Species Cited Versus the Number of Different Species Across These Citations

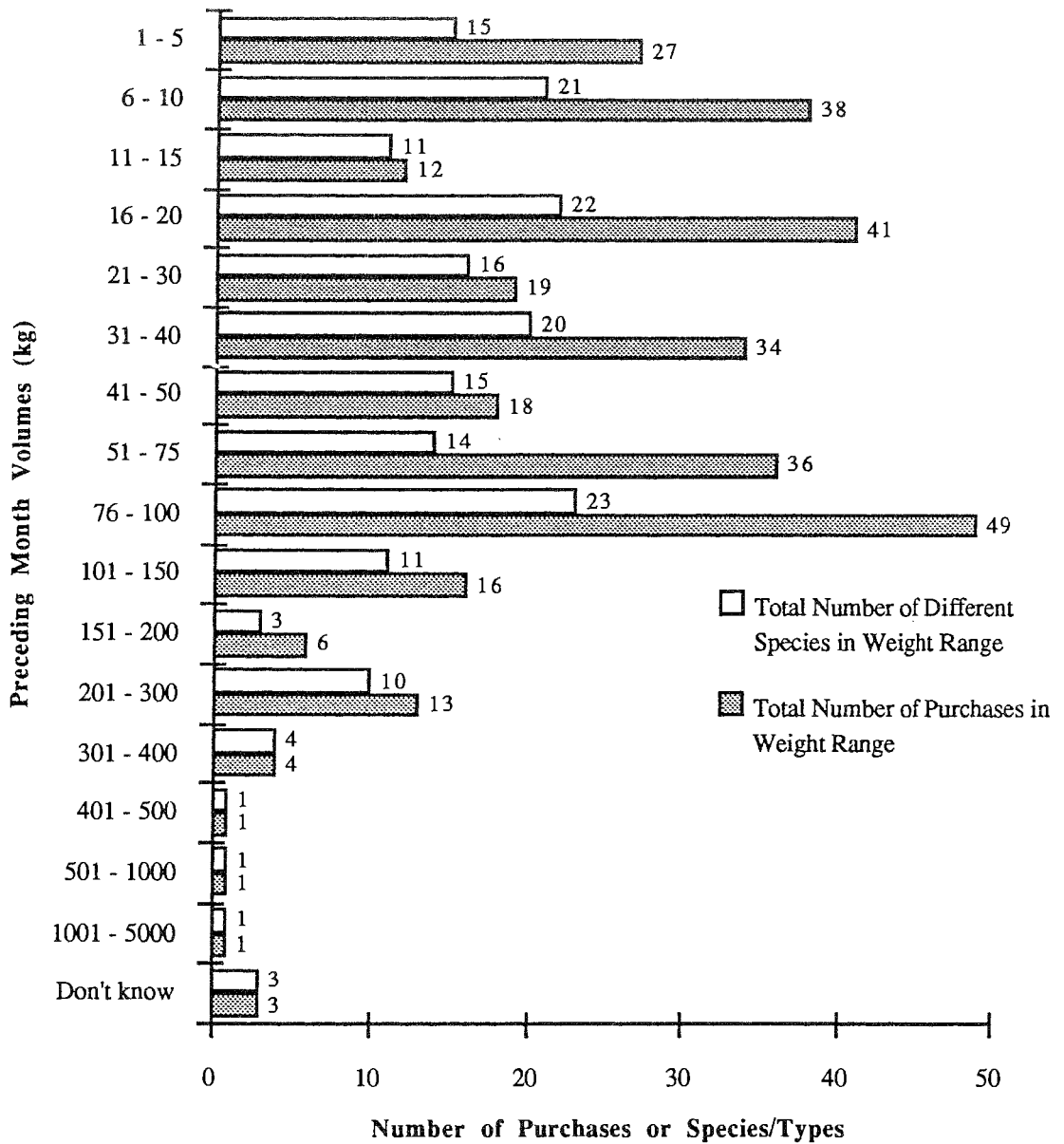
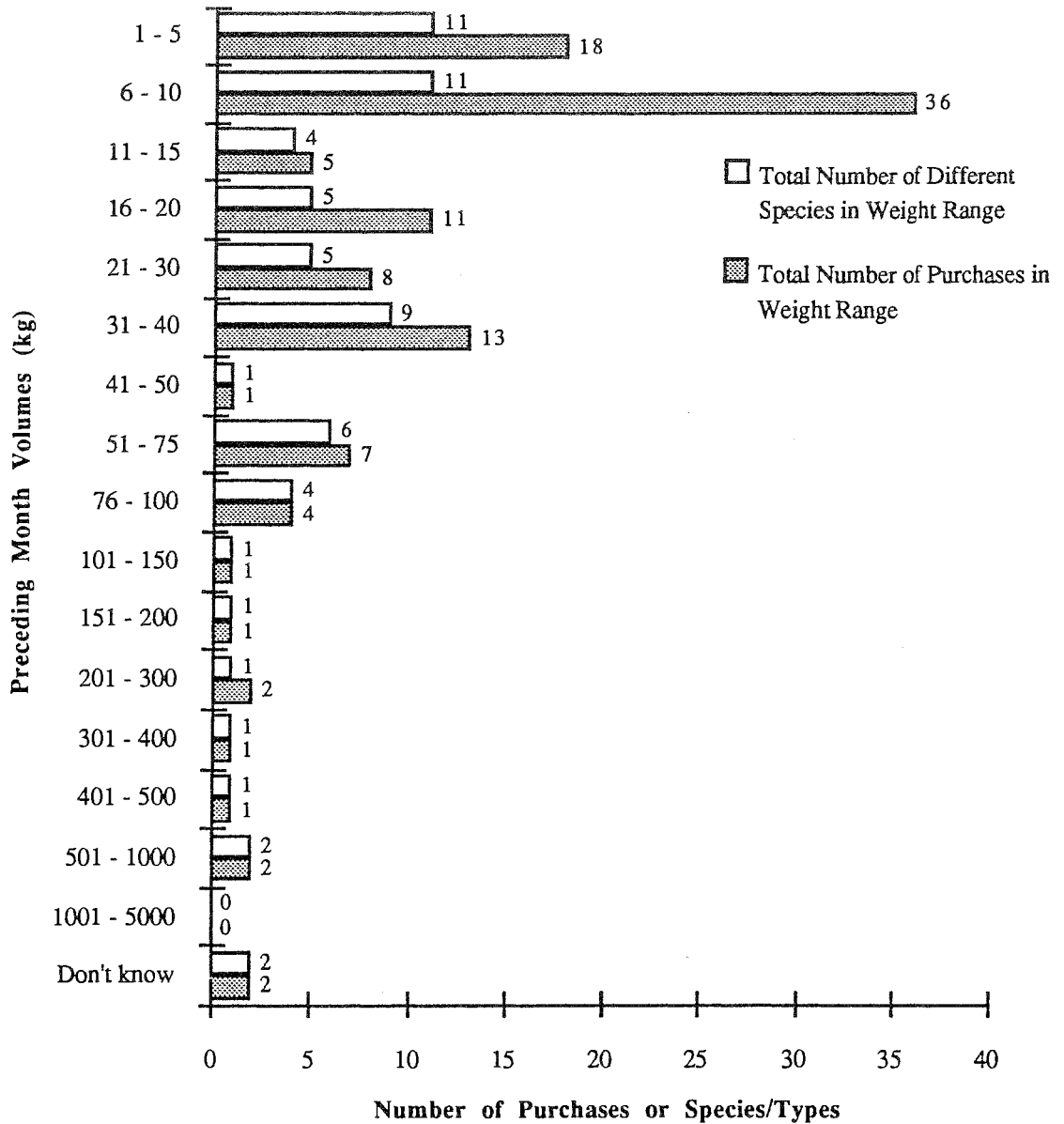


Figure 3.5.4: Total Number of Main Seafood Species Cited Versus the Number of Different Species Across These Citations



3.6 Stock Selection, Supplier Selection and Supplier Rating

An important aspect of market development is to understand the basis on which retailers select their stock of finfish, their basis for selection of suppliers and how they rate their current supplier against these criteria. Hence, respondents were asked to give reasons why they purchased each of the (up to) six main species of fish they had bought in the month prior to that survey (Question 9b, Appendix I). The range of reasons given by respondents for buying in a particular fish species or type is shown in Figure 3.6.1. The six most frequently cited reasons comprise over 80% of all responses given, ie:

- popular/customers want/prefer it
- sells well/most; good seller
- good price/cheap/value for money
- better known/well known
- available fresh/all the time
- boneless/skinless.

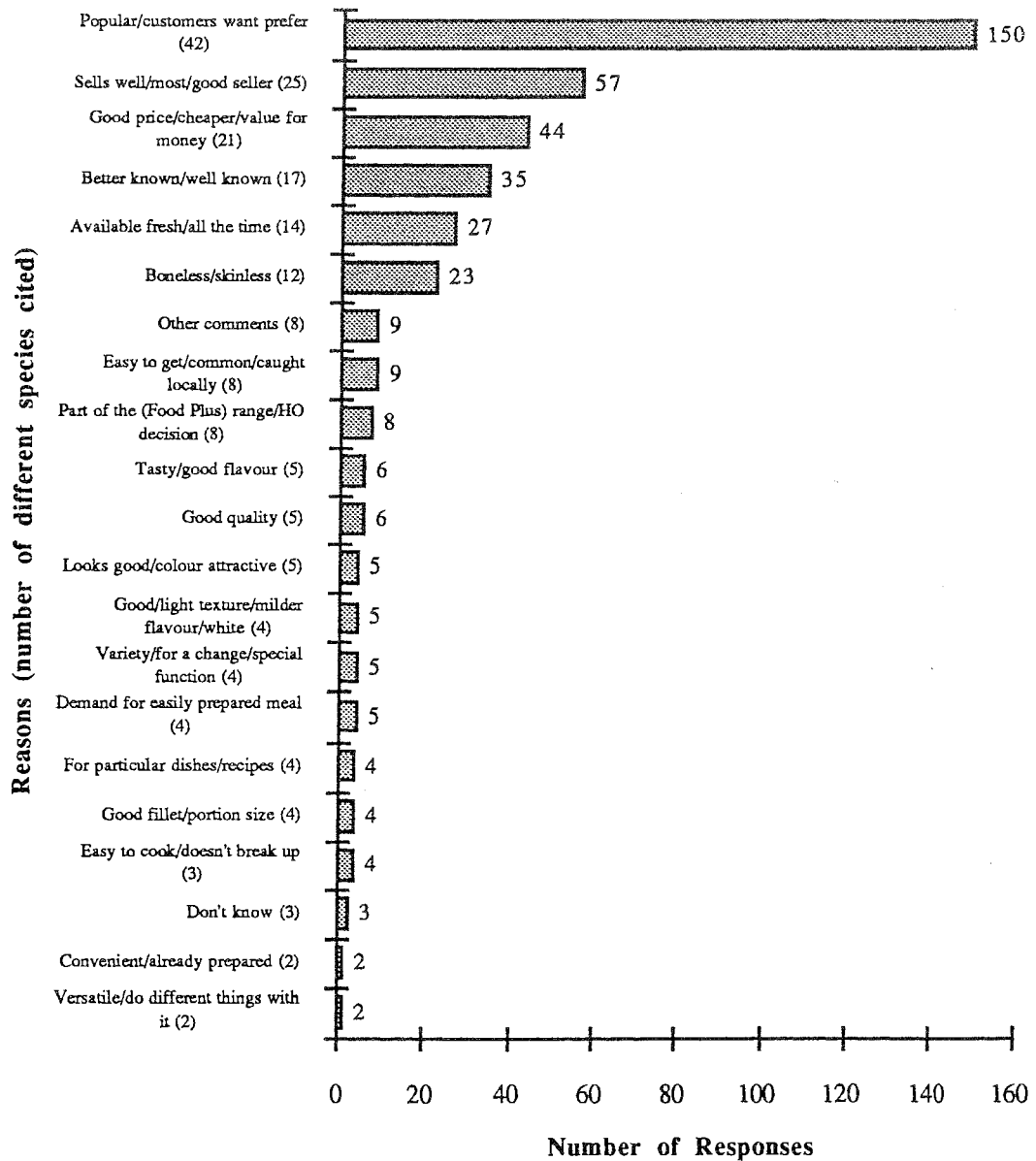
There were only four fish species/products which did *not* receive a response against *any* of these six reasons (black bream, imported herrings, redfish, seafood extender).

Closer scrutiny of the data shows that smoked cod, whiting (unspecified) and shark accounted for 13.3%, 12.7% and 8% respectively of all responses referring to 'popular/customers want/prefer it'. Orange roughy was most frequently cited in association with the 'boneless/skinless' reason (26% of responses).

When considering a range of eighteen factors influencing their choice of fish and seafood suppliers, retailers generally gave most emphasis to a supplier who is “honest and fair in doing business” (Figure 3.6.2). Other highly ranked factors included prompt attention to orders, reliable delivery, guarantee of correct nomenclature, good reputation for quality and good temperature control. However, when retailers rated their degree of satisfaction with their current main supplier against the same factors, the top ranked attribute “honest and fair in doing business” slipped to fifth average ranking, with suppliers generally being most highly commended for “provides clear documentation” (Figure 3.6.3).

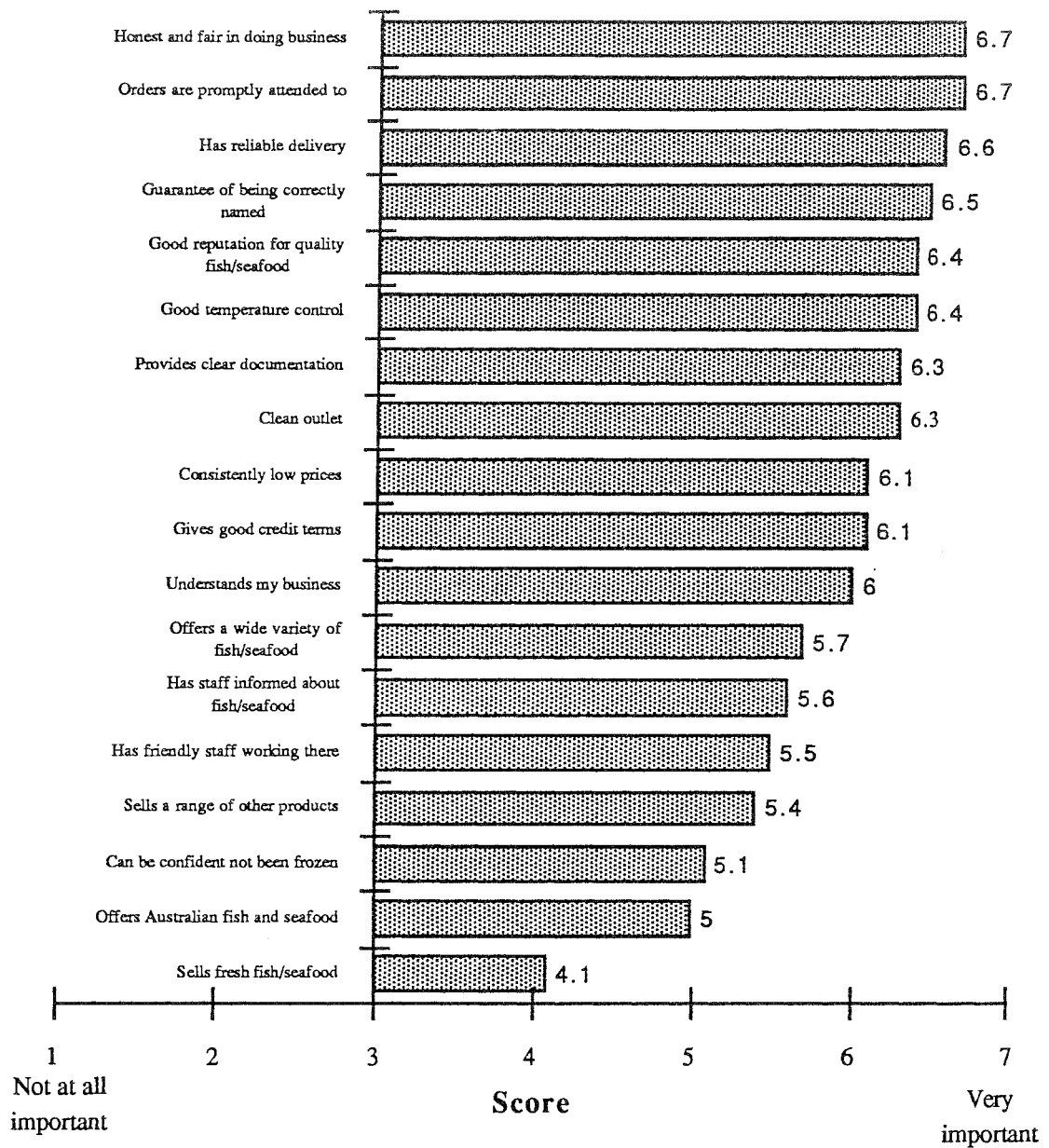
Necessarily, a slightly different set of factors was devised to assess retailer’s perceptions of what customers look for in a store which sells fresh or frozen fish or seafood. These are shown in Figure 3.6.4, which indicates that retailers generally believe that customers place great emphasis on cleanliness and friendliness when selecting a retail fish outlet.

Figure 3.6.1: Retailers' Reasons for Purchase of Main Finfish



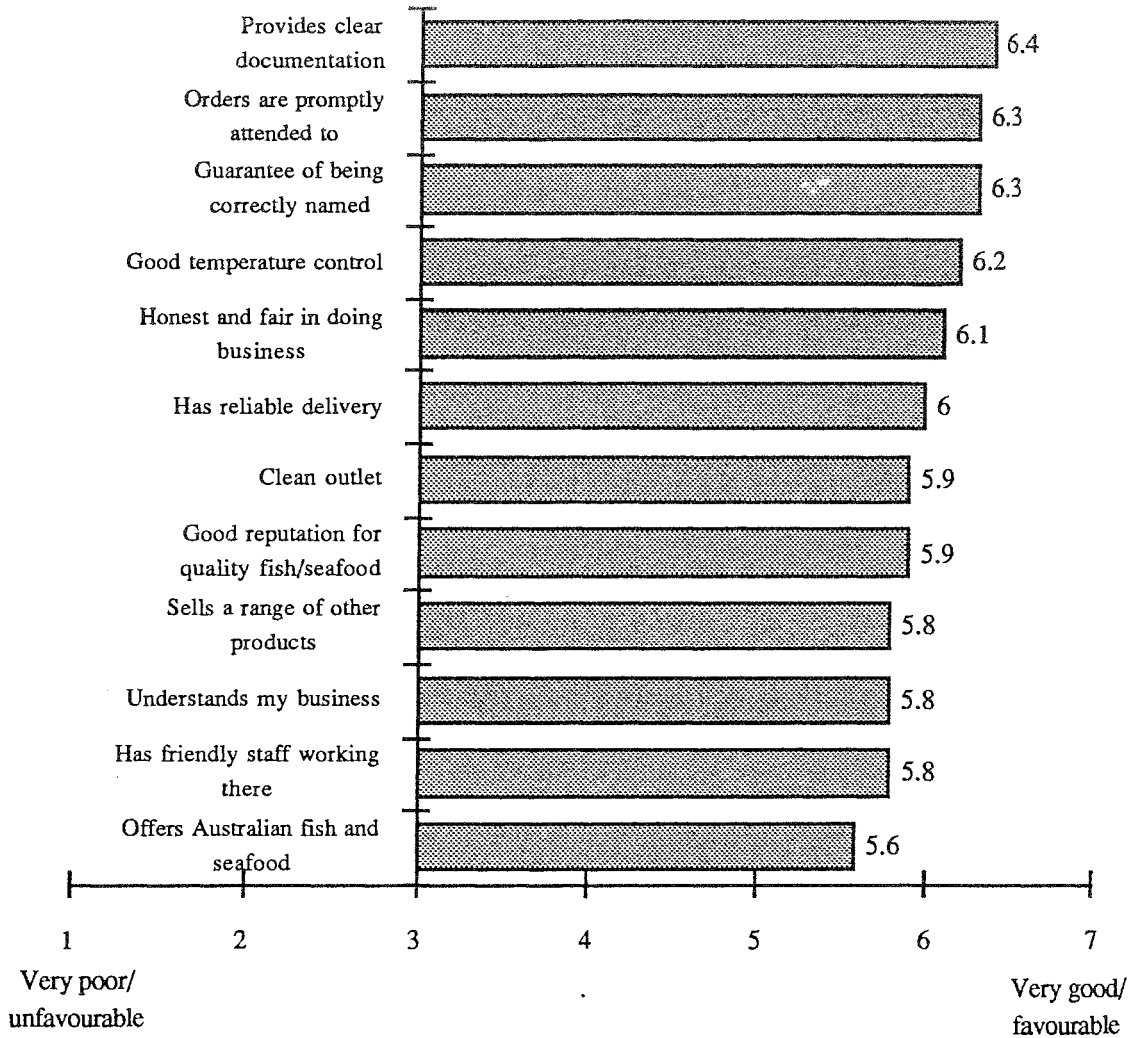
(see Question 9b, Appendix I).

Figure 3.6.2: Important Factors when Choosing Retail Supplier: Averaged Factor Rating



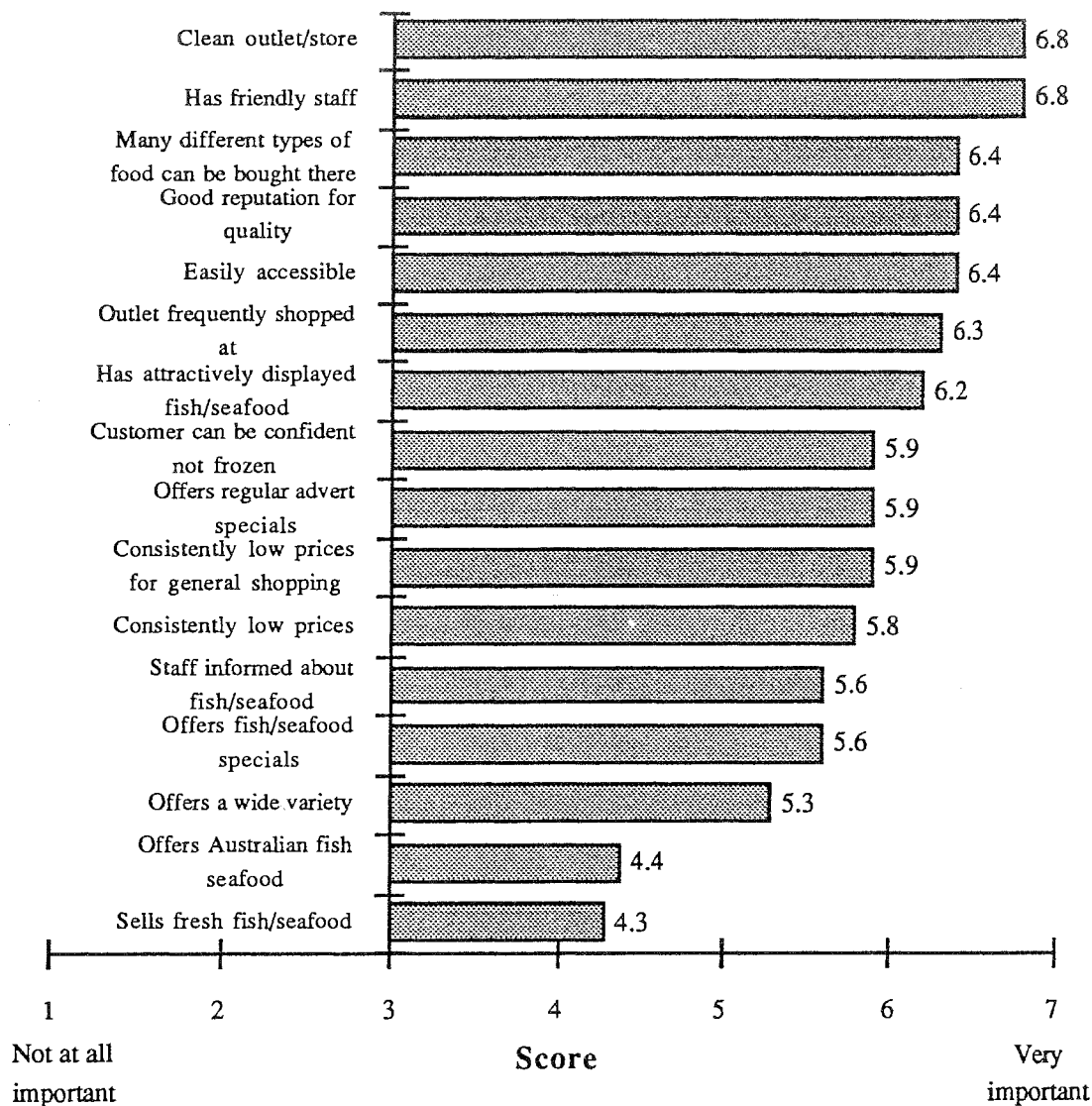
57 respondents for May 1991 and September 1991 surveys (see Question 10a, Appendix I).

Figure 3.6.3: Rating of Main Wholesale Supplier:
Averaged Rating



57 respondents for May 1991 and September 1991 surveys (see Question 10b, Appendix I).

Figure 3.6.4: Factors of Perceived Importance to Customers: Average Factor Rating



57 respondents for May 1991 and September 1991 surveys (see Question 11, Appendix I).

3.7 Species with Potential for Increased Usage

Retailers were questioned about a range of eleven species to gather their views on the potential which these species held for increased usage in the market (Question 12a, Appendix I). As shown in Figure 3.7.1, the most frequently cited response on species' potential was "none", with farm barramundi, rainbow trout, squid, farm prawns and oysters following. Farmed species/types were said to hold far greater potential for increased sales than wild species (the last four in Figure 3.7.1).

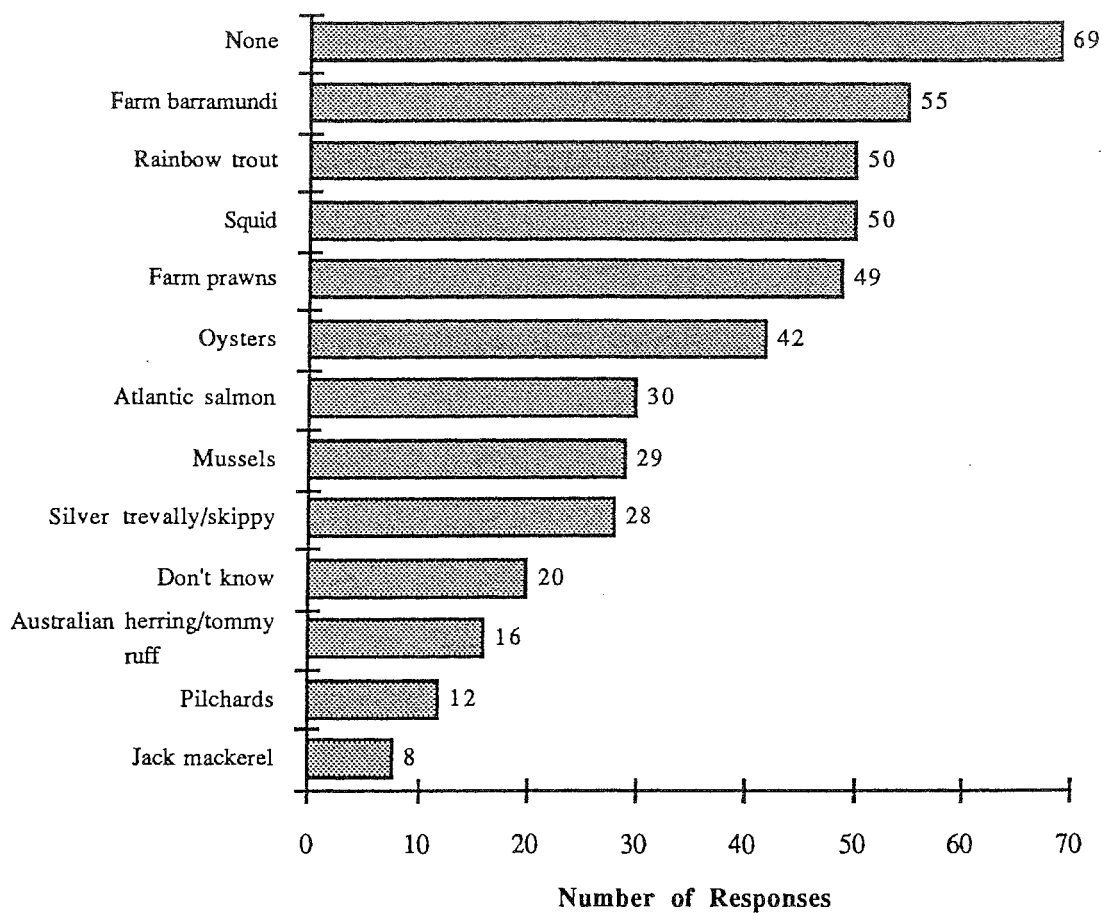
A lower-than-average number of responses on 'none' came from supermarket outlets (99.9% confidence limits), and an above average number from food store outlets (95% confidence limits). An above average number of responses favouring barramundi came from Brisbane retailers (95% confidence limits).

Supermarkets in general were positive about the potential of under-utilised species, being responsible for an above average number of responses on the potential of rainbow trout, squid, farm prawns, Atlantic salmon (all at 99% confidence limits), and pilchards and silver trevally/skipper (both at 95% confidence limits). Sydney retailers fell below average in their responses on silver trevally/skipper (99% confidence limits) and Jack mackerel (95% confidence limits), while Melbourne retailers were above average in their support for pilchards.

On closer questioning about the basis for their comments on the potential of the eleven species or types, four reasons alone accounted for over 50% of all responses to this question. The most frequently cited reason was "popular fish/in demand" (Figure 3.7.2). The reason "popular fish/in demand" was most frequently associated with squid. In fact five species (squid, farm prawns, rainbow trout, oysters and farm barramundi) accounted for 69% of "popular fish/in demand" responses.

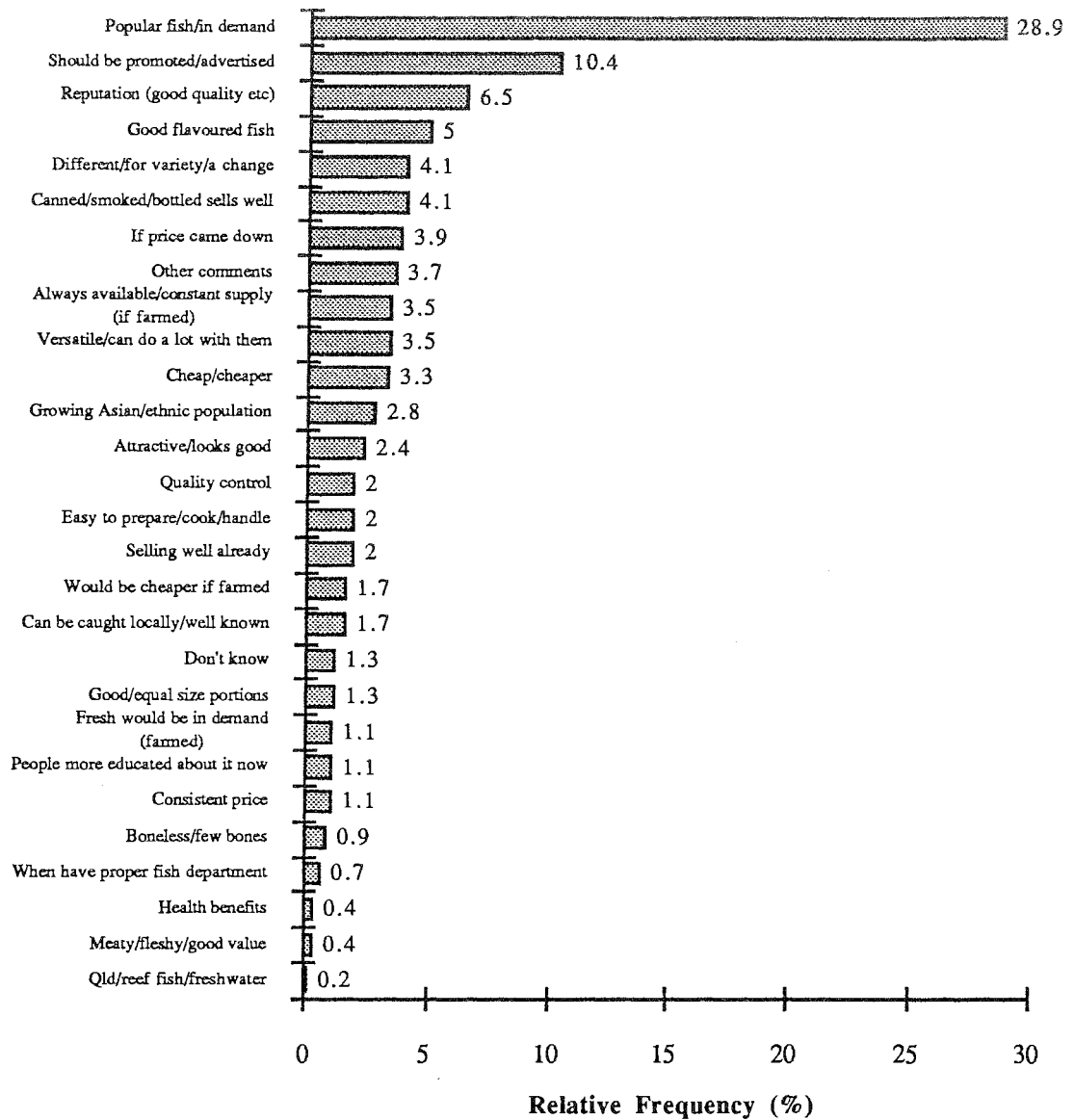
Almost half the responses drawn on “reputation (good quality, etc)” related to farm barramundi alone. Similarly, about three quarters of comments on “growing Asian/ethnic population” related to squid. Of interest is the extremely low rating given to “health benefits” as a reason.

Figure 3.7.1: Retailers’ Views on the Potential for Increased Usage of Under-utilised Species



202 respondents offered 458 responses for May 1991 and September 1991 surveys (see Question 12a, Appendix I).

Figure 3.7.2: Retailers' Reasons for the Potential of Under-utilised Species



461 responses drawn to 28 'reasons' for potential of 11 species, across May 1991 and September 1991 surveys (see Question 12b, Appendix I).

3.8 Retailer and Industry Initiatives to Sell More Fish

Section 3.4 examined the perceived problems with selling fresh, chilled and/or frozen/fish and seafood and underlying reasons for this; this Section examines the views held by retailers about what specific actions could be taken by their store and/or by the fishing industry which could encourage greater sales of fish through retail outlets (Question 13, Appendix I).

As regards actions which could be taken by retailers, the favoured actions were:

- freezer size/increase freezer space/refrigerator
- none
- space/increase store size.

A lower than average number of Melbourne retail outlets saw the need for an increase in freezer or refrigerator space (95% confidence limits); an above average number of them saw 'none' as the action needed (95% confidence limits).

Retailer initiatives such as raising awareness of how customers might prepare fish, or building awareness of health benefits gained from eating fish ranked quite low (Figure 3.8.1).

A higher-than-average number of supermarket outlets gave 'more advertising/promotions' as a required action (99.9% confidence limits), and in keeping with results in previous sections, an above average number of Sydney outlets saw the issue of stocking and selling more fish as a 'head office decision' (99.9% confidence limits).

Fishing industry initiatives suggested by retailers were quite different, the two most frequently cited being:

- more advertising/promotion/information
- nothing.

(These two suggested actions comprised over 70% of responses; Figure 3.8.2.)

Brisbane-based outlets stood out in their call to the fishing industry to address the following issues:

- packaging (99% confidence limits)
- less controls/destructure the industry (99% confidence limits)
- stop the racket/monopoly (95% confidence limits).

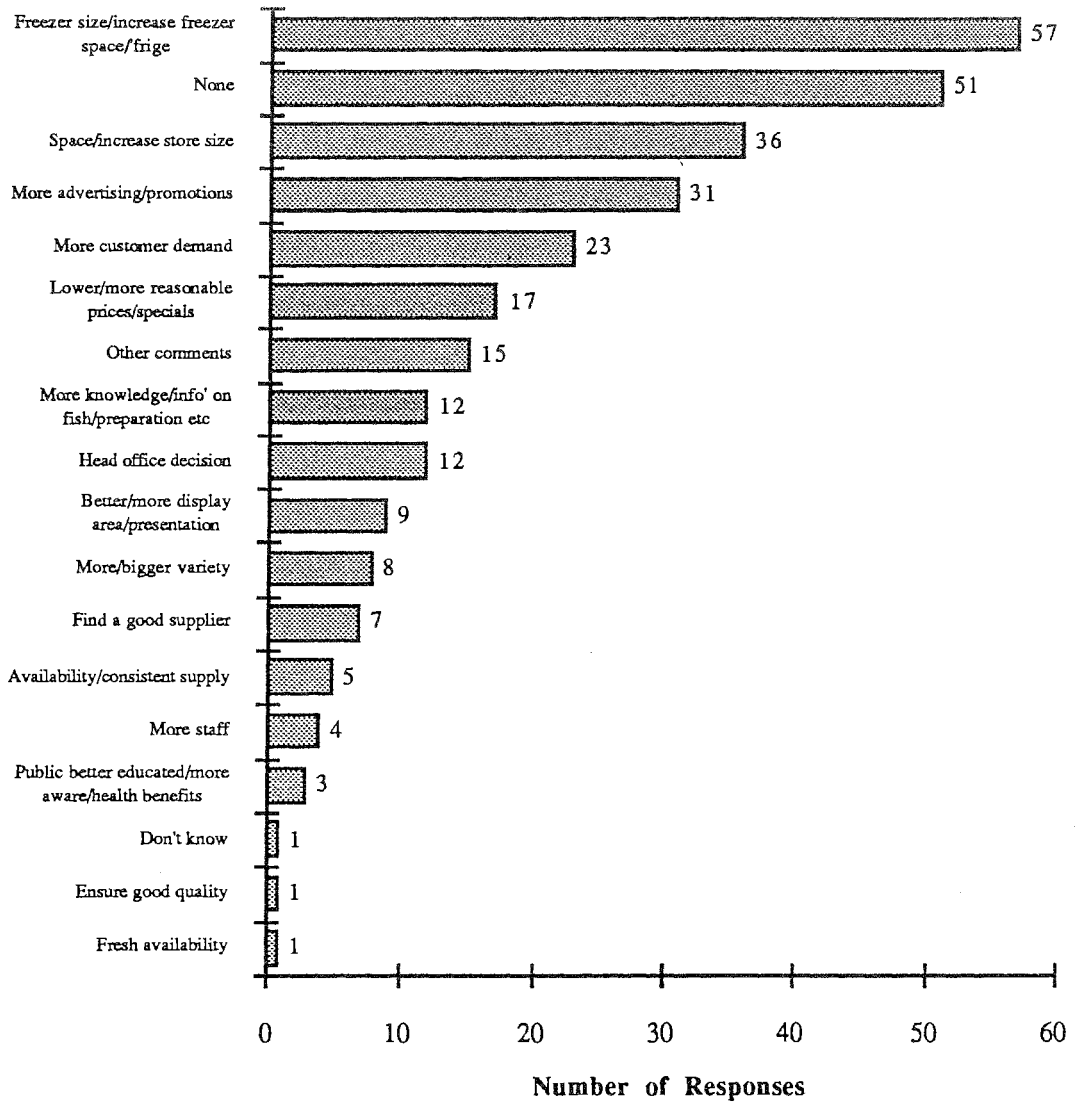
As further elaboration on this area of initiatives to enhance sales, retailers were then challenged with a range of suggested actions developed in a prior phase of the study (the Industry Leader Interviews phase). Retailers were asked to give their opinions on the impact which each of these actions would have on sales enhancement, if implemented (Question 14, Appendix I).

Retailers saw that the greatest impact from industry action to enhance sales would be achieved through more advertising (Figure 3.8.3). The general view that a better supply of ready to cook meals would also have a considerable impact on sales fits in with earlier findings that fillets are the most frequently purchased form of fish sold in retail outlets.

Optimism amongst retailers that sales of fish and seafood would increase over the next five years was high; over half of respondents held this view (Figure 3.8.4). An above average number of supermarkets (by comparison with other store types) held the opinion that fish/seafood sales would increase. However the frequency of views of Sydney and Melbourne retailers that fish/seafood sales would “decrease” and “remain the same” (respectively) were above average (all at 95% confidence limits).

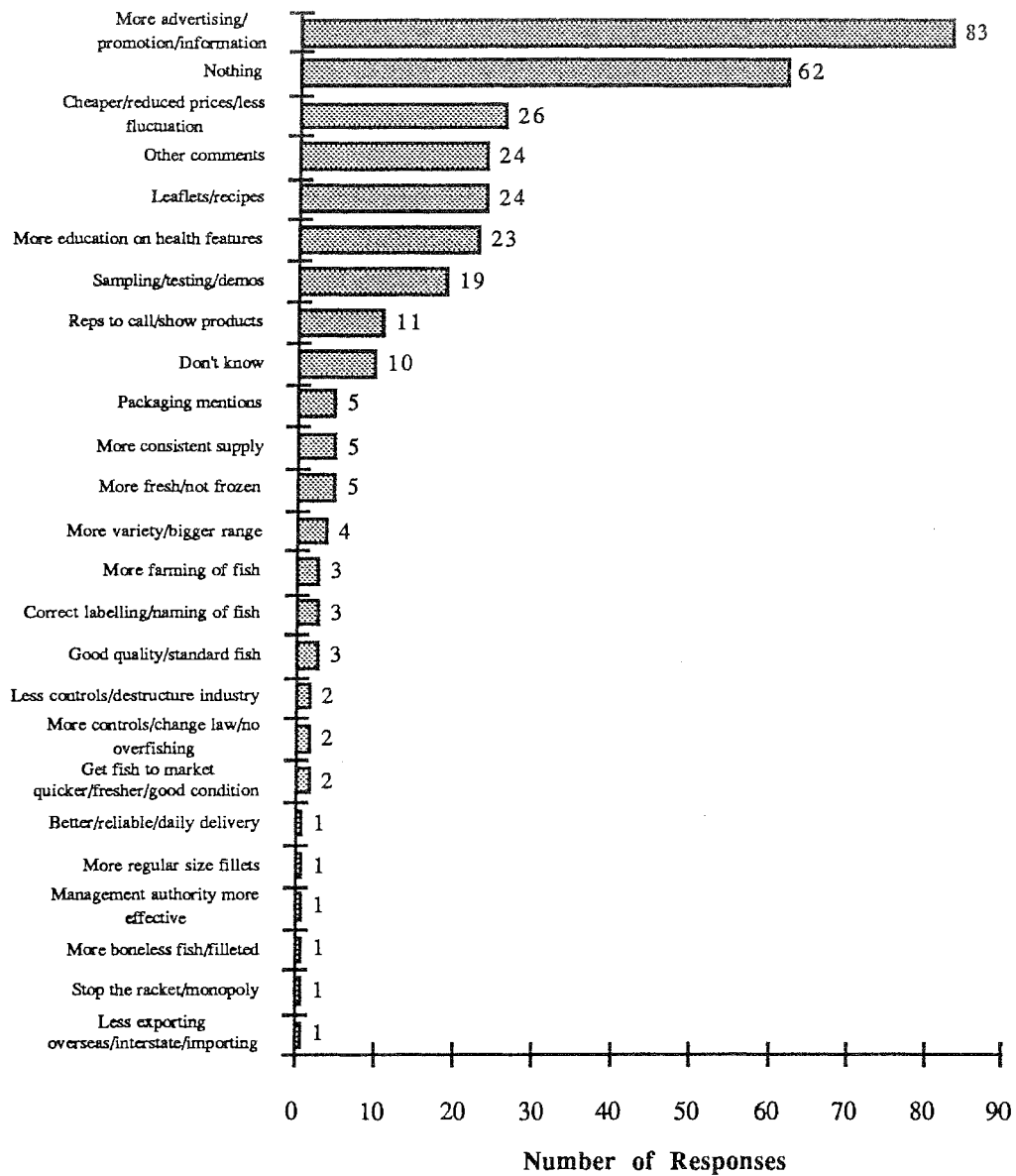
By far the most frequently cited reason for opinions on the prospects for fish/seafood sales over the next five years was that people are becoming more health conscious (Figure 3.8.5). In fact, increased health consciousness probably underlies the top three most frequently cited specific reasons. The database provides a more detailed breakdown of those reasons associated with increasing or decreasing fish sales, or for them remaining the same.

Figure 3.8.1: Actions Needed to be Taken by Retail Store to Stock/Sell More Fish



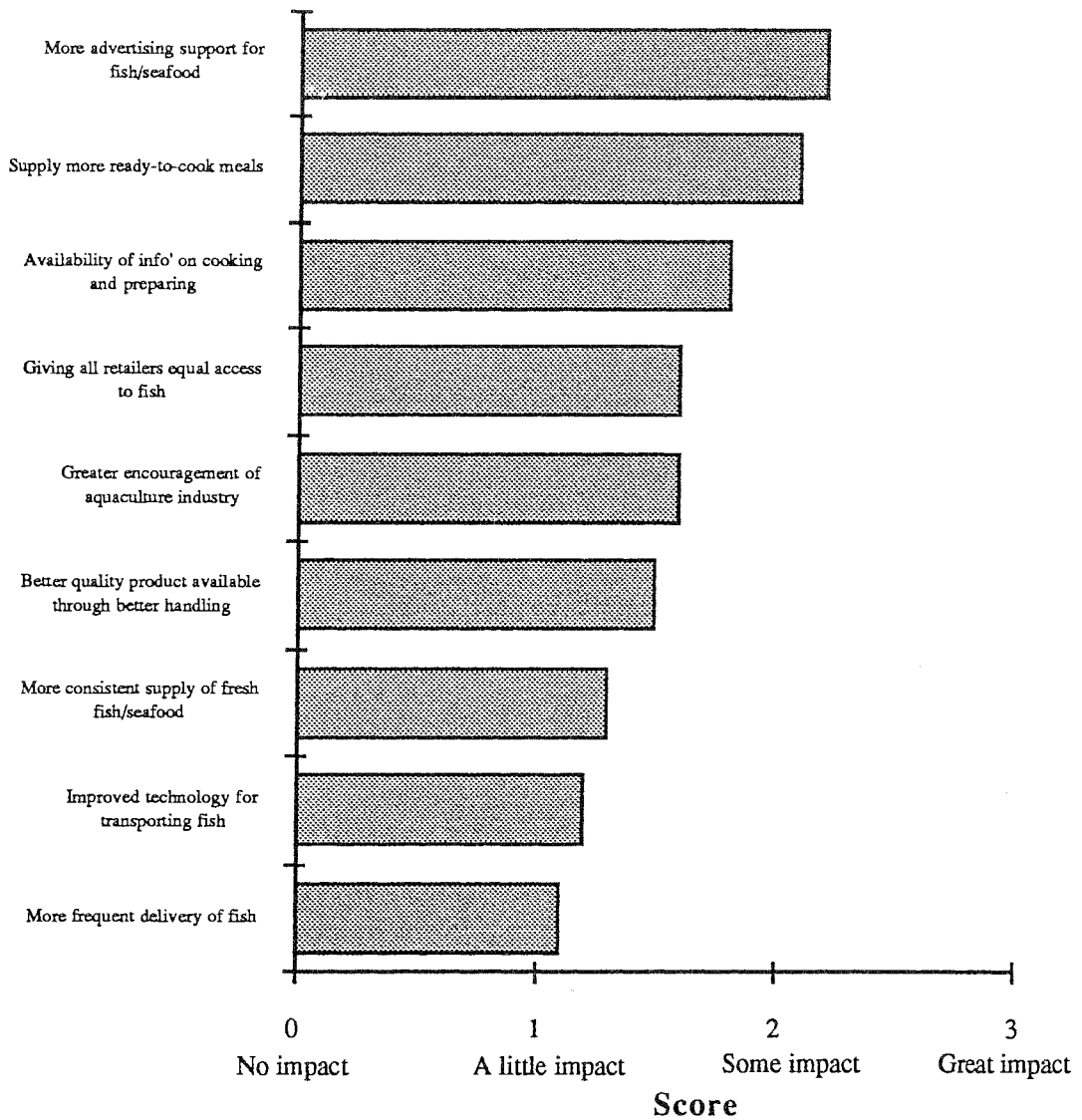
202 respondents offered 293 responses for May 1991 and September 1991 surveys (see Question 13a, Appendix I).

Figure 3.8.2: Possible Actions by Fishing Industry to Increase Sales



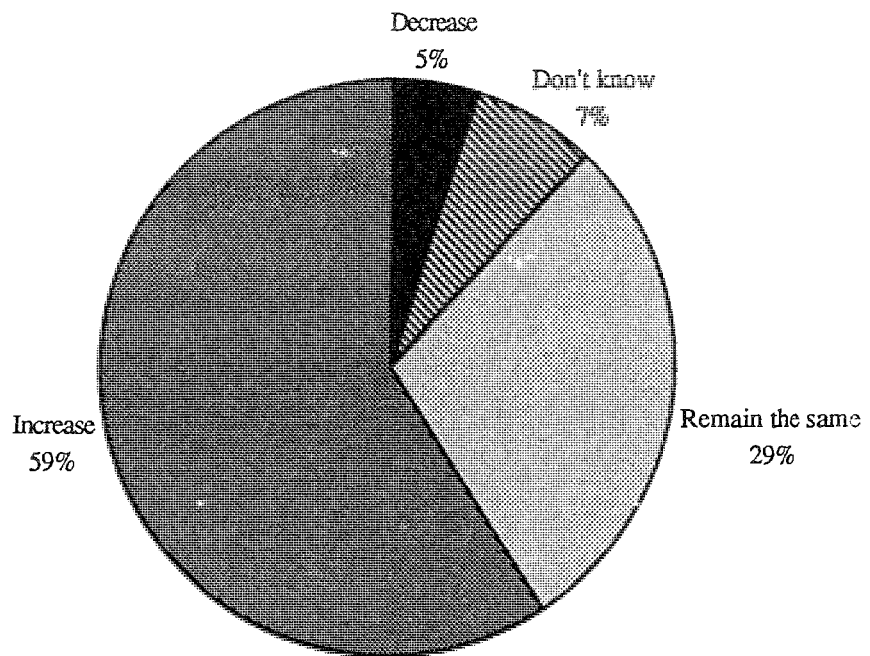
202 respondents offered 322 responses for May 1991 and September 1991 surveys (see Question 13b, Appendix I).

Figure 3.8.3: Retailers' Views on Impact of Possible Actions in Increasing Sales of Fish/Seafood: Averaged Rating



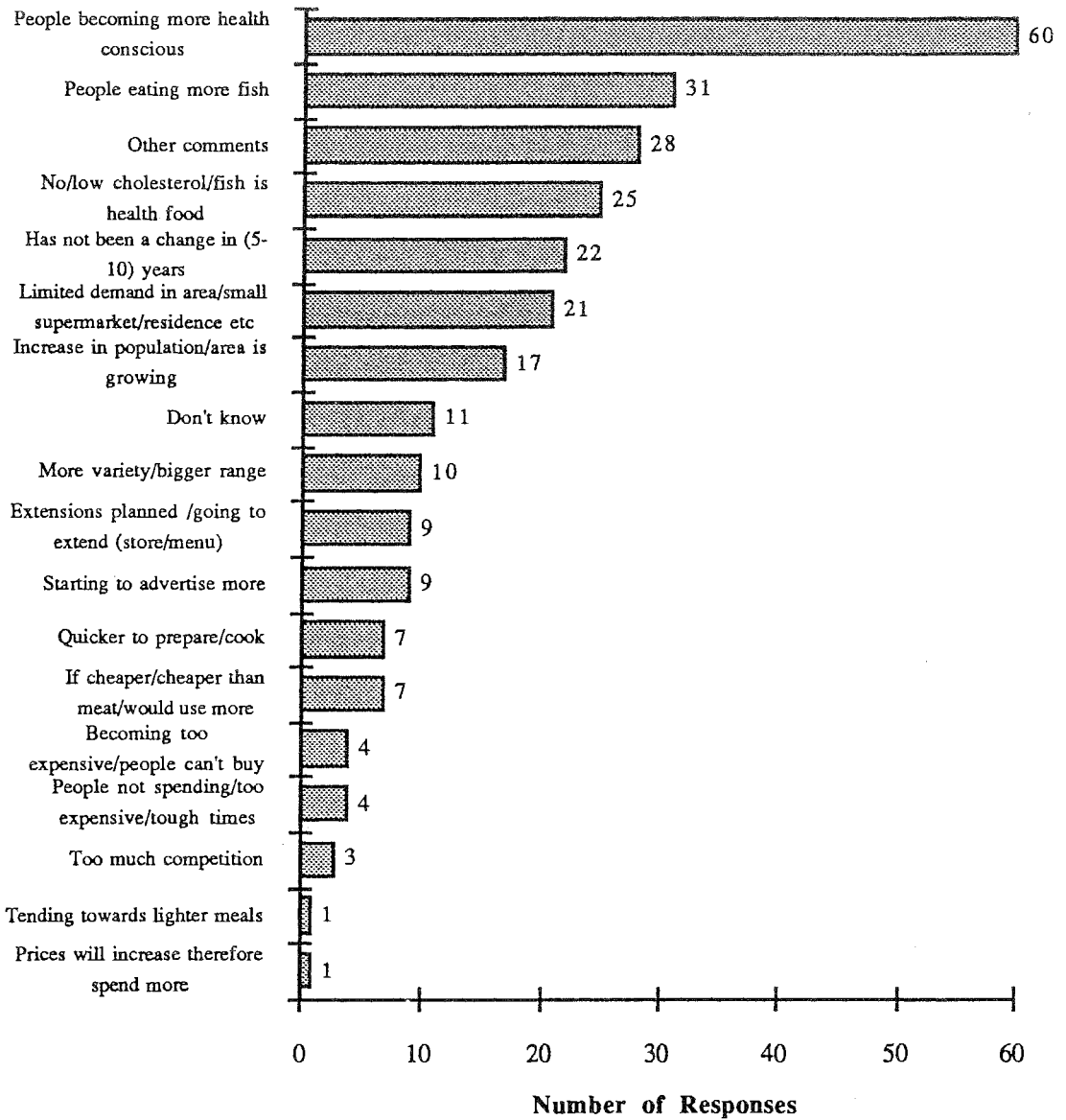
202 respondents offered 202 responses on each of 9 possible actions for May 1991 and September 1991 surveys (see Question 14, Appendix I).

Figure 3.8.4: Retailers' Opinion on Sales of Fish/Seafood Over the Next Five Years



202 respondents offered 202 responses for May 1991 and September 1991 surveys (see Question 15a, Appendix I).

Figure 3.8.5: Reasons for Opinion of Fish Sales Over the Next Five Years



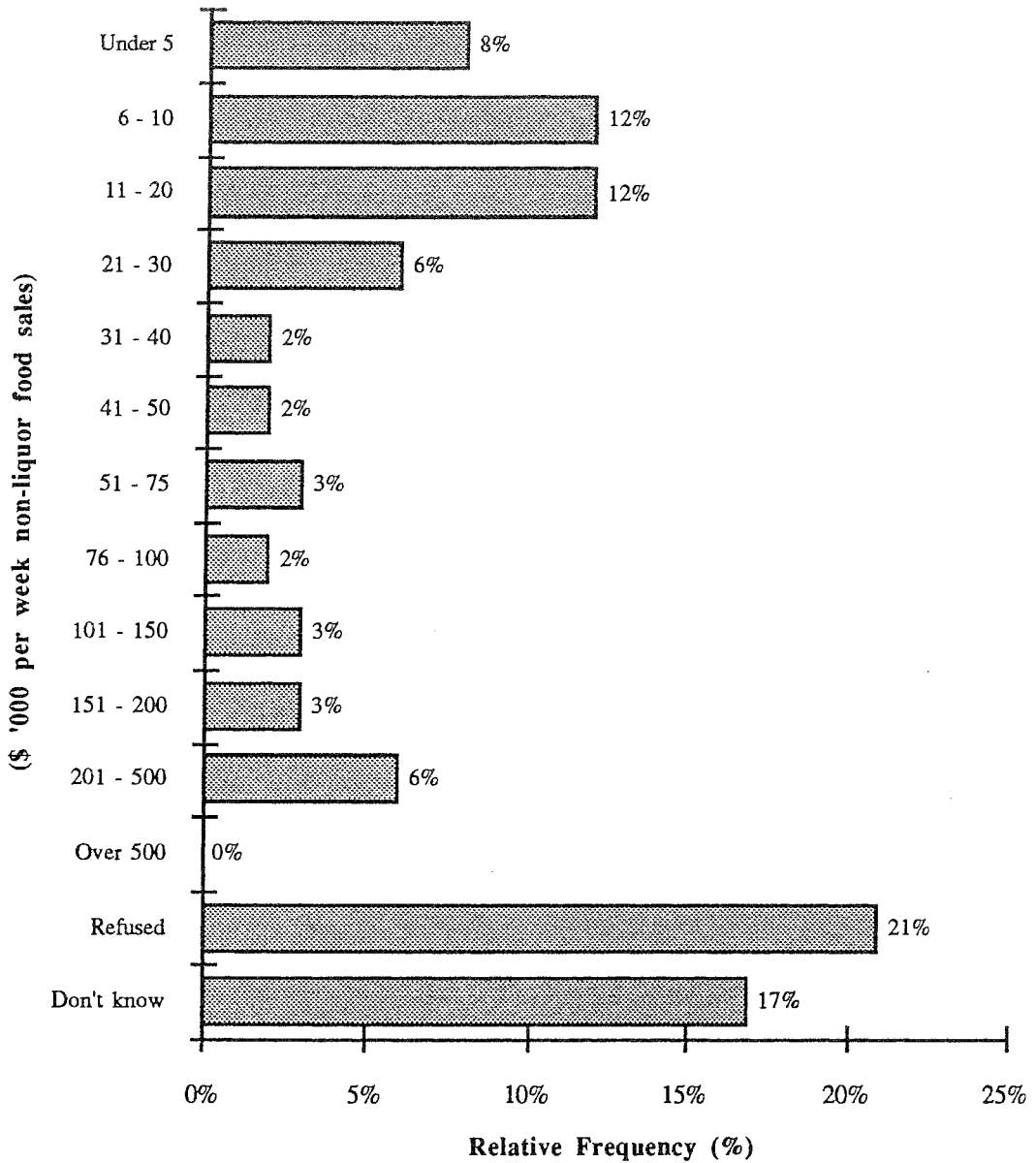
202 respondents offered 270 responses for May 1991 and September 1991 surveys (see Question 15b, Appendix I).

3.9 Store Details - Sales and Profits from Fish/Seafood

Stores were further characterised according to their weekly non liquor turnover in food sales (Questions 16a, b, Appendix I). However, ignoring those respondents who “refused” or “did not know” their turnover, the data in Figure 3.9.1 suggest a bimodal sample distribution of stores’ food sales, ie a peak at modest turnover (\$6,000 - \$20,000 per week) and at high turnover (\$201,000 - \$500,000 per week). Most stores reported that fish/seafood sales contributed between 1% - 10% of average weekly non liquor sales (Figure 3.9.2) and the most frequent range of weekly sales due to fish/seafood was \$201 - \$500, against an average weekly fish/seafood sales figure of \$3,507 (Figure 3.9.3). Over one third of retailers interviewed reported that sales from fresh/chilled or frozen fish or seafood made zero contribution to total fish/seafood sales (Figure 3.9.4), with the bulk of respondents either not knowing or suggesting a figure in the range 1% - 10%.

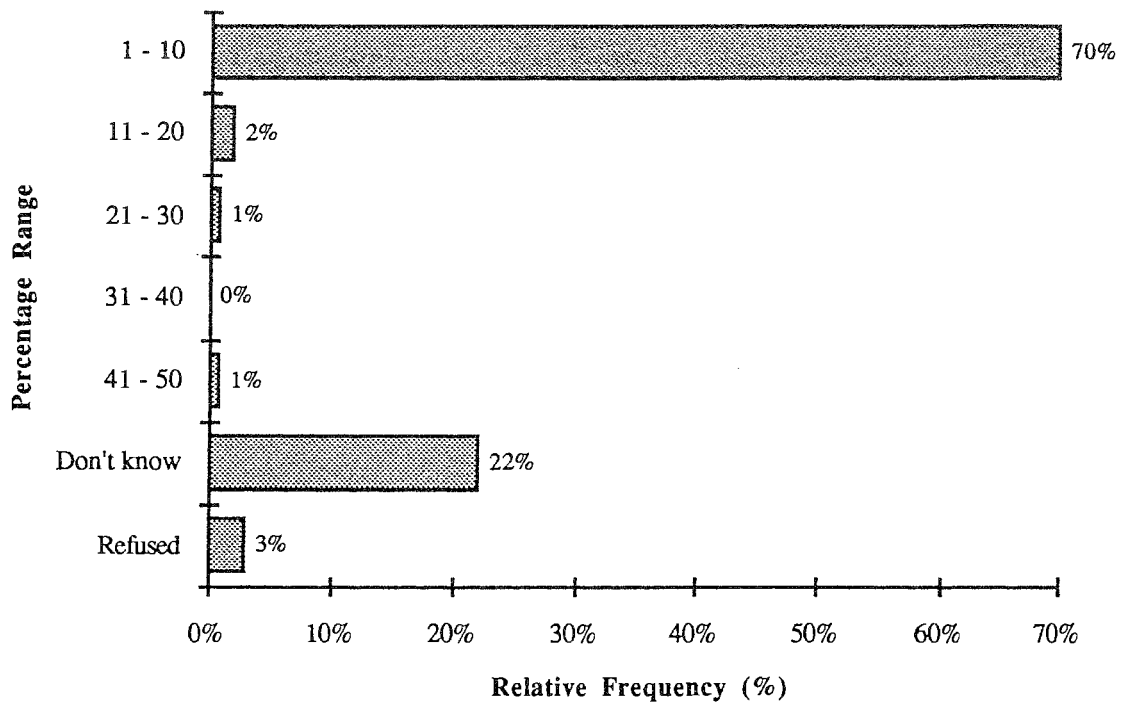
The value of weekly retail sales specifically from fresh/chilled/frozen fish and seafood was most commonly either under \$50, or in the range \$201 - \$500. Average weekly sales for fresh/chilled/frozen fish and seafood were \$494.10 (Figure 3.9.5). Far more profit contribution was seen in canned or bottled fish/seafood than in unpackaged fresh or frozen fish (Figure 3.9.6).

Figure 3.9.1: Average Weekly Non-Liquor Turnover in Food Sales (Rounded to Nearest \$1,000)



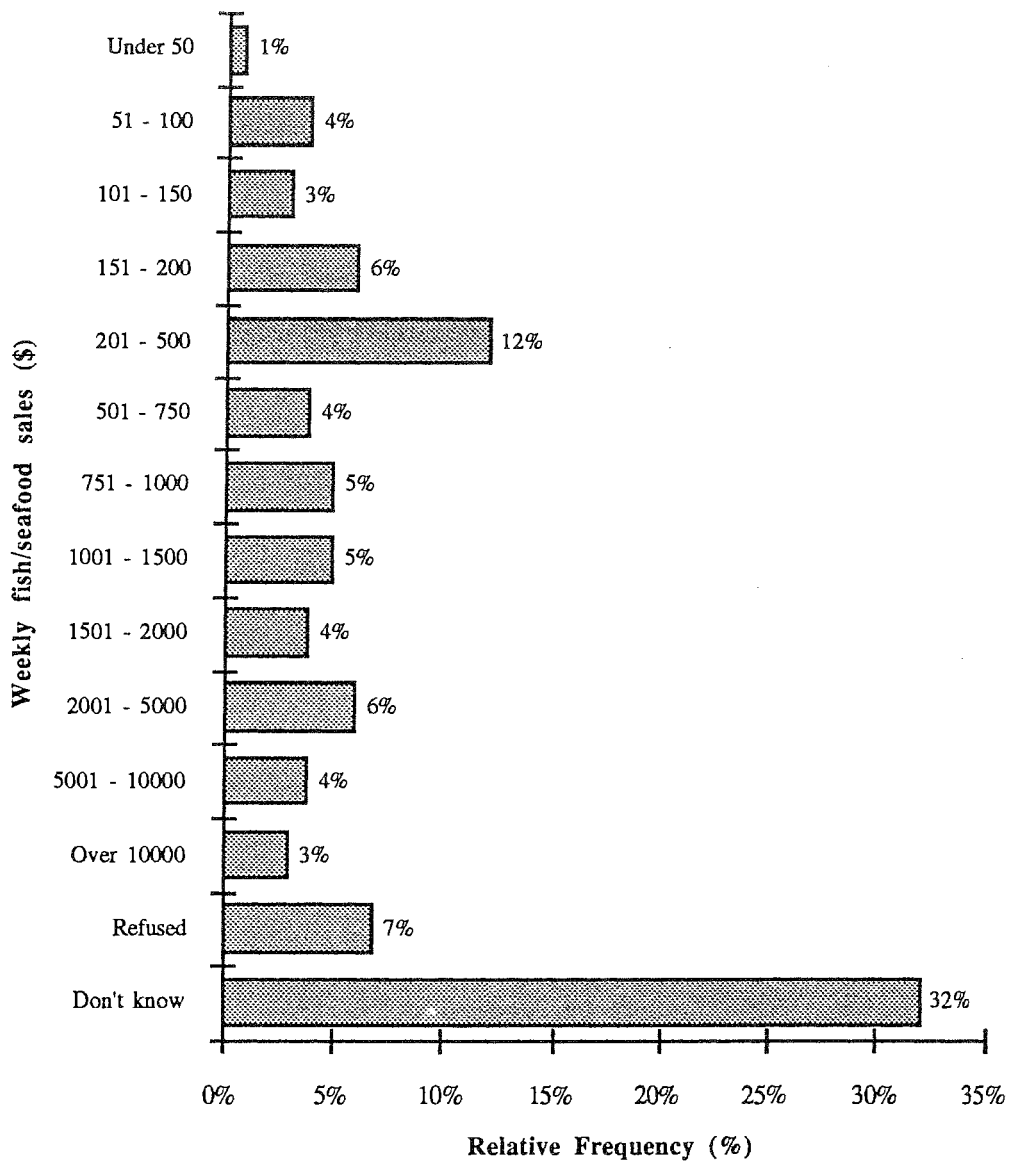
202 respondents for May 1991 and September 1991 surveys (see Question 16b, Appendix I).

Figure 3.9.2: Percentage of Average Weekly Non-Liquor Sales Due to all Fish/Seafood Products (including fresh, frozen, pre-packaged, canned and bottled products)



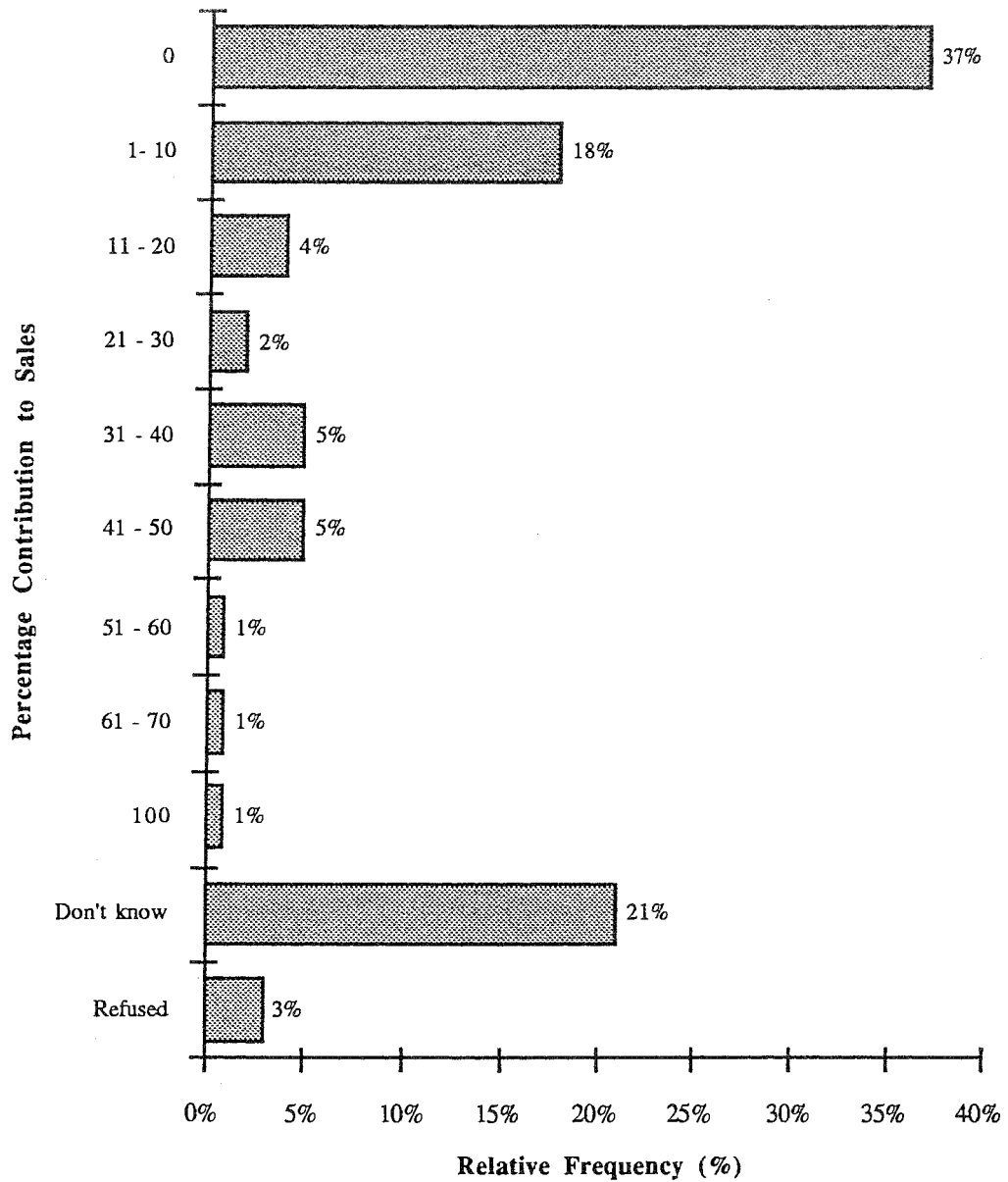
202 respondents for May 1991 and September 1991 surveys (see Question 17a, Appendix I).

