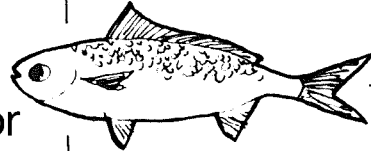
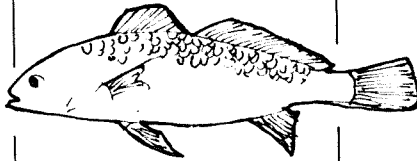
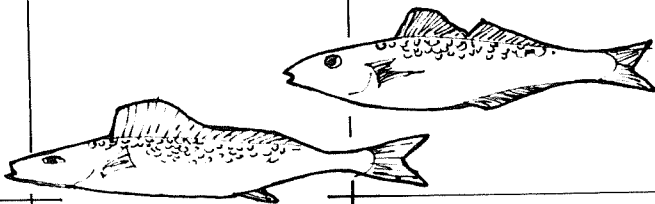
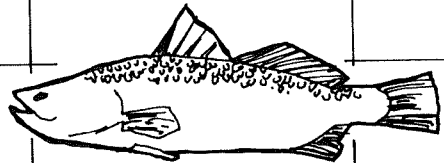


**ANALYSIS OF  
CONSUMER  
ATTITUDES  
TO FRESH  
AND  
PROCESSED  
FIN FISH**



prepared for  
FISHING  
INDUSTRY  
RESEARCH  
TRUST  
ACCOUNT  
1986-1987



by  
Applied  
Economic  
Associates  
february 1987

## 1. INTRODUCTION

Applied Economic Associates (AEA) were awarded a 1986-87 Research Grant by the Fishing Industry's Research Trust Account. The grant was to enable the undertaking of a survey of the attitudes of Australian consumers to fresh and processed fish.

Essentially, the objective of the study was to identify the means by which the demand for Australian wetfish could be increased and thereby raise returns to fishermen.

To achieve this objective, it was proposed to undertake a detailed study of the structure of the demand for fresh and processed fish in terms of:

- \* purchase patterns;
- \* consumption behaviour, and
- \* the consumer's attitude.

Our approach to this study was to ignore factors which were readily determinable from published data and concentrate our analysis on those factors generally lumped together and identified as taste. To this end, four markets for fish were identified, namely:

- \* fresh, consumed at home;
- \* processed, consumed at home (frozen and smoked etc.);
- \* the fast food market outlets;
- \* restaurant trade.

A two stage research programme was undertaken. The first was a qualitative study carried out by Mr. John Brown of Brown Market Research under supervision of Arthur Partridge from A.E.A. The findings from this area of research are contained in a separate document accompanying this report. A brief summary of the major findings are contained in Section 3 of this report.

The second stage of the programme was a quantitative study, utilising survey results obtained through an extensive telephone interviewing programme. The phone survey and the analysis of the results was carried out by Hassell Planning Consultants, again under the supervision of A.E.A. The results of this survey and the analysis are reported separately. A brief summary of the major findings are contained in Section 4 of this report.

The results of the overall research programme are outlined in the report which follows.

## 2. SUMMARY OF RESULTS

Both the qualitative analysis and quantitative study results support the view that fresh fish is well received in the major Australian markets of Sydney and Melbourne.

The quantitative analysis identified a significant difference in consumer attitudes to fresh and processed fish.

Fresh fish is considered (relative to meat) high in nutritional value, essential in a well balanced diet, non-fattening and its freshness can be readily determined.

Processed fish, relative to other meats including fresh fish was ranked last on all but three of the listed attributes associated with meat.

Despite fresh fish's high standing relative to other meats, Australian per capita consumption vis-a-vis other developed countries is low. This apparent contradiction it may be argued, can be explained by the fact that many of the above positive attributes of fresh fish are offset by perceived negative attributes. That is, fresh fish is seen as not being readily available on a year round basis, its price is relatively unstable, even when fish is available reputable outlets are few and far between, it does not keep well and is not popular with children. With the exception of the latter two points, the above negative points are less applicable to major fish eating nations and thus, the above explanation is plausible.

Regardless of the validity of the explanation, it sidesteps the real issue which is that the Australian fishing industry appears to lack understanding as to the needs of the major market sectors and have thus failed to effectively meet these requirements.

Australian consumers, more now than ever in the past, are aware of the need to eat healthy foods. Correspondingly, there has been a growing awareness of the positive attributes of fish and likewise a growing awareness of some of the more negative aspects of other meats. The Australian fishing industry appears to have failed to capitalise on these developments and fish consumption has remained relatively static showing only marginal growth over the last two decades.

Australian meat eaters, while aware of the positive attributes of fish, need further educating and to have these positive attributes reinforced.

To achieve these ends, a promotional/educational campaign should be undertaken. The two overriding aims of such a campaign should be:

- \* substantially reduce the identified attitude gap between fresh and processed fish; and
- \* match Australian fish consumption habits with their apparent attitudes to fish.

To achieve these aims the promotion undertaken should stress the positive aspects of fish, reinforcing views already held and counter where possible misconceptions associated with perceived negative attributes of both fresh and processed fish. The following points should be covered:

- \* emphasise the positive factors indicated by respondents, particularly those ranked behind chicken, which shows out as fish's main competition. These are:
  - \*\* easiness to prepare;
  - \*\* ease of detecting quality;
  - \*\* ease of detecting freshness.
- \* address the negative characteristics, which may be incorrectly perceived, through consumer education and marketing. Important among these are:
  - for fresh fish
    - \*\* stability of price;
    - \*\* bones (showing how to eat whole fish and where bones are found in fillets);
  - for processed fish
    - \*\* easiness to prepare;
    - \*\* ease in taking home;
    - \*\* storeability at home.
- \* in general, stress that fish offers a range of tastes and flavours which is an important decision factor; and
- \* address the low popularity with children perhaps by a campaign such as "feed the man meat".

There are few soundly based reasons why Australian fresh fish consumption habits cannot be made to match the identified favourable attitudes or why negative aspects to both fresh and processed fish cannot be substantially reduced. Singularly most important among these is the suggested "worst feature of fish", bones, this along with some of the other identified negative attributes of fish can at least be partially reduced by processing fish. A promotion which educated consumers to the fact that filleted fish eliminates problems associated with bones (or at least substantially reduce them) and when frozen are available year round from almost any reasonable supermarket outlet at stable prices. Further, fish should be promoted in such a way as to increase popularity among children. The combined effect of this should see a further substantial outward shift in the demand for processed fish and thus indirectly wetfish.

In conclusion, whilst fish as a meat meets many of the requirements of the grocery buyer and meal planner, there exists the difficult to avoid problem associated with bones. Nevertheless, a campaign which emphasises the positive factors indicated by respondents to this survey and counters some of the more negative aspects should produce an outward shift in the demand curve for fish.

### 3. FINDINGS OF THE QUALITATIVE RESEARCH PROGRAM

#### 3.1 Introduction

The aim of this stage of the research programme was to obtain background information on:

- \* consume behaviour and attitudes;
- \* relevant or salient behaviour patterns, beliefs, opinion, attitudes and motivations;
- \* consumer priorities among categories, behaviour and attitudes.

The information obtained was to assist in the formulation of hypothesis and provide background information for the development of the phone survey questionnaires.

Four group discussions were held covering home consumption, restaurant trade and fast foods. For home consumption, discussions were held with two groups of female groceries buyers, one in the 25-34 year age group and the other in the 35-49 year age group. The remaining two groups, were both male and female with the restaurant trade group focusing on persons 25-40 years, while the fast food group focused on younger persons 20-30 years.

#### 3.2 Home Consumption Market

In analysing behaviour and attitudes associated with the consumption of fish prepared at home, the following hypothesis were suggested:

- \* fish consumption is universal, frequently purchased across a range of household types with the possible exception of households with younger children, where there is some evidence of a substitution for fresh fish by frozen/crumbed fish.
- \* fresh fish is positively regarded as a component of a healthy balanced diet, ranking near chicken in terms of nourishment and goodness;
- \* fresh fish is perceived as easy to prepare, an important consideration in the decision as to what meat to purchase;
- \* filleted fresh fish is chosen when ease of preparation is a major criteria;
- \* freshness is the overriding criteria in selecting between species and outlets:

- \* regular eaters appear to know how to assess freshness and the best places to purchase fresh fish;
- \* the desire for freshness and the distance to reputable outlets is a deterrent to fish consumption. In this regard, supermarkets in general are not perceived as suppliers of fresh fish. Sydney Fish Markets are recognised as an outlet where freshness is almost guaranteed;
- \* there is a distinct lack of knowledge regarding fish species;
- \* the demand for fresh fish by committed fish eaters appears to be relatively unresponsive to fish price, but those less committed eaters note large price fluctuations and switch to other meats in times of higher prices;
- \* chicken and canned fish are the major substitutes for fresh fish, though it is not considered a two-way relationship.
- \* canned fish and of course chicken are considered foods in their own rights, with canned fish ranked very high as a convenient/standby meal;
- \* source (country of origin) of processed fish is critical in the decision as to what is to be purchased;
- \* information on fish is seen as necessary and desirable, the Fish Marketing Authorities pamphlets were commended but more information should be readily available;
- \* consumers appear to know little of what processing (smoking/freezing, crumbing etc.) does to taste and nutrition.

### 3.3 Restaurant Market

The analysis of behaviour and attitudes of groups members in regards to eating fish at restaurants suggested the following:

- \* the specialists fish restaurants have the connotation of "up-market" and/or "for special occasions". While this is most likely associated with prawns, lobster and oysters, it does rub off onto finfish, promoting fish as a desirable special occasion meal away from home;
- \* while specialist fish restaurants are essential for some, if fish is to be eaten away from home, this is not an across the board view;

Fish is selected from a menu for one of the following reasons:

- \* a desired change from food normally consumed at home;
- \* desire for a light meal;
- \* rejection of other meats; or
- \* the menu description is good.

Plainly presented fish meals are preferred with suspicion as to quality being associated with heavily sauced or garnished meals. While freshness is hard to ascertain before sampling, it is still considered extremely important. Knowledge of freshness is by and large gained from past experience or often associated with specialty fish restaurants. Perceived "up-market" fish are associated with restaurant meals e.g., barramundi, john dory etc.

### 3.4 Fastfood (Takeaway) Market

The analysis of behaviour and attitudes of group members in regard to purchase of finfish as a fastfood, suggested the following:

- \* takeaway fish is just one of many fastfoods available today and only identified as such under prompting by the moderators.



Four main sub-markets were identified:

- \* young frequent takeaway purchasers;
- \* lunch trade;
- \* weekend/holiday trade;
- \* family trade.

The young consider fish an as option for variety, blue collar workers are the more likely to eat fish for lunch while white collar workers and family trade tends to be associated with traditional fish meals on Friday nights, other important identified were:

- \* the overriding criterion for cooked takeaway fish is that it be bone free and what it is appears to be of minor importance;
- \* McDonalds type fish is eaten for variety, not because it is considered good;
- \* takeaway fish remains synonymous with "fish and chips";
- \* the price for takeaway fish is not considered important in the decision as to whether to have fish or something else.

## 4. STUDY FINDINGS OF THE QUANTITATIVE RESEARCH

### 4.1 Introduction

The aim of this stage of the research programme was to determine meat (including fish) consumption patterns, attitudes of consumers to fish and to test some of the more important hypothesis identified in the qualitative research programme.

The sampling procedure employed was a random selection of telephone numbers from the Melbourne and Sydney telephone directories. The questionnaire addressed 40 specific questions, which covered the following broad areas:

- \* attitudes to fish as a meat were assessed via questions which required the preference ordering of 18 desirable attributes of meat for five distinct meat types;
- \* attitudes to fish, examining why fish was eaten, how it was prepared as well as what would induce greater purchases, fishes best and worst features;
- \* consumption behaviour was assessed in terms of who eats, when (what meals and time of year), where fish is eaten and the type of fish eaten;
- \* purchase behaviour was assessed in terms of where and by whom is fish purchased.

A full analysis of the survey response is contained in a separate report prepared by Hassell Planning Consultants. The important findings of the HPC report are summarised below.

### 4.2 Attitudes to Fish as a Meat Product

Of those surveyed, 76 per cent purchased fish on a regular basis (at least once per month) and as such fish was ranked behind chicken 89 per cent and red meat 81 per cent, but in front of white meat 72 per cent and processed fish 36 per cent. In terms of age, those in their late teens or those nearing the end of their working life are more likely to be fresh fish eaters. In both cases this would appear to be attributable to greater health consciousness on the part of these two groups.

