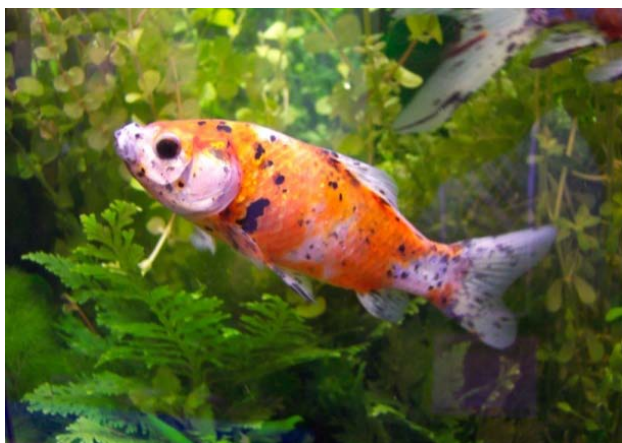


# ORNAMENTAL AQUATIC TRADE ASSOCIATION

*"The voice of the ornamental fish industry"*



## Customer Profile Survey Results Winter 2011/2012

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*Fish keeping in the UK has enjoyed a long and varied history attracting interest from all around the country, male and female, of all ages and for a variety of reasons. With such a diversity of fish keepers in the UK, are there any trends that can be observed? What motivates people to keep fish? How long have they been keeping fish for? What services can retailers provide that fish keepers find most useful? Are these services the same whether the keeper own tropical fish or ponds?*

*This survey was conducted to answer these questions and many more and to provide a snap shot of the 2011/2012 winter ornamental aquatic trade. In conjunction with the similar studies conducted in 1995/96 and 2005/06, we have also attempted to see if any changes have occurred over the last 16 years.*

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## 1. The Survey

The design of our survey followed that of our previous surveys conducted in 1995/1996 and 2005/2006, consisting of double-sided A6 postcards. Participating pet stores selling aquatic livestock were provided with 50 survey cards and were asked to get their customers to complete these cards at the point of sale. The survey was conducted during December 2011 and January 2012. A copy of the survey card can be found in the Annex 1.

The format of this report has been changed from that of previous reports to reflect that the results of this survey provides a profile of customers visiting retailers during the survey period. Bullet point findings have been included at the beginning of each section followed by supporting tables, graphs and text where appropriate. These can be used to determine the accuracy of the findings stated.

A total of 26 stores participated in this survey resulting in 728 respondents.

## 2. Limitations

All surveys carry a likelihood of incurring error. The most accurate way of determining trends and behaviours of a population would be to obtain the relevant information from *all* members of that population. While accuracy would be perfect, it is impossible to achieve. Instead, a sample of the population can be taken making the assumption that this sample accurately represents the whole population. However, this can be a dangerous assumption to make. The smaller the sample, the greater caution must be taken when drawing conclusions from the data.

Ensure that a sample of people is representative of the whole population requires that individuals are chosen using stratified random sampling technique and all are willing to complete such a study. Achieving a stratified random sample of the whole population is difficult, time consuming and costly to accomplish. National polls by groups such as Gallup claim to achieve an accurate view of public opinion by ensuring their sample of approximately 1,000 is representative of the whole nation in terms of age, gender, ethnicity, employment status, geographic location etc. This is beyond the abilities of our survey and therefore, the results within should be treated as a glimpse into the behaviour and nature of fish keepers rather than the exact truth about all fish keepers in the UK.

The limitations with our study are:

- Small sample size
- Relatively few sample sites (i.e. not geographically representative)
- Dependent upon who visits retailers **and** who is prepared to complete the survey card
- Seasonal differences in buying/visiting behaviour.

## Results

### Background

#### 3. How many households in the UK own fish?

- *Up to 3.9 million homes in the UK keep fish.*
- *There are between 117m and 134m fish kept in the UK.*

There are 26.3 million households in the UK<sup>1</sup> of which it is estimated that 9% keep indoor fish and 6% keep outdoor fish<sup>2</sup>. Making the assumption that there is no overlap of indoor and outdoor fish keepers, it is estimated that there are 3.9 million households in the UK owning fish. However, this assumption is probably incorrect and the true figure may therefore be somewhat lower. The same calculations were conducted in our previous surveys and are outlined in Table 1. Using the mean and median number of fish kept per fish keeper calculated later on in this report, there are between 117m to 134 million fish kept in the UK.

**Table 1. Estimate on the number of households in the UK owning fish**

Year of OATA Survey	Number of Households (millions)
1996	3.5*
2005	4.1*
2011	3.9

\*Figures from previous OATA surveys

### General Ownership

#### 4. What type of fish do customers keep?

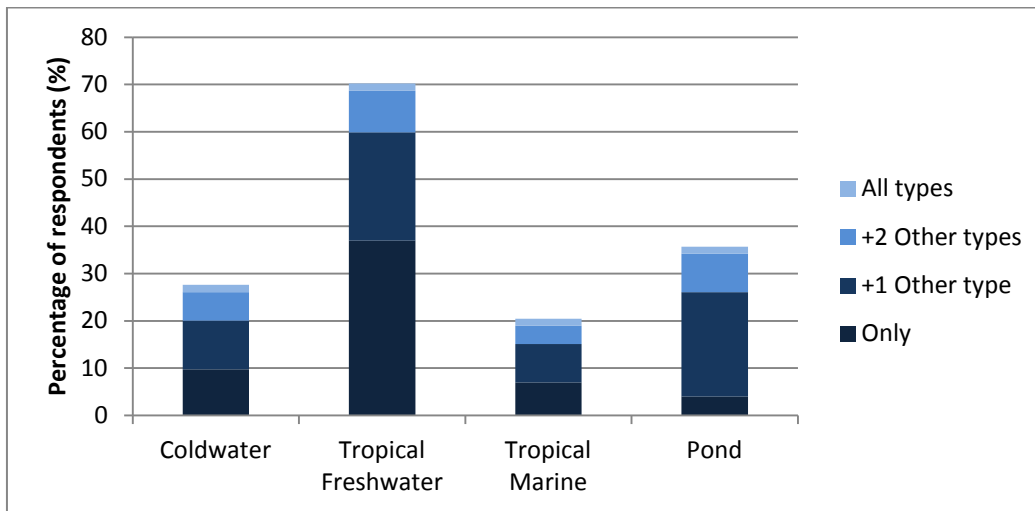
- *70% of customers visiting retailers keep tropical freshwater fish. Half of these keep this type of fish only.*
- *Pond fish keeping is the next most popular type of fish keeping. While marine fish keeping is the less frequently kept, 1 in 5 customers visiting retailers keep marine fish.*
- *13.7% of customers keep tropical freshwater and pond fish and 5.1% keep coldwater, tropical freshwater and pond fish.*

Our survey obtained data on the four different types of fish keeping: Indoor coldwater, tropical freshwater, tropical marine and pond. Survey participants were asked to provide the number of aquaria/ponds and the total number of fish they own for each group. Of the participants that provided a valid answer to this question, the breakdown of fish keepers can be found in Fig 1.