Figure 3.9.3: Dollar Value of Average Weekly Sales Due to all Fish/Seafood Products (including fresh, frozen, prepackaged, canned and bottled)



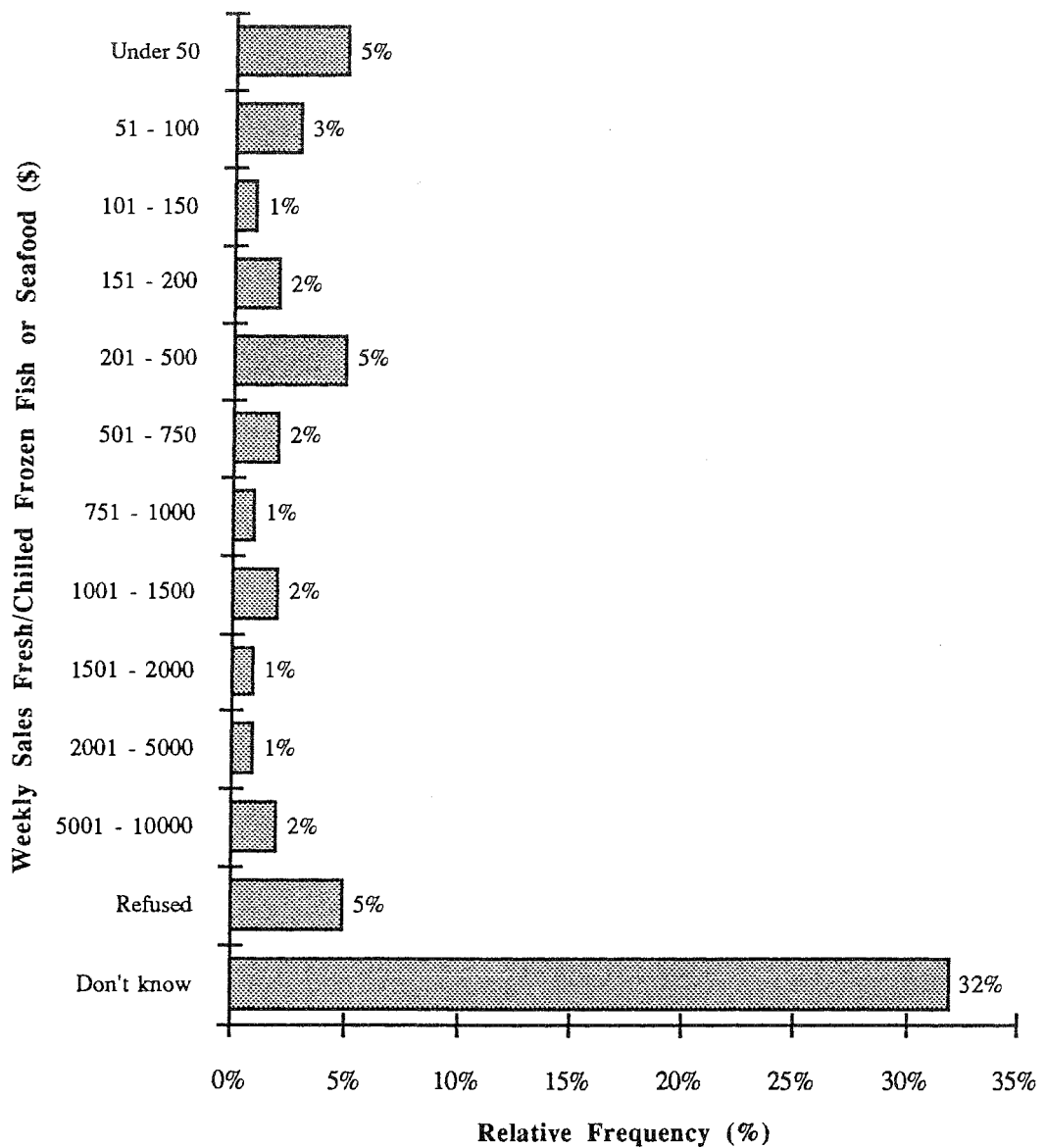
202 respondents for May 1991 and September 1991 surveys (see Question 17a, 'value', Appendix I)

Figure 3.9.4: Percentage of all Fish and Seafood Product Sales Due to Fresh/Chilled or Frozen Fish/Seafood



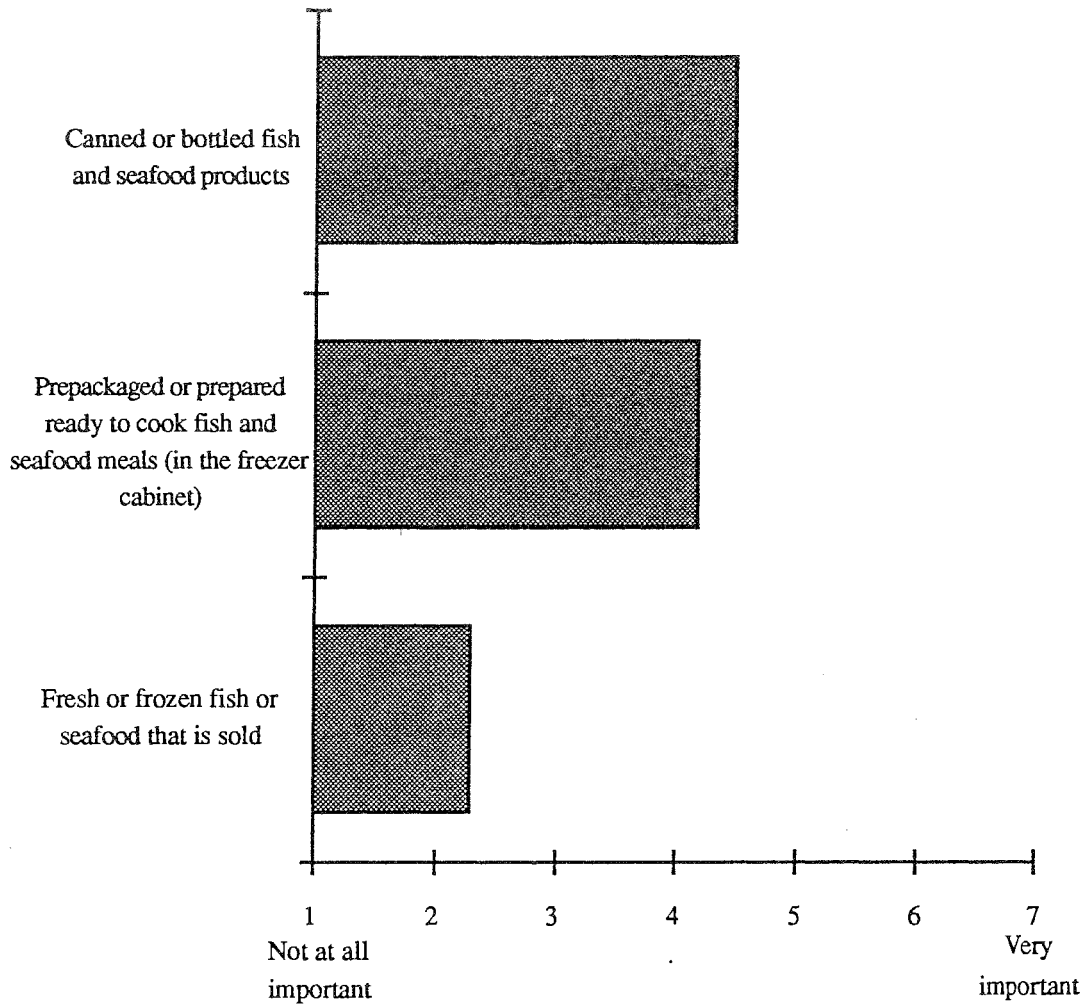
202 respondent for May 1991 and September 1991 surveys (see Question 17b, Appendix I).

Figure 3.9.5: Dollar Value of all Fish and Seafood Product Sales Attributable to Fresh/Chilled/Frozen Fish and Seafood



202 respondents for May 1991 and September 1991 surveys (see Question 17b, 'Value', Appendix I).

Figure 3.9.6: Importance of Various Fish and Seafood Products to Profits: Average Importance Rating



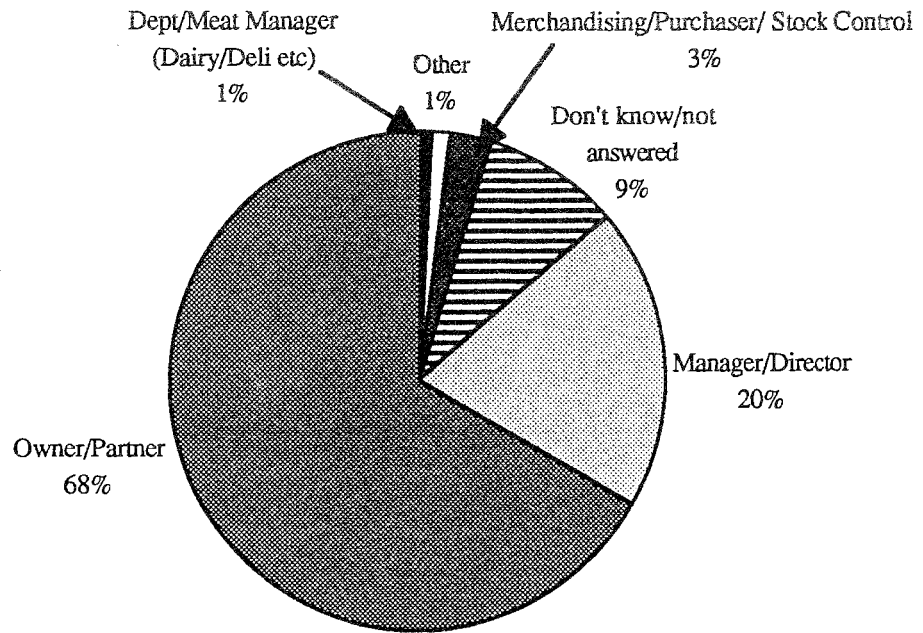
4. Detailed Findings - Fishmonger Outlets

4.1 Fishmonger Respondents - Store Type, Position and Purchasing Responsibility

The 200 respondents for the fishmonger study were drawn from Sydney, Melbourne, Brisbane, Adelaide, Perth and Hobart in proportion to national demographics for both the May 1991 and September 1991 surveys. Stores included in the study were categorised as either "retail fish markets" or "fishmonger/fresh fish outlets". To simplify this discussion, all outlets surveyed in this segment of the study are referred to as "fishmongers". Their relative proportions in the various geographic locations did vary. In Sydney, for example, the frequency of retail fish markets in the study sample relative to fishmongers/fresh fish outlets was above average (>99.9% confidence limits).

Almost 90% of fishmonger respondents held positions of major responsibility in the businesses sampled, ie as managing director, owner/partner, or manager of the relevant store section (Figure 4.1.1). Over 80% of respondents were responsible for purchasing decisions made at that outlet only. Of the remainder, only one respondent had responsibility for six or more outlets, the rest making purchasing decisions for either two or three outlets.

Figure 4.1.1: Position of Fishmonger Respondent



Total of 102% due to rounding-off

200 respondents offered responses across the May 1991 and September 1991 surveys (see Question 1a, Appendix II).

4.2 Type of Store - Initial Data

The commercial situation of fishmongers regarding sales of fish for in-home consumption was viewed by market researchers as straightforward by comparison with retail outlets, where factors such as the availability of a liquor licence may interact with fish and seafood sales. Fishmongers were asked (Question 1e, Appendix II) whether their store formed part of a buying group, to which 85% answered 'no'. Further specific data on the weekly turnover of stores and number of full time and part time employees were also gathered for the survey database.

4.3 Fishmongers' Perceptions of Protein Sources

Fishmongers' perceptions on the relative merits of each protein source were not gathered since they are only involved in the sale of fish and seafood.

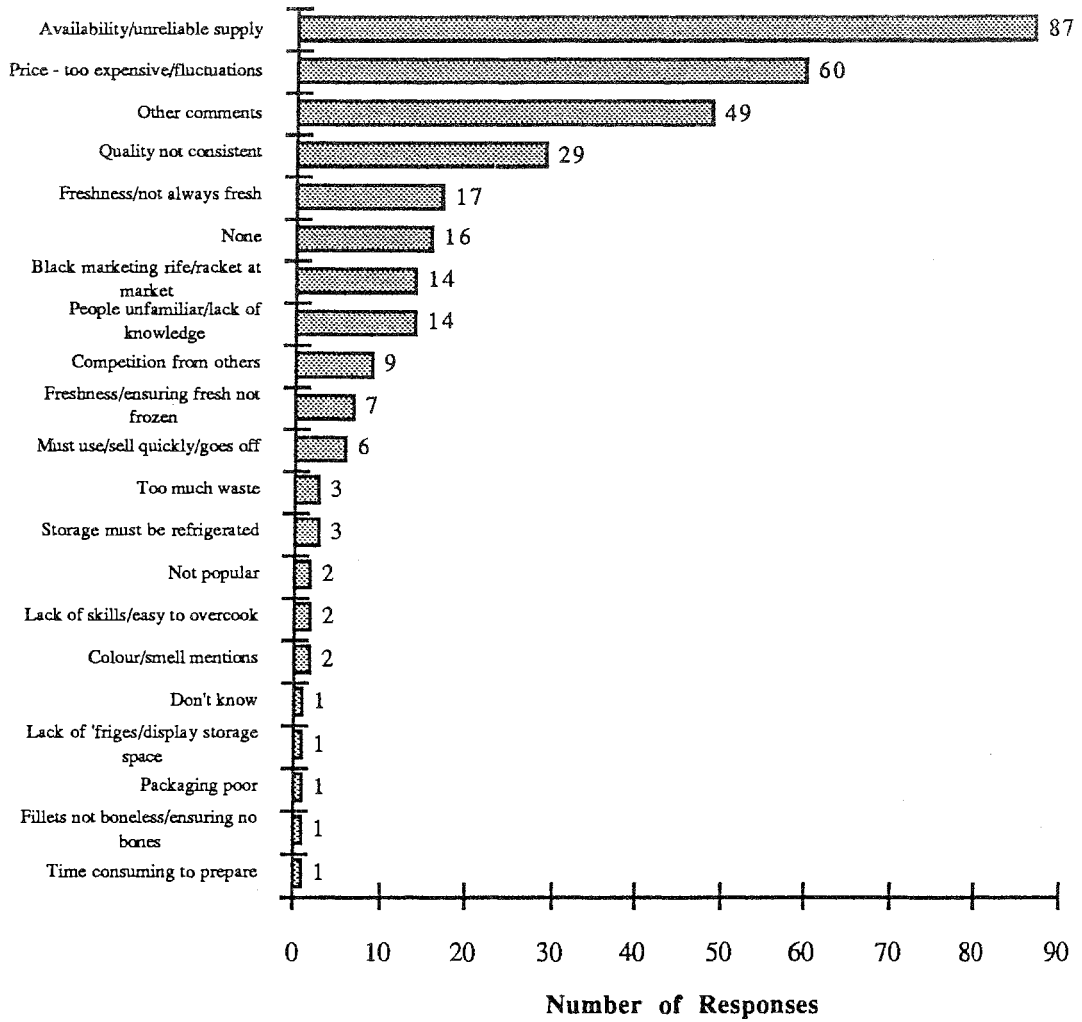
4.4 Fish and Seafood Sales - Problems

Availability of stock and unreliability of supply was seen by fishmongers as the single leading problem in selling fish and seafood (Figure 4.4.1). Price was regarded as the second most important factor, either from the standpoint that fish/seafood is too expensive or that price fluctuations introduce difficulties in supply and selling. Quality issues (variable quality, freshness of produce) were the next most cited issues. In contrast, customer convenience issues such as suitability of packaging, presence of bones in fish and the time involved in preparation of purchased items for meals were rarely regarded as problems for supply and sales.

A prior phase of this study (the Industry Leader Interviews) had established a number of problems encountered by retailers of fresh and frozen fish and seafood in selling these goods. When fishmongers were asked to comment on the relative significance of these as problems, a slightly different emphasis emerged. Issues of supply, availability and price still figured prominently as major problems (Figure 4.4.2). However, two directly customer-related issues were given far greater significance than when respondents were simply asked to raise their own issues, ie:

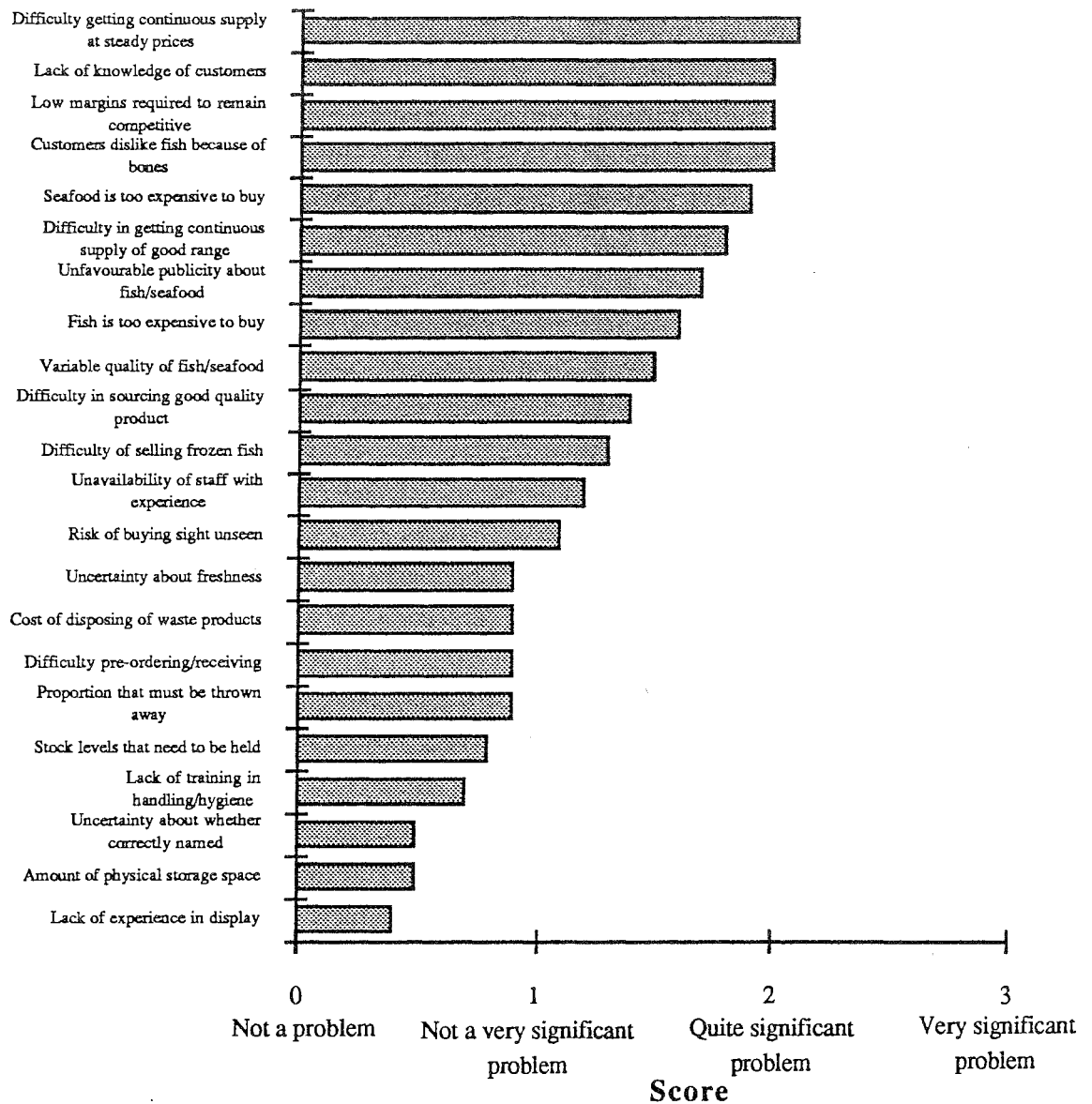
- that there is a lack of knowledge on the part of customers in preparing and cooking seafood products
- that customers dislike buying fish because of the bones.

Figure 4.4.1: Fishmongers' Main Problems in Supplying/Selling Fish/Seafood



202 respondents offered 325 responses for May 1991 and September 1991 surveys (see Question 2, Appendix II).

Figure 4.4.2: Fishmongers' Averaged Responses to a Range of Suggested Problems in Selling Fish and Seafood



200 respondents offered 200 responses for May 1991 and September 1991 surveys (see Question 3, Appendix II).

4.5 Fish and Seafood Sales - Types, Format, Volumes, Origin

Respondents were asked to cite the main types of fish (up to a maximum of six) and seafood (up to a maximum of four types) sold by their store in the month prior to the survey (Question 4a, Appendix II). All the responses to this question were aggregated across the 200 fishmongers sampled and those species or types of fish and seafood sold by the highest number of retailers were ranked so as to produce Tables 4.5.1 and 4.5.3. Hence, orange roughy, sold by 122 of the 200 fishmongers in the month prior to the survey was the most common main type of fish sold. Prawns, sold by 185 of the fishmongers, was the most common type of seafood sold.

The eight leading fish species ranked in Table 4.5.1 represent over 50% of all the species/types cited by respondents.

The database reveals interesting differences between location over the popularity of finfish (Table 4.5.2). For example, the popularity of sea bream, silver bream/yellowfin, flathead, leatherjacket, ocean/coral perch, redfish and snapper was higher than average in Sydney by comparison with other cities. Melbourne's sales of blue grenadier, kingclip, orange roughy and shark were above average. Other cities also had their preferences or aversions. Some significant differences were recorded for Brisbane (eg where crabs were popular), but the small sample size in Adelaide, Perth and Hobart made statistically significant differences at these locations unlikely.

Table 4.5.1: Eight Main Types of Finfish which Fishmongers sold in the Preceding Month, Preferred Form and Presumed Origin

Type of Finfish	Rank	Number of fishmongers selling each species ⁽¹⁾	Preferred forms bought ⁽²⁾ (of fishmongers selling the species what proportion sold in form below)	Origin - weighted average estimate (% local/Australian)
Orange roughy	1	122 ⁽³⁾	Whole (63%)	88.0%
Flathead	2	92	Whole (89%)	98.9%
Mullet (unspecified)	3	80	Whole (80%)	98.8%
Snapper ⁽⁴⁾	4	76	Whole (92%)	70.8%
Trevally ⁽⁵⁾	5	65	Whole (87%)	100%
Shark	6	63	Whole (60%)	96.6%
Bream (unspecified) ⁽⁶⁾	7	54	Whole (81%)	91.8%
Whiting (unspecified) ⁽⁷⁾	8	45	Whole (77%)	97.9%

(1) 200 Respondents offered 1130 responses for May 1991 and September 1991 surveys, for a total of 80 fresh finfish types or products

(2) Alternative forms considered were: live, whole, filleted, cutlet, headed and gutted, smoked or in some other form

(3) Orange roughy is also known as sea perch in NSW. Perch (unspecified) was sold by 13 respondents (Sydney 7, Brisbane 2, Hobart 4)

(4) There were a further 11 responses for additional types of snapper

(5) The names trevally and warehou are commonly used interchangeably; there were five additional references to silver trevally and six to blue/silver warehou

(6) There were also 23 responses for sea bream (morwong), an above average number of these coming from Sydney, and 22 for silver/yellowfin bream (again an above average number from Sydney). Much of this unspecified bream is probably morwong.

(7) There were also 4 responses on King George whiting, 4 for sand whiting and 2 for school whiting.

Table 4.5.2: Leading Finfish Species/Types Sold⁽¹⁾ by Fishmongers, According to Location

Leading Finfish Species/Types	Number of fishmongers selling each main species, by city					
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
Orange roughy	29 (---)	48 (+++)	23	17	0	5
Flathead	46 (+++)	30 (+)	6 (---)	3	0	7
Mullet (unspecified)	25	2 (---)	25 (+++)	16	12	0
Snapper (unspecified)	37 (+++)	17	5 (--)	6	11	0
Trevally	6 (---)	46 (+++)	0 (---)	1	0	12
Shark	16	27 (+++)	6	2	5	7
Bream (unspecified)	23	8 (-)	18 (+++)	1	4	0
Whiting (unspecified)	4 (---)	5 (-)	19 (+++)	14	3	0

(+++), (++) , (+) denotes frequencies of responses for a species/type which are significantly greater than would be expected for that location (at >99.9%, 99% and 95% confidence limits, respectively)

(---), (--), (-) denotes frequencies of response for a species/type which are significantly lower than would be expected for that location (at >99.9%, 99% and 95% confidence limits respectively)

Absence of an '+' or '-' indicates that these values were not significantly different from the value expected statistically for that location across that row (1) to be read in conjunction with footnotes of Table 4.5.1

Table 4.5.3 - Eight Main Types of Seafood sold by Fishmongers in the Preceding Month, Preferred Form and Presumed Origin

Type of Seafood	Rank	Number of fishmongers selling each species	Preferred forms bought ⁽²⁾ (of fishmongers selling the species what proportion sold in form below)	Origin - weighted average estimate (% local/Australian)
Prawns ⁽³⁾	1	185	Whole (85%)	96.1%
Oysters	2	87	Whole (61%)	94.5%
Crab (unspecified)	3	76	Whole (83%)	99.0%
Squid/calamari	4	63	Whole (54%)	59.9%
Mussels (unspecified)	5	50	Whole (67%)	52.7%
Crayfish (unspecified)	6	40	Whole (78%)	100%
Scallops	7	40	Whole (63%)	69.5%
Seafood marinara	8	21	Other (90%)	41.3%

(1) 200 Respondents offered 681 responses for May 1991 and September 1991 surveys, for a total of 46 types of seafood (non finfish) products

(2) Alternative forms considered were: live, whole, filleted, cutlet, headed and gutted, smoked (plus: other, no answer)

(3) In addition there were 6 responses for king prawns, 1 for royal red prawns, 1 for school prawns and 2 for 'other Australian prawn species'

Table 4.5.4: Leading Seafood Species/Types Sold by Fishmongers, According to Location

	Number of fishmongers selling each main species, by city					
	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart
Prawns ⁽¹⁾	72	44	33	19	16	11
Oysters	33	28	14	3	3	6
Crab (unspecified)	33 (+)	11 (--)	18 (+)	10	4	0
Mussels (unspecified)	22	14	2 (--)	2	7	3
Crayfish (unspecified)	15	8	0 (--)	11	3	3
Scallops	2 (--)	17 (++)	1 (--)	3	6	11
Squid/Calamari	22	17	6	7	8	3
Seafood marinara	1 (--)	14 (+++)	0 (-)	4	2	0

(+++), (++), (+) denotes frequencies of responses for a species/type which are significantly greater than would be expected for that location (at >99.9%, 99% and 95% confidence limits, respectively)

(--), (-), (-) denotes frequencies of response for a species/type which are significantly lower than would be expected for that location (at >99.9%, 99% and 95% confidence limits respectively)

An absence of '+' or '-' indicates that values are not significantly different for those expected statistically for that location in that horizontal row of data

(1) Refers to all prawns discussed in Table 4.5.3.

Regional data on the number of fishmongers selling each of the eight leading seafood species/types (Table 4.5.4) show a Melbourne preference for seafood marinara and scallops. In addition, proportionately more Melbourne fishmongers sold seafood extender and cooked and peeled shrimp than those in other cities..

Estimates by fishmongers of the proportion of their stocks which originate from Australian waters (Tables 4.5.1 and 4.5.3) indicate that the main types of fish and seafood sold are local; the major exceptions appear to be in seafood lines, eg mussels, seafood marinara.

A key finding of this Section was the focus of fishmongers as buyers for **whole** fish and seafood and sellers of whole and fillet fish. This is in sharp contrast to data from retailers of fish and seafood products, where the principal format sold was fillet.

Fishmonger respondents were also asked to estimate the number of kilograms of each of their (up to) six main fish species and (up to) four main seafood species they had purchased in the month prior to the May 1991 and September 1991 surveys (Question 6a, Appendix II).

The results of this question were aggregated across the fishmongers surveyed in May 1991 and September 1991 respectively to give the data shown in Figures 4.5.1 and 4.5.2.

The most common monthly purchased volumes of main finfish species by fishmongers were the 76 kg - 100kg and 201kg - 300kg ranges, while for seafood species, were the 76kg - 100kg or 151kg - 200kg ranges.

Figures 4.5.3 and 4.5.4 reproduce the data shown in Figures 4.5.1 and 4.5.2 respectively, but aggregate it over the two survey periods. In addition, the number of **different** species that make up the monthly purchases within each weight range are shown alongside the number of monthly purchases. Hence, if each fishmonger cited main species of fish and seafood that were completely different from those cited by all other fishmongers in the sample, then the twin bars in each weight range would be the same length. The shorter the "Number of Different Species" bar relative to the "Total Number of Species" bar in each weight range, the greater the commonality in species stocked across the fishmongers sampled.

Figure 4.5.3 shows that species commonality (or product range overlap) is more prominent for main fish species purchased by the higher monthly volume ranges above about 50kg/month. For example, the 162 main fish species purchased in the 76-100kg monthly volume range were made up of only 46 different species since many fishmongers cited the same main species. On the other hand, the eight main fish species purchased in the 11 - 15kg monthly weight range consisted of eight different species.

Figure 4.5.4 shows a greater degree of product range overlap in the main seafood species/types cited than was evident for fish. The 95 main seafood species purchases in the 76 - 100kg range consisted of only 16 different species/types. Even in the low monthly purchase volume ranges the high degree of product range overlap is evident.

The same data have been used to investigate the actual volumes (kg) of main finfish and seafood species/types purchased by fishmongers in the month prior to the May 1991 and September 1991 surveys. In the case of finfish, data are provided on thirteen species for which the total purchase volume by all respondents across either May 1991 or September 1991 surveys exceeded an arbitrary figure of 10 tonnes (Table 4.5.5). A feature of the top five species/types previously cited in Table 4.5.1 is that fishmongers were able to purchase substantial quantities (over 17tonnes) of these species/types immediately preceding **either** May 1991 **or** September 1991 surveys (Table 4.5.5). This suggests a link between popularity of a species and continuity of supply. Redfish, with 13.7tonnes and 16.8tonnes purchased prior to May 1991 or September 1991 surveys respectively, stands as a possible exception to this proposed link, since it did not feature prominently in Table 4.5.1. Regional differences and purchase patterns may explain this 'anomaly'. The raw data indicate redfish as the eleventh "main type" of finfish purchased (with kingclip and blue grenadier following as ninth and tenth respectively after whiting) but its frequency of selection by Sydney respondents was significantly greater (99.9% confidence limits) than for other cities. Furthermore, its purchase was significantly favoured by respondents in retail fish markets over respondents in fishmongers/fresh fish outlets (99% confidence limit), suggesting additional segmentation.

For seafood, data on the fifteen species/types for which the total purchase volume by all respondents across either May 1991 or September 1991 surveys exceeded an arbitrary figure of 1tonne are presented in Table 4.5.6. Comparison between Tables 4.5.3 and 4.5.6 suggest a similar link between 'popularity' and continuity of supply; data on the four main types of seafood sold (prawns, oysters, crab and mussels) indicate that this survey's sample of fishmongers would need to be able to collectively purchase a minimum of about 3tonnes of these products in any particular month for them to maintain their product ranking nationally.

Table 4.5.5 - Leading Finfish Types purchased by Fishmongers in the Month Prior to the Survey⁽¹⁾

Species/type of Finfish	May 1991 Survey		September 1991 Survey	
	Total volume purchased (kg)	Average volume purchased ⁽⁶⁾ (kg)	Total volume purchased (kg)	Average volume purchased ⁽⁶⁾ (kg)
Barracouta	13,728	1,525	480	240
Bream (silver/yellow fin)	12,868	1,170	2,990	99
Bream (unspecified) ⁽²⁾	13,926	422	4,529	174
Flathead	32,632	796	29,759	551
Grenadier, blue	38,314	1,197	3,895	354
Kingclip	17,325	597	7,174	423
Mullet (unspecified)	39,375	875	19,569	477
Orange roughy ⁽³⁾	59,308	899	52,122	745
Redfish	13,658	1,138	16,830	765
Shark	43,088	1,197	9,521	328
Snapper	19,088	415	21,597	460
Trevally ⁽⁴⁾	38,374	1,096	37,505	938
Whiting (unspecified) ⁽⁵⁾	13,409	583	6,410	256

(1) An arbitrary cut-off point of over 10 tonnes total volume purchased in either survey was applied for inclusion in the table

(2) These bream data may include morwong purchases, since this is a common name for sea breams

(3) Orange roughy purchases may be understated, since this species is commonly known as sea perch in NSW. Purchases under this name would be captured as perch (unspecified), 2,240kg and 5,000kg in the May and September surveys respectively.

(4) Where silver trevally (skippy) was specified these data are not included. Blue/silver warehou are included.

(5) Excludes nominal quantities of King George, sand and school whiting (135kg and 1,080kg total volume in May and September surveys, respectively)

(6) Calculated by dividing the Total Volume Purchased in the month by the number of fishmongers who purchased the species

Table 4.5.6: Leading Seafood Species/Types purchased by Fishmongers in the Month Prior to the Survey⁽¹⁾

Species/type of Seafood	May 1991 Survey		September 1991 Survey	
	Total volume purchased (kg)	Average volume purchased ⁽²⁾ (kg)	Total volume purchased (kg)	Average volume purchased ⁽²⁾ (kg)
Crab (blue swimmer)	—	—	2,867	717
Crab (unspecified)	34,608	824	6,142	171
Crayfish (unspecified)	2,439	94	1,939	139
Mussels (unspecified)	23,531	1023	6,441	176
Octopus	1,520	217	3,873	426
Oysters	11,050	316	3,120	54
Prawns	76,535	722	46,173	402
Scallops	1,200	92	3,618	129
Seafood extender	3,196	291	630	79
Squid/calamari	13,897	409	5,015	139
Seafood marinara	1,477	164	548	50
Shrimp cooked and peeled	2,048	137	994	249

(1) An arbitrary cut-off point of 1 tonne total volume purchased in either survey was applied for inclusion in the tables

(2) Calculated by dividing the total volume purchased in the month by the number of fishmongers who purchased the species.

The types of suppliers to fishmongers was of interest, in view of the diversity and volumes of their purchases.

As an indication of fishmongers' preference for a particular fish and seafood supply route, retailers were asked to specify the type of supplier used to supply each main species/type of fish and seafood bought. The popularity of a particular type of supplier (commercial fisherman/ aquaculture farmer, general wholesaler, fish/seafood wholesaler/ co-operative; wholesale fish market or retailer) was gauged by summing the number of times a particular type of supplier was referred to across the entire sample of fishmongers.

An indication of the *range* of fish and seafood business done by particular types of suppliers was gained by summing the number of distinct species handled by a supplier type. The results are given as bracketed figures in Table 4.5.7.

In contrast to retailers, fishmongers showed a strong preference for purchasing their finfish and seafood from wholesale fishmarkets (Table 4.5.7), rather than general wholesalers.

Table 4.5.7: Types of Suppliers of Finfish and Seafood to Fishmongers: Proportion of the Species of Finfish or Seafood Mentioned as Being Purchased in the Last Month from Each Respective Source Type

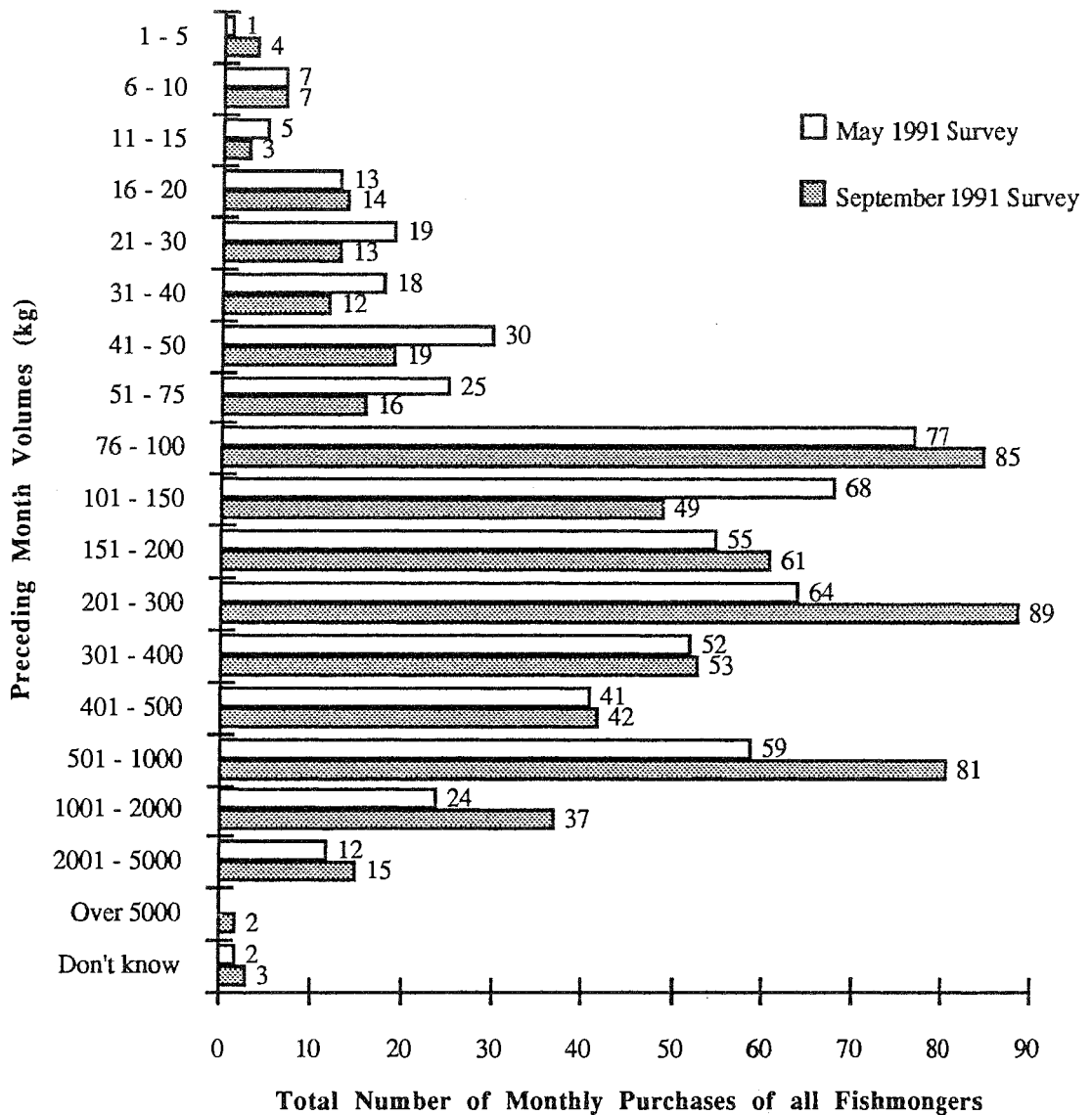
	Proportion of mentions:	
	Finfish ⁽¹⁾ (Number of Species)	Seafood ⁽²⁾ (Number of Species)
Commercial fisherman/ aquaculture farm	6.4% (38)	8.4% (17)
General wholesaler	12.4% (42)	16.8% (24)
Fish/seafood wholesaler/ co-operative	10.3% (34)	22.7% (27)
Wholesale fish market	67.1% (69)	47.2% (31)
Retailer	0.6% (3)	0.5% (4)
Other	1.9% (15)	1.6% (7)
Don't know	0.6% (7)	0.5% (4)
No answer	0.8% (8)	2.2% (7)
Totals	100%	99.9%

(1)Based on 1,206 responses

(2)Based on 739 responses

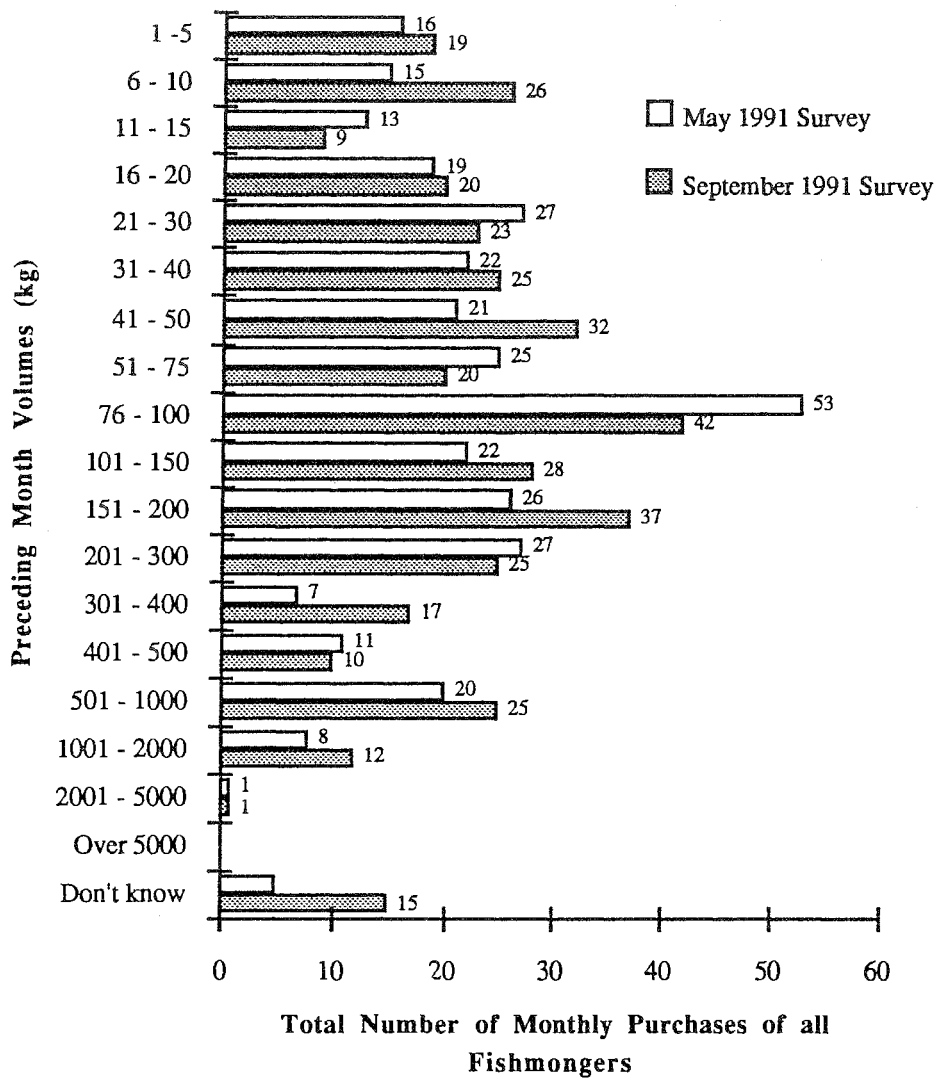
Note: figures in brackets refer to the number of different species (range) handled by each supplier - based on the species mentioned by respondents as being purchased in the last month

Figure 4.5.1: Total Number of Cited Main Finfish Species/Types Purchased in the Monthly Volume Ranges Specified



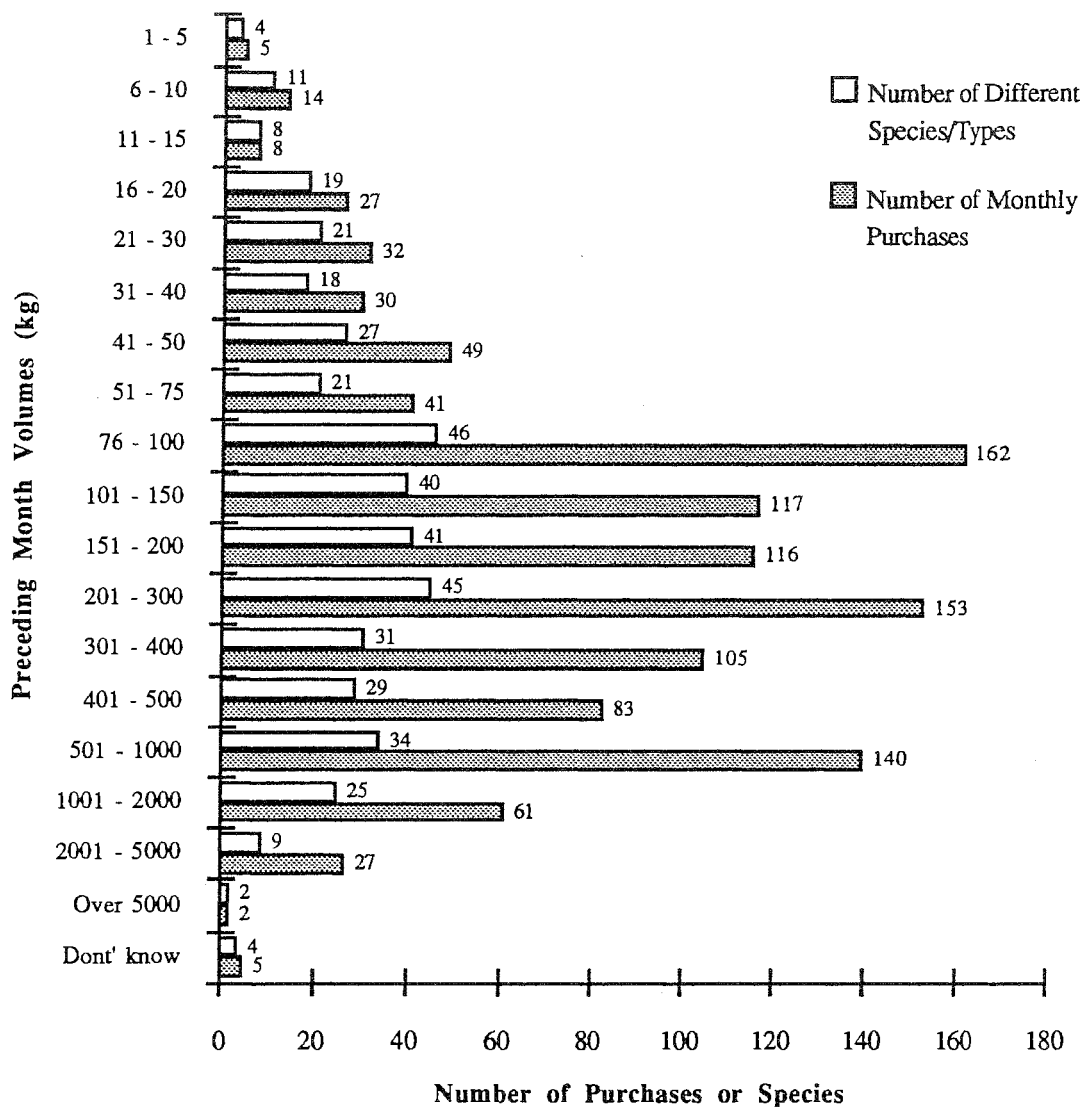
(see Question 6a, Appendix II)

Figure 4.5.2: Total Number of Cited Main Seafood Species/Types Purchased in the Monthly Volume Ranges Specified



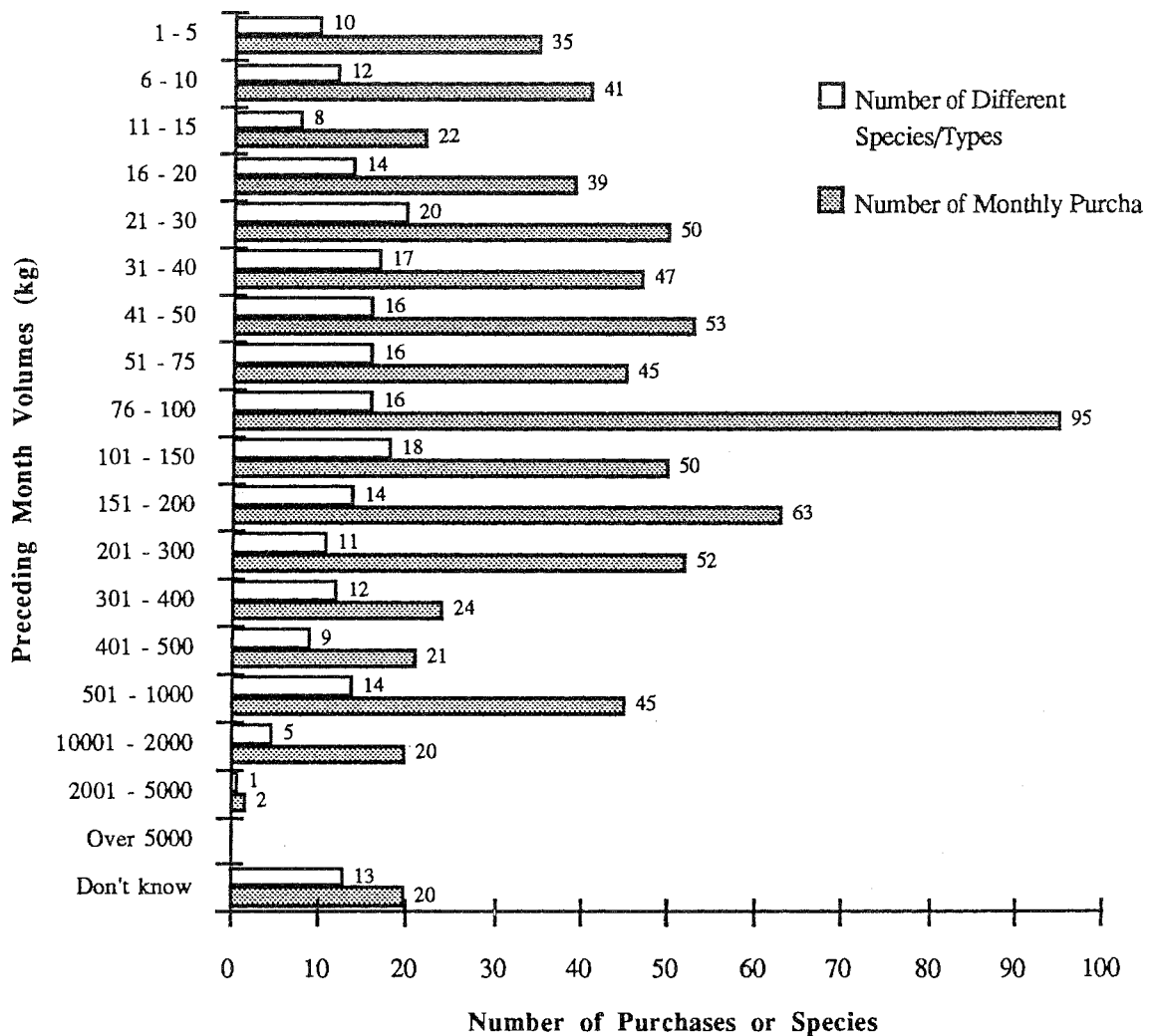
(see Question 6a, Appendix II)

Figure 4.5.3: Total Number of Main Finfish Species Cited Versus the Number of Different Species Across These Citations (Purchased in Monthly Volume Ranges Specified)



200 respondents offered 1177 responses for May 1991 and September 1991 surveys (see Question 6a, Appendix II)

Figure 4.5.4: Total Number of Main Seafood Species Cited Versus the Number of Different Species Across These Citations (Purchased in Monthly Volume Ranges Specified)



200 respondents offered 724 responses for May 1991 and September 1991 surveys (see Question 6a, Appendix II)

4.6 Stock Selection, Supplier Selection and Supplier Rating

Respondents were asked to provide specific reasons why they stocked each of the (up to) six main species of fish they had cited as having bought in the month prior to the survey (Question 8b, Appendix II). Figure 4.6.1 summarises fishmongers' reasons for stocking their main fish species across both the May 1991 and September 1991 surveys. The most frequently cited reasons were:

- popular/customers want/prefer it
- good price/cheaper/value for money
- boneless/skinless
- tasty/good flavour
- sells well/sells most/good seller
- better known/well known
- good/light texture/milder flavour/white.

Responses for these reasons constitute over 80% of all responses given.

However, particular species were selected on the basis of particular attributes. Table 4.6.1 shows the reasons why respondents stocked the eight leading fish species already discussed in Section 4.5.1. For example, much of the basis for purchasing orange roughy has little to do with price but rests on its attributes of being boneless/skinless, tasty, with a desirable texture and milder flavour and overall popularity with customers.

Table 4.6.1: The Major Reasons Fishmongers Gave for Purchasing the Eight Leading⁽⁴⁾ Finfish Species/Types

Leading species/type bought	Orange roughly ⁽¹⁾	Flathead (unspecified)	Mullet (unspecified)	Snapper (unspecified)	Trevally ⁽²⁾ (unspecified)	Shark	Bream ⁽³⁾ (unspecified)	Whiting (unspecified)
Number of respondents citing this species/type (out of a total of 200 respondents)	122	92	80	76	65	63	54	45
Top five reasons given for stocking each species (proportion of the respondents who cited this species and gave reason shown is given in brackets, %) ranked in descending order:	Boneless/skinless (31%) Popular/customers want/prefer (23%) Good/light texture/milder flavour/white flesh (22%) Tasty/good flavour (5%) Sells well/sells most/good seller (4%)	Popular/customers want/prefer (39%) Better known/well known (16%) Good price/cheaper/value for money (16%) Tasty/good flavour (8%) Sells well/sells most/good seller (8%)	Good price/cheaper/value for money (35%) Popular/customers want/prefer (32%) Sells well/sells most/good seller (10%) Better known/well known (7%) Easy to get/common/caught locally (5%)	Popular/customers want/prefer (49%) Better known/well known (14%) Good quality (10%) Tasty/good flavour (7%) Sells well/sells most/good seller (4%)	Popular/customers want/prefer (25%) Good price/cheaper/value for money (25%) Tasty/good flavour (10%) Available fresh/all the time (8%) Sells well/sells most/good seller (6%)	Boneless/skinless (29%) Popular/customers want/prefer (28%) Better known/well known (12%) Sells well/sells most/good seller (7%) Good/light texture/milder flavour/white (7%)	Popular/customers want/prefer (45%) Better known/well known (14%) Good price/cheaper/value for money (9%) Tasty/good flavour (7%) Easy to get/common/caught locally (7%)	Popular/customers want/prefer (50%) Tasty/good flavour (11%) Good price/cheaper/value for money (10%) Sells well/sells most/good seller (8%) Good quality (5%)
Average number of reasons given for purchase of this species by each respondent who had purchased in previous month	2.0	1.5	1.4	1.5	1.7	1.7	1.3	1.4

(1) contribution for orange roughly may be understated, since this species is commonly called sea perch in NSW

(2) includes blue/silver warehou, but where silver trevally (skipjack) was specified these data were not included

(3) aside from these 54 bream (unspecified) mentions, there were 23 sea bream mentions and 21 silver/yellow fin bream mentions not shown here

(4) leading in terms of the number of fishmongers who said they had purchased these species in the last month.

Most of the other seven species were stocked mainly because they were considered to be:

- popular with customers
- better known/well known by customers.

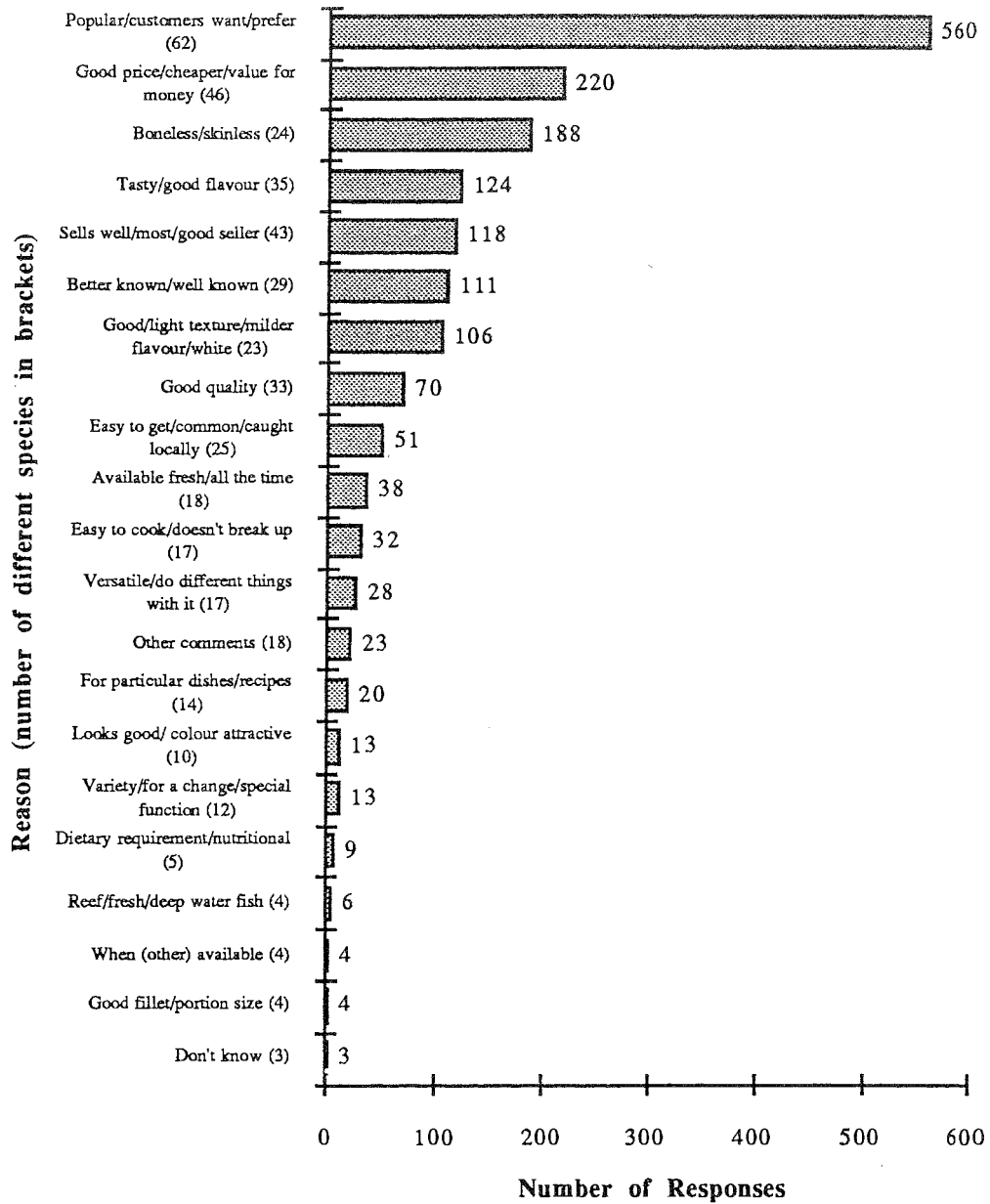
The exceptions to this were mullet, chosen for its cheapness/value for money attribute and popularity with customers; and shark, chosen for its boneless/skinless attribute and popularity.

Reference has already been made to the type of supplier chosen by fishmongers for obtaining their stocks. Fishmongers were asked (Question 9a, Appendix II) to gauge the importance to them of seventeen factors when choosing a supplier. As seen in Figure 4.6.2, a desire for honesty and fairness in doing business was given priority, followed by supplier's attention to good temperature control of stock. Other highly ranked factors were a "good reputation for quality fish/seafood", "providing clear documentation" and "prompt attention to orders". However, when fishmongers rated their degree of satisfaction with their current main supplier against the same seventeen factors (Question 9b, Appendix II), "honest and fair in doing business" slipped to fifth average ranking (Figure 4.6.3). This pattern mirrors exactly the findings in the previous section (Section 3.6 - Retailers). As was found for retailers, the fishmongers highly commended their suppliers for providing clear documentation.

To investigate fishmongers' perceptions of what factors customers regard as important when selecting an outlet to buy fresh or frozen fish or seafood, their responses on fourteen factors were sought (Question 9c, Appendix II). The clear message which emerged was that most importance would be placed on the quality of product ("good reputation for quality"; "customer can be confident that fish or seafood sold as fresh has not been frozen") and service ("clean outlet/store"; "has friendly staff, informed about seafood") (Figure 4.6.4).

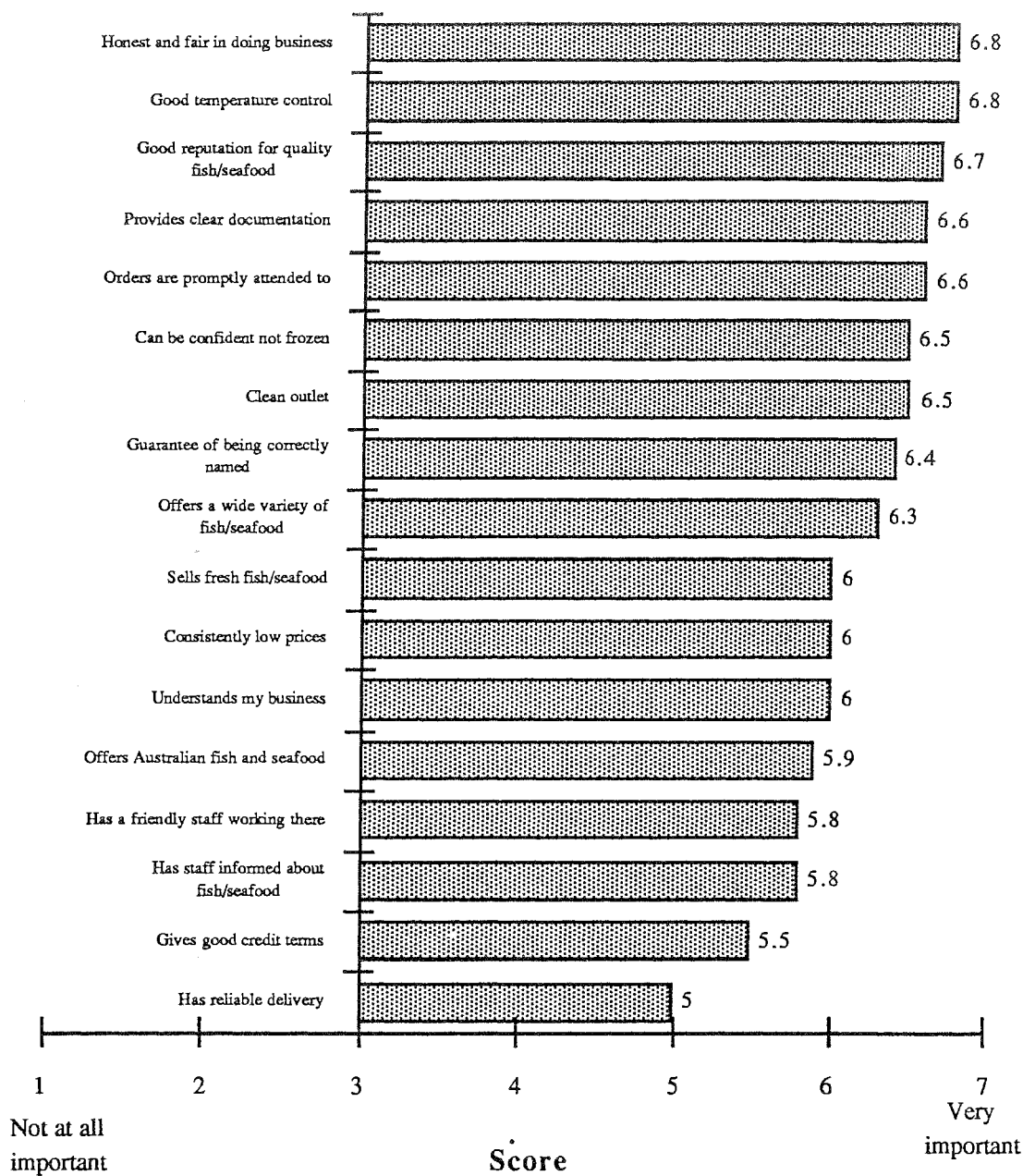
As if to reinforce the relevance of service to customers, fishmongers indicated (Question 9d, Appendix II) that on average, just over four in ten of their customers request advice (and take it) on what species or type of fish to buy (Figure 4.6.5).

Figure: 4.6.1: Fishmongers' Reasons for Purchase of Main Finfish



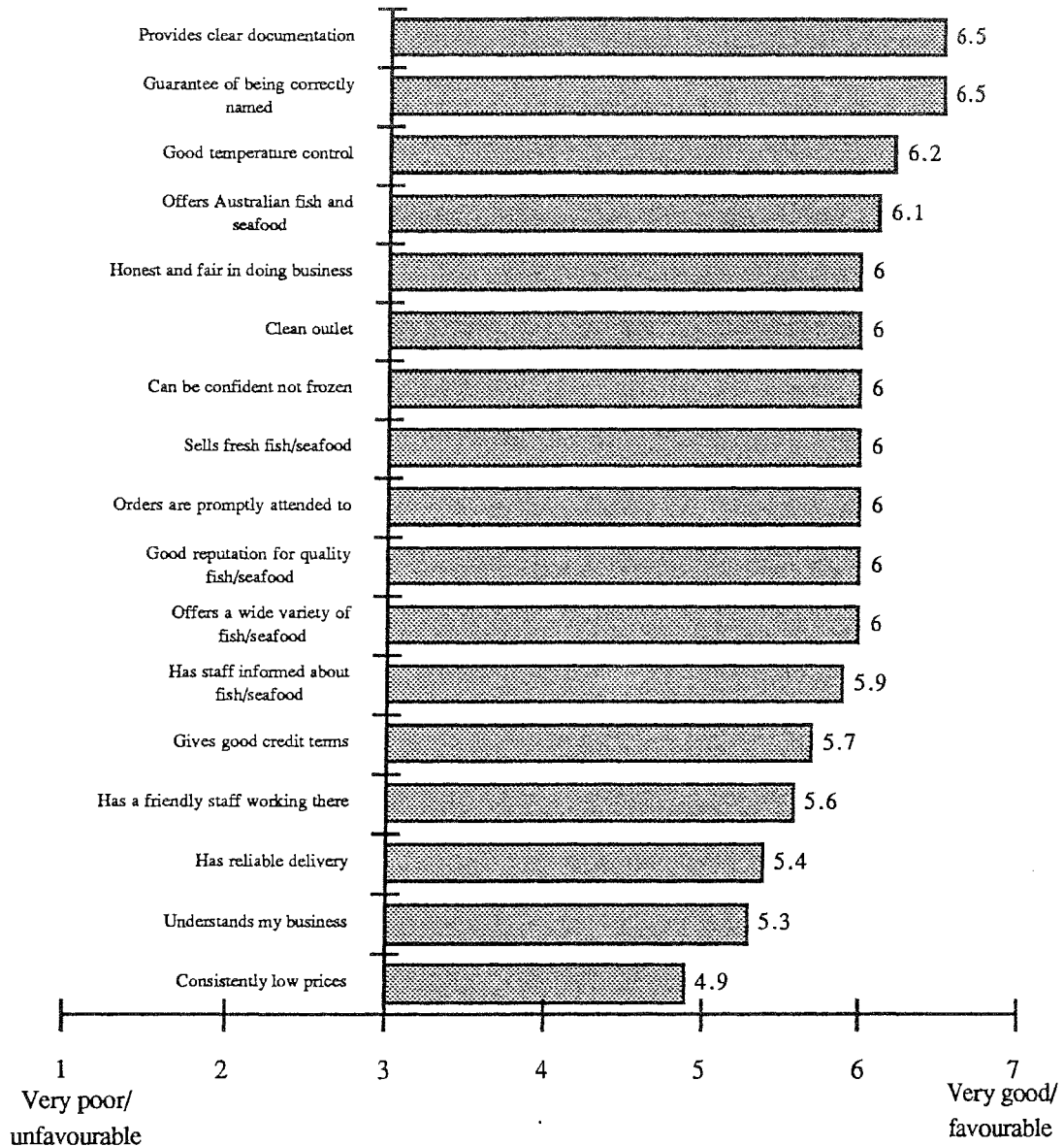
Respondents offered 1741 responses for May 1991 and September 1991 surveys (see Question 8b, Appendix II)

Figure 4.6.2: Important Factors to Fishmongers When Choosing Supplier: Averaged Factor Rating



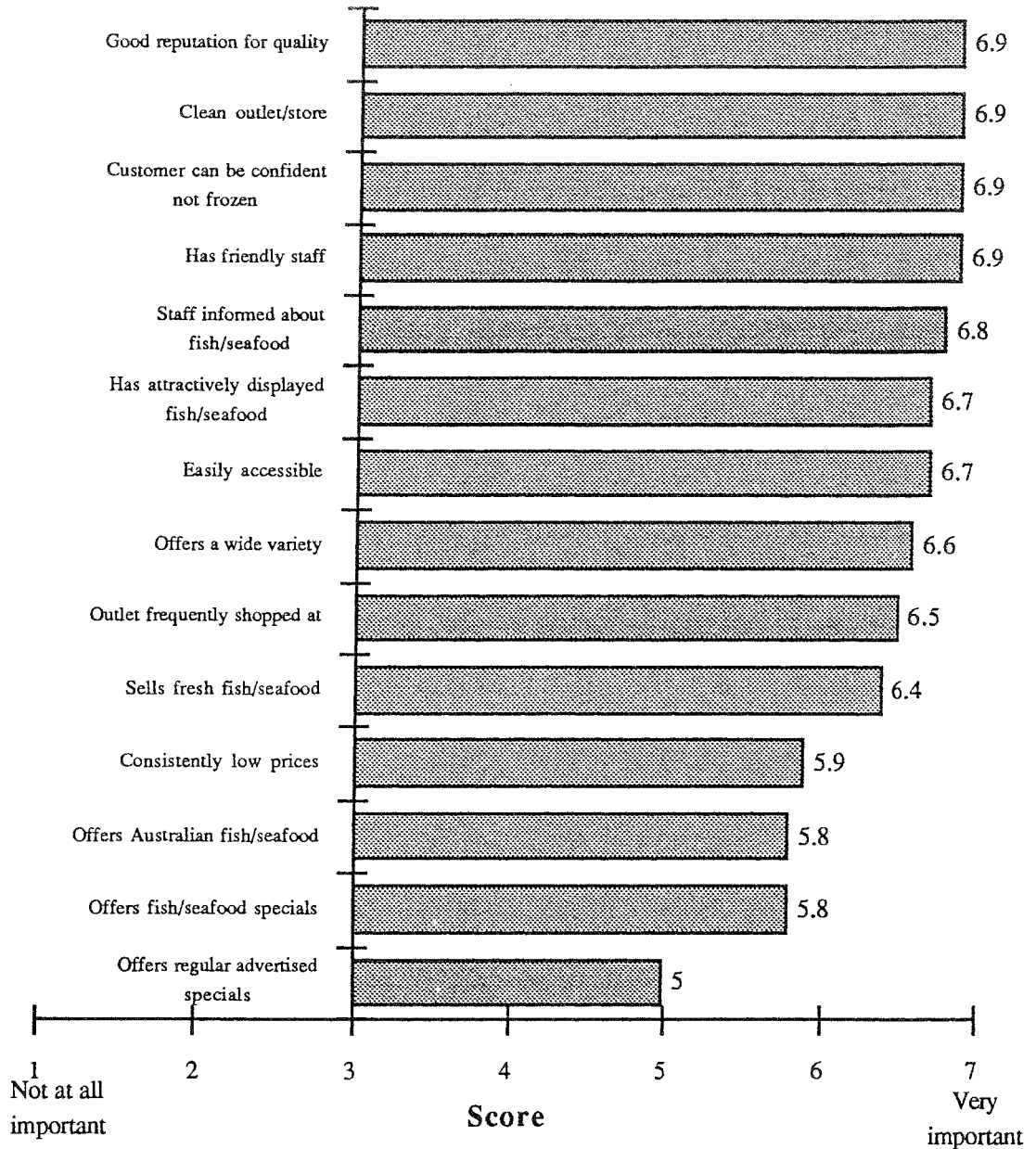
200 respondents offered responses on each of 17 factors across the May 1991 and September 1991 surveys (see Question 9a, Appendix II)

Figure 4.6.3: Fishmongers' Rating of Main Wholesale Supplier: Averaged Rating



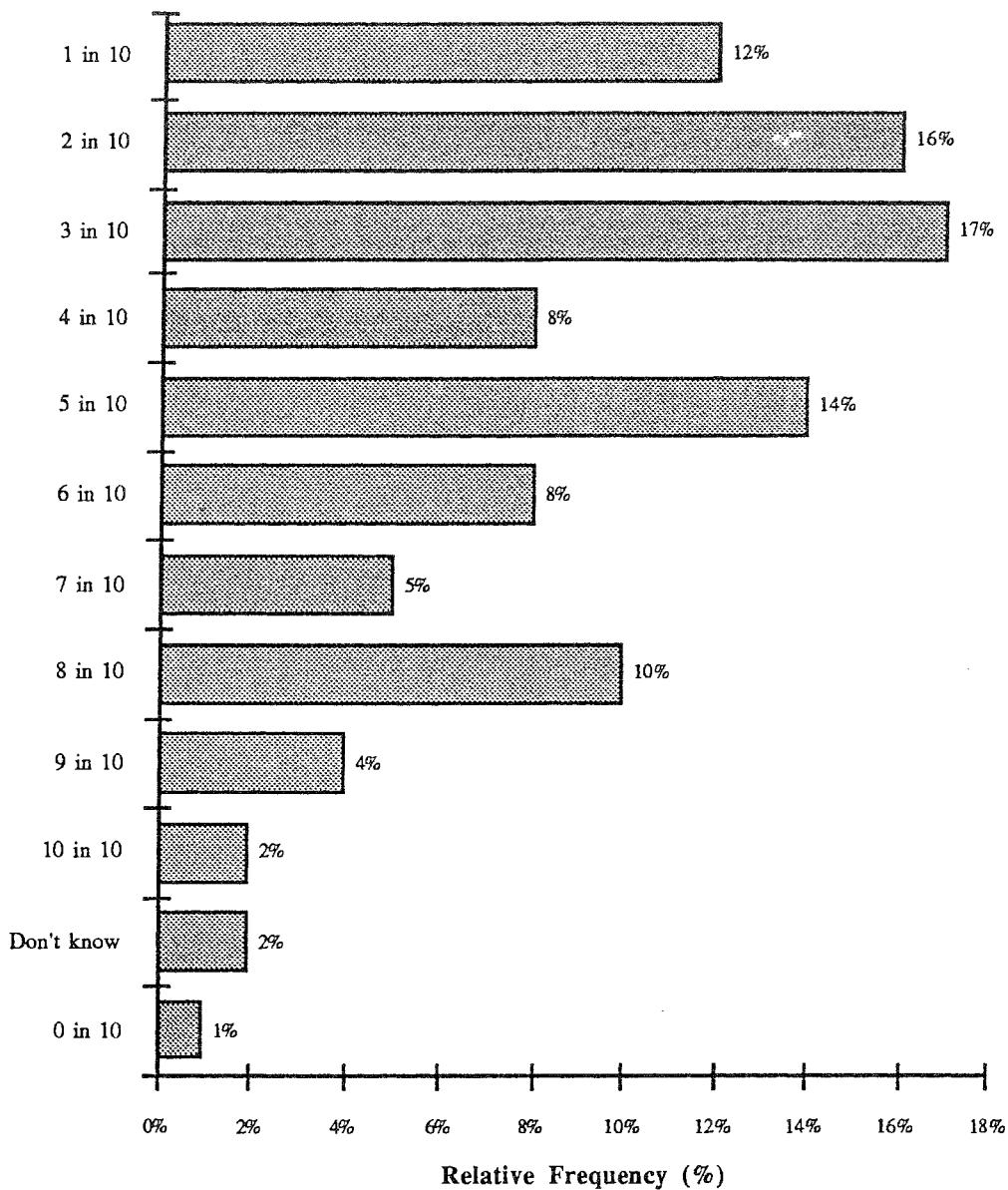
200 respondents offered responses on each of 17 factors across the May 1991 and September 1991 surveys (see Question 9b, Appendix II).

Figure 4.6.4: Factors of Perceived Importance to Customers: Averaged Rating



200 respondents offered responses on each of 14 factors across the May 1991 and September 1991 surveys (see Question 9c, Appendix II)

Figure 4.6.5: Number of Fishmongers' Customers out of Every 10 Who Ask for and Take Advice on What Species/Type of Fish to Buy



200 respondents offered 200 responses across the May 1991 and September 1991 surveys (see Question 9d, Appendix II)

4.7 Species/Types and Products with Potential for Increased Usage

Fishmongers were asked (Question 10a, Appendix II) whether they sold a range of derived products in their stores, specifically:

- fish/seafood shashliks
- marinara sauce/marinara mix
- satay/chilli/sweet and sour fish pieces
- stuffed trout
- fish terrine/pâté.

A clear majority answered ‘yes’ to marinara sauce/marinara mix (88%) (Table 4.7.1) whilst the majority answered ‘no’ to all other products (range 87% - 96%).

Table 4.7.1: Sale and/or Preparation of Fish-Derived Products in Fishmongers’ Stores

	Fish/ seafood shashliks	Marinara sauce/ marinara mix	Satay/ chilli/ sweet and sour fish pieces	Stuffed trout	Fish terrine pâté	Other
Number of respondents	200	200	200	200	200	200
Number of respondents who sold these	22	176	16	8	27	92
Number of respondents who prepared these in shop	19	56	13	5	6	28

Nevertheless, where derived products such as fish/seafood shashliks, satay or chilli or sweet and sour fish pieces, or stuffed trout were sold, the majority of fishmongers prepared these on their premises. For the major item sold, marinara sauce/marinara mix, about one third of those who sold this product prepared it themselves.

When pressed for reasons for not selling these particular products, 80% of all responses were covered by four reasons, ie:

- no demand/no market for it
- not heard of before/not tried/can't get
- no room to prepare/display
- only sell fresh seafood/it's a delicatessen/gourmet line.