In terms of ranking for the 18 attributes of meat, despite the fact fresh fish was ranked poorly in six of the attributes (year round availability, stability of price, general availability, keeping quality and popularity with children), it was second only to chicken in terms of the number of first preferences it received (3,813 as against 4,107 for chicken).

For the individual attributes, fresh fish received the highest number of first preferences for five of the attributes and second highest number for four of them. This represents half of the attributes and it is further noted that fish also had the first and second highest number of first preferences for any single attribute.

Within different age groups, those in their late teens tend to have a higher allocation of first preferences for fish attributes than did the older age groups. This was especially true for "easy in deciding quality" (38 per cent as against 24 per cent for the total sampled) and "easy deciding freshness" (49 per cent as against 34 per cent).

Within income groups, the highest income group (\$60,000 and over) gave a greater number of first preferences to all but the six poorly ranked attributes, for which they gave a lower number of first preferences. In some cases these differences are large e.g., "nutritional value" (68 per cent as against 47 per cent), "easy for deciding freshness" (52 per cent against 34 per cent), "variety" (45 per cent as against 27 per cent), "no waste" (52 per cent as against 32 per cent).

#### 4.3 Attitudes to Fish Per Se

Responses to questions covering this area indicated that fish was eaten in excess of 60 per cent of the time because it was considered "nutritional" or "an important element in a healthy diet". If we add to this the fourth and fifth most cited reasons for eating fish ("low in cholesterol" and "non-fattening"), 82 per cent of the reasons for eating fish are associated with health. The only important non-health reason given was that it was eaten because it was traditional to do so.

Further probing indicated that in addition to fish's health properties, it was considered quick and easy to prepare.

Lower prices was nominated as the most important factor, likely to induce greater consumption of fish. This was nominated by 42 per cent of respondents with the next highest factor being "greater availability" which was nominated by only 4 per cent of respondents.

Unprompted respondents cited taste/flavour (39 per cent) and nutritional value (14 per cent) as the most important best feature of fish. In regards to the worst feature, the most frequently cited feature were bones (52 per cent), smell (12 per cent) and cleaning (6 per cent). Smell and cleaning were more important to the older age group, while bones and the head were more important to those in their late teens. Bones were less important to the top income group but somewhat surprisingly price was considerably more important being cited four times more frequently than by the lower income groups.

#### 4.4 Attitudes to Processed Fish

It is noted not surprisingly that bones are considered the worst feature of fish. This, along with a number of other negative features of fish are at least partially reduced by processing fish. Yet in moving from fresh fish to processed fish, consumers perception of attributes declines significantly. For processed fish, none of the 18 attributes received over 10 per cent of first preferences. When it is asked why processed fish should be ranked last vis-a-vis red meat, white meat, chicken and fresh fish in terms of "year round availability", "stability of price", "availability", "easy to take home from shops", "variety" and "waste". Two answers emerge:

- \* consumers are poorly informed, and/or
- \* fishermen and in particular fish processors are not providing what the consumer wants.

Other attributes on which processed fish was ranked last was "ease in deciding quality", "value for money", "ease in deciding freshness", "satisfactory to eat", "suitability for special occasions" and "popularity with children" could all be counted by an imaginative sales campaign.

An educational promotional campaign such as one which established the different eating qualities of different species, pointed out snap frozen fillets lost little or none of the taste and nutrition and removed almost all of the bone, would go a long way to substantially raising the demand for wetfish.

#### 4.5 Consumption Behaviour

The majority of respondents (88 per cent) consumed fish at home. Some 26 per cent indicated they consumed fish at restaurants and 19 per cent indicated they consumed takeaway fish. The younger and lower income groups tend to eat more at home, while higher income groups and older persons tending to eat fish in restaurants more frequently than other groups. Takeaway fish meals tend to be associated with 21-35 years old and the \$30,000 to \$60,000 income group.

In terms of frequency of consumption 60 per cent of those interviewed eat fish at least once a week. While Sydney has slightly more in the "at least once per week" it also has slightly more in the "less than once a month" category than Melbourne.

Despite more positive attitudes to fish among the younger age group, they tend to be less frequent eaters and frequency is seen to increase with age. Only 48 per cent of 16-20 year olds eat fish at least once per week while the corresponding figure for the 49-60 year olds is 68 per cent.

Income would appear to positively affect frequency of consumption but is not highly significant. The \$45,000 - \$60,000 show the highest per cent of "at least once a week" eaters but as this is not part of a clear trend of rising consumption with income, it is felt it may be picking up some other influence such as age.

In all cases where fish is eaten, dinner is the most popular time to eat fish and year round consumption would appear to be the norm.

Fresh fish consumption is almost evenly divided between whole fish and fillets, with fillets having a slight edge (52 per cent as against 48 per cent). For processed fish eaters, canned (44 per cent) is more favoured than frozen fillets (31 per cent).

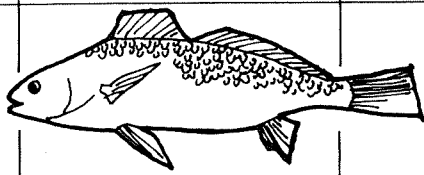
#### 4.6 Purchaser Behaviour

Fish markets (49 per cent) and specialists fish shops (36 per cent) were the most important sources of fish cooked in the home. In the main, the household head (46 per cent) or the grocery buyer (38 per cent) purchased the fish.

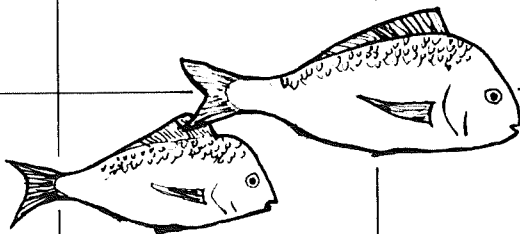
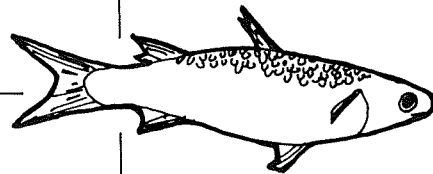
Of those who ate fish at restaurants (69 per cent), eat fish at specialty fish restaurants and 58 per cent ate fish at non-specialists restaurants, implying 27 per cent ate at both.

Of those who ate cooked takeaway fish, 58 per cent bought from the local fastfood outlets, 53 per cent from the traditional fish shop with approximately 11 per cent purchasing from McDonalds or their local takeaway shops.

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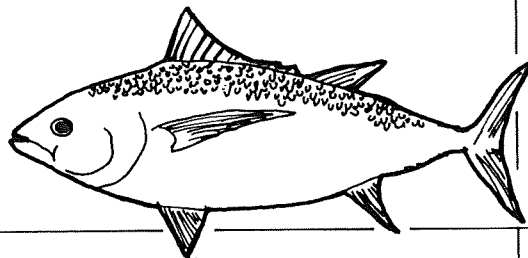


**SURVEY OF  
CONSUMER  
ATTITUDES  
TO FRESH  
AND  
PROCESSED  
FIN FISH**



prepared  
for  
**APPLIED  
ECONOMIC  
ASSOCIATES**

by  
Hassell  
Planning  
Consultants  
february 1987



**A SURVEY OF CONSUMER ATTITUDES  
TO FRESH AND PROCESSED FIN FISH**

**FEBRUARY 1987**

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**A SURVEY OF CONSUMER ATTITUDES  
TO FRESH AND PROCESSED FIN FISH**

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## 1. INTRODUCTION

This report outlines the results of a telephone survey of 1,009 households in the Melbourne and Sydney metropolitan areas to determine meat consumption patterns and the attitudes of consumers to fish. The overall objective of the survey is to collect information on the factors determining the demand for Australian wet fish to establish whether the returns to Australian fishermen could be increased.

The survey probed the attitudes of consumers in terms of their meat purchasing patterns, consumption behaviour and general attitudes to fish as a food. For the purpose of this survey, four markets were identified:

- \* wet fish consumption at home;
- \* processed fish consumption at home (frozen, canned, smoked etc);
- \* the fast food market for fish;
- \* fish consumption in restaurants.

The demand for any commodity can generally be said to be a function of income, population growth, the price of the product, the availability of substitute products, the price of these substitutes and various other factors that are generally lumped together under "tastes". For the most part the influence of the majority of factors listed above can be assessed via desk research of published statistics and economic analysis. However, two important exceptions exist. The first of these relates to the paucity of knowledge on the substitutes for fish among particular socio-economic sub-groups in Australia, and the second to taste as a determinant of fish demand. The only data source relevant to the above two factors is via consumer research.

Thus, important variables which the survey sought to identify included:

- \* substitutes for fish amongst sub-groups within the population;
- \* differences among these sub-groups in terms of the type of fish eaten and when fish is eaten;
- \* identification of "fish taste" factors that can be influenced.

Preceding the conduct of the sample survey, qualitative research was undertaken via group discussions. This qualitative research, which is reported on separately, assisted in the development of hypotheses for subsequent quantification through the telephone survey.

The sampling procedure used involved random selection of telephone numbers from the Melbourne and Sydney telephone directory. As the survey sought to gain information on consumer behaviour within different socio-economic and demographic groups, the survey results are subsequently reported on in terms of the age, socio-economic condition and ethnicity of respondents.

The survey questionnaire is included as an appendix to this report.

## 2. SUMMARY OF RESULTS

The survey showed that some 76 per cent of households purchase fresh fish and 36 per cent of households purchase processed fish on a regular basis, ranking behind chicken (89 per cent of households purchasing) and red meat (81 per cent) in popularity. Generally speaking, fresh fish is more popular with younger people and new Australians, particularly those from the Middle East and Southern Europe. Vegetarian diets was the major reason for not eating meat given by about 10 per cent of households.

In terms of what consumers regard as the advantages of fish relative to other meats, factors such as nutrition, diet and preparation advantages emerged as the relative comparative merits. The nutritional attributes of fish were stressed by younger households whereas older household shoppers were more concerned with ease of preparation. New Australians were more inclined to emphasise the ease of deciding quality and freshness and its satisfying eating qualities than other Australians.

The major comparative advantage of processed fish was, not surprisingly, its storability. New Australians from the Middle East and Northern Europe were more likely to purchase processed fish on a regular basis.

With regard to the frequency of fish consumption, eating fish "once a week" is the most common behaviour of households, representing some 36 per cent of all households. The survey also showed that some 60 per cent of households consume fish "at least once a week". Generally speaking, however, this proportion was higher for older age groups, higher income groups and significantly higher for new Australians.

Home cooking of fish was, not surprisingly, the most popular form of fish consumption and most particularly at the dinner meal. New Australians were more frequent consumers of home cooked fish. The majority of households consumed home cooked fish all year round, indicating little seasonality in fish consumption patterns. Fish fillets and whole fish were equally as popular representing the purchases of about one-half of households in each case. About one-half of household shoppers purchased fish at fish markets with specialist fish shops attended by about one-third of shoppers.

The preferred method of preparing or cooking fish was grilling (32 per cent of households) and shallow frying (26 per cent). Grilling is far more frequently employed by long term Australians while new Australians are more inclined to deep fry or steam fish than other groups.

Consumption of fish at restaurants on a regular basis was less frequent (26 per cent of households) than home cooking. Restaurant attendance was more common for higher income households. There was little variance in these consumption patterns in terms of birthplace characteristics of households. Dinner was clearly the most popular time for restaurant fish consumption and again occurred all year round. Consumer preferences at restaurants was fish fillets and consumers were equally likely to attend specialist fish restaurants as those restaurants offering a range of meat meals.

In the case of take-away fish, regular consumption was reported by only about 20 per cent of households. Take-away fish consumption was more frequent for those household shoppers aged 21-35 years and for long term and first generation Australians. Again consumption was predominantly at the dinner meal and occurred, for the most part, all year round. Take-away fish consumers show a preference for plain fillets rather than fancy fresh species and were equally divided between purchasing at the local fast food shop and the traditional fish shop.

In terms of the reasons for eating fish, consumers pointed to its nutritional and dietary qualities and the fact that it is easy to prepare.

When household shoppers were asked what would prompt them to purchase more fish, cheaper prices emerged as the major issue, particularly for younger households and lower income groups.