<sup>1</sup> Office of National Statistics: <http://www.ons.gov.uk/ons/rel/family-demography/families-and-households/2011/index.html>

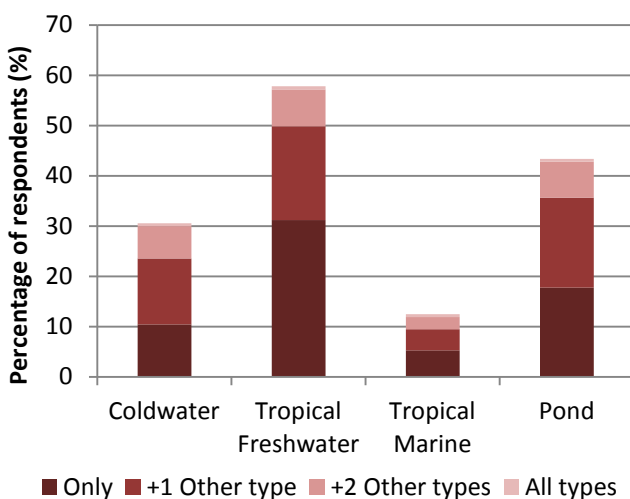
<sup>2</sup> Pet Food Manufacturers' Association: <http://www.pfma.org.uk/pet-ownership-trends/>

**Fig 1. Percentage of respondents keeping one or more different type of fish**

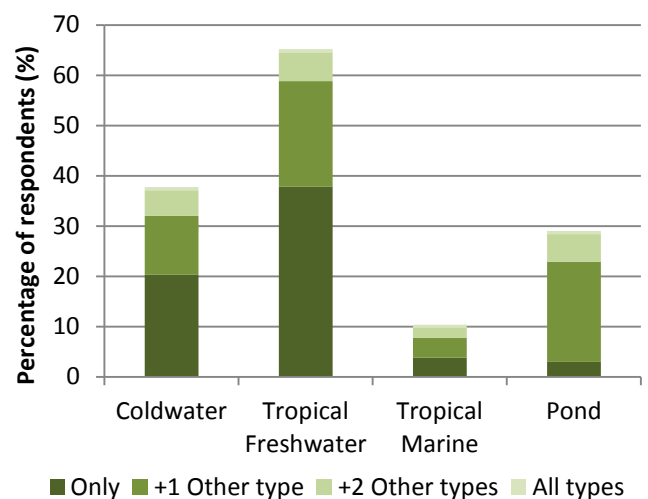


Just over 70% of respondents in this survey own tropical aquaria, making them the most popular type of fish to keep. Of the respondents that keep tropical aquaria, half of them keep only this type of fish. While pond fish are the next most popular type of fish kept, the vast majority of pond owners keep at least one other type of fish. The low percentage of those only keeping a pond might be explained by the fact that this survey was conducted in the winter. Those that only keep pond fish may have little need to visit an aquatic retailer during the winter months. Performing the same analysis on the data gathered from the previous surveys reinforces the plausibility of this explanation. Fig 2 and Fig 3 show the data from the 1996 (September/October) and 2005/2006 (December/January) studies respectively. The winter study also shows a low percentage of pond-only respondents, while it is much higher in the autumn survey. This finding is important in that it probably demonstrates “sampling error”. We will re-evaluate this in our next survey to see if this explanation is correct.

**Fig 2. Sept/Oct 1996 Survey**



**Fig 3. Dec 2005/Jan 2006 Survey**



Examining the data from the present study further, we can also see what other types of fish people keep. Tables 2 and 3 describe what other types of fish the respondents own when more than one type of fish is being kept.

**Table 2. Percentage of total respondents keeping 2 different types of fish**

	Coldwater	Tropical	Marine
Tropical	4.9%		
Marine	0.4%	4.3%	
Pond	4.9%	13.7%	3.4%

Coldwater, Tropical and Marine Aquaria	0.8%
Coldwater & Tropical Aquaria and Ponds	5.1%
Coldwater & Marine aquaria and Ponds	0.1%
Tropical & Marine Aquaria & Ponds	2.9%