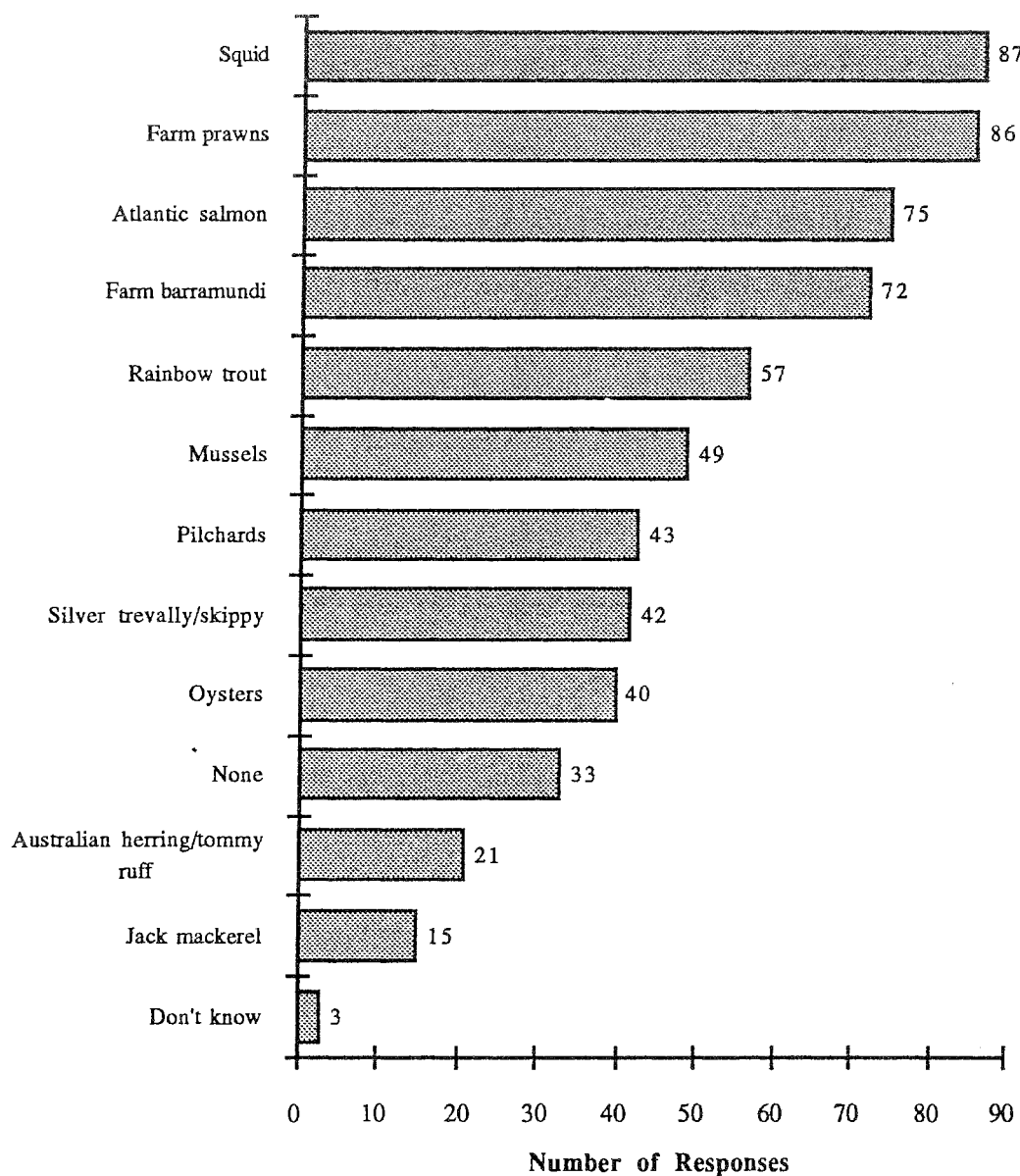
When asked (Question 14a, Appendix II) about the potential for a range of wild and "farmed" species, which have been identified as under-utilised by the fishing industry, fishmongers most frequently saw squid and farm prawns as having potential for increased sales (Figure 4.7.1).

Five of the top six under-utilised species regarded as having potential for increased sales are currently farmed (ie farm prawns, Atlantic salmon, farm barramundi, rainbow trout and mussels). In contrast, the two least favoured under-utilised species are wild catch (Australian herring/tommy ruff and Jack mackerel).

Interestingly, whereas the views on the potential of squid were broadly derived across the national survey sample, there was an above average view on the potential of farm prawns from Sydney respondents and a below average response from Melbourne based respondents (both significant at 99.9% confidence limits).

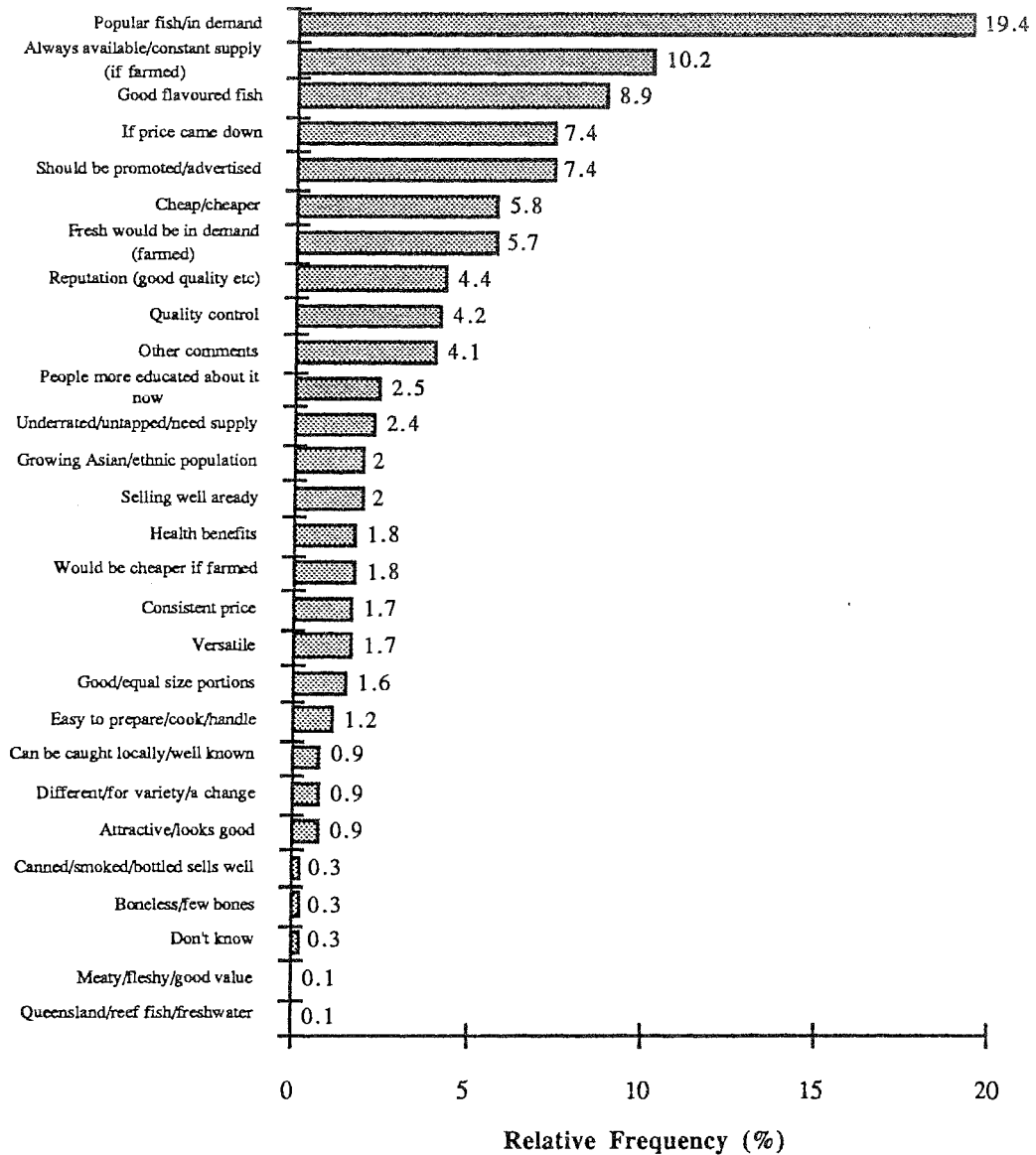
The reasons for fishmongers' views on the potential of under-utilised species are presented in Figure 4.7.2. Popularity/demand is clearly the leading reason, with 22% of responses to this reason relating to squid alone. Farm prawns drew 44% of responses related to "always available/constant supply (if farmed)". Atlantic salmon was responsible for 27% and 36% respectively for responses to the attributes "good flavoured fish" and "if price came down".

Figure 4.7.1: Fishmongers' Views on Species with Potential for Increased Usage



200 respondents offered 623 responses for May 1991 and September 1991 surveys (see Question 14a, Appendix II)

Figure 4.7.2: Fishmongers' Reasons for Potential of Under-utilised Species



200 respondents offered 757 responses for May 1991 and September 1991 surveys (see Question 14b, Appendix II)

4.8 Fishmonger and Industry Initiatives to Sell More Fish

Section 4.4 examined the perceived problems with selling finfish and seafood. Fishmongers focused on availability of stock/unreliability of supply, price (*per se* and its fluctuations) and quality issues as the main problem areas in selling fish and seafood (Figure 4.4.1).

When questioned about what actions needed to be taken for their own store to stock and sell more fish and seafood products (Question 12a, Appendix II), the most frequent response was “none” (Figure 4.8.1). However, the second and fourth most frequently cited responses (ie space/increase store size and better/more display area/presentation) together represent physical restraints which fishmongers could address, or be assisted to address.

Similarly, three further actions relate to generating and facilitating customer demand for fish, ie :

- more customer demand
- public better educated/more aware/health benefits
- more knowledge/information on fish/preparation, etc.

In general, actions relating to supply and quality ranked far less frequently and emphasis appeared to be on building demand and providing service.

Complementing this desire to build customer demand was fishmongers’ very dominant view that the action required most strongly of the fishing industry was firstly, “more advertising/promotion/information” and secondly “more education on health features” (Question 12b, Appendix II). These two responses alone accounted for 40% of all calls for action by the fishing industry (Figure 4.8.2).

Fishmongers saw that the greatest impact from industry action to increase the sale of fish and seafood products through their business (Question 13, Appendix II) would be achieved through “more advertising support for fish and seafood” (Figure 4.8.3). The “availability of information on cooking and preparation” of fish and seafood was perceived as likely to have some impact on sales and could be addressed in a related campaign.

Industry actions facilitating “better quality product available through better handling” and “a more consistent supply of fresh fish and seafood” were also viewed as likely to have some impact on sales. Interestingly, the “supply of a greater variety of prepared fish and seafood meals ready to cook” was viewed as having a little impact only.

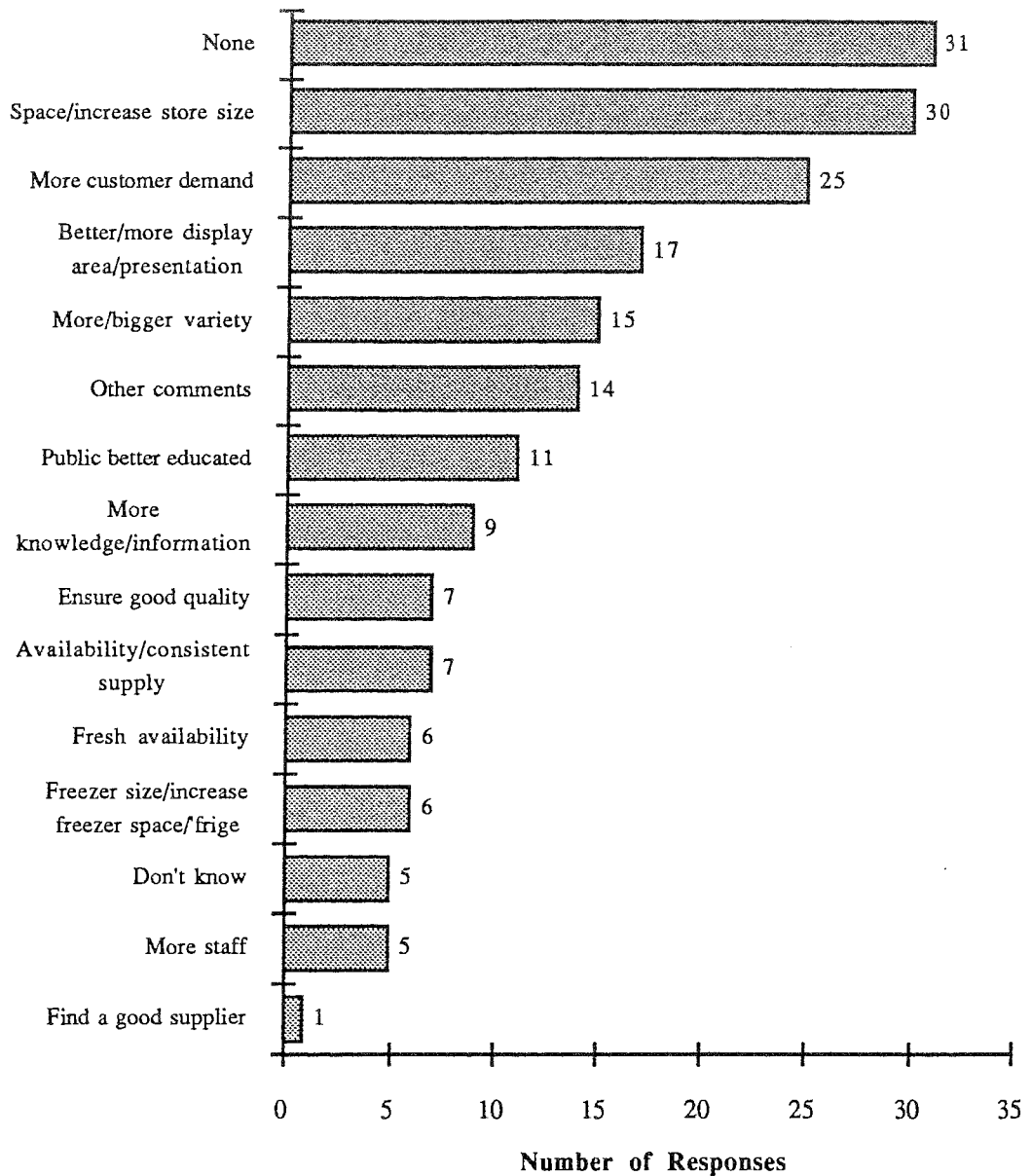
The specific type of consumer promotion, publicity or advertising most favoured by fishmongers for achieving success in increasing sale of fish and seafood (Question 15, Appendix II) was the use of newspaper articles and advertisements (Figure 4.8.4). Television was ranked ahead of the use of promotional cooking and sampling of fish and “none”.

As a refinement on the views that availability of information on cooking and preparation (to customers, caterers and restaurants) would have some impact on sales (Figure 4.8.3), the use of free recipes was seen as having little success in achieving this (Figure 4.8.4).

As with retailers, fishmongers were optimistic that sales of fish and seafood would increase in the next five years (Figure 4.8.5). A below average number of Melbourne based respondents held this optimistic view (99.9% confidence limits), with the most frequent view there being that sales would remain the same (99% confidence limits).

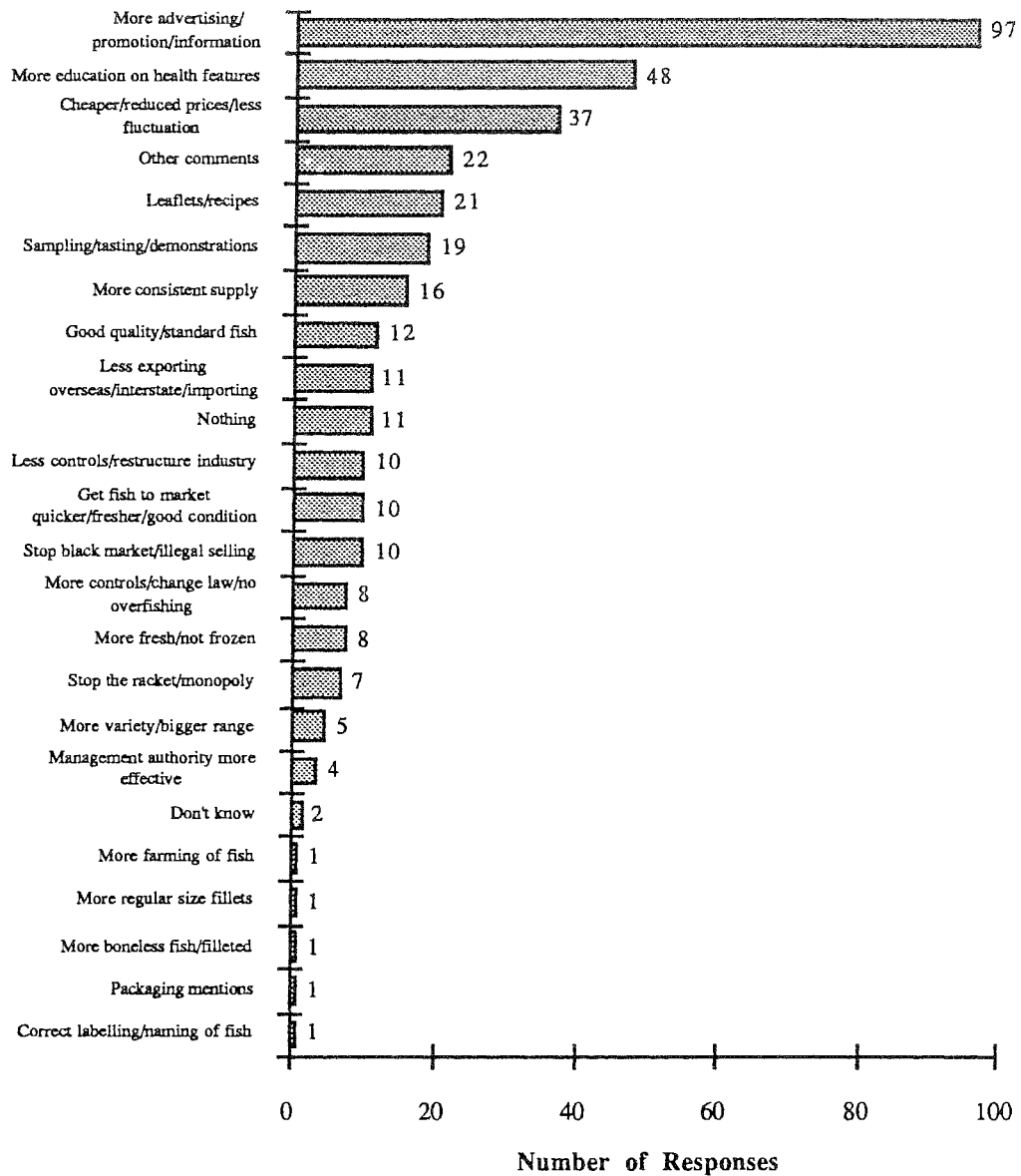
By far the most frequently cited reason for the optimistic outlook (Question 16b, Appendix II) was that people are becoming more health conscious (Figure 4.8.6). In fact, health consciousness probably underlies the three most frequently cited **specific** reasons (ie “no/low cholesterol/fish is health food” and “people eating more fish”). Increasing expense was the main basis for respondents holding the view that sales would decrease (Figure 4.8.7) or remain the same (data not shown) over the next five years.

Figure 4.8.1: Actions Needed to be Taken by Fishmongers to Stock/Sell More Fish



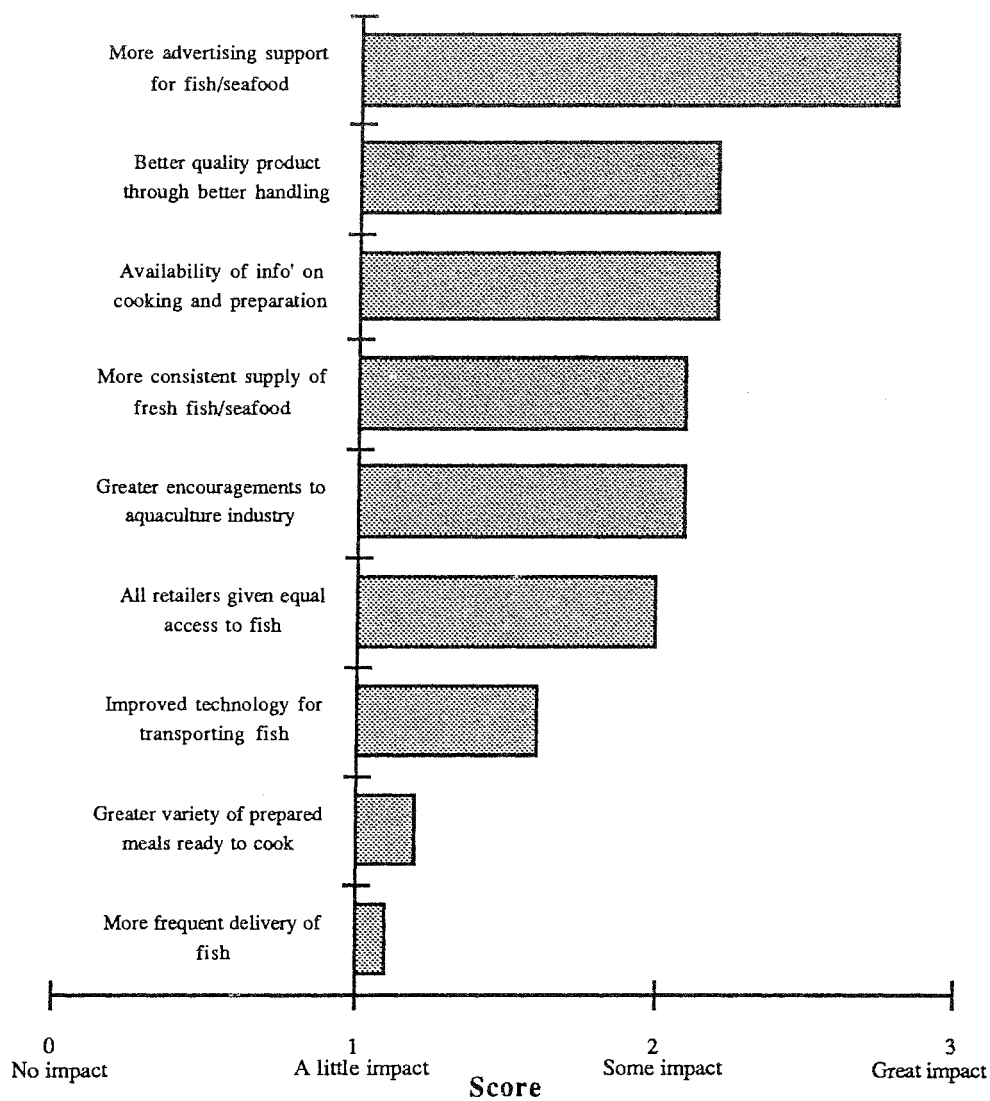
200 respondents offered 284 responses for May 1991 and September 1991 surveys (see Question 12a, Appendix II)

Figure 4.8.2: Actions by Fishing Industry for Fishmongers' Stores to Sell More Fish



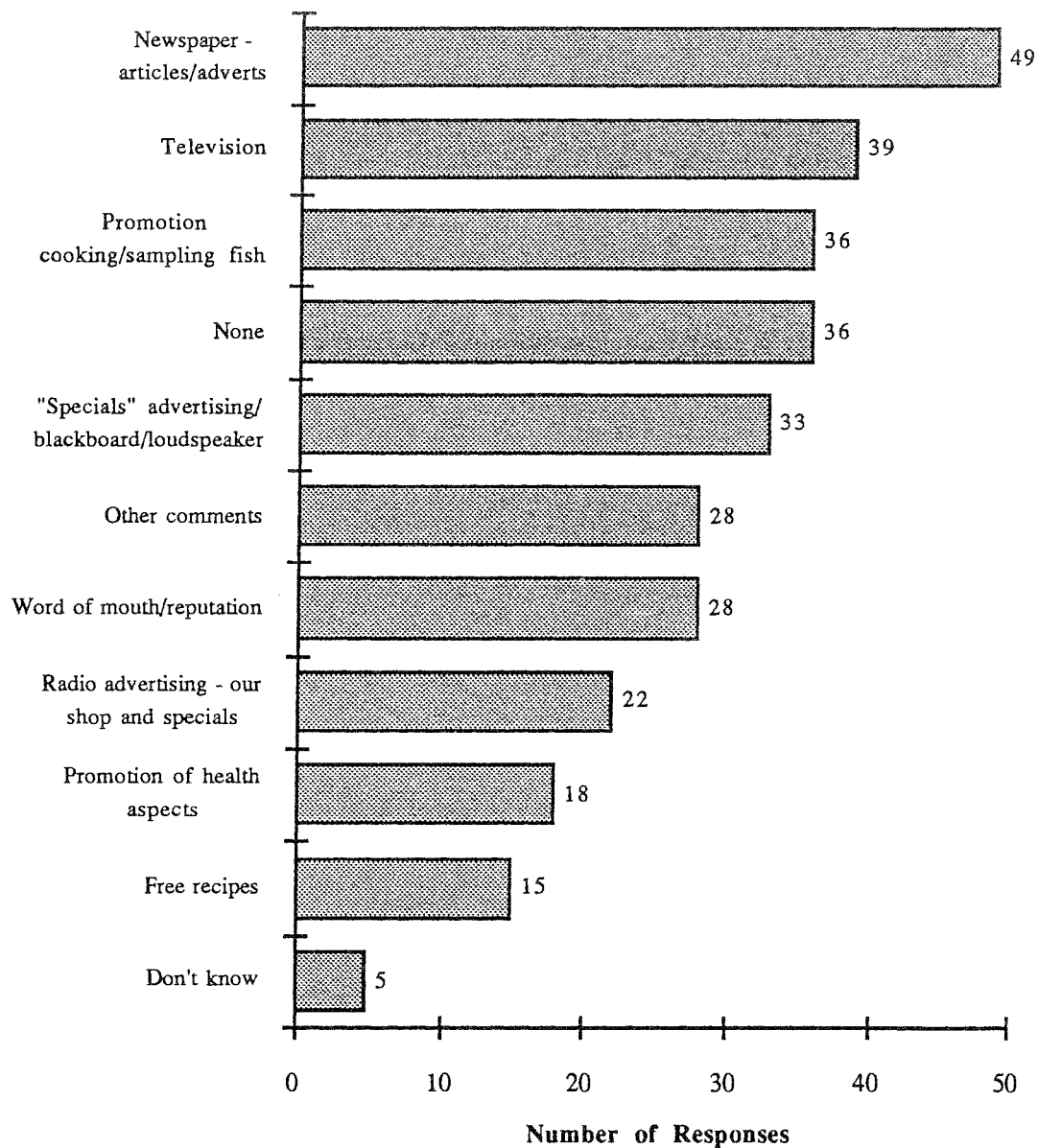
200 respondents offered 363 responses for May 1991 and September 1991 surveys (see Question 12b, Appendix II)

Figure 4.8.3: Fishmongers' Opinions of Possible Actions to Increase Sales of Fish/Seafood: Averaged Impact Rating



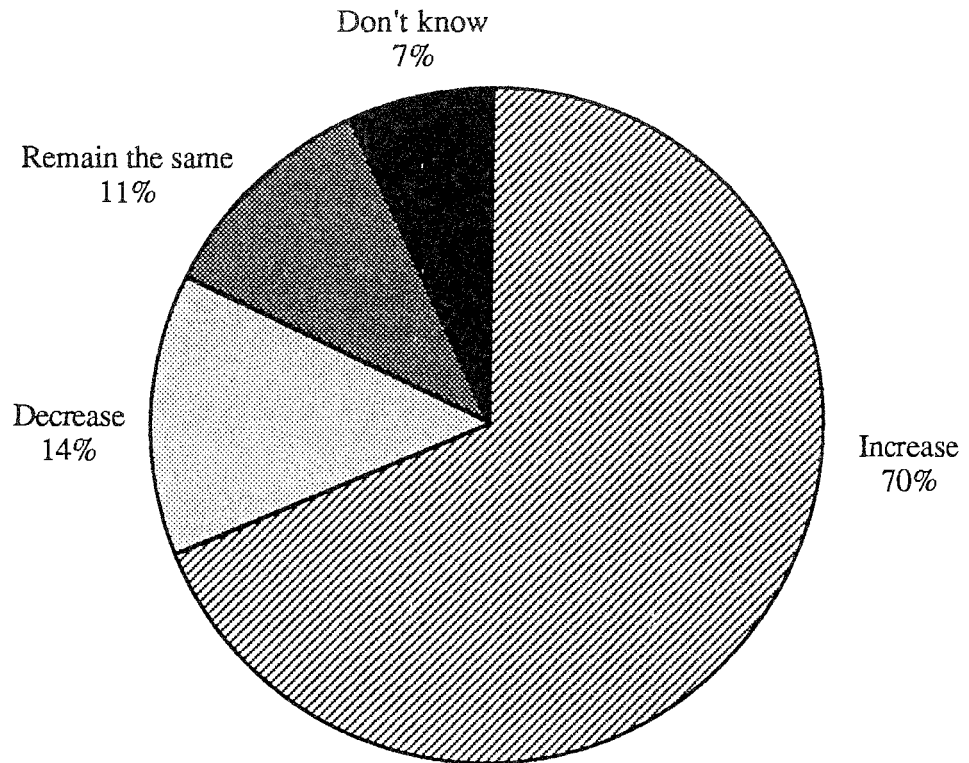
200 respondents for May 1991 and September 1991 surveys (see Question 13, Appendix II)

Figure 4.8.4: Fishmongers' Opinions on Publicity Most Successful in Increasing Sales



200 respondents offered 309 responses for May 1991 and September 1991 surveys (see Question 15, Appendix II)

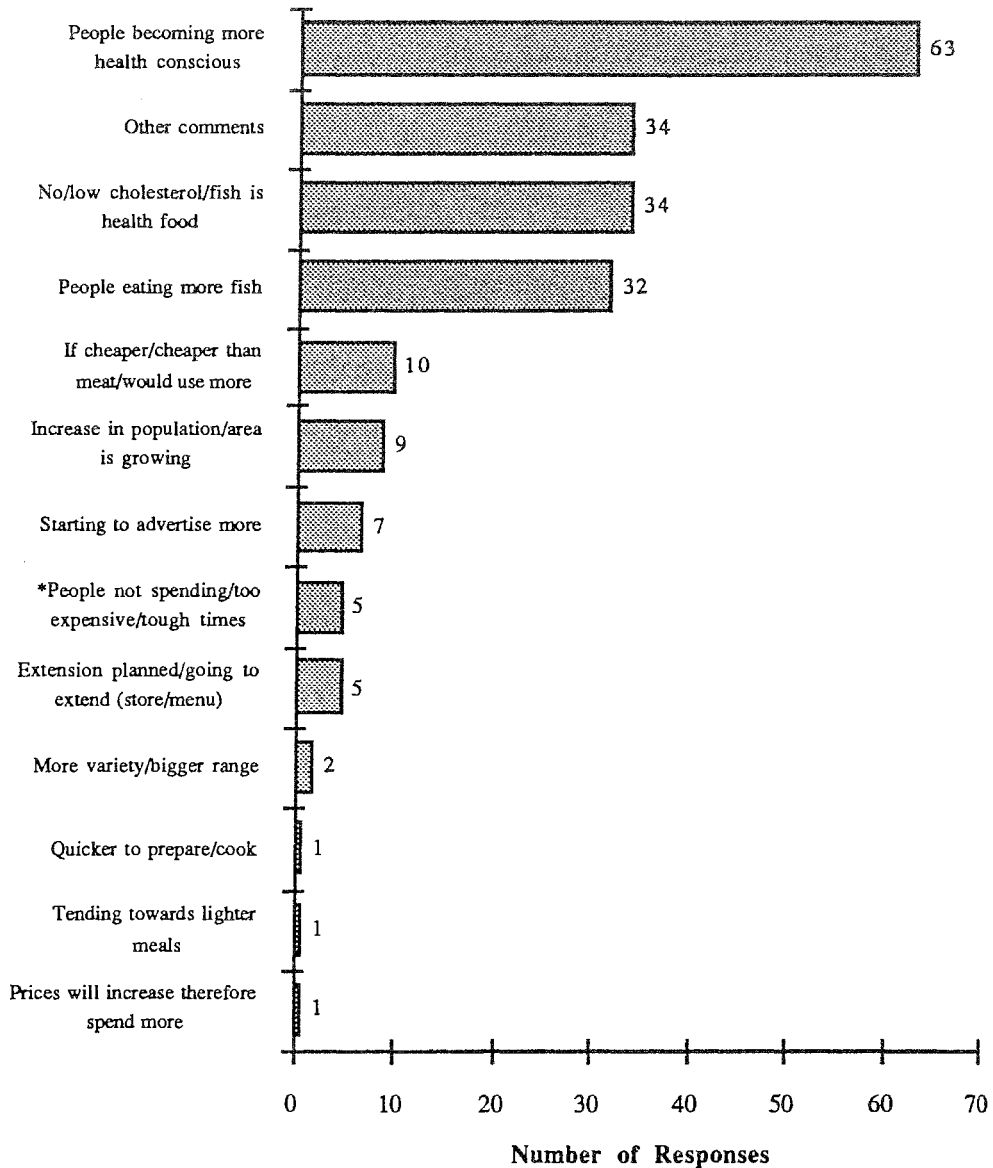
Figure 4.8.5: Fishmongers' Expected Sales of Fish/Seafood in Next Five Years



Totals over 100% due to rounding off

200 respondents offered responses across the May 1991 and September 1991 surveys (see Question 16a, Appendix II)

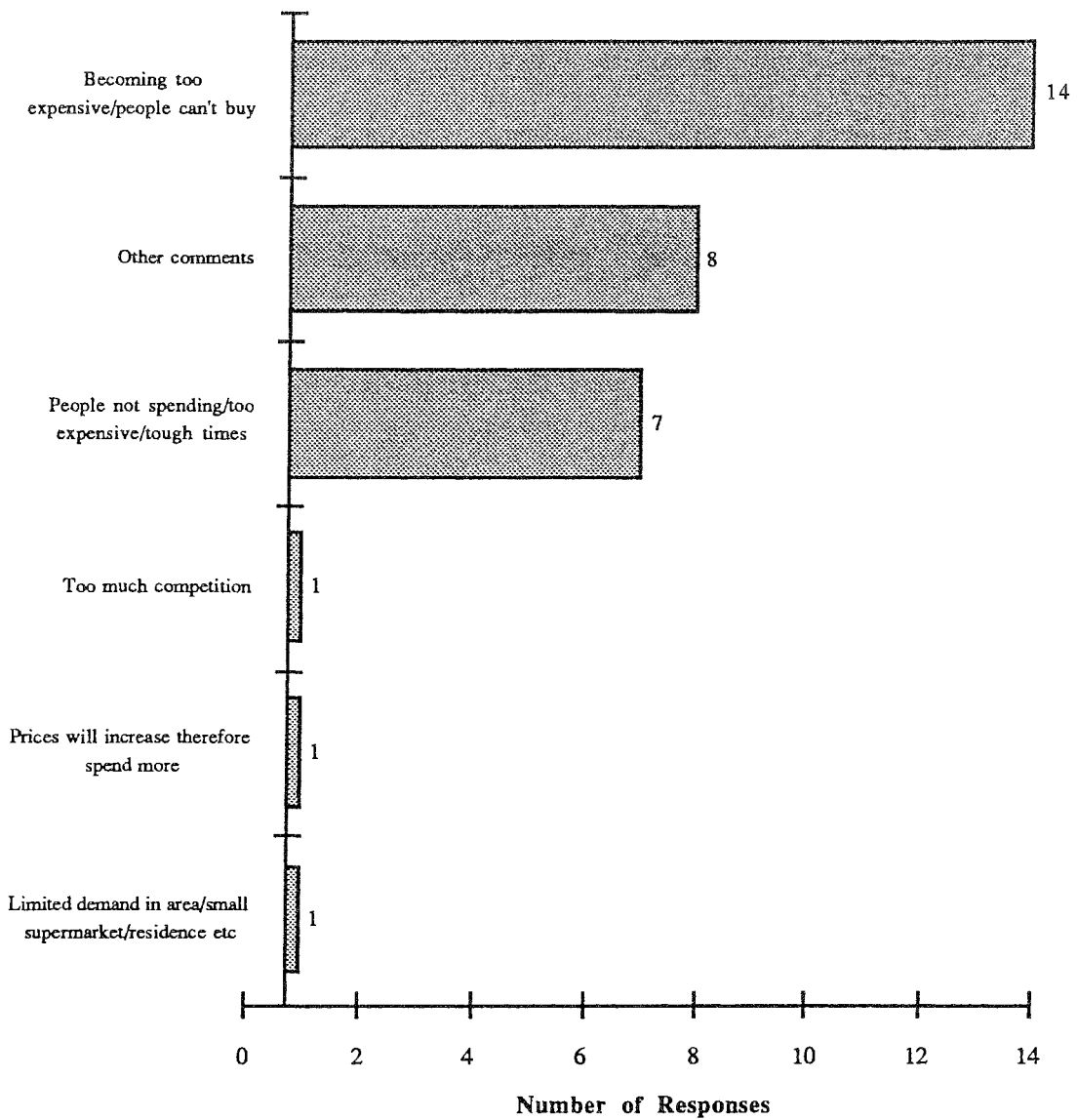
Figure 4.8.6: Reasons for Expected Sales Increase in Next Five Years by Fishmongers Expecting an Increase



139 respondents offered 206 responses for May 1991 and September 1991 surveys (see Question 16b, Appendix II)

* that is - when economy improves expect sales to improve

Figure 4.8.7: Fishmongers' Reasons for Expected Sales Decrease in Next Five Years by Fishmongers Expecting a Decrease



27 respondents offered 32 responses for May 1991 and September 1991 surveys (Question 16b, Appendix II).

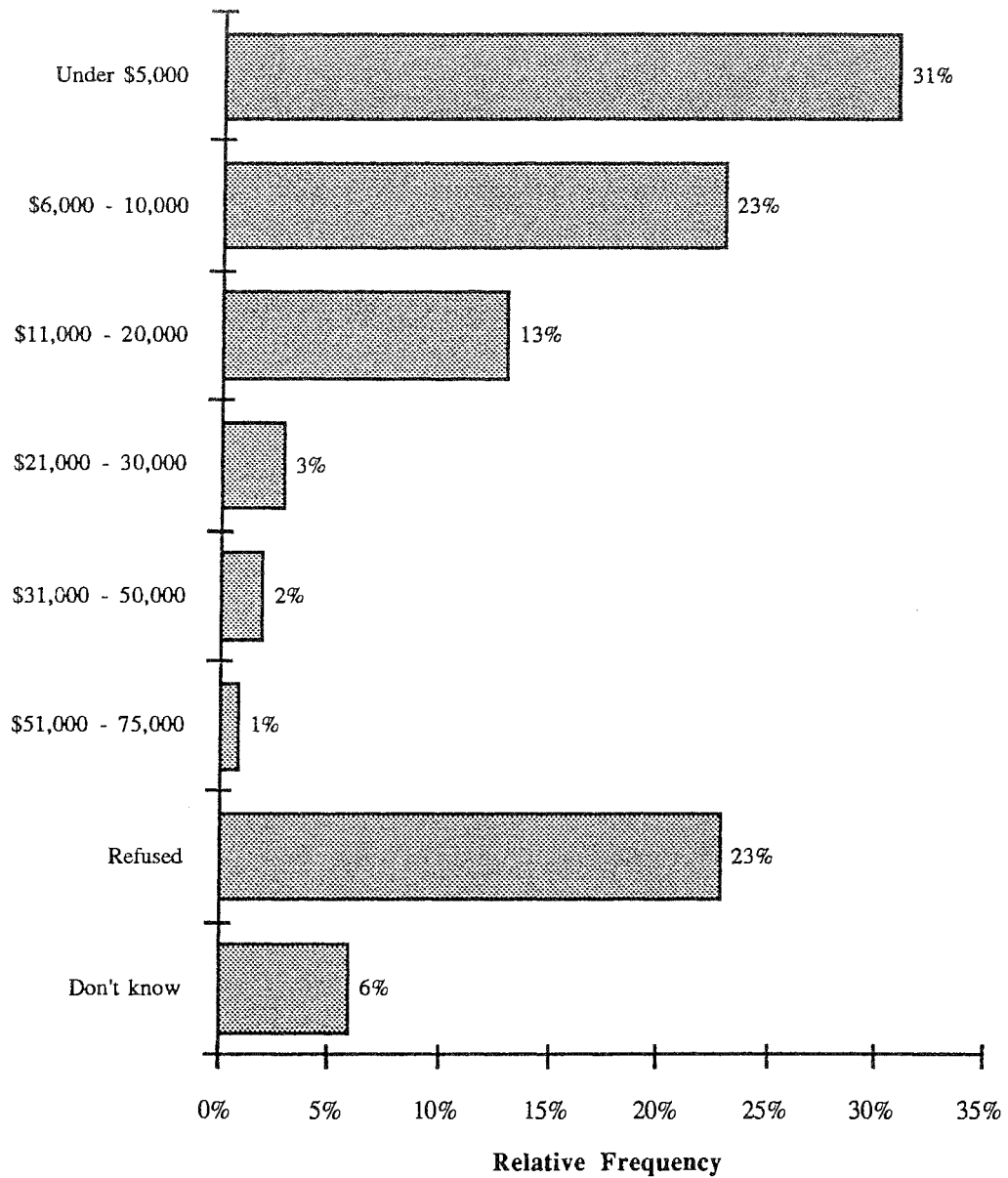
4.9 Store Details - Turnover and Staff

The majority of fishmonger respondents indicated (Question 17, Appendix II) that their store's weekly turnover averaged \$5,000 (Figure 4.9.1), whilst the overall store average for the survey sample was \$9,365.40 per week.

The average number of staff employed by the sample group was 2.6 full time employees and 2.0 part time/casual employees (Question 18, Appendix II).

Only 8% of the sample claimed that their business had any ownership ties with either a fish and seafood wholesaler, processor, another fish and seafood retailer (uncooked product) or a retailer selling cooked fish and seafood (Question 19, Appendix II).

Figure 4.9.1: Average Weekly Turnover of Fishmonger's Store (Rounded to Nearest \$1000)



200 respondents for May 1991 and September 1991 surveys (see Question 17, Appendix II).

5 Detailed Findings - Wholesalers

5.1 Wholesaler - Type, Position and Responsibility

Two types of wholesaler were interviewed in the study:

- general wholesalers, eg including dry grocery goods
- wholesalers focusing especially on fish and seafood (referred to as ‘fish/seafood specific’).

These two types were sampled in the approximate proportions of 1:3, and were drawn from the locations of Sydney, Melbourne, Brisbane, Adelaide and Perth on the basis of national business demographics (Table 5.1.1). Hobart was omitted from the sample base.

Table 5.1.1: Sample Base for Wholesalers’ Study

Type of Wholesaler	Total	Sydney	Melbourne	Brisbane	Adelaide	Perth
General Wholesaler	35	15	4	4	5	7
Fish/seafood specific wholesaler	116	28	45	18	14	11
Total	151	43	49	22	19	18

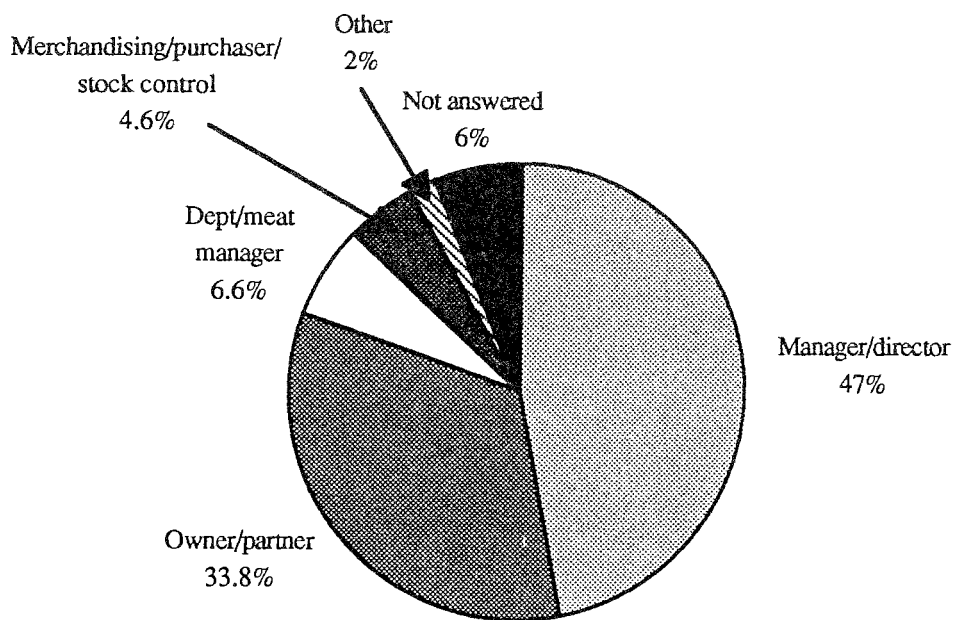
The quantity of data sought in the questionnaires was substantial and commercial pressures forced several organisations to withdraw from the second survey ('September 1991' survey). This was of little consequence for the attitudinal questions in the survey. However, to obtain reliable quantitative data on fish and seafood purchases and sales by wholesalers, 19 of the businesses interviewed in the first (May 1991) survey kindly agreed to supply data for a sales period not covered by the May 1991 survey. This is summarised below in Table 5.1.2.

Table 5.1.2: Composition of the Sample of Wholesalers for the May 1991 and September 1991 Surveys

May 1991		September 1991	
Number of respondents	Data provided	Number of respondents	Data provided
86	Entire questionnaire, including volumes of fish and seafood bought: <ul style="list-style-type: none"> • Jan - Jun 1990 • July - Dec 1990 	65	Entire questionnaire including volumes of fish and seafood bought <ul style="list-style-type: none"> • Jan - Jun 1991
		19 (repeated interviews from May 1991)	Data on volumes of fish and seafood bought only <ul style="list-style-type: none"> • Jan - Jun 1991

Details of the positions of respondents were sought (Question 1a, Appendix III), to ensure that persons with the appropriate purchasing responsibility had been identified. Just under half of the respondents were managers/directors (Figure 5.1.1) and 34% were owner/partners. A further 12% had managerial responsibility, either for a particular department, or in purchasing or stock control. Respondents identified themselves as having responsibility for fish and seafood purchases, and while 46% confirmed that they were the sole person involved in the purchase decision for fish and seafood (Question 1b, c, Appendix III), 52% said that they were not the only purchaser, and 2% gave no answer (sample base of 151 respondents).

Figure 5.1.1: Respondents' Position in Wholesaler Business



151 respondents offered responses across the May 1991 and September 1991 surveys. See Question 1a, Appendix III.

5.2 Type of Business - Initial Data

It was most frequently found that purchasing responsibility in the wholesalers' sample did not extend beyond the outlet at which the respondent was based (Question 1d, e, Appendix III). As seen in Table 5.2.1, 81% of respondents purchased for one outlet only. A further 14% purchased for more than one outlet.

Table 5.2.1: Breadth of Purchasing Responsibility of Respondents

Responsible for:	Respondents		
		Number	%
One outlet only		123	81%
More than one outlet			
• two outlets	9		
• three outlets	9		
• four outlets	2		
• six or more outlets	8		
	21	21	14%
No answer		7	5%
Totals		151	100%

An overview of the sort of wholesale business conducted by respondents was gathered by asking whether they **mainly** sold fish, frozen fish, both these, or in fact did not sell fresh or frozen fish at all (Question 3a, Appendix III).

The largest elements of the sample base sold mainly either fresh or frozen fish and seafood (Figure 5.2.1). Fewer than one in five sold both. Table 5.2.2 provides further analysis of these data. Of those who were general wholesalers, about two thirds mainly sold frozen fish; a much lower proportion was involved in the sale of fresh fish and seafood or both fresh and frozen fish and seafood. Fish and seafood 'specific' wholesalers were more inclined to be sellers of fresh fish and seafood.

Table 5.2.2: Wholesalers' Involvement in Selling Fresh or Frozen Fish and Seafood

Items Mainly Sold	General Wholesaler	Fish and Seafood Specific Wholesaler	Totals
Fresh fish/seafood	4	50	54
Frozen fish/seafood	23	43	66
Both	5	22	27
Neither	2	0	2
Don't know	1	1	2
Totals	35	116	151

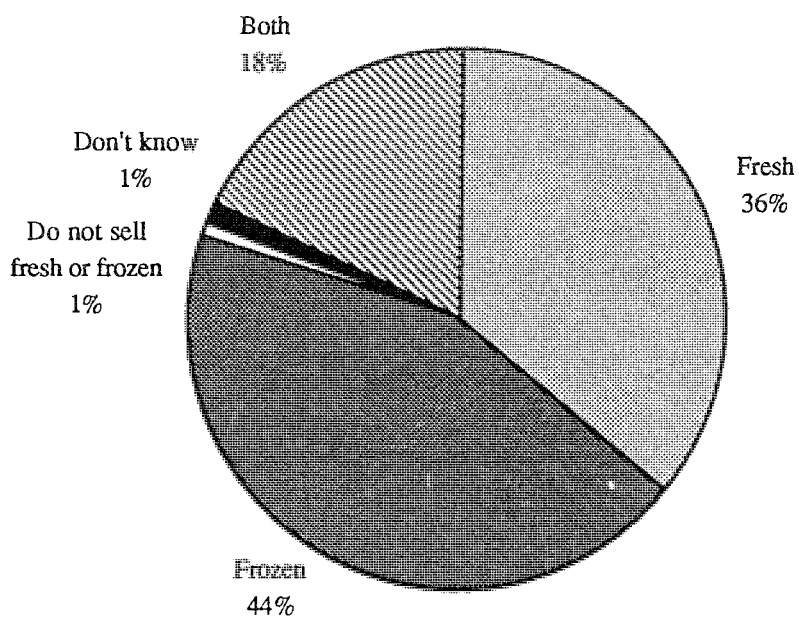
To gain further insight into the nature of wholesalers' businesses, each was asked whether they sold any other food products besides fish and seafood (Question 12a, Appendix III). A bare majority (52%) replied 'no'. Table 5.2.3 provides the break-down of these responses.

Table 5.2.3: Wholesale of Other Food Products Besides Fish and Seafood

	Wholesaler Type		Total	
	General	Fish/ Seafood Specific	Number of Respondents	% of Sample
Do wholesale other food products	29	44	73	48%
Don't wholesale other food products	6	72	78	52%
	35	116	151	100%

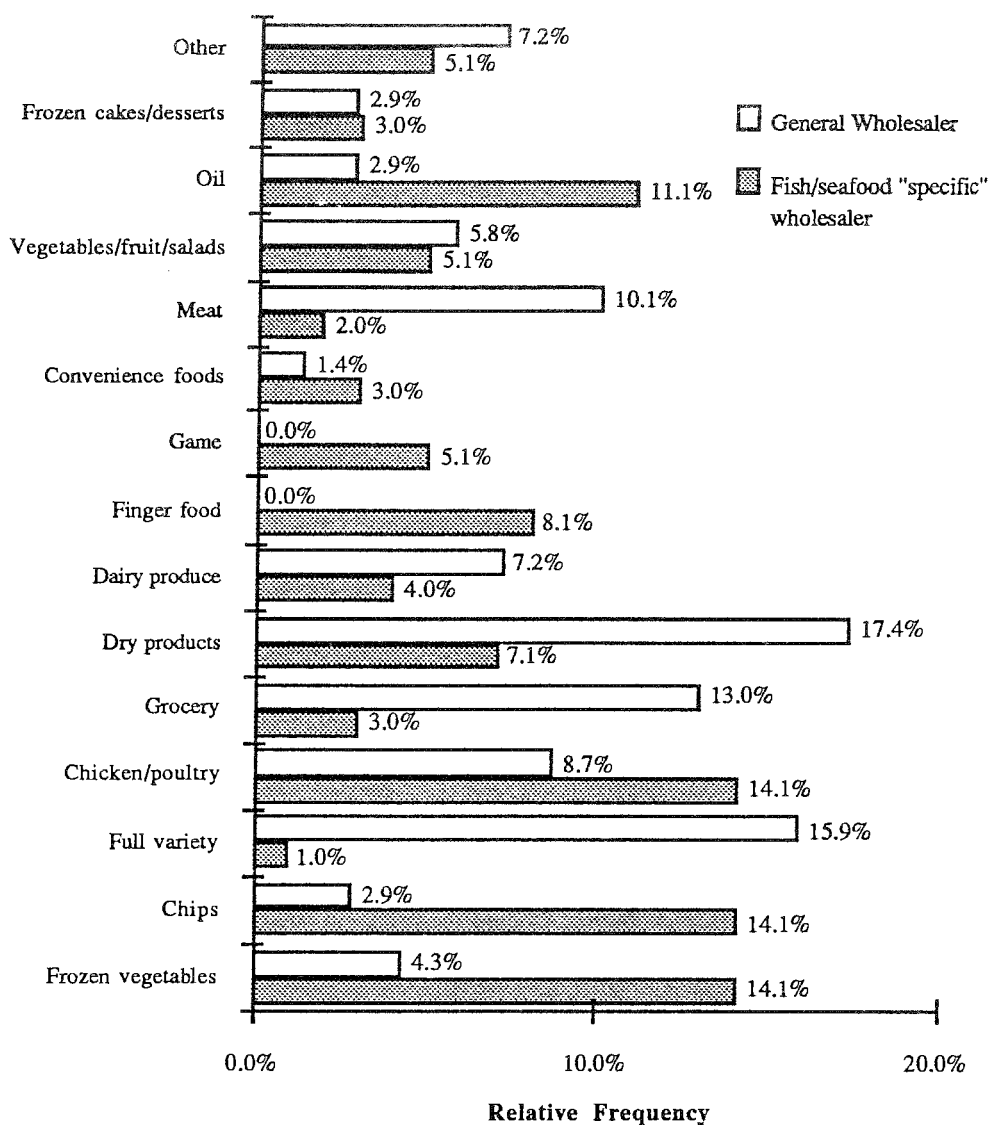
Closer examination of the food products sold by those businesses which **do** sell foods other than fish and seafood (Figure 5.2.2) reveals that the so-called 'fish and seafood specific' wholesalers do in fact sell a wide range of goods, particularly frozen vegetables, chips, chicken and poultry, and oil.

Figure 5.2.1: Wholesaler Involvement in Selling Fresh or Frozen Fish and Seafood



151 respondents offered 151 responses across the May 1991 and September 1991 surveys. See Question 3a, Appendix III.

Figure 5.2.2: Other Food Products Sold Wholesale by Respondent's Business



73 respondents who sold products wholesale apart from fish/seafood offered 168 responses across the May 1991 and September 1991 surveys. Relative frequencies have been calculated as proportions of the total number of responses given by general or fish/seafood specific wholesalers (69 and 99, respectively). See Question 12b, Appendix III.

5.3 Wholesalers' Perceptions of Protein Sources

The wholesaler questionnaire dealt with fresh and frozen fish/seafood wholesaling. Amongst the wholesalers sampled were both general and specialist fish and seafood wholesalers. Since the specialist fish and seafood wholesalers were not involved in the purchase and resale of most protein sources it was not valid to question them on the relative merits of each protein source. Wholesalers' perceptions of each protein source were therefore not gathered as was the case for fishmongers (Section 4.3).

5.4 Fish and Seafood - Problems in Selling and Distributing

Wholesalers were asked for their views (Question 2a, Appendix III) on the main problems in selling and distributing fish and seafood. The most frequent issues raised (Figure 5.4.1) were:

- lack of availability/unreliable supply
- none
- price - too expensive/fluctuations.

The commercial nature of these issues is reinforced by other frequently mentioned problems, such as the competition from other wholesalers, the inconsistent quality of fish and seafood and a general lack of familiarity with it on the part of the public.

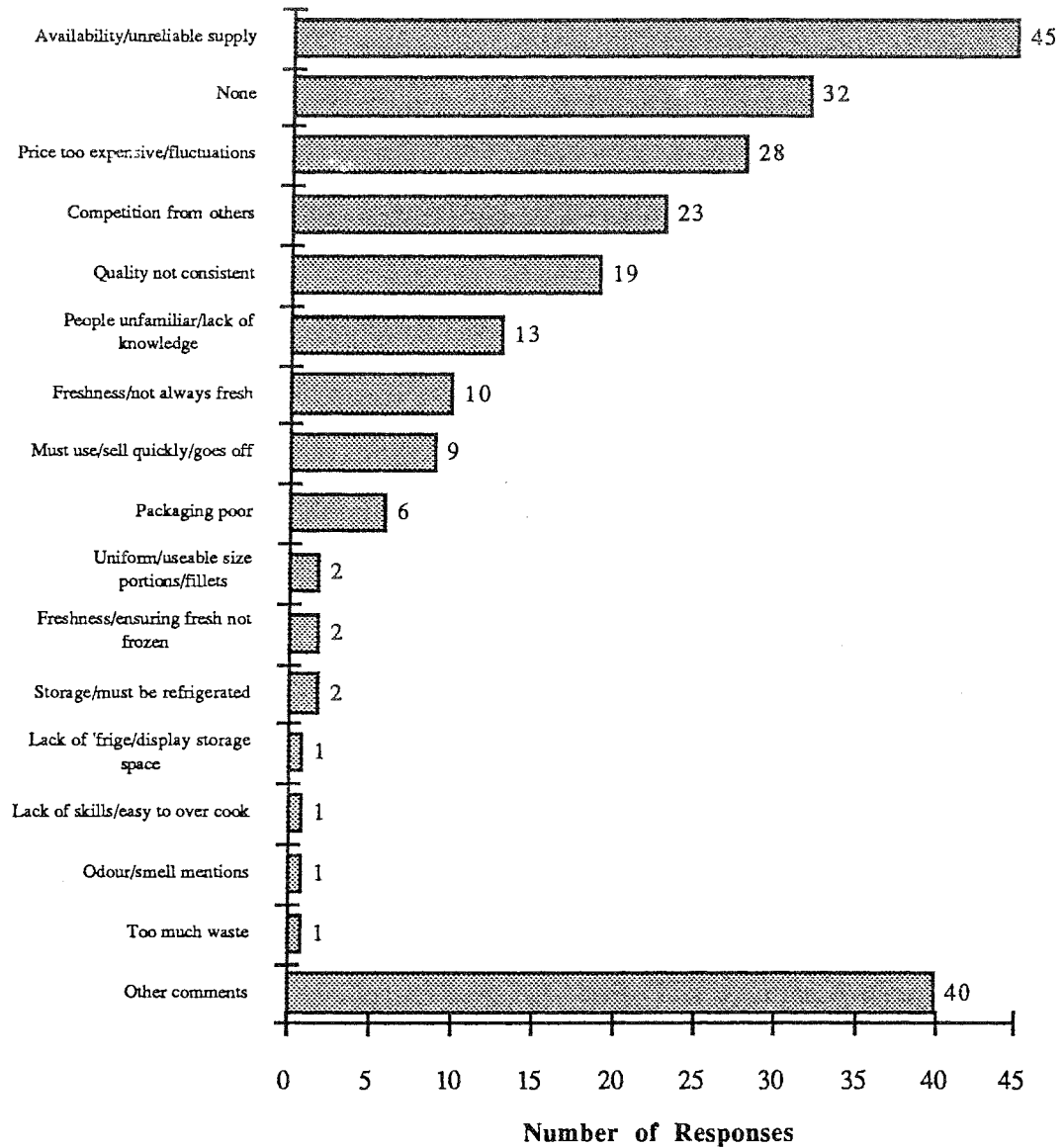
The two priority problems raised by wholesalers are identical with those given priority by retailers and fishmongers.

A previous phase of the study (the Industry Leader Interviews) had identified a range of 21 problems or barriers which suppliers of fresh and frozen fish and seafood had encountered (Question 2b, Appendix III). Wholesalers were asked to give a quantitative assessment of the 'degree of problem' which they believed these represented. The results (Figure 5.4.2) indicate that the most significant problems were seen to be:

- the low margins necessary to remain competitive
- the credit terms that have to be offered to customers
- the difficulty in getting continuous supply at steady prices.

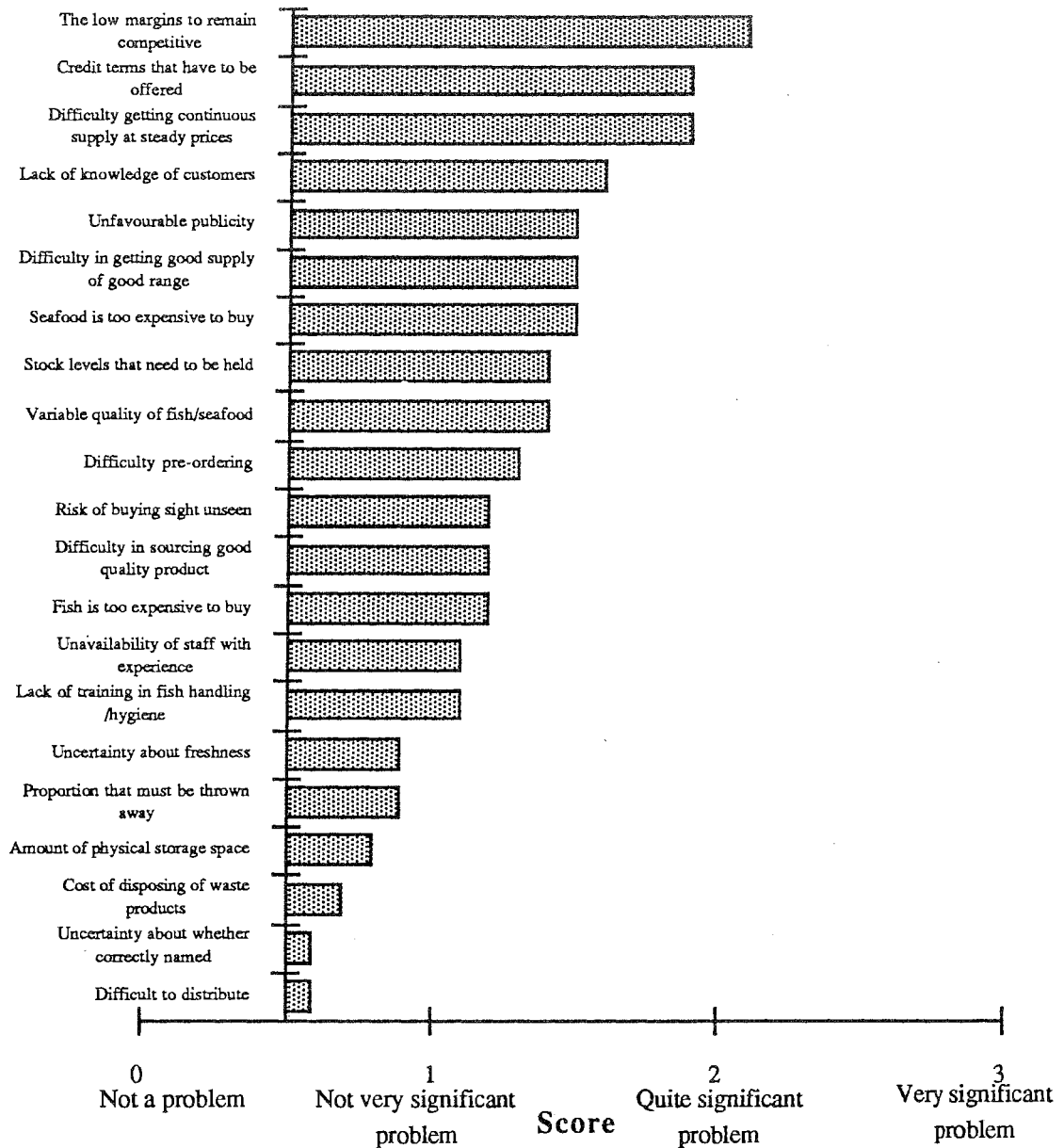
These provide an interesting contrast with the other trade segments supplying to the in-home consumption market, ie retailers and fishmongers who both saw the issue of continuous supply at steady prices as a serious concern. However, whereas retailers and fishmongers saw fish and seafood prices as the most pressing problem, the wholesalers reflected this in comments on the commercial pressure on their margins and credit terms to retailers and wholesalers.

Figure 5.4.1: Wholesalers' Main Problems in Selling/Distributing Fish/Seafood



151 respondents offered 235 responses across the May 1991 and September 1991 surveys. See Question 2a, Appendix III.

Figure 5.4.2: Wholesalers' Views on the Degree of Problems Encountered in the Industry: Averaged Rating



151 respondents offered responses across the May 1991 and September 1991 surveys.
See Question 2b, Appendix III.

5.5 Fish and Seafood Sales - Types, Origin and Volumes

Wholesaler respondents to the May 1991 survey were asked to cite the (up to 12) main types of fresh or frozen finfish and (up to 12) main types of fresh or frozen seafood they had sold in calendar year 1990. In the September 1991 survey the same questions were asked, but for the first six months of calendar years 1991 (Q4a and 4b, Appendix III).

Responses to these questions were aggregated across wholesalers within each survey and those ten species of fish and eight species of seafood sold by the highest number of wholesalers are presented in Tables 5.5.1 and 5.5.2 respectively. Orange roughy was the first species sold by the highest number of wholesalers while whole prawns were the most commonly sold seafood.

Wholesalers were also asked to estimate the proportion of each main fish and seafood species that had originated from Australian waters. Hake was correctly cited by almost all respondents as being an important species. A high proportion of mussels, squid/calamari and scallops were thought to be imported. Otherwise, Australian caught fish and seafood dominates wholesalers' fresh and frozen fish/seafood sales. There were statistically significant regional differences in the fish and seafood species being sold by wholesalers.

**Table 5.5.1: Leading Fresh and Frozen Finfish
Species/Types Sold by Wholesalers**

Type of Finfish	January - Dec 1990		January - June 1991	
	Number of wholesalers selling each species ⁽¹⁾	Origin - weighted average estimate (% local/Australian)	Number of wholesalers selling each species ⁽²⁾	Origin - weighted average estimate (% local/Australian)
Barramundi	25	45%	20	72%
Flathead	30	90%	26	100%
Blue grenadier	27	57%	25	42%
Kingclip	34	53%	18	69%
Hake	30	4%	28	9%
Orange roughy ⁽³⁾	48	85%	47	85%
Snapper	43	84%	49	79%
Shark	20	76%	31	84%
Trevally ⁽⁴⁾	21	99%	23	100%
Whiting ⁽⁵⁾	35	66%	29	73%

(1) 86 respondents offered 702 responses on the 65 leading species/types of fish which they sold.

(2) 82 respondents offered 669 responses on the 95 leading species/types of fish which they sold.

(3) Orange roughy values may be understated, since this species is also known as sea perch in NSW. Responses against this name would be recorded as perch (unspecified). During the May 1991 survey there was one response as perch (unspecified) (from Sydney), and five during the September 1991 survey (Sydney 1, Adelaide 1, Perth 3)

(4) Trevally is also known as blue/silver warehou in some regions. The September 1991 survey included two responses under this alternative name. Specific responses as silver trevally (skippy) have not been included

(5) Does not include specific responses on grass whiting (4,5), King George whiting (6,7), English whiting (4,1), sand whiting (0,3) and school whiting (0,2) during the May 1991 and September 1991 surveys, respectively.

The wholesalers were also asked to specify the volumes they had purchased of each of their cited main fresh/frozen fish and seafood species. Wholesaler respondents to the May 1991 survey were asked for total volume purchased in the six month period January to June 1990 and July to December 1990. Those responding to the September 1991 survey were only asked for total volume purchased in the six month period January to June 1991. Responses to these questions were aggregated within each six month period to give the data shown in Figures 5.5.1 and 5.5.2. Hence, the most common six monthly purchase volume of the cited main fish species of May 1991 survey respondents was in the 2001 - 5000kg range. This was the same weight range most common for cited main seafood species (Figure 5.5.2).

Data on the aggregate quantities of fish purchased during the periods surveyed are presented in Table 5.5.3. Orange roughy stands out as that species purchased in largest volume by the wholesalers. Despite a substantial drop in orange roughy quantities purchased across the three sequential data periods, this species is still handled in quantities about 50% greater than any other species. Hake, which is imported, is the species bought in second largest quantities. Data in Table 5.5.3 capture 85.9%, 84.4% and 81.8% respectively of the total volumes of fish purchased by wholesale respondents for the three half-year intervals shown.

Table 5.5.2: Leading Fresh and Frozen Seafood Species/Types Sold by Wholesalers

Type of Seafood	January - Dec 1990		January - June 1991	
	Number of wholesalers selling each species ⁽¹⁾	Origin - weighted average estimate (% local/Australian)	Number of wholesalers selling each species ⁽²⁾	Origin - weighted average estimate (% local/Australian)
Bugs	31	81.6%	23	93.5%
Crayfish (unspecified)	48	96.7%	43	94.5%
Crab (unspecified)	19	92.8%	26	98.8%
Mussels (unspecified)	37	38.6%	32	56.9%
Oysters	49	83.8%	31	85.2%
Prawns, whole ⁽³⁾	72	80.1%	70	84.9%
Scallops	38	45.4%	35	79.6%
Squid/calamari	41	45.3%	28	58.9%

(1) 86 respondents offered 511 responses on the 60 leading species/types of seafood which they sold.

(2) 82 respondents offered 444 responses on the 55 leading species/types of seafood which they sold.

(3) Predominantly prawns (unspecified), but includes respondents' specific reference to banana, endeavour, king, tiger, and 'other Australian' species of prawn.

Table 5.5.3: Leading Finfish Types Purchased by Wholesalers During the Three Periods Surveyed (Volume, kg)⁽¹⁾⁽²⁾

Species/Type of Finfish	May 1991 Survey		September 1991 Survey
	Jan - June 1990	July - Dec 1990	Jan - June 1991
Barramundi	165,976	170,634	94,410
Blue eye	327,580	337,740	42,800
Bream, sea	72,510	77,560	151,215
Bream (unspecified)	144,830	129,980	44,280
Cod, red	111,702	103,474	92,600
Cod, smoked	111,032	82,777	173,810
Dory, smooth	10,385	17,527	158,933
Flathead	320,144	283,698	207,132
Gem fish	65,726	102,676	69,648
Grenadier, blue	320,030	313,832	361,000
Hake	822,619	928,057	832,871
Kingclip	222,552	246,147	266,330
Mullet (unspecified)	394,739	365,439	240,327
Orange roughy ⁽³⁾	2,137,048	1,638,542	1,291,988
Redfish	12,540	13,540	190,780
Salmon, Atlantic	87,662	81,353	101,110
Snapper	476,936	479,572	205,659
Shark	207,937	211,937	277,214
Trevally ⁽⁴⁾	328,257	346,535	242,951
Trout, Coral	101,610	102,111	69,400
Whiting ⁽⁵⁾	446,823	490,578	285,418

Continued

- (1) An arbitrary cut-off point of 100,000kg purchased in any one data period was applied for inclusion in the table
- (2) The summed quantities of these leading 21 species/types comprise 85.9%, 84.4% and 81.7% of the total quantities of fish purchased during the three respective data periods
- (3) Orange roughy data may be understated, since this species is commonly known as sea perch in NSW. Responses on perch would be recorded as perch (unspecified). Volumes of perch (unspecified) reported for the three surveys were 0.6%, 0.9%, 0.5% of orange roughy volumes, respectively
- (4) Trevally is also commonly known as warehou in some regions. When specified, warehou purchases are included in these data (two purchases totalling 93,000kg in the September 1991 survey). Data on silver trevally (skippy) purchases are not included
- (5) most frequently the species/type of whiting was not specified. Whiting (unspecified) comprised 83.7%, 82.2% and 56.8% of total whiting volumes for the three data periods respectively.

Data on the aggregate quantities of leading seafood species/products purchased by wholesalers are presented in Table 5.5.4. Prawns are the major purchased item across the three half-year periods, with quantities varying between 1,500 tonne to 1,800 tonne in any six-month interval. Consistently large quantities of crayfish were also bought, although volumes declined over the survey period. On the other hand, the quantities of scallops bought by wholesalers rose. Squid/calamari was another seafood item bought in consistently large quantities. The summed quantities of the leading 13 seafood species/products bought by wholesalers represent about 85% of the total quantities of seafood purchased by wholesaler respondents.

These quantitative findings, ie that 13 species/products constitute 85% of total volumes purchased, are in general agreement with more qualitative findings indicating that wholesalers most frequently bought in the range of 21 - 50 distinct species/types of fish or seafood over any six-month interval (Figures 5.5.3 and 5.5.4).

**Table 5.5.4: Leading Seafood Species/Products
Purchased by Wholesalers During the Three Periods
Surveyed⁽¹⁾⁽²⁾**

Species/Type of Seafood	May 1991 Survey		September 1991 Survey
	Jan - June 1990	July - Dec 1990	Jan - June 1991
Bugs ⁽³⁾	112,684	105,581	60,534
Crayfish, freshwater marron ⁽⁴⁾	1,000	200,000	0
Crayfish (unspecified)	660,527	592,286	251,176
Mussels (blue/black)	30,500	31,000	114,150
Mussels (unspecified)	176,140	178,210	190,013
Octopus	236,131	143,916	83,400
Oysters	118,274	130,883	119,102
Prawns (whole)	1,755,889	1,568,025	1,788,919
Prawn meat, raw imported ⁽⁴⁾	153,000	124,000	0
Prawn, cooked and peeled, Asian	180,400	226,680	129,150
Scallops	260,981	278,670	637,819
Seafood extender	55,470	126,175	52,950
Squid/calamari	282,993	260,739	386,503
Crumbed fish fillet and chips ⁽⁴⁾	201,800	151,850	0

Continued

- (1) An arbitrary cut-off point of 100,000kg purchased in any one data period was applied for inclusion in the table*
- (2) The summed quantities of these leading 13 seafood species/products comprise 85.5%, 85.3% and 84.6%, respectively, of the total quantities of seafood purchases by wholesaler respondents during the three periods*
- (3) Includes Balmain bugs, Moreton Bay bugs, slipper lobster bug meat and tails, and bugs (unspecified)*
- (4) An absence of purchasing in any half-year period may reflect commercial decisions of the particular wholesalers sampled, rather than general supply or demand conditions.*

Wholesalers were asked what proportion of their leading species/types of fish and seafood were sold to a range of other 'downstream' businesses in the fishing industry retail chain (Question 6b, Appendix III).