In terms of the perceived best features of fish, taste or flavour was clearly the most important factor along with its nutritional value and non-filling eating qualities. Generally speaking, taste and flavour were more important qualities for younger age group households while nutrition was relatively more important for the middle age household shopper. Notably, the ease of preparation and non-filling qualities of fish are more important characteristics for those household shoppers aged over 60 years.

When it comes to perceived worst features of fish, over one-half of households indicated that bones were a concern, with the smell, cleaning, the head and scales as comparatively minor negative characteristics.

3. GENERAL MEAT AND FISH CONSUMPTION

3.1. General Meat Consumption

As discussed in Chapter 1, identification of the purchasing patterns for both fish and meat substitutes is an important element in an analysis of the demand determinants for fish. To gain a general indication of the substitutes for fish and the regularity of their purchase, the household shopper was asked to indicate the types of meat which he/she regularly purchased (at least once a month).

The results, shown in Table 1 below, shows that chicken is the most regularly purchased meat type with 89 per cent of respondents indicating regular purchase. Chicken was clearly ahead of red meats such as beef and lamb (80 per cent) fresh fish (76 per cent), white meats e.g. veal and pork (72 per cent) and processed fish e.g. frozen, canned, smoked, (36 per cent). These results were fairly even between Melbourne and Sydney but Melbourne households were more likely to purchase red meat and processed fish on a regular basis while Sydney households were more likely to purchase chicken and white meats on a regular basis.

**Table 1. Types of Meat Regularly Purchased (at least once a month) by Respondents**  
(per cent of responses)

|                | <u>Melbourne</u> | <u>Sydney</u> | <u>Total</u> |
|----------------|------------------|---------------|--------------|
| Chicken        | 87               | 90            | 89           |
| Red meats      | 83               | 80            | 81           |
| Fresh fish     | 76               | 76            | 76           |
| White meats    | 70               | 73            | 72           |
| Processed fish | 40               | 32            | 36           |
| Not stated     | 4                | 4             | 4            |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

If we look at this meat purchase behaviour in terms of the age of the household shopper, we find some variance in behaviour between age groups. In terms of regular chicken purchases, for instance, 93 per cent of household shoppers in the age group 29-35 years, purchase chicken regularly whereas for the oldest age group of over 60 years, only 83 per cent purchase chicken regularly. In the case of red meats, popularity is greatest for the youngest age category, 16-20 years (88 per cent) and for those aged 29-35 years (84 per cent). Fresh fish is also most regularly purchased by the youngest age category (86 per cent). It is notable however, that this proportion falls to 73 per cent for those aged 21-28 years. Finally processed fish is most popular for shoppers in the older (36-60 years) age categories.

**Table 2. Types of Meat Regularly Purchased by Age of Respondents**  
(per cent of respondents)

|                | <u>16-20</u> | <u>21-28</u> | <u>29-35</u> | <u>36-48</u> | <u>49-60</u> | <u>Over 60</u> | <u>Total</u> |
|----------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|
|                | <u>years</u> | <u>years</u> | <u>years</u> | <u>years</u> | <u>years</u> | <u>years</u>   |              |
| Chicken        | 91           | 89           | 93           | 90           | 90           | 83             | 89           |
| Red meats      | 88           | 78           | 84           | 83           | 82           | 74             | 81           |
| Fresh fish     | 86           | 73           | 76           | 77           | 79           | 73             | 76           |
| White meats    | 70           | 78           | 74           | 73           | 71           | 58             | 72           |
| Processed fish | 28           | 33           | 36           | 42           | 41           | 31             | 36           |
| Not stated     | 1            | 4            | 3            | 3            | 4            | 12             | 4            |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

In terms of the sex of the household shopper interviewed, there was little variance in the purchasing behaviour for different meat types, with the possible exception of processed fish, which female household shoppers were more likely to purchase. These results are given below in Table 3.

**Table 3. Types of Meat Regularly Purchased by Sex of Respondents**  
(per cent of respondents)

|                | <u>Male</u> | <u>Female</u> | <u>Total</u> |
|----------------|-------------|---------------|--------------|
| Chicken        | 90          | 89            | 89           |
| Red meats      | 81          | 82            | 81           |
| Fresh fish     | 75          | 76            | 76           |
| White meats    | 69          | 73            | 72           |
| Processed fish | 30          | 39            | 36           |
| Not stated     | 4           | 4             | 4            |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

If we look at regular meat purchases in terms of the annual household income of respondents, some interesting variances in purchasing behaviour are apparent. For instance, greater proportions regularly purchasing chicken are evident for the higher income groups (over \$20,000 per annum). This is also the case for purchases of white meats. For those households earning income over \$60,000, greater than average purchases of all meat types is evident. In the case of fresh fish, the income group \$40-60,000 has significantly lower than average regular purchases of fresh fish. While the proportion of households purchasing fish is highest for those households with zero income. The zero income group, however, is significantly lower than average purchases of processed fish. (Note: the results for the zero income group should be interpreted with caution because of the small number of respondents). These results are given in Table 4.

**Table 4. Types of Meat Regularly Purchased by Annual Household Income of Respondents**  
(per cent of respondents)

|                | No<br>income | Under<br>\$20,000 | \$20,001<br>to<br>\$30,000 | \$30,001<br>to<br>\$45,000 | \$45,001<br>to<br>\$60,000 | Over<br>\$60,000 |
|----------------|--------------|-------------------|----------------------------|----------------------------|----------------------------|------------------|
| Chicken        | 82           | 86                | 94                         | 95                         | 92                         | 100              |
| Red meats      | 76           | 80                | 84                         | 80                         | 86                         | 97               |
| Fresh fish     | 88           | 78                | 76                         | 84                         | 68                         | 77               |
| White meats    | 41           | 66                | 75                         | 73                         | 85                         | 87               |
| Processed fish | 24           | 44                | 32                         | 42                         | 44                         | 42               |
| Not stated     | 6            | 4                 | 2                          | 2                          | 2                          | -                |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

The final variable of interest in meat purchasing patterns is the types of meat regularly purchased by the birthplace characteristics of the household shopper. First of all, for long term Australians the purchasing patterns are much the same as the average. This is not surprising as this group makes up about two-thirds of the sample. First generation Australians however, were more likely to purchase chicken on a regular basis, but less likely to purchase fresh fish. New Australians were more regular than average purchasers of chicken, fresh fish, red meat and processed fish. These results are shown in Table 5. Table 6 shows that new Australians from Southern Europe (91 per cent) and the Middle East (94 per cent) are the ethnic groups most regular purchasing fresh fish. New Australians from the Middle East and Northern Europe were also more likely to purchase processed fish on a regular basis.

**Table 5. Types of Meat Purchased by Birthplace Characteristics of Respondents**  
(per cent of responses)

|                | Long term<br>Australian | First generation<br>Australian | New<br>Australian | Total |
|----------------|-------------------------|--------------------------------|-------------------|-------|
| Chicken        | 88                      | 92                             | 93                | 89    |
| Red meats      | 81                      | 81                             | 85                | 81    |
| Fresh fish     | 75                      | 73                             | 80                | 76    |
| White meats    | 72                      | 72                             | 72                | 72    |
| Processed fish | 35                      | 35                             | 40                | 36    |
| Not stated     | 5                       | 3                              | 3                 | 4     |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

**Table 6. Types of Meat Regularly Purchased by Country of Origin of New Australians**  
(per cent of respondents)

|                   | South<br>Europe | North<br>Europe | British<br>or<br>Irish | South<br>or<br>Central<br>American | North<br>American | South<br>Middle<br>Eastern | East<br>Asian | Other<br>Asian | Other |
|-------------------|-----------------|-----------------|------------------------|------------------------------------|-------------------|----------------------------|---------------|----------------|-------|
| Chicken           | 97              | 93              | 90                     | 100                                | 88                | 94                         | 88            | 96             | 86    |
| Red meats         | 88              | 91              | 83                     | 100                                | 75                | 83                         | 63            | 88             | 86    |
| Fresh<br>fish     | 91              | 74              | 83                     | 71                                 | 63                | 94                         | 75            | 79             | 64    |
| White<br>meats    | 75              | 80              | 69                     | 71                                 | 63                | 50                         | 69            | 83             | 71    |
| Processed<br>fish | 41              | 46              | 42                     | 14                                 | 38                | 50                         | 31            | 33             | 29    |
| Not<br>stated     | -               | 4               | 4                      | -                                  | -                 | -                          | 6             |                | 14    |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

A final point to make is that some 10 per cent of household shoppers indicated that they do not purchase any types of meat. The reasons stated for this are given below in Table 7. The most common reason given was that the respondent's household follows a vegetarian diet (64 per cent).

**Table 7. Reasons for Not Purchasing Meats**  
(per cent of respondents)

|                   |            |
|-------------------|------------|
| Vegetarian        | 64         |
| Health reasons    | 4          |
| Religious beliefs | 2          |
| Other             | 22         |
| Not stated        | 8          |
|                   | <u>100</u> |

Source: HPC Fish Consumption Survey

**3.2. Reasons for General Meat Consumption**

Household shoppers in the survey were asked to indicate their preferences for meat types in terms of some 18 different attributes of meat. Specifically, they were asked to rank their order of preference between the five food types for each of the attributes. From the results outlined in Table 8 and Table 9 which show those households ranking 1st and 1-3 respectively, we can determine those food characteristics for which consumers have a relative preference in terms of type of meat.

First of all, in terms of fresh fish consumption, we can establish an ordering of consumer preferences relative to other meats. This is summarised below for the qualities which survey households rank fish highest in terms of first preference, relative to other meats:

- \* for weight watching diets (52 per cent ranking 1st)
- \* nutritional value (47 per cent)
- \* essential in well balanced diet (38 per cent)
- \* easiness to decide freshness (34 per cent)
- \* easiness to prepare (26 per cent).

To the forefront in consumers' minds regarding the merits of fresh fish relative to other meats appears to be its nutritional, dietary and preparation advantages rather than characteristics related to price, taste, etc. The first three attributes noted above in particular were highlighted as clear comparative advantages of fish over other meat substitutes.

If these preferences are viewed in terms of the those ranking 1-3, nutritional value, weight watching qualities and essential in well balanced diet again stand out as the preferred characteristics.

In terms of the perceived disadvantages or low ranked characteristics of fresh fish relative to other meats, the following characteristics stand out:

- \* storability at home (6 per cent ranking 1st)
- \* availability (7 per cent)
- \* stability of prices (9 per cent)
- \* popularity with children (9 per cent)
- \* year round availability (9 per cent).

In the case of ~~processed fish~~, the outstanding advantage relative to other meats is, not surprisingly, its storability. Ease of taking home from shops and easiness to prepare are also perceived as relative merits of processed fish.

Of the meat substitutes for fish, a range of qualities stand out as perceived comparative advantages. First of all in the case of ~~chicken~~ the following are highlighted by consumers:

- \* stability of prices (40 per cent ranking 1st)
- \* popularity with children (40 per cent)
- \* suitability for eating by itself (37 per cent)
- \* value for money (36 per cent)
- \* suitability for special occasions (32 per cent).

In the case of ~~red meat~~, the perceived comparative advantages are:

- \* storability at home (33 per cent ranking 1st)
- \* its variety (28 per cent)



- \* year round availability (27 per cent)
- \* suitability for special occasions (27 per cent)
- \* easiness in deciding its quality (26 per cent).

Finally, in the case of ~~white meats~~, the outstanding comparative advantages in terms of households ranking first are:

- \* suitability for special occasions (11 per cent ranking 1st)
- \* satisfying to eat (8 per cent)
- \* no waste (8 per cent)
- \* year round availability (8 per cent).