**Table 3. Percentage of total respondents keeping 3 different types of fish**

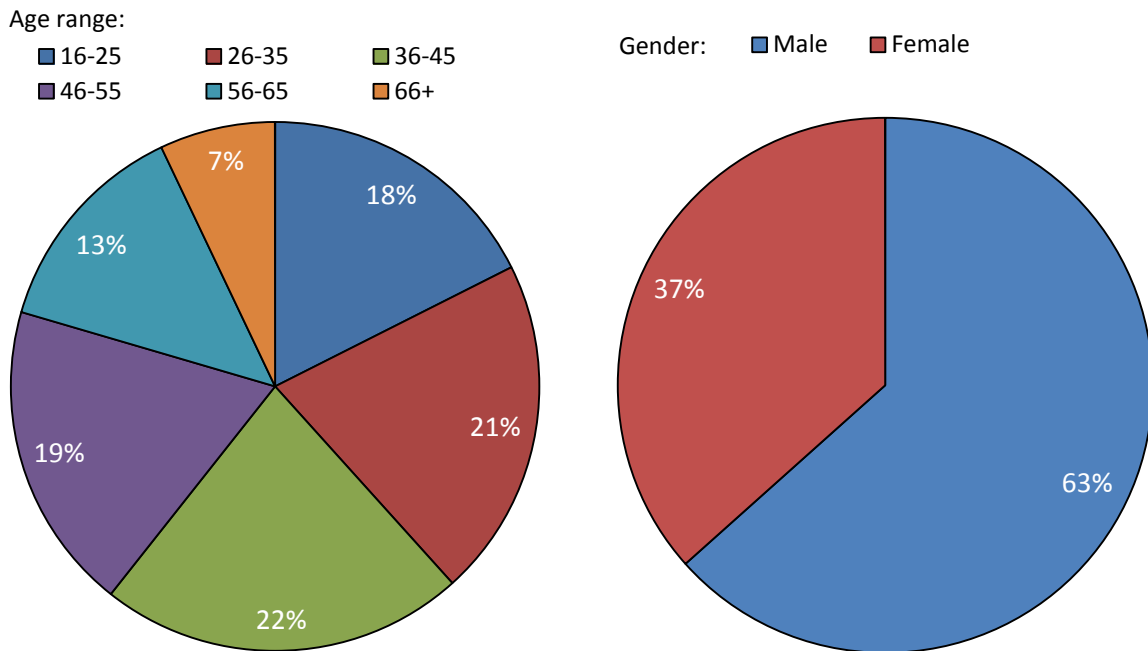
From Table 2, where two different types of fish are being kept, the combination of a pond and a tropical aquarium is most popular with 13.7% of all respondents owning this combination. The least likely combination where two different types of fish are being kept is that of coldwater and marine fish ownership (0.4%). 1.5% (11) of customers in our survey keep all 4 different types of fish.

### 5. What is the age and gender of customers visiting retailers?

- 22% of customers visiting retailers are aged between 36-45, but those aged 26-35 and 46-55 were as equally numerous.
- Approximately 63% customers are male.
- Pond ownership becomes more likely with increasing age.
- Tropical freshwater and tropical marine fish are more popular with the younger generations.
- Coldwater fish appear to be equally popular with all age ranges.
- Tropical freshwater and marine fish are equally popular with men and women, yet coldwater fish are more popular with women and pond fish are more popular with men.

Fish keeping is popular with all age ranges, but 36 to 45 year olds were the most numerous (Fig 4). Fish keeping is also heavily biased towards the male with nearly a 2:1 ratio of men to women (Fig 5).

**Fig 4. Age ranges and gender of fish keepers**



Breaking down the data from Fig 4 in more detail, the age distribution of male and female fish keepers is more apparent (Fig 5).

**Fig 5. Age ranges of male and female fish keepers**

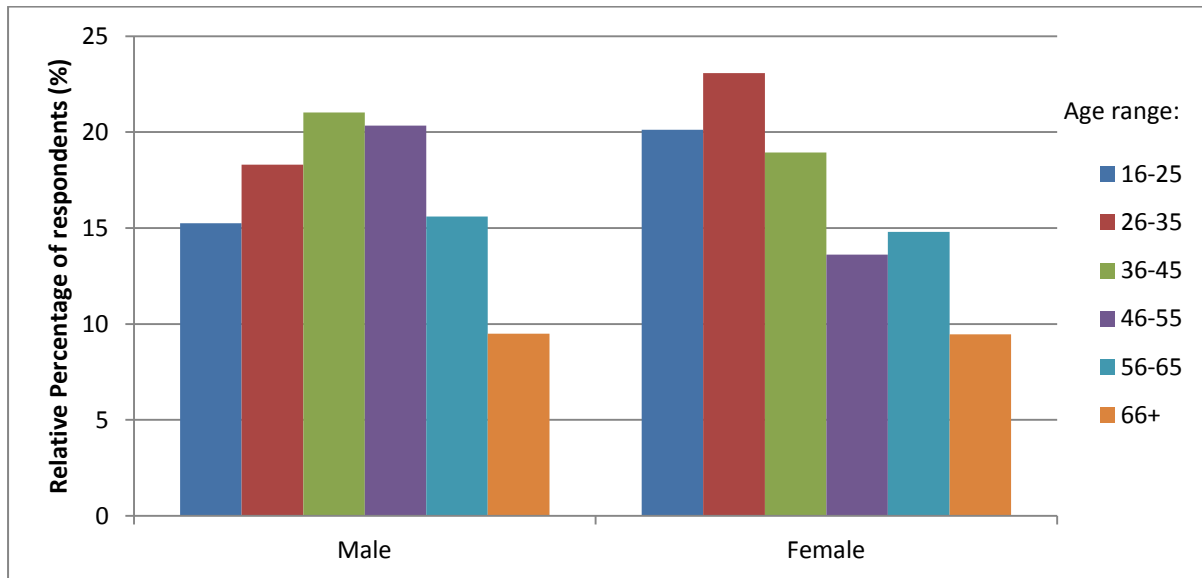
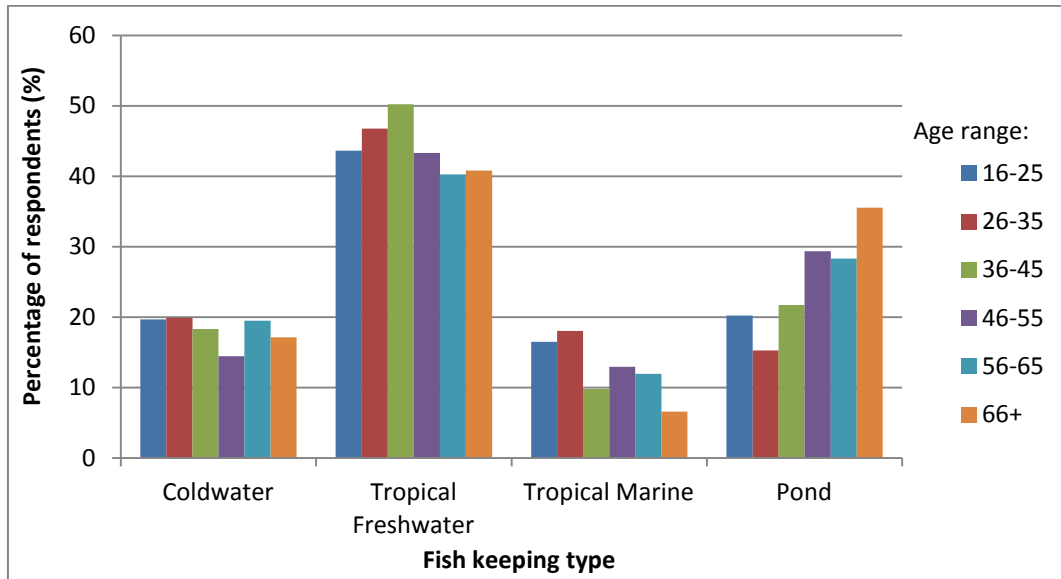