Tables 5.5.5 and 5.5.6 show the preferential distribution of different fish and seafood species, respectively, into distinct business streams. For example, orange roughy, which may be regarded as a premium fish, is sold predominantly into the 'restaurant' trade sector. In the case of hake, the 'restaurant' sectors again purchase an appreciable proportion, but the proportions being sold into less premium markets like 'take-away' outlets and supermarkets are greater than those of orange roughy. Very little of either species is sold directly to value-added processors or to retail fish markets.

The proportion of smoked cod which is sold direct to consumers is very high, reflecting the wholesale activities of major food stores such as nation-wide supermarket chains.

The National Consumption Study Database contains similar data for the full range of 60 finfish species/types and 55 seafood species/types discussed by wholesalers.

When asked approximately what proportion of the total amount spent buying fish and seafood in the preceding month was spent on their individual leading species, (Question 6c, Appendix III), the majority of respondents said '100%'. Across the entire sample of wholesalers, the average proportion spent was computed as 84.6%.

Table 5.5.5: Proportion of Leading Fish Species Sold by Wholesalers to Particular Businesses

Species/Type of Finfish	Number of Citations	Other W/Saler Market	Value-Added Processor Manufacturer	Institutional Catering	Caterers	'Restaurants/hotel/motel/club	Retail Fish Market	Retail Fish Shop (Fishmonger)	Fish and Chip Shop/ Take-Away	Retailers (Super-market etc)	Direct to Consumer	Total
Barramundi	45	16.6	0.0	2.2	8.3	46.3	1.3	6.5	4.1	8.4	6.1	100%
Blue eye	33	12.1	0.0	1.9	5.0	62.3	1.5	7.4	1.3	1.6	6.9	100%
Bream, sea	30	14.1	3.0	1.1	1.1	24.1	3.9	17.4	16.0	9.3	10.0	100%
Cod, red	10	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.5	27.5	70.0	100%
Cod, smoked	19	1.9	0.0	0.0	0.3	8.3	0.0	2.8	5.6	36.7	44.4	100%
Dory, smooth	9	27.8	0.0	5.6	2.2	36.7	6.7	7.8	11.1	0.0	2.2	100%
Flathead ⁽¹⁾	56	12.1	3.0	0.6	3.7	23.3	4.7	10.5	1.6	11.8	28.8	100%
Gemfish	30	14.6	2.7	2.3	3.2	39.5	3.0	15.2	3.0	8.2	8.3	100%
Grenadier, blue	52	19.1	0.0	4.3	5.4	16.3	2.8	10.1	4.1	22.7	15.1	100%
Hake	58	4.2	0.2	5.6	4.6	19.0	2.3	5.5	24.3	19.6	14.6	100%
Kingclip	52	13.4	2.0	2.8	5.0	44.5	4.8	8.5	2.3	7.5	9.2	100%
Mullet (unspecified)	32	11.9	8.1	0.6	3.2	5.4	6.3	10.0	10.8	7.6	36.0	100%
Orange roughy ⁽²⁾	95	17.7	1.2	2.7	3.6	29.9	5.1	8.8	6.5	6.8	17.5	100%
Salmon, Atlantic	20	20.6	0.6	1.4	4.7	43.6	1.9	4.0	1.1	5.6	16.6	100%
Snapper ⁽³⁾	92	15.3	1.3	1.9	3.4	43.4	3.0	7.0	4.6	8.8	11.1	100%
Shark ⁽⁴⁾	51	13.8	2.0	1.4	4.3	7.9	2.7	9.0	26.5	21.4	11.1	100%
Trevally ⁽⁵⁾	44	17.7	1.8	2.1	8.3	39.6	4.3	7.3	0.8	6.9	11.1	100%
Trout, coral	27	17.1	0.0	0.8	2.3	51.7	0.8	6.3	8.8	4.6	7.5	100%
Whiting ⁽⁶⁾	96	8.7	2.4	3.2	4.2	29.1	4.3	6.8	11.2	9.1	21.0	100%

(1) Flathead includes flathead (unspecified) plus any other flathead species. Eight wholesalers claimed to sell 100% of their flathead direct to customers, and none of these respondents were repeat interviews across the two surveys

(2) Orange roughy is orange roughy alone and makes no allowance for orange roughy being called sea perch in NSW

(3) Snapper includes snapper (unspecified) plus snapper, King snapper, Queen snapper

(4) Shark is shark (other), excluding shark, gummy

(5) Trevally is trevally (unspecified) plus warehou blue/silver, but excludes silver trevally/skippy

(6) Whiting is whiting (unspecified) plus grass whiting, King George whiting, sand whiting, English whiting. Thirteen wholesalers claimed to sell 100% of their whiting direct to customers, and only two of these were repeat interviews across the two surveys.

Table 5.5.6: Proportion of Leading Seafood Species Sold by Wholesalers to Particular Businesses (%)

Species/Type of Seafood	Number of Citations	Other W/Saler Market	Value-Added Processor Manufacturer	Institutional Catering	Caterers	'Restaurants/hotel/motel/club	Retail Fish Market	Retail Fish Shop (Fishmonger)	Fish and Chip Shop/ Take-Away	Retailers (Super-market etc)	Direct to Consumer	Total
Bugs ⁽¹⁾	54	15.8	0.0	0.7	3.3	56.7	3.3	4.8	1.7	0.0	13.7	100%
Crayfish (freshwater marron)	1	70.0	5.0	0.0	5.0	10.0	5.0	0.0	0.0	0.0	5.0	100%
Crayfish (unspecified)	91	12.8	1.2	0.9	4.2	44.5	4.7	8.3	3.4	4.9	15.2	100%
Mussels blue/black	6	8.3	0.0	0.0	6.3	28.7	8.3	36.7	0.0	0.0	11.7	100%
Mussels (unspecified)	69	10.4	1.4	0.5	4.0	50.8	4.8	8.0	3.7	6.3	10.0	100%
Octopus ⁽²⁾	28	21.9	2.1	0.4	7.3	44.8	4.2	6.0	5.2	0.0	8.0	100%
Oysters ⁽³⁾	80	11.2	1.1	0.9	5.5	51.1	5.2	6.8	3.7	3.3	11.1	100%
Prawns (whole) ⁽⁴⁾	53	13.8	3.6	0.6	1.8	37.5	2.9	7.0	1.0	15.1	16.7	100%
Prawn meat (imported, raw)	4	30.0	0.0	0.0	6.7	56.7	0.0	3.3	3.3	0.0	0.0	100%
Prawn cooked & peeled, Asian	17	13.4	0.0	4.8	13.4	39.1	0.4	4.1	5.0	6.9	12.8	100%
Scallops	75	17.7	1.6	1.0	3.2	49.6	2.2	7.0	7.1	1.6	7.8	100%
Seafood extender	17	6.7	0.0	0.7	0.0	23.7	7.3	12.0	4.7	12.0	33.0	100%
Squid/calamari ⁽⁵⁾	69	15.6	1.0	1.7	3.4	43.1	2.1	8.5	6.4	9.2	8.8	100%

(1) Includes Balmain bugs, Moreton bay bugs, slipper lobster bugmeat, and tails, and bugs (unspecified)

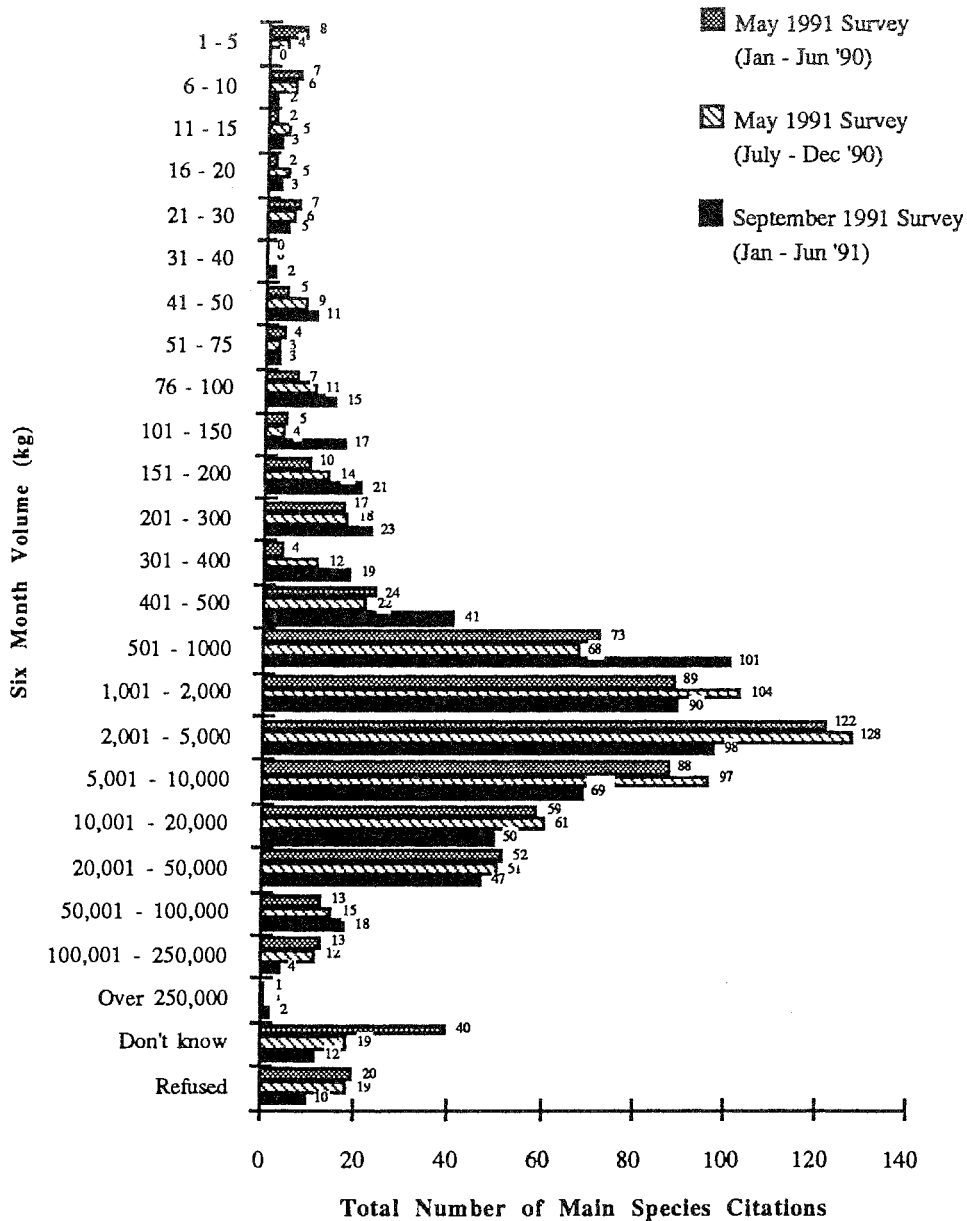
(2) 'Octopus' is octopus (unspecified)

(3) 'Oysters' is oysters (unspecified)

(4) Prawns, whole includes banana, endeavour, king, tiger, and other Australian species PLUS 'prawn other' (located after squid)

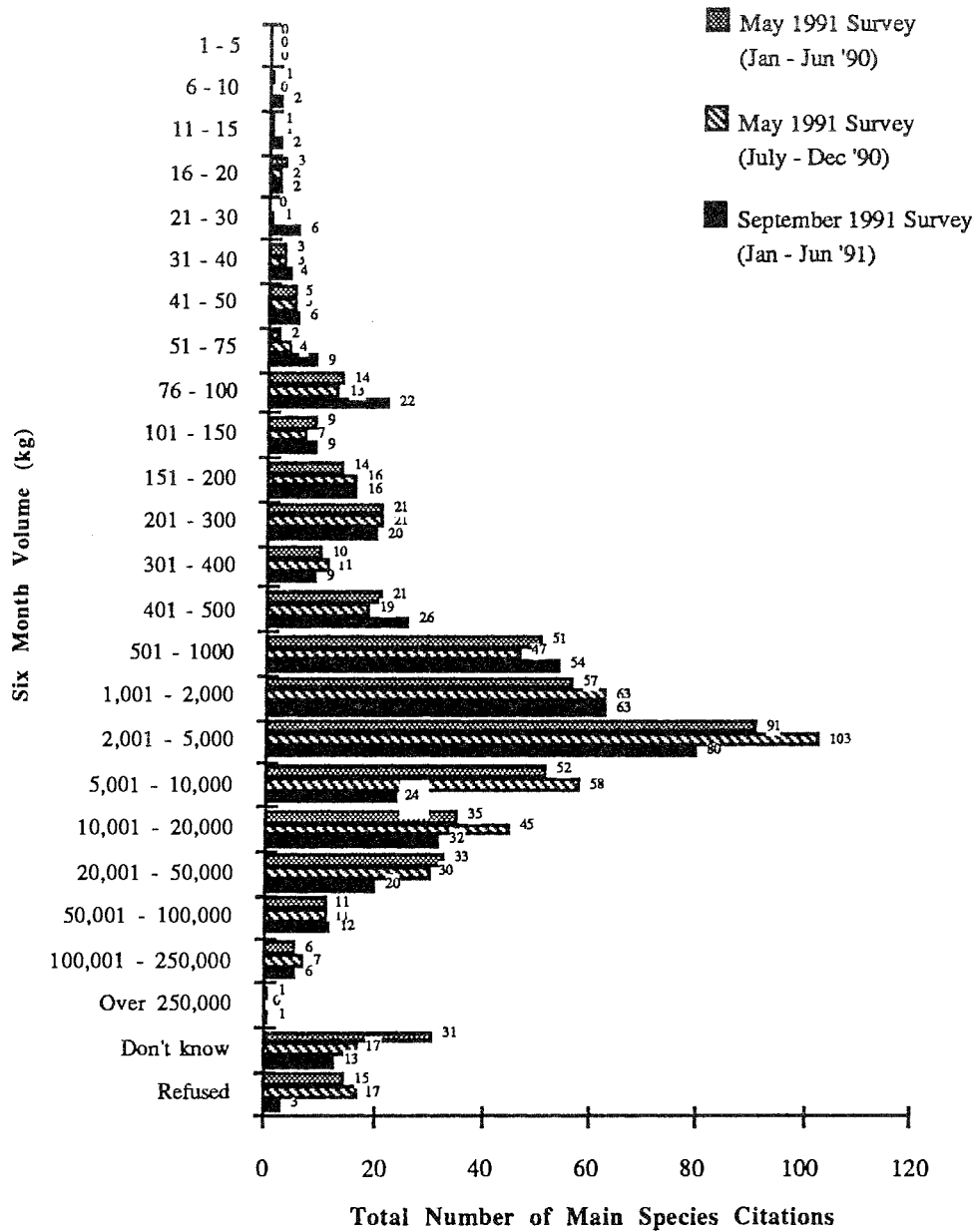
(5) Squid/calamari combines squid (unspecified) and calamari

Figure 5.5.1: Total Number of Cited Main Finfish Species Purchased in the Six Month Volume Ranges Specified



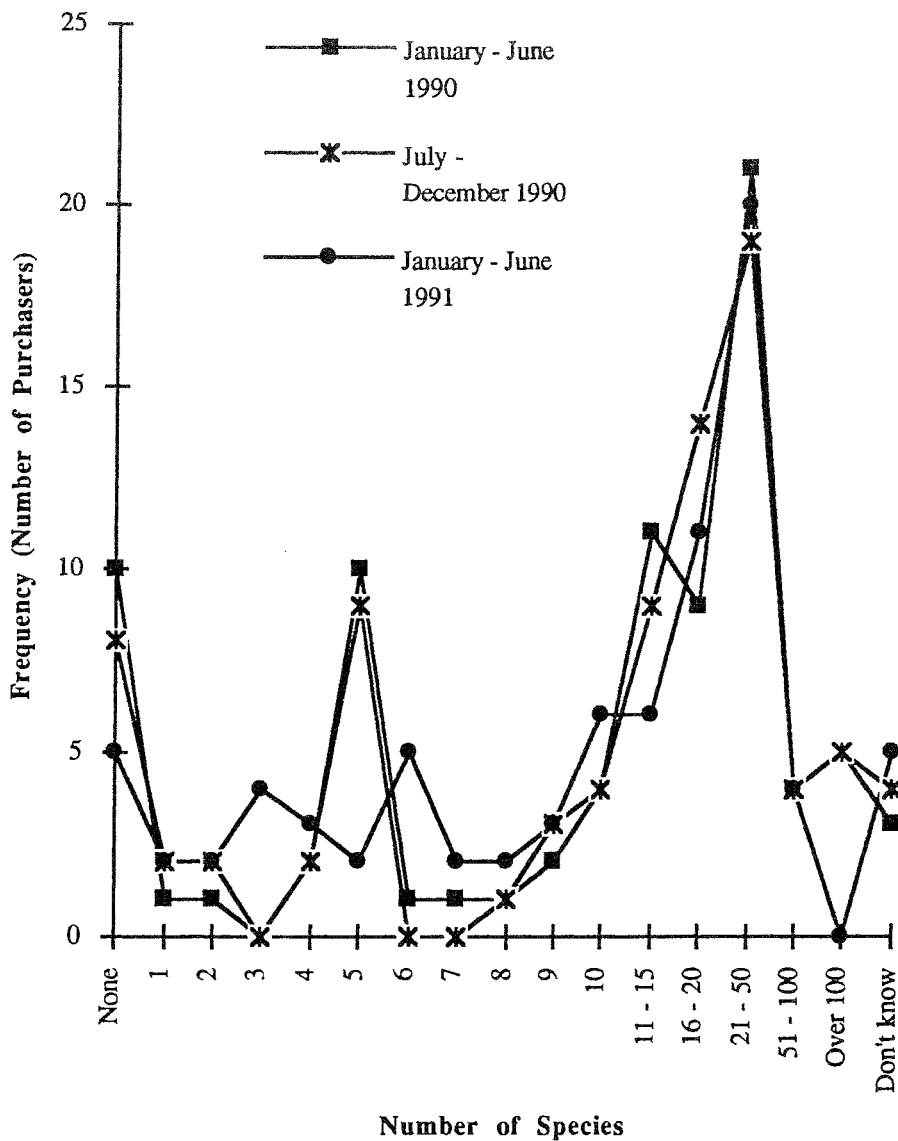
168 respondents offered 2,032 responses across the May 1991 and September 1991 surveys (see Question 5, Appendix III).

Figure 5.5.2: Total Number of Cited Main Seafood Species Purchased in the Six Month Volume Ranges Specified



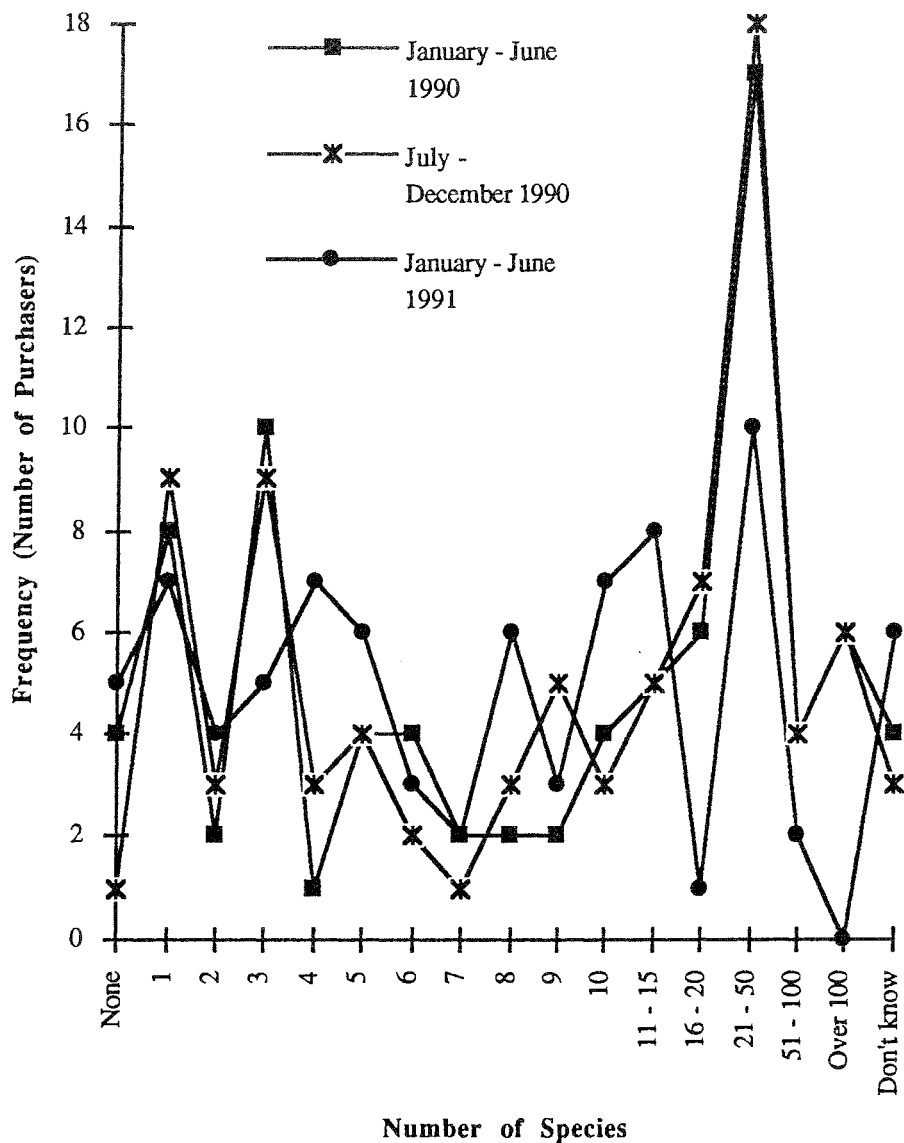
168 respondents offered 1,429 responses across the May 1991 and September 1991 surveys (see Question 5, Appendix III).

Figure 5.5.3: Number of Species of Fresh and Frozen Fish Bought by Wholesalers in the Three Half-Year Intervals Surveyed



86 and 82 respondents offered responses in the May 1991 and September 1991 surveys, respectively (see Question 3b, c, Appendix III).

Figure 5.5.4: Number of Species of Fresh and Frozen Seafood Bought by Wholesalers in the Three Half-Year Intervals Surveyed



86 and 82 respondents offered responses in the May 1991 and September 1991 surveys, respectively (see Question 3b, c, Appendix III).

5.6 Wholesalers' Stock Selection and Perceived Customers' Criteria

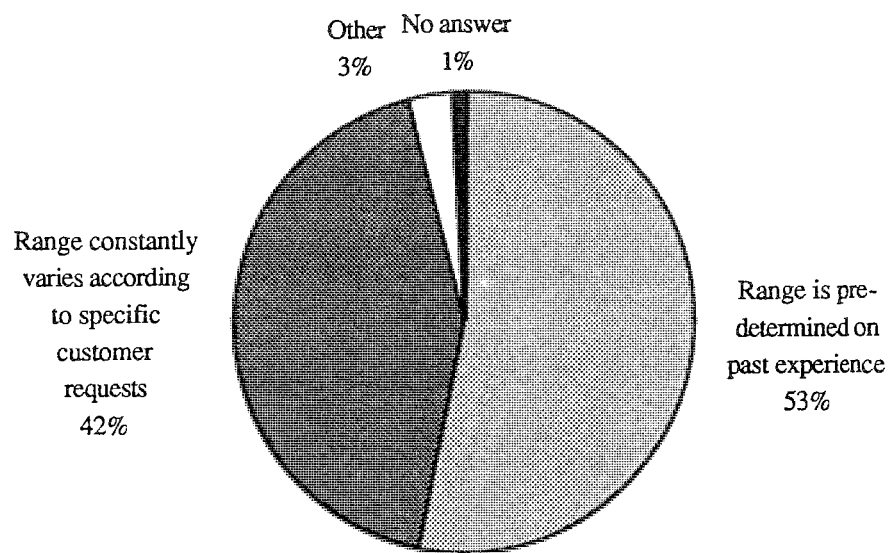
In view of the pivotal role of wholesalers in the retailing chain for fish and seafood, the survey sought information on the basis upon which wholesalers selected the range of fish and seafood stocked (Question 8, Appendix III). Respondents were more frequently of the opinion that “the range of fish and seafood is essentially predetermined based on past experience” (Figure 5.6.1). The alternative proposition, “that the range of species constantly varies according to specific customer requests”, was nevertheless favoured by 42% of respondents. There was no significant influence of the type of wholesaler on the responses given.

The Industry Leader Interview phase of this study had previously identified a range of factors considered to be important to customers when selecting their supplier of fresh or frozen fish and seafood bought unpackaged (Question 7, Appendix III). Wholesalers were asked to ‘score’ these factors quantitatively, on the basis of their perception of what customers saw as important. Respondents most frequently placed emphasis on the following factors:

- honest and fair in doing business
- good reputation for quality fish/seafood
- that orders are promptly attended to.

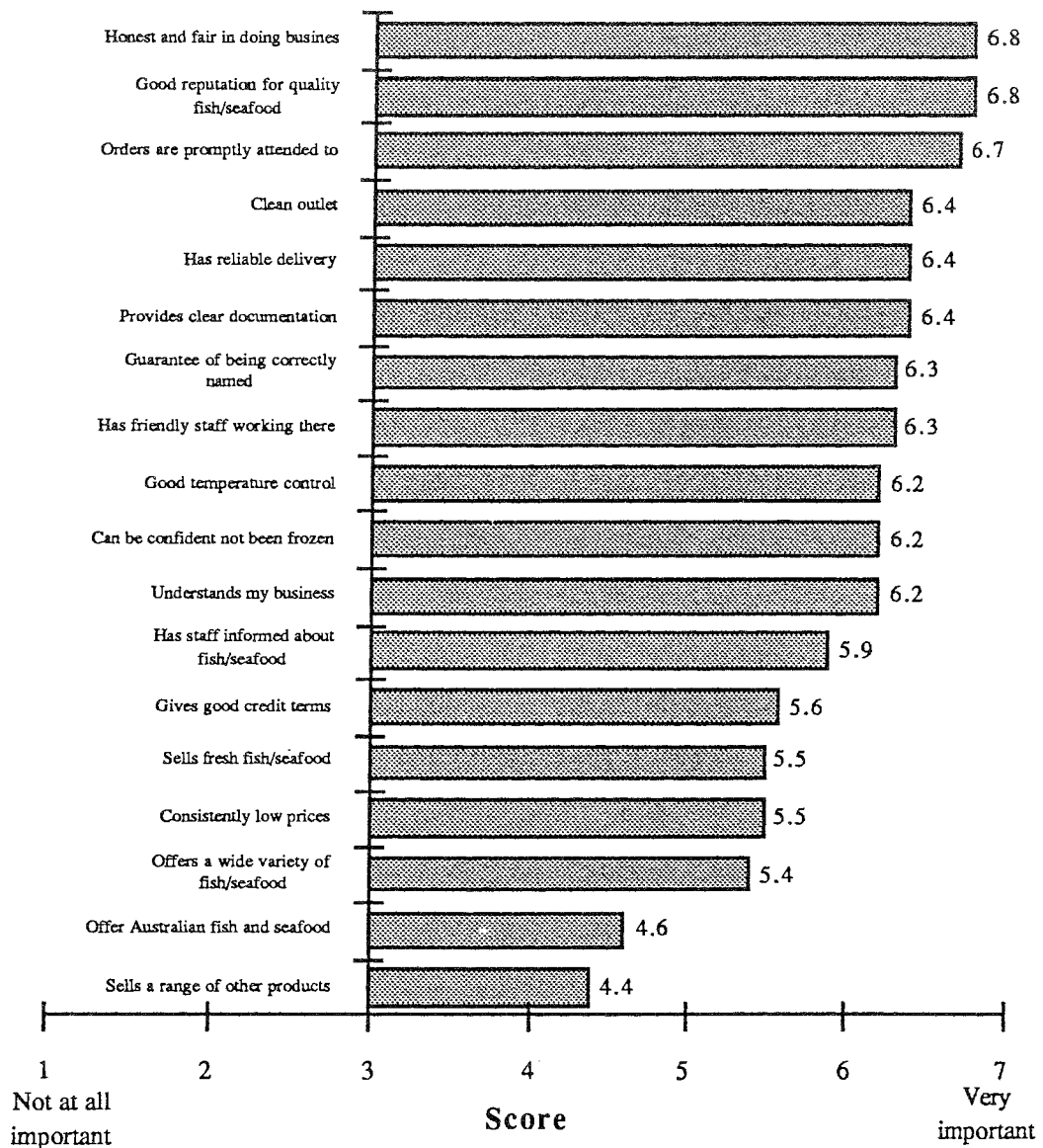
Wholesalers' ranking of these and other factors are shown in Figure 5.6.2.

Figure 5.6.1: Basis for Wholesaler's Range of Fish/Seafood Stocked



149 respondents offered responses across the May 1991 and September 1991 surveys.
See Question 8, Appendix III.

Figure 5.6.2: Wholesalers' Ratings of Factors of Importance to Customers When Choosing a Supplier of Unpackaged Fresh/Frozen Fish or Seafood: Averaged Rating



149 respondents offered responses on each of 18 factors across the May 1991 and September 1991 surveys (see Question 7, Appendix III).

5.7 Industry Changes, and Potential for Under-utilised Species

When asked what changes had occurred in the fishing industry within the last five years, the change most frequently noted by wholesalers was that prices for fish and seafood had gone up (Question 13, Appendix III; Figure 5.7.1). The next most frequently noted changes were that:

- supply was decreasing and there was less choice possible
- more varieties available.

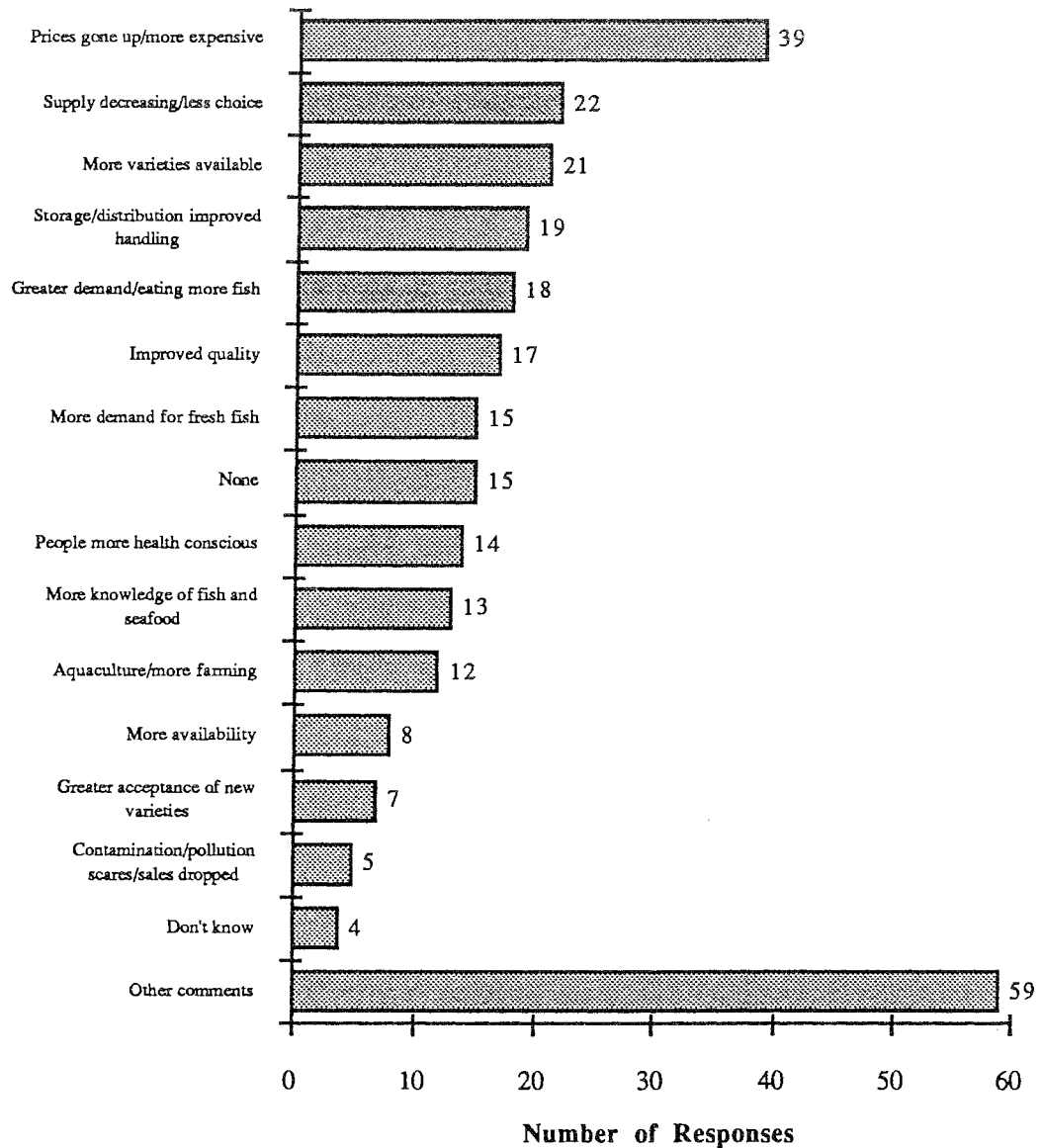
While these latter two may seem a little contradictory, they are representative of the situation in the fishing industry. The diminishing fishing stocks for some species is narrowing the range of options in selecting some fish and seafood. At the same time more varieties are becoming available but they may not necessarily fulfil the same market requirements as those species with diminishing supply.

Not surprisingly then, when wholesalers were asked about the potential for increased sales for a range of under-utilised species (seven farmed species, four wild species), they most frequently saw potential in farm prawns and farm barramundi (Figure 5.7.2). These two species/types are frequently sold by wholesalers; prawns are sold in greater quantities than any other seafood item, and the quantities of barramundi sold rank highly amongst fish sales.

Wholesalers also saw far greater potential for increased sales through the farmed species rather than wild catch (pilchards, silver trevally/skipper, Australian herring/tommy ruff, and Jack mackerel). Squid was the major exception to this generalisation.

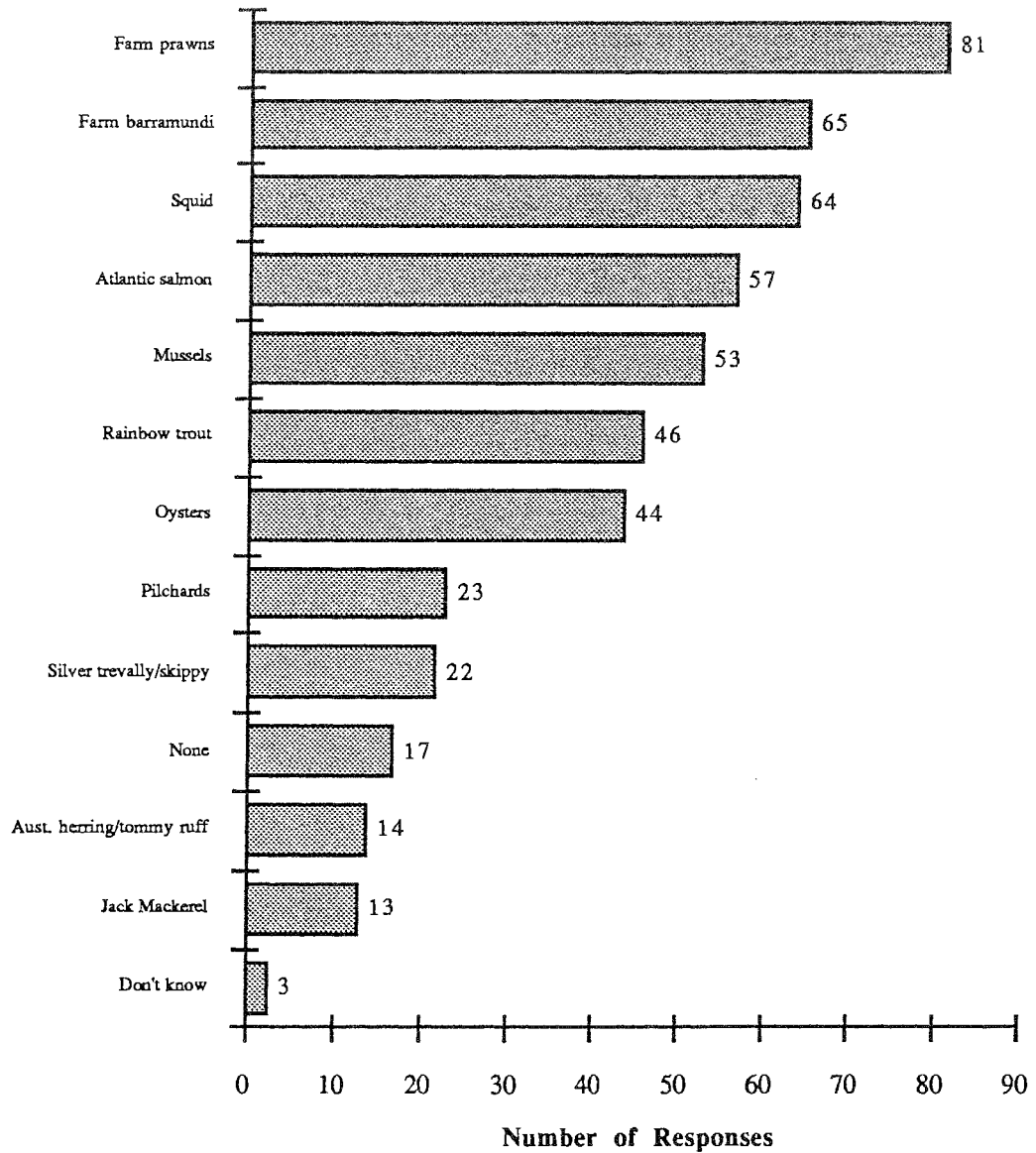
The difficulties which wholesalers face in securing a constant and steady supply of fish and seafood is probably their principal reason for looking to farming of species. This is borne out to some extent through data on their reasons for the potential of under-utilised species (Figure 5.7.3). The most frequently cited reason was 'always available/constant supply'; farm prawns accounted for 41% of responses by those who gave this reason, and farm barramundi 21%. The second most frequently offered reason for the potential of under-utilised species was 'popular/fish in demand', with squid and farm barramundi accounting for 22% and 17% of responses, respectively. For 'good flavoured fish', 28% of responses were associated with Atlantic salmon. With regard to 'quality controls' as a reason, 33% of responses linked this aspect of potential to farm prawns. Squid was associated with 35% of all responses for the reason 'under-utilised/untapped/need supply', and mussels with 32% of responses on 'cheap/cheaper'.

Figure 5.7.1: Major Changes Noticed by Wholesalers in Last 5 Years in the Fish and Seafood Industry



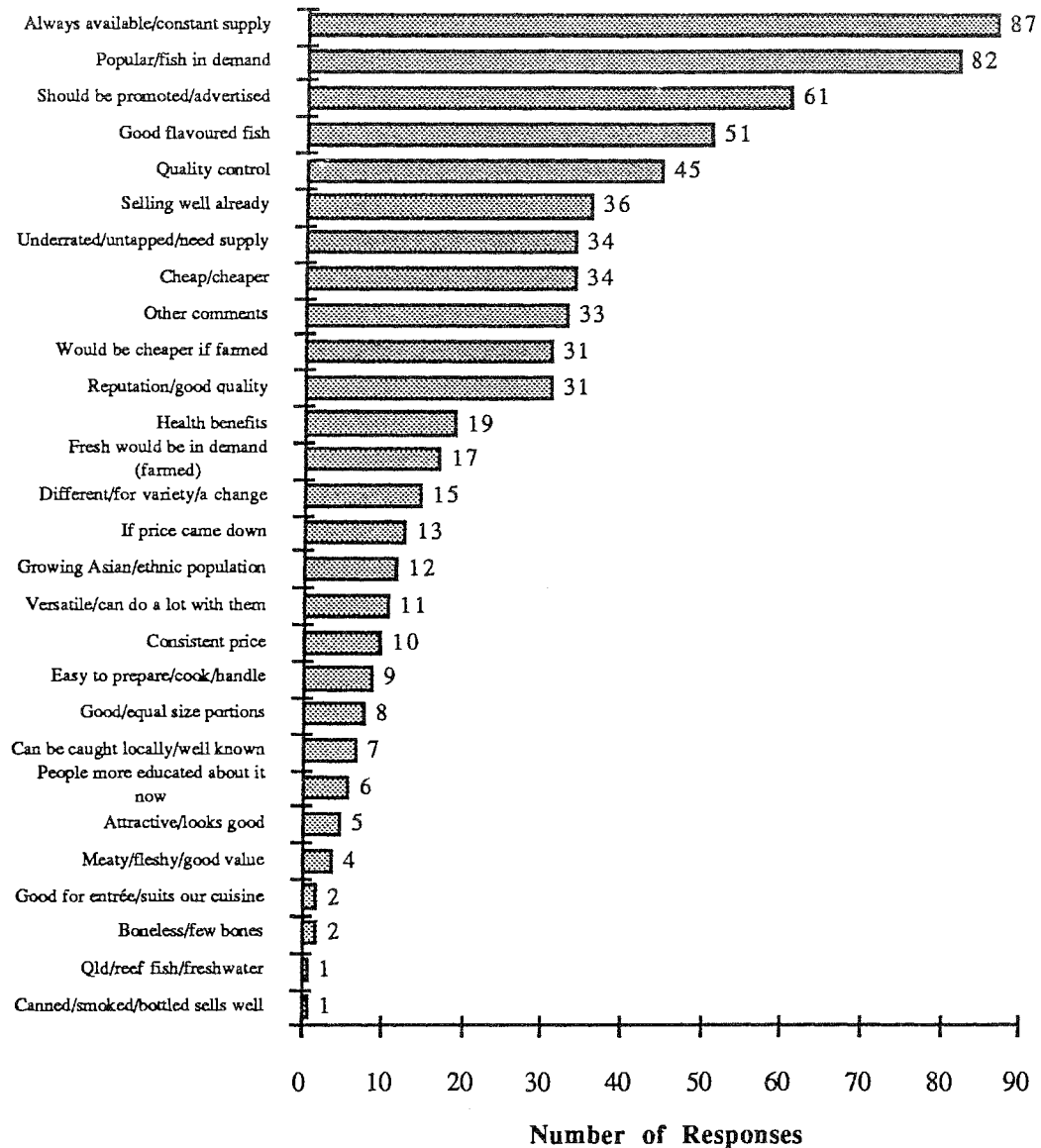
151 respondents offered 288 responses across the May 1991 and September 1991 surveys. See Question 13, Appendix III.

Figure 5.7.2: Wholesalers' Views on Under-utilised Species with Greatest Potential for Increased Sales



151 respondents offered 502 responses across the May 1991 and September 1991 surveys. See Question 11a, Appendix III.

Figure 5.7.3: Reasons for Wholesalers' Opinions on Potential of Under-utilised Species.



151 respondents offered 667 responses across the May 1991 and September 1991 surveys. See Question 11b, Appendix III.

5.8 Wholesaler and Industry Initiatives to Sell More Fish

The study sought input from wholesalers on initiatives which may be taken to stimulate businesses to stock and sell more fish and seafood (Questions 9a, b, 10, Appendix III), ie

- actions needed to be taken for the wholesaler's own business to stock and sell more
- actions needed to be taken by the fishing industry in general
- quantitative ranking of a range of specified actions.

In terms of stimulating their own businesses, wholesalers most frequently saw the necessary actions as:

- stimulating more customer demand
- doing more advertising and promotions
- adopting lower or more reasonable prices or putting on specials (Figure 5.8.1).

As for actions which might be taken by the fishing industry in general, wholesalers' most frequent responses were:

- more advertising/promotion/information
- cheaper/reduced prices/less (price) fluctuation (Figure 5.8.2).

Further comments were made on the need to do more to educate the public about the health features of fish, and to adopt practices which would ensure good quality fish.

Perhaps more than with any other trade sector, there was frequent comment on the management of the fishing industry at present, through such related comments as:

- less controls/restructure the industry
- more controls/change laws/no overfishing
- management authority more effective.

When respondents were asked to give a score on the relative impact of nine particular actions would have on their sales, the action given the highest score for its potential sales impact was ‘more advertising support for fish/seafood’ (Figure 5.8.3). Three further actions were regarded as likely to have ‘some impact’, ie

- availability of information on cooking and preparation
- better quality product available through better handling
- greater encouragement of the aquaculture industry.

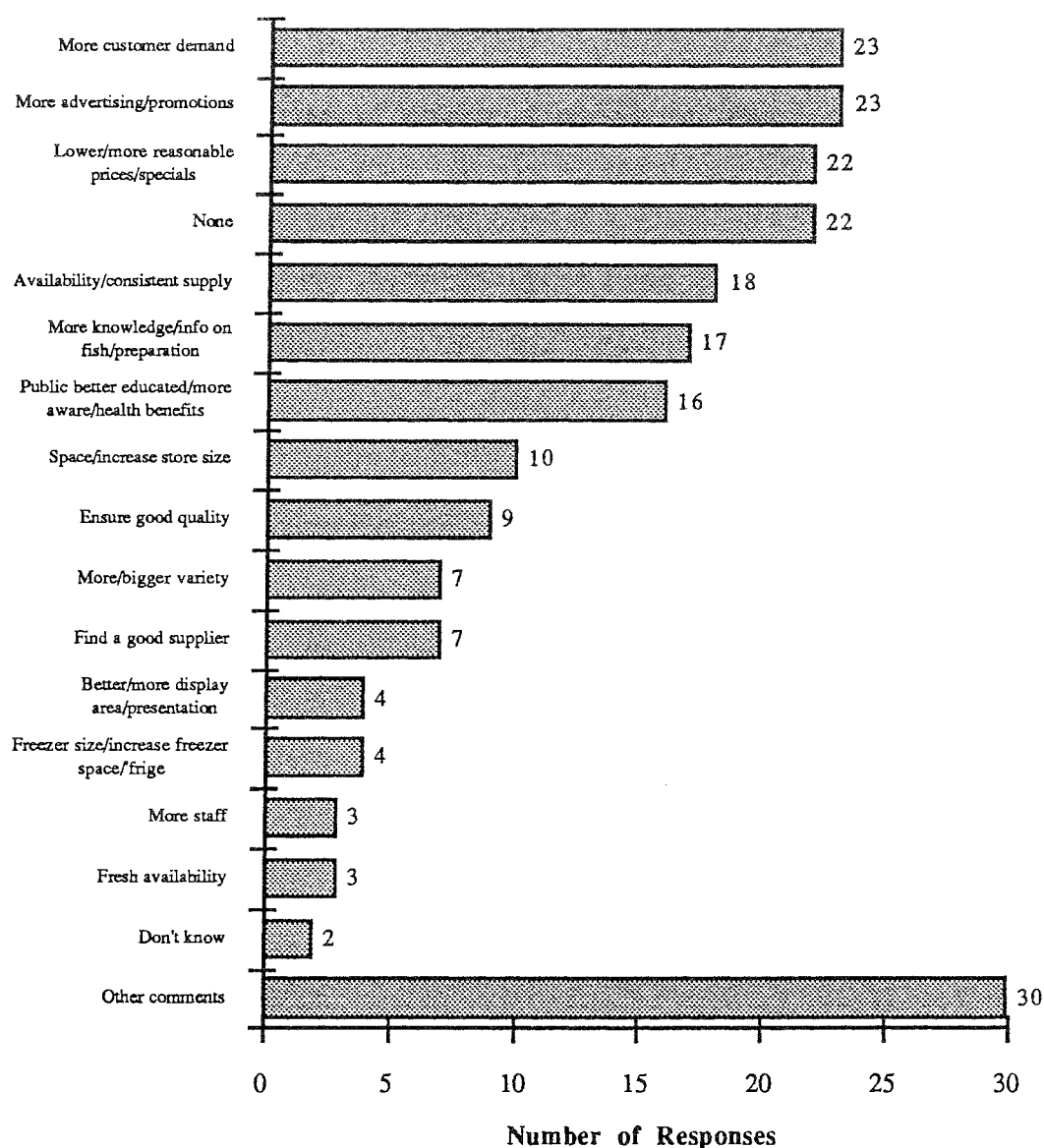
Wholesalers were particularly optimistic about the future of the fishing industry (Question 14a, Appendix III); when asked whether they considered that the sale of fish and seafood products would increase, decrease or remain the same, 70% expressed the view that sales would increase (Figure 5.8.4). Their most frequent reasons for holding this view (Question 14b, Appendix III) were predominantly health-related, ie (Figure 5.8.5).

- people becoming more health conscious
- people eating more fish
- no/low cholesterol/fish is health food.

The major reason for wholesalers holding the view that sales would be static or decline, related to price, ie

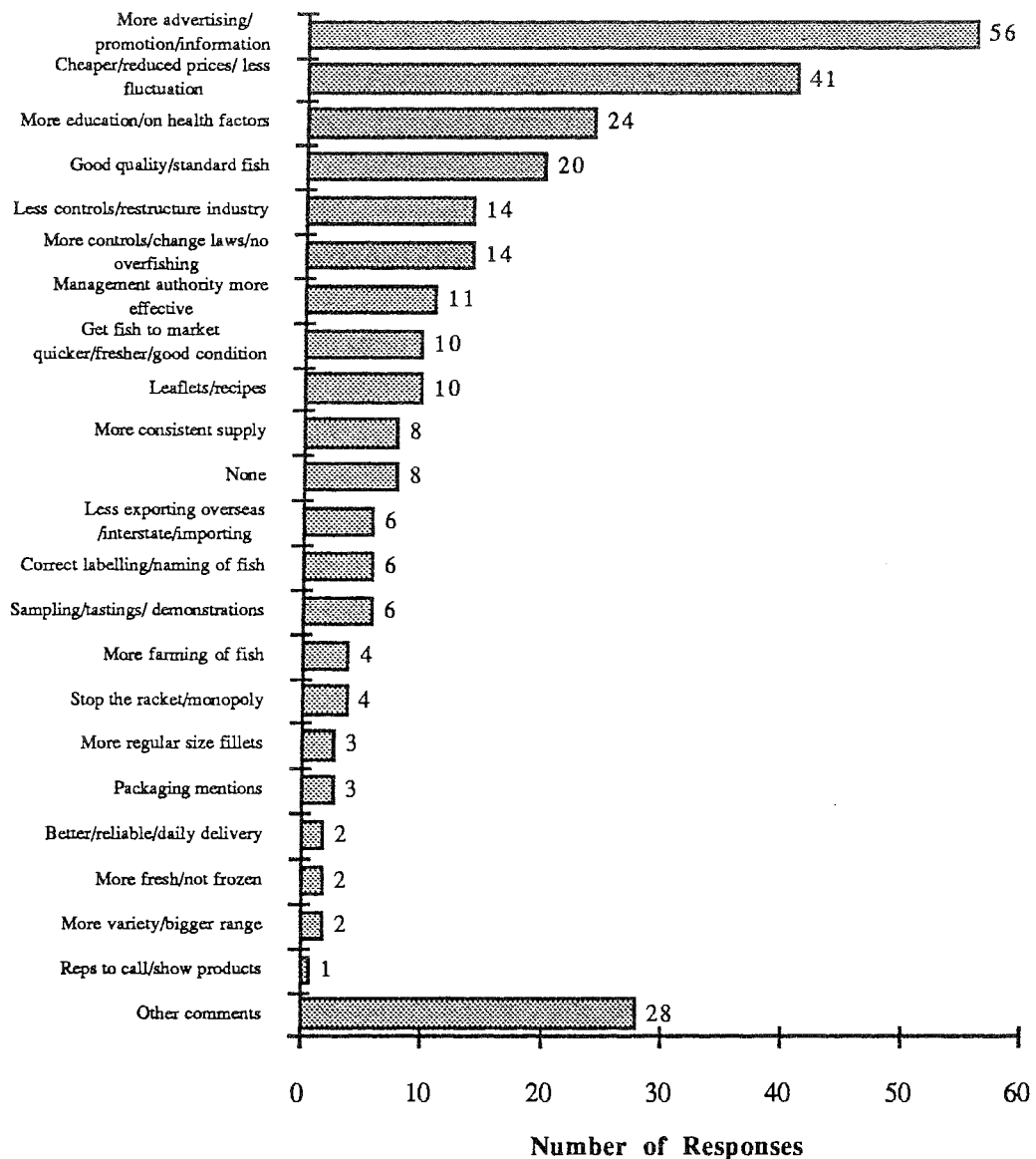
- becoming too expensive/people can’t buy
- people not spending/too expensive/tough times.

Figure 5.8.1: Actions Needed to be Taken by Wholesaler's Business to Sell More Fish and Seafood Products



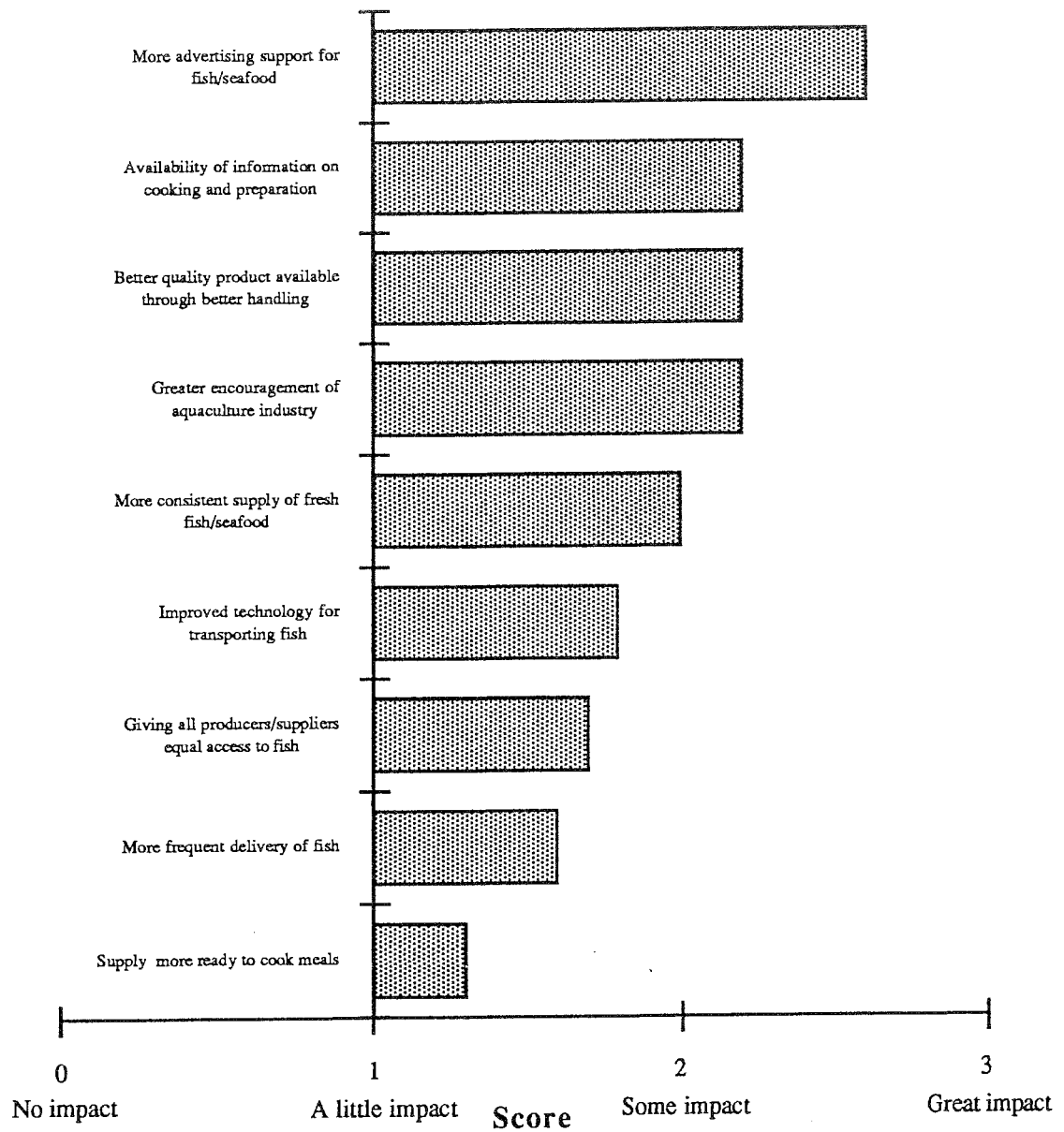
151 respondents offered 220 responses across the May 1991 and September 1991 surveys. See Question 9a, Appendix III.

Figure 5.8.2: Actions That Need to be Taken by Fishing Industry in General for More Fish/Seafood to be Bought by Wholesaler's Business



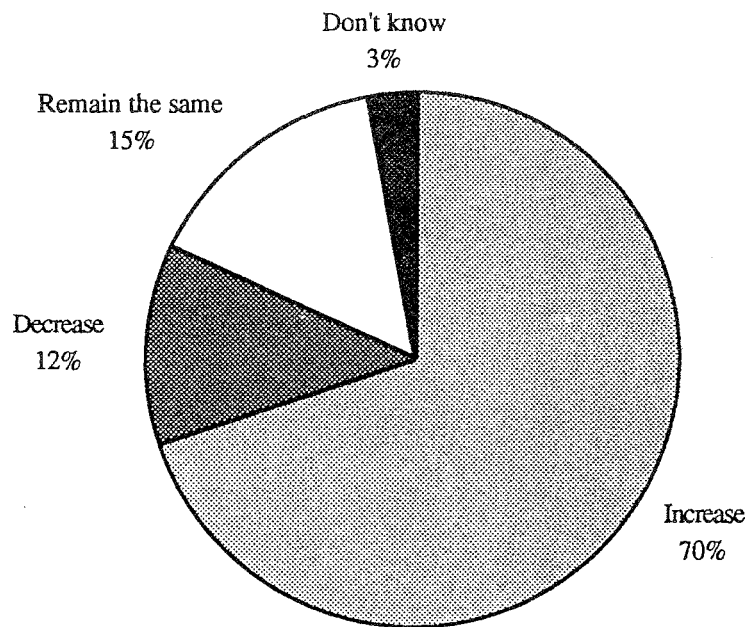
151 respondents offered 283 responses across the May 1991 and September 1991 surveys. See Question 9b, Appendix III

Figure 5.8.3: Likelihood of Actions Leading to an Increase in the Sale of Fish and Seafood Products by Wholesaler's Business: Averaged Impact Rating



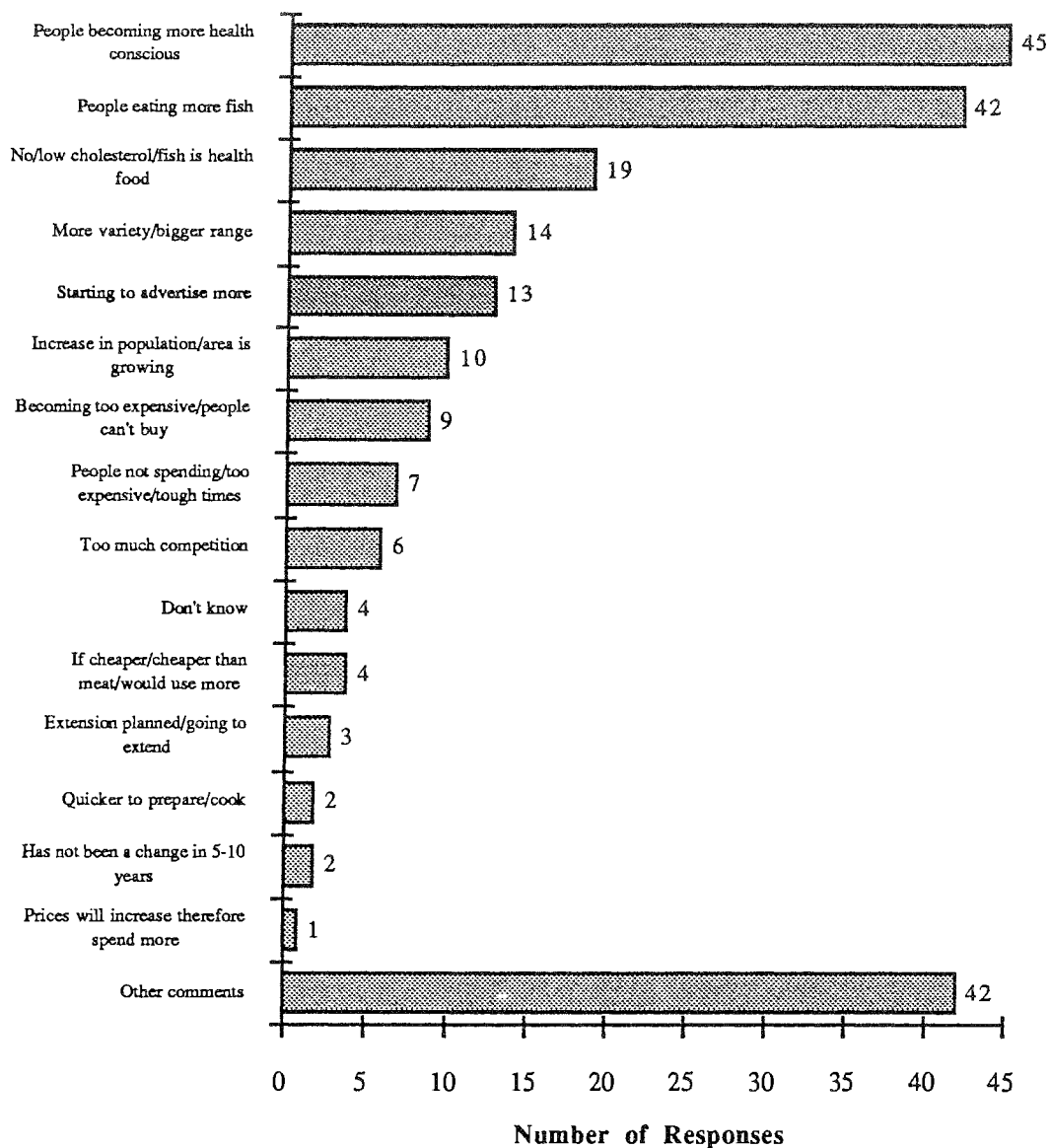
151 respondents offered responses across the May 1991 and September 1991 surveys. See Question 10, Appendix III.

Figure 5.8.4: Wholesaler's Opinion of Sales of Fish/Seafood Over Next 5 Years



151 respondents offered responses across the May 1991 and September 1991 surveys. See Question 14a, Appendix III.

Figure 5.8.5: Wholesalers' Reasons for Opinion on Prospects for Fish and Seafood Sales



151 respondents offered 223 responses across the May 1991 and September 1991 surveys. See Question 14b, Appendix III.

5.9 Business Details - Turnover, Staff and Business Links

The turnover of wholesalers' businesses varied widely, from those with sales of under \$5,000 per week to major national organisations with weekly turnovers exceeding \$10 million (Figure 5.9.1). Whilst a large proportion (22%) of wholesalers refused to disclose turnover data, the most commonly mentioned turnover range was \$11,000 - \$20,000.

The contribution of the sale of all fish and seafood products to these turnover data is interesting. Most wholesalers estimated that 100% of turnover came from fish and seafood products (Figure 5.9.2); eleven wholesalers reported that their contribution was in the 1% - 10% range, but ten of these eleven respondents were general wholesalers rather than of the fish and seafood specific type.

Consistent with these data, wholesalers most frequently gave their value of all fish and seafood sales as being in the \$11,000 - \$20,000 per week range (Figure 5.9.3), but a large number of respondents either refused to discuss dollar values, or claimed they didn't know the relevant figures. The computed average value of all fish and seafood product sales was \$73,000 per week, which is boosted considerably by those few organisations with substantial sales.

Relevant differences between general wholesalers and fish and seafood specific wholesalers emerged from data on the proportion of total weekly sales of all fish and seafood accounted for by the three categories of products (Question 15c, Appendix III)

- fresh and frozen fish or seafood
- canned fish or seafood
- other forms of fish or seafood (bottled, packaged, etc) (Table 5.9.1).

Averaged across the sample of all wholesalers, fresh and frozen fish and seafood sales account for 91% of total fish and seafood sales, canned products for 5%, and other fish and seafood product forms for 3.3%.

Sales of fresh and frozen fish and seafood were a far greater component in the total fish and seafood sales of 'specific' wholesalers by comparison with general wholesalers; 78% versus 31%. On the other hand most fish and seafood specific wholesalers sold **no** canned or 'other' fish and seafood products.

The numbers of full and part time staff employed by wholesalers were wide ranging (Question 16, Appendix III) reflecting the diversity of scale of the businesses. Thus, while wholesalers most frequently employed two or three full time staff (Figure 5.9.4) and no part time staff (Figure 5.9.5), the **average** number of full time staff was 495.8 and of part time staff 121.5. These averages reflect the influence of the very large general wholesaling activities of supermarket chains. In fact the average number of full time staff employed by general wholesalers was 2,317 as compared to the average number employed by fish/seafood specific wholesalers of 9.1. Equivalent figures for part time staff were 551 and 5.8 respectively.

When asked about ownership ties with other fish and seafood businesses (Question 17, Appendix III)

- 17% of wholesalers said they had ties with fish and seafood producers or catchers (Figure 5.9.6)
- 5% had ties with another fish and seafood wholesaler
- 10% had ties with a fish and seafood processor
- 8% had ties with a fish and seafood retailer (ie uncooked)
- 4% had ties with a retailer selling cooked fish and seafood.

These figures indicate that, generally, the level of cross-business ownership was low.

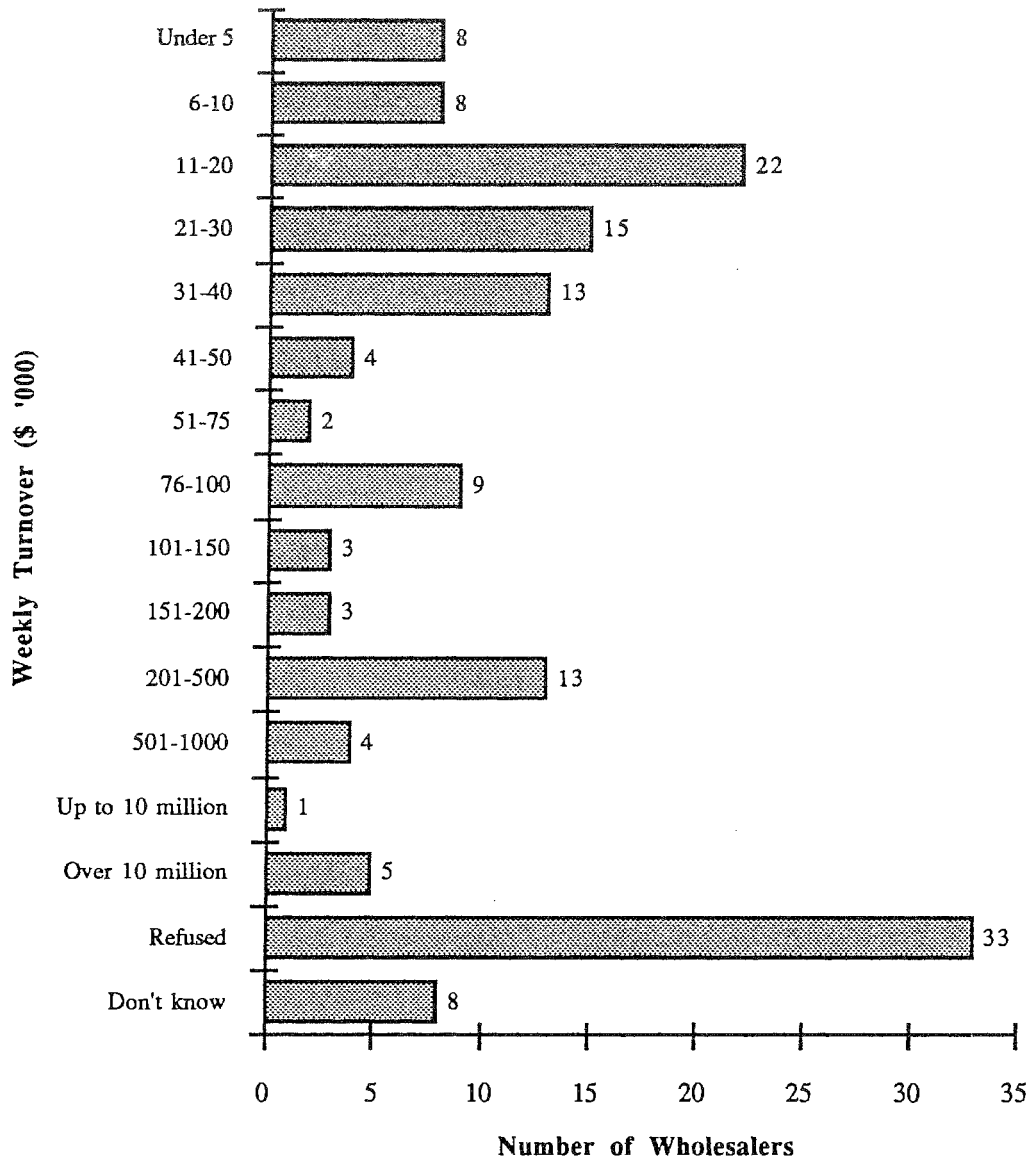
Table 5.9.1: Proportion of Wholesalers' Total Weekly Fish and Seafood Sales Which Come From Fresh or Frozen, Canned, or Other Fish and Seafood Products

Proportion of Weekly Fish and Seafood Sales (%)	Fresh/Frozen		Canned		Other	
	General wholesaler ⁽¹⁾	Fish/seafood specific wholesaler ⁽²⁾	General wholesaler ⁽¹⁾	Fish/seafood specific wholesaler ⁽²⁾	General wholesaler ⁽¹⁾	Fish/seafood specific wholesaler ⁽²⁾
0			43%	91%	54%	86%
1 - 10	11%		11%	9%	17%	11%
11 - 20	6%	1%	3%		3%	1%
21 - 30	6%	1%	3%		6%	
31 - 40	6%				3%	
41 - 50	3%		3%			
51 - 60	9%		6%			
61 - 70			3%			
71 - 80	6%		9%			2%
81 - 90	3%	8%	6%			
91 - 99	9%	12%			3%	
100	31%	78%				
Don't know	9%		11%		11%	
Refused	1%		3%		3%	
Totals	100%	100%	100%	99%	100%	100%
Average	90.9%		5.2%		3.3%	

(1) 35 general wholesalers gave responses in each of the three fish and seafood product categories across the May 1991 and September 1991 surveys

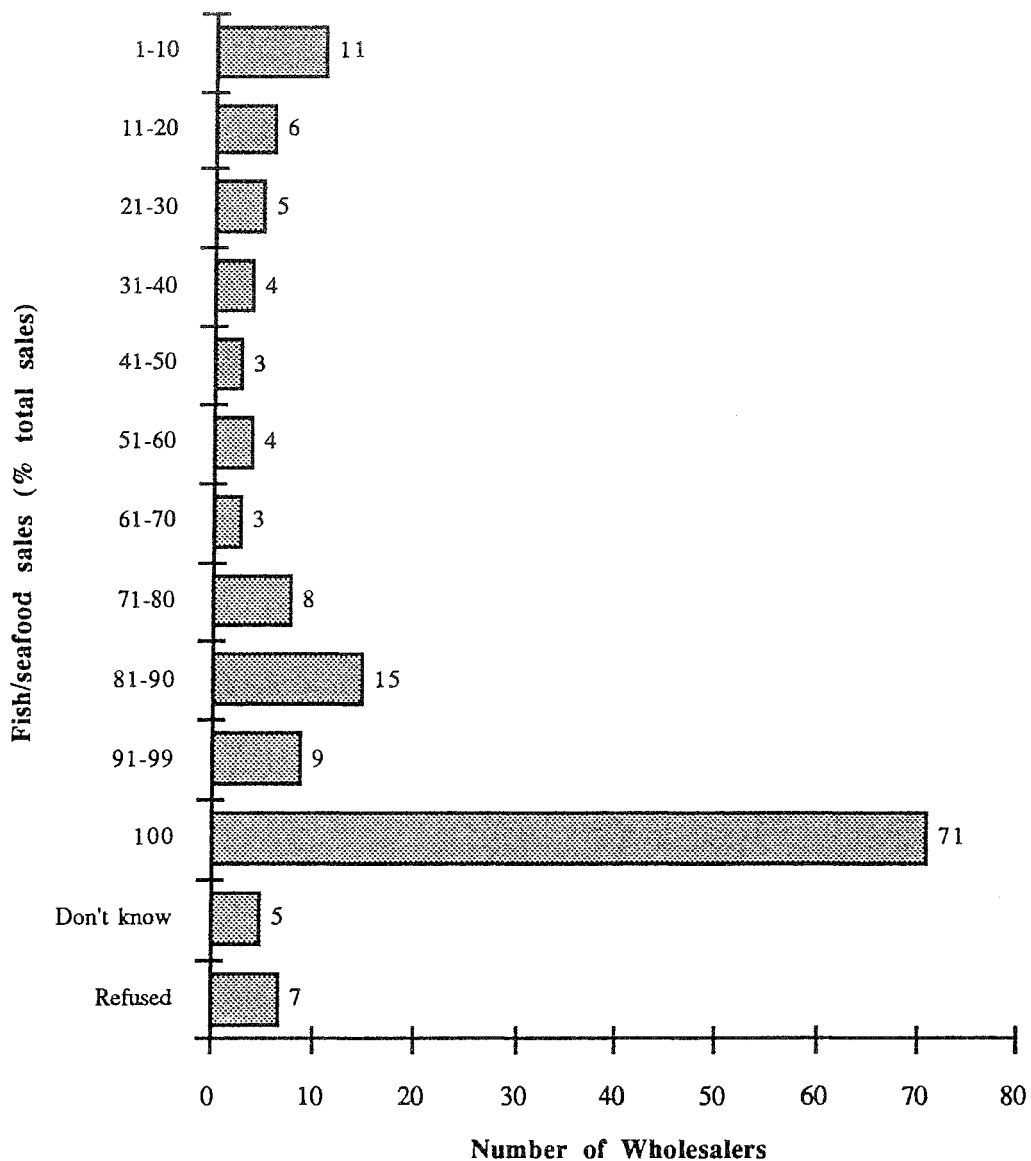
(2) 116 fish and seafood specific wholesalers gave responses in each of the three fish and seafood product categories across the May 1991 and September 1991 surveys

Figure 5.9.1: Average Weekly Turnover of Wholesalers' Business (Rounded to Nearest \$1,000)



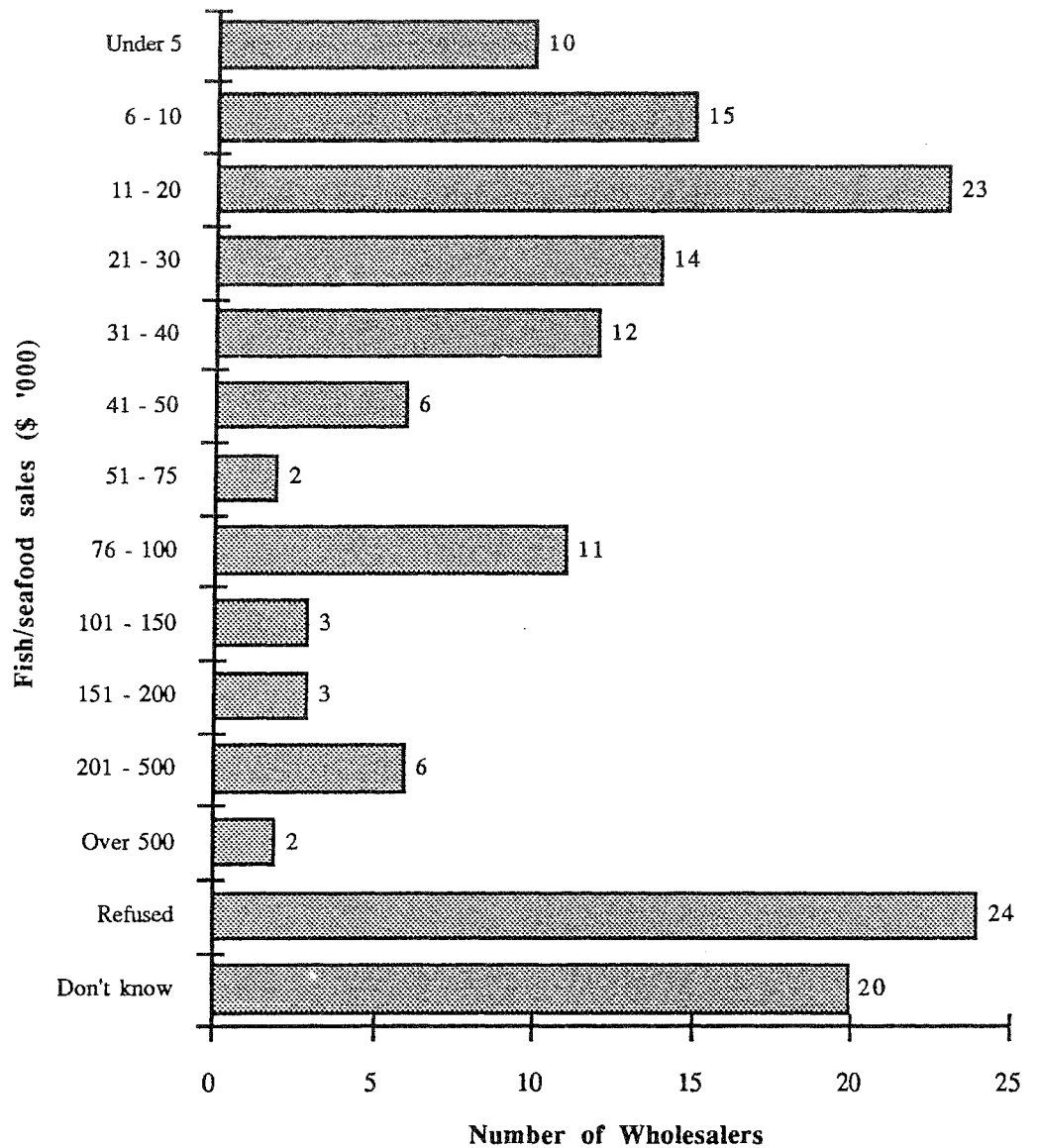
151 respondents offered responses across the May 1991 and September 1991 surveys.
See Question 15a, Appendix III.