**Table 8. Preferred Food Type of Respondent by Food Characteristics**

|                                       | Per Cent of Persons Ranking Food Type First |                |         |               |                   |               | Total |
|---------------------------------------|---|----------------|---------|---------------|-------------------|---------------|-------|
|                                       | Red<br>meat                                 | White<br>meats | Chicken | Fresh<br>fish | Processed<br>fish | Not<br>stated |       |
| Easiness to prepare                   | 24  | 5              | 27      | 26            | 7                 | 11            | 100   |
| Nutritional value                     | 16  | 5              | 16      | 47            | 1                 | 15            | 100   |
| Year round availability               | 27  | 8              | 26      | 9             | 5                 | 25            | 100   |
| Easiness in deciding<br>its quality   | 26  | 4              | 19      | 24            | 2                 | 25            | 100   |
| Value for money                       | 21  | 6              | 36      | 19            | 1                 | 17            | 100   |
| Easiness in deciding<br>its freshness | 24  | 4              | 15      | 34            | 1                 | 22            | 100   |
| Stability of its prices               | 18  | 7              | 40      | 9             | 3                 | 23            | 100   |
| Availability                          | 22  | 5              | 20      | 7             | 3                 | 43            | 100   |
| Essential in a well<br>balanced diet  | 16  | 7              | 18      | 38            | 1                 | 20            | 100   |
| Satisfying to eat                     | 25  | 8              | 28      | 23            | 1                 | 15            | 100   |
| Suitability for<br>special occasions  | 27  | 11             | 32      | 15            | 1                 | 14            | 100   |
| Ease in taking<br>home from shops     | 19  | 5              | 22      | 10            | 7                 | 37            | 100   |
| Storability at home<br>(keeps well)   | 33  | 5              | 20      | 6             | 10                | 26            | 100   |
| Suitability for eating<br>by itself   | 14  | 4              | 37      | 18            | 4                 | 23            | 100   |
| Its variety                           | 28  | 5              | 17      | 27            | 2                 | 21            | 100   |
| For weight watching<br>diets          | 3   | 5              | 18      | 52            | 2                 | 20            | 100   |
| No waste                              | 20  | 8              | 18      | 22            | 6                 | 26            | 100   |
| Popularity with<br>children           | 12  | 4              | 40      | 9             | 1                 | 34            | 100   |

Source: HPC Fish Consumption Survey

**Table 9 - Preferred Food Type of Respondent by Food Characteristics**

|                                       | Per Cent. of Respondents Ranking 1st |                |         |               |                   |            |
|---------------------------------------|--------------------------------------|----------------|---------|---------------|-------------------|------------|
|                                       | Red<br>meat                          | White<br>meats | Chicken | Fresh<br>fish | Processed<br>fish | Not stated |
| Easiness to prepare                   | 66                                   | 40             | 75      | 57            | 17                | 11         |
| Nutritional value                     | 60                                   | 41             | 69      | 65            | 7                 | 15         |
| Year round availability               | 53                                   | 33             | 58      | 36            | 11                | 25         |
| Easiness in deciding<br>its quality   | 56                                   | 36             | 61      | 51            | 7                 | 25         |
| Value for money                       | 64                                   | 39             | 72      | 54            | 8                 | 17         |
| Easiness in deciding<br>its freshness | 59                                   | 36             | 62      | 46            | 7                 | 22         |
| Stability of its prices               | 60                                   | 39             | 69      | 40            | 11                | 23         |
| Availability                          | 50                                   | 27             | 44      | 25            | 8                 | 43         |
| Essential in a well<br>balanced diet  | 53                                   | 35             | 66      | 57            | 7                 | 20         |
| Satisfying to eat                     | 60                                   | 39             | 73      | 55            | 7                 | 15         |
| Suitability for<br>special occasions  | 48                                   | 47             | 77      | 47            | 6                 | 14         |
| Ease in taking<br>home from shops     | 48                                   | 31             | 54      | 31            | 12                | 37         |
| Storability at home<br>(keeps well)   | 60                                   | 40             | 62      | 33            | 16                | 26         |
| Suitability for eating<br>by itself   | 56                                   | 32             | 70      | 49            | 11                | 23         |
| Its variety                           | 62                                   | 38             | 57      | 51            | 10                | 21         |
| For weight watching<br>diets          | 44                                   | 33             | 69      | 64            | 14                | 20         |
| No waste                              | 53                                   | 36             | 55      | 45            | 13                | 26         |
| Popularity with<br>children           | 51                                   | 31             | 60      | 38            | 7                 | 36         |

Note: \* more than one response possible  
Source: HPC Fish Consumption Survey

If we focus on the preferences for fresh fish in terms of particular sub-groups within the sample households, a number of observations can be made: Table 10 shows relative preferences for fish in terms of age group, ranking fish first. For the highest ranking characteristic of dietary advantages, it appears that this characteristic of fish is a relative preference over other meats for all age groups except for those aged over 60 years. In terms of nutritional value, those aged 21-35 years are relatively more concerned about this characteristic relative to other meats. The essentiality in a well balanced diet characteristic was relatively more important for the younger age groups (16-35 years).

It is notable that it seems younger age groups are better educated about judging the freshness of fish with greater proportions nominating easiness in deciding its freshness. It is also notable that the household shopper age group 60 years and over was relatively more concerned with the easy preparation of fish and suitability for eating by itself. Another feature of Table 10 worthy of comment is that younger age groups are more likely to point to the variety of fish as an advantage - indicating that young people are becoming more aware of this quality of fresh fish.

**Table 10. Proportion of Persons Preferring Fish by Food Characteristics and Age Group**

|                                    | <u>Per. Cent. of Persons Ranking Fresh Fish First Preference</u> |                              |                              |                              |                              |                                | <u>Total</u> |
|------------------------------------|--|------------------------------|------------------------------|------------------------------|------------------------------|--------------------------------|--------------|
|                                    | <u>16-20</u><br><u>years</u>                                     | <u>21-28</u><br><u>years</u> | <u>29-35</u><br><u>years</u> | <u>36-48</u><br><u>years</u> | <u>49-60</u><br><u>years</u> | <u>Over 60</u><br><u>years</u> |              |
| Easiness to prepare                | 20   | 23                           | 28                           | 28                           | 23                           | 33                             | 26           |
| Nutritional value                  | 45   | 52                           | 50                           | 49                           | 44                           | 35                             | 47           |
| Year round availability            | 11   | 9                            | 7                            | 11                           | 7                            | 13                             | 9            |
| Easiness in deciding its quality   | 38   | 25                           | 21                           | 24                           | 19                           | 17                             | 24           |
| Value for money                    | 26   | 17                           | 20                           | 19                           | 16                           | 18                             | 19           |
| Easiness in deciding its freshness | 49   | 38                           | 34                           | 33                           | 28                           | 29                             | 34           |
| Stability of its prices            | 12   | 5                            | 11                           | 12                           | 5                            | 11                             | 9            |
| Availability                       | 9  | 6                            | 6                            | 7                            | 5                            | 9                              | 7            |
| Essential in a well balanced diet  | 42   | 38                           | 41                           | 38                           | 35                           | 34                             | 38           |
| Satisfying to eat                  | 25   | 21                           | 25                           | 26                           | 20                           | 23                             | 23           |
| Suitability for special occasions  | 12   | 17                           | 21                           | 15                           | 11                           | 7                              | 15           |
| Ease in taking home from shops     | 13   | 8                            | 12                           | 12                           | 8                            | 11                             | 10           |
| Storability at home (keeps well)   | 11   | 5                            | 7                            | 5                            | 3                            | 9                              | 6            |
| Suitability for eating by itself   | 19   | 16                           | 19                           | 20                           | 14                           | 21                             | 18           |
| Its variety                        | 35   | 28                           | 34                           | 25                           | 21                           | 21                             | 27           |
| For weight watching diets          | 53   | 54                           | 58                           | 52                           | 50                           | 37                             | 52           |
| No waste                           | 20   | 21                           | 30                           | 21                           | 20                           | 17                             | 22           |
| Popularity with children           | 12   | 5                            | 11                           | 12                           | 8                            | 7                              | 9            |

Source: HPC Fish Consumption Survey

If we consider these comparative ranking results in terms of the income group of households, Table 11 summarises the survey data in terms of the proportion of household shoppers ranking fresh fish first preference as a meat. Dietary considerations appear to be uniform across all groups except those households with zero income for which it is relatively more important. This is also the case for nutritional value and essentiality in a well balanced diet. For households with higher average income (more than \$30,000), factors such as suitability for special occasions, the lack of wastage, ease of deciding its quality and freshness, value for money and satisfying to eat, appear to be relatively more important considerations.

**Table 11. Proportion of Persons Preferring Fish by Food Characteristics and Annual Household Income**

**Per Cent. of Persons Ranking Fresh Fish First Preference**

|  | No<br>income | Under<br>\$20,000 | \$20,001<br>to<br>\$30,000 | \$30,001<br>to<br>\$45,000 | \$45,001<br>to<br>\$60,000 | Over<br>\$60,000 | All<br>groups |
|--|--------------|-------------------|----------------------------|----------------------------|----------------------------|------------------|---------------|
| Easiness to prepare                      | 13           | 24                | 27                         | 30                         | 29                         | 32               | 26            |
| Nutritional value                        | 69           | 42                | 53                         | 51                         | 46                         | 68               | 47            |
| Year round<br>availability               | 13           | 8                 | 5                          | 3                          | 12                         | 3                | 9             |
| Easiness in<br>deciding its<br>quality   | 13           | 21                | 28                         | 28                         | 22                         | 29               | 24            |
| Value for money                          | 19           | 18                | 17                         | 23                         | 22                         | 23               | 19            |
| Easiness in<br>deciding its<br>freshness | 44           | 28                | 39                         | 44                         | 35                         | 52               | 34            |
| Stability of its<br>prices               | 6            | 3                 | 12                         | 12                         | 11                         | 6                | 9             |
| Availability                             | 19           | 9                 | 7                          | 5                          | 15                         | 6                | 7             |
| Essential in a<br>well balanced diet     | 63           | 36                | 38                         | 40                         | 48                         | 45               | 38            |
| Satisfying to eat                        | 13           | 24                | 22                         | 28                         | 28                         | 35               | 23            |
| Suitability for<br>special occasions     | 13           | 13                | 19                         | 17                         | 22                         | 16               | 15            |
| Ease in taking<br>home from shops        | 13           | 10                | 9                          | 12                         | 11                         | 16               | 10            |
| Storability at home<br>(keeps well)      | 6            | 10                | 7                          | 6                          | 9                          | 3                | 6             |
| Suitability for<br>eating by itself      | 31           | 18                | 22                         | 25                         | 15                         | 26               | 18            |
| Its variety                              | 31           | 35                | 32                         | 18                         | 34                         | 45               | 27            |
| For weight watching<br>diets             | 69           | 50                | 55                         | 59                         | 52                         | 58               | 52            |
| No waste                                 | 25           | 20                | 26                         | 29                         | 31                         | 52               | 22            |
| Popularity with<br>children              | 13           | 8                 | 13                         | 9                          | 8                          | 3                | 9             |

Source: HPC Fish Consumption Survey

Table 12 summarises this data by the birthplace characteristic sub-groups of long term Australian, first generation Australian and new Australian. Although the results are dominated by responses from long term Australians, a number of observations can be made about the advantages of fish as perceived by new and first generation Australians. First, in terms of new Australians, the characteristics of ease of deciding quality and freshness are relatively more important, perhaps pointing to the better education of fish in this sub-group who, as noted earlier, purchase fish on a more regular basis. This group is also more concerned with its variety and its satisfying eating qualities. First generation Australians focus comparatively more on stability of prices, but rank fresh fish relatively much lower as a first preference in terms of nutritional and dietary characteristics and suitability for eating by itself than the average for all households.

Table 12. Proportion of Persons Preferring Fish by Food Characteristics and Birthplace Characteristics

Per Cent of Persons Ranking Fresh Fish First Preference

|  | <u>Long term<br/>Australian</u> | <u>1st<br/>generation<br/>Australian</u> | <u>New<br/>Australian</u> | <u>Total</u> |
|--|---------------------------------|--|---------------------------|--------------|
| Easiness to prepare                      | 27                              | 18                                       | 27                        | 26           |
| Nutritional value                        | 48                              | 40                                       | 48                        | 47           |
| Year round<br>availability               | 10                              | 9  | 8                         | 9            |
| Easiness in<br>deciding its<br>quality   | 21                              | 28                                       | 30                        | 24           |
| Value for money                          | 19                              | 20                                       | 17                        | 19           |
| Easiness in<br>deciding its<br>freshness | 33                              | 34                                       | 40                        | 34           |
| Stability of its<br>prices               | 9                               | 13                                       | 8                         | 9            |
| Availability                             | 7                               | 6  | 7                         | 7            |
| Essential in a<br>well balanced diet     | 39                              | 35                                       | 36                        | 38           |
| Satisfying to eat                        | 21                              | 23                                       | 30                        | 23           |
| Suitability for<br>special occasions     | 15                              | 14                                       | 15                        | 15           |
| Ease in taking<br>home from shops        | 11                              | 10                                       | 10                        | 10           |
| Storability at home<br>(keeps well)      | 6                               | 5  | 5                         | 6            |
| Suitability for<br>eating by itself      | 18                              | 13                                       | 20                        | 18           |
| Its variety                              | 26                              | 27                                       | 31                        | 27           |
| For weight watching<br>diets             | 53                              | 44                                       | 55                        | 52           |
| No waste                                 | 23                              | 23                                       | 20                        | 22           |
| Popularity with<br>children              | 10                              | 6  | 6                         | 9            |

Source: HPC Fish Consumption Survey

4. FAMILY FISH CONSUMPTION

4.1 Frequency of Consumption of Fish

Household survey respondents were asked a series of questions related to usual household fish consumption behaviour. Firstly, the household shopper was asked to indicate the regularity of the household's consumption of fish. Table 13 below shows that "once a week" is the most common frequency of consumption, representing 36 per cent of all households. Some 20 per cent of respondents indicated consumption of fish 2-3 days a week, 3 per cent indicated 4-6 days a week and 1 per cent indicated daily fish consumption. In other words, some 60 per cent of households consume fish at least once a week.