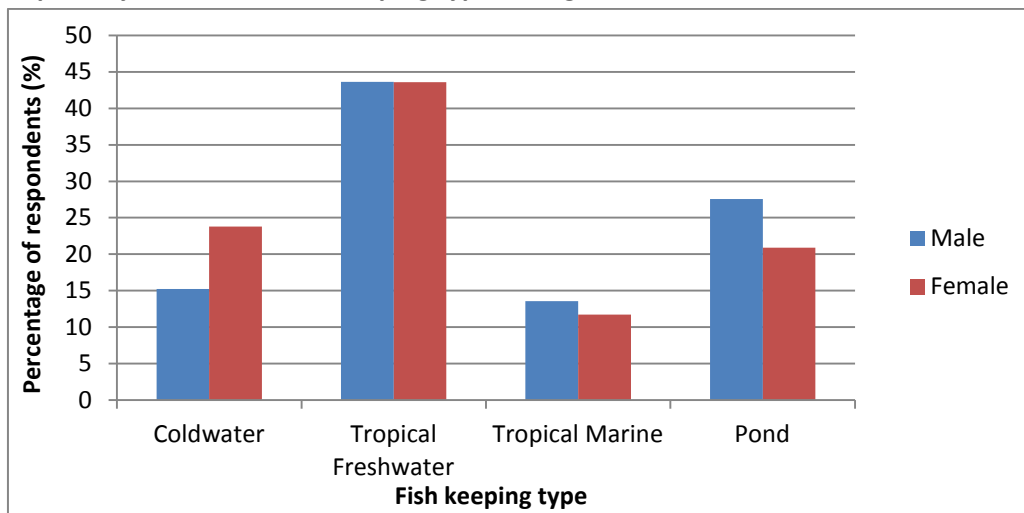
Fig 6 illustrates the different types of fish keeping in relation to age. Pond keeping clearly becomes more popular with increasing age, and less clearly, tropical marine fish keeping is more popular with the younger generations. There are also indications that keeping tropical freshwater fish is more popular with intermediate ages while coldwater fish appear to be equally popular to all. To determine if these trends are correct, in-depth analysis would need to be performed, but this is beyond the remit of this study.

**Fig 6. Popularity of different fish keeping types and age.**



Cold water fish keeping appears to be more popular with women, while pond keeping is more popular with men (Fig 7).

**Fig 7. Popularity of different fish keeping types and gender**



**6. What other pets do fish keepers own?**

- *Fish keepers are over 6 times more likely to own reptiles and birds than non-fish keepers and nearly twice as likely to own dogs, cats or rodents.*

In the data collected from our previous surveys, we revealed that fish keepers are more likely to own other pets compared to the general UK population. In 2006, we estimated that fish keepers were nearly 7 times more likely to keep reptiles, twice as likely to keep dogs, birds, rodents or rabbits, and nearly 20% more likely to keep cats than the general public. Although there have been some changes in these proportions since the 2006 study, fish keepers are still more likely to own other pets compared to the general public (Table 4).



**Table 4. Ownership of pets other than fish compared to the whole UK population.**

	% of owners in 2011/2012 survey sample	PFMA % estimate for whole population (2011)	Increased likelihood of owing other pets	
			This survey	2006 OATA survey
Dogs	38.7	22.0	<b>1.8</b>	1.8
Cats	31.3	18.0	<b>1.7</b>	1.2
Birds	12.8	2.0	<b>6.4</b>	2.0
Rodents	7.7	3.4	<b>2.3</b>	2.2
Reptiles	10.3	1.6	<b>6.4</b>	8.1
Rabbits	3.7	2.7	<b>1.4</b>	1.6
Invertebrates	0.4	NA	<b>NA</b>	NA
Other mammals	3.7	0.2	<b>18.5</b>	1.1

### 7. How long have visitors to retailers been keeping their fish?

- *15% of customers are new to the hobby or have been keeping fish for 1 year or less.*
- *50% of all customers have been keeping fish for 7 years or longer.*

The survey card asked respondents to provide the length of time they have been keeping fish. In previous studies, this value was used to analyse the fallout of fish keepers or decay from the hobby. However, with hindsight, the analysis of this data did not take into account the inclusion of further sampling error.

It is quite possible that there is a link between duration in the hobby and need to visit an aquatic retailer, and hence, complete a survey card. For example, an experienced fish keeper may only need to visit retailers infrequently to buy small items such as food or water conditioner, while newcomers will be making more frequent visits to buy stock for their aquarium or pond in addition to these other products. The effect of this on the decay graphs is further discussed in Annex 2.

Rather than provide decay graphs similar to those published in our previous reports, the data has been represented in different graphical ways, for example, using box plots. For those unfamiliar with reading box plots, please consult Annex 3.