Figure 5.9.2: Proportion of Wholesalers' Average Weekly Sales Due to all Fish/Seafood Products (%)



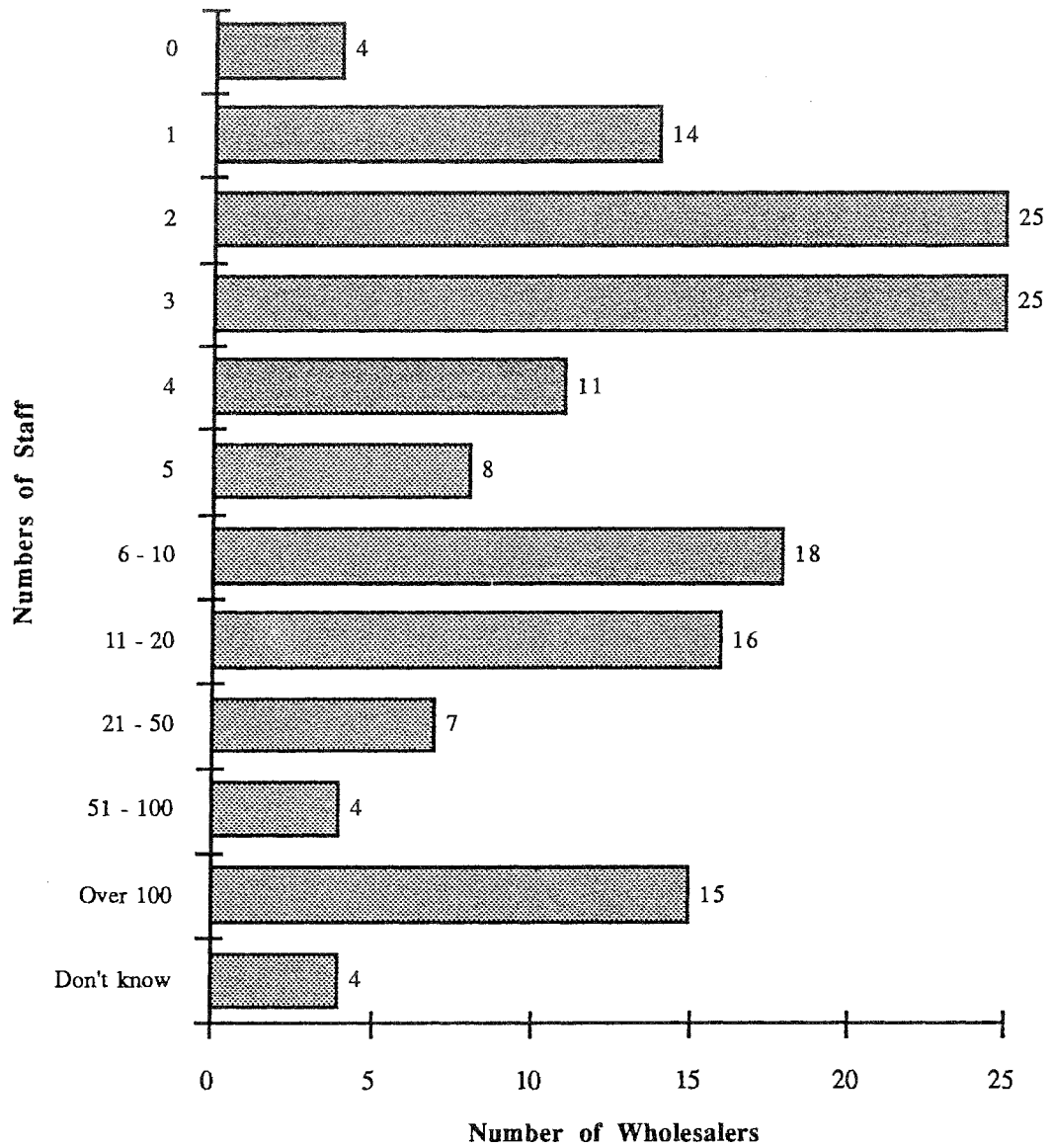
151 respondents offered responses across the May 1991 and September 1991 surveys.
See Question 15b, Appendix III.

Figure 5.9.3: Value of All Fish/Seafood Products Sold by Wholesaler in the Last to Month (Rounded to Nearest \$1,000)



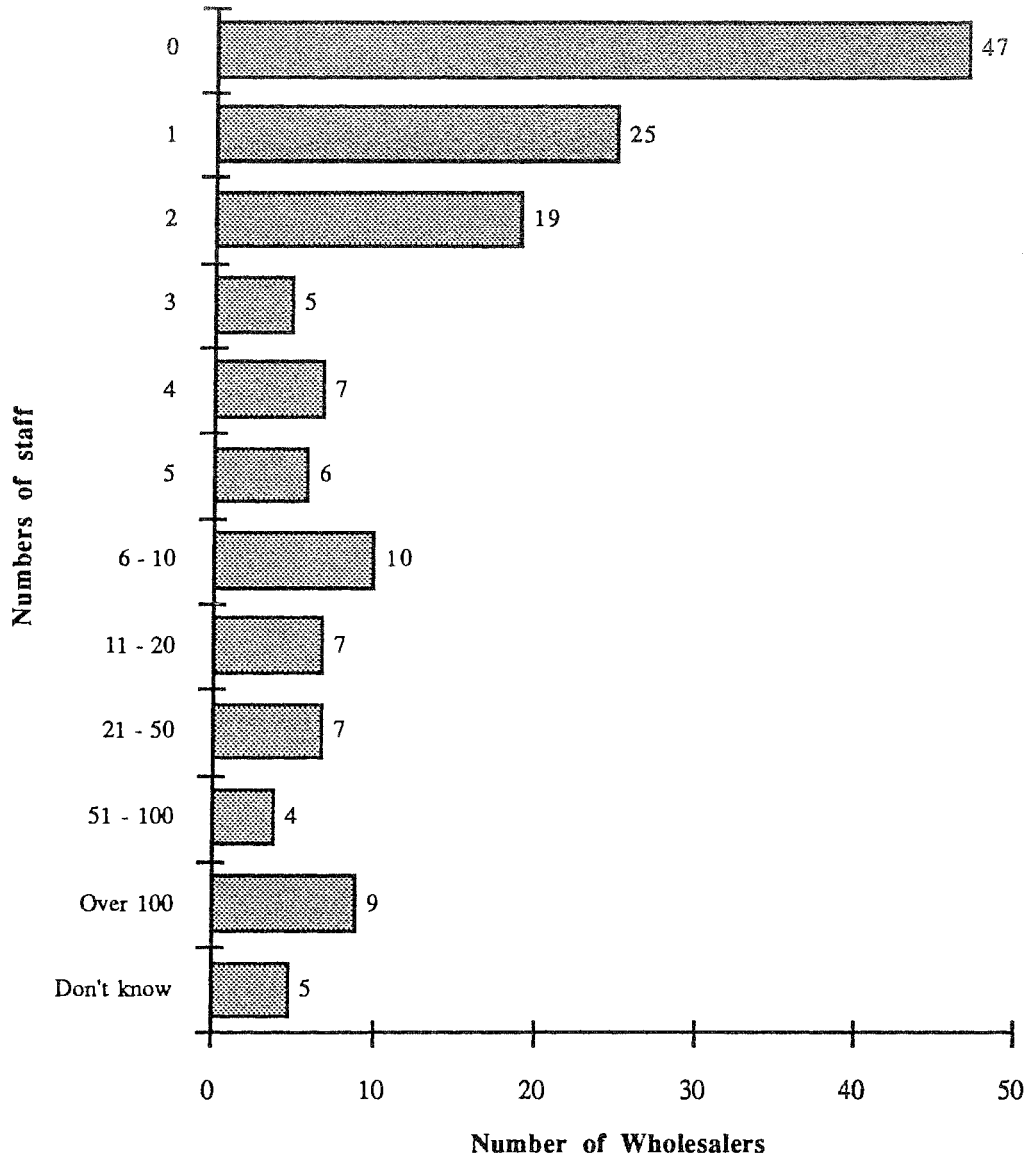
151 respondents offered responses across the May 1991 and September 1991 surveys. See Question 15b, Appendix III.

Figure 5.9.4: Number of Full Time Staff Employed by Wholesalers



151 respondents offered responses across the May 1991 and September 1991 surveys.
See Question 16, Appendix III.

Figure 5.9.5: Number of Part Time/Casual Staff Employed by Wholesalers



151 respondents offered responses across the May 1991 and September 1991 surveys.
See Question 16, Appendix III.

6. Analysis of Perceptual Maps

6.1 Introduction to Perceptual Maps

This report has made reference (Section 3.3) to analysis of the perceptions of trade suppliers to a range of six protein sources. Previous discussion has presented superficial comment on trade suppliers' perceptions across 22 - 25 statements or attributes regarding protein sources.

This Section of the report presents a thorough analysis of suppliers' perceptions, along with the perceptual maps supporting these analyses. It is important to be aware of several points regarding the structure and interpretation of these perceptual maps, ie:

- findings are presented on a matrix, generated using a correspondence analysis algorithm. The scales on the matrix relate to this correspondence analysis and should not be interpreted in the sense of conventional x- and y- axes in a graphical representation
- the 'total retention' value is an estimate of the variability in responses to statements/attributes which is retained on the map. As a rule of thumb, interpretation can proceed confidently when the sum of the two values quoted exceeds 75%
- attributes are positioned on the map according to the pattern of responses given by respondents, and protein sources then mapped against these attributes according to scores generated through the correspondence analysis
- the dots alongside statements/attributes represent the actual location of that attribute on the map.

6.2 Retail Supermarkets, Food Stores, and Convenience Stores

Main buyers in a sample of 202 retail supermarkets, food stores and convenience stores, located in six State capital cities, were shown a list of 22 statements about meat, pork, poultry, fresh or frozen fish, prepared fish products and canned fish and seafood products. They were asked to associate each of the statements with one or more of these protein sources, or none of them. The results are presented in the attached perceptual map, which is generated using a correspondence analysis algorithm (Figure 6.2.1). It should be noted that six statements do not appear on the map, either because of the relatively high level of “don’t know” or non-response, or because they were found not to contribute significantly to perceptual differentiation between the six protein sources.

In parts of the discussion that follows, the rank of protein sources in respect of the strength of the association to a particular statement is discussed. The ranking is derived from the proportion of respondents who associated the statement with each protein source - it is not drawn from the perceptual map. The perceptual map should be seen merely as a technique with which to highlight strong and very weak associations between statements and protein sources.

As can be seen, **fresh or frozen fish** is the protein source most commonly associated with negative perceptions. It is most likely to be seen as needing more trade and consumer marketing support, as indicated by customers requesting more information about its presentation or cooking; it is most commonly thought likely to go off in-store and have to be thrown out; it is often too expensive for the retailer to buy, and its prices fluctuate too much. Supply of **fresh or frozen fish** often cannot be guaranteed for future in-store promotions, and staff often do not have the knowledge to recommend it to customers. It is second to **canned fish and seafood products** as being considered to be too dear by customers, and is second to meat for variation in quality. It is not considered easily available to buy relative to other protein sources.

Canned fish and seafood products have a more positive image with supermarket and food store retailers. They were considered easily available to buy, to take up little storage space, to receive good promotional support by supplier associations, and to be well supported by advertising. Their major negative is that they are considered too dear to buy by customers, though many other respondents thought it offered the customer good value for money. Second to fresh or frozen fish, they are the product for which supply is least likely to be guaranteed for future in-store promotions. Some retailers believe that they need more trade and marketing support.

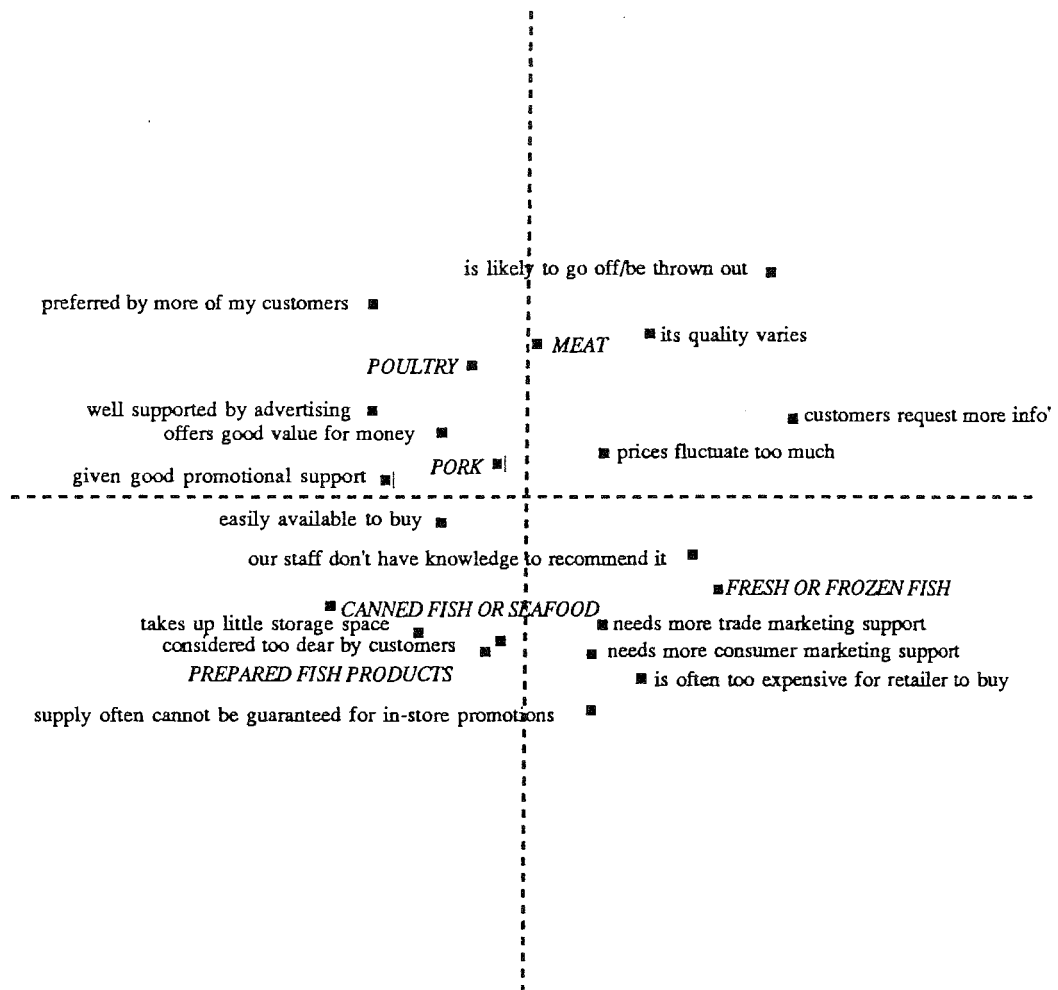
Prepared fish products (like fish fingers) are considered easily available to buy, but require more trade and consumer marketing support. Relative to all other protein sources apart from pork, they are not thought to offer the customer good value for money.

Poultry has the most positive image of all the protein sources investigated. It is considered to offer the customer good value for money, and to be preferred by more customers. Poultry is not considered too dear by customers, or too expensive for the retailer to buy. It is given good promotional support by supplier associations, and is relatively well supported by advertising. It is easily available to buy. Its only negative associations are that, next to fresh or frozen fish, it is most likely to go off in-store and have to be thrown out, and sometimes its quality varies.

Meat has a mixed image with supermarket and food store retailers. It is thought to be well supported by advertising, and to be given good promotional support by supplier associations, though customers tend to request more information about its presentation or cooking. Second to poultry, it is preferred by more customers, though second to fresh or frozen fish, retail staff don't have the knowledge to recommend it to customers. The main negatives associated with meat are that its quality varies, its prices fluctuate too much, and that it is likely to go off in-store and have to be thrown out. Relative to all types of fish products, meat is not considered expensive for the retailer to buy. It is second to canned fish and seafood in being seen as offering the customer good value for money.

Pork has a relatively weak image among all the protein sources investigated. It tends to suffer from quality variations, and retail staff don't have the knowledge to recommend it to customers. It is not perceived as offering good value for money, and though it receives relatively good advertising and promotional support, retailers don't feel that a strong consumer franchise has been built for pork.

Figure 6.2.1: Perceptual Map of Retailers' Attitudes to Protein Sources



$$\text{Total retention} = 40.2 + 37.3$$

7. Main Findings from A C Nielsen Warehouse Withdrawals Data

Data compiled by A C Nielsen Pty Ltd on the movement of **canned** and **frozen** fish and seafood products through Australia's major food and grocery wholesalers and chain retailers have been used in this Study to provide a more accurate estimate of consumption pattern than would be obtained through limited surveys. Data indicate that during 1990, warehouses located in the five mainland capital cities distributed 24,474 tonnes canned fish and seafood (retail value \$233.6 million) and 11,336 tonnes frozen fish (retail value \$87.6 million). These distributed quantities indicate values of 1.66kg *per capita* per annum and 0.76kg *per capita* per annum consumption of canned fish and seafood and frozen fish, respectively.

One particular species/product type dominated each of these categories. Tuna accounts for almost one half (46.5%) of the volume of canned fish and seafood, and miscellaneous portion (oven fry and battered/crumbed portions, bites, burgers, cakes and snacks) accounted for half (49.8%) of the volume of frozen fish distributed.

There was no growth trend in either category. Whereas the canned fish and seafood category showed some seasonal variation in volumes distributed (March and December peaks), data on the frozen fish category suggested a steady decline across the 1990 year. For both categories the most popular pack size was in the range 375 - 500g (38 - 40% of sales by volume).

These data provide an interesting comparison with those from the 1977 National Consumption Study. Estimated *per capita* consumption of canned fish and seafood has dropped from 1.93kg per annum in 1977 to 1.66kg per annum. [The 1977 value is drawn from p 23, Table 4 of that study, and comprises 1.81kg tinned fish plus 0.12kg tinned seafood]. By comparison, the consumption of frozen packaged fish and seafood has doubled from 0.39kg per annum to 0.77kg per annum. [The 1977 value is drawn from the same table as tinned fish data above, and comprises 0.3kg per annum frozen packaged fish plus 0.09kg per annum frozen packaged seafood.]

8. Comparisons with Findings from the 1977 Study

Prior to the National Seafood Consumption Study the most recent detailed national survey was conducted in 1977.

The 1977 study drew conclusions and made recommendations which are relevant to these three Trade/Out-Of-Home Consumption industry segments. It concluded that fish and seafood consumption could be increased fairly readily in the absence of two major constraints, ie price and resource availability. It also observed that “increased consumption of Australian fish requires the fulfilment of one or both of the following objectives:

- to improve the industry’s capacity to supply frozen fish to institutional and catering markets, and
- to endeavour to establish fish as an ‘everyday’ food item in the home.”

Recommendations in that study which related directly to the retail, catering, fishmongers and wholesale industry segments included:

- increased research by Government and Industry to establish the extent of stocks available, especially for take-away outlets and tinned fish. Such research should also include investigation into ways of catching fish which at present cannot be caught because of technical or economic factors
- improved co-ordination between the catching and distribution sectors in order to improve continuity of supply and achieve some predictability in price to meet the needs of fast food outlets and supermarkets. Such co-ordination could be accomplished by the growth of large co-operative marketing organisations or some form of integrated enterprise supplied either by its own boat or by contract

- studies be conducted to identify new fish species suitable for canning
- research be conducted into the implications of a mandatory requirement that fish sold through retail outlets be described as ‘fresh’ or ‘frozen’
- fish species be identified in a way acceptable to both trade and consumers
- retailers give more emphasis to local advertising of ‘specials’ ie, cheaper fish in temporary over-supply
- an industry levy be adopted to:
 - promote under-used or new species
 - produce point of sale recipes and pamphlets
 - enable a small group of home economists to give cooking demonstrations at meetings of shoppers and at shopping centres.

The issue of research into fish and seafood stocks and technological improvements to enhance access to them is covered in another part of the study (‘Literature Review’). The Literature Review discusses the widespread introduction of fisheries management regimes and progress in developing a fishing fleet comprising larger vessels better able to fish in open ocean waters.

The area of improved co-ordination between catching and distribution, to alleviate supply continuity and price fluctuations, clearly remains unresolved. The three trade segments assessed in this report reported these inter-related issues as priority problems. The retail trade segment (eg supermarkets) appears to have circumvented the problem through continuing to meet customer demand for smoked cod (imported), and by introducing the term 'chilled' fish/seafood, for frozen product which has been thawed. Fishmongers and retail fish shops still face supply continuity problems, although there are examples of increased vertical integration of unit operations in the fishing industry (eg wharfside retail fishmarkets in Blackwattle Bay, New South Wales, and Fremantle, Western Australia).

The proposed search for new fish species suitable for canning has largely been overtaken by resource management and sustainable harvesting levels. Respondents in this survey gave no indication that the less preferred under-utilised species such as pilchards, anchovy or Jack mackerel would be welcomed as the raw material resource for a canning industry.

The issue of labelling of fish and seafood as "fresh" or "frozen" has not been resolved. The retail segment has introduced the term "chilled" to describe frozen fish that has been thawed, further confusing the issue.

The 1977 recommendation that fish species be identified in a way acceptable to the trade and consumers was not raised as a specific concern by the trade respondents' interviews. However, both retailers and to a lesser extent fishmongers said, when selecting a supplier, a guarantee the fish/seafood they purchased was correctly named was highly important. This concern suggests that species substitution is still a problem, particularly for retailers who purchase mainly filleted fish.

The 1977 proposal of “specials” to promote species in temporary oversupply is apparent in some current fish and seafood marketing practices. Some retailers suggested the introduction of lower prices and/or specials, in their stores could increase sales. Fishmongers did not mention “specials” at all when questioned on initiatives they could take to increase sales, though this is probably due to the already widespread use of “specials” by fishmongers. Yet high prices were seen by many retailers and fishmongers as limiting their sales - many suggested industry action in reducing prices and price fluctuations would result in higher sales.

One interesting development is the reinforcement of the seasonal nature of some species’ catch, eg the long-standing tuna festival in Port Lincoln, South Australia, and the sardine festival in Fremantle, Western Australia

The 1977 recommendation of introduction of an industry levy for promotional purposes has been fulfilled in some regions. Nevertheless, the retailers, fishmongers and wholesalers surveyed were is still calling strongly for additional promotional support.

Submitted for
PA Consulting Group

R G Logie-Smith
General Manager -
Process & Extractive Industries

P J Kitson
Consultant

This report has been prepared for the client to whom it is addressed. In accordance with our standard practice, PA, its servants and agents disclaim responsibility to any third party for anything arising out of the report.

Appendix I

Retail Questionnaire

Q.2c What is the name of the banner under which this store sells its grocery products?

COLES NEW WORLD	01
SAFEWAY	02
SSW	03
WOOLWORTHS	04
FRANKLINS	05
FOODTOWN	06
FOODLAND	07
RITWAY	08
BI LO	09
GOOD FELLOWS	10
OTHER (SPECIFY) _____	11
NONE	12

SHOW CARD A

Q.3 In other research other retailers have made a number of statements about meat, pork, poultry, fresh or frozen fish, prepared fish products (like fish fingers) and canned fish and seafood products. I am going to read out some statements and would like you to tell me to which, if any, each statement applies. You may nominate none, one, or as many as you like. There are no right or wrong answers, we are just interested in your opinion. ROTATE TO ASTERISK

The first statement is ... (READ OUT FIRST STATEMENT). From Card A to which products does this statement apply?

	MEAT	PORK	POULTRY	FRESH OR FROZEN FISH	PREP -ARED FISH PRODUCTS	CANNED FISH & SEAFOOD	NONE	DON'T KNOW
1. PROVIDES A GOOD MARGIN TO THE RETAILER	1	2	3	4	5	6	7	8
2. GIVEN GOOD PROMOTIONAL SUPPORT BY SUPPLIER ASSOCIATION	1	2	3	4	5	6	7	8
3. WELL SUPPORTED BY ADVERTISING	1	2	3	4	5	6	7	8
4. SUPPLY OFTEN CANNOT BE GUARANTEED FOR FUTURE IN-STORE PROMOTIONS	1	2	3	4	5	6	7	8
5. IS OFTEN TOO EXPENSIVE FOR THE RETAILER TO BUY	1	2	3	4	5	6	7	8
6. OFFERS THE CUSTOMER GOOD VALUE FOR MONEY	1	2	3	4	5	6	7	8
7. NEEDS MORE CONSUMER MARKETING SUPPORT	1	2	3	4	5	6	7	8
8. NEEDS MORE TRADE MARKETING SUPPORT	1	2	3	4	5	6	7	8
9. IS LIKELY TO GO OFF IN-STORE AND HAVE TO BE THROWN OUT	1	2	3	4	5	6	7	8
10. PRESENTS A PROBLEM IN WASTE DISPOSAL	1	2	3	4	5	6	7	8
11. STAFF DISLIKE PACKING OR HANDLING IT	1	2	3	4	5	6	7	8
12. CUSTOMERS REQUEST MORE INFORMATION ABOUT ITS PRESENTATION OR COOKING	1	2	3	4	5	6	7	8
13. OUR STAFF DON'T HAVE THE KNOWLEDGE TO RECOMMEND IT TO CUSTOMERS	1	2	3	4	5	6	7	8
14. IT TAKES UP LITTLE STORAGE SPACE	1	2	3	4	5	6	7	8
15. IS CONSIDERED TO BE TOO DEAR BY CUSTOMERS	1	2	3	4	5	6	7	8
16. PREFERRED BY MORE OF MY CUSTOMERS	1	2	3	4	5	6	7	8
17. OUR STAFF DON'T HAVE THE KNOWLEDGE TO BUY IT CONFIDENTLY	1	2	3	4	5	6	7	8
18. IS EASILY AVAILABLE TO BUY	1	2	3	4	5	6	7	8
19. LOOKS GOOD IN THE STORE	1	2	3	4	5	6	7	8
20. ITS QUALITY VARIES	1	2	3	4	5	6	7	8
21. PRICES FLUCTUATE TOO MUCH	1	2	3	4	5	6	7	8
22. AN ESSENTIAL PART OF THE RANGE WE OFFER CUSTOMERS	1	2	3	4	5	6	7	8

ALL THE REMAINING QUESTIONS CONCERN FISH AND SEAFOOD PRODUCTS AS PART OF THE NATIONAL SEAFOOD CONSUMPTION STUDY

Q.4a Does this store actually sell fresh, chilled or frozen (not prepared like fish fingers) fish and/or seafood. By chilled I mean fish that has been frozen and thawed out for sale?

YES - FRESH	1
YES - CHILLED	2
YES - FROZEN	3
NO	4

GO TO Q.4b _____

GO TO Q.4d _____

Q.4b What do you believe are the main problems in supplying and selling fresh, chilled and frozen fish and seafood? READ OUT FOR EACH TYPE SOLD. PROBE

FRESH _____

NO PROBLEMS/NONE 01

CHILLED _____

NO PROBLEMS/NONE 01

FROZEN _____

NO PROBLEMS/NONE 01

Q.4c Are you free to choose your supplier for (READ OUT FIRST FORM STOCKED IN Q.4a) fish and seafood? REPEAT FOR EACH TYPE STOCKED

	<u>YES</u>	<u>NO</u>	<u>DON'T KNOW</u>
FRESH	1	2	3
CHILLED	1	2	3
FROZEN	1	2	3

Q.4d What are the main reasons for this store not supplying and selling (READ OUT FIRST OF THOSE NOT STOCKED IN Q.4a) fish and seafood? REPEAT FOR EACH TYPE NOT STOCKED. IF NO IN Q.4a ASK FOR ALL FORMS

FRESH _____

CHILLED _____

FROZEN _____

Q.4e What would encourage this store to stock and sell (READ OUT FIRST OF THOSE NOT STOCKED IN Q.4a) fish and seafood? REPEAT FOR EACH TYPE NOT STOCKED

FRESH _____ NOTHING 01

CHILLED _____ NOTHING 01

FROZEN _____ NOTHING 01

SHOW CARD G

- Q.4f **Research conducted with other fish retailers has uncovered a number of problems that retailers of fresh, chilled and frozen fish and seafood have encountered. Using the following scale (SHOW CARD G), how significant do you consider each of the following problems? READ OUT. ROTATE TO ASTERISK.**

	<u>VERY SIGNI- FICANT PROBLEM</u>	<u>QUITE SIGNI- FICANT PROBLEM</u>	<u>NOT VERY SIGNI- FICANT PROBLEM</u>	<u>NOT A PROBLEM</u>	<u>DON'T KNOW</u>
1. THE VARIABLE QUALITY OF THE FISH AND SEAFOOD DELIVERED	1	2	3	4	5
2. THE PROPORTION OF THE FISH AND SEAFOOD PURCHASED WHICH CANNOT BE SOLD AND MUST BE THROWN AWAY	1	2	3	4	5
3. THE COST OF DISPOSING OF WASTE PRODUCT	1	2	3	4	5
4. THE UNAVAILABILITY OF STAFF WITH EXPERIENCE IN HANDLING AND SELLING FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
5. THE AMOUNT OF PHYSICAL STORAGE SPACE REQUIRED FOR FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
6. THE LACK OF KNOWLEDGE OF CUSTOMERS IN PREPARING AND COOKING FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
7. UNCERTAINTY ABOUT THE FRESHNESS OF FISH AND SEAFOOD DELIVERED	1	2	3	4	5
8. UNCERTAINTY ABOUT WHETHER THE FISH DELIVERED ARE CORRECTLY NAMED	1	2	3	4	5
9. THE DIFFICULTY OF SELLING FISH AND SEAFOOD IF IT IS LABELLED FROZEN	1	2	3	4	5
10. THE RISK OF BUYING FISH AND SEAFOOD "SIGHT UNSEEN"	1	2	3	4	5
11. UNFAVOURABLE PUBLICITY ABOUT FISH & SEAFOOD	1	2	3	4	5
12. CUSTOMERS DISLIKE BUYING FISH BECAUSE OF THE BONES	1	2	3	4	5
13. FISH IS TOO EXPENSIVE TO BUY	1	2	3	4	5
14. SEAFOOD IS TOO EXPENSIVE TO BUY	1	2	3	4	5
X 15. DIFFICULTY PRE-ORDERING AND RECEIVING FISH & SEAFOOD PRODUCTS	1	2	3	4	5
16. THE LOW MARGINS NECESSARY TO REMAIN COMPETITIVE	1	2	3	4	5
17. THE STOCK LEVELS THAT NEED TO BE HELD	1	2	3	4	5
18. DIFFICULTY IN OBTAINING GOOD QUALITY PRODUCT	1	2	3	4	5
19. A LACK OF EXPERIENCE IN ATTRACTIVELY DISPLAYING FISH AND SEAFOOD	1	2	3	4	5
20. DIFFICULTY GETTING CONTINUOUS SUPPLY AT STEADY PRICES	1	2	3	4	5
21. A LACK OF TRAINING IN FISH HANDLING AND HYGIENE	1	2	3	4	5
22. DIFFICULTY GETTING CONTINUOUS SUPPLY OF A GOOD RANGE OF FISH	1	2	3	4	5

IF NOT FREE TO CHOOSE SUPPLIER (Q.4c ALL CODE 2) GO TO Q.11

SHOW CARD E

Q.10a

	VERY IMPORTANT	NOT AT ALL IMPORTANT	DON'T KNOW
	1	2	3
	4	5	6
	7	8	

On a scale of 1 to 7 how important are each of the following factors in choosing from which supplier to buy fish or seafood, that is, fresh, chilled or frozen that is sold unpackaged? READ OUT FIRST ROTATED STATEMENT. RECORD BELOW. THEN ASK Q.10b FOR THAT STATEMENT. REPEAT Q.10a AND Q.10b FOR EACH STATEMENT.

SHOW CARD F

Q.10b

	VERY GOOD/FAVOURABLE	VERY POOR/ UNFAVOURABLE	DON'T KNOW
	1	2	3
	4	5	6
	7	8	

On a scale of 1 to 7 how would you rate your main wholesale supplier for ... READ OUT. RECORD BELOW.

	<u>Q.10a</u>	<u>Q.10b</u>
	<u>IMPORT. RATING</u>	<u>WHOLESALE SUPPLIER RATING</u>
1. CLEAN OUTLET	_____	_____
2. IT SELLS FRESH FISH & SEAFOOD (IE. NOT FROZEN)	_____	_____
3. HAS CONSISTENTLY LOW PRICES FOR FISH & SEAFOOD	_____	_____
4. GOOD TEMPERATURE CONTROL	_____	_____
<hr/>		
5. OFFERS AUSTRALIAN FISH & SEAFOOD	_____	_____
6. HAS STAFF INFORMED ABOUT FISH & SEAFOOD	_____	_____
7. HAS RELIABLE DELIVERY	_____	_____
8. UNDERSTANDS MY BUSINESS	_____	_____
<hr/>		
9. OFFERS A WIDE VARIETY OF FISH & SEAFOOD	_____	_____
10. HAS FRIENDLY STAFF WORKING THERE	_____	_____
11. HAS A GOOD REPUTATION FOR QUALITY FISH & SEAFOOD	_____	_____
12. I CAN BE CONFIDENT THAT FRESH FISH OR SEAFOOD HAS NOT BEEN FROZEN	_____	_____
<hr/>		
13. ORDERS ARE PROMPTLY ATTENDED TO	_____	_____
14. GUARANTEE OF THE FISH OR SEAFOOD SOLD BEING CORRECTLY NAMED	_____	_____
15. IT ALSO SELLS A RANGE OF OTHER PRODUCTS I NEED	_____	_____
16. IS HONEST AND FAIR IN DOING BUSINESS	_____	_____
<hr/>		
17. GIVES GOOD CREDIT TERMS	_____	_____
18. PROVIDES CLEAR DOCUMENTATION AND PAPERWORK	_____	_____

SHOW CARD E



We have just discussed what you consider important when you buy fresh or frozen fish or seafood for your store. I would now like you to think about what you believe your customers look for in a store which sells fresh or frozen fish or seafood. Again on a scale of 1 to 7, how important do you believe each of the following factors are to your customers when they choose from which outlet to buy fresh, chilled or frozen fish or seafood? READ OUT ROTATING TO ASTERISK. RECORD BELOW.

Q.11

- | | | |
|-------|--|-------|
| 1. | CLEAN OUTLET/STORE | _____ |
| 2. | THE OUTLET SELLS FRESH FISH AND SEAFOOD (IE. NOT FROZEN) | _____ |
| 3. | HAS ATTRACTIVELY DISPLAYED FISH AND SEAFOOD | _____ |
| 4. | HAS CONSISTENTLY LOW PRICES FOR FISH AND SEAFOOD | _____ |
| <hr/> | | |
| 5. | IS AN OUTLET FREQUENTLY SHOPPED AT | _____ |
| 6. | OFFERS AUSTRALIAN FISH AND SEAFOOD | _____ |
| 7. | OFFERS FISH AND SEAFOOD SPECIALS | _____ |
| 8. | HAS STAFF INFORMED ABOUT FISH AND SEAFOOD | _____ |
| <hr/> | | |
| 9. | HAS CONSISTENTLY LOW PRICES FOR SHOPPING IN GENERAL | _____ |
| 10. | IS EASILY ACCESSIBLE TO THE CUSTOMER | _____ |
| X | 11. OFFERS ADVERTISED SPECIALS REGULARLY | _____ |
| 12. | MANY DIFFERENT TYPES OF FOOD CAN BE BOUGHT THERE | _____ |
| <hr/> | | |
| 13. | OFFERS A WIDE VARIETY OF FISH AND SEAFOOD PRODUCTS | _____ |
| 14. | HAS FRIENDLY STAFF WORKING THERE | _____ |
| 15. | HAS A GOOD REPUTATION FOR QUALITY FISH AND SEAFOOD | _____ |
| 16. | THE CUSTOMER CAN BE CONFIDENT THAT FISH OR SEAFOOD SOLD AS FRESH HAS NOT BEEN FROZEN | _____ |

SHOW CARD M

Q.12a Listed are various species of fish and seafood which have been identified by the fishing industry as being under utilised. For stores like this, which types do you consider to have the greatest potential for increased sales? RECORD BELOW

FOR THOSE IDENTIFIED AS HAVING POTENTIAL (Q.12a CODES 1 TO 11) ASK Q.12b

Q.12b And what are the main reasons for believing that the potential lies with (READ OUT EACH TYPE MENTIONED IN Q.12a)?

	<u>Q.12a</u>	<u>Q.12b</u> <u>REASON</u>
<u>WILD SPECIES</u>		
JACK MACKEREL (NOT JUST MACKEREL OR ANY OF THE OTHER TYPES)	01	_____
SQUID (OR CALAMARI)	02	_____
PILCHARDS OR SARDINES (NOT CANNED)	03	_____
AUSTRALIAN HERRING/ TOMMY RUFF	04	_____
SILVER TREVALLY/SKIPPY (NOT JUST TREVALLY)	05	_____
<u>"FARMED" SPECIES</u>		
FARM PRAWNS (NOT JUST PRAWNS)	06	_____
RAINBOW TROUT (FRESHWATER)	07	_____
ATLANTIC SALMON (FRESH NOT SMOKED)	08	_____
MUSSELS	09	_____
OYSTERS	10	_____
FARM BARRAMUNDI	11	_____
NONE	12	GO TO Q.13a
DON'T KNOW	13	

Q.13a What actions need to be taken for your store to stock and sell more fish and seafood products? PROBE

OFFICE

Q.13b What actions need to be taken by the fish industry in general for more fish and seafood to be sold by your store?

OFFICE

SHOW CARD J

Q.14 I am going to read out a number of actions that could be taken to increase the sale of fish and seafood products for your business. For each I would like you to tell me if you believe each action would have a (READ OUT SCALE) on your sales. READ OUT EACH STATEMENT.

	GREAT IMPACT	SOME IMPACT	A LITTLE IMPACT	NO IMPACT	DON'T KNOW		
	1	2	3	4	5		
			<u>GREAT IMPACT</u>	<u>SOME IMPACT</u>	<u>A LITTLE IMPACT</u>	<u>NO IMPACT</u>	<u>DON'T KNOW</u>
1. A MORE CONSISTENT SUPPLY OF FRESH FISH AND SEAFOOD			1	2	3	4	5
2. MORE FREQUENT DELIVERY OF FISH			1	2	3	4	5
3. AVAILABILITY OF INFORMATION FOR CONSUMERS, CATERERS & RESTAURANTS ON COOKING AND PREPARATION			1	2	3	4	5
4. ALL WHOLESALERS & SUPPLIERS GIVING ALL RETAILERS EQUAL ACCESS TO FISH			1	2	3	4	5
5. MORE ADVERTISING SUPPORT FOR FISH & SEAFOOD			1	2	3	4	5
6. GREATER ENCOURAGEMENT OF AQUACULTURE INDUSTRY			1	2	3	4	5
7. IMPROVED TECHNOLOGY FOR TRANSPORTING FISH			1	2	3	4	5
8. BETTER QUALITY PRODUCT AVAILABLE THROUGH BETTER HANDLING			1	2	3	4	5
9. SUPPLY OF A GREATER VARIETY OF PREPARED FISH AND SEAFOOD MEALS READY TO COOK			1	2	3	4	5

Q.15a	Thinking in the next five years, do you consider that the sale of fish and seafood products will increase, decrease or remain the same in this store?	INCREASE	1
		DECREASE	2
		REMAIN THE SAME	3
		DON'T KNOW	4

Q.15b And why do you say that?

	OFFICE

CLASSIFICATION

For classification purposes only could you please tell me ...

Q.16a The average weekly non-liquor turnover (sales) of this store? WRITE IN \$ _____

Q.16b The average weekly non-liquor turnover (sales) of this store in food sales? WRITE IN \$ _____

Q.17a You mentioned that the average weekly non-liquor sales of this store is (READ OUT FROM Q.16a). Approximately what proportion or sales value would be accounted for by sales of all fish and seafood products including fresh, frozen, pre-packaged, canned and bottled products?

PROPORTION: _____ % VALUE: \$ _____ DON'T KNOW 9999

Q.17b And of the total value of all fish and seafood products sold in an average week, (REFER TO Q.17a) what proportion is accounted for by fresh, chilled and frozen fish and seafood?

PROPORTION: _____ % VALUE: \$ _____ DON'T KNOW 9999

SHOW CARD E

Q.17c Thinking of the fish and seafood products sold by your store how important is the contribution to profits made by (READ OUT EACH ITEM IN TURN) to your business overall? IF DO NOT SELL ITEM RECORD AS CODE 7.

	VERY IMPORTANT						NOT AT ALL IMPORTANT	DON'T KNOW
	1	2	3	4	5	6	7	8
1. FRESH OR FROZEN FISH OR SEAFOOD THAT IS SOLD UNPACKAGED	1	2	3	4	5	6	7	8
2. PRE-PACKAGED OR PREPARED READY TO COOK FISH AND SEAFOOD MEALS (IN THE FREEZER CABINET)	1	2	3	4	5	6	7	8
3. CANNED OR BOTTLED FISH AND SEAFOOD PRODUCTS	1	2	3	4	5	6	7	8

Q 18 How many full time and part time/casual workers are employed by this store? FULL TIME: _____ PART TIME/CASUAL: _____

THANK YOU VERY MUCH FOR YOUR HELP AS I SAID, I AM FROM YANN CAMPBELL HOARE WHEELER MARKET RESEARCH. I WILL GIVE YOU OUR TELEPHONE NUMBER IF YOU WOULD LIKE TO CHECK THE BONA FIDES OF THIS COMPANY. PLEASE CALL THE COMPANY NUMBER - 537 2255.

COMPANY NAME: _____

RESPONDENT'S NAME: _____

ADDRESS: _____

SUBURB: _____ PHONE: _____

I certify this is a true, accurate and complete interview, conducted to the best of my ability and in accordance with my instructions. I also agree to hold in confidence and not disclose to any other person the content of this questionnaire or any other information relating to this project.

INTERVIEWER SIGNATURE: _____

DATE: _____ INTERVIEWER NO: _____

Appendix II

Fishmonger Questionnaire

YANN CAMPBELL HOARE WHEELER
 MARKET RESEARCH
 11 PRINCES STREET
 ST KILDA VIC 3182
 PHONE: 537 2255

TIME: _____
 START _____
 FINISH: _____

SYDNEY 1
 MELBOURNE 2
 BRISBANE 3
 ADELAIDE 4
 PERTH 5
 HOBART 6

FISHMONGERS/
 FRESH FISH OUTLETS 1
 RETAIL FISH MARKET 2

FISH & SEAFOOD CONSUMPTION STUDY
WAVE 2

JOB NO.: 6754D2

INTRODUCTION

Thank you for agreeing to participate in the National Fish and Seafood Consumption Study. The information collected from every respondent will be treated in the strictest confidence, added to the other data obtained and used for statistical purposes only. The results will be used in planning the supply and marketing of fish and seafood in the 1990's.

- Q.1a First of all would you mind telling me your exact position in this business.
 POSITION OF RESPONDENT: _____
- Q.1b Are you yourself, responsible for the purchase of fish and seafood that is bought by this business?
 CONTINUE TO Q.1c _____ YES 1
 ASK TO SPEAK _____ NO 2
 TO PERSON RESPONSIBLE FOR THESE ITEMS AND RECOMMENCE INTERVIEW
- Q.1c Are you responsible for purchasing these items for this store only, or for other outlets as well?
 GO TO Q.1e _____ ONE STORE ONLY 1
 GO TO Q.1d _____ OTHER OUTLETS 2
- Q.1d And how many outlets do you purchase fish and seafood for?
 TWO 2
 THREE 3
 FOUR 4
 FIVE 5
 SIX OR MORE (WRITE IN) _____
- Q.1e Is this store part of a buying group for fish and seafood products?
 YES 1
 NO 2

- Q.2 What do you believe are the main problems in supplying and selling fresh and frozen fish and seafood? PROBE
- | | | |
|-------|------------------|--------|
| | NO PROBLEMS/NONE | 01 |
| _____ | | OFFICE |
| _____ | | |
| _____ | | |

SHOW CARD G

Q.3 Research conducted with other fish retailers has uncovered a number of problems that retailers of fresh and frozen fish and seafood have encountered. Using the following scale (SHOW CARD G), how significant do you consider each of the following problems? READ OUT. ROTATE TO ASTERISK.

	<u>VERY</u> <u>SIGNI-</u> <u>FICANT</u> <u>PROBLEM</u>	<u>QUITE</u> <u>SIGNI-</u> <u>FICANT</u> <u>PROBLEM</u>	<u>NOT VERY</u> <u>SIGNI-</u> <u>FICANT</u> <u>PROBLEM</u>	<u>NOT A</u> <u>PROBLEM</u>	<u>DON'T</u> <u>KNOW</u>
1. THE VARIABLE QUALITY OF THE FISH AND SEAFOOD AVAILABLE	1	2	3	4	5
2. THE PROPORTION OF THE FISH AND SEAFOOD PURCHASED WHICH CANNOT BE SOLD AND MUST BE THROWN AWAY	1	2	3	4	5
3. THE COST OF DISPOSING OF WASTE PRODUCT	1	2	3	4	5
4. THE UNAVAILABILITY OF STAFF WITH EXPERIENCE IN HANDLING AND SELLING FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
5. THE AMOUNT OF PHYSICAL STORAGE SPACE REQUIRED FOR FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
6. THE LACK OF KNOWLEDGE OF CUSTOMERS IN PREPARING AND COOKING FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
7. UNCERTAINTY ABOUT THE FRESHNESS OF FISH AND SEAFOOD AVAILABLE	1	2	3	4	5
8. UNCERTAINTY ABOUT WHETHER THE FISH BOUGHT ARE CORRECTLY NAMED	1	2	3	4	5
9. THE DIFFICULTY OF SELLING FISH AND SEAFOOD IF IT IS LABELLED FROZEN	1	2	3	4	5
10. THE RISK OF BUYING FISH AND SEAFOOD "SIGHT UNSEEN"	1	2	3	4	5
11. UNFAVOURABLE PUBLICITY ABOUT FISH & SEAFOOD	1	2	3	4	5
12. CUSTOMERS DISLIKE BUYING FISH BECAUSE OF THE BONES	1	2	3	4	5
13. FISH IS TOO EXPENSIVE TO BUY	1	2	3	4	5
14. SEAFOOD IS TOO EXPENSIVE TO BUY	1	2	3	4	5
15. DIFFICULTY PRE-ORDERING AND RECEIVING FISH & SEAFOOD PRODUCTS	1	2	3	4	5
16. THE LOW MARGINS NECESSARY TO REMAIN COMPETITIVE	1	2	3	4	5
17. THE STOCK LEVELS THAT NEED TO BE HELD	1	2	3	4	5
18. DIFFICULTY IN OBTAINING GOOD QUALITY PRODUCT	1	2	3	4	5
19. A LACK OF EXPERIENCE IN ATTRACTIVELY DISPLAYING FISH AND SEAFOOD	1	2	3	4	5
20. DIFFICULTY GETTING CONTINUOUS SUPPLY AT STEADY PRICES	1	2	3	4	5
21. A LACK OF TRAINING IN FISH HANDLING AND HYGIENE	1	2	3	4	5
22. DIFFICULTY GETTING CONTINUOUS SUPPLY OF A GOOD RANGE OF FISH	1	2	3	4	5

Q.9a SHOW CARD E
 VERY IMPORTANT NOT AT ALL IMPORTANT DON'T KNOW
 1 2 3 4 5 6 7 8

On a scale of 1 to 7 how important are each of the following factors in choosing from which supplier to buy fish or seafood, that is, fresh or frozen that is sold unpackaged? READ OUT FIRST ROTATED STATEMENT. RECORD BELOW THEN ASK Q.9b FOR THAT STATEMENT. REPEAT Q.9a AND Q.9b FOR EACH STATEMENT.

SHOW CARD F

Q.9b VERY GOOD/FAVOURABLE VERY POOR/UNFAVOURABLE DON'T KNOW
 1 2 3 4 5 6 7 8

On a scale of 1 to 7 how would you rate your main wholesale supplier for ... READ OUT. RECORD BELOW.

	<u>Q.9a</u>	<u>Q.9b</u>
	<u>IMPORT. RATING</u>	<u>WHOLESALE SUPPLIER RATING</u>
1. CLEAN OUTLET	_____	_____
2. IT SELLS FRESH FISH & SEAFOOD (IE. NOT FROZEN)	_____	_____
3. HAS CONSISTENTLY LOW PRICES FOR FISH & SEAFOOD	_____	_____
4. GOOD TEMPERATURE CONTROL	_____	_____
5. OFFERS AUSTRALIAN FISH & SEAFOOD	_____	_____
6. HAS STAFF INFORMED ABOUT FISH & SEAFOOD	_____	_____
7. HAS RELIABLE DELIVERY	_____	_____
8. UNDERSTANDS MY BUSINESS	_____	_____
9. OFFERS A WIDE VARIETY OF FISH & SEAFOOD	_____	_____
10. HAS FRIENDLY STAFF WORKING THERE	_____	_____
11. HAS A GOOD REPUTATION FOR QUALITY FISH & SEAFOOD	_____	_____
12. I CAN BE CONFIDENT THAT FRESH FISH OR SEAFOOD HAS NOT BEEN FROZEN	_____	_____
13. ORDERS ARE PROMPTLY ATTENDED TO	_____	_____
14. GUARANTEE OF THE FISH OR SEAFOOD SOLD BEING CORRECTLY NAMED	_____	_____
* 15. IS HONEST AND FAIR IN DOING BUSINESS	_____	_____
16. GIVES GOOD CREDIT TERMS	_____	_____
17. PROVIDES CLEAR DOCUMENTATION AND PAPERWORK	_____	_____

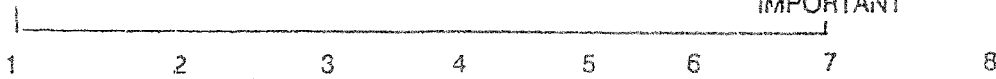
SHOW CARD E

Q.9c

VERY IMPORTANT

NOT AT ALL IMPORTANT

DON'T KNOW



We have just discussed what you consider important when you buy fresh or frozen fish or seafood for your store. I would now like you to think about what you believe your customers look for in a store which sells fresh or frozen fish or seafood. Again on a scale of 1 to 7, how important do you believe each of the following factors are to your customers when they choose from which outlet to buy fresh or frozen fish or seafood? READ OUT ROTATING TO ASTERISK. RECORD BELOW.

Q.9c

- 1. CLEAN OUTLET/STORE _____
- 2. THE OUTLET SELLS FRESH FISH AND SEAFOOD (IE. NOT FROZEN) _____
- 3. HAS ATTRACTIVELY DISPLAYED FISH AND SEAFOOD _____
- 4. HAS CONSISTENTLY LOW PRICES FOR FISH AND SEAFOOD _____

- 5. IS AN OUTLET FREQUENTLY SHOPPED AT _____
- 6. OFFERS AUSTRALIAN FISH AND SEAFOOD _____
- 7. OFFERS FISH AND SEAFOOD SPECIALS _____
- 8. HAS STAFF INFORMED ABOUT FISH AND SEAFOOD _____

- 9. IS EASILY ACCESSIBLE TO THE CUSTOMER _____
- 10. OFFERS ADVERTISED SPECIALS REGULARLY _____
- 11. OFFERS A WIDE VARIETY OF FISH AND SEAFOOD PRODUCTS _____
- 12. HAS FRIENDLY STAFF WORKING THERE _____

- 13. HAS A GOOD REPUTATION FOR QUALITY FISH AND SEAFOOD _____
- 14. THE CUSTOMER CAN BE CONFIDENT THAT FISH OR SEAFOOD SOLD AS FRESH HAS NOT BEEN FROZEN _____

Q.9d

Out of every ten customers, how many would ask for advice about the type (species) of fish to buy and would then buy that fish?

RECORD NUMBER _____

DON'T KNOW 11

Q.10a Which of the following products do you sell in this store? READ OUT.
RECORD BELOW. Are there any others? RECORD BELOW.

IF SELL PREPARED FISH OR SEAFOOD Q.10a ANY CODE 1 ASK Q.10b; OTHERWISE GO TO Q.11

Q.10b Do you prepare (READ OUT EACH PRODUCT SELL IN Q.10a CODE 1) on these premises?
RECORD BELOW.

GO TO Q.11

FOR EACH PRODUCT NOT SOLD IN Q.10a (CODE 2) ASK Q.11

Q.11 And what is the main reason for not selling (READ OUT EACH PRODUCT NOT SOLD
IN Q.10a CODE 2)? RECORD BELOW

	Q.10a SELL		Q.10b PREPARE		Q.11 REASON FOR NOT SELLING
	YES	NO	YES	NO	
FISH/SEAFOOD SHASLIKS	1	2	1	2	_____
MARINARA SAUCE/MARINARA MIX	1	2	1	2	_____
SATAY/CHILLY/SWEET AND SOUR FISH PIECES	1	2	1	2	_____
STUFFED TROUT	1	2	1	2	_____
FISH TERRINE/PATE	1	2	1	2	_____
OTHER (SPECIFY) _____	1	2	1	2	_____
OTHER (SPECIFY) _____	1	2	1	2	_____

Q.12a What actions need to be taken for your store to stock and sell more fish and seafood products? PROBE

OFFICE

Q.12b What actions need to be taken by the fish industry in general for more fish and seafood to be sold by your store?

OFFICE

SHOW CARD J

Q.13

I am going to read out a number of actions that could be taken to increase the sale of fish and seafood products for your business. For each I would like you to tell me if you believe each action would have a (READ OUT SCALE) on your sales. READ OUT EACH STATEMENT.

GREAT IMPACT	SOME IMPACT	A LITTLE IMPACT	NO IMPACT	DON'T KNOW
1	2	3	4	5

	<u>GREAT IMPACT</u>	<u>SOME IMPACT</u>	<u>A LITTLE IMPACT</u>	<u>NO IMPACT</u>	<u>DON'T KNOW</u>
1. A MORE CONSISTENT SUPPLY OF FRESH FISH AND SEAFOOD	1	2	3	4	5
2. MORE FREQUENT DELIVERY OF FISH	1	2	3	4	5
3. AVAILABILITY OF INFORMATION FOR CONSUMERS, CATERERS AND RESTAURANTS ON COOKING AND PREPARATION	1	2	3	4	5
4. ALL WHOLESALERS & SUPPLIERS GIVING ALL RETAILERS EQUAL ACCESS TO FISH	1	2	3	4	5
<hr/>					
5. MORE ADVERTISING SUPPORT FOR FISH & SEAFOOD	1	2	3	4	5
6. GREATER ENCOURAGEMENT OF AQUACULTURE INDUSTRY	1	2	3	4	5
7. IMPROVED TECHNOLOGY FOR TRANSPORTING FISH	1	2	3	4	5
8. BETTER QUALITY PRODUCT AVAILABLE THROUGH BETTER HANDLING	1	2	3	4	5
9. SUPPLY OF A GREATER VARIETY OF PREPARED FISH AND SEAFOOD MEALS READY TO COOK	1	2	3	4	5

Now I would like to talk about specific types of fish and seafood.

SHOW CARD M

Q.14a Listed are various species of fish and seafood which have been identified by the fishing industry as being under utilised. For businesses like this, which types do you consider to have the greatest potential for increased sales? RECORD BELOW

FOR THOSE IDENTIFIED AS HAVING POTENTIAL (Q.14a CODES 1 TO 11) ASK Q.14b

Q.14b And what are the main reasons for believing that the potential lies with (READ OUT EACH TYPE MENTIONED IN Q.14a)?

	Q.14a	Q.14b REASON
<u>WILD SPECIES</u>		
JACK MACKEREL (NOT JUST MACKEREL OR ANY OF THE OTHER TYPES)	01	
SQUID (OR CALAMARI)	02	
PILCHARDS OR SARDINES (NOT CANNED)	03	
AUSTRALIAN HERRING/ TOMMY RUFF	04	
SILVER TREVALLY/SKIPPY (NOT JUST TREVALLY)	05	
<u>"FARMED" SPECIES</u>		
FARM PRAWNS (NOT JUST PRAWNS)	06	
RAINBOW TROUT (FRESHWATER)	07	
ATLANTIC SALMON (FRESH NOT SMOKED)	08	
MUSSELS	09	
OYSTERS	10	
FARM BARRAMUNDI	11	
NONE	12	GO TO Q.15
DON'T KNOW	13	

Q.15 In your experience what specific type of consumer promotion, publicity or advertising has been most successful in increasing sales? RECORD IN DETAIL BELOW

PROMOTION/
PUBLICITY/
ADVERTISING

WRITE
IN: _____

WRITE
IN: _____

WRITE
IN: _____

Q.16a	Thinking in the next five years, do you consider that the sale of fish and seafood products will increase, decrease or remain the same in this store?	INCREASE DECREASE REMAIN THE SAME DON'T KNOW	1 2 3 4
-------	---	---	------------------

Q.16b And why do you say that?

	OFFICE

CLASSIFICATION

For classification purposes only could you please tell me

Q.17 The average weekly turnover (sales) of this store? WRITE IN \$ _____

Q.18 How many full time and part time/casual workers are employed by this store?
FULL TIME: _____
PART TIME/CASUAL: _____

Q.19 Does this business have any ownership ties with ... READ OUT? RECORD BELOW

	<u>YES</u>	<u>NO</u>	<u>DON'T KNOW</u>
FISH AND SEAFOOD WHOLESALER	1	2	3
FISH AND SEAFOOD PROCESSOR	1	2	3
ANOTHER FISH AND SEAFOOD RETAILER (IE. UNCOOKED)	1	2	3
A RETAILER SELLING COOKED FISH AND SEAFOOD	1	2	3

INTERVIEWER: OBTAIN A COPY OF THE RETAILERS PRICE LIST FOR FISH AND SEAFOOD AND ATTACH IT TO THIS QUESTIONNAIRE

THANK YOU VERY MUCH FOR YOUR HELP AS I SAID, I AM FROM YANN CAMPBELL HOARE WHEELER MARKET RESEARCH. IF YOU WISH I WILL GIVE YOU OUR TELEPHONE NUMBER IF YOU WOULD LIKE TO CHECK ANYTHING. IF YOU WOULD LIKE TO CHECK THE BONA FIDES OF THIS COMPANY, PLEASE CALL THE MARKET RESEARCH LINE ON 008 023642 AND GIVE THE COMPANY NAME: YANN CAMPBELL HOARE WHEELER. CALLS TO THIS NUMBER ARE FREE.

COMPANY NAME: _____

RESPONDENT NAME: _____

ADDRESS: _____

SUBURB: _____

PHONE: _____

I hereby certify that this is a true, accurate and complete interview.

SIGNED: (Interviewer)

DATE:

Appendix III

Wholesaler Questionnaire

YANN CAMPBELL HOARE WHEELER
MARKET RESEARCH
11 PRINCES STREET
ST KILDA VIC 3182
PHONE: 537 2255

TIME:
START _____

FINISH: _____

SYDNEY 1
MELBOURNE 2
BRISBANE 3
ADELAIDE 4
PERTH 5

JOB NO.: 6754H2

GENERAL WHOLESALER 1
FISH/SEAFOOD SPECIFIC WHOLESALER 2

FISH AND SEAFOOD CONSUMPTION STUDY
WAVE 2

INTRODUCTION

Thank you for agreeing to participate in the National Fish and Seafood Consumption Study. The information collected from every respondent will be treated in the strictest confidence, added to other data obtained and used for statistical purposes only. The results will be used in planning the supply and marketing of fish and seafood in Australia in the 1990's.

Q.1a First of all would you mind telling me your exact position in this business.

POSITION OF RESPONDENT: _____

Q.1b Are you yourself responsible for the purchase of the fish and seafood for this business? GO TO Q.1c _____ YES 1
ASK TO SPEAK TO PERSON _____ NO 2
RESPONSIBLE FOR PURCHASE AND RECOMMENCE INTERVIEW

Q.1c Are you the only person in this business who is involved in the decision for the purchase of fish and seafood? YES 1
NO 2

Q.1d Are you responsible for purchasing fish and seafood for this wholesale outlet only, or for other wholesale outlets as well? GO TO Q.2a _____ ONE OUTLET ONLY 1
GO TO Q.1e _____ OTHER OUTLETS 2

Q.1e And how many outlets do you purchase fish and seafood for? TWO 2
THREE 3
FOUR 4
FIVE 5
SIX OR MORE (WRITE IN) _____

Q.2a What do you believe are the main problems in selling and distributing fish and seafood?

NONE/NOTHING 01

OFFICE

SHOW CARD G

Q.2b Research conducted with other fish and seafood wholesalers has uncovered a number of problems or barriers that suppliers of fresh and frozen fish and seafood have encountered. Using the following scale (SHOW CARD G), how significant do you consider each of the following problems? READ OUT. ROTATE TO ASTERISK

	<u>VERY</u> <u>SIGNI-</u> <u>FICANT</u> <u>PROBLEM</u>	<u>QUITE</u> <u>SIGNI-</u> <u>FICANT</u> <u>PROBLEM</u>	<u>NOT VERY</u> <u>SIGNI-</u> <u>FICANT</u> <u>PROBLEM</u>	<u>NOT A</u> <u>PROBLEM</u>	<u>DON'T</u> <u>KNOW</u>
1. THE VARIABLE QUALITY OF THE FISH AND SEAFOOD PURCHASED	1	2	3	4	5
2. THE PROPORTION OF THE FISH AND SEAFOOD PURCHASED WHICH CANNOT BE SOLD AND MUST BE THROWN AWAY	1	2	3	4	5
3. THE COST OF DISPOSING OF WASTE PRODUCT	1	2	3	4	5
4. THE UNAVAILABILITY OF STAFF WITH EXPERIENCE IN HANDLING AND SELLING FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
5. THE AMOUNT OF PHYSICAL STORAGE SPACE REQUIRED FOR FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
6. THE LACK OF KNOWLEDGE OF CUSTOMERS ABOUT THE VARIETY OF FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
7. UNCERTAINTY ABOUT THE FRESHNESS OF FISH AND SEAFOOD AVAILABLE	1	2	3	4	5
8. UNCERTAINTY ABOUT WHETHER THE FISH BOUGHT ARE CORRECTLY NAMED	1	2	3	4	5
9. THE RISK OF BUYING FISH AND SEAFOOD "SIGHT UNSEEN"	1	2	3	4	5
10. UNFAVOURABLE PUBLICITY ABOUT FISH AND SEAFOOD	1	2	3	4	5
11. IT IS DIFFICULT TO DISTRIBUTE	1	2	3	4	5
12. FISH IS TOO EXPENSIVE TO BUY	1	2	3	4	5
13. SEAFOOD IS TOO EXPENSIVE TO BUY	1	2	3	4	5
14. DIFFICULTY GETTING CONTINUOUS SUPPLY AT STEADY PRICES	1	2	3	4	5
15. DIFFICULTY PRE-ORDERING AND RECEIVING FISH AND SEAFOOD PRODUCTS	1	2	3	4	5
16. THE LOW MARGINS NECESSARY TO REMAIN COMPETITIVE	1	2	3	4	5
17. THE CREDIT TERMS THAT HAVE TO BE OFFERED TO CUSTOMERS	1	2	3	4	5
18. THE STOCK LEVELS THAT NEED TO BE HELD	1	2	3	4	5
19. DIFFICULTY IN OBTAINING GOOD QUALITY PRODUCT	1	2	3	4	5
20. A LACK OF TRAINING IN FISH HANDLING AND HYGIENE	1	2	3	4	5
21. DIFFICULTY GETTING A CONTINUOUS SUPPLY OF A GOOD RANGE OF FISH	1	2	3	4	5

- Q.3a Do you mainly sell fresh or frozen fish and seafood?
- FRESH 1
- FROZEN 2
- GO TO Q.9a _____ DO NOT SELL FRESH OR FROZEN 3
- DON'T KNOW 4

FOR Q.3b TO Q.3c, IF MANY SPECIES ARE PURCHASED SEEK BEST POSSIBLE ESTIMATE

Q.3b How many different species of fresh and frozen fish did you buy in the January to June 1991 period?

FISH _____

Q.3c How many different species of fresh and frozen seafood did you buy in the January to June 1991 period?

SEAFOOD _____

Q 4a In the first six months of 1991, which twelve species (up to) of fresh and frozen fin fish were the main types sold by this business throughout Australia? RECORD UP TO TWELVE TYPES ACROSS TOP OF SHEET.

NONE 001

Q.4b And which twelve species (up to) of fresh and frozen seafood (crustaceans and molluscs) were the main types sold by this business throughout Australia? RECORD UP TO TWELVE TYPES ACROSS TOP OF SHEET.

NONE 001

FOR EACH SPECIES ASK Q.5a TO Q.6b

Q.5a How many kilograms of (READ OUT SPECIES) was sold throughout January to June, 1991? RECORD BEST ESTIMATE OF KG. IF UNAVAILABLE, RECORD CRATES, BOXES, TONNES - ANY DETAIL.

Q 6a What proportion of (READ OUT SPECIES) that were bought in 1991 was imported and what proportion was caught in Australian waters? ENSURE TOTAL IS 100%.

SHOW CARD!

Q 6b What proportion of (READ OUT SPECIES) is sold to the following businesses. READ OUT.

OTHER WHOLESALER/MARKET

VALUE ADDED PROCESSOR/MANUFACTURER

INSTITUTIONAL CATERING

CATERERS

RESTAURANT/HOTEL/MOTEL/CLUB

RETAIL FISH MARKET

RETAIL FISH SHOP (FISHMONGER)

FISH AND CHIP SHOP/TAKE-AWAY

SUPERMARKET/FOOD STORE/CONVENIENCE STORE

DIRECT TO CONSUMER

Q 6c Thinking of the species we have just discussed, approximately what proportion of the total amount you spent on all fresh and frozen fish and seafood in the last month was accounted for by these species? PROBE FOR BEST ESTIMATE. WHERE POSSIBLE DO NOT ACCEPT DON'T KNOW.

WRITE IN: _____ %

DON'T KNOW 101

Q.9a What actions need to be taken for your business to stock and sell more fish and seafood products? PROBE

OFFICE

Q.9b What actions need to be taken by the fishing industry in general for more fish and seafood to be bought by your business? PROBE

OFFICE

SHOW CARD J

- Q.10 I am going to read out a number of actions that could be taken to increase the sale of fish and seafood products for your business. For each I would like you to tell me if you believe each action would have a (READ OUT SCALE) on your sales. READ OUT EACH STATEMENT.

GREAT
IMPACTSOME
IMPACTA LITTLE
IMPACT

NO IMPACT

DON'T
KNOW

1

2

3

4

5

GREAT
IMPACTSOME
IMPACTA LITTLE
IMPACTNO
IMPACTDON'T
KNOW

1. A MORE CONSISTENT SUPPLY OF FRESH FISH AND SEAFOOD	1	2	3	4	5
2. MORE FREQUENT DELIVERY OF FISH	1	2	3	4	5
3. AVAILABILITY OF INFORMATION FOR CONSUMERS, CATERERS & RESTAURANTS ON COOKING & PREPARATION	1	2	3	4	5
4. ALL PRODUCERS & SUPPLIERS GIVING EQUAL ACCESS TO THE FISH SUPPLY	1	2	3	4	5
<hr/>					
5. MORE ADVERTISING SUPPORT FOR FISH & SEAFOOD	1	2	3	4	5
6. GREATER ENCOURAGEMENT OF AQUACULTURE INDUSTRY	1	2	3	4	5
7. IMPROVED TECHNOLOGY FOR TRANSPORTING FISH	1	2	3	4	5
8. BETTER QUALITY PRODUCT AVAILABLE THROUGH BETTER HANDLING	1	2	3	4	5
9. SUPPLY OF A GREATER VARIETY OF PREPARED FISH AND SEAFOOD MEALS READY TO COOK	1	2	3	4	5

Now I would like to talk about specific types of fish and seafood.

SHOW CARD M

Q.11a Listed are various species of fish and seafood which have been identified by the fishing industry as being under utilised. For businesses like this, which types do you consider to have the greatest potential for increased sales? RECORD BELOW

Q.11b FOR THOSE IDENTIFIED AS HAVING POTENTIAL (Q.11a CODES 1 TO 11) ASK Q.11b And what are the main reasons for believing that the potential lies with (READ OUT EACH TYPE MENTIONED IN Q.11a)?

	<u>Q.11a</u>	<u>Q.11b</u> <u>REASON</u>
<u>WILD SPECIES</u>		
JACK MACKEREL (NOT JUST MACKEREL OR ANY OF THE OTHER TYPES)	01	
SQUID (OR CALAMARI)	02	
PILCHARDS OR SARDINES (NOT CANNED)	03	
AUSTRALIAN HERRING/TOMMY RUFF	04	
SILVER TREVALLY/SKIPPY (NOT JUST TREVALLY)	05	
<u>"FARMED" SPECIES</u>		
FARM PRAWNS (NOT JUST PRAWNS)	06	
RAINBOW TROUT (FRESHWATER)	07	
ATLANTIC SALMON (FRESH NOT SMOKED)	08	
MUSSELS	09	
OYSTERS	10	
FARM BARRAMUNDI	11	
NONE	12	
DON'T KNOW	13	

> GO TO Q.12a

Q.12a Do you wholesale any other food products besides fish and seafood?
 GO TO Q.12b _____ YES 1
 GO TO Q.13 _____ NO 2
 DON'T KNOW/CAN'T SAY 3

Q.12b What other food products do you wholesale?
 _____ OFFICE

Q.13 What major changes have you noticed in the fish and seafood industry within the last five years (ie. price, storage and/or distribution, product emphasis, promotion)?
PROBE

	OFFICE

Q.14a Thinking in the next five years, do you consider that the sale of fish and seafood products will increase, decrease or remain the same in this business?