It is interesting to note that Sydney respondents indicated they consume fish slightly more regularly than Melbourne households in terms of consumption "at least once a week" (62 per cent Sydney versus 59 per cent Melbourne).

Table 13: Frequency of Household Fish Consumption  
(per cent of respondents)

|                               | <u>Melbourne</u> | <u>Sydney</u> | <u>Total</u> |
|-------------------------------|------------------|---------------|--------------|
| Daily                         | 1                | 2             | 1            |
| 4-6 days a week               | 3                | 3             | 3            |
| 2-3 days a week               | 21               | 19            | 20           |
| Once a week                   | 34               | 38            | 36           |
| Once a fortnight              | 20               | 18            | 19           |
| Once a month                  | 13               | 11            | 12           |
| Once every 3 months           | 3                | 3             | 3            |
| Less than once every 3 months | 1                | -             | 1            |
| Not stated                    | 4                | 6             | 5            |
|                               | ---              | ---           | ---          |
|                               | 100              | 100           | 100          |

Source: HPC Fish Consumption Survey

If frequency of consumption is viewed in terms of particular sub-groups in the survey, some interesting variations are apparent.

Firstly, in terms of the age of the shopper, we find that generally speaking, the frequency of fish consumption increases as a function of age, as shown in Table 14. If we take, for example, the measure of eating fish "at least once a week", the highest incidence occurs for those aged 49-60 years (68 per cent) while the lowest incidence occurs for those aged 16-20 years (49 per cent).

**Table 14. Frequency of Fish Consumption by Age Groups of Respondents**

|                                  | 16-20<br>YEARS | 21-28<br>YEARS | 29-35<br>YEARS | 36-48<br>YEARS | 49-60<br>YEARS | Over 60<br>YEARS | Total |
|----------------------------------|----------------|----------------|----------------|----------------|----------------|------------------|-------|
| Daily                            | 2              | 2              | 1              | 1              | 1              | -                | 1     |
| 4-6 days a week                  | 1              | 3              | 1              | 4              | 5              | 5                | 3     |
| 2-3 days a week                  | 12             | 17             | 18             | 23             | 27             | 22               | 20    |
| Once a week                      | 33             | 35             | 41             | 32             | 35             | 37               | 36    |
| Once a fortnight                 | 27             | 21             | 19             | 17             | 16             | 17               | 19    |
| Once a month                     | 18             | 15             | 11             | 14             | 8              | 9                | 12    |
| Once every 3 months              | 5              | 4              | 3              | 2              | 3              | 2                | 3     |
| Less than once every<br>3 months | -              | -              | -              | 1              | 1              | 1                | 1     |
| Not stated                       | 2              | 3              | 6              | 6              | 4              | 7                | 5     |
|                                  | 100            | 100            | 100            | 100            | 100            | 100              | 100   |

Source: HPC Fish Consumption Survey

With regard to the household income group of households, frequency of consumption of fish tended to be greater for the higher income groups. Table 15 shows that the highest incidence of eating "at least once a week" occurs for those households with an income between \$45-60,000 per annum, (71 per cent) with the lowest incidence for those households with zero income (50 per cent).

**Table 15. Frequency of Fish Consumption by Annual Household Income of Respondents**  
(per cent of respondents)

|                                     | No<br>income | Under<br>\$20,000 | \$20,001<br>to<br>\$30,000 | \$30,001<br>to<br>\$45,000 | \$45,001<br>to<br>\$60,000 | Over<br>\$60,000 | Total |
|-------------------------------------|--------------|-------------------|----------------------------|----------------------------|----------------------------|------------------|-------|
| Daily                               | -            | 2                 | 2                          | 1                          | -                          | 3                | 1     |
| 4-6 days a<br>week                  | 19           | 6                 | 1                          | 6                          | 2                          | 3                | 3     |
| 2-3 days a<br>week                  | -            | 19                | 15                         | 20                         | 34                         | 16               | 20    |
| Once a week                         | 31           | 34                | 39                         | 35                         | 35                         | 39               | 36    |
| Once a<br>fortnight                 | 25           | 16                | 23                         | 17                         | 20                         |                  |       |
| Once a month                        | 6            | 16                | 12                         | 14                         | 8                          | 6                | 12    |
| Once every<br>3 months              | 6            | 1                 | 5                          | 3                          | -                          | 10               | 3     |
| Less than<br>once every<br>3 months | 6            | -                 | 1                          | 1                          | -                          | -                | 1     |
| Not stated                          | 7            | 6                 | 2                          | 3                          | 1                          | 4                | 5     |
|                                     | 100          | 100               | 100                        | 100                        | 100                        | 100              | 100   |

Source: HPC Fish Consumption Survey

Finally, in terms of the birthplace characteristics of households, as shown in Table 16, new Australians are significantly more frequent consumers of fish. Some 71 per cent of new Australians consume fish at least once a week as compared to 57 per cent of both long term Australians and first generation Australians. In terms of the particular country of origin of new Australians, highest frequencies of eating fish at least once a week occurred for North Americans (89 per cent), persons from the Middle East (79 per cent) and British and Irish (74 per cent).

**Table 16. Frequency of Fish Consumption by Birthplace Characteristics of Respondents**  
(per cent of respondents)

|                                  | <u>Long<br/>term<br/>Australian</u> | <u>1st<br/>generation<br/>Australian</u> | <u>New<br/>Australian</u> | <u>Total</u> |
|----------------------------------|-------------------------------------|--|---------------------------|--------------|
| Daily                            | -                                   | 3  | 4                         | 1            |
| 4-6 days a week                  | 3                                   | 5  | 3                         | 3            |
| 2-3 days a week                  | 19                                  | 18                                       | 24                        | 20           |
| Once a week                      | 35                                  | 31                                       | 40                        | 36           |
| Once a fortnight                 | 20                                  | 21                                       | 13                        | 19           |
| Once a month                     | 12                                  | 15                                       | 11                        | 12           |
| Once every 3 months              | 4                                   | -  | 2                         | 3            |
| Less than once every<br>3 months | 1                                   | -  | -                         | 1            |
| Not stated                       | 6                                   | 7  | 3                         | 5            |
|                                  | ---                                 | ---                                      | ---                       | ---          |
|                                  | 100                                 | 100                                      | 100                       | 100          |

Source: HPC Fish Consumption Survey



**4.2 Usual Place of Consumption of Fish**

Respondents who had indicated they consumed fish were asked the usual place of consumption of fish. The results show that the home was the most usual venue, as indicated by 88 per cent of respondents. Some 26 per cent indicated they consumed fish at restaurants and 19 per cent indicated they consumed take-away fish.

Table 17 shows that this consumption behaviour varied to some extent across age groups. While the incidence of cooking fish at home was fairly consistent across age groups (with the exception of the high incidence in the youngest age group), eating fish at restaurants or take-away was different for particular age groups. For instance, as shown in Table 17, eating fish at restaurants was greater than average for those aged 21-28 years, declining for those aged 29-35 years and increasing again as a function of increasing age. Take-away food consumption is relatively greater for those aged 21-48 years.

**Table 17. Usual Place of Consumption of Fish by Age Group of Respondents (per cent of respondents)**

|             | 16-20<br>YEARS | 21-28<br>YEARS | 29-35<br>YEARS | 36-48<br>YEARS | 49-60<br>YEARS | Over 60<br>YEARS | Total |
|-------------|----------------|----------------|----------------|----------------|----------------|------------------|-------|
| Home cooked | 99             | 88             | 89             | 85             | 86             | 87               | 88    |
| Restaurant  | 13             | 29             | 25             | 26             | 28             | 31               | 26    |
| Take-away   | 13             | 23             | 23             | 21             | 12             | 12               | 19    |
| Not stated  | -              | 2              | 2              | 3              | 3              | 1                | 2     |

Note: multiple response allowed  
 Source: HPC Fish Consumption Survey

In terms of the household fish consumption behaviour of different household income earning groups, Table 18 shows that the incidence of home cooked fish was fairly consistent across income groups but with a higher instance apparent for the zero income group and a lower proportion for those earning \$20-30,000. On the other hand, not surprisingly, the incidence of eating at restaurants was higher for the households reporting higher annual household incomes. Take-away fish consumption was fairly consistent across income groups with the notable exception of households on zero income which had a surprisingly low proportion indicating consumption of take-away fish. This result may not, however, be statistically reliable owing to the small number of respondents in this group.

~~Table 18. Usual Place of Consumption of Fish by Annual Household Income~~  
(per cent of respondents)

|             | No<br>income | Under<br>\$20,000 | \$20,001<br>to<br>\$30,000 | \$30,001<br>to<br>\$45,000 | \$45,001<br>to<br>\$60,000 | Over<br>\$60,000 | All<br>income<br>groups |
|-------------|--------------|-------------------|----------------------------|----------------------------|----------------------------|------------------|-------------------------|
| Home cooked | 94           | 89                | 84                         | 92                         | 92                         | 87               | 88                      |
| Restaurant  | 25           | 33                | 29                         | 29                         | 40                         | 37               | 26                      |
| Take-away   | 6            | 23                | 22                         | 27                         | 29                         | 23               | 19                      |
| Not stated  | -            | 1                 | 5                          | 1                          | 2                          | 3                | 2                       |

Note: multiple response allowed

Source: HPC Fish Consumption Survey

Table 19 shows that place of consumption behaviour varied to some extent between birthplace sub-groups. This table shows that new Australians were far more likely to consume home cooked fish than long term or first generation Australians. Conversely, the latter two groups were more likely to consume fish at restaurants or take-away fish.

~~Table 19. Usual Place of Consumption of Fish by Birthplace Characteristics~~  
(per cent of respondents)

|             | Long<br>term<br>Australian | 1st<br>generation<br>Australian | New<br>Australian | Total |
|-------------|----------------------------|---------------------------------|-------------------|-------|
| Home cooked | 86                         | 87                              | 94                | 88    |
| Restaurant  | 26                         | 27                              | 25                | 26    |
| Take-away   | 19                         | 21                              | 17                | 19    |
| Not stated  | 3                          | 2                               | -                 | 2     |

Note: multiple response allowed

Source: HPC Fish Consumption Survey

#### 4.3 Occasions for Fish Consumption

Household shopper respondents were asked at which meals fish is usually eaten for each place of fish consumption. Table 20 shows the results of responses to this question. It shows that the overwhelming most common eating time for fish is at dinner for either home cooked meals (85 per cent of respondents), restaurant meals (28 per cent) and take-away meals (20 per cent), with lunch the next most important time in each case.

**Table 20. Meals at which Fish is Usually Eaten**  
(per cent of respondents)

|                       | <u>Home<br/>cooked</u> | <u>Restaurant</u> | <u>Take<br/>away</u> |
|-----------------------|------------------------|-------------------|----------------------|
| Breakfast             | 1                      | -                 | -                    |
| Lunch                 | 11                     | 3                 | 5                    |
| Dinner                | 85                     | 28                | 20                   |
| Between meals         | 1                      | -                 | 1                    |
| Not stated/do not eat | 11                     | 71                | 77                   |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

Survey participants were then asked 'In what season is fish usually eaten'. Again, responses were concentrated into one category, that of 'all year'. Some 79 per cent of households indicated they consumed home cooked fish all year round, 24 per cent of households indicated eating fish at restaurants all year and 19 per cent of households indicated eating take-away fish all year round. The only significant seasonality of responses was clustered into summer fish consumption.