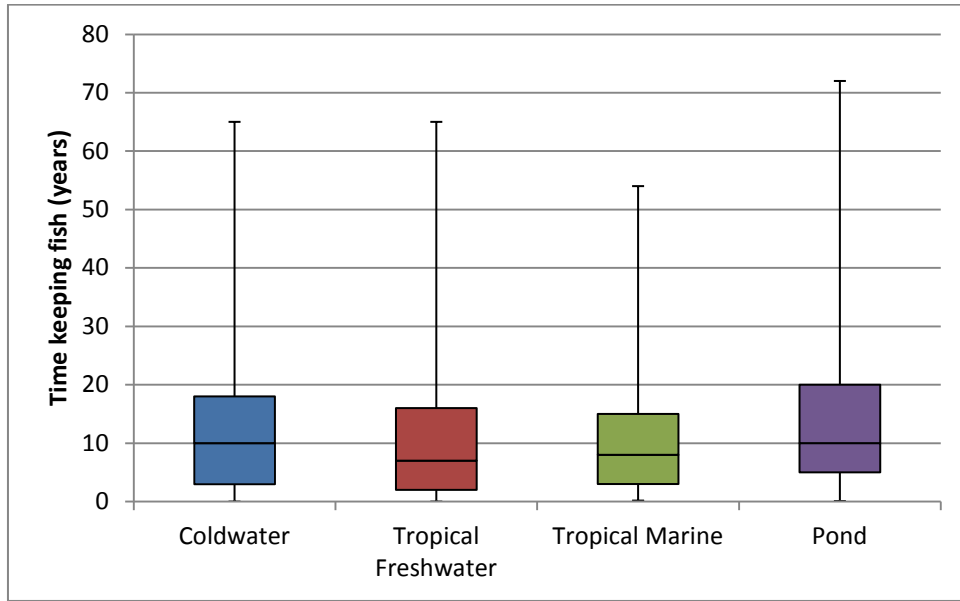
Table 5 shows the duration in the hobby and the number of respondents categorised by their fish keeping type. There appears to be an unusual peak at the “10 years” duration, but this is probably down to reporting error from the respondents. Many respondents keeping fish in the region of 10 years will be more inclined to round up or down and state this figure on the survey card.

**Table 5. Fish keepers visiting retailers by time spent in hobby and type of fish keeping.**  
(please see Annex 3 for an explanation on medians)

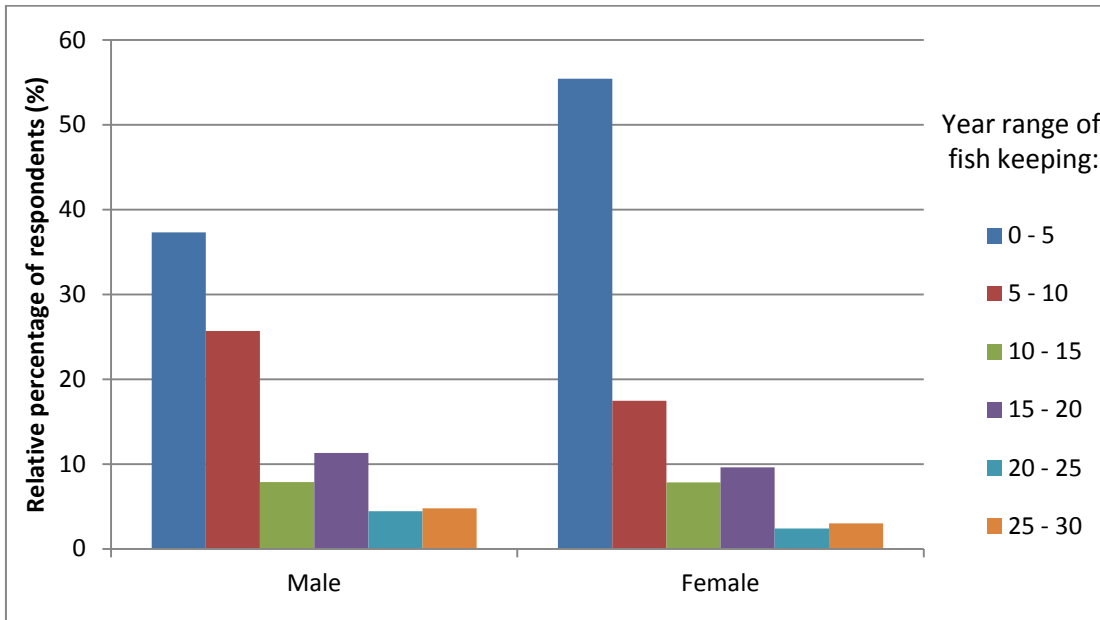
Time (years)	Coldwater	Tropical	Marine	Ponds	Any Category
1	30	72	17	12	106
2	15	55	13	14	77
3	9	36	8	9	43
4	8	23	10	12	37
5	12	31	8	17	42
6	7	19	9	6	31
7	7	12	5	8	22
8	4	19	7	11	21
9	2	5	2	5	8
10	21	50	12	33	74
Over 10 Years	76	168	53	117	235
11 to 15	20	39	17	30	58
16 to 20	23	52	13	36	75
21 to 25	11	15	8	13	28
26 to 30	12	23	6	14	29
31 to 35	1	6	2	5	8
36 to 40	3	21	4	9	21
41 to 45	2	3	0	3	4
46 to 50	2	7	1	4	8
51 to 55	0	0	1	0	1
56 to 60	0	0	0	0	0
61+	2	2	1	3	3
Mean	12.2	11.5	11.7	15.0	11.1
Median	10	7	8	10	7

**Table 6. Comparison of duration of fish keeping (years) between 1995 and the present survey.**

		Coldwater	Tropical	Marine	Ponds	Any Category
1995	Mean	8.11	8.68	9.92	10.71	8.26
	Median	5	5	7	8	5
1996	Mean	8.21	9.35	10.45	10.45	8.38
	Median	4	5	8	7	5
2005/ 2006	Mean	7.03	8.75	11.51	12.4	7.94
	Median	4	5	9	10	4
2011/ 2012	Mean	<b>12.2</b>	<b>11.5</b>	<b>11.7</b>	<b>15.0</b>	<b>11.1</b>
	Median	<b>10</b>	<b>7</b>	<b>8</b>	<b>10</b>	<b>7</b>