INCREASE	1
DECREASE	2
REMAIN THE SAME	3
DON'T KNOW	4

Q.14b And why do you say that?

	OFFICE

CLASSIFICATION

For classification purposes only could you please tell me

Q.15a The average weekly turnover (sales) of this business? WRITE IN \$ _____

Q.15b And what proportion or sales value of this would be accounted for by **all** fish and seafood products? PROBE FOR BEST ESTIMATE. IF DO NOT SELL OTHER FOOD PRODUCTS (Q.12a CODE 2). RECORD PROPORTION AS 100%.

PROPORTION _____% VALUE \$ _____ DON'T KNOW 9999

Q.15c And of the total weekly sales of all fish and seafood, approximately what proportion would be fresh and frozen fish or seafood, canned fish or seafood and other forms of fish or seafood (bottled, prepackaged etc).

- | | | | | |
|-------|--------------|-------|------|--|
| 1. | FRESH/FROZEN | _____ | % | |
| 2. | CANNED | _____ | % | |
| 3. | OTHER | _____ | % | |
| TOTAL | | _____ | 100% | |

Q.16 How many full time and part time/casual workers are employed by this business?

FULL TIME: _____

PART TIME/CASUAL: _____

Q.17 Does this business have any ownership ties with ... READ OUT? RECORD BELOW

	<u>YES</u>	<u>NO</u>	<u>DON'T KNOW</u>
FISH OR SEAFOOD PRODUCERS/CATCHERS	1	2	3
ANOTHER FISH AND SEAFOOD WHOLESALER	1	2	3
FISH AND SEAFOOD PROCESSOR	1	2	3
FISH AND SEAFOOD RETAILER (IE. UNCOOKED)	1	2	3
RETAILER SELLING COOKED FISH & SEAFOOD	1	2	3

INTERVIEWER: OBTAIN A COPY OF THE WHOLESALERS PRICE LIST FOR FISH AND SEAFOOD AND ATTACH IT TO THIS QUESTIONNAIRE

THANK YOU VERY MUCH FOR YOUR HELP AS I SAID, I AM FROM YANN CAMPBELL HOARE WHEELER MARKET RESEARCH. I WILL GIVE YOU OUR TELEPHONE NUMBER IF YOU WOULD LIKE TO CHECK THE BONA FIDES OF THIS COMPANY. PLEASE CALL THE COMPANY NUMBER - 537 2255.

COMPANY NAME: _____

RESPONDENT NAME: _____

ADDRESS: _____

SUBURB: _____

PHONE: _____

I certify this is a true, accurate and complete interview, conducted to the best of my ability and in accordance with my instructions. I also agree to hold in confidence and not disclose to any other person the content of this questionnaire or any other information relating to this project.

INTERVIEWER SIGNATURE:

DATE

INTERVIEWER NO.:

Appendix IV

**Market Profile Report - Canned and Frozen Fish and
Seafood (A C Nielsen warehouse withdrawals data)**

Special Note on Weights/Volumes

All weights and volumes mentioned in this report (kgs and grms) are in net weight of consumable product. That is, the weight or volume given excludes packaging weight.

CONFIDENTIAL

MARKET PROFILE REPORT - CANNED AND FROZEN
FISH AND SEAFOOD

Prepared for:

CLIENT CONTACT: DR MICHAEL WALKER

YCHW CONTACT: GRAEME PEACOCK
JACKIE COOKE

Study No: J7128

Date: NOVEMBER 1991



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INTRODUCTION

The conduct of the National Seafood Consumption Study requires the collection of data to describe the movement of all fish and seafood products through the retail and catering and wholesale and institutional sectors. Due to the fact that many supermarkets, and grocery and convenience stores carry a large range of canned and frozen fish and seafood products, offering many different pack sizes, and many also sell fresh fish, a considerable amount of survey resources would have to have been devoted to the collection of this information.

A C Nielsen Pty Ltd systematically collect data on the movement of canned and frozen fish and seafood products through Australia's major food and grocery wholesalers and chain retailers. This information represents a census for the two product categories, therefore offering more accurate data than would otherwise be collected through a sample survey.

Resources were provided for the purchase of the Market Profile Reports for the canned and frozen fish and seafood markets. Results are based on the movement of product through the grocery segment for the 1990 calendar year.

This report is divided into two sections. Section one describes the canned fish market and section two, following the same reporting format, outlines the features of the frozen fish and seafood market. All data is based on the SAMI Market Profile Reports accompanying this report.



SUMMARY OF MAIN FINDINGS

CANNED FISH

- In the 1990 CY, 24,474,100kg of canned fish and seafood was distributed from warehouses located in New South Wales, Victoria, Queensland, South Australia and Western Australia. On a per capita basis (based on the 1986 Census of Population and Housing) this represents 1.66kg.
- Residents in New South Wales, South Australia and Western Australia, per capita, consumed a similar volume to the National average (1.71kg, 1.77kg and 1.55kg respectively). On average, Queensland residents consumed more than the National average (1.87kg per capita) and Victorian residents consumed less (1.45kg per capita) canned fish.
- The total retail value of canned fish and seafood moved in 1990 equated to \$233,638,000 or \$0.96 for each 100 grams.
- Tuna accounted for almost one half (46.5%) of the volume of canned fish and seafood distributed through the warehouse network in 1990. The next most popular species was pink salmon (16.4%), followed by sardines (10.0%), red salmon (7.9%), Australian salmon (6.5%), molluscs (3.5%) and other canned products (9.3%) - mackerel, prawns, herrings, pilchards, crab and other canned species.
- In terms of canned product, the main manufacturers (or suppliers) were: Private Label (accounting for 22.0% of the volume); John West (18.0%); Seakist (14.8%); and Heinz (12.4%). Each other manufacturer accounted for less than 10% of the volume distributed. The most significant of these were Safcol (5.9%) and Sirena (4.5%).



- Results indicate that there is not a positive trend in the volume of canned fish and seafood distributed. Although the volume of product moved in 1990 was higher than in 1989 (up by 6.3%), this did not exceed the volume in 1988 (down by 1.1%).
- The volume through-put of Australian salmon, molluscs, prawns and crabs was less in 1990 than the two previous years. Tuna and sardines showed consistent growth, in terms of volume, from 1988 to 1990. The other species - pink salmon, red salmon, mackerel, herrings and pilchards - sold in cans recorded variable volume output.
- Overall, canned fish and seafood appears a highly seasonal product. The peak quarters for this product, in 1990, were March (6,811,900kg) and December (6,661,900kg). The volume of canned product distributed in the September (5,606,500kg) and June (5,393,800kg) quarters was considerably lower than the in the warmer months of the year.
- Of all the fish and seafood species sold in a can, seasonality appears greatest for tuna, pink salmon, red salmon, and molluscs.
- Based on total volume, the most popular can sizes were those ranging from 376 to 500 grams (accounting for 37.6% of the volume) and 151 to 375 grams (35.6%). Smaller cans accounted for a lower share of the volume - 101 to 150 grams (16.2%) and 40 to 100 grams (9.8%). At present, cans under 50 grams and over 500 grams account for an insignificant amount of the volume distributed.



FROZEN FISH

- In the 1990 CY, 11,336,200kg of frozen fish was distributed through the warehouses located in the five mainland capital cities. This represents less than half of the volume of fish and seafood sold in cans. This highlights that the frozen fish (prepared market) is under-developed in Australia. On a per capita basis, this equates to 0.76kg.
- Reviewing the per capita estimate by State, shows New South Wales to be exactly the same as the National average (0.76kg). Per capita consumption appears greater in Western Australia (1.05kg) and Queensland (0.89kg) and less in Victoria (0.66kg) and South Australia (0.58kg).
- In 1990, the retail value of the frozen fish market was \$87,579,200 or \$0.77 for each 100 grams - this is less than the value calculated for canned fish (\$0.96 for 100 grams).
- Miscellaneous portions (oven fry and battered and crumbed portions, bites, burgers, cakes and snacks) accounted for one half (49.8%) of the volume of this category distributed in 1990 through the warehouse network. Fish fingers was the next most significant contributor (32.3%), followed by fish fillets (10.0%), fish dinners (4.9%) and frozen seafood (3.0%).
- In the frozen preprepared fish market, the three main manufacturers, in 1990, were Edgell Foods (35.1% of the volume), I & J (29.6%) and Private Label (25.4%). These accounted for 90% of the volume sold of this category. Many other small manufacturers supply the frozen fish market.
- Volume through-put of frozen fish has held at a similar level over the last three years - -0.3% change from 1989 to 1990 and -1.2% change from 1988 to 1990. At present, frozen fish is not a growing market.



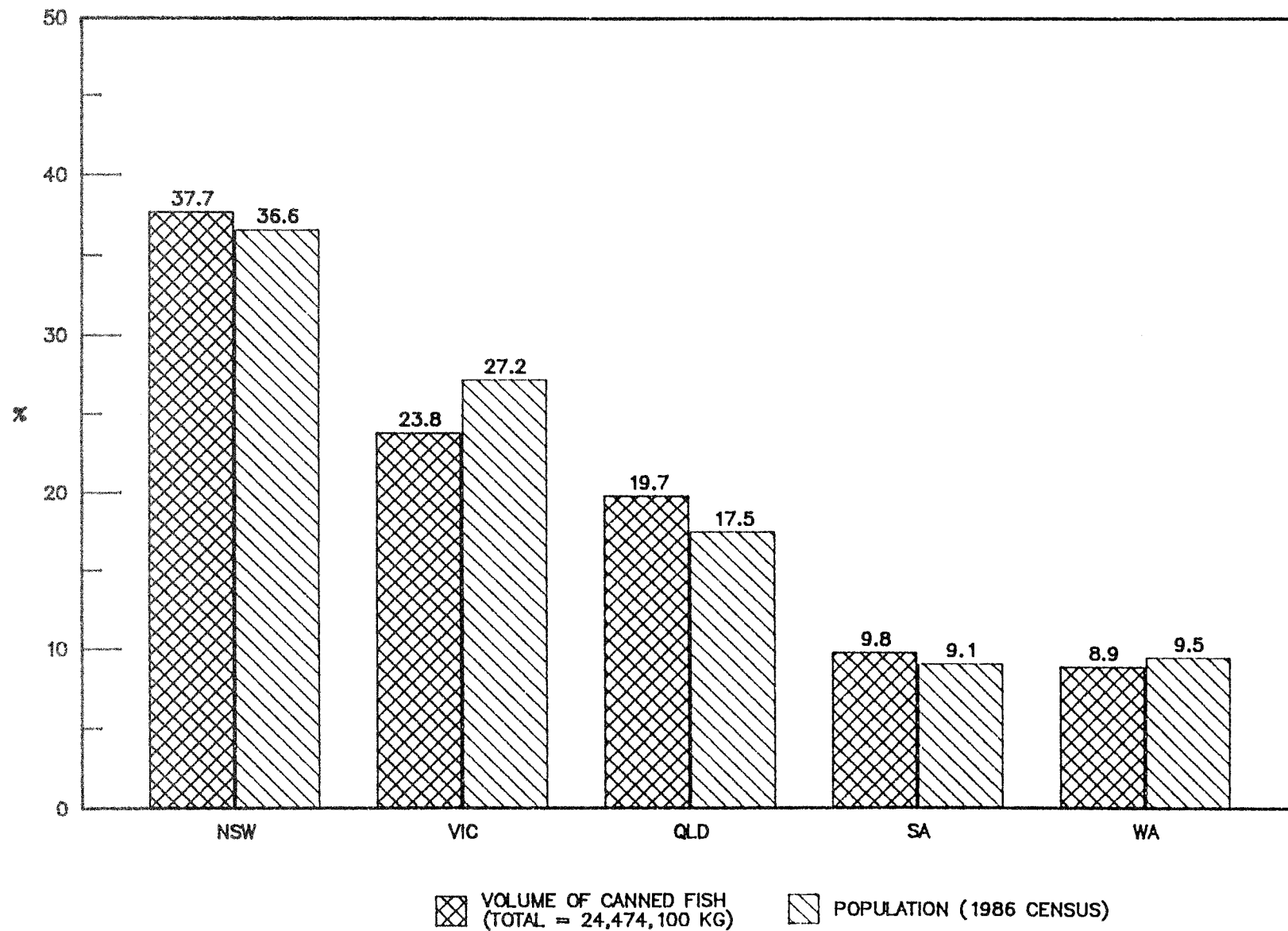
- While there has not been a significant change in the volume of frozen fish sold over the last three years, specific segments have shifted in emphasis. Fish fillets and miscellaneous portions appear the growth areas (increasing in volume in 1990 compared with 1988 and 1989), at the detriment of the fish fingers market (volume output lower in 1990 than the two previous years). Distribution of frozen seafood in 1990 did not exceed the level reported in 1988.
- In contrast to the quarterly trend for canned fish, the pattern for frozen fish, in 1990, showed March to be the peak quarter (3,151,400kg), followed by June (2,960,100kg), September (2,700,600kg) and declining to December (2,524,200kg).
- With the exception of frozen seafood, the volume movement of the other products - miscellaneous portions, fish fingers, fish fillets and fish dinners - peaked in the first quarter (March) of 1990 and declined each quarter to reach the lowest level in the December quarter of 1990.
- The most significant contributor, to volume share, was the 376 to 500 gram pack accounting for 40.1% of volume. Packs 151 to 375 gram and over 500 grams each accounted for approximately 30% of volume share - more 151 to 375 gram packs than over 500 gram packs were distributed.



SECTION 1 - CANNED FISH



1.1.1 STATE SHARE OF CANNED FISH VOLUME & POPULATION



1.1 The Market Overall

1.1.1 State Share of Canned Fish Volume and Population

In the 1990 calendar year (CY), **24,474,100kg of canned fish and seafood was distributed through the Australian - New South Wales, Victoria, Queensland, South Australia, and Western Australia - grocery warehouse channel of trade.** This represented **\$233,638,000 in retail sales** of canned fish and seafood product, equating to an average of \$9.55 per kg or \$0.96 for each 100 grams. Overall, on a per capita basis, each individual ate 1.66kg of canned fish (population figure based on 1986 Census of Population and Housing).

The actual population in 1990 cannot be accurately determined, although it is known to be higher than in 1986. Therefore, the 1990 estimate of per capita consumption would be slightly lower than the estimate of 1.66 kg which is based on the 1986 population.

The chart shown on the facing page (see Chart 1.1.1) shows the proportion of the volume of canned fish which was sold within each State and the share of the population within each State. Where the share of volume exceeds the share of population, per capita consumption is greater in this region. Where population share exceeds volume share, per capita consumption is lower.



It can be seen that New South Wales accounted for the greatest share of canned fish volume (37.7%), but this is not surprising as this State also has the greatest share of the population (36.6%). The comparative shares (volume and population) for South Australia and Western Australia were almost the same. In contrast, per capita consumption of canned fish in Victoria was lower in 1990 (23.8% volume compared with 27.2% population), while it was marginally higher within Queensland (19.7% and 17.5% respectively).

Recalculating these figures on a per capita basis, New South Wales, South Australia and Western Australia were similar to the National average (1.71kg, 1.77kg and 1.55kg respectively). The greatest difference, as noted above, was found for Victoria (1.45kg) and Queensland (1.87kg).

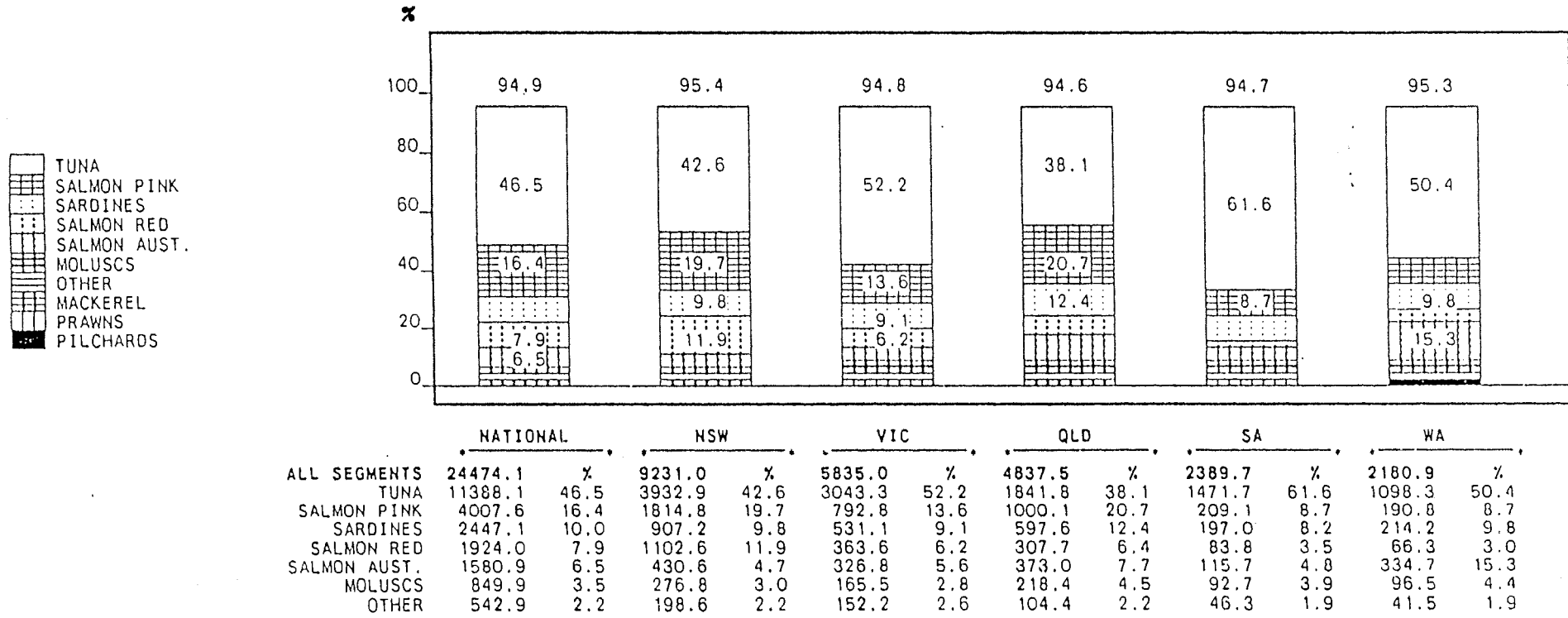


1.1.2 CANNED FISH

31 DECEMBER 199

SEGMENT SHARE GRAPH

BASED ON VOLUME IN 000'S KG
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



1.1.2 Species Share of National Total - Volume

Based on the volume of canned fish distributed (24,474,100kg for the 1990 CY), the most popular species sold throughout Australia was tuna (see Chart 1.1.2). **Tuna accounted for over one half (46.5%) of the volume of canned fish sold in 1990.** Specific shares for the other species of canned fish are shown below:

- pink salmon (16.4%);
- sardines (10.0%);
- red salmon (7.9%);
- Australian salmon (6.5%);
- molluscs (3.5%); and
- other canned products (9.3%).

The discussion below highlights the canned fish species more popular within a specific State(s). That is, it is based on the share of that species sold within the State compared with the Australian share.

Tuna: A greater volume of tuna was sold into:

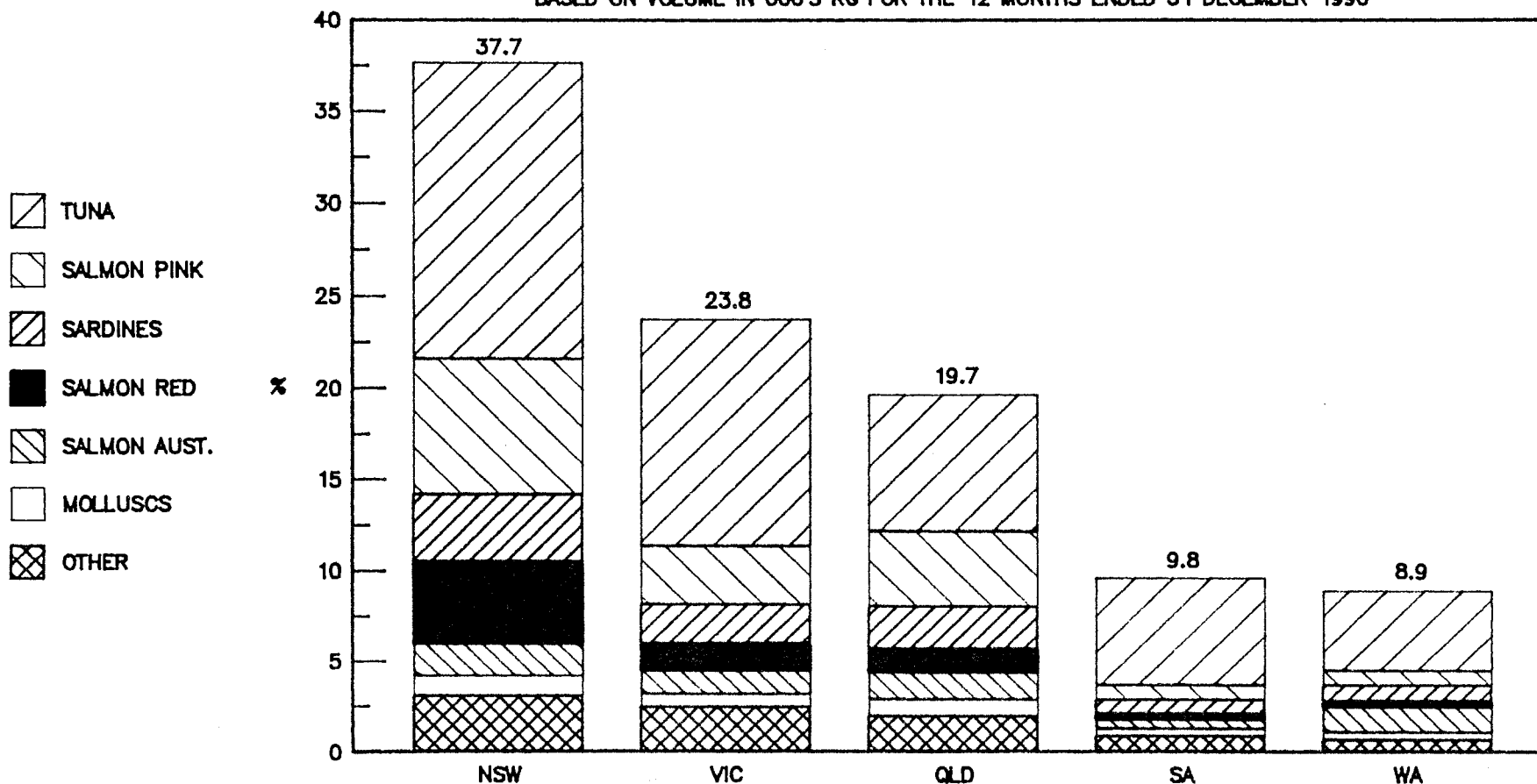
- South Australia (61.6%);
- Victoria (52.2%); and
- Western Australia (50.4%)

compared with Australia overall (46.5%).



1.1.2 CANNED FISH – SPECIES SHARE OF NATIONAL TOTAL

BASED ON VOLUME IN 000'S KG FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



ALL SEGMENTS	9231.0	%	5835.0	%	4837.5	%	2389.7	%	2180.9	%
TUNA	3932.9	16.1	3043	12.4	1841.8	7.5	1471.7	6.0	1098.3	4.5
SALMON PINK	1814.8	7.4	792.8	3.2	1000.1	4.1	209.1	0.8	190.8	0.8
SARDINES	907.2	3.7	531.1	2.2	597.6	2.4	197.0	0.8	214.2	0.9
SALMON RED	1102.6	4.5	363.6	1.5	307.7	1.3	83.8	0.3	66.3	0.3
SALMON AUST.	430.6	1.8	326.8	1.3	373.0	1.5	115.7	0.5	334.7	1.4
MOLLUSCS	276.8	1.1	165.5	0.7	218.4	0.9	92.7	0.4	96.5	0.4
OTHER	766.0	3.1	611.8	2.5	499.0	2.0	219.6	0.9	180.0	0.7

NOTE: OTHER CONSISTS OF PILCHARDS, MACKEREL, HERRINGS, PRAWNS, CRABS, AND OTHER



Pink Salmon: This product was more popular within:

- Queensland (20.7%); and
- New South Wales (19.7%)

than Australia overall (16.4%).

Red Salmon: A greater share of the volume was attributed to New South Wales (11.9%) than any other State (Australia 7.9%).

Australian Salmon: This canned product was far more likely to be bought within Western Australia (15.3%) compared with the share for Australia (6.5%).

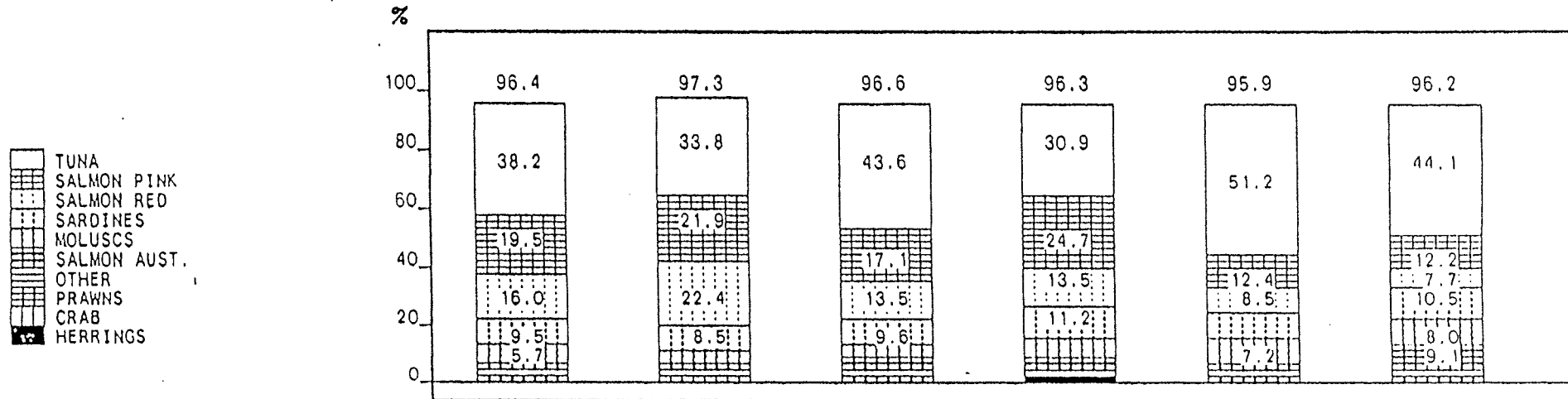


1.1.3 CANNED FISH

31 DECEMBER 1990

SEGMENT SHARE GRAPH

BASED ON VALUE IN \$ 000'S
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



	NATIONAL		NSW		VIC		QLD		SA		WA	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
ALL SEGMENTS	233638.0		90566.2		57625.1		44064.9		21647.6		19734.3	
TUNA	89138.6	38.2	30641.5	33.8	25108.0	43.6	13600.6	30.9	11087.2	51.2	8701.2	44.1
SALMON PINK	45610.1	19.5	19798.0	21.9	9841.6	17.1	10890.0	24.7	2678.3	12.4	2402.2	12.2
SALMON RED	37389.7	16.0	20294.5	22.4	7796.6	13.5	5940.5	13.5	1838.0	8.5	1520.2	7.7
SARDINES	22201.5	9.5	7700.9	8.5	5510.9	9.6	4915.1	11.2	1993.3	9.2	2081.4	10.5
MOLUSCS	13390.4	5.7	4196.9	4.6	2692.8	4.7	3361.1	7.6	1563.7	7.2	1575.9	8.0
SALMON AUST.	7767.8	3.3	1921.8	2.1	1746.6	3.0	1703.5	3.9	592.6	2.7	1803.3	9.1
OTHER	6824.6	2.9	2358.1	2.6	1805.0	3.1	1362.4	3.1	653.0	3.0	646.1	3.3



1.1.3 Species Share of National Total - Value

The value of the canned fish market within Australia for the 1990 CY was almost \$234 million (see Chart 1.1.3). The **most significant contributor to the canned fish market was tuna, with a retail value of \$89,138,600.** Tuna was followed in market value by pink salmon (\$45.6m); red salmon (\$37.4m); sardines (\$22.2m); molluscs (\$13.3m); Australian salmon (\$7.8m); and other canned products (\$18.1m).

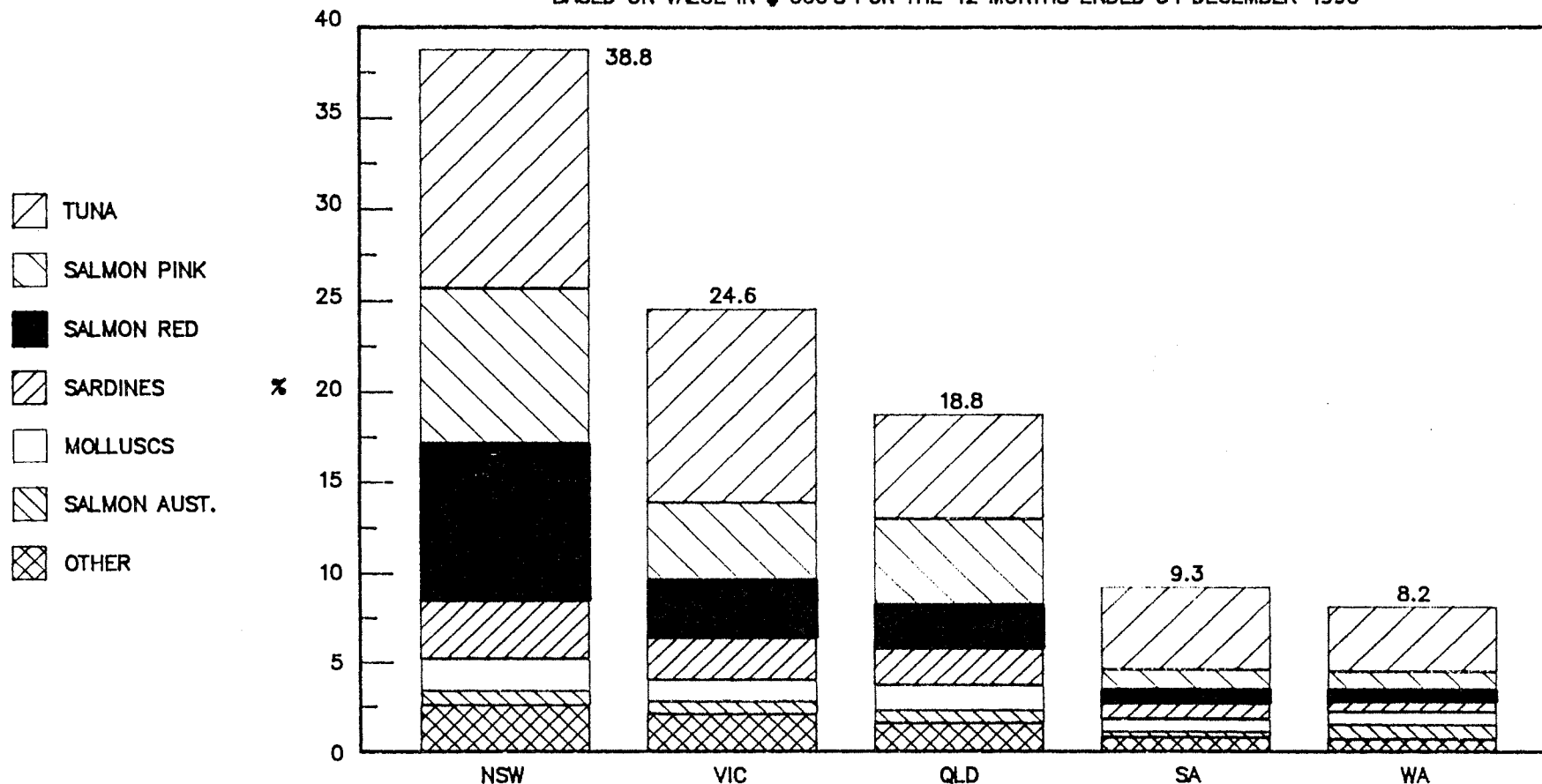
Based on the volume and value for each category of canned fish, it is possible to derive an average value per kg and 100gm for each of the seven categories. The value for a given weight is shown in descending order.

	<u>\$ per</u> <u>1kg</u>	<u>\$ per</u> <u>100gm</u>
RED SALMON	19.43	1.94
MOLLUSCS	15.76	1.58
PINK SALMON	11.38	1.14
SARDINES	9.07	0.91
TUNA	7.83	0.78
OTHER FISH	7.96	0.80
AUSTRALIAN SALMON	4.91	0.49



1.1.3 CANNED FISH – SPECIES SHARE OF NATIONAL TOTAL

BASED ON VALUE IN \$ 000'S FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



ALL SEGMENTS	90566.2	%	57625.1	%	44064.9	%	21647.6	%	19734.3	%
TUNA	30641.5	13.1	25108.0	10.7	13600.6	5.8	11087.2	4.7	8701.2	3.7
SALMON PINK	19798.0	8.5	9841.6	4.2	10890.0	4.7	2678.3	1.1	2402.2	1.0
SALMON RED	20294.5	8.7	7796.6	3.3	5940.5	2.5	1838.0	0.8	1520.2	0.7
SARDINES	7700.9	3.3	5510.9	2.4	4915.1	2.1	1993.3	0.9	2081.4	0.6
MOLLUSCS	4196.9	1.8	2692.8	1.2	3361.1	1.4	1563.7	0.7	1575.9	0.7
SALMON AUST.	1921.8	0.8	1746.6	0.7	1703.5	0.7	592.6	0.3	1803.3	0.8
OTHER	6012.6	2.6	4928.6	2.1	3654.2	1.6	1894.4	0.8	1650.1	0.7

NOTE: OTHER CONSISTS OF PILCHARDS, MACKEREL, HERRINGS, PRAWNS, CRABS, AND OTHER



These results reflect the difference in the contribution (or share) for each species to the value of the canned fish market. Although tuna accounted for almost one half of the volume of canned product sold (46.5%), its share of the value was somewhat lower (38.2%). The share of value to volume was greater for the following species:

	<u>% SHARE OF VALUE</u>	<u>% SHARE OF VOLUME</u>
PINK SALMON	19.5%	16.4%
RED SALMON	16.0%	7.9%
MOLLUSCS	5.7%	3.5%

In comparison, the share of volume to value was greater for:

TUNA	38.2%	46.5%
SARDINES AUSTRALIAN	9.5%	10.0%
SALMON	3.3%	6.5%
OTHER FISH	7.8%	9.3%

State differences in the value of species sold (see Chart 1.1.3) compared with the Australian result correspond with that found for the State differences in volume sold (see section 1.1.2).

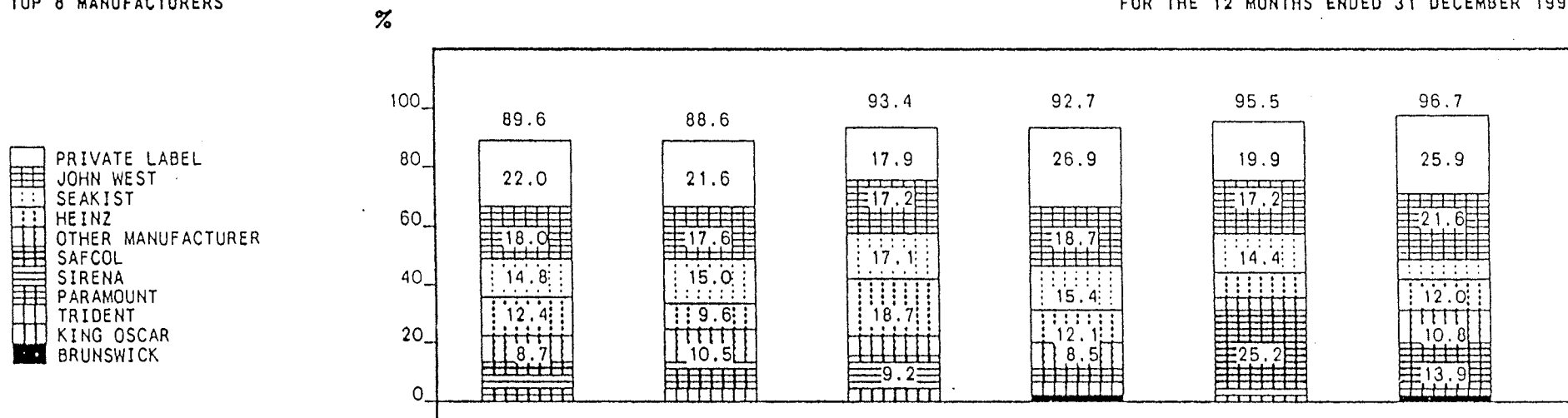


1.1.4 CANNED FISH

31 DECEMBER 1990

MANUFACTURER SHARE GRAPH
TOP 8 MANUFACTURERS

BASED ON VOLUME IN 000'S KG
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



	NATIONAL		NSW		VIC		QLD		SA		WA	
	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
ALL MANUFACTURERS	24474.1		9231.0		5835.0		4837.5		2389.7		2180.9	
PRIVATE LABEL	5385.3	22.0	1996.4	21.6	1046.5	17.9	1302.6	26.9	475.8	19.9	564.0	25.9
JOHN WEST	4415.2	18.0	1626.0	17.6	1004.3	17.2	903.1	18.7	411.6	17.2	470.2	21.6
SEAKIST	3631.3	14.8	1387.1	15.0	997.2	17.1	746.1	15.4	343.5	14.4	157.4	7.2
HEINZ	3022.7	12.4	882.3	9.6	1093.3	18.7	586.6	12.1	199.0	8.3	261.4	12.0
OTHER MANUFACTURER	2133.5	8.7	966.6	10.5	394.9	6.8	409.8	8.5	127.0	5.3	235.2	10.8
SAFCOL	1438.8	5.9	333.8	3.6	153.5	2.6	46.6	1.0	601.2	25.2	303.7	13.9
SIRENA	1090.6	4.5	354.9	3.8	535.7	9.2	103.8	2.1	58.7	2.5	37.4	1.7
PARAMOUNT	819.9	3.3	524.6	5.7	94.3	1.6	174.7	3.6	26.3	1.1		
TRIDENT	778.9	3.2	441.8	4.8	67.7	1.2	204.2	4.2	17.8	0.7	47.3	2.2
KING OSCAR	588.4	2.4	147.9	1.6	224.9	3.9	120.3	2.5	64.6	2.7	30.7	1.4
BRUNSWICK	575.9	2.4	207.0	2.2	121.7	2.1	155.5	3.2	22.6	0.9	69.0	3.2
LUNCHTIME	352.1	1.4	222.0	2.4	50.8	0.9	46.7	1.0	29.7	1.2	2.8	0.1
CONGA	129.1	0.5	79.3	0.9	9.8	0.2	28.7	0.6	11.3	0.5		
CAPTAIN	112.5	0.5	61.2	0.7	40.4	0.7	8.7	0.2	0.5	0.0	1.7	0.1



1.1.4 Manufacturers Share of National Total - Volume

Based on the volume of canned fish distributed (24,474,100kg for the 1990 CY), the most significant manufacturer, in terms of volume, was **Private Label (homebrands), accounting for 22.0% of the volume (or 5,385,300 kg) of canned product** (see Chart 1.1.4). Closely behind in this segment of the market, in 1990, was John West (18.0%), Seakist (14.8%) and Heinz (12.4%). The other key canned fish manufacturers within Australia are detailed in the chart on the facing page, the more significant including Safcol and Sirena.

Contrasting the share of sales attributable to each manufacturer by State, highlights regions of strength for these manufacturers. Results are obviously influenced by the species of canned fish (and consequently the manufacturer) which are more popular within a State.

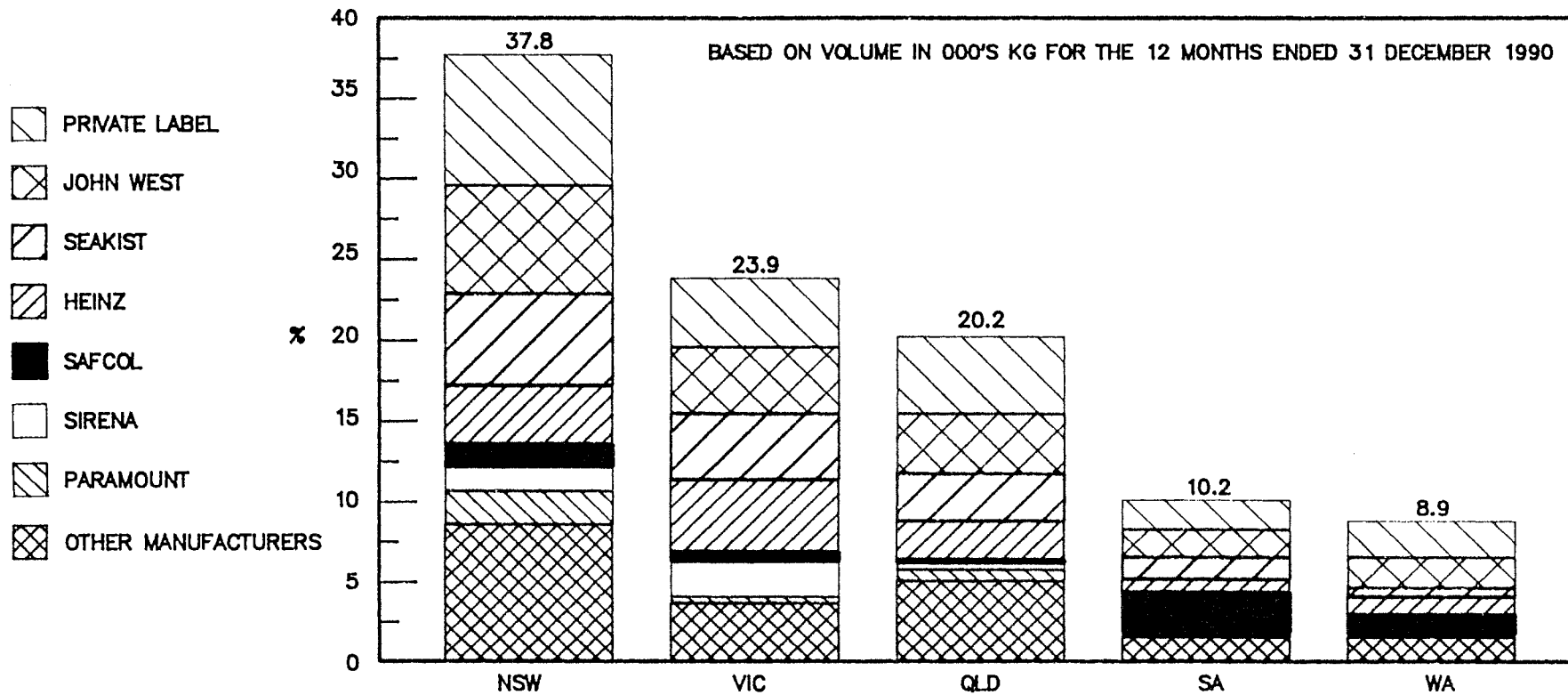
Within New South Wales no major variances in the share of volume were evident by manufacturer, that is, compared with the share for Australia. The only marginal difference was in relation to canned fish manufactured by Paramount (5.7% compared with 3.3% for Australia).

In Victoria, Heinz - predominantly the Greenseas brand - (18.7% compared with 12.4% for Australia) and Sirena (9.2% compared with 4.5% for Australia) commanded a greater volume share of the canned fish market.

Private Label was quite dominant within Queensland (26.9% versus 22.0% Australia), while Safcol held one quarter of the volume share of the South Australian market (25.2% versus 5.9% Australia) - which is possibly an indication of State loyalty.



1.1.4 CANNED FISH – MANUFACTURERS SHARE OF NATIONAL TOTAL



	NSW	%	VIC	%	QLD	%	SA	%	WA	%
ALL MANUFACTURERS	9231.0		5835.0		4837.5		2389.7		2180.9	
PRIVATE LABEL	1996.4	8.2	1046.5	4.3	1302.6	5.3	475.8	1.9	564.0	2.3
JOHN WEST	1626.0	6.7	1004.3	4.1	903.1	3.7	411.6	1.7	470.2	1.9
SEAKIST	1387.1	5.7	997.2	4.1	746.1	3.0	343.5	1.4	157.4	0.6
HEINZ	882.3	3.6	1093.3	4.5	586.6	2.4	199.0	0.87	261.4	1.1
* OTHER MANUFACTURER	966.6	3.9	394.9	1.6	409.8	1.7	127.0	0.5	235.2	1.0
SAFCOL	333.8	1.4	153.5	0.6	46.6	0.2	601.2	2.5	303.7	1.2
SIRENA	354.9	1.5	535.7	2.2	103.8	0.4	58.7	0.2	37.4	0.2
PARAMOUNT	524.6	2.1	94.3	0.4	174.7	0.7	26.3	0.1	0.0	0.0
* TRIDENT	441.8	1.8	67.7	0.3	204.2	0.8	17.8	0.07	47.3	0.2
* KING OSCAR	147.9	0.6	224.9	0.9	120.3	0.8	64.6	0.3	30.7	0.1
* BRUNSWICK	207.0	0.8	121.7	0.5	155.5	0.6	22.6	0.09	69.0	0.3
* UNCHTIME	222.0	0.9	50.8	0.2	46.7	0.2	29.7	0.1	2.8	0.01
* CONGA	79.3	0.3	9.8	0.04	28.7	0.1	11.3	0.5	0.0	0.0
* CAPTAIN	61.2	0.3	40.4	0.2	8.7	0.03	0.5	0.02	1.7	0.006

* INDICATES OTHER MAN.



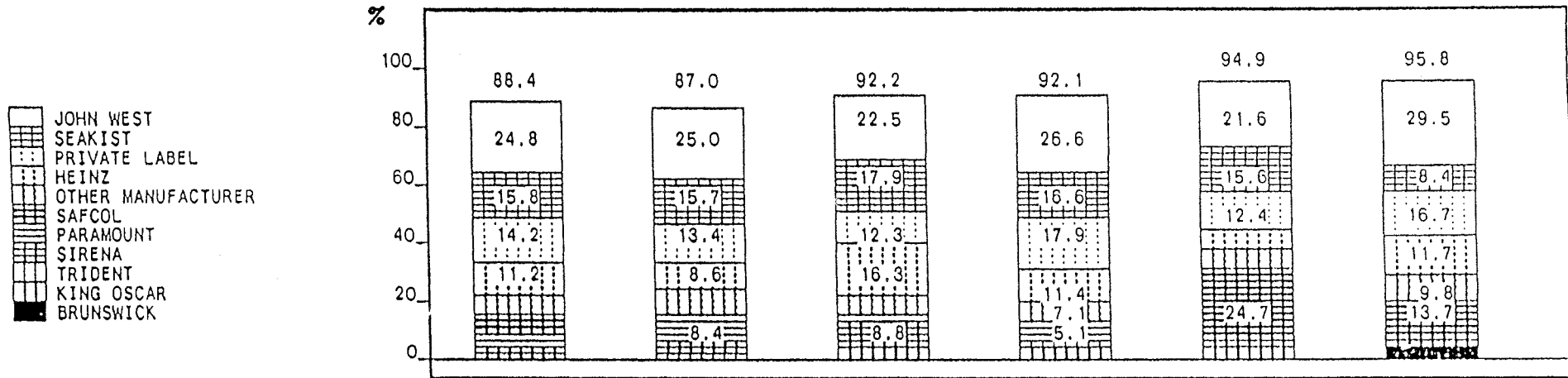
The main manufacturers for which canned fish products were sold, in 1990, within Western Australia were found to be Private Label (25.9% versus 22.0% Australia); John West (21.6% versus 18.0% Australia); and Safcol (13.9% versus 5.9% Australia).



1.15 CANNED FISH

31 DECEMBER 1990

BASED ON VALUE IN \$ 000'S
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



	NATIONAL		NSW		VIC		QLD		SA		WA	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
ALL MANUFACTURERS	233638.0		90568.2		57825.1		44064.9		21647.6		19734.3	
JOHN WEST	57875.3	24.8	22653.1	25.0	12991.8	22.5	11741.3	26.6	4676.5	21.6	5312.6	29.5
SEAKIST	36911.8	15.8	14236.5	15.7	10303.8	17.9	7326.0	16.6	3384.8	15.6	1660.7	8.4
PRIVATE LABEL	33119.7	14.2	12165.5	13.4	7084.2	12.3	7900.3	17.9	2673.9	12.4	3295.8	16.7
HEINZ	26179.5	11.2	7746.8	8.6	3382.4	16.3	5030.7	11.4	1713.7	7.9	2305.9	11.7
OTHER MANUFACTURER	18000.0	7.7	7801.5	8.6	3838.2	6.7	3124.9	7.1	1302.8	6.0	1932.5	9.8
SAFCOL	12377.4	5.3	2918.6	3.2	1056.3	1.8	346.1	0.8	5346.7	24.7	2709.7	13.7
PARAMOUNT	11420.0	4.9	7631.8	8.4	1279.2	2.2	2255.9	5.1	253.1	1.2		
SIRENA	10637.1	4.6	3532.1	3.9	5082.7	8.8	987.5	2.2	605.1	2.8	429.7	2.2
KING OSCAR	8310.4	3.6	2169.2	2.4	3158.7	5.5	1703.9	3.9	850.0	3.9	428.5	2.2
BRUNSWICK	5594.1	2.4	2083.0	2.3	1230.8	2.1	1274.3	2.9	241.8	1.1	764.2	3.9
TRIDENT	5457.2	2.3	2988.6	3.3	489.6	0.8	1511.6	3.4	139.4	0.6	327.9	1.7
LUNCHTIME	4538.7	1.9	2869.3	3.2	771.2	1.3	497.9	1.1	371.3	1.7	29.0	0.1
CAPTAIN	2295.1	1.0	1185.6	1.3	887.0	1.5	173.6	0.4	10.9	0.1	37.9	0.2
CONGA	921.8	0.4	584.4	0.6	69.1	0.1	190.9	0.4	77.4	0.4		



1.1.5 Manufacturers Share of National Total - Value

Total retail sales for canned fish products throughout 1990 almost reached \$234m (see Chart 1.1.5). **John West achieved almost one quarter (24.8%) of the value of the National canned fish market**, equating to retail sales of \$57,875,300. The next most significant competitors were:

-	Seakist	15.8%;
-	Private Label	14.2%;
-	Heinz	11.2%;
-	Safcol	5.3%;
-	Paramount	4.9%; and
-	Sirena	4.6%.

Each other manufacturer held less than 4% market share value, as shown in the accompanying chart.

Value share compared with volume share varied marginally by manufacturer, which is indicative of the type of product sold (and margins). The greatest variation in the share of value to volume was found for:

	<u>% SHARE OF VALUE</u>	<u>% SHARE OF VOLUME</u>
John West*	24.8%	18.0%
Private Label#	14.2%	22.0%
Heinz#	11.2%	12.4%
Paramount*	4.9%	3.3%
King Oscar*	3.6%	2.4%

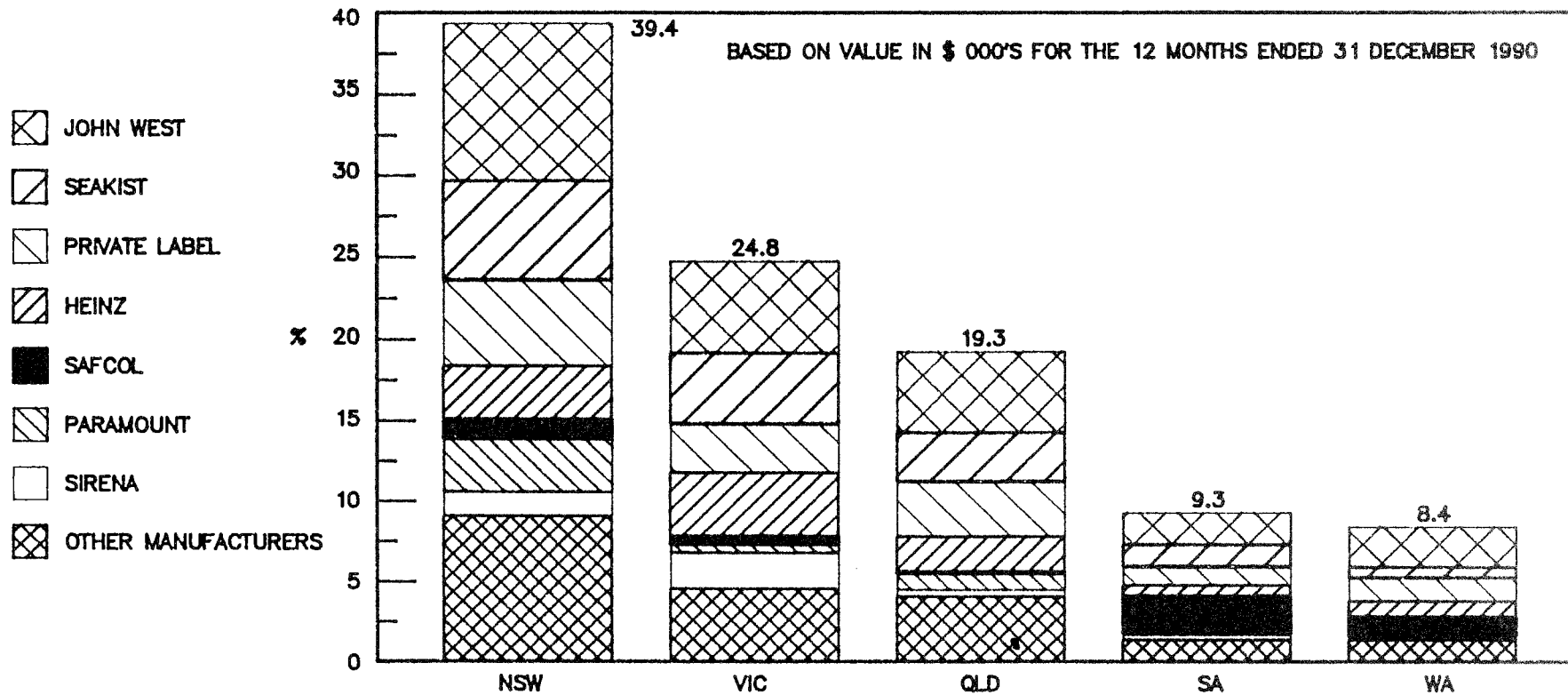
* share of value exceeded share of volume

share of volume exceeded share of value

The same variations emerged in the share of the value sold by each manufacturer within each State as that found for the volume of product distributed (see section 1.1.4).



1.1.5 CANNED FISH – MANUFACTURERS SHARE OF NATIONAL TOTAL

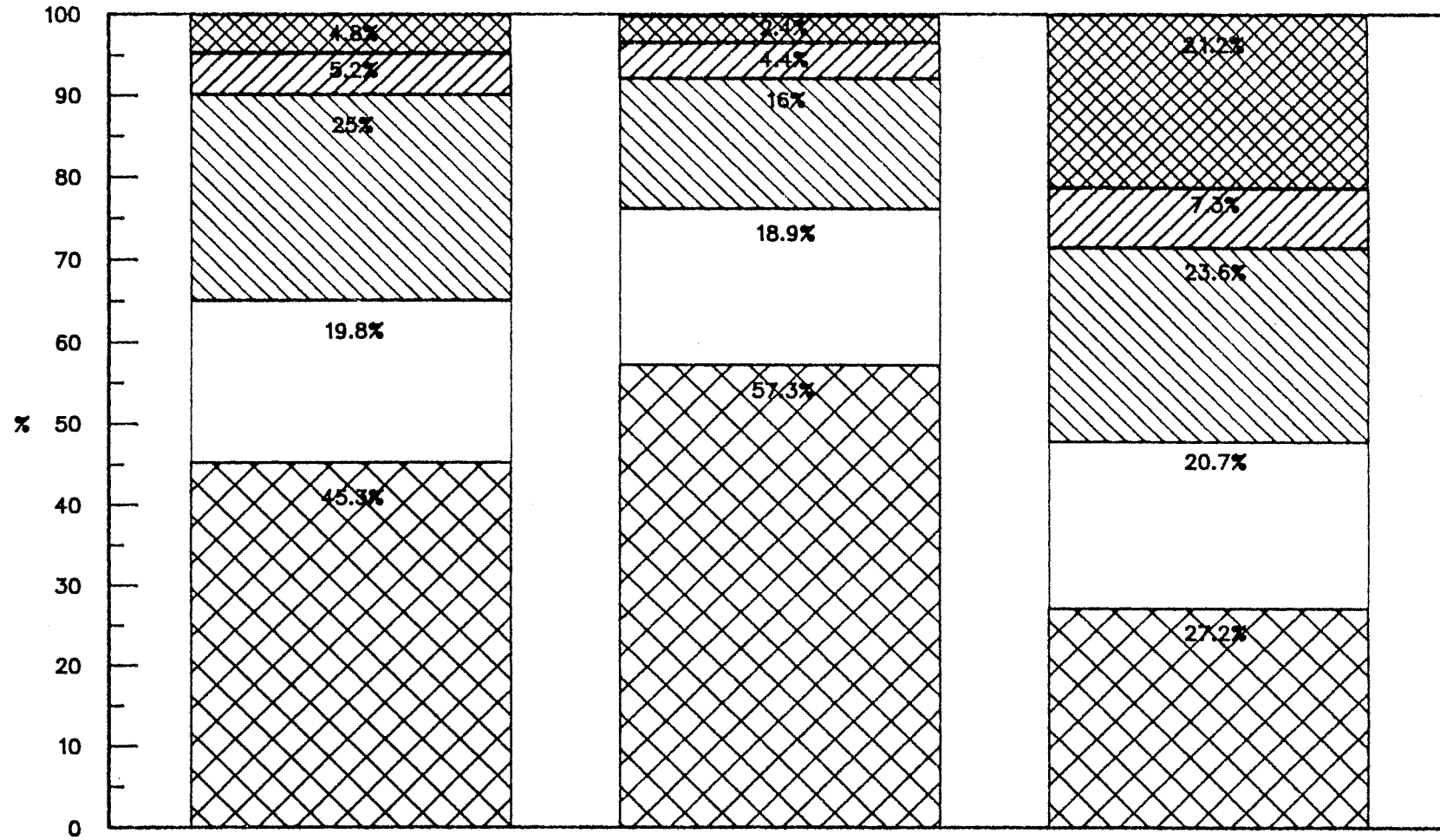


	NSW	%	VIC	%	QLD	%	SA	%	WA	%
ALL MANUFACTURERS	90566.2		57625.1		44064.9		21647.6		19734.3	
JOHN WEST	226534.1	9.7	12991.8	5.6	11741.3	5.0	4676.5	2.0	5821.6	2.5
SEAKIST	14236.5	6.1	10303.8	4.4	7326.0	3.1	3384.8	1.4	1660.7	0.7
PRIVATE LABEL	12165.5	5.2	7084.2	3.0	7900.3	3.4	2673.9	1.1	3295.8	1.4
HEINZ	7746.8	3.3	9382.4	4.0	5030.7	2.2	1713.7	0.7	2305.9	1.0
* OTHER MANUFACTURER	7801.5	3.3	3838.2	1.6	3124.9	1.3	1302.8	0.6	1932.5	0.8
SAFCOL	2918.6	1.2	1056.3	0.5	346.1	0.1	5346.7	2.3	2709.7	1.2
PARAMOUNT	7631.8	3.3	1279.2	0.5	2255.9	1.0	253.1	0.1	0.0	0.0
SIRENA	3532.1	1.5	5082.7	2.2	987.5	0.4	605.1	0.3	429.7	0.2
* KING OSCAR	2169.2	0.9	3158.7	1.3	1703.9	0.7	850.0	0.4	428.5	0.2
* BRUNSWICK	2083.0	0.9	1230.8	0.5	1274.3	0.5	241.8	0.1	764.2	0.3
* TRIDENT	2988.6	1.3	489.6	0.2	1511.6	0.6	139.4	0.1	327.9	0.1
* LUNCHTIME	2869.3	1.2	771.2	0.3	497.9	0.2	371.3	0.2	29.0	0.0
* CAPTAIN	1185.6	1.2	887.0	0.4	173.6	0.7	10.9	0.0	37.9	0.0
* CONGA	584.4	0.3	69.1	0.03	190.9	0.1	77.4	0.0	0.0	0.0

* INDICATES OTHER MAN.



1.2.1 SHARE OF SPECIES VOLUME SOLD BY STATE (SALMON ANALYSIS)



PINK SALMON
 VOLUME 000'S KG 4007.6
 SEGMENT SHARE 16.4%

RED SALMON
 VOLUME 000'S KG 1924.0
 SEGMENT SHARE 7.9%

AUST. SALMON
 VOLUME 000'S KG 1580.9
 SEGMENT SHARE 6.5%

NSW
 VIC
 QLD
 SA
 WA



1.2 Share of Species Volume Sold by State

1.2.1 Salmon Analysis

Chart 1.2.1 shows the volume share of the three canned salmon species sold within each State.

Of all canned product sold, pink salmon accounted for 16.4% of the Australian volume (or 4,007,600kg). Almost one half (45.3%) of this volume was sold within New South Wales, Queensland accounted for another quarter of the volume (25.0%), and one fifth (19.8%) was distributed through Victorian warehouses. In volume terms, South Australian (5.2%) and Western Australian (4.8%) warehouses distributed a lower share of the pink salmon volume than would have been expected - that is, compared with the States share of the population (9.1% and 9.5% respectively).

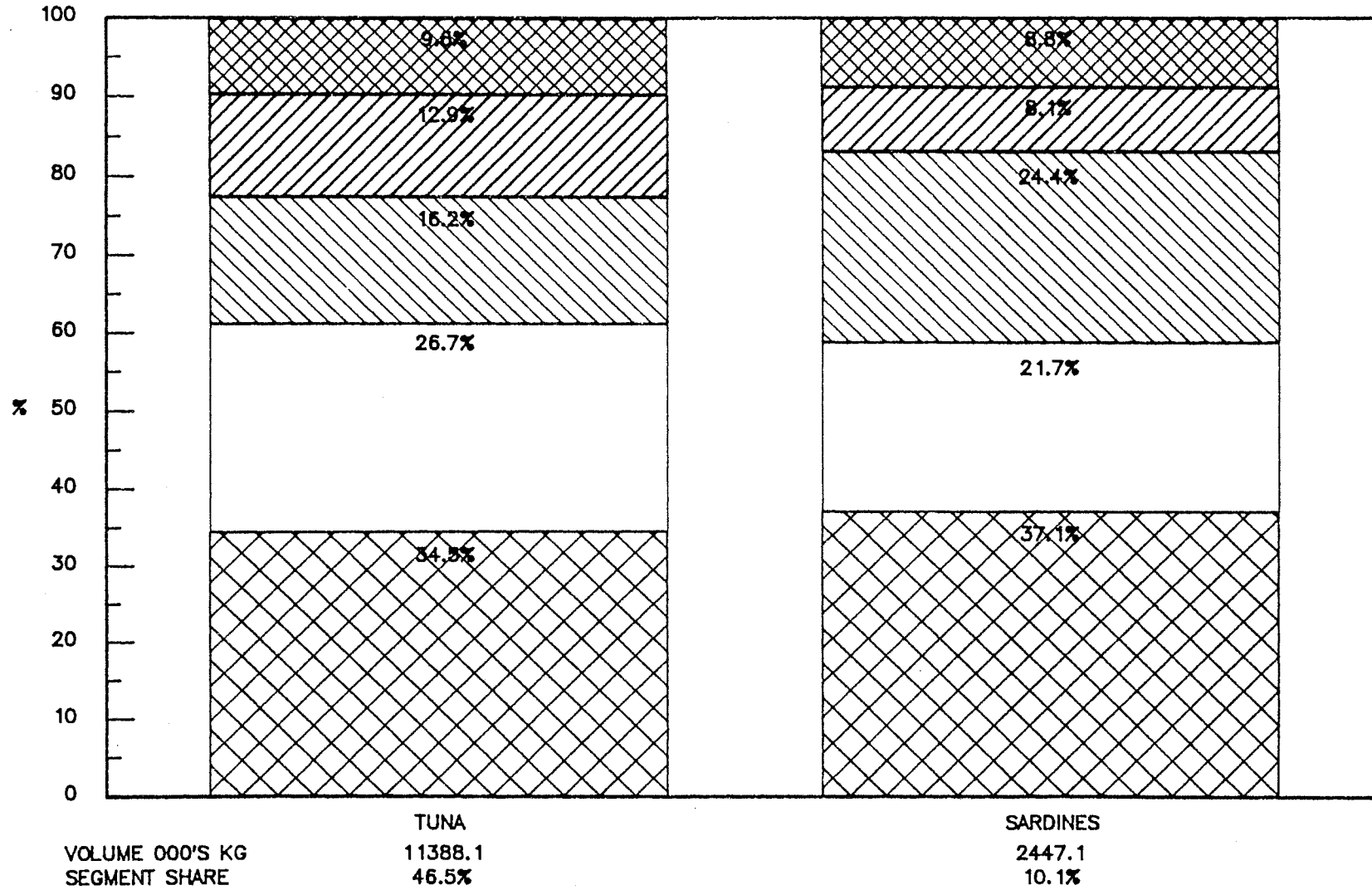
Red salmon was even more popular amongst New South Wales grocery buyers than pink salmon (57.3% and 45.3% respectively), particularly if contrasted with the anticipated share of these two products - the share of population (36.6%). Consumer preference in New South Wales for these two species of salmon was also highlighted in section 1.1.2. Almost one fifth (18.9%) of the volume of red salmon was distributed throughout Victoria, followed closely, in volume terms, by Queensland (16%). As found for pink salmon, red salmon has not achieved great market penetration in South Australia (4.4%) and Western Australia (2.4%).



The States share of Australian salmon varied considerably to the result for the two other salmon species. Although the greatest volume of Australian salmon was sold throughout New South Wales (27.2%), this was substantially lower than what would have been anticipated on the basis of population share (36.6%). Queensland wholesalers accounted for 23.6% of Australian salmon volume, (and 17.5% population share) but by far the greatest disparity between species volume share and population share resulted in Western Australia (21.2% and 9.5% respectively). Similar to pink and red salmon, approximately one fifth (20.7%) of Australian salmon was sold throughout Victoria. South Australia accounted for 7.3% of the volume.



1.2.2 SHARE OF SPECIES VOLUME SOLD BY STATE (TUNA & SARDINE ANALYSIS)



NSW
 VIC
 QLD
 SA
 WA



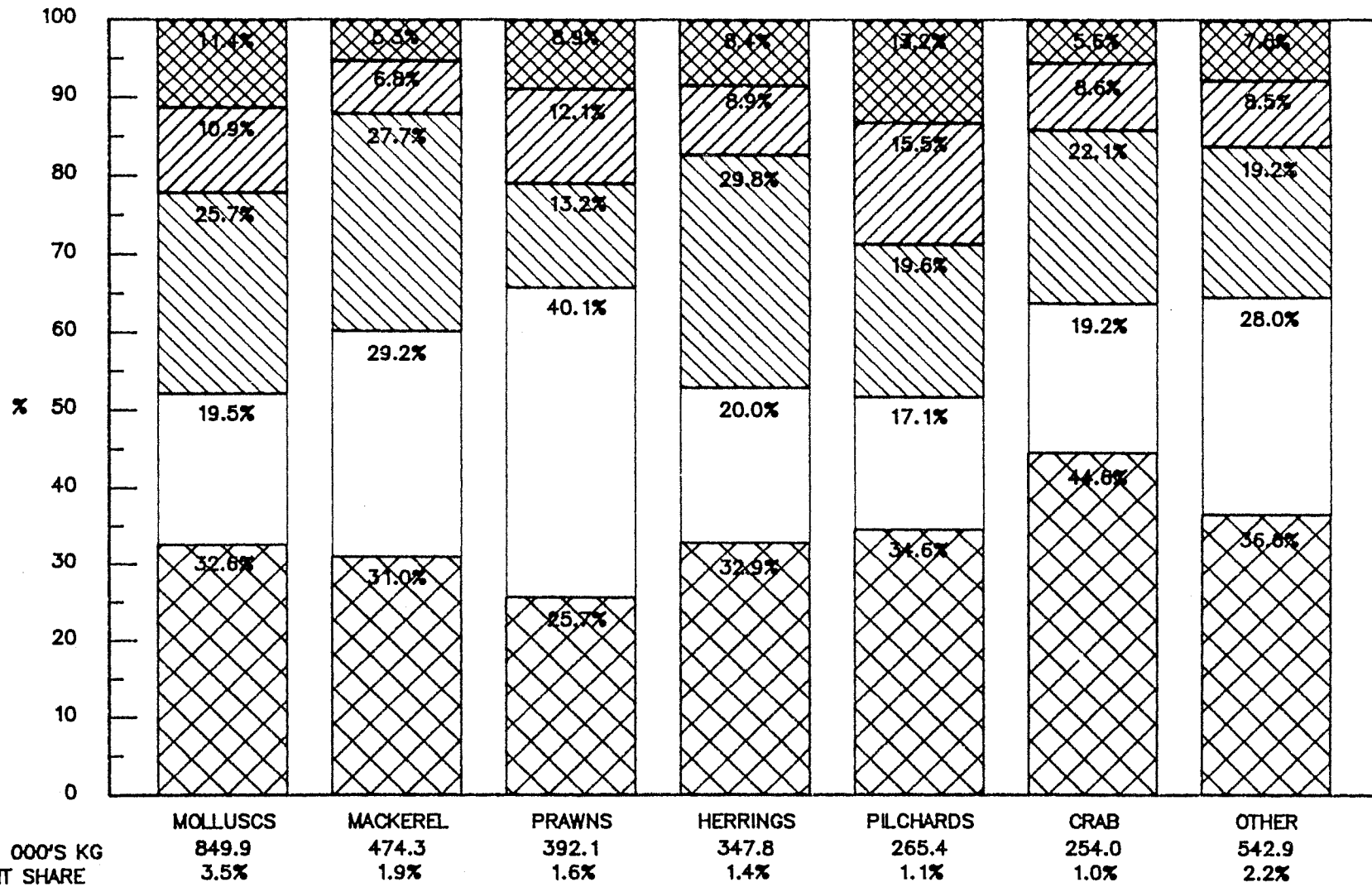
1.2.2 Tuna and Sardine Analysis

In Chart 1.2.2, Tuna constitutes by far the largest segment amongst all canned fish, accounting for 46.5% of the volume of this product category. As for all salmon species, wholesalers in New South Wales distributed the greatest volume of tuna compared with the other States. Overall, just over one third (34.5%) of tuna channelled through the New South Wales trade, followed by Victoria (26.7%), Queensland (16.2%), South Australia (12.9%) and Western Australia (9.6%). Of all States, the disparity between volume and population share was most evident in South Australia - greater per capita tuna consumption in this State.

Sardines, representing 10.1% of canned fish volume, were most commonly distributed around New South Wales (37.1%). Queensland grocery buyers were the next greatest consumer of this species (24.4%), particularly when compared with the share of population (17.5%). A lower consumption level (per capita) was found in Victoria in 1990 (21.7% share of volume to 27.2% of population), while share in South Australia (8.1%) and Western Australia (8.8%) was fairly comparable with the population share.



1.2.3 SHARE OF SPECIES VOLUME SOLD BY STATE (OTHER SPECIES ANALYSIS)



NSW
 VIC
 QLD
 SA
 WA

1.2.3 Other Species Analysis

Combined, the seven other species of canned fish depicted in Chart 1.2.3:

- molluscs;
- mackerel;
- prawns;
- herrings;
- pilchards;
- crab; and
- other canned products;

represent 12.7% of canned fish volume (3,126,400kg).

With the exception of prawns, the greatest volume of all other species of canned fish was distributed through the New South Wales wholesale system. Volume share ranged between 31.0% for mackerel to 44.6% for crab.

The following summary highlights the States where species volume share exceeded population share, that is, where per capita was greater in 1990.

- Molluscs - were disproportionately represented in Queensland and to a lesser extent in Western Australia and South Australia.
- Mackerel - appeared to be favoured by those in Queensland and marginally more so by Victorians.