**Table 21. The Season When Fish is Usually Eaten**  
(per cent of respondents)

|                       | <u>Home<br/>cooked</u> | <u>Restaurant</u> | <u>Take<br/>away</u> |
|-----------------------|------------------------|-------------------|----------------------|
| Spring                | 1                      | -                 | -                    |
| Summer                | 7                      | 3                 | 2                    |
| Autumn                | 1                      | -                 | -                    |
| Winter                | 2                      | 1                 | 1                    |
| All year              | 79                     | 24                | 19                   |
| Not stated/do not eat | 12                     | 73                | 78                   |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

**4.4. Usual Type of Fish Purchased**

When household shoppers were asked the type of fish they usually purchased for each venue of eating, Tables 22, 23 and 24 show the results for home cooked meals, restaurant and take-away respectively. In the case of home cooked fish, households indicated a preference for purchase of fish fillets (52 per cent) although whole fish were nearly as popular (48 per cent). Canned and frozen fillets were significantly lower purchase items (14 per cent and 10 per cent respectively).

When it comes to restaurant fish preferences, respondents were more inclined to purchase fish fillets with dried and smoked fish as relatively irregular purchases. Plain fillets were the most usual purchase of respondents purchasing take-away fish.

~~Table 22. Type of Home-Cooked Fish Usually Purchased~~  
 (per cent of respondents)

|                          |    |
|--------------------------|----|
| Fillets                  | 52 |
| Whole fish               | 48 |
| Canned                   | 14 |
| Frozen fillets           | 10 |
| Smoked                   | 4  |
| Other frozen             | 2  |
| Dried                    | 2  |
| Not stated/not purchased | 12 |

Note: multiple response allowed  
 Source: HPC Fish Consumption Survey

~~Table 23. Type of Restaurant Fish Usually Purchased~~  
 (per cent of respondents)

|                          |    |
|--------------------------|----|
| Whole fillets            | 27 |
| Smoked                   | 2  |
| Dried fish               | 1  |
| Not stated/not purchased | 73 |

Note: multiple response allowed  
 Source: HPC Fish Consumption Survey

~~Table 24. Type of Take-Away Fish Usually Purchased~~  
 (per cent of respondents)

|                          |    |
|--------------------------|----|
| Plain fillets            | 20 |
| Fancy fresh species      | 3  |
| Not stated/not purchased | 78 |

Note: multiple response allowed  
 Source: HPC Fish Consumption Survey

A final point relates to the type of fish usually purchased for home consumption and the usual frequency of consumption. Table 25 shows the frequency of consumption of the four most popular fish types for all households. It shows that, in terms of eating at "least once a week", whole fish and fillets are almost as equally as frequently consumed. Some 36 per cent of households consume whole fish and 35 per cent of households consume fish fillets "at least once a week". This proportion falls to 9 per cent for canned fish and 6 per cent for frozen fillets.

Table 25. Frequency of Fish Consumption by Type of Home Cooked Fished ~~Usually Purchased~~  
 (per cent of respondents)

|                               | Whole fish | Fillets | Canned | Frozen fillets |
|-------------------------------|------------|---------|--------|----------------|
| Daily                         | 1          | 1       | -      | -              |
| 4-6 days a week               | 2          | 2       | 1      | -              |
| 2-3 days a week               | 11         | 12      | 3      | 2              |
| Once a week                   | 20         | 20      | 5      | 4              |
| Once a fortnight              | 8          | 10      | 3      | 2              |
| Once a month                  | 5          | 6       | 2      | 1              |
| Once every 3 months           | 1          | 1       | -      | -              |
| Less than once every 3 months | -          | -       | -      | -              |
| Not stated/not eaten          | 52         | 48      | 86     | 91             |
|                               | ---        | ---     | ---    | ---            |
|                               | 100        | 100     | 100    | 100            |

Source: HPC Fish Consumption Survey

**4.5 Usual Place of Fish Purchase**

A number of questions were asked to determine the fish purchasing patterns of households.

First of all, in relation to home cooked fish, the household shopper was asked the usual place of purchase of home cooked fish. Table 26 below shows that in almost 50 per cent of cases, the fish market is the usual venue. Specialist fish shops, however, were also important as a place of purchase (36 per cent) with supermarkets (18 per cent) and butcher shops (2 per cent) of lesser significance. When asked the usual person that purchases the fish, Table 27 shows that in 46 per cent of cases this was the household head, in 38 per cent of cases this was the grocery buyer and in 10 per cent of cases, 'whoever is passing'.

~~Table 26. Usual Place of Purchasing Fish to be Home-Cooked~~  
(per cent of respondents)

|             |    |
|-------------|----|
| Fish market | 49 |
| Fish shop   | 36 |
| Supermarket | 18 |
| Butcher     | 2  |
| Not stated  | 12 |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

~~Table 27. Person that Usually Purchases the Fish~~  
(per cent of respondents)

|                    |    |
|--------------------|----|
| Household head     | 46 |
| Grocery buyers     | 38 |
| Whoever is passing | 10 |
| Not stated         | 8  |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

In the case of fish consumption at restaurants, Table 28 shows that respondents are more inclined to consume fish meals at general restaurants (18 per cent) rather than restaurants specialising in fish (15 per cent).

~~Table 28. Usual Place of Purchasing Fish at Restaurant~~  
(per cent of respondents)

|                          |    |
|--------------------------|----|
| Other restaurant         | 18 |
| Fish restaurant          | 15 |
| Not stated/not purchased | 74 |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

When it comes to take-away fish venues, the most popular place of purchase was the local fast food shop (11 per cent of total responses) with traditional fish shops almost equally as popular (10 per cent).

~~Table 29. Usual Place of Purchasing Take-Away Fish~~  
(per cent of respondents)

|                          |    |
|--------------------------|----|
| Local fast food shop     | 11 |
| Traditional fish shop    | 10 |
| McDonald's               | 2  |
| Ethnic take-away         | 2  |
| Not stated/not purchased | 79 |

Note: multiple response allowed  
Source: HPC Fish Consumption Survey

5. RESPONDENTS VIEW OF FISH

5.1 Reasons for Eating Fish

In Section 3.2, the issue of relative consumer preferences for different meats was discussed, drawing out the relative perceived advantages that fish has over other types of meat. In this section, household shoppers are asked to respond to the specific single response question of "why fish is eaten".

The first question related to the perceived dietary benefits of fish. Responses to this question given in Table 30 below, show that the nutritional value of fish is highlighted by the most household shoppers. The related dietary importance is also stressed with 24 per cent indicating that "fish is an important element in a healthy diet" and 12 per cent indicating that fish is "traditionally an important part of diet". Also important is the fact that fish is "low in cholesterol" (11 per cent) and "non-fattening" (8 per cent).

Table 30. Reasons for Eating Fish  
(per cent of respondents)

|   |     |
|---|-----|
| Nutritional                             | 39  |
| An important element in a healthy diet  | 24  |
| Traditionally an important part of diet | 12  |
| Low in cholesterol                      | 11  |
| Non fattening                           | 8   |
| Not stated                              | 6   |
|   | --- |
|   | 100 |

Source: HPC Fish Consumption Survey

To further probe the reasons why people eat fish, respondents were asked to nominate some broader reasons for fish consumption. Table 31, shows that the fact that fish is quick and easy to prepare is to the forefront of consumers' minds with over 50 per cent of respondents nominating this particular virtue of fish. Other important reasons for eating of fish are that fish is "an alternative meal" (16 per cent), eaten for health reasons (12 per cent), and "a traditional dish" (2 per cent). On a more negative level, fish is seen as the "same as other meats" by 6 per cent of respondents.

**Table 31. Attitudes to Fish as a Food**

(per cent of respondents)

|                           |     |
|---------------------------|-----|
| Quick and easy to prepare | 52  |
| An alternative meal       | 16  |
| Eaten for health reasons  | 12  |
| Same as other meats       | 6   |
| Messy and difficult       | 5   |
| A traditional dish        | 2   |
| Not stated                | 7   |
|                           | --- |
|                           | 100 |

Source: HPC Fish Consumption Survey

**5.2. Preparation of Fish**

Another objective of the fish consumption survey was to identify the methods that consumers currently employ to prepare fish. Respondents were asked to nominate the best method of preparing or cooking fish. The results, shown on Table 32, indicate that grilling is regarded as the best method of preparing fish by about one-third of respondents (32 per cent) with shallow frying (26 per cent) slightly less important. Baking (12 per cent), steaming (11 per cent), deep frying (8 per cent) were also seen as important preparation methods.

**Table 32. Best Method of Preparing or Cooking Fish**

(per cent of respondents)

|                |     |
|----------------|-----|
| Grilling       | 32  |
| Shallow frying | 26  |
| Baking         | 12  |
| Steaming       | 11  |
| Deep frying    | 8   |
| Barbequing     | 4   |
| Eaten raw      | 1   |
| Not stated     | 6   |
|                | --- |
|                | 100 |

Source: HPC Fish Consumption Survey

It is interesting to note that although preferred preparation methods vary little between age groups and household income groups, there is some variance according to country of birth characteristics. Table 33 shows that grilling is far more frequently employed by long term Australians than new Australians while new Australians are more inclined to deep fry or steam fish than other Australians.



**Table 33. Best Method of Preparing Fish by Country of Birth**  
~~Characteristics of Respondents~~  
 (per cent of respondents)

|                | Long term<br><u>Australian</u> | First generation<br><u>Australian</u> | New<br><u>Australian</u> | All<br><u>persons</u> |
|----------------|--------------------------------|---------------------------------------|--------------------------|-----------------------|
| Grilling       | 35                             | 35                                    | 24                       | 32                    |
| Shallow frying | 27                             | 21                                    | 27                       | 27                    |
| Baking         | 12                             | 6                                     | 15                       | 12                    |
| Steaming       | 9                              | 15                                    | 14                       | 11                    |
| Deep frying    | 7                              | 8                                     | 13                       | 8                     |
| Barbequeing    | 4                              | 7                                     | 3                        | 4                     |
| Eaten raw      | 1                              | 1                                     | 1                        | 1                     |
| Not stated     | 5                              | 7                                     | 3                        | 5                     |
|                | ---                            | ---                                   | ---                      | ---                   |
|                | 100                            | 100                                   | 100                      | 100                   |

Source: HPC Fish Consumption Survey

**5.3. Factors Which May Prompt Purchase of More Fish**

An important component of the questionnaire related to the responses of household shoppers in terms of what would prompt them to purchase more fish. Table 34 shows the responses of all respondents when posed with this question. It shows that price is clearly the prime determinant in the demand for fish with 42 per cent indicating that cheaper prices would induce greater purchases. Other responses were spread between greater availability or variety, better taste and freshness and other factors.

**Table 34. Factors Which Would Prompt Respondents to Purchase More Fish**  
 (per cent of respondents)

|                      |     |
|----------------------|-----|
| Cheaper price        | 42  |
| Greater availability | 4   |
| Greater variety      | 3   |
| Better taste         | 3   |
| More freshness       | 3   |
| Other factors        | 36  |
| Not stated           | 9   |
|                      | --- |
|                      | 100 |

Source: HPC Fish Consumption Survey

As shown in Table 35, this sensitivity to price was evident in all age groups. Price, however, was a more important determinant of household consumption for younger households. Greater availability was more of an issue for those aged 49-60 years while the youngest age group (16-20 years) was looking for greater variety relative to other groups.

**Table 35. Factors Which Prompt Respondents to Purchase More Fish by Age Group of Respondents**  
(per cent of respondents)

|                      | 16-20<br>YEARS | 21-28<br>YEARS | 29-35<br>YEARS | 36-48<br>YEARS | 49-60<br>YEARS | Over 60<br>YEARS | Total |
|----------------------|----------------|----------------|----------------|----------------|----------------|------------------|-------|
| Cheaper price        | 48             | 45             | 46             | 38             | 37             | 38               | 42    |
| Greater availability | 1              | 3              | 4              | 3              | 9              | 2                | 4     |
| Greater variety      | 6              | 3              | 3              | 4              | 2              | 2                | 3     |
| Better taste         | 4              | 4              | 4              | -              | 2              | -                | 3     |
| More freshness       | 1              | 3              | 3              | 3              | 5              | 4                | 3     |
| Other factors        | 34             | 36             | 31             | 40             | 36             | 41               | 36    |
| Not stated           | 6              | 6              | 9              | 12             | 9              | 13               | 9     |
|                      | 100            | 100            | 100            | 100            | 100            | 100              | 100   |

Source: HPC Fish Consumption Survey

In terms of the birthplace characteristics of households, as shown in Table 36, new Australians and first generation Australians were more sensitive to the price of fish. First generation Australians are also more inclined to be influenced by variety and availability than the other groups.