**Fig 8. Box plot of visitors at retailers and their length of time keeping fish by type.**



**Fig 9. Customers and their length of time keeping fish by gender.**

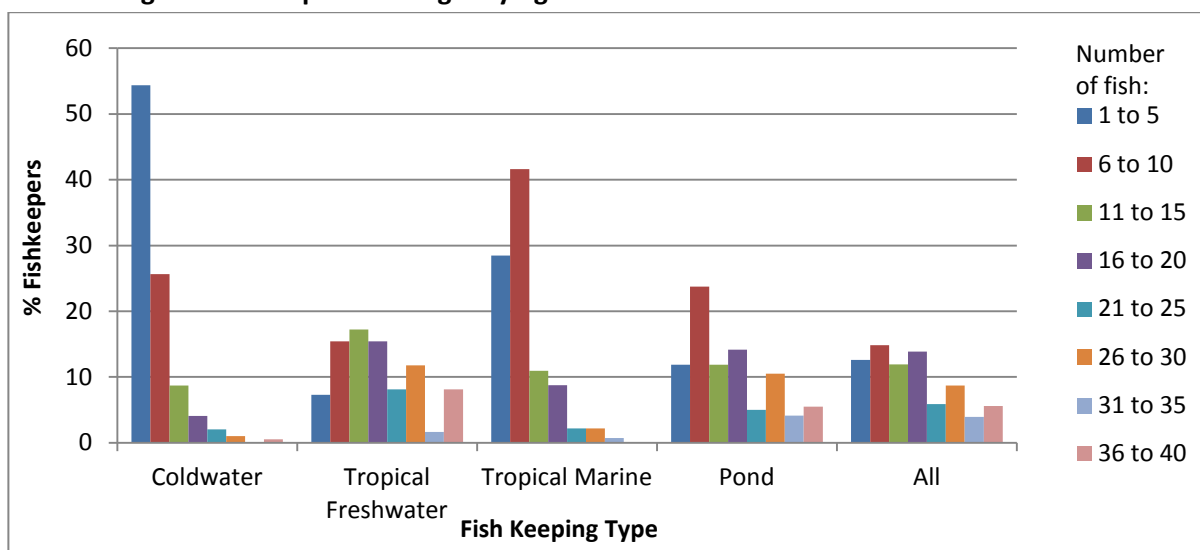
As is evident from Table 5 and Figs 8 and 9, there is little difference between the type of fish kept and fish keepers’ duration within the hobby. Most respondents visiting retailers are either new to the hobby having kept fish for 1 or 2 years, or have in the region of 10 years’ experience. However, there is a greater tendency for pond keepers visiting retail outlet to have more years of fishkeeping rather than just starting out. Male fish keepers visiting retailer tend to have been keeping fish longer than female fish keepers.

**8. How many fish do customers own?**

- Coldwater fish keepers own the fewest fish, on average, owning no more than 5 fish.
- Tropical freshwater and pond fish keepers own the most fish.

Fig 10 represents the percentages of fish keepers that keep varying numbers of fish. For clarity, only those keeping fewer than 40 fish have been plotted. This figure shows there are some differences in the numbers of fish kept in relation to the type of fish they keep. For example, coldwater fish keepers generally own fewer fish, with over 50% of coldwater fish keepers owning 1 to 5 fish. Tropical freshwater fish keepers are a little more varied in the number of fish they keep. The complete dataset can be found in Annex 5.

**Fig 10. Percentage of fish keepers owning varying numbers of fish.**



**Table 7. Comparing the number of fish kept.**

		Coldwater	Tropical Freshwater	Tropical Marine	Pond	All
1995/ 1996	Mean	21.5	40.3	10.7	37.1	46.8
	Median	7	24	7	16	22
2005/ 2006	Mean	8.0	29.2	12.7	22.0	27.7
	Median	4	20	10	14	15
2011/ 2012	Mean	10.3	30.8	11.3	26.9	34.5
	Median	5	20	7	18	20

Tropical freshwater aquarium keepers own the greatest number of fish (Table 7), which is unsurprising considering that most of these fish are generally small. This allows for more fish per aquarium. Pond keepers own the next most number of fish which, probably due to the greater volume of ponds and the ease of which goldfish reproduce. These trends are also similar to the previous two surveys. When examining this table, the medians represent a more accurate representation of the average due to the nature of the data – see Annex 4 for an explanation of means and medians.

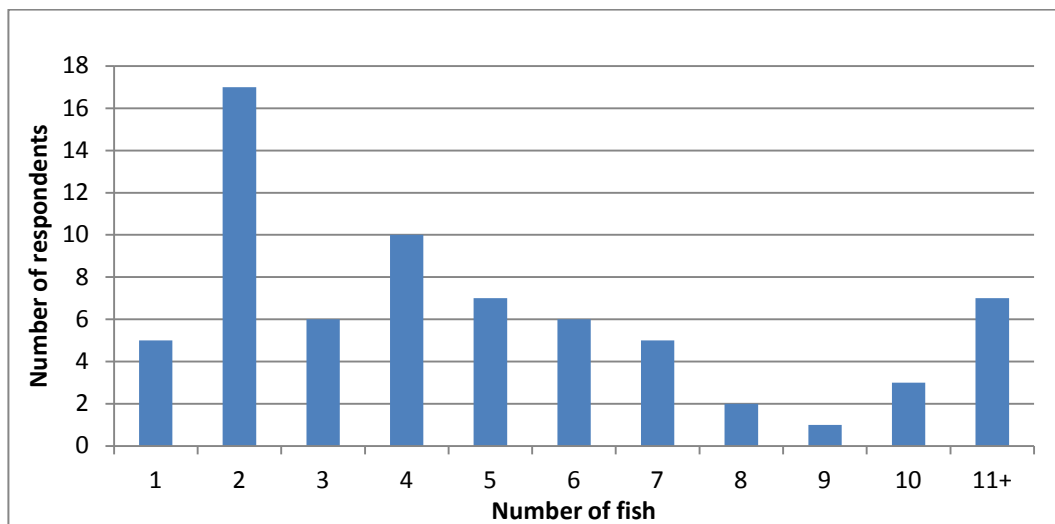
Examining the relationship between duration of fish keeping and number of fish being kept leads to unclear results. This might be due to insufficient respondents to build an accurate picture, but nevertheless, the data has been included in Annex 6.

### 9. How many fish do customers that only keep coldwater fish own?

- *Customers only keeping coldwater fish are most likely to own just 2 fish.*

Of all the fish available in the ornamental aquatics industry, the goldfish is the most familiar. Many fish keepers may gain experience by starting out with a single goldfish in an aquarium before moving on to other types of fish keeping, such as tropical freshwater or marine. Conversely, some families may stick to keeping goldfish only. Whilst this survey does not differentiate between coldwater fish and goldfish, it is likely that the majority of coldwater fish owners own goldfish rather than other coldwater species. The data reveals that just under 9% of all respondents keep coldwater fish only and no other types of fish. Most coldwater-only fish keepers own 2 fish, and only 5 keep one fish (Fig 11).