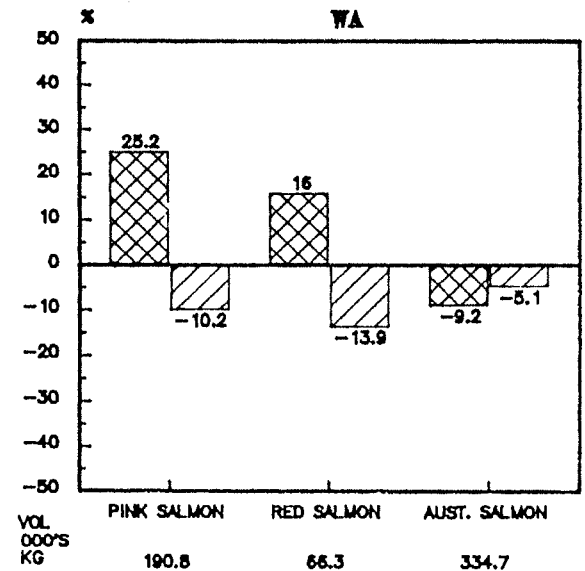
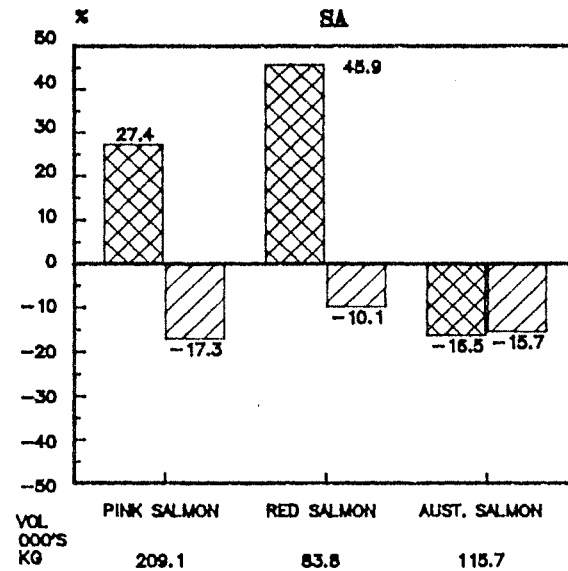
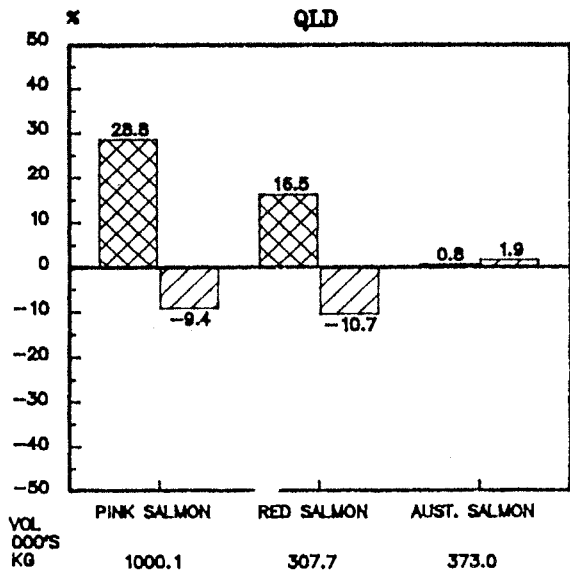
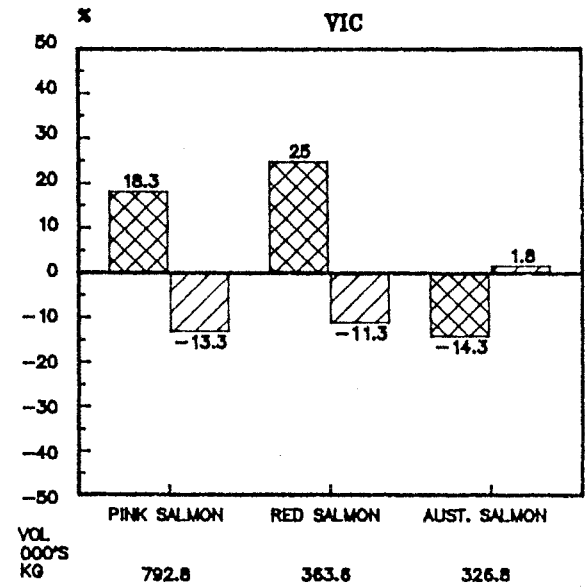
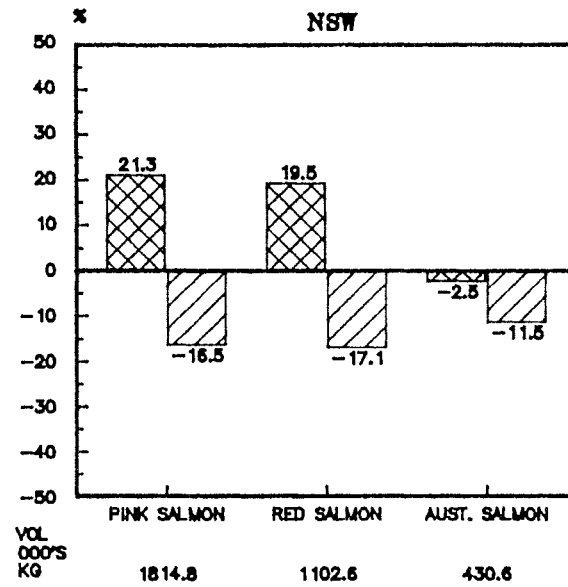
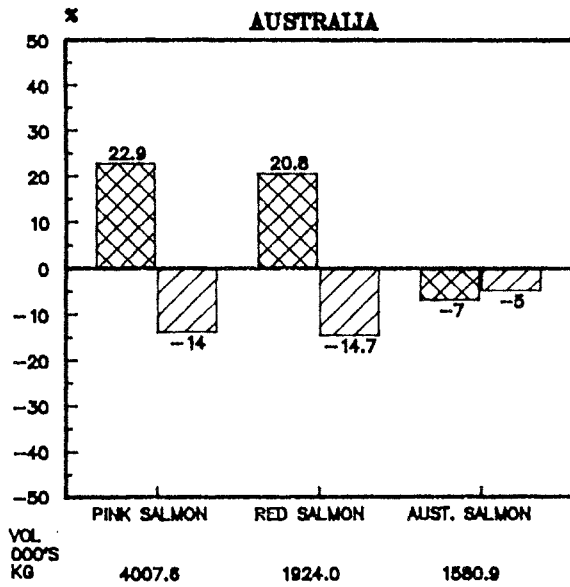


- Prawns - two fifths (40.1%) of the volume of this product was distributed within Victoria - compared with 27.2% population share. Volume share was marginally higher than population share in South Australia (12.1% and 9.1 respectively).
- Herrings - were disproportionately distributed in Queensland, that is, compared with the population share.
- Pilchards - a greater share of this product, than would be expected, was placed in the South Australian and Western Australian market.
- Crab - nearing one half (44.6%) of the volume of this product was distributed through the New South Wales warehouse system, which was somewhat greater than the population share (36.6%). Canned crab would also seem a reasonably popular choice in Queensland (22.1% volume share compared with 17.5% population share).



1.3.1 YEARLY TREND ANALYSIS BY STATE - SALMON ANALYSIS

12 MONTHS ENDING DEC 89
 12 MONTHS ENDING DEC 88



1.3 Yearly Trend Analysis by State

1.3.1 Salmon Analysis

Chart 1.3.1 shown facing indicates the percentage change in the volume of specific salmon species sold from 1989 to 1990 (blue bar) and 1988 to 1990 (red bar). Where a positive percentage change is noted, the volume of product sold has increased in 1990 compared with the corresponding 12 month period (either 1988 or 1989 depending on the period reviewed). Conversely, where a negative percentage change results, sales of that canned product have fallen in 1990.

It can be observed that in Australia, sale of pink salmon and red salmon has increased from 1989 to 1990 (up by 22.9% and 20.8% respectively), but the change in the sales volume of these species has not surpassed the level sold throughout the twelve months ended December 1988 (declined by 14.0% and 14.7% respectively). The volume of Australian salmon moved over the twelve months ended December 1990 continues to be lower than that in 1988 and 1989 (5.0% and 7.0% respectively).

When analysed by State, the pattern to emerge is very similar for pink salmon and red salmon, that is, volume sales have improved since the previous twelve month period (1989), but have not exceeded the volume sold in 1988. The greatest change from 1989 to 1990 was found for red salmon in South Australia, where the volume of this species distributed throughout the warehouse network increased by 45.9% to 83,800 kg.

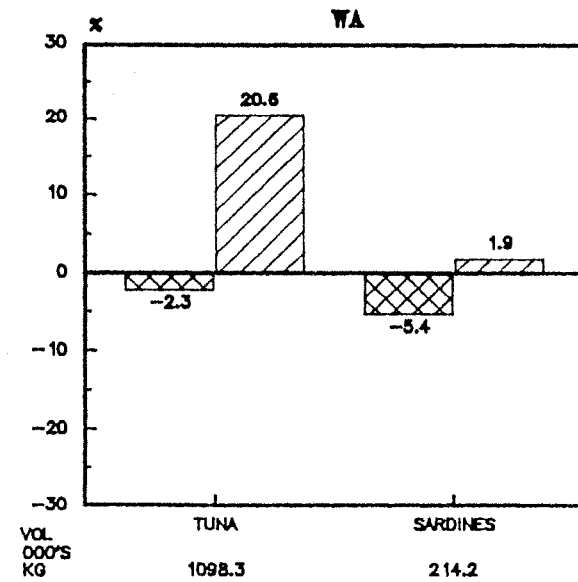
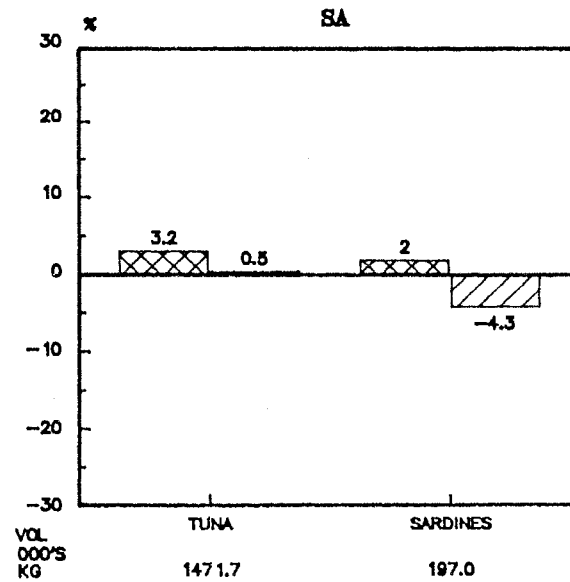
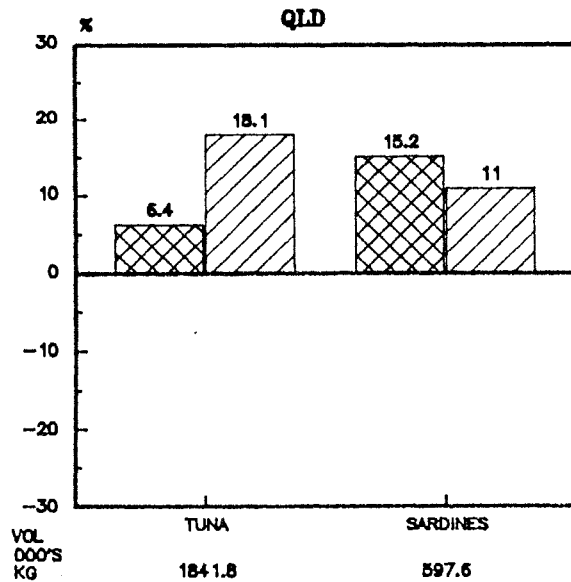
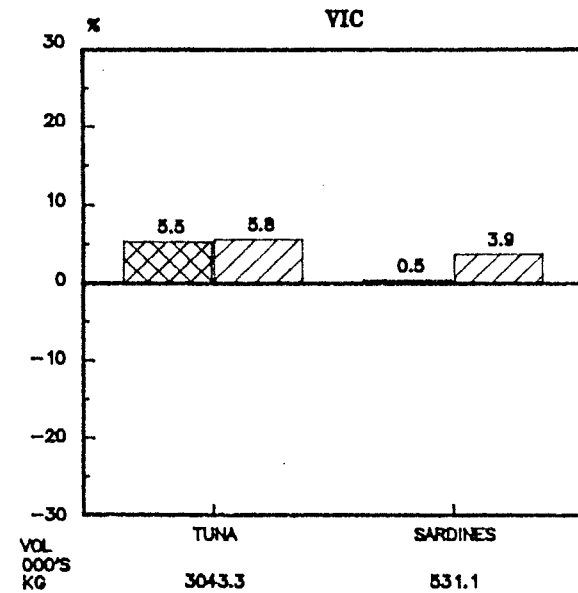
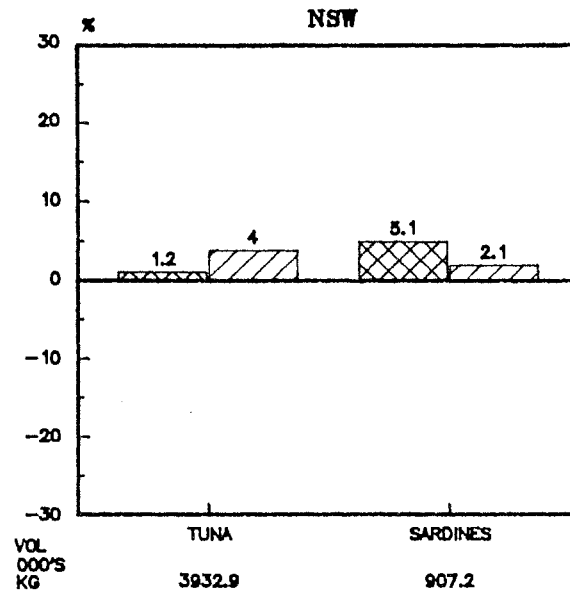
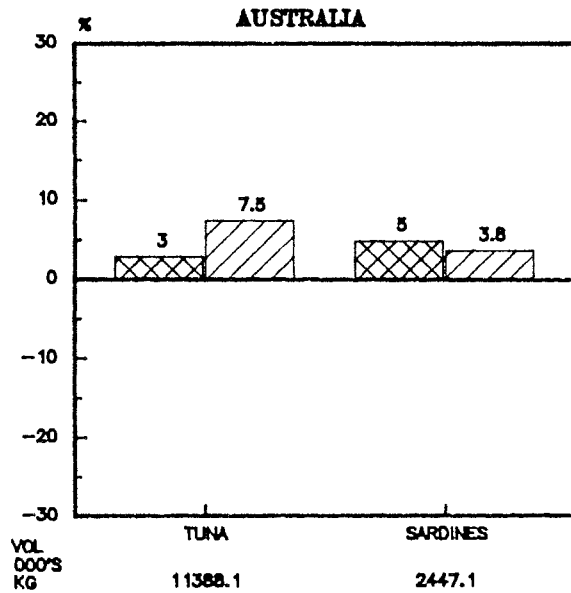


Less Australian salmon was sold throughout Australia for the twelve months ended December 1990 compared with the previous twelve months (decline of 7.0%). This is against the trend for the other salmon species. The most significant decline in volume sold occurred in South Australia (-16.5%) and Victoria (-14.3%). Queensland warehouses moved a slightly greater volume of Australian salmon in 1990 compared with 1989 (+0.8%).



1.3.2 YEARLY TREND ANALYSIS BY STATE - TUNA & SARDINE ANALYSIS

12 MONTHS ENDING DEC 89
 12 MONTHS ENDING DEC 88



1.3.2 Tuna and Sardine Analysis

The percentage change in the volume of canned tuna and sardines sold from 1989 to 1990 and 1988 to 1990 is shown on the accompanying page (see Chart 1.3.2).

Overall, the volume of tuna and sardines sold throughout Australia in 1990 exceeded that for the two previous twelve month periods (1989 and 1988). Although the percentage change was relatively small (3% for tuna and 5% for sardines from 1989 to 1990).

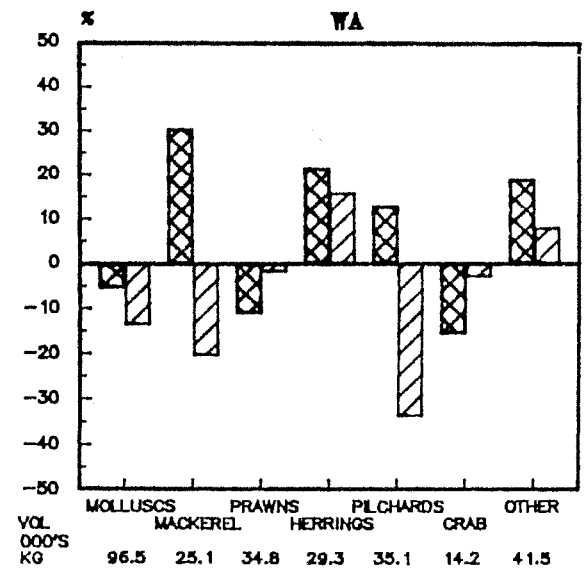
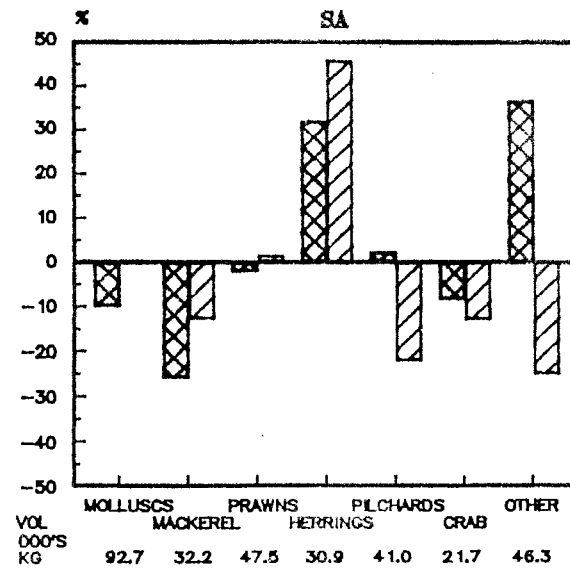
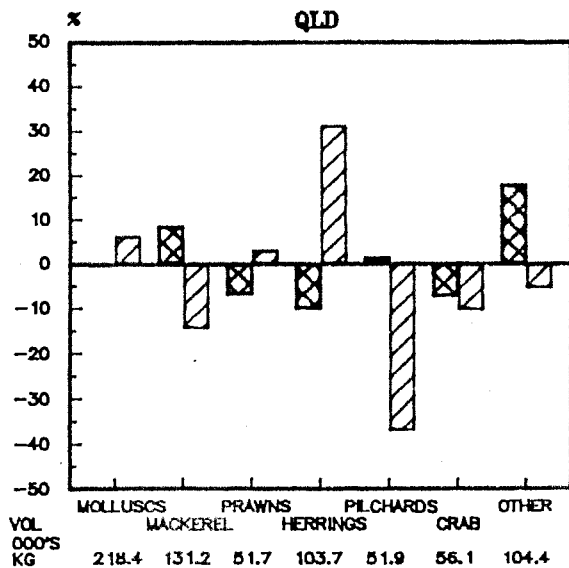
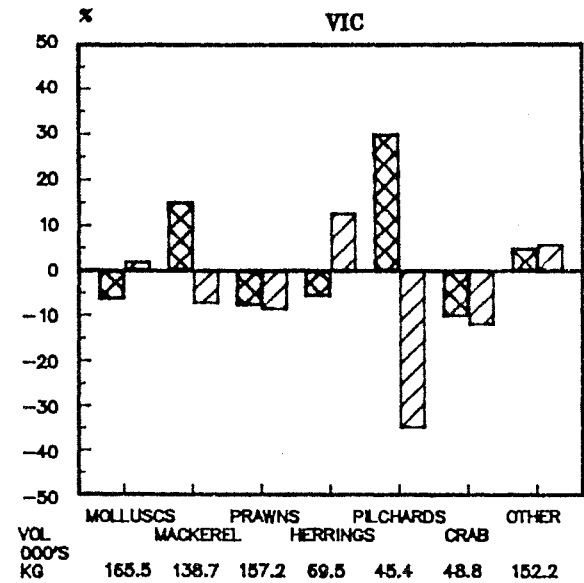
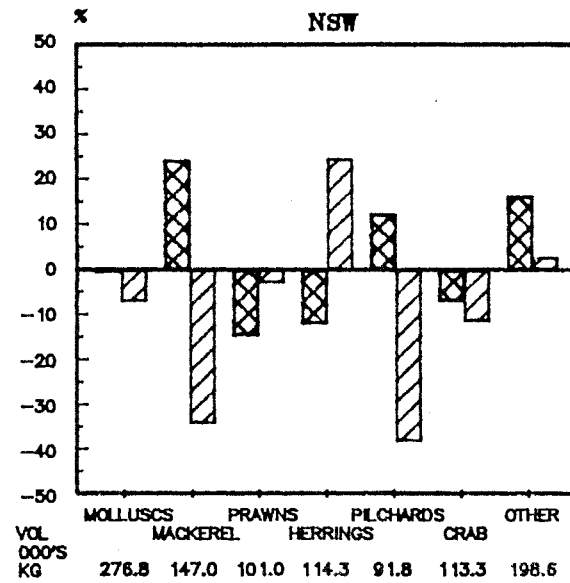
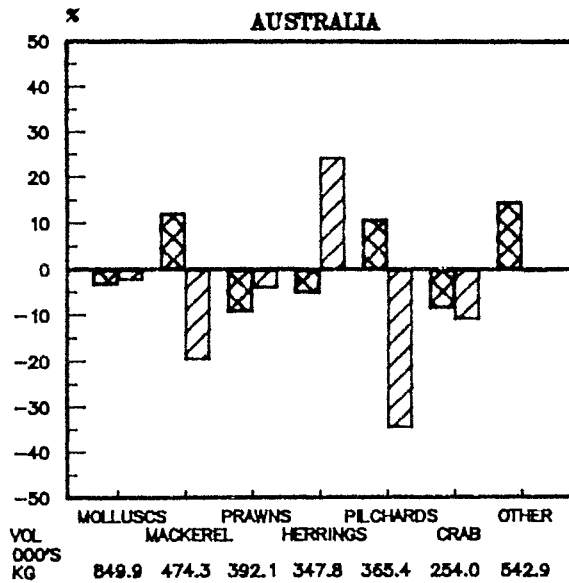
Of the States, New South Wales and Victoria most closely matched the National trend. Sales of tuna and sardines have shown considerable improvement in Queensland, with a volume percentage change of 6.4% and 15.2% respectively from 1989 to 1990.

South Australian warehouses reported fairly minor changes in the volume of tuna and sardines sold over the three years. Against the National trend, the sale of tuna and sardines fell in Western Australia from 1989 to 1990 (-2.3% and -5.4% respectively), but the volume distributed of these two species in 1990 was greater than in 1988.



1.3.3 YEARLY TREND ANALYSIS BY STATE - OTHER SPECIES ANALYSIS

12 MONTHS ENDING DEC 89
 12 MONTHS ENDING DEC 88



NOTE: REFER TO TABLE 1.3.3 FOR EXACT FIGURES RELATING TO VOLUME AND PERCENTAGE CHANGE



1.3.3 Other Species Analysis

The percentage change in the volume of other species of canned product sold from 1989 to 1990 and 1988 to 1990 is shown in Chart 1.3.3 and is also outlined in Table 1.3.3.

Considering the combined result of the five main States (referred to as Australia for reporting purposes), it can be seen that volume through-put has not improved for canned molluscs, prawns and crabs in 1990 than from the previous two years. The volume of canned mackerel, pilchards and other species increased from 1989 to 1990 (up by 12.0%, 11.0% and 14.8% respectively), but did not exceed the level distributed in 1988. Herrings fared better in 1990 than 1988, in terms of volume, but volume movement in 1990 was slightly lower than in 1989 (-5.1%).

On a State basis and considering the percentage change for the two twelve month periods ending December 1989 and 1990, the following observations can be made:

- volume through-put of mackerel, pilchards and other species increased, like the National trend, in New South Wales, Victoria, Queensland and Western Australia; and
- Herrings were more popular in 1990 than 1989 or 1988 in South Australia and Western Australia. The volume of other species sold in South Australia also improved in 1990 compared with the 1989 calendar year, but still remains less than in 1988.

This analysis highlights the volatile nature of, in particular, the canned mackerel, herrings, pilchards and other species markets.



TABLE 1.3.3 - YEARLY TREND ANALYSIS BY STATE - OTHER SPECIES ANALYSIS

% Movement based on Previous 12 month period

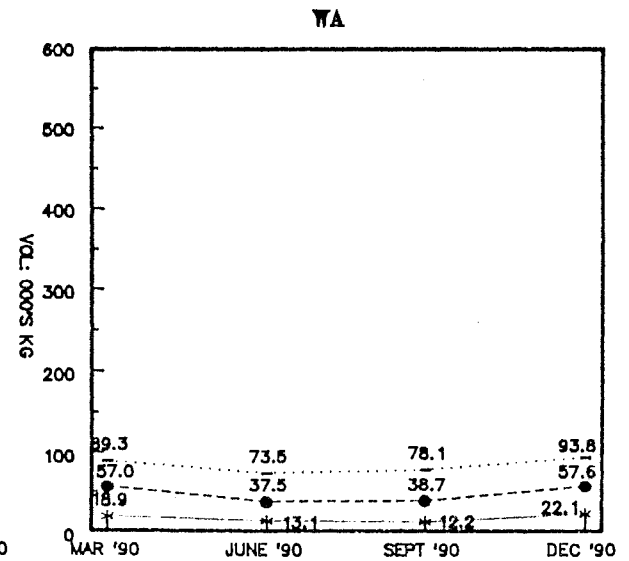
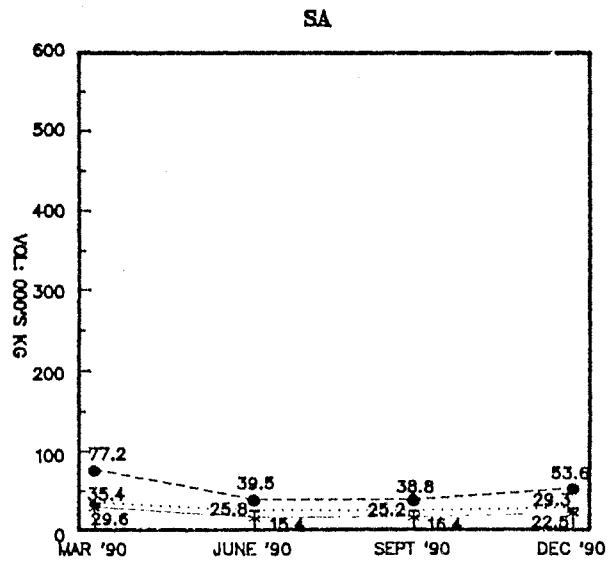
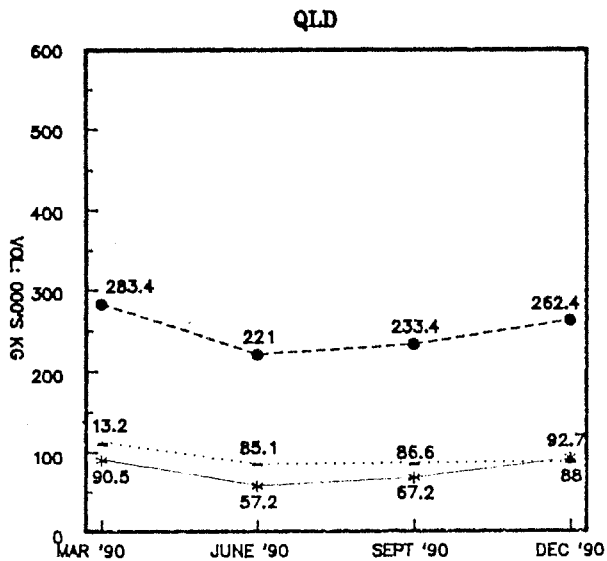
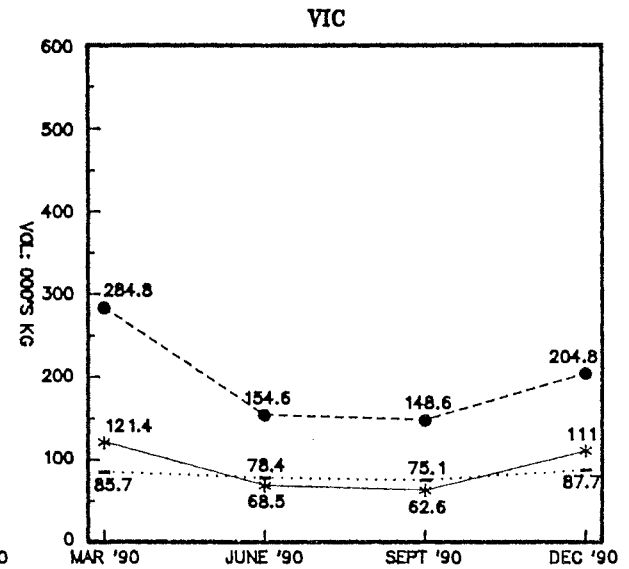
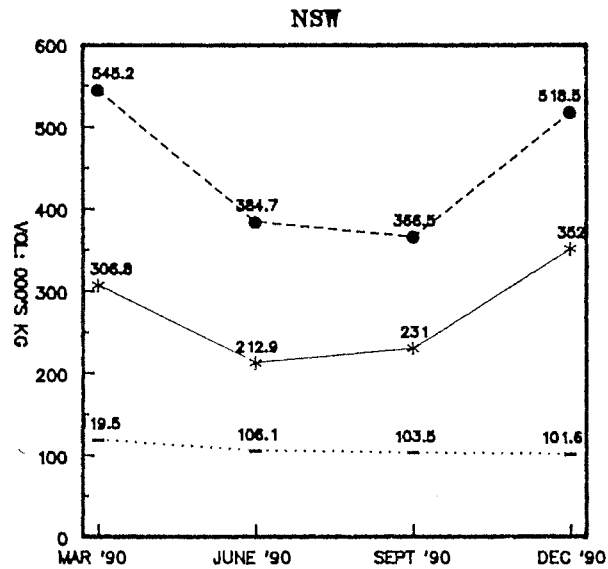
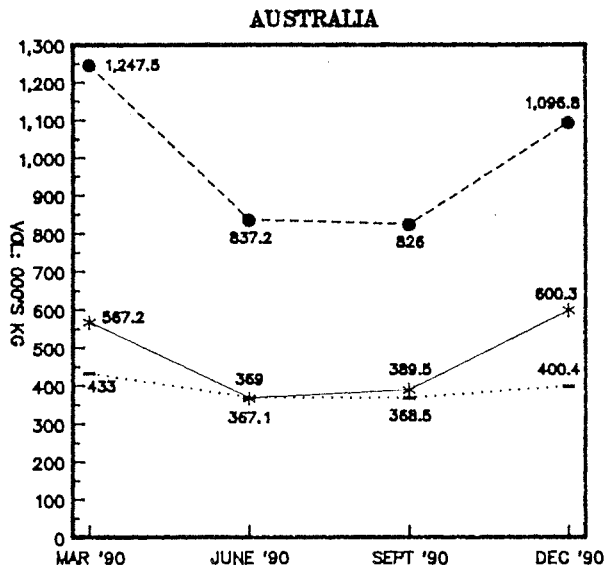
	MOLLUSCS	MACKEREL	PRAWNS	HERRINGS	PILCHARDS	CRAB	OTHER
<u>AUSTRALIA</u>							
Volume 000's kg	849.9	473.3	392.1	347.8	365.4	254.0	542.9
vs. 12 months ended December 1989	-3.3%	+12.3%	-9.2%	-5.1%	+11.0%	-8.4%	+14.8%
vs. 12 months ended December 1988	-2.3%	-19.6%	-4.1%	+24.5%	-34.6%	-10.9%	-0.2%
<u>NSW</u>							
Volume 000's kg	276.8	147.0	101.0	114.3	91.8	113.3	198.6
vs. 12 months ended December 1989	-0.6%	+24.2%	-14.6%	-12.0%	+12.4%	-7.0%	+16.4%
vs. 12 months ended December 1988	-7.1%	-34.2%	-3.0%	+24.6%	-38.2%	-11.5%	+2.9%
<u>VIC</u>							
Volume 000's kg	165.5	138.7	157.2	69.5	45.4	48.8	152.2
vs. 12 months ended December 1989	-6.4%	+15.2%	-7.8%	-5.7%	+30.0%	-10.1%	+5.1%
vs. 12 months ended December 1988	+2.0%	-7.4%	-8.7%	+12.9%	-35.0%	-11.2%	+5.9%
<u>QLD</u>							
Volume 000's kg	218.4	131.2	51.7	103.7	51.9	56.1	104.4
vs. 12 months ended December 1989	-0.4%	+8.6%	-6.9%	-10.1%	+1.5%	-7.9%	+17.8%
vs. 12 months ended December 1988	+6.3%	-14.4%	+3.1%	+31.2%	-37.0%	-10.4%	-5.5%
<u>SA</u>							
Volume 000's kg	92.7	32.2	47.5	30.9	41.0	21.7	46.3
vs. 12 months ended December 1989	-9.9%	-25.9%	-2.1%	+32.0%	+2.2%	-8.3%	+36.6%
vs. 12 months ended December 1988	+0.3%	-12.8%	+1.5%	+45.8%	-22.1%	-12.9%	-25.0%
<u>WA</u>							
Volume 000's kg	96.5	25.1	34.8	29.3	35.1	14.2	41.5
vs. 12 months ended December 1989	-5.4%	+30.5%	-11.1%	+21.4%	+12.9%	-15.6%	+18.9%
vs. 12 months ended December 1988	-13.7%	-20.5%	-1.9%	+15.9%	-33.9%	-3.1%	+8.1%

Source: A.C. Nielsen Australia Pty Ltd. SAMI Market Profile Report on Frozen Fish, December 1990.



1.4.1 QUARTERLY SEASONALITY ANALYSIS BY VOLUME BY STATE - SALMON ANALYSIS

RED SALMON PINK SALMON AUST. SALMON
 * - - ● - - - -



1.4 Quarterly Seasonality Analysis by Product by State

The movement of canned fish and seafood was highly seasonal in 1990. The peak quarter for the sale of canned product was December (6,811,900kg), followed closely by March (6,661,900kg). Volume output declined significantly in the June (5,393,800kg) and September (5,606,500kg) quarters.

1.4.1 Salmon Analysis

The three 1.4 charts show the level of seasonality in the range of canned products available in the market. Each chart maps the volume of product sold in the three months ended March, June, September and December, 1990.

Chart 1.1.4 shows the volume of salmon species moved each quarter indicates the sale of pink salmon and red salmon to be highly seasonal for Australia. The peak sales period for these two species are the March and December quarters. 1,247,500kg of pink salmon passed through the warehouse network during the March quarter, 1,096,800kg in the December quarter and just over 800,000kg in the June and September quarters. A similar pattern was evident for red salmon, although the December quarter was the peak period for this species.



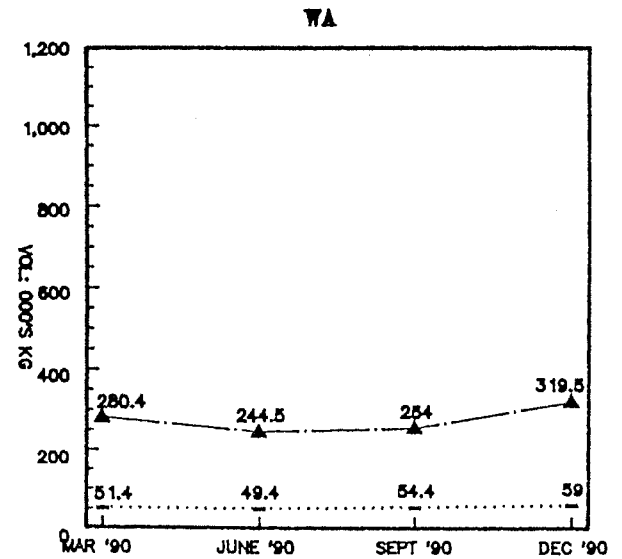
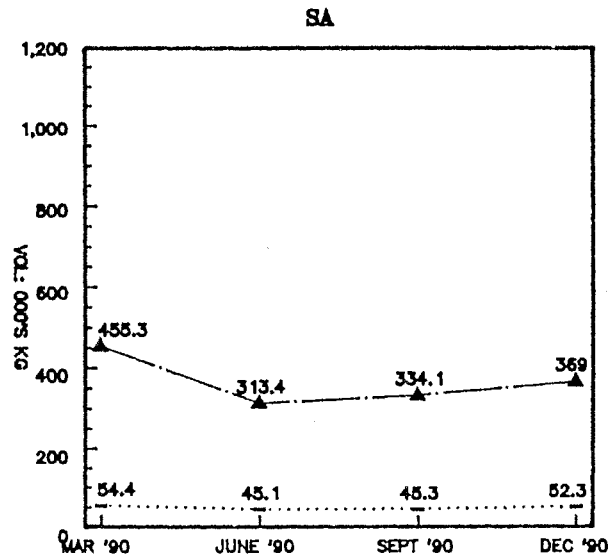
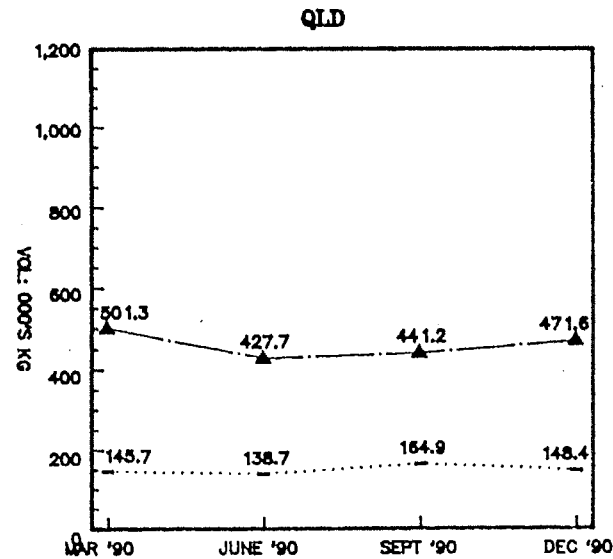
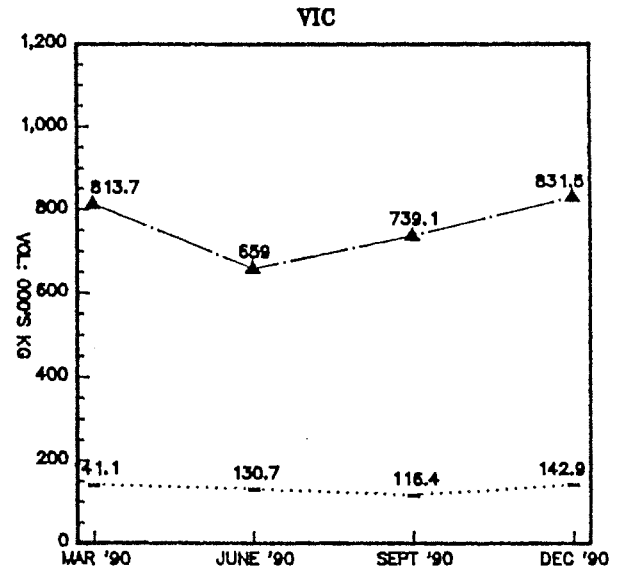
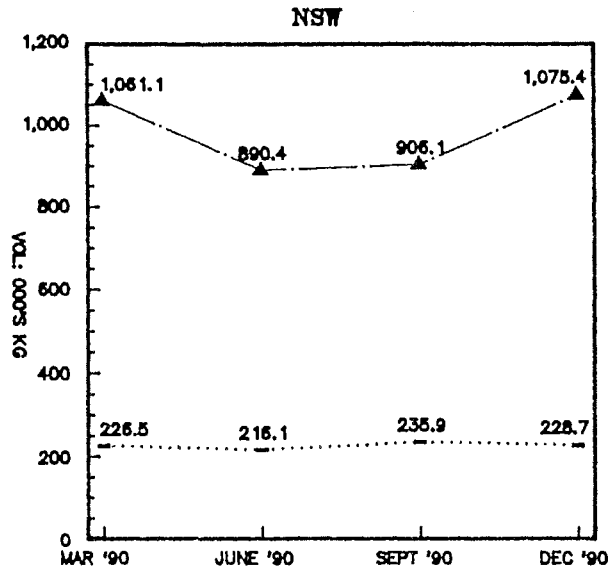
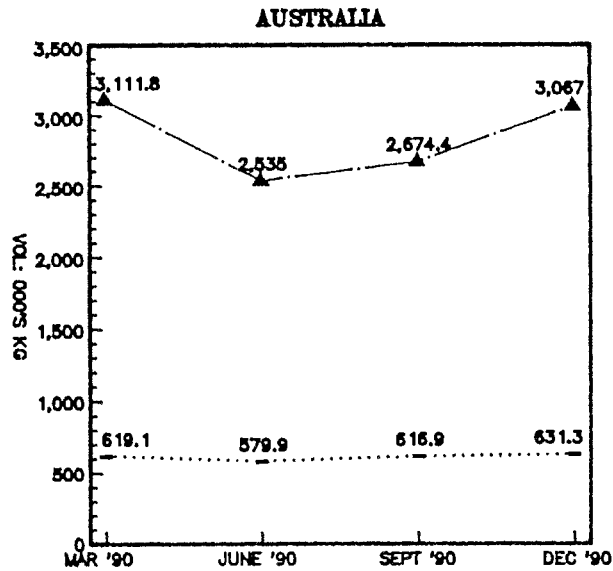
Australian salmon does not appear to be as seasonal a product as the other salmon species. Although there was some variation in the volume of canned Australian salmon sold in each quarter, the movement was fairly minor. The March quarter represented the greatest volume movement of 443,000kg and June the lowest, with 369,000kg.

The observed seasonality movement in the salmon species described above for Australia, was also evident in each of the five States. Although the peaks and troughs were more pronounced in New South Wales and Victoria, particularly for pink salmon and red salmon.



1.4.2 QUARTERLY SEASONALITY ANALYSIS BY VOLUME BY STATE - TUNA AND SARDINE ANALYSIS

SARDINES TUNA



1.4.2 Tuna and Sardine Analysis

As found for pink and red salmon, the movement of canned tuna appears highly seasonal, with a peak in volume throughput in the March (3,111,800kg) and December quarters (3,067,000kg) and falling to approximately 2,600,000kg through the mid-half of 1990 (see Chart 1.4.2).

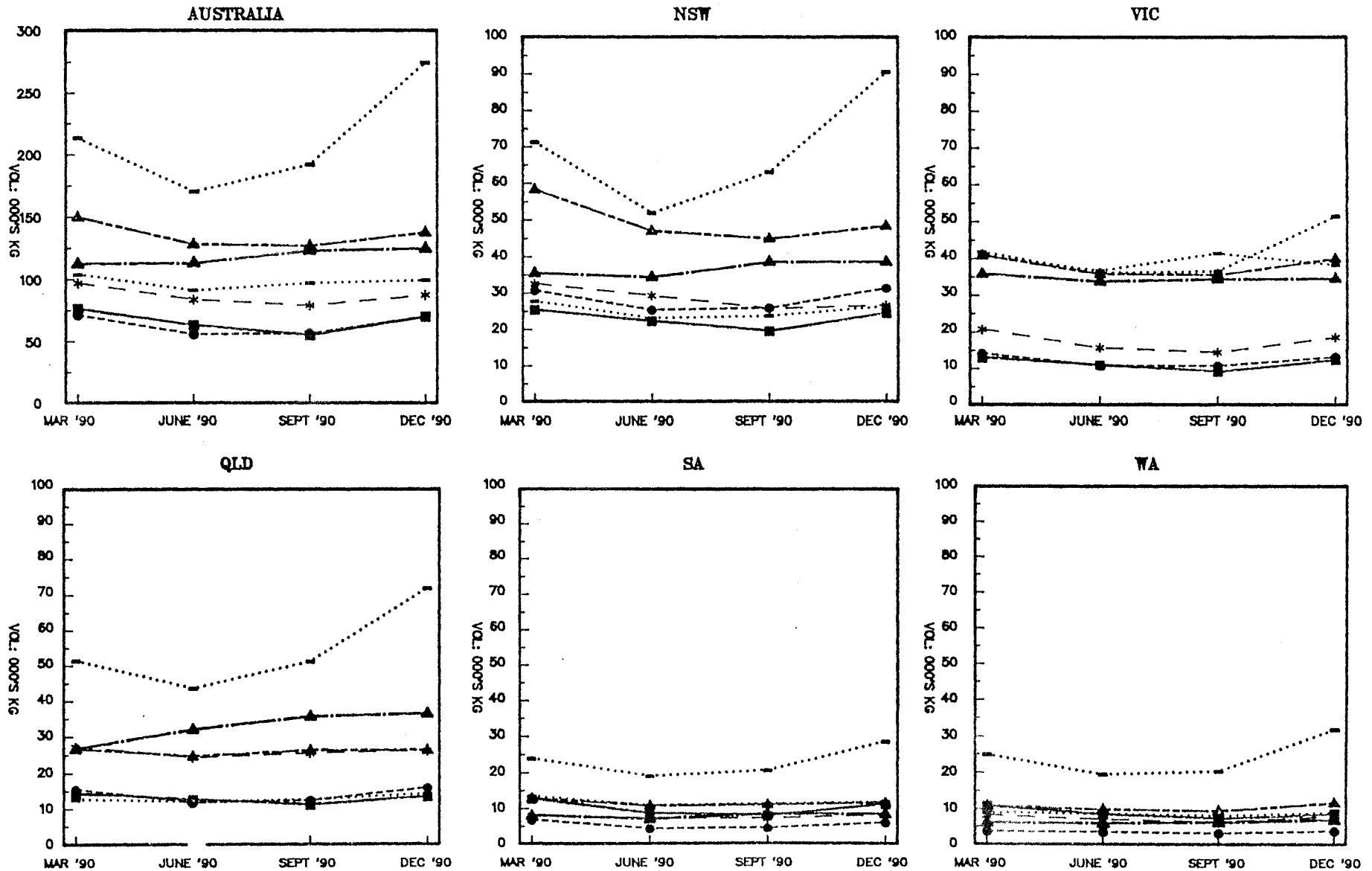
Overall, the distribution of canned sardines through Australia's warehouse network was quite stable over 1990. In every quarter, volume output from warehouses was close to 6,000,000kg (plus or minus 30,000kg).

The quarterly distribution pattern, of tuna and sardines, described for Australia in 1990, also applied to the five States for which warehouse withdraw information was collected. Generally, sales of tuna peaked in the March and December quarters, while the movement of sardines through the distribution network was relatively stable over 1990.



1.4.3 QUARTERLY SEASONALITY ANALYSIS BY VOLUME BY STATE - OTHER SPECIES

MOLLUSCS MACKEREL PRAWNS HERRINGS PILCHARDS CRAB OTHER



NOTE: REFER TO TABLE 1.4.3 FOR EXACT FIGURES RELATING TO QUARTERLY VOLUME (000'SKG)



1.4.3 Other Species Analysis

Chart 1.4.3 maps the volume movement of the seven other categories of fish and seafood sold in cans. Molluscs accounted for the greatest volume output of all "other species", and as can be noted from the chart, also the most variable quarterly sales. In 1990, movement of molluscs peaked in the December quarter (274,200kg), followed by the March quarter (213,300kg), with sales falling below 200,000kg in the June and September quarters.

In general, movement of the other canned products - mackerel, prawns, herrings, pilchards, crab and other canned products - was relatively stable with slight movements upwards in the March and December quarters.

Movement of other canned fish and seafood products from the State warehouses essentially mirrored the National trend.



**TABLE 1.4.3 - QUARTERLY SEASONALITY ANALYSIS BY VOLUME
BY STATE - OTHER SPECIES**

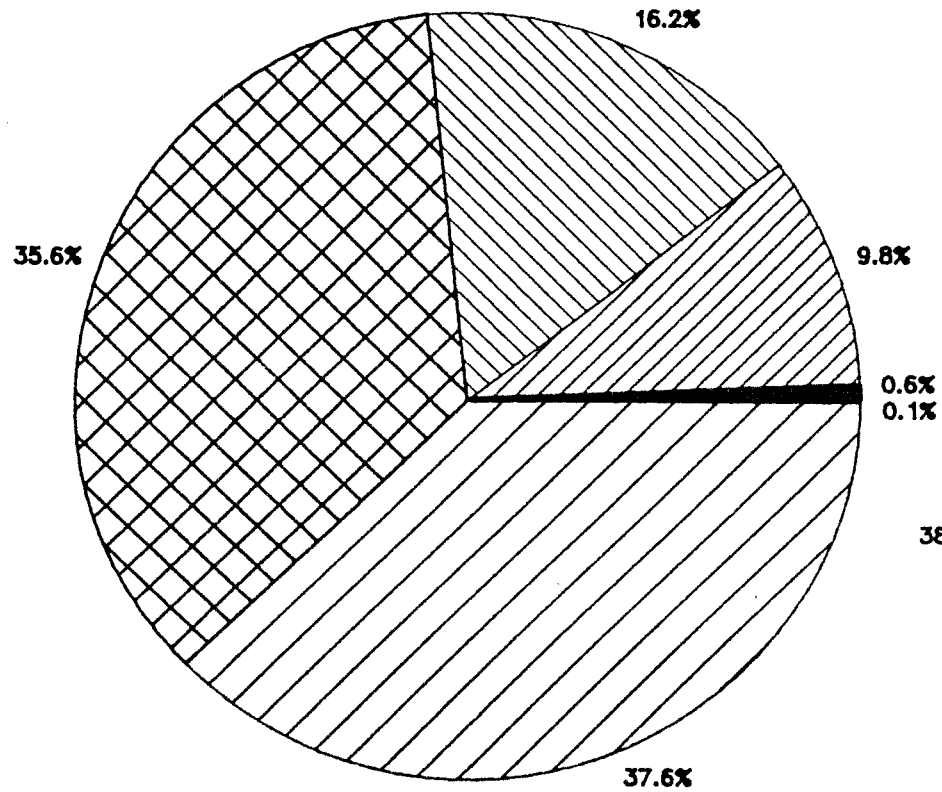
Volume 000's kg			MOLLUSCS	MACKEREL	PRAWNS	HERRINGS	PILCHARDS	CRAB	OTHER
<u>3 MONTHS TO:</u>									
<u>AUSTRALIA</u>	- MARCH	1990	213.3	112.3	103.9	97.0	76.2	71.0	149.7
	- JUNE	1990	170.2	113.3	91.2	83.8	63.2	55.8	128.1
	- SEPTEMBER	1990	192.2	123.4	97.2	79.2	55.4	56.8	127.1
	- DECEMBER	1990	274.2	125.3	99.8	87.8	70.5	70.5	138.0
<u>NSW</u>	- MARCH	1990	71.2	35.5	27.8	32.6	25.4	30.7	58.3
	- JUNE	1990	51.9	34.4	23.1	29.3	22.3	25.3	47.0
	- SEPTEMBER	1990	63.1	38.6	23.7	35.7	19.6	25.9	44.9
	- DECEMBER	1990	90.6	38.6	26.4	26.7	24.6	31.4	48.4
<u>VIC</u>	- MARCH	1990	41.8	35.9	40.8	20.8	13.0	14.2	40.9
	- JUNE	1990	36.0	33.8	36.7	15.7	11.0	10.7	35.8
	- SEPTEMBER	1990	36.6	34.4	41.5	14.4	9.1	10.7	35.6
	- DECEMBER	1990	51.1	34.6	38.2	18.6	12.4	13.2	40.0
<u>QLD</u>	- MARCH	1990	51.5	26.8	12.7	27.4	14.4	15.6	26.7
	- JUNE	1990	43.7	32.2	12.1	24.4	12.8	11.9	24.8
	- SEPTEMBER	1990	51.3	35.7	12.7	25.6	11.3	12.5	26.4
	- DECEMBER	1990	71.9	36.5	14.3	26.3	13.6	16.1	26.4
<u>SA</u>	- MARCH	1990	24.0	8.1	13.5	8.0	12.8	6.8	12.9
	- JUNE	1990	19.1	7.1	10.8	7.3	8.7	4.4	10.7
	- SEPTEMBER	1990	20.8	8.5	11.3	7.2	8.2	4.5	11.0
	- DECEMBER	1990	28.8	8.5	11.9	8.3	11.3	6.1	11.7
<u>WA</u>	- MARCH	1990	24.9	6.1	9.1	8.2	10.8	3.7	10.8
	- JUNE	1990	19.5	5.9	8.6	7.0	8.5	3.5	9.8
	- SEPTEMBER	1990	20.4	6.2	8.1	6.2	7.3	3.1	9.3
	- DECEMBER	1990	31.8	6.9	9.0	7.9	8.6	3.8	11.6

Source: A.C. Nielsen Australia Pty Ltd. SAMI Market Profile Report on Frozen Fish, December 1990

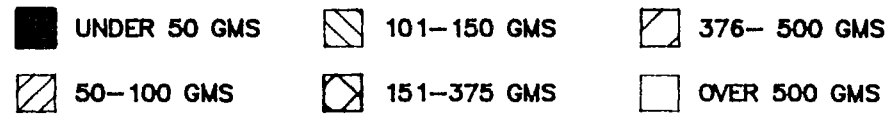
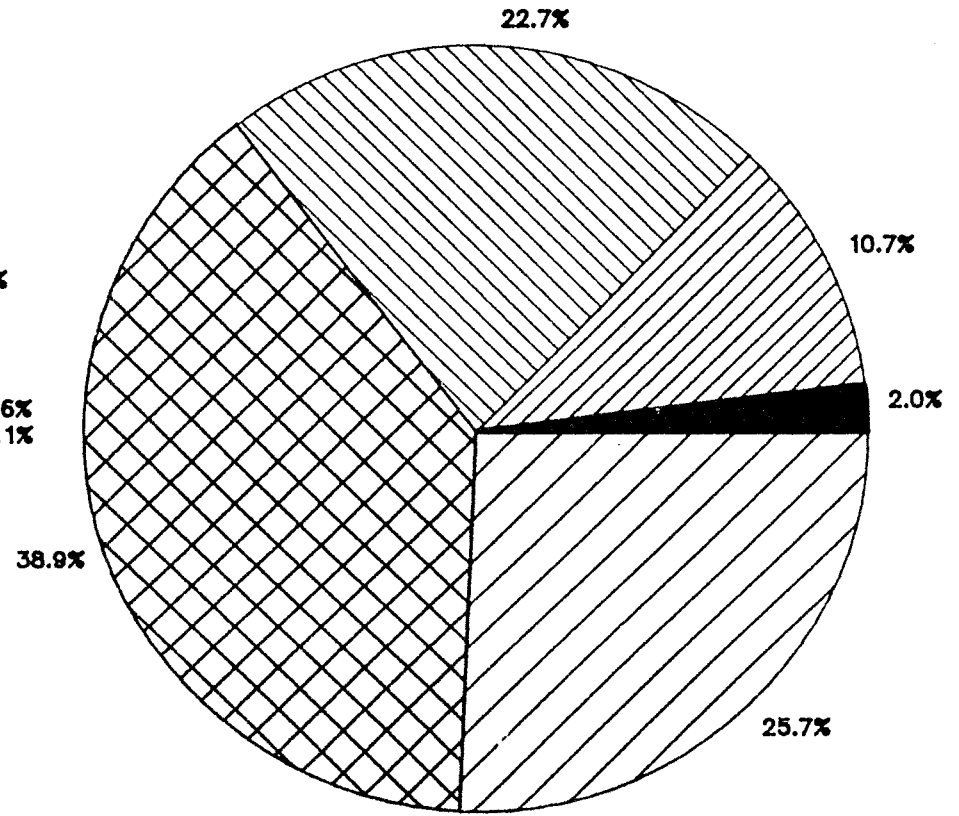


1.5.1 PACK SIZE SHARE OF VOLUME AND VALUE

SHARE OF VOLUME



SHARE OF VALUE



1.5 Pack Size

1.5.1 Pack Size Share of Volume and Value

Chart 1.5.1 shows the share of volume and value contributed by the range of can sizes. This information is obviously influenced by the species range sold throughout Australia.

Considering all canned product sold in 1990 throughout Australia, the greatest volume share contribution was made by 376 to 500 gram cans (37.6%). This was followed closely by cans ranging from 151 to 375 grams (35.6%) and well behind by the smaller cans - 101 to 150 grams (16.2%) and 50 to 100 grams (9.8%). Results indicate that cans under 50 grams and over 500 grams are not well established in the canned fish market.

Slight variations were found in the share of can size value to volume. Where value share exceeds volume share, the contribution by the species commonly sold in that can size range is greater. Conversely, where volume share exceeds value share, it may be assumed that species attracting a lower price (per gram) will be included within the can size range.

As previously outlined, the three most common can size ranges (in volume terms) were 376 to 500 grams, 151 to 375 grams and 101 to 150 grams. Cans 376 to 500 grams constituted 37.6% of the volume of product sold in 1990, but accounted for a far lower proportion of the value (25.7%) - cheaper products or species. In contrast, the value share of the 151 to 375 gram (38.9%) and 101 to 150 gram (22.7%) cans exceeded the volume share (35.6% and 16.2% respectively) - more expensive products.



ESTIMATE OF THE NUMBER OF TUNA AND PINK SALMON
CANS SOLD IN 1990

	TUNA				PINK SALMON			
	VOLUME 000's KG	CAN SIZE WEIGHTING FACTOR	ESTIMATE OF CANS	SHARE OF CANS	VOLUME 000's KG	CAN SIZE WEIGHTING FACTOR	ESTIMATE OF CANS	SHARE OF CANS
50 - 100 GRAMS	1,744.8	100gm	17,448,000	35%	-	-	-	-
101 - 150 GRAMS	-	-	-	-	785.4	105gm	7,480,000	36%
151 - 375 GRAMS	3,378.21	185gm	18,260,541	36%	2,384.1	210gm	11,352,857	55%
376 - 500 GRAMS	6,238.8	425gm	14,679,529	29%	838.1	450gm	1,862,444	9%
OVER 500 GRAMS	26.4	1kg	26,400	0%	-	-	-	-
TOTAL	11,338.1		50,414,470	100%	4,007.6		20,695,301	100%



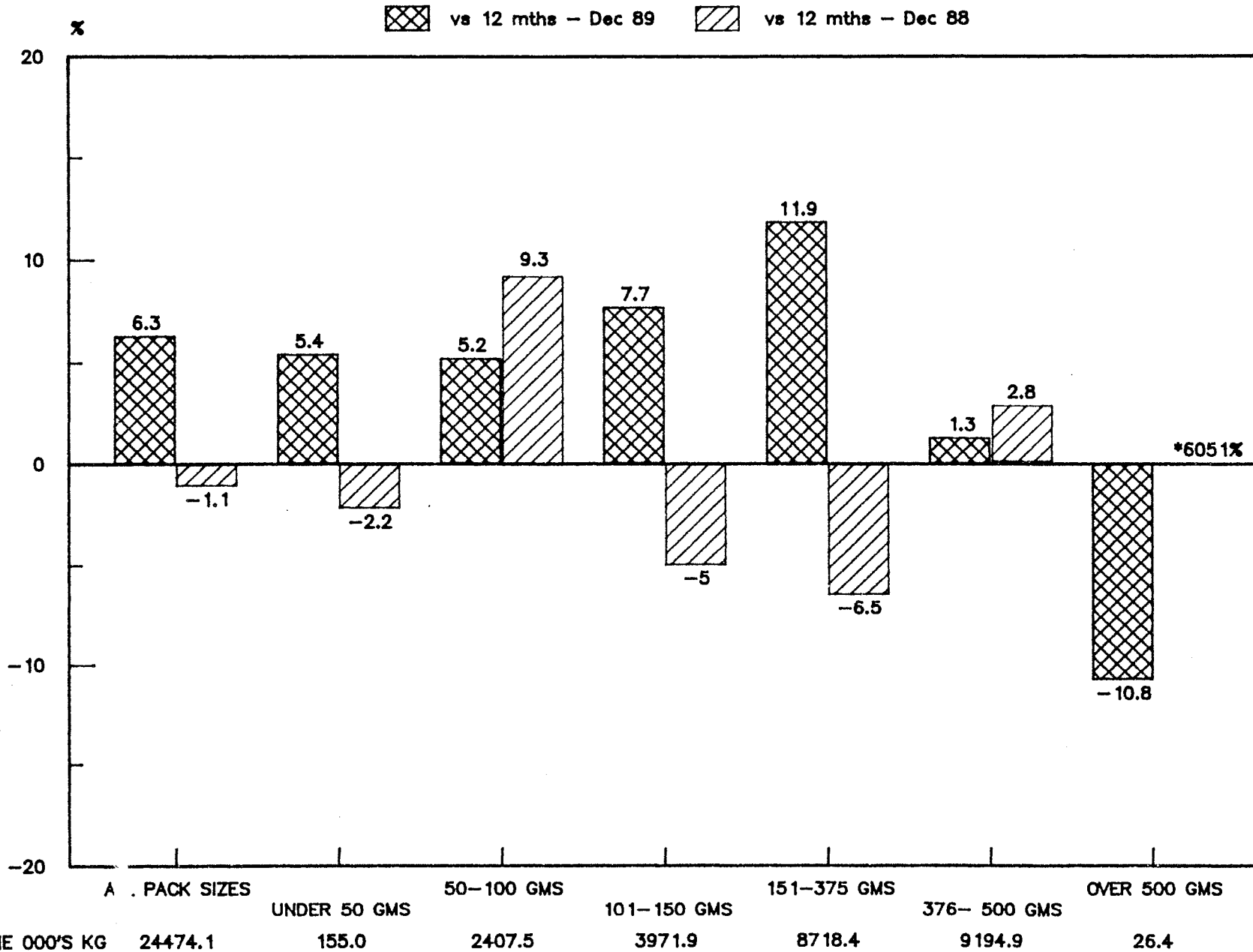
As previously outlined, tuna and pink salmon account for over three fifths of the volume of canned fish moved through the warehouse network in 1990. The accompanying table shows the volume of these species sold in the various can size ranges. Through an estimation procedure of the most common can size for a given range, it is possible to estimate the number of cans sold of each species.

There are essentially three tuna can sizes - 100 grams, 185 grams and 425 grams. Overall, it is estimated that 50.4 million cans of tuna were sold in 1990 and each can size accounted for roughly a third of the cans distributed. Almost 17.5 million tuna 100 gram cans were sold; just over 18.2 million 185 gram cans; and 14.7 million 425 gram cans. Tuna sold in cans over 500 grams are not well established in the market.

The number of cans of pink salmon estimated to have been distributed in 1990 approximates 20.7 million cans. Unlike cans of tuna, there is a clear preference for pink salmon sold in 210 gram cans. Approximately 11.4 million 210 gram cans were sold in 1990, accounting for 55% of all cans moved through the warehouse network. The next most popular can size was 105 grams, representing 7.5 million cans or 36% of all cans distributed. Less popular was the large, 450 gram can - 1.9 million cans or 9% of all pink salmon cans.



1.5.2 TREND ANALYSIS SHARE OF PACK SIZE



1.5.2 Trend Analysis Share of Pack Size

Chart 1.5.2 reflects the change in the volume of each pack size range from 1989 to 1990 (blue bar) and 1988 to 1990 (red bar). For any given pack size, where one bar shows a positive percentage change and the other shows a negative percentage change, sales of that pack size are volatile. This may be brought about by changes in pack size preference, but most likely changes in product preference. Where both bars indicate a positive percentage change, a greater preference for that pack size (or products sold in that pack size) existed in 1990.

Of the total volume of canned product sold throughout 1990 (24,474,100 kilograms), a 6.3% volume increase occurred from the previous twelve month period (1989), but was less than that distributed throughout 1988 (a fall of 1.1%).

The only pack sizes to record a consistent improvement in terms of volume were the 50 to 100 gram and 376 to 500 gram cans. That is, the volume of product sold in these can sizes increased in 1990 from the volume reported in 1989 and 1988.

The volume of product sold in cans under 50 grams, 101 to 150 grams and 151 to 375 grams increased from 1989 to 1990, but the volume was still lower than in 1988.

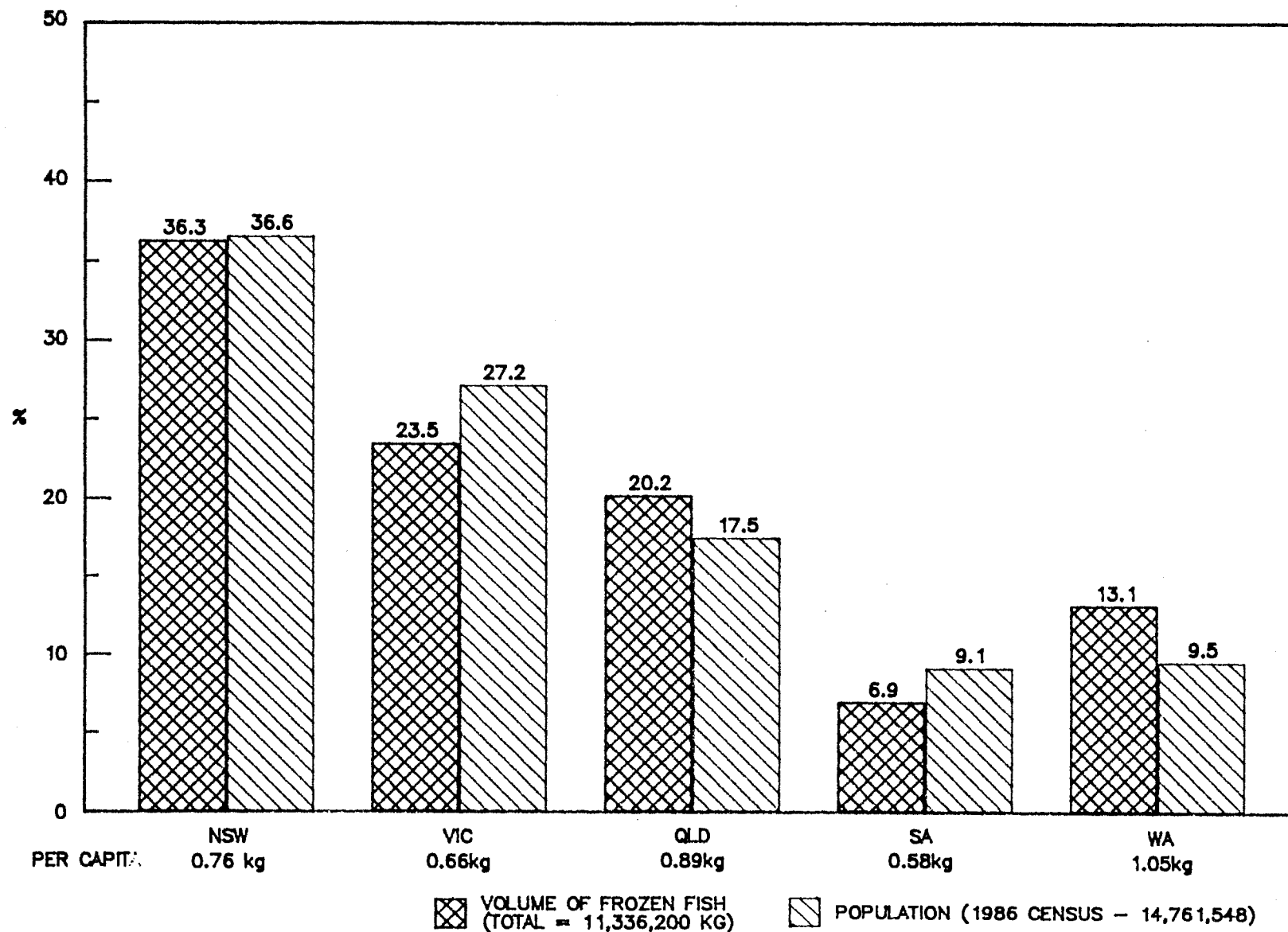
The 500 gram can was less likely to be bought in 1990 than in 1989 (a decline of 10.8% in volume). The 6051% increase noted from 1988 to 1990 signifies that this can size was not available in 1988.



SECTION 2 - FROZEN FISH



2.1.1 STATE SHARE OF FROZEN FISH VOLUME & POPULATION



2.1 The Market Overall

2.1.1 State Share of Frozen Fish Volume and Population

In the 1990 calendar year (CY) **11,336,200kg of frozen fish**, defined as fish and seafood that has been prepackaged, was distributed through the Australian - five mainland States - grocery warehouse channel of trade. Overall, this represented **\$87,579,200 in retail sales**, or an average of \$7.73 per kg or \$0.77 for each 100 grams. Canned fish and seafood has achieved greater volume penetration (24,474,100kg) with over double the volume of frozen fish being distributed throughout 1990. On a per capita basis this equates to 0.76kg - compared with 1.66kg for canned fish.

Chart 2.1.1 shows the State share of the volume of frozen fish distributed in 1990 and the share of population within each State (based on the ABS, 1986 Census of Population and Housing). Greater per capita consumption, than the norm, occurs where volume share exceeds population share.

Thus, it can be observed that while New South Wales accounted for the greatest share of frozen fish volume (36.3%), it also accounted for the greatest population share (36.6%). On a per capita basis this represent 0.76kg. The share of volume and population was not consistent for each of the other States.

Per capita consumption would seem to be higher in Queensland (20.2% volume compared with 17.5% population share - 0.89kg per capita) and Western Australia (13.1% volume and 9.5% population share - 1.05kg per capita).



In contrast, the share of frozen fish products distributed through Victoria's (23.5% volume and 27.2% population share - 0.66kg per capita) and South Australia's (6.9% volume and 9.1% population share - 0.58kg per capita) grocery network was lower than the population share, indicating lower per capita consumption in these States.



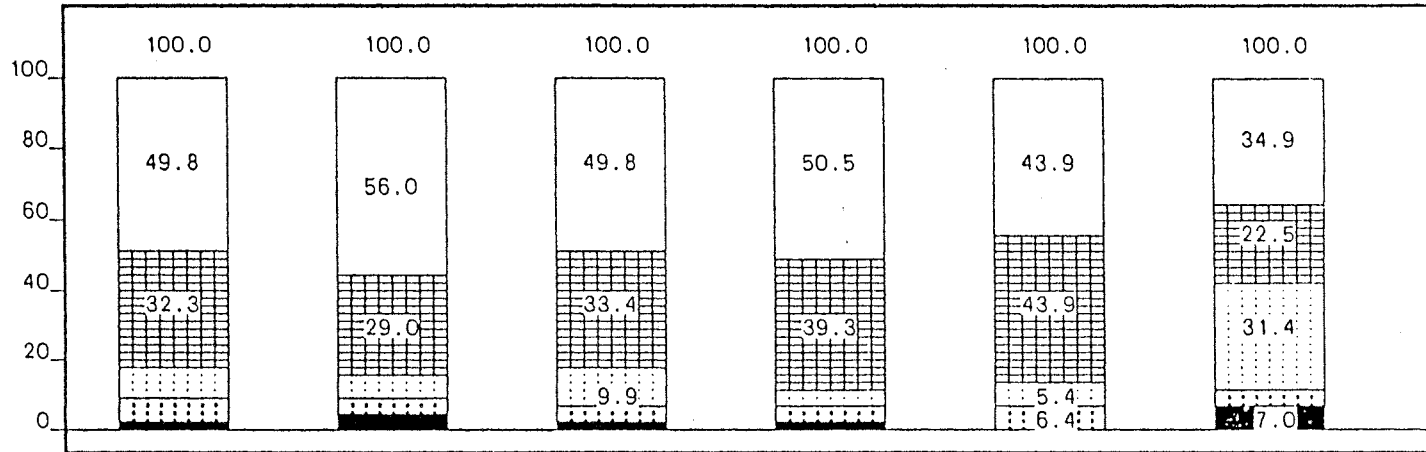
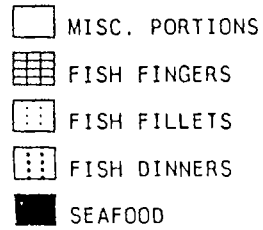
2.1.2 FROZEN FISH

31 DECEMBER 1990

SEGMENT SHARE GRAPH

BASED ON VOLUME IN 000'S KG
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990

%



	NATIONAL		NSW		VIC		QLD		SA		WA	
	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
ALL SEGMENTS	11336.2		4113.9		2665.3		2295.1		779.8		1482.2	
MISC. PORTIONS	5648.9	49.8	2303.1	56.0	1326.2	49.8	1159.6	50.5	342.0	43.9	518.0	34.9
FISH FINGERS	3664.1	32.3	1194.0	29.0	891.5	33.4	902.4	39.3	342.3	43.9	333.9	22.5
FISH FILLETS	1131.9	10.0	263.7	6.4	262.9	9.9	97.7	4.3	42.3	5.4	465.3	31.4
FISH DINNERS	554.7	4.9	215.3	5.2	129.0	4.8	99.9	4.4	50.0	6.4	60.5	4.1
SEAFOOD	336.5	3.0	137.7	3.3	55.6	2.1	35.5	1.5	3.2	0.4	104.5	7.0



2.1.2 Product Share of National Total - Volume

Within the analysis of frozen fish and seafood, five products have been identified by Nielsen for reporting purposes (see Chart 2.1.2). A brief description of the type of product to be classified to the five groups is outlined below:

Miscellaneous Portions

- oven fry and battered portions;
- oven fry and crumbed portions;
- bites; burgers; cakes; snacks.

Fish Fingers

- are just as described.

Fish Fillets

- plain fillets;
- crumbed fillets;
- smoked fillets;
- fillets in batter.

Fish Dinners

- such as those prepared in cheese sauce, parsley, mushroom and lemon.