**Table 36. Factors Which Would Prompt Respondents to Purchase More Fish by Birthplace Characteristic of Respondents**  
(per cent of respondents)

|                      | Long term<br>Australian | First generation<br>Australians | New<br>Australian | All<br>persons |
|----------------------|-------------------------|---------------------------------|-------------------|----------------|
| Cheaper price        | 40                      | 45                              | 46                | 42             |
| Greater availability | 4                       | 5                               | 3                 | 4              |
| Greater variety      | 3                       | 6                               | 2                 | 3              |
| Better taste         | 2                       | 2                               | 4                 | 3              |
| More freshness       | 3                       | 5                               | 3                 | 3              |
| Other factors        | 38                      | 28                              | 34                | 36             |
| Not stated           | 10                      | 9                               | 8                 | 9              |
|                      | 100                     | 100                             | 100               | 100            |

Source: HPC Fish Consumption Survey

Finally, as regards the household income group of households, not surprisingly, sensitivity to price tended to be greater for the lower income groups. The low responses to price for those on zero income is likely to be a function of the small sample size represented and the inherent statistical unreliability of the results.

**Table 37. Factors Which Would Prompt Respondents to Purchase More Fish by Income Group of Respondents**  
(per cent of respondents)

|                      | No income | Under \$20,000 | \$20,001 to \$30,000 | \$30,001 to \$45,000 | \$45,001 to \$60,000 | Over \$60,000 | All income groups |
|----------------------|-----------|----------------|----------------------|----------------------|----------------------|---------------|-------------------|
| Cheaper price        | 31        | 47             | 44                   | 42                   | 41                   | 42            | 42                |
| Greater availability | -         | 3              | 5                    | 6                    | 8                    | 6             | 4                 |
| Greater variety      | -         | 5              | 5                    | 4                    | 2                    | 6             | 3                 |
| Better taste         | -         | 6              | 1                    | 4                    | -                    | -             | 3                 |
| More freshness       | 19        | 2              | 6                    | 1                    | 5                    | -             | 3                 |
| Other factors        | 44        | 31             | 31                   | 34                   | 42                   | 46            | 36                |
| Not stated           | 6         | 6              | 8                    | 9                    | 2                    | -             | 9                 |
|                      | 100       | 100            | 100                  | 100                  | 100                  | 100           | 100               |

Source: HPC Fish Consumption Survey

**5.4 Perceived Best Features of Fish**

Survey respondents were asked to nominate what they regarded as the best features of fish. Table 38 shows the responses of household shoppers to this question. Clearly heading the list of the perceived attributes of fish is its taste or flavour with 39 per cent of all respondents nominating. Nutritional value was also regarded as important (14 per cent nominating) as well as the non-filling or light meal characteristic of fish (8 per cent). Next most important were ease of preparation (6 per cent), freshness (2 per cent) and tenderness (2 per cent).

**Table 38. Perceived Best Features of Fish**  
(per cent of respondents)

|                        |     |
|------------------------|-----|
| Taste/flavour          | 39  |
| Nutritional value      | 14  |
| Not filling/light meal | 8   |
| Ease of preparation    | 6   |
| Freshness              | 2   |
| Tenderness             | 2   |
| Variety                | 1   |
| Price                  | 1   |
| Other features         | 20  |
| Not stated             | 7   |
|                        | 100 |

Source: HPC Fish Consumption Survey

If we look at these perceived best attributes of fish in terms of the age group of the survey respondent, some notable variances are evident. As shown in Table 39, taste and flavour were slightly more important factors for the younger age groups (16-35 years) and for those over 60 years. Nutritional value, however, was relatively more important for the 36-48 years age group. It is notable that older people (over 60 years of age) regard the fact that fish is not filling or a light meal as relatively more important than other age groups. Ease of preparation is a relatively more positive feature of fish for those aged 49-60 years.

**Table 39. Perceived Best Features of Fish by Age Group of Respondents**  
(per cent of respondents)

|                        | 16-20<br>YEARS | 21-28<br>YEARS | 29-35<br>YEARS | 36-48<br>YEARS | 49-60<br>YEARS | Over 60<br>YEARS | Total |
|------------------------|----------------|----------------|----------------|----------------|----------------|------------------|-------|
| Taste/flavour          | 52             | 40             | 41             | 34             | 38             | 40               | 39    |
| Nutritional value      | 8              | 10             | 14             | 20             | 16             | 11               | 14    |
| Not filling/light meal | 4              | 8              | 9              | 8              | 7              | 15               | 8     |
| Ease of preparation    | -              | 5              | 9              | 7              | 10             | 5                | 6     |
| Freshness              | -              | 3              | 1              | 4              | 1              | 1                | 2     |
| Tenderness             | 1              | 3              | 2              | 3              | 1              | 5                | 2     |
| Variety                | -              | 2              | -              | -              | -              | -                | 1     |
| Price                  | -              | 2              | 1              | -              | -              | -                | 1     |
| Other features         | 32             | 23             | 19             | 17             | 19             | 16               | 20    |
| Not stated             | 3              | 4              | 4              | 7              | 8              | 7                | 7     |
|                        | 100            | 100            | 100            | 100            | 100            | 100              | 100   |

Source: HPC Fish Consumption Survey

In terms of the birthplace characteristics of respondents, Table 40 shows that taste or flavour is a relatively more important feature of fish for long term Australians. New Australians were, however, more likely to point to the nutritional value of fish. First generation Australians were relatively more concerned with the not filling/light meal characteristic of fish.

**Table 40. Perceived Best Features of Fish by Birthplace Characteristics of Respondents**  
(per cent of respondents)

|                        | Long term<br><u>Australian</u> | First generation<br><u>Australian</u> | New<br><u>Australian</u> | All<br><u>persons</u> |
|------------------------|--------------------------------|---------------------------------------|--------------------------|-----------------------|
| Taste/flavour          | 42                             | 36                                    | 34                       | 39                    |
| Nutritional value      | 13                             | 15                                    | 16                       | 14                    |
| Not filling/light meal | 7                              | 13                                    | 8                        | 8                     |
| Ease of preparation    | 8                              | 3                                     | 5                        | 6                     |
| Freshness              | 2                              | 1                                     | 2                        | 2                     |
| Tenderness             | 2                              | 5                                     | 2                        | 2                     |
| Variety                | 1                              | 1                                     | 1                        | 1                     |
| Price                  | -                              | 1                                     | 1                        | 1                     |
| Other features         | 19                             | 17                                    | 27                       | 20                    |
| Not stated             | 6                              | 7                                     | 4                        | 7                     |
|                        | ---                            | ---                                   | ---                      | ---                   |
|                        | 100                            | 100                                   | 100                      | 100                   |

Source: HPC Fish Consumption Survey

Finally, in terms of the annual household income of households surveyed, Table 41 shows that taste and flavour again dominate the responses of all groups, but relatively more dominant for those earning \$45-60,000 per annum and \$20-30,000 per annum. Other results are fairly consistent between groups but with the highest household income group regarding the not filling/light meal and ease of preparation characteristics as relatively more important attributes of fish.

**Table 41. Perceived Best Features of Fish by Annual Household Income of Respondents**  
(per cent of respondents)

|                        | No<br>income | Under<br>\$20,000 | \$20,001<br>to<br>\$30,000 | \$30,001<br>to<br>\$45,000 | \$45,001<br>to<br>\$60,000 | Over<br>\$60,000 | All<br>income<br>groups |
|------------------------|--------------|-------------------|----------------------------|----------------------------|----------------------------|------------------|-------------------------|
| Taste/flavour          | 31           | 36                | 42                         | 36                         | 54                         | 39               | 39                      |
| Nutritional value      | 19           | 10                | 14                         | 15                         | 12                         | 13               | 14                      |
| Not filling/light meal | 6            | 9                 | 8                          | 9                          | 5                          | 13               | 8                       |
| Ease of preparation    | 6            | 7                 | 8                          | 9                          | 3                          | 10               | 6                       |
| Freshness              | 6            | 1                 | 2                          | 3                          | 3                          | -                | 2                       |
| Tenderness             | -            | 4                 | 2                          | 1                          | 2                          | -                | 2                       |
| Variety                | -            | 2                 | 1                          | 1                          | -                          | 1                | 1                       |
| Price                  | -            | 1                 | 1                          | -                          | 2                          | -                | 1                       |
| Other features         | 25           | 24                | 20                         | 22                         | 14                         | 20               | 20                      |
| Not stated             | 7            | 6                 | 2                          | 4                          | 5                          | 4                | 7                       |
|                        | ---          | ---               | ---                        | ---                        | ---                        | ---              | ---                     |
|                        | 100          | 100               | 100                        | 100                        | 100                        | 100              | 100                     |

Source: HPC Fish Consumption Survey

**5.5 Perceived Worst Features of Fish**

A final area of interest to the study of fish consumption patterns is what respondents view as the worst characteristics of fish. The results to this question are given below in Table 42 which shows the outstanding "worst feature" of fish to be "bones". Some 52 per cent of respondents mentioned this feature and was clearly ahead of smell (12 per cent), cleaning (6 per cent), the head (6 per cent) and price (4 per cent) as the perceived worst characteristics of fish.

**Table 42. Perceived Worst Features of Fish**  
(per cent of respondents)

|                |     |
|----------------|-----|
| Bones          | 52  |
| Smell          | 12  |
| Cleaning       | 6   |
| Head           | 4   |
| Price          | 4   |
| Scales         | 1   |
| Taste/flavour  | 1   |
| Other features | 14  |
| Not stated     | 6   |
|                | --- |
|                | 100 |

Source: HPC Fish Consumption Survey

If we segment these total responses into age categories, Table 43 shows that "bones" are a concern for all household shopper age groups but particularly so for those aged 16-20 years. These younger households were also relatively more perturbed by the "head" of the fish. Other responses were fairly uniform across age groups.

**Table 43. Perceived Worst Feature of Fish by Age Group of Respondents**  
(per cent of respondents)

|                | 16-20<br>years | 21-28<br>years | 29-35<br>years | 36-48<br>years | 49-60<br>years | Over 60<br>years | Total |
|----------------|----------------|----------------|----------------|----------------|----------------|------------------|-------|
| Bones          | 61             | 48             | 53             | 48             | 51             | 52               | 52    |
| Smell          | 8              | 10             | 12             | 13             | 11             | 12               | 12    |
| Cleaning       | 4              | 7              | 6              | 6              | 7              | 2                | 6     |
| Head           | 12             | 6              | 2              | 2              | 2              | 1                | 4     |
| Price          | -              | 4              | 6              | 5              | 3              | 3                | 4     |
| Scales         | 1              | 3              | -              | 1              | 1              | 1                | 1     |
| Taste/flavour  | 1              | -              | 1              | 1              | -              | 1                | 1     |
| Other features | 9              | 17             | 15             | 16             | 17             | 16               | 14    |
| Not stated     | 4              | 5              | 5              | 8              | 8              | 12               | 6     |
|                | ---            | ---            | ---            | ---            | ---            | ---              | ---   |
|                | 100            | 100            | 100            | 100            | 100            | 100              | 100   |

Source: HPC Fish Consumption Survey

In terms of the reported annual household income of households "bones" were more of an issue for those earning \$20-30,000 per annum. Surprisingly, price of fish was of most concern to those households with the highest annual income.