**Fig 11. Number of fish kept by coldwater-only fish keepers.**



### *Fish Keeper Preferences*

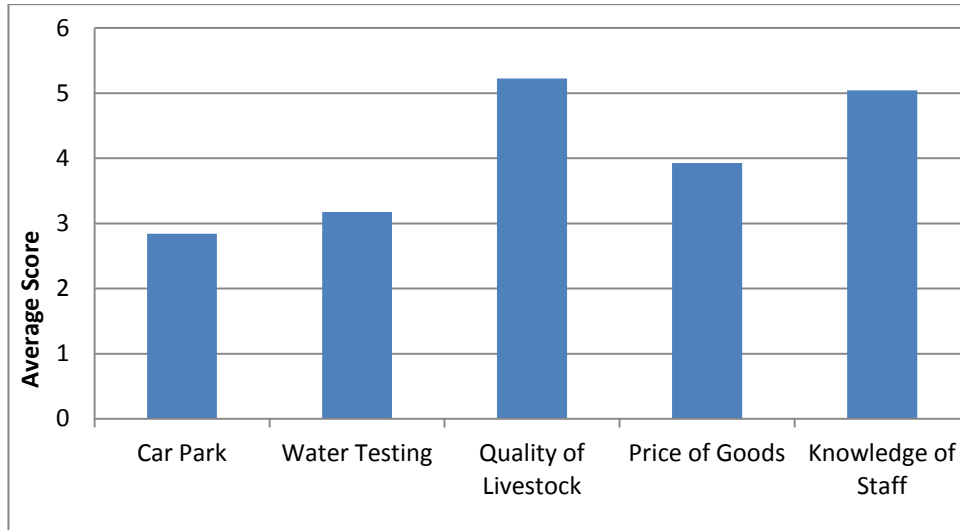
Our previous survey examined water test kit ownership and the use of aquatic medications by fish keepers. In this survey, the back of the survey card was redesigned to determine fish keeper preferences such as what services they find the most important when visiting an aquatic retailer, why they keep fish, the methods in which they find out about fish keeping and how far they have travelled to reach the aquatic retailer.

### 10. What are the most important services or features offered by retailers?

- *Customers visiting retailers place greatest priority on the quality of the live stock sold and the knowledge of the retail staff.*
- *This preference is not affected by age, gender or type of fish kept.*

Respondents were asked to rank the importance of the following services or features as well as having the option to provide their own: car parking, water testing service, quality of fish, price of goods and knowledge of staff. This analysis was conducted by awarding 6 points where respondents showed the greatest preference through to 1 point where the least preference was given. The two most important aspects of retailers that our respondents chose were the quality of the livestock and the knowledge of staff (Fig 12). A small fraction of respondents provided other services or benefits that they rated when visiting an aquatic retailer such as its variety of stock (10), a cafe (7), toilets (5) and cleanliness of shop (3).

**Fig 12. Preference of services offered by aquatic retailers from all respondents.**



We can examine these details further and see if these preferences are different between genders, age, types of fish keeping, duration of fish keeping, and distance prepared to travel to reach a shop. Performing this analysis, there is little, if any, link between these variables. Fig 13 shows the average mark given to these services by different types of fish keeper. The only difference that might be apparent is that tropical marine hobbyists give a slightly lower score to car parking than other fish keepers, but this marginal difference is probably of no significance. Determining if a difference was present would require the use of complicated statistics which again is beyond the remit of this report.

**Fig 13. The preference of services offered by retailers by fish keeping type.**

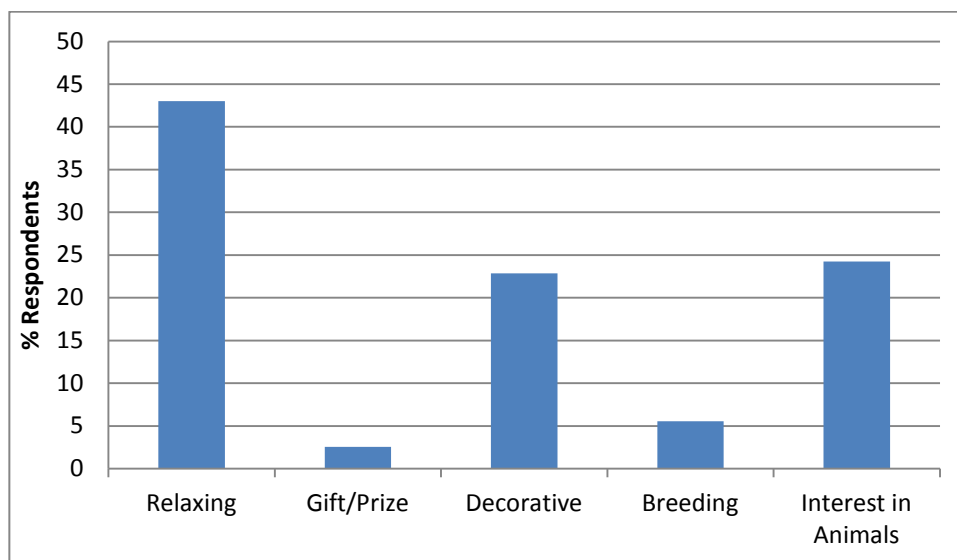


### 11. Why do customers keep fish?

- Customers are most likely to keep fish for relaxation.
- A customer's interest in animals or biology and their decorative appeal and are the next most likely reasons for customers keeping fish.
- The relaxing quality of fish is more greatly appreciated as age increases.
- The decorative appeal and interest in biology or animals is more likely to be chosen as a reason for keeping fish among younger people.
- Marine fish keepers are more likely to have an interest in animals or biology than other types of fish keepers.