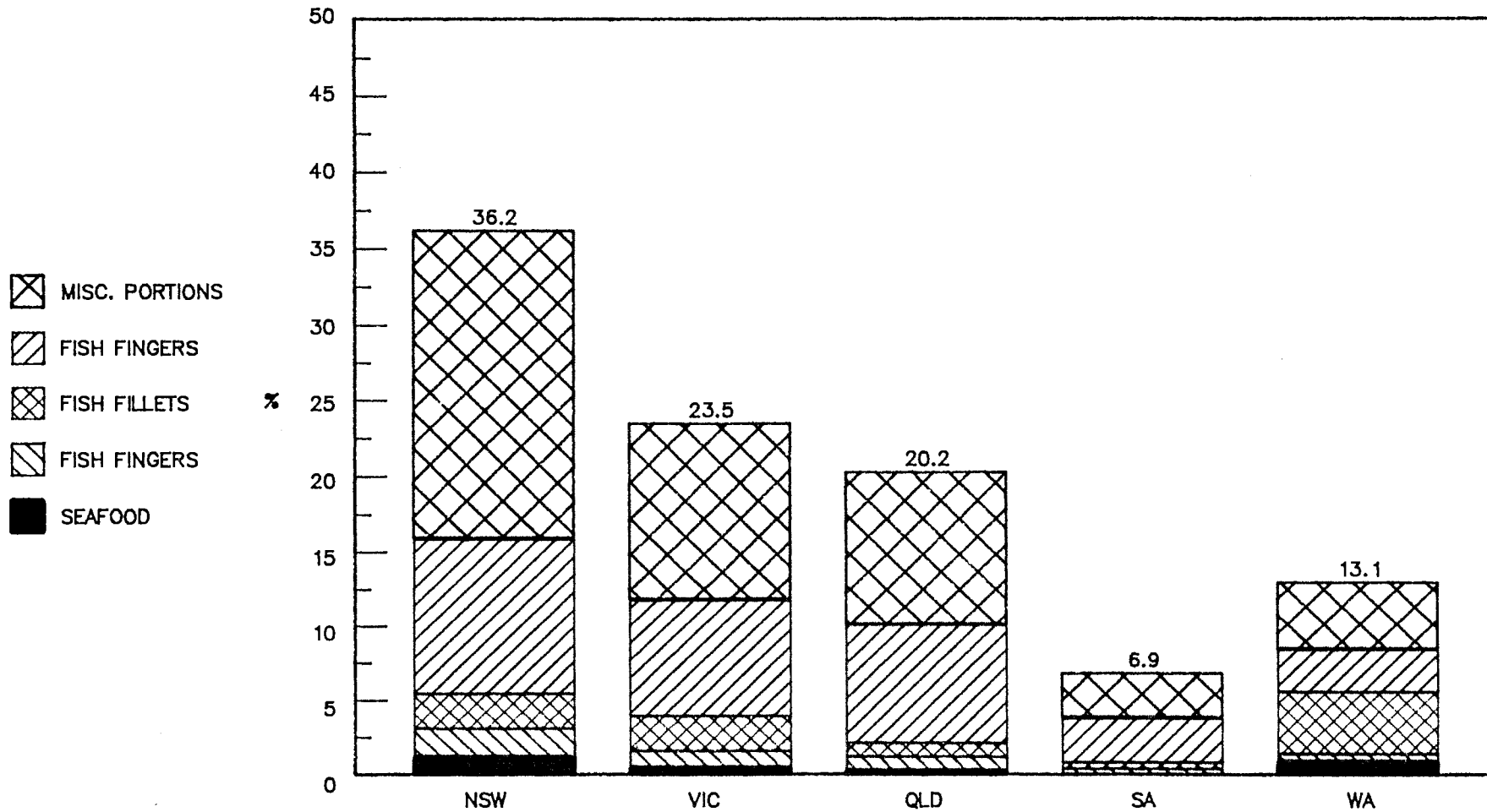
Seafood

- sticks and rolls;
- prawns;
- scallops;
- oysters;
- lobster/crayfish;
- other seafood.



2.1.2 FROZEN FISH – PRODUCT SHARE OF NATIONAL TOTAL

BASED ON VOLUME IN 000'S KG FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



ALL SEGMENTS	4113.9	%	2665.3	%	2295.1	%	779.8	%	1482.2	%
MISC. PORTIONS	2303.1	20.3	1326.2	11.7	1159.6	10.2	342.0	3.0	518.0	4.6
FISH FINGERS	1194.0	10.5	891.5	7.9	902.4	8.0	342.3	3.0	333.9	2.9
FISH FILLETS	263.7	2.3	262.9	2.3	97.7	0.9	42.3	0.4	465.3	4.1
FISH DINNERS	215.3	1.9	129.0	1.1	99.9	0.9	50.0	0.4	60.5	0.5
SEAFOOD	137.7	1.2	55.6	0.5	35.5	0.3	3.2	0.0	104.5	0.9



In volume terms, miscellaneous portions accounted for one half (49.8%) of the volume of frozen fish distributed in 1990, representing 5,648,900kg of product (see Chart 2.1.2). **Fish fingers** was the next most significant contributor to the frozen fish category, accounting for **almost one third of the volume** (32.3% or 3,664,100kg).

Fish fillets (10.0%), fish dinners (4.9%) and frozen seafood (3.0%) accounted for a far lower volume share, within Australia to the end of the 1990 CY.

Compared with the product share for Australia it can be noted that:

- a greater share of miscellaneous portions was sold into New South Wales (56.0% compared with 49.8% for the National total);
- Queensland (39.3%) and South Australian (43.9%) warehouses moved a greater volume share of fish fingers than the other three States;
- warehouses in Western Australia distributed a disproportionate volume of fish fillets (31.4% compared with 10.0% for Australia) and frozen seafood (7.0% compared with 3.0% for Australia); and
- South Australian warehouses moved a greater volume share of fish dinners (6.4% compared with 4.9%).

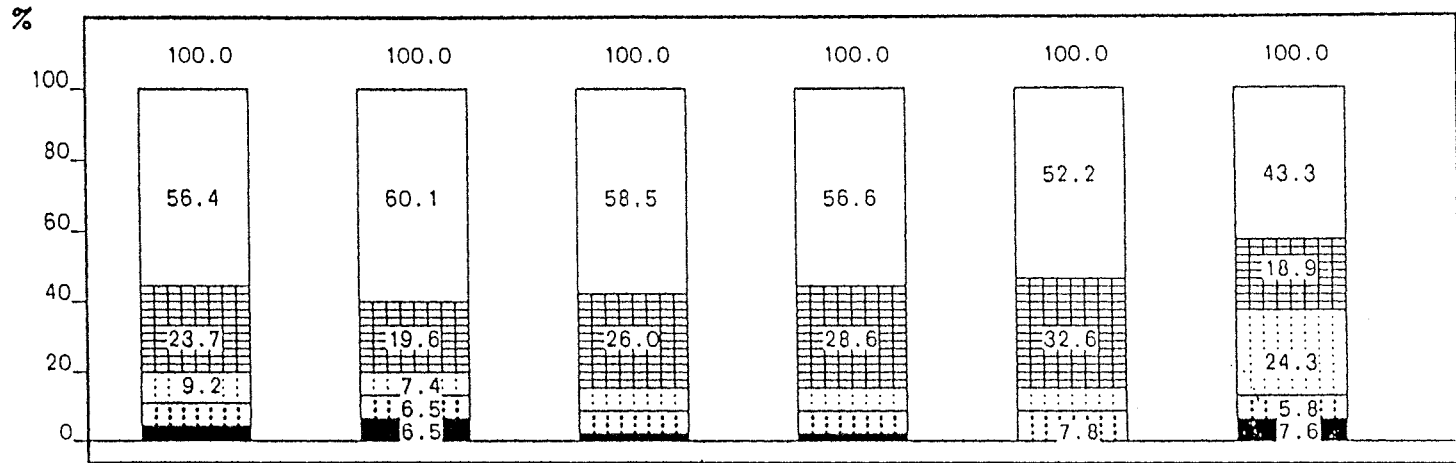


2.13 FROZEN FISH

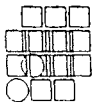
31 DECEMBER 1990

SEGMENT SHARE GRAPH

BASED ON VALUE IN \$ 000's
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



	NATIONAL		NSW		VIC		QLD		SA		WA	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
ALL SEGMENTS	87579.2		32590.8		21040.6		16397.1		6554.0		10996.6	
MISC. PORTIONS	49381.8	56.4	19593.0	60.1	12316.4	58.5	9285.8	56.6	3423.8	52.2	4762.8	43.3
FISH FINGERS	20747.4	23.7	6378.7	19.6	5466.4	26.0	4681.8	28.6	2137.2	32.6	2083.3	18.9
FISH FILLETS	8065.5	9.2	2403.9	7.4	1569.1	7.5	988.4	6.0	429.6	6.6	2674.5	24.3
FISH DINNERS	5565.1	6.4	2108.9	6.5	1347.3	6.4	957.7	5.8	510.3	7.8	640.9	5.8
SEAFOOD	3819.4	4.4	2106.3	6.5	341.4	1.6	483.4	2.9	53.1	0.8	835.2	7.6



2.1.3 Product Share of National Total - Value

The value of the frozen fish and seafood market was just over \$87.5 million (retail) in 1990 (see Chart 2.1.3). As for the volume contribution, **miscellaneous portions accounted for the greatest retail value, totalling \$49,381,800** or 56.4% of the frozen fish market. The ranking of products in retail value matched the volume ranking. **Fish fingers (\$20.7m) accounted for less than half of the retail value of miscellaneous portions** and these products were followed well behind by fish fillets (\$8.1m), fish dinners (\$5.6m) and frozen seafood products (\$3.8m).

State differences in the value of product sold were consistent with the volume differences highlighted in section 2.1.1.

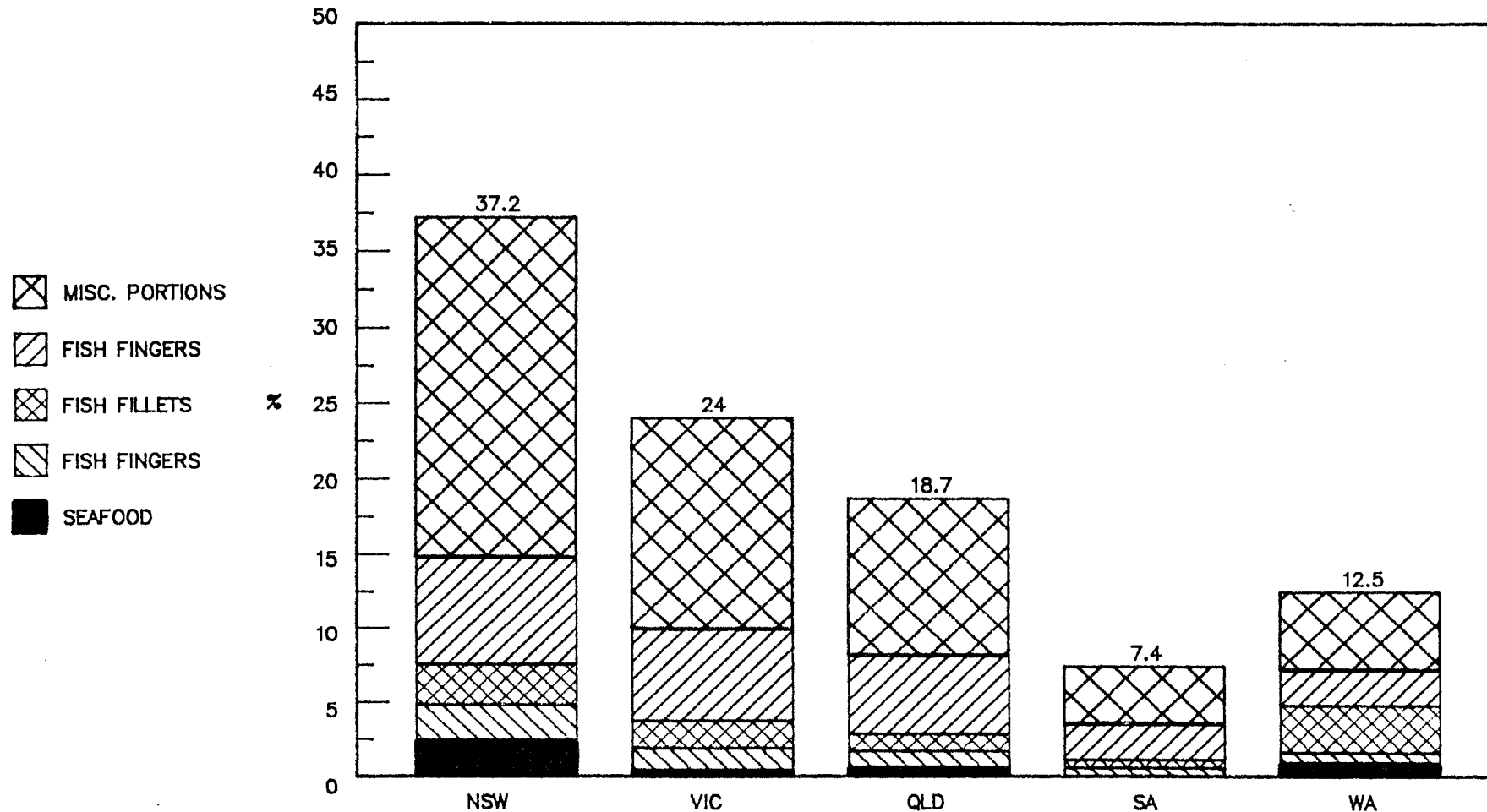
The average retail price for one kilogram for each product category, indicates that the greatest value for a given weight comes from frozen seafood, while fish fingers contribute the least.

	<u>\$ PER</u> <u>1kg</u>	<u>\$ PER</u> <u>100gm</u>
FROZEN SEAFOOD	11.35	1.14
FISH DINNERS	10.03	1.00
MISCELLANEOUS PORTIONS	8.74	0.87
FISH FILLETS	7.13	0.71
FISH FINGERS	5.66	0.57



2.1.3 FROZEN FISH – PRODUCT SHARE OF NATIONAL TOTAL

BASED ON VALUE IN \$ 000'S FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



ALL SEGMENTS	32590.8	%	21040.6	%	16397.1	%	6554.0	%	10996.6	%
MISC. PORTIONS	19593.0	22.4	12316.4	14.1	9285.8	10.6	3423.8	3.9	4762.8	5.4
FISH FINGERS	6378.7	7.3	5466.4	6.2	4681.8	5.3	2137.2	2.4	2083.3	2.4
FISH FILLETS	2403.9	2.7	1569.1	1.8	988.4	1.1	429.6	0.5	2674.5	3.1
FISH DINNERS	2108.9	2.4	1347.3	1.5	957.7	1.1	510.3	0.6	640.9	0.7
SEAFOOD	2106.3	2.4	341.4	0.4	483.4	0.6	53.1	0.0	835.2	0.9



The disparities in the value for a given weight are reflective of the differences in volume share and value share. That is, while a product may contribute little to the overall volume of frozen fish, it may account for a greater share of the value (more expensive product).

Products which accounted for a greater share of the value of frozen fish than volume (see Chart 2.1.3) were:

	<u>% SHARE OF VALUE</u>	<u>% SHARE OF VOLUME</u>
FROZEN SEAFOOD	4.4%	3.0%
FISH DINNERS	6.4%	4.9%
MISCELLANEOUS PORTIONS	56.4%	49.8%

In comparison, the share of value to volume was lower for:

FISH FILLETS	9.2%	10.0%
FISH FINGERS	23.7%	32.3%



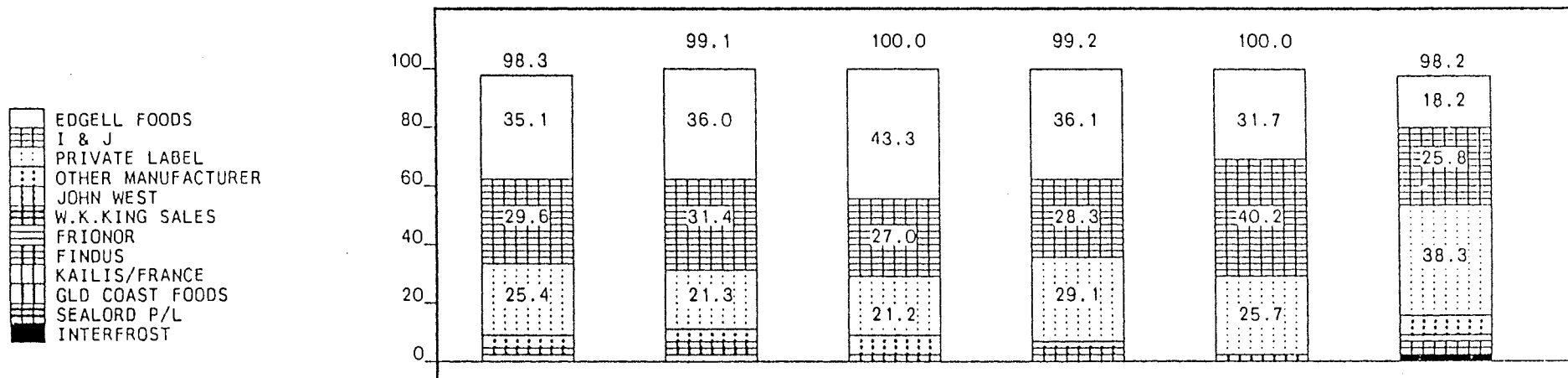
2.1.4 FROZEN FISH

31 DECEMBER 199

MANUFACTURER SHARE GRAPH
TOP 8 MANUFACTURERS

%

BASED ON VOLUME IN 000'S KG
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



	* NATIONAL *		* NSW *		* VIC *		* QLD *		* SA *		* WA *	
	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
ALL MANUFACTURERS	11336.2		4113.9		2665.3		2295.1		779.8		1482.2	
EDGELL FOODS	3983.3	35.1	1482.0	36.0	1155.0	43.3	829.4	36.1	247.4	31.7	269.5	18.2
I & J	3358.3	29.6	1292.8	31.4	720.9	27.0	649.2	28.3	313.2	40.2	382.2	25.8
PRIVATE LABEL	2878.4	25.4	878.1	21.3	565.4	21.2	667.5	29.1	200.5	25.7	567.0	38.3
OTHER MANUFACTURER	470.0	4.1	146.1	3.6	177.1	6.6	35.0	1.5	0.1	0.0	111.6	7.5
JOHN WEST	159.4	1.4	78.4	1.9	24.4	0.9	42.4	1.8	3.6	0.5	10.5	0.7
W.K.KING SALES	114.1	1.0	95.3	2.3	2.0	0.1	9.9	0.4			7.0	0.5
FRIONOR	100.7	0.9	63.7	1.5	4.1	0.2	3.6	0.2	1.4	0.2	28.0	1.9
FINDUS	82.7	0.7	42.5	1.0	16.0	0.6	9.7	0.4	5.7	0.7	8.8	0.6
KAILIS/FRANCE	80.2	0.7	9.6	0.2			31.5	1.4			39.1	2.6
SEALORD P/L	60.5	0.5	24.0	0.6	0.3	0.0	3.7	0.2	7.9	1.0	24.5	1.7
INTERFROST	34.1	0.3									34.1	2.3
GLD COAST FOODS	11.1	0.1					11.1	0.5				
OCEAN DELIGHT	2.0	0.0	0.0	0.0			2.0	0.1				
MACCAIN AUST.	1.4	0.0	1.4	0.0								



2.1.4 Manufacturers Share of National Total - Volume

In the frozen fish segment, **Edgell Foods (35.1%), I and J (29.6%) and Private Label (25.4%)** were the three major manufacturers, accounting for 90% of the total volume of frozen fish sold in 1990 (see Chart 2.1.4). At least another ten identified manufacturers (and many others) each held a small share of the frozen fish market in Australia (the five mainland States).

Not forgetting that a manufacturer's strength in a particular region is not only influenced by its distribution, but also the products it manufactures (and State preference for that product), a number of differences from the National total can be observed by State. It should be noted that these differences do not refer to the total volume of product sold by a manufacturer into a State, but its share of the State's total volume.

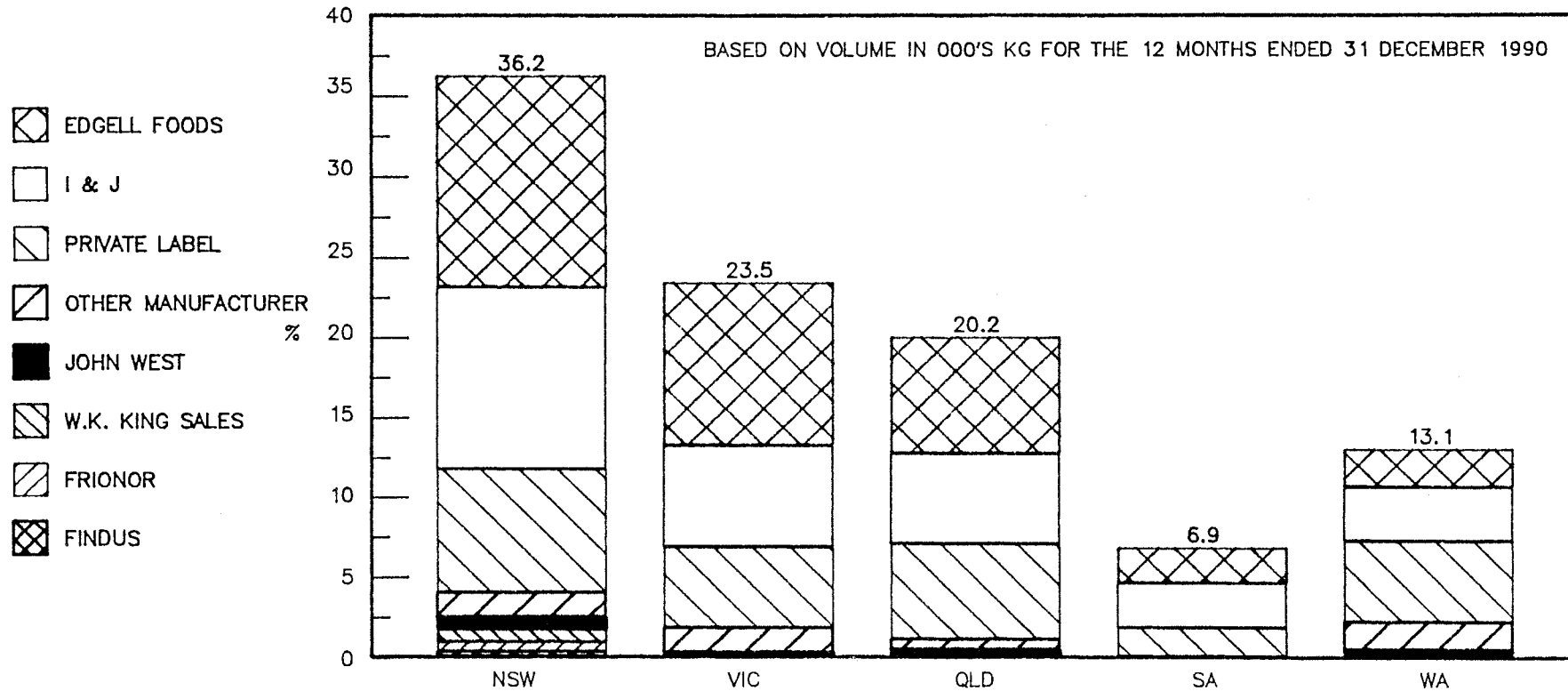
The volume of frozen fish sold through the New South Wales distribution network accounted for 36.2% of the total volume. In absolute terms, the three major manufacturers each sold the greatest share of their frozen fish volume into this region. However, the only major positive variation in the share of frozen fish sold within the State compared with the National total, was for product manufactured by W.K. King Sales (2.3% compared with 1.0% for Australia).

In Victoria, Edgell Foods commanded a greater volume share of this region's frozen fish (43.3% compared with 35.1% overall).

Gold Coast Foods distributed its frozen fish only throughout Queensland, but even so only accounted for 0.5% of the volume of frozen fish sold in the State in 1990.



2.1.4. FROZEN FISH – MANUFACTURERS SHARE OF NATIONAL TOTAL



ALL MANUFACTURERS	4113.9	%	2665.3	%	2295.1	%	779.8	%	1482.2	%
EDGELL FOODS	1482.8	13.1	1155.0	10.2	829.4	7.3	247.4	2.2	269.5	2.4
I & J	1292.8	11.4	720.9	6.4	649.2	5.7	313.2	2.8	382.2	3.4
PRIVATE LABEL	878.1	7.7	565.4	5.0	667.5	5.9	200.5	1.8	567.0	5.0
* OTHER MANUFACTURER	146.1	1.3	177.1	1.6	35.0	0.3	0.1	0.0	111.6	0.9
JOHN WEST	78.4	0.7	24.4	0.2	42.4	0.4	3.6	0.0	10.5	0.1
W.K. KING SALES	95.3	0.8	2.0	0.0	9.9	0.0			7.0	0.1
FRIONOR	63.7	0.6	4.1	0.0	3.6	0.0	1.4	0.0	28.0	0.2
FINDUS	42.5	0.4	16.0	0.1	9.7	0.1	5.7	0.0	8.8	0.1
* KAILIS/France	9.6	0.0			31.5	0.3			39.1	0.3
*SEALORD PTY LTD	24.0	0.2	0.3	0.0	3.7	0.0	7.9	0.0	24.5	0.2
* INTERFROST									34.1	0.3
* GLD COAST FOODS					11.1	0.0				
*OCEAN DELIGHT	0.0	0.0			2.0	0.0				
* McCAIN AUST.	1.4	0.0								

* INDICATES OTHER MAN.



Two thirds (40.2%) of the volume of frozen fish moved through the South Australian warehouse network was manufactured by L & J. In contrast, this manufacturer accounted for a lower proportion of the National volume (29.6%).

The Western Australian warehouse distribution network appears quite different from the other States. This State moved a disproportionately high volume of frozen fish manufactured by:

- packers for Private Label (38.3% compared with 25.4% for Australia);
- other manufacturers (7.5% and 4.1% respectively);
- Frionor (1.9% and 0.9%);
- Kailis and France (2.6% and 0.7%);
- Sealord Pty Ltd (2.3% and 0.5%); and
- Interfrost (1.7% and 0.3%).

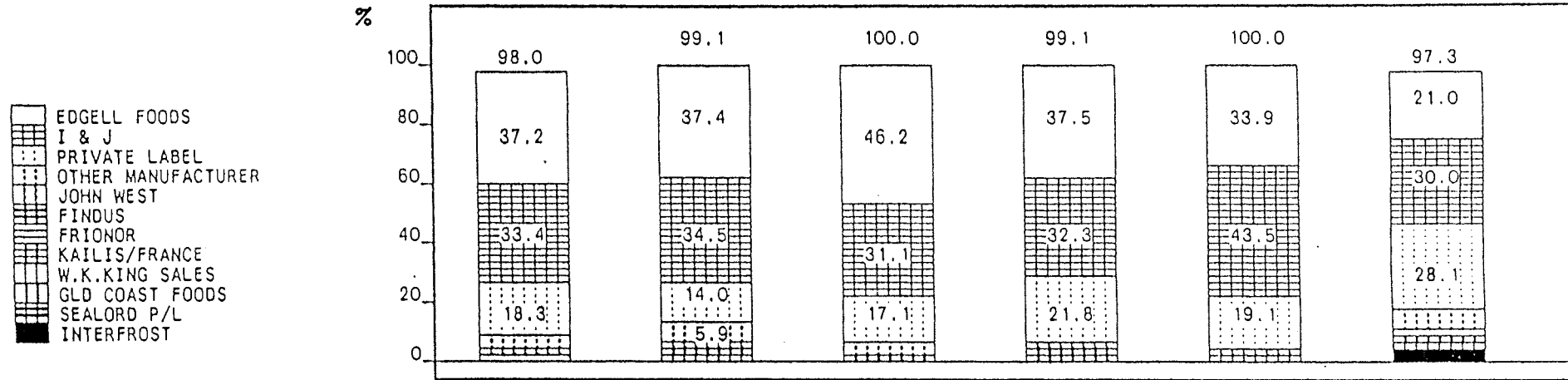


2.1.5 FROZEN FISH

31 DECEMBER 1990

MANUFACTURER SHARE GRAPH
TOP 8 MANUFACTURERS

BASED ON VALUE IN \$ 000's
FOR THE 12 MONTHS ENDED 31 DECEMBER 1990



	NATIONAL		NSW		VIC		QLD		SA		WA	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
ALL MANUFACTURERS	87579.2		32590.8		21040.6		16397.1		6554.0		10996.6	
EDGELL FOODS	32605.0	37.2	12205.1	37.4	9716.9	46.2	6153.2	37.5	2222.4	33.9	2307.4	21.0
I & J	29241.9	33.4	11256.6	34.5	6540.8	31.1	5290.7	32.3	2851.5	43.5	3302.3	30.0
PRIVATE LABEL	16068.0	18.3	4564.6	14.0	3595.5	17.1	3569.4	21.8	1251.0	19.1	3087.6	28.1
OTHER MANUFACTURER	3720.3	4.2	1919.9	5.9	632.5	3.0	260.3	1.6	7.5	0.1	900.0	8.2
JOHN WEST	1532.8	1.8	788.6	2.4	256.3	1.2	349.2	2.1	33.1	0.5	105.5	1.0
FINDUS	1277.7	1.5	624.3	1.9	262.4	1.2	141.6	0.9	95.7	1.5	153.8	1.4
FRIONOR	800.2	0.9	528.2	1.6	22.9	0.1	35.3	0.2	16.0	0.2	197.9	1.8
KAILIS/FRANCE	615.8	0.7	78.9	0.2			347.8	2.1			189.1	1.7
INTERFROST	514.8	0.6									514.8	4.7
SEALORD P/L	509.3	0.6	200.1	0.6	1.7	0.0	28.6	0.2	76.7	1.2	202.1	1.8
W.K.KING SALES	500.3	0.6	414.2	1.3	11.7	0.1	38.2	0.2			36.2	0.3
GLD COAST FOODS	143.2	0.2					143.2	0.9				
OCEAN DELIGHT	39.5	0.0	0.1	0.0			39.5	0.2				
MACCAIN AUST.	10.3	0.0	10.3	0.0								

2.1.5 Manufacturers Share of National Total - Value

The frozen fish market is not as well established or developed as the canned fish market, with retail sales for the former earning **just over \$87.5m** in 1990, compared with \$234m from the canned fish market (see Chart 2.1.5). Almost 90% of the value of the frozen fish market in 1990 was accounted for by three manufacturers. The most significant producers of preprepared fish meals in 1990 were **Edgell Foods (37.2% or \$32.6m)**, **I and J (33.4% or \$29.2m)** and **marketers of Private Label (18.3% or \$16.1m)**. Each other manufacturer held less than 5%, but generally less than 2%, of the frozen fish market share value. Exact retail earnings are detailed in the accompanying chart.

Slight variations in value share to volume share were found for a number of the manufacturers. Differences such as these would be brought about by the product range and margins applying to frozen fish. In summary, the greatest variations emerged for:

	<u>% SHARE OF VALUE</u>	<u>% SHARE OF VOLUME</u>
Edgell Foods*	37.2%	35.1%
I and J*	33.4%	29.6%
Private Label#	18.3%	25.4%
Findus*	1.5%	0.7%
Interfrost*	0.6%	0.3%
W.K.King Sales#	0.6%	1.0%

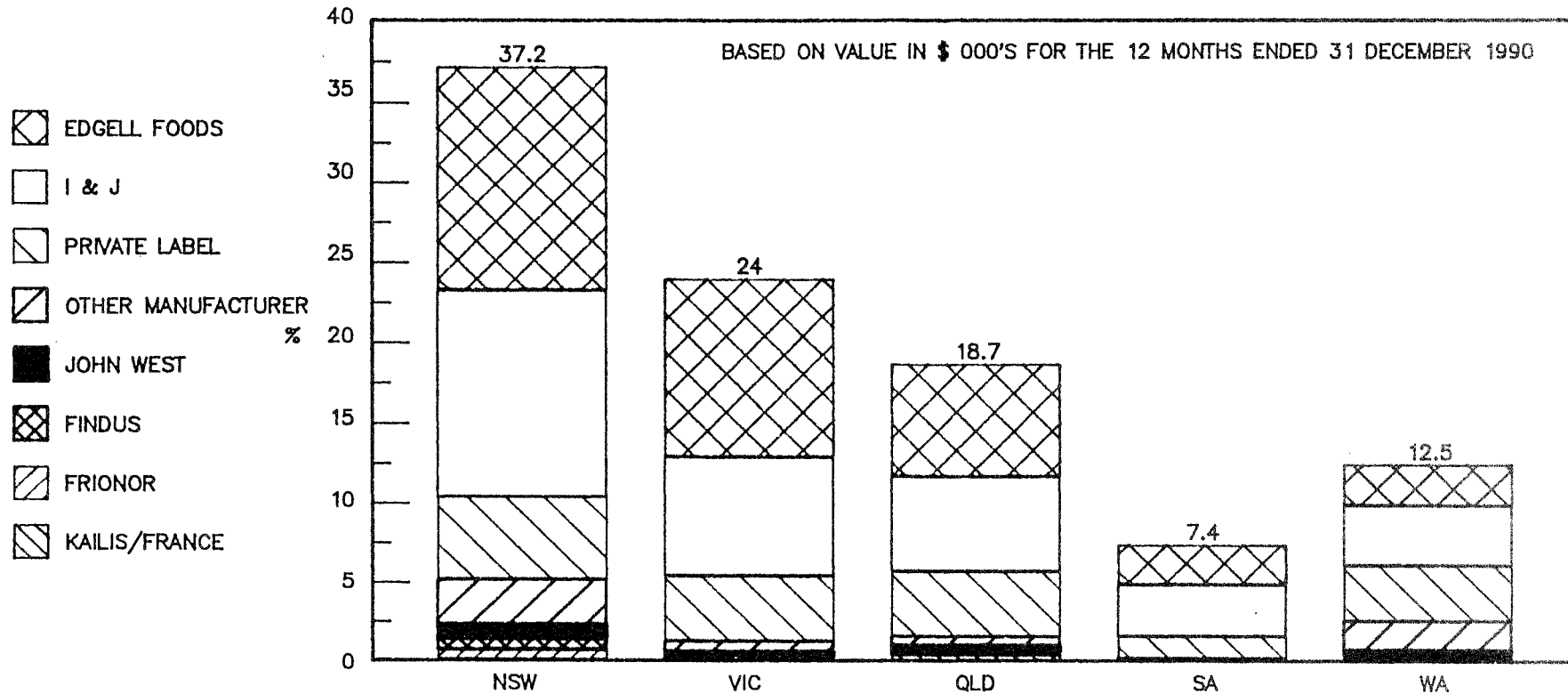
* share of value exceeded share of volume

share of volume exceeded share of value

Disparities in the value of frozen fish moved through each State warehouse, compared with the National average, were consistent with those noted for the volume of product distributed (see section 2.1.4).



2.1.5. FROZEN FISH – MANUFACTURERS SHARE OF NATIONAL TOTAL

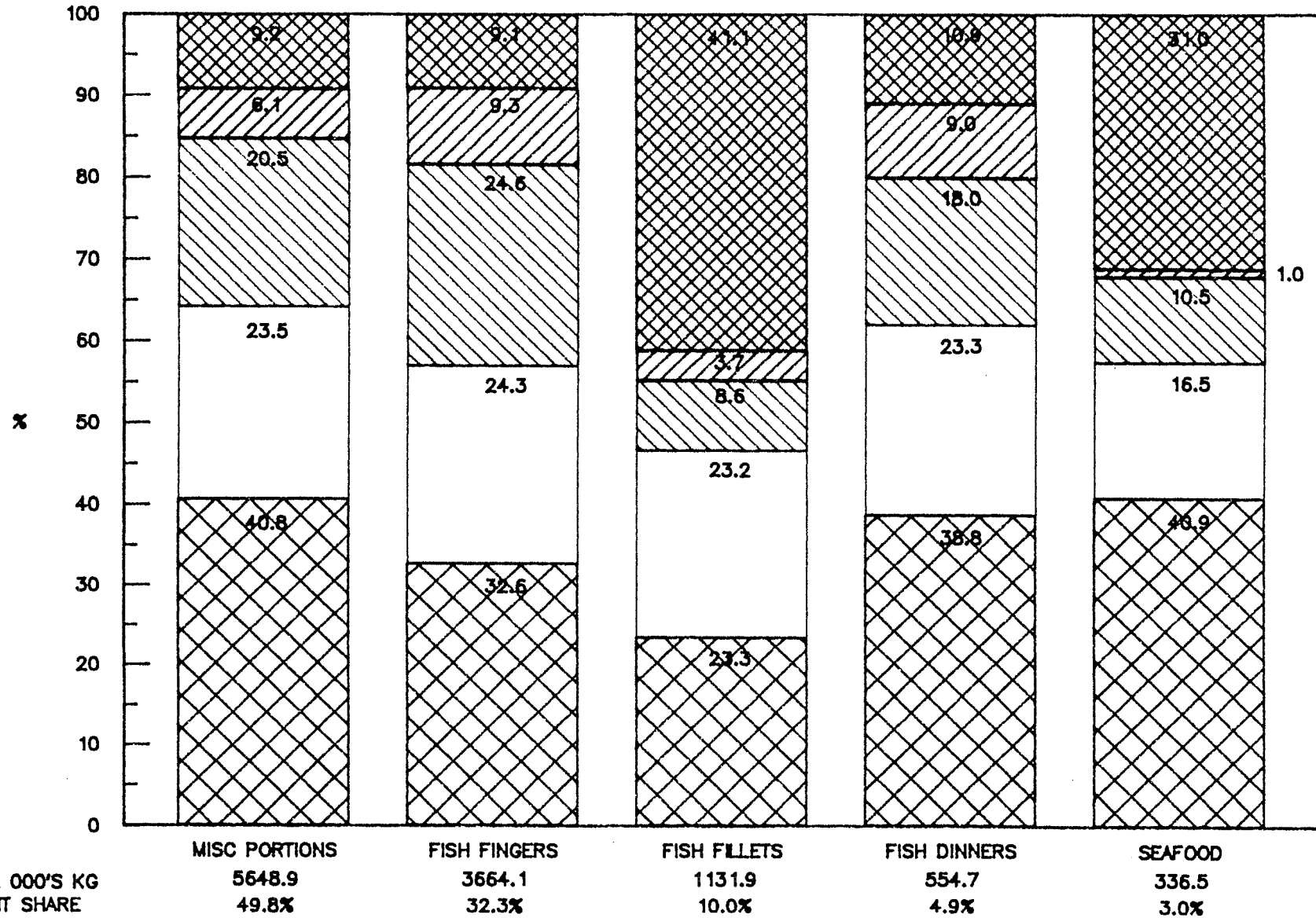


	NSW	%	VIC	%	QLD	%	SA	%	WA	%
ALL MANUFACTURERS	32590.8		21040.6		16397.1		6554.0		10996.6	
EDGELL FOODS	12205.1	13.9	9716.9	11.1	6153.2	7.0	2222.4	2.5	2307.4	2.6
I & J	11256.6	12.9	6540.8	7.5	5290.7	6.0	2851.5	3.3	3302.3	3.8
PRIVATE LABEL	4564.6	5.2	3595.5	4.1	3569.4	4.1	1251.0	1.4	3087.6	3.5
* OTHER MANUFACTURER	1919.9	2.2	632.5	0.7	260.3	0.3	7.5	0.0	900.0	1.0
JOHN WEST	788.6	0.9	256.3	0.3	349.2	0.4	33.1	0.0	105.5	0.1
FINDUS	624.3	0.7	262.4	0.3	141.6	0.2	95.7	0.1	153.8	0.2
FRIONOR	528.2	0.6	22.9	0.0	35.3	0.0	16.0	0.0	197.9	0.2
KAILIS/FRANCE	78.9	0.1			347.8	0.4			189.1	0.2
* INTERFROST									514.8	0.6
* SEALORD P/L	200.1	0.2	1.7	0.0	28.6	0.0	76.7	0.0	202.1	0.2
* W.K.KING SALES	414.2	0.5	11.7	0.0	38.2	0.0			36.2	0.0
* GLD COAST FOODS					143.2	0.2				
* OCEAN DELIGHT	0.1	0.0			39.5	0.0				
* McCAIN AUST.	10.3	0.0								

* INDICATES OTHER MAN.



2.2 SHARE OF FROZEN FISH PRODUCT SOLD BY STATE



VOLUME 000'S KG
SEGMENT SHARE

MISC PORTIONS

5648.9

49.8%

FISH FINGERS

3664.1

32.3%

FISH FILLETS

1131.9

10.0%

FISH DINNERS

554.7

4.9%

SEAFOOD

336.5

3.0%

NSW
 VIC
 QLD
 SA
 WA



2.2 Share of Frozen Fish Product Sold By State

Chart 2.2 shows each State's volume share for the five frozen fish products. State product preferences as described in section 2.1.2 can be reconfirmed by comparing the share of a specific product (see Chart 2.2) and share of population (see Chart 2.1.1) held in a State. Where product share is greater than population share for that State, greater preference can be said to exist for that type of frozen fish.

Miscellaneous portions, defined as predominantly oven fry fillets, fish cakes and sea shantys, accounted for 49.8% of the volume (or 5,648,900kg) of frozen fish sold in 1990 through the grocery warehouse network. Two fifths (40.8%) of this volume passed through the New South Wales network, just under one quarter (23.5%) was distributed through Victorian warehouses and one fifth (20.5%) reached consumers in Queensland. Western Australia (9.2%) and South Australia (6.1%) accounted for a fairly low proportion of the volume of miscellaneous portions sold in 1990. This frozen product was preferred by those in New South Wales (40.8% product share; and 36.6% population share) and Queensland (20.5% product share; and 17.5% population share).

The next greatest contributor to the frozen fish market was fish fingers (32.3% or 3,664,100kg). Approximately one third (32.6%) of this product moved through the New South Wales grocery network and close to one quarter moved into Victoria (24.3%) and Queensland (24.5%). Just under one tenth of the volume of fish fingers sold in 1990 passed through warehouses located in South Australia (9.3%) and Western Australia (9.1%). Preference for fish fingers was more likely to exist in Queensland and marginally more so in South Australia.



While accounting for 13.1% of the volume of all frozen fish sold in 1990 (and 9.5% of the population), Western Australian warehouses moved 41.1% of the fish fillets produced. Grocery warehouses located in New South Wales and Victoria moved just under one fifth of the volume of fish fillets (23.3% and 23.2% respectively). Little of this product channelled into the Queensland and South Australian network (8.6% and 3.7% respectively).

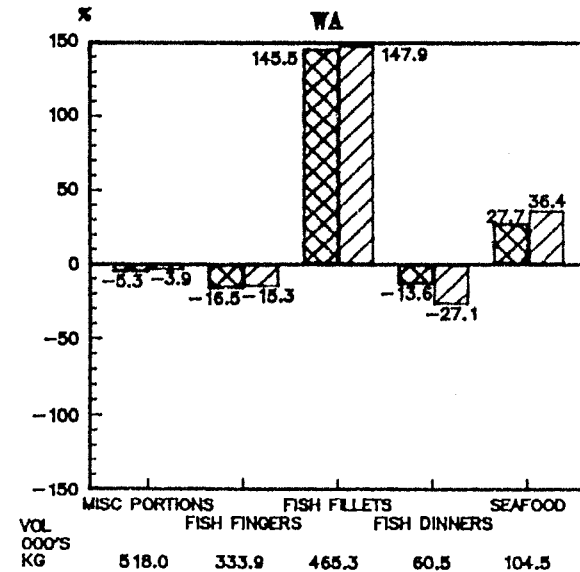
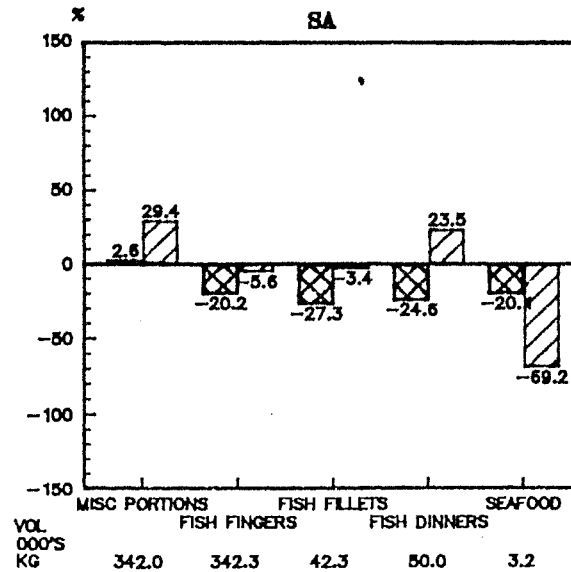
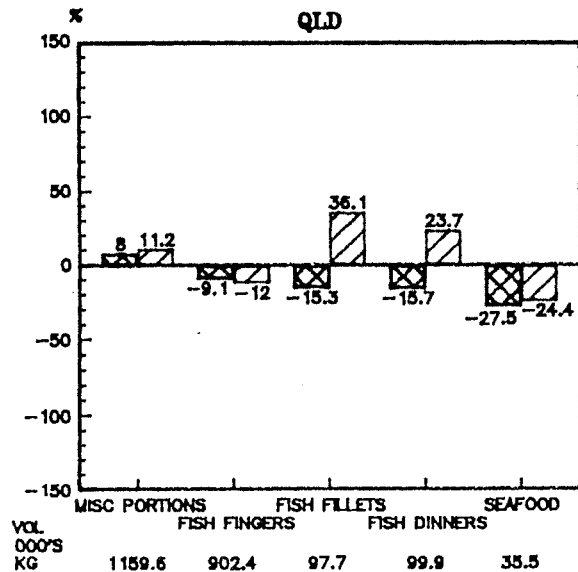
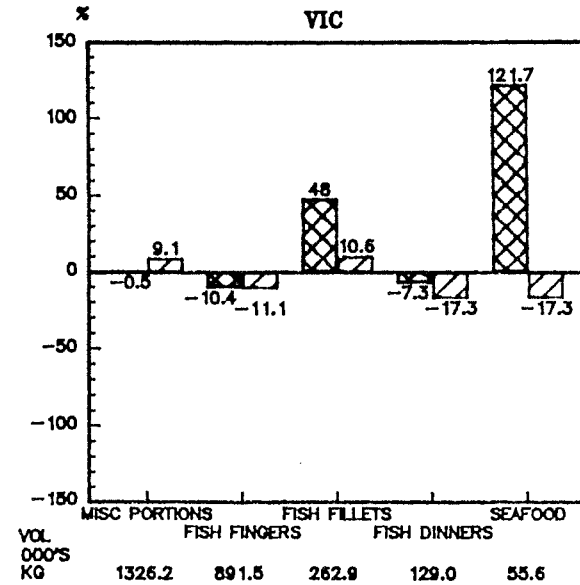
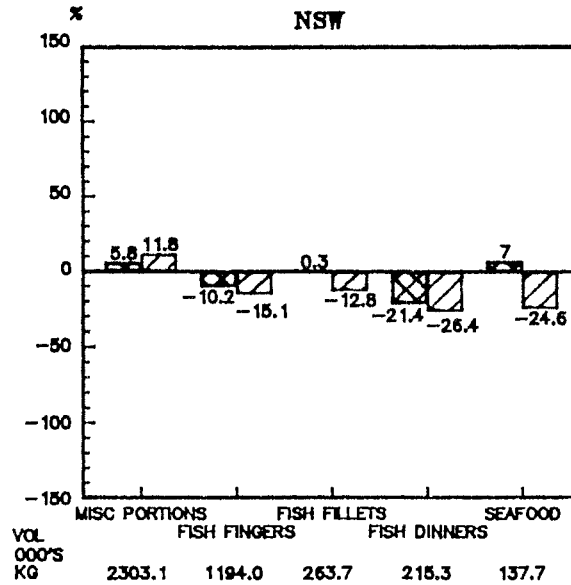
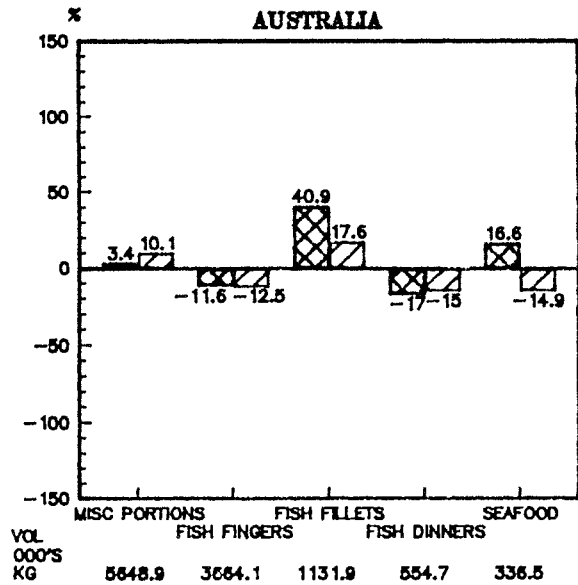
Fish dinners represent a fairly small market at present, accounting for 4.9% of the volume of frozen fish, or in terms of volume, 554,700kg. The States with the greatest population base, New South Wales, Victoria and Queensland, also moved the highest proportion of this product (36.8%, 23.3% and 18.0% respectively). Western Australia and South Australia accounted for a fairly low proportion of the volume (10.9% and 9.0% respectively).

Like fish dinners, frozen seafood is an under-developed market, representing 3.0% (or 336,500kg) of the total frozen fish volume. New South Wales and Western Australian warehouses distributed the majority of frozen seafood (40.9% and 31.0% respectively) - also representing a disproportionately high share compared with the share of population in each of these States. Victoria distributed 16.5%, Queensland 10.5% and South Australia 1.0% of the volume of frozen seafood products.



2.3 YEARLY TREND ANALYSIS BY STATE

12 MONTHS ENDING DEC 89
 12 MONTHS ENDING DEC 88



2.3 Yearly Trend Analysis by State

Chart 2.3 shows the percentage change in the volume of frozen fish products sold from 1989 to 1990 (blue bar) and 1988 to 1990 (red bar). Positive percentage changes signify that the volume of that product moved through the warehouse system was greater in 1990 than, as the case may be, 1989 or 1988. **Overall, in 1990 the volume of frozen product distributed through the warehouse system declined by 0.3% from the previous year and by 1.2% when compared with the 1988 CY.**

In terms of volume, the frozen products which have shown consistent improvement from 1988 to 1990 are miscellaneous portions and fish fillets. The National trend for miscellaneous portions indicates that a 10.1% volume increase occurred from the 1988 to 1990 calendar year and a 3.4% volume increase from 1989 to 1990. The corresponding increase for fish fillets was 17.6% (1988 to 1990) and 40.9% (1989 to 1990).

When analysed by State, the National trend for miscellaneous portions was also evident in New South Wales, Queensland and South Australia. In Victoria, the volume of this product distributed from 1989 to 1990 declined marginally, but the result for 1990 exceeded the volume in 1988. Less of this product was distributed in 1990 than 1989 or 1988 in Western Australia.

A greater volume of fish fillets moved through Victorian, and in particular Western Australian, warehouses in 1990 than the two previous years. In contrast, the South Australian distribution network moved less of this product in 1990 than either 1988 or 1989. The New South Wales and Queensland markets appear quite variable.



Overall, the volume of fish fingers and fish dinners that channelled through the National warehouse network in 1990 was lower than the two previous years. In 1990 the volume of fish fingers sold was down by close to 12% from 1988 and 1989. The situation for fish dinners was worse, with volume through-put close to 16% less in 1990 than either 1988 or 1989.

All States displayed the same pattern as the National trend for fish fingers (lower in 1990 than the two previous years). Lower volume output of fish dinners was found in 1990 than 1988 or 1989 in New South Wales, Victoria and Western Australia. In Queensland and South Australia, fish dinner volume increased by close to 24% from 1988 to 1990, but was at least 15% lower than 1989.

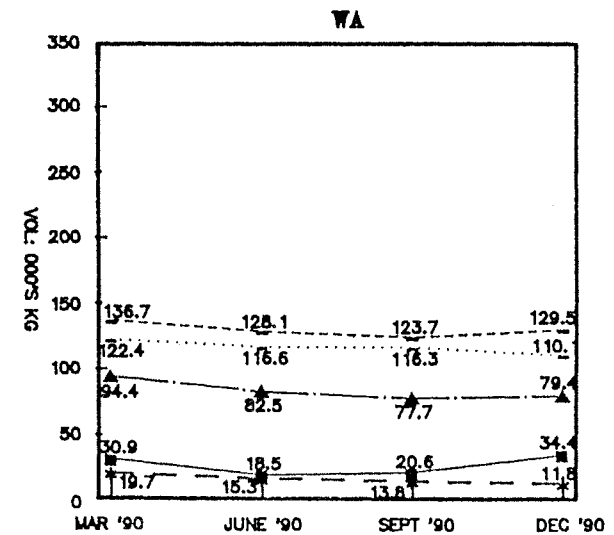
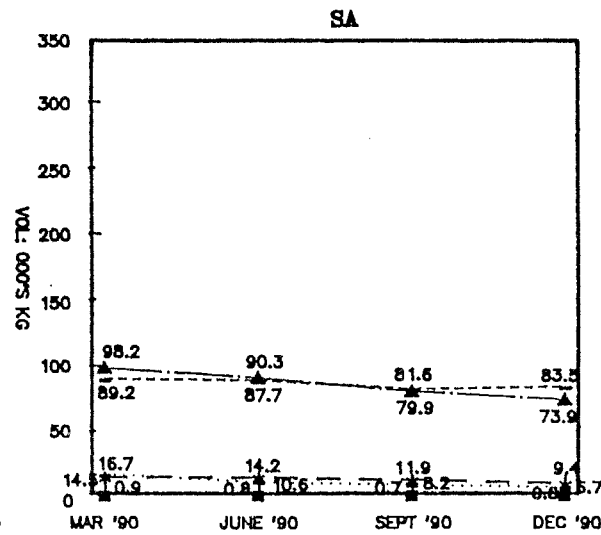
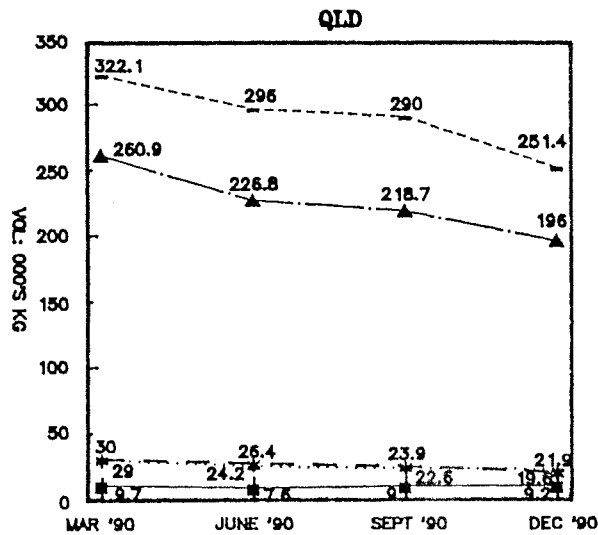
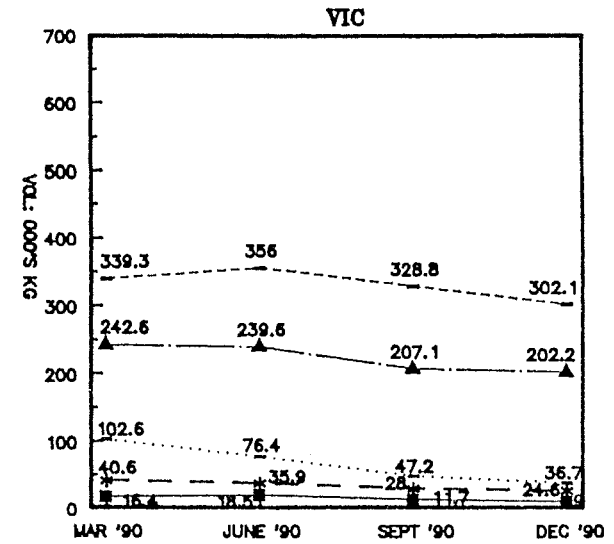
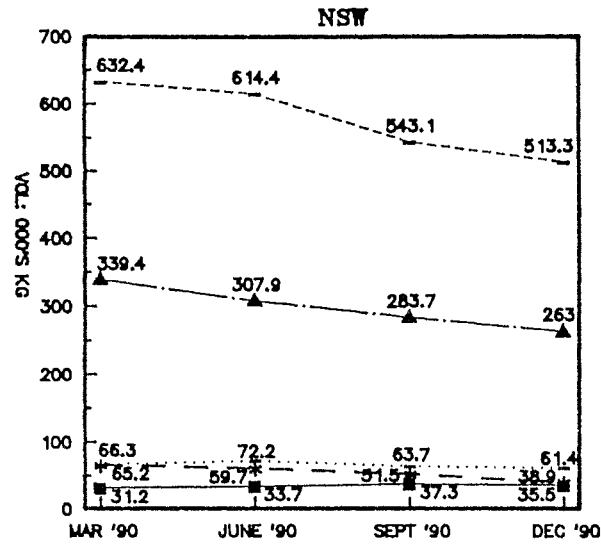
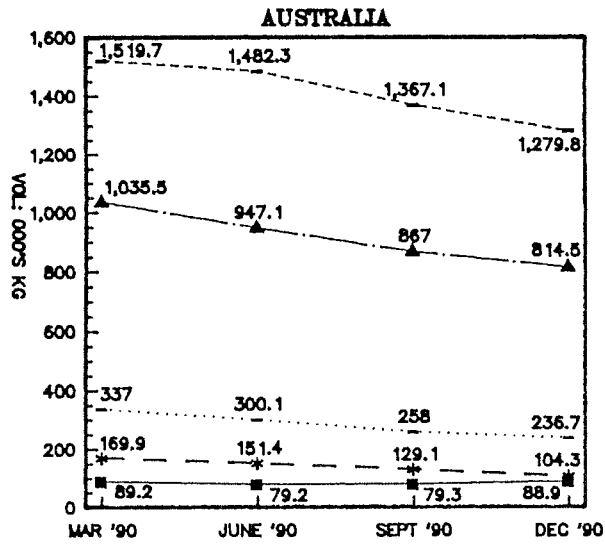
The volume of frozen seafood sold in 1990 did not pass the level distributed in 1988 (-14.9%), but showed some improvement from 1989 (+16.6%). New South Wales and Victoria displayed variable volume distribution of this product over the three years. Queensland and South Australian warehouses distributed less frozen seafood in 1990 than the two previous years. Western Australia warehouses showed positive growth, distributing more frozen seafood in 1990 than 1988 (+36.4%) or 1989 (+27.7%).



2.4 QUARTERLY SEASONALITY ANALYSIS BY FROZEN FISH PRODUCT BY STATE

MISC PORTIONS FISH FINGERS FISH FILLETS FISH DINNERS SEAFOOD

- - - - -
▲
- . - . -
- * -
■



NOTE: THE SCALE ON NSW AND VIC GRAPHS (0-700) IS DIFFERENT TO THE SCALE ON QLD, SA AND WA GRAPHS (0-350)



2.4 Quarterly Seasonality Analysis by Frozen Fish Product by State

In 1990, the quarterly movement of frozen fish was quite different when compared with canned fish. Volume output of frozen fish was greatest in the March quarter (3,151,400kg) and consistently fell each quarter thereafter - June (2,960,100kg), September (2,700,600kg) and December (2,524,200kg) quarters.

Chart 2.4 depicts the movement of the five fish products through each quarter of 1990. With the exception of frozen seafood, volume movement for all other products - miscellaneous portions, fish fingers, fish fillets and fish dinners - peaked in the March quarter and consistently declined to the December quarter of 1990.

The rapid decline in volume through-put was most evident for the two top selling products - miscellaneous portions and fish fingers. In the March quarter, 1,519,700kg of miscellaneous portions was sold, declining to 1,279,800kg in the December quarter. Fish fingers peaked in the March quarter (1,035,500kg) and fell to December (814,500kg). Fish fillets and fish dinners displayed the same pattern.

Frozen seafood, being the least popular of all products, showed some variability in each quarter. Warehouses moved a slightly greater volume of frozen seafood in the March and December quarters than the June or September quarters.

In general, the quarterly movement of frozen products in each of the five States followed the same pattern as that described for the National trend.



**TABLE 2.4 - QUARTERLY SEASONALITY ANALYSIS BY FROZEN FISH
PRODUCT BY STATE**

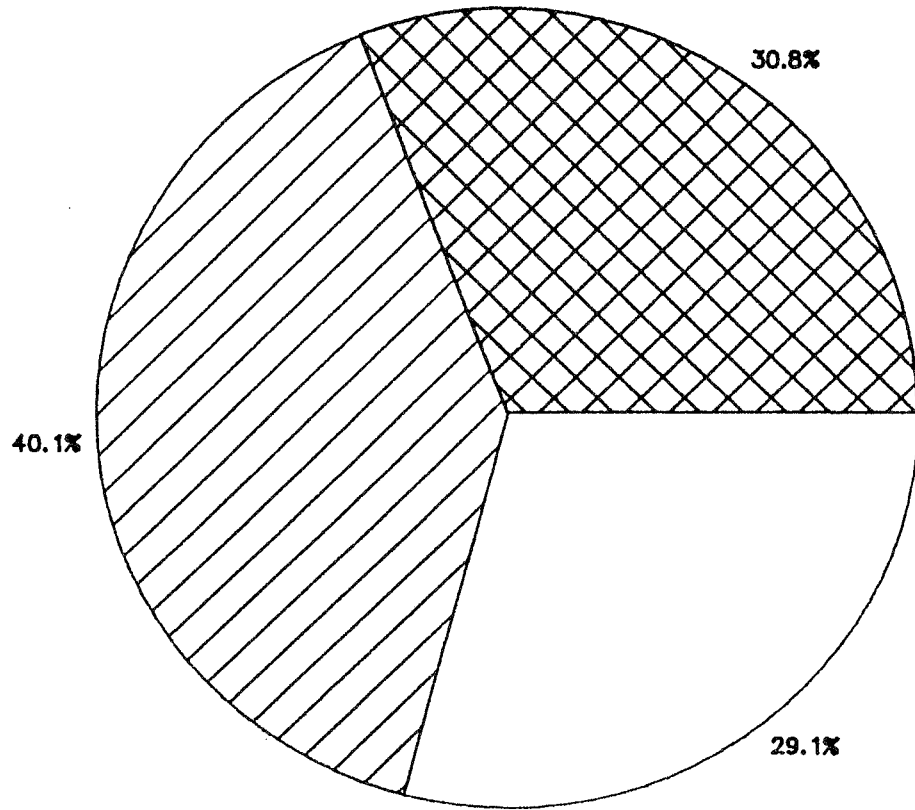
Volume 000'skg			MISCELLANEOUS PORTIONS	FISH FINGERS	FISH FILLETS	FISH DINNERS	FROZEN SEAFOOD
<u>3 MONTHS TO:</u>							
AUSTRALIA	- MARCH	1990	1519.7	1035.5	337.0	169.9	89.2
	- JUNE	1990	1482.3	947.1	300.1	151.4	79.2
	- SEPTEMBER	1990	1367.1	867.0	258.0	129.1	79.3
	- DECEMBER	1990	1279.8	814.5	236.7	104.3	88.9
NSW	- MARCH	1990	632.4	339.4	66.3	65.2	31.2
	- JUNE	1990	614.4	307.9	72.2	59.7	33.7
	- SEPTEMBER	1990	543.1	283.7	63.7	51.5	37.3
	- DECEMBER	1990	513.3	263.0	61.4	38.9	35.5
VIC	- MARCH	1990	339.3	242.6	102.6	40.6	16.4
	- JUNE	1990	356.0	239.6	76.4	35.9	18.5
	- SEPTEMBER	1990	328.8	207.1	47.2	28.0	11.7
	- DECEMBER	1990	302.1	202.2	36.7	24.6	9.0
QLD	- MARCH	1990	322.1	260.9	29.0	30.0	9.7
	- JUNE	1990	296.0	226.8	24.2	26.4	7.6
	- SEPTEMBER	1990	290.0	218.7	22.6	23.9	9.0
	- DECEMBER	1990	251.4	196.0	21.9	19.6	9.2
SA	- MARCH	1990	89.2	98.2	16.7	14.5	0.9
	- JUNE	1990	87.7	90.3	10.6	14.2	0.8
	- SEPTEMBER	1990	81.6	79.9	8.2	11.9	0.7
	- DECEMBER	1990	83.5	73.9	6.7	9.4	0.8
WA	- MARCH	1990	136.7	94.4	122.4	19.7	30.9
	- JUNE	1990	128.1	82.5	116.6	15.3	18.5
	- SEPTEMBER	1990	123.7	77.7	116.3	13.8	20.6
	- DECEMBER	1990	129.5	79.4	110.1	11.8	34.4

Source: A.C. Nielsen Australia Pty Ltd. SAMI Market Profile Report on Frozen Fish, December 1990.

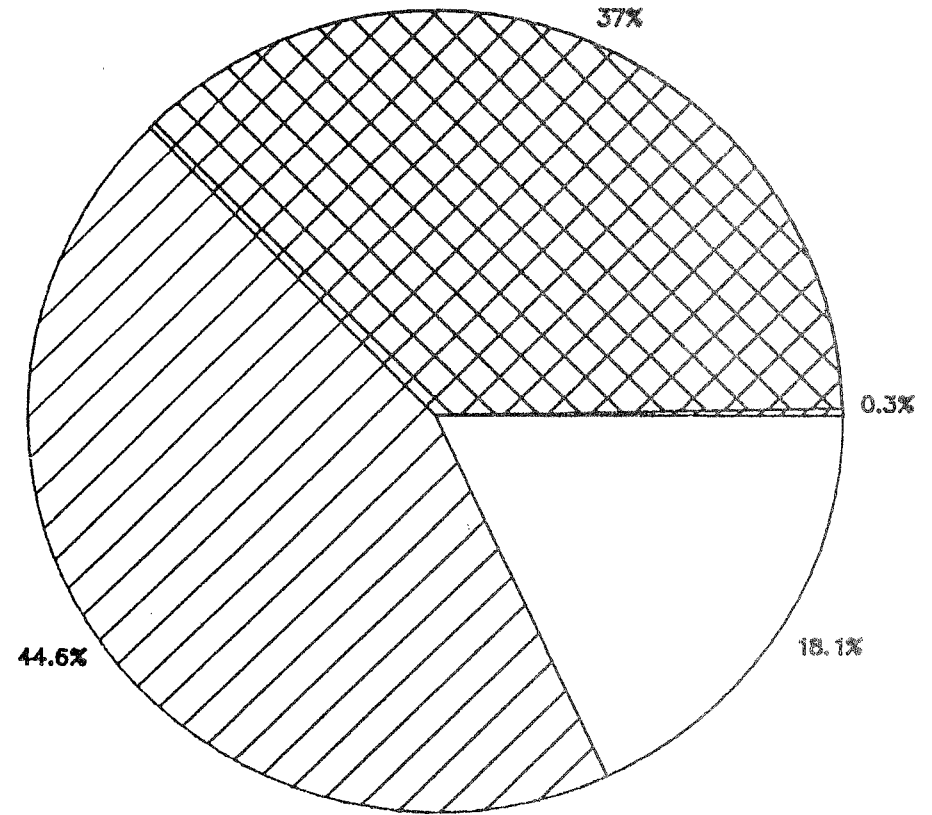


2.5.1 PACK SIZE SHARE OF VOLUME AND VALUE

SHARE OF VOLUME



SHARE OF VALUE



50-100 GMS

101-150 GMS

376-500 GMS

151-375 GMS

OVER 500 GMS



2.5 Pack Size

2.5.1 Pack Size Share of Volume and Value

The total volume of frozen fish and seafood distributed through 1990 was 11,336,200kg, representing \$87,579,200 in retail sales. Although 50 to 100 gram and 101 to 150 gram packs of frozen fish and seafood are available in Australia, each accounted for 0% of volume share in 1990. The most significant contributor, to volume share, was the 376 to 500 gram pack accounting for 40.1% of volume (or 4,547,000kg) (see Chart 2.5.1). Packs 151 to 375 gram and over 500 gram each accounted for approximately 30% of the volume. Therefore, more packs in the 151 to 375 gram range would have been distributed than those over 500 grams.

376 to 500 gram (44.6%) and 151 to 375 gram (37.0%) packs accounted for a greater share of value than volume (40.1% and 30.8% respectively). In contrast, a lower retail price per kilogram was generated by frozen fish sold in packs over 500 grams - 18.1% value share compared with 29.1% volume share.

The two key frozen fish segments are miscellaneous portions and fish fingers. The accompanying table shows the volume of these products sold in the range of pack sizes. Assumptions have been made about the most common pack size for a given range. On this basis, an estimate of the number of packs sold has been derived.



**ESTIMATE OF THE NUMBER OF MISCELLANEOUS PORTIONS
AND FISH FINGERS SOLD IN 1990**

MISCELLANEOUS PORTIONS					FISH FINGERS			
	VOLUME 000's KG	PACK SIZE WEIGHTING FACTOR	ESTIMATE OF PACKS	SHARE OF PACKS	VOLUME 000's KG	PACK SIZE WEIGHTING FACTOR	ESTIMATE OF PACKS	SHARE OF PACKS
50 - 100 GRAMS	1,222.7	375gm (6 portions)	3,260,533	25%	1,255.0	375gm (pack of 15)	3,346,666	49%
376 - 500 GRAMS	3,998.2	425gm (6 portions)	9,407,529	71%	248.4	400gm (pack of 16)	621,000	9%
OVER 500 GRAMS	422.8	840gm	5 03,333	4%	2,160.7	750gm (pack of 30)	2,880,933	42%
TOTAL	5,643.8		13,171,395	100%	3,664.1		6,848,599	100%

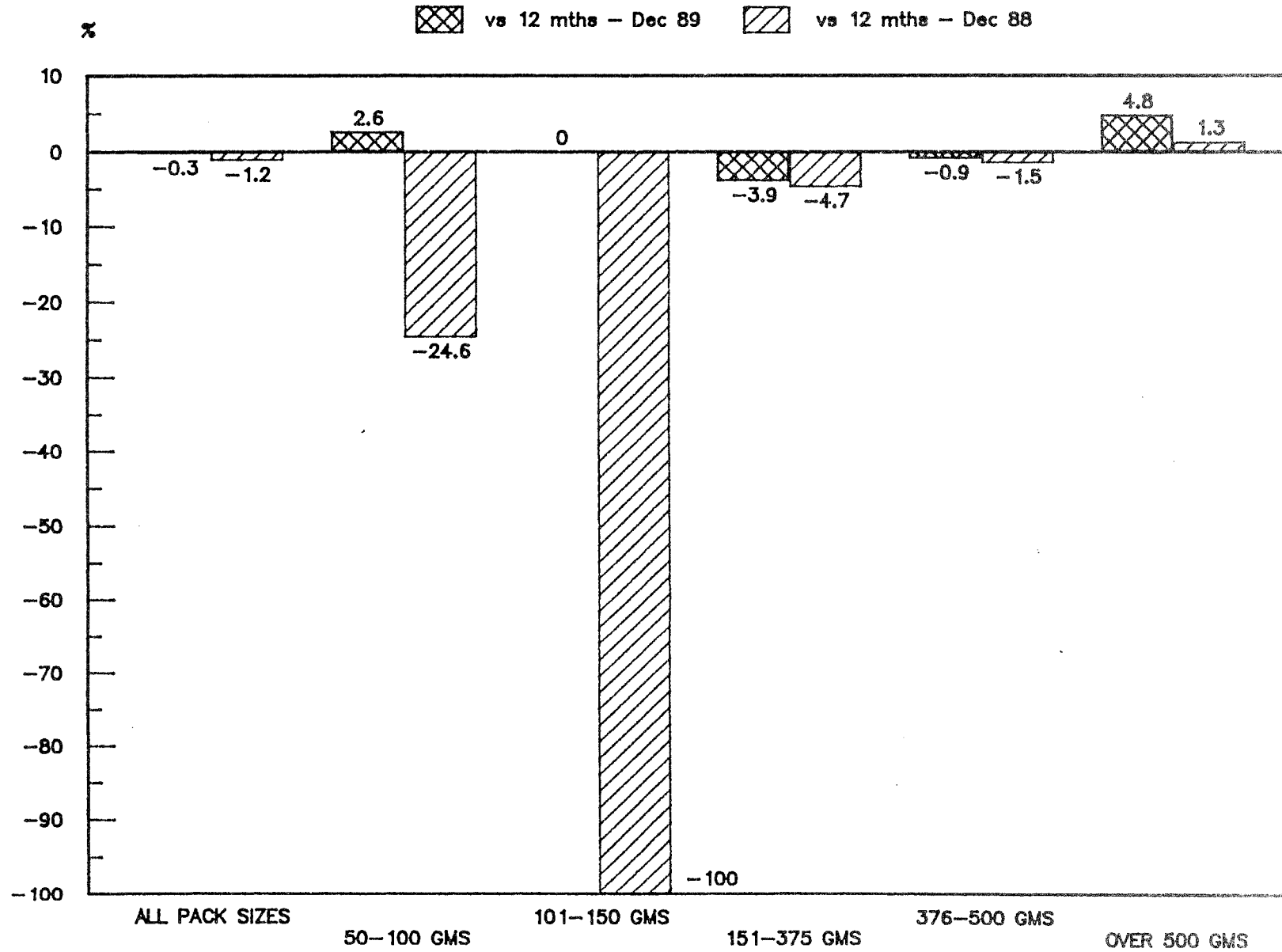


Overall, it is estimated that 13.2 million packs of miscellaneous portions were sold in 1990. The mid pack size (425 gram) appeared the most popular, accounting for 71% of all packs sold, or almost 9.5 million packs. The 375 gram pack was the next most popular, with an estimated 3.3 million packs sold in 1990. Larger packs of miscellaneous portions commanded a far lower pack market share.

In terms of pack ranges, for estimation purposes, fish fingers have been assumed to be sold in 375 gram, 400 gram and 750 gram packs. Applying these weights, an estimated 6.8 million packs of fish fingers were sold in 1990. 375 gram (3.3 million or 49% share of packs) and 750 gram (2.9 million or 42% share of packs) packs clearly dominate the fish fingers market.



2.5.2 TREND ANALYSIS SHARE OF PACK SIZE



VOLUME 000'S KG

11336.2

3.7

1.4

3490.6

4547.0

3293.5

2.5.2 Trend Analysis Share of Pack Size

Chart 2.5.2 shows the percentage change in volume of each pack size sold from 1988 to 1990 (red bar) and 1989 to 1990 (blue bar). The only pack size to record a consistent improvement, in volume terms, was that over 500 grams. In 1990, compared with 1989, a 4.8% volume increase was distributed through packs over 500 grams. There was only a marginal improvement from the volume moved through warehouses in 1988 (+1.3%).

As previously noted, 50 to 100 gram packs are not very popular for frozen fish, accounting for 3,700kg. In 1990, fewer packs were sold than in 1988 (-24.6%), but there was a marginal improvement from 1989 (+2.6%).

Exactly the same volume of product was sold in packs 101 to 150 grams in 1989 and 1990, but this was considerably lower than that moved through the warehouse network in 1988 (-100%).

The volume of product sold in packs 151 to 375 grams and 376 to 500 grams was marginally lower in 1990 than either 1988 or 1989.