~~Table 44. Perceived Worst Features of Fish by Income Group of Respondents~~  
(per cent of respondents)

|                | No<br>income | Under<br>\$20,000 | \$20,001<br>to<br>\$30,000 | \$30,001<br>to<br>\$45,000 | \$45,001<br>to<br>\$60,000 | Over<br>\$60,000 | All<br>income<br>groups |
|----------------|--------------|-------------------|----------------------------|----------------------------|----------------------------|------------------|-------------------------|
| Bones          | 38           | 50                | 62                         | 46                         | 55                         | 32               | 52                      |
| Smell          | 13           | 12                | 12                         | 13                         | 15                         | 13               | 12                      |
| Cleaning       | -            | 7                 | 5                          | 9                          | 3                          | -                | 6                       |
| Head           | -            | 7                 | 2                          | 6                          | 6                          | 3                | 4                       |
| Price          | 13           | 1                 | 3                          | 5                          | 5                          | 16               | 4                       |
| Scales         | -            | 2                 | 3                          | 1                          | 2                          | 3                | 1                       |
| Taste/flavour  | -            | 1                 | 1                          | 1                          | -                          | -                | 1                       |
| Other features | 23           | 14                | 9                          | 14                         | 11                         | 33               | 14                      |
| Not stated     | 13           | 6                 | 3                          | 5                          | 3                          | -                | 6                       |
|                | 100          | 100               | 100                        | 100                        | 100                        | 100              | 100                     |

Source: HPC Fish Consumption Survey

Finally, in terms of the birthplace characteristics of respondents, the outstanding perceived worst feature of fish, that of "bones", was again a major concern of all groups, but slightly more so for long term Australians. Table 45 shows that other responses were fairly even across groups, but long term Australians were more inclined to regard price of fish as a worst feature and new Australians more concerned about cleaning of fish.

~~Table 45. Perceived Worst Features of Fish by Nationality of Respondents~~  
(per cent of respondents)

|                | Long term<br>Australian | First generation<br>Australians | New<br>Australian | All<br>persons |
|----------------|-------------------------|---------------------------------|-------------------|----------------|
| Bones          | 53                      | 47                              | 51                | 52             |
| Smell          | 12                      | 12                              | 12                | 12             |
| Cleaning       | 6                       | 8                               | 9                 | 6              |
| Head           | 3                       | 5                               | 2                 | 4              |
| Price          | 5                       | 2                               | 1                 | 4              |
| Scales         | 1                       | 2                               | 1                 | 1              |
| Taste/flavour  | 1                       | -                               | -                 | 1              |
| Other features | 13                      | 16                              | 20                | 14             |
| Not stated     | 6                       | 8                               | 4                 | 6              |
|                | 100                     | 100                             | 100               | 100            |

Source: HPC Fish Consumption Survey

APPENDIX I

SURVEY OF FISH CONSUMPTION IN AUSTRALIA

Good evening. My name is ..... and I am an interviewer with Hassell Planning Consultants, an Australian Market research company. Today we are conducting a survey of the consumption of fish by Australians for the Department of Primary Industry, and would like to ask the shopper in the household a few questions.

~~Section A. General Meat and Fish Consumption~~

Q.1 DO YOU USUALLY PRUCHASE THE FOLLWING ITEMS ON A REGULAR BASIS (AT LEAST ONCE A MONTH)? (ALLOW MULTIPLE RESPONSES)

- Red meats (beef, lamb) ..... 1
- White meats (veal, pork) ..... 2
- Chicken ..... 3
- Fresh Fish ..... 4
- Processed Fish (frozen, canned, smoked) ... 5

IF YES TO ANY ITEM PROCEED TO QUESTION 2, IF NO TO ALL ITEMS ASK RESPONDENT WHY, WRITE RESPONSE IN SPACE PROVIDED AND GO TO QUESTION 36.

.....  
 .....

Could you indicate your order of preference between these five food types (ranked 1-5) in terms of:

|  | <u>Red Meats</u> | <u>White Meats</u> | <u>Chicken</u> | <u>Fresh Fish</u> | <u>Processed Fish</u> |
|--|------------------|--------------------|----------------|-------------------|-----------------------|
| Q.2 EASINESS TO PREPARE                | .....            | .....              | .....          | .....             | .....                 |
| Q.3 NUTRITIONAL VALUE                  | .....            | .....              | .....          | .....             | .....                 |
| Q.4 YEAR ROUND AVAILABILITY            | .....            | .....              | .....          | .....             | .....                 |
| Q.5 EASINESS IN DECIDING ITS QUALITY   | .....            | .....              | .....          | .....             | .....                 |
| Q.6 VALUE FOR MONEY                    | .....            | .....              | .....          | .....             | .....                 |
| Q.7 EASINESS IN DECIDING ITS FRESHNESS | .....            | .....              | .....          | .....             | .....                 |
| Q.8 STABILITY OF ITS PRICES            | .....            | .....              | .....          | .....             | .....                 |



|   | <u>Red Meats</u> | <u>White Meats</u> | <u>Chicken</u> | <u>Fresh Fish</u> | <u>Processed Fish</u> |
|---|------------------|--------------------|----------------|-------------------|-----------------------|
| Q.9 ITS AVAILABILITY                      | .....            | .....              | .....          | .....             | .....                 |
| Q.10 ESSENTIALITY IN A WELL BALANCED DIET | .....            | .....              | .....          | .....             | .....                 |
| Q.11 SATISFYING TO EAT                    | .....            | .....              | .....          | .....             | .....                 |
| Q.12 SUITABILITY FOR SPECIAL OCCASIONS    | .....            | .....              | .....          | .....             | .....                 |
| Q.13 EASE IN TAKING HOME FROM SHOPS       | .....            | .....              | .....          | .....             | .....                 |
| Q.14 STORABILITY AT HOME (KEEPS WELL)     | .....            | .....              | .....          | .....             | .....                 |
| Q.15 SUITABILITY FOR EATING BY ITSELF     | .....            | .....              | .....          | .....             | .....                 |
| Q.16 ITS VARIETY                          | .....            | .....              | .....          | .....             | .....                 |
| Q.17 FOR WEIGHT WATCHING DIETS            | .....            | .....              | .....          | .....             | .....                 |
| Q.18 NO WASTE                             | .....            | .....              | .....          | .....             | .....                 |
| Q.19 POPULARITY WITH CHILDREN             | .....            | .....              | .....          | .....             | .....                 |

Section B - Family Fish Consumption

Looking now at the fish consumption your household:

|                                     |     | <u>Home Cooked</u> | <u>Restaurant</u> | <u>Take away</u> |
|-------------------------------------|-----|--------------------|-------------------|------------------|
| Q.20 DO YOU OR YOUR FAMILY EAT FISH | Yes | 1                  | 3                 | 5                |
|                                     | No  | 2                  | 4                 | 6                |

If no to all three categories go to question 29, if yes to any category continue with Q.21

|  |       |       |       |
|--|-------|-------|-------|
| Q.21 HOW MANY IN YOUR FAMILY EAT FISH? | ..... | ..... | ..... |
|--|-------|-------|-------|

Q.22 HOW OFTEN IS FISH EATEN

|                         |   |
|-------------------------|---|
| Daily                   | 1 |
| 4 to 6 days a week      | 2 |
| 2 to 3 days a week      | 3 |
| once a week             | 4 |
| once a fortnight        | 5 |
| once a month            | 6 |
| once every 3 months     | 7 |
| less than once 3 months | 8 |

Q.23 AT WHAT MEALS IS FISH USUALLY EATEN? (ALLOW MULTIPLE RESPONSES)

|               | <u>Home Cooked</u> | <u>Restaurant</u> | <u>Take away</u> |
|---------------|--------------------|-------------------|------------------|
| Breakfast     | 1                  | 1                 | 1                |
| Lunch         | 2                  | 2                 | 2                |
| Dinner        | 3                  | 3                 | 3                |
| Between meals | 4                  | 4                 | 4                |

Q.24 IN WHAT SEASON IF FISH USUALLY EATEN? (ALLOW MULTIPLE RESPONSES)

|          |   |   |   |
|----------|---|---|---|
| Spring   | 1 | 1 | 1 |
| Summer   | 2 | 2 | 2 |
| Autumn   | 3 | 3 | 3 |
| Winter   | 4 | 4 | 4 |
| All year | 5 | 5 | 5 |
| Easter   | 6 | 6 | 6 |

Q.25 WHICH TYPE OF FISH DO YOU USUALLY BUY? (ALLOW MULTIPLE ANSWERS)

|         |   |         |         |   |
|---------|---|---------|---------|---|
| whole   | 1 | whole   | plain   |   |
| fresh   |   | fillets | fillets | 1 |
| fillets | 2 | dried   | fancy   |   |
| canned  | 3 | smoked  | fresh   |   |
| frozen  |   |         | species | 2 |
| fillets | 4 |         |         |   |
| other   |   |         |         |   |
| frozen  | 5 |         |         |   |
| dried   | 6 |         |         |   |
| smoked  | 7 |         |         |   |

Q.26 WHERE DO YOU USUALLY BUY FISH? (ALLOW MULTIPLE ANSWERS)

|              |   |                  |   |                       |   |
|--------------|---|------------------|---|-----------------------|---|
| fish market  | 1 | fish restaurant  | 1 | McDonald's            | 1 |
| fish shop    | 2 | other restaurant | 2 | Local fast food shop  | 2 |
| butcher      | 3 |                  |   | Traditional fish shop | 3 |
| super-market | 4 |                  |   | Ethnic take away      | 4 |

Q.27 WHO EATS THE FISH?  
(ALLOW MULTIPLE ANSWERS)

|                           |   |   |   |
|---------------------------|---|---|---|
| Adult males               | 1 | 1 | 1 |
| Adult females             | 2 | 2 | 2 |
| Teenagers (12-17 years)   | 3 | 3 | 3 |
| Children (under 12 years) | 4 | 4 | 4 |

Q.28 WHO BUYS THE FISH?  
(ALLOW MULTIPLE ANSWERS)

|                    |   |
|--------------------|---|
| Household head     | 1 |
| Grocery buyers     | 2 |
| Whoever is passing | 3 |

Q.29 WHY DON'T YOU EAT FISH?

|   |   |
|---|---|
| Am a vegetarian and eat no meat of any kind | 1 |
| Can't stand the bones                       | 2 |
| Don't like the taste of fish                | 3 |
| Find freshness very hard to assess          | 4 |
| Other                                       | 5 |

**Section C - Respondents View of Fish**

We would now like to have your personal views on fish by answering a few simple statements.

Q.30 FISH IS EATEN BECAUSE IT IS ..... (SINGLE RESPONSE)

|   |   |
|---|---|
| nutritional                             | 1 |
| non-fattening                           | 2 |
| low in cholesterol                      | 3 |
| an important element in a healthy diet  | 4 |
| traditionally an important part of diet | 5 |

Q.31 FISH IS ..... (SINGLE RESPONSE)

|                           |   |
|---------------------------|---|
| quick and easy to prepare | 1 |
| same as other meats       | 2 |
| an alternative meal       | 3 |
| messy and difficult       | 4 |
| eaten for health reasons  | 5 |
| a traditional dish        | 6 |

Q.32 FISH IS BEST PREPARED OR COOKED BY ..... (SINGLE REPOSE)

|                |   |
|----------------|---|
| shallow frying | 1 |
| grilling       | 2 |
| baking         | 3 |
| barbequing     | 4 |
| deep frying    | 5 |
| eaten raw      | 6 |
| steaming       | 7 |

Q.33 WHAT WOULD PROMPT YOU TO BUY MORE FISH?

.....  
.....

Q.34 WHAT DO YOU FEEL IS THE BEST FEATURE OF FISH?

.....  
.....

Q.35 WHAT IS THE WORST FEATURE OF FISH?

.....  
.....

**Section D - Details on Household**

Q.36 HOW MANY MEMBERS ARE THERE IN YOUR HOUSEHOLD?

adults .....  
children under 15 years .....

Q.37 SEX OF RESPONDENT (ASSESS OVER PHONE)

male                    1                    female                    2

Q.38 COULD YOU INDICATE YOUR APPROXIMATE AGE

16-28 years            1                    21-38 years            2  
29-35 years            3                    36-48 years            4  
49-60 years            5                    over 60 years            6

Q.39 COULD YOU INDICATE WHETHER YOU ARE A:

|  |    |
|--|----|
| Long term Australian (second generation or more) | 1  |
| 1st generation Australian                        | 2  |
| New Australian                                   |    |
| * South European                                 | 3  |
| * North European                                 | 4  |
| * British or Irish                               | 5  |
| * South or Central American                      | 6  |
| * North American                                 | 7  |
| * Middle Eastern                                 | 8  |
| * South East Asian                               | 9  |
| * Other Asian                                    | 10 |
| * Other  | 11 |

Q.40 COULD YOU INDICATE YOUR APPROXIMATE HOUSEHOLD INCOME BEFORE DEDUCTING INCOME TAX?

|                     |   |
|---------------------|---|
| No income           | 1 |
| Less than \$20,000  | 2 |
| \$20,000 - \$30,000 | 3 |
| \$30,000 - \$45,000 | 4 |
| \$45,001 - \$60,000 | 5 |
| over \$60,000       | 6 |