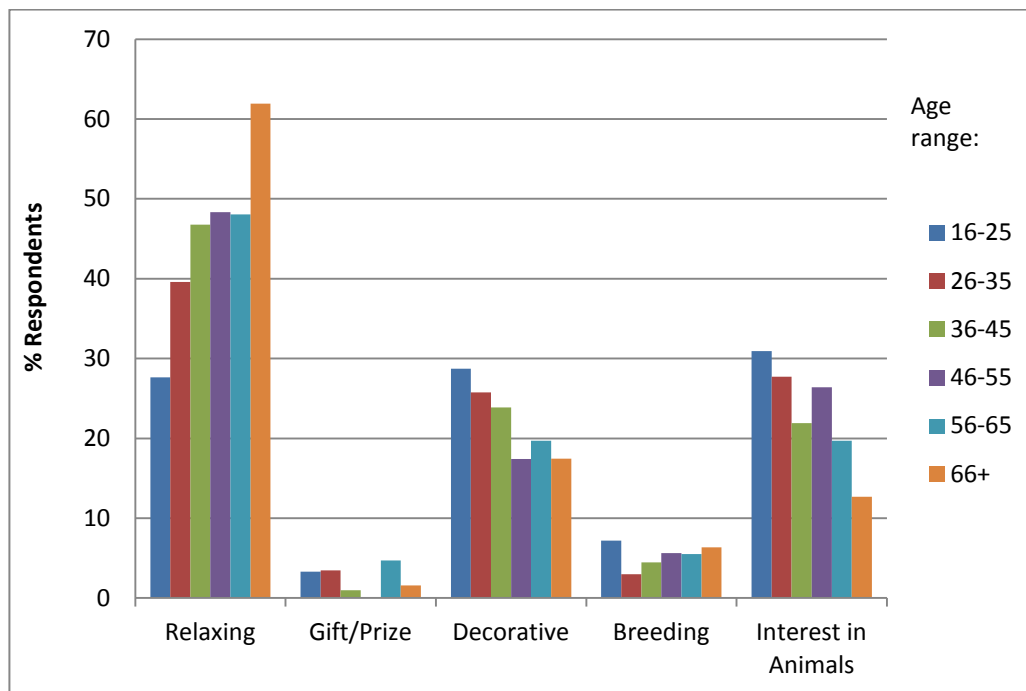
The second question asked on the reverse was to evaluate why people keep fish. Respondents were invited to tick one of the following options or to provide their own reason for starting fish keeping: Relaxing, gift or prize, decorative, for breeding fish, or general interest in animals or biology. While very few respondents provided another reason for keeping fish, a common alternative of these responses was for their children. Please note that when viewing the following graphs, percentages may not add up to 100% as "other" has been removed for clarity.

By far, the most popular reason for people to start fish keeping was for relaxation (Fig 14). People keeping fish for decorative purposes was nearly as popular as those that have an underlying interest in animals or biology.



**Fig 14. Reason for starting fish keeping from all respondents**

Evaluating if any differences in the reasons for keeping fish between gender, none seem to be present. Age however does reveal some interesting trends as shown in Fig 15.



**Fig 15. Reason for people keeping fish by age range**

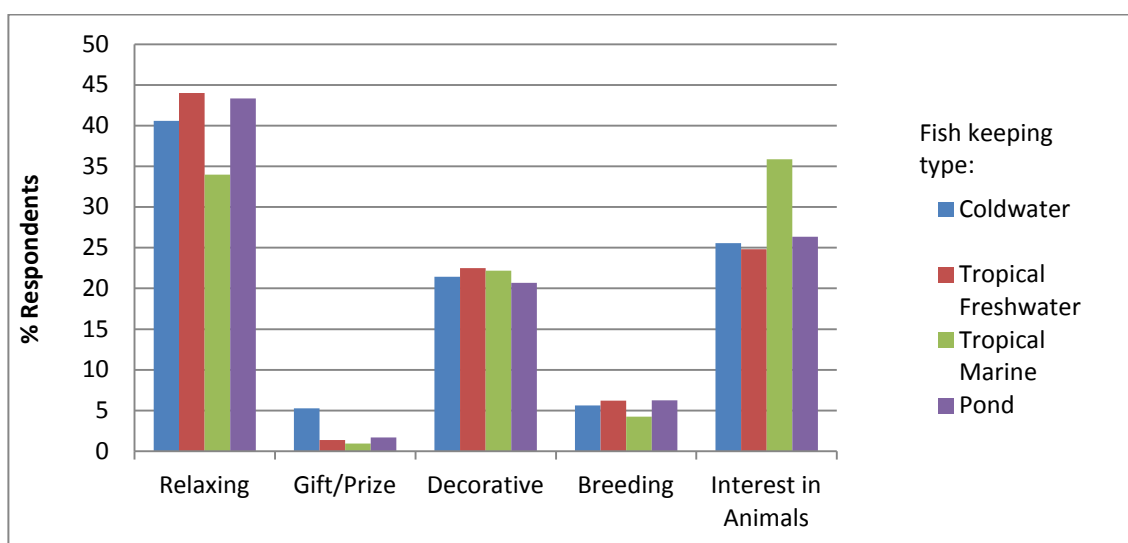
This figure suggests that there is a link between age and reason for keeping fish. For example, the relaxing benefit becomes increasingly popular with age. The decorative aspect and interest in animals also seems to be more popular with the younger generation in comparison to older fish keepers.

The type of fish kept also seems to have a bearing on the reason for fish keeping (Fig 16). The relaxing benefit seems to be most appreciated by pond keepers and least appreciated by marine keepers. This observation might be expected owing to the relaxing nature of the garden pond environment. This does not necessarily mean that fish keepers find marine fish less relaxing, but instead could mean that marine fish keepers give greater importance to other reasons over relaxation, such as having an interest in animals or biology.

It is often thought that fish won at fairs is a common route of fish keepers into the hobby, however, the data collected does not support this idea. Only 14 respondents from the whole survey selected “prize/gift” as their reason for keeping fish and keep cold water fish. Furthermore, only 2 of these respondents kept other type of fish (pond fish). All of these respondents did however keep more than one fish. The half of these 14 respondents were female and aged between 16 and 35.



Fig 16. Reasons for people keeping fish by type of fish keeping



## 12. How do customers want to find out more about their hobby?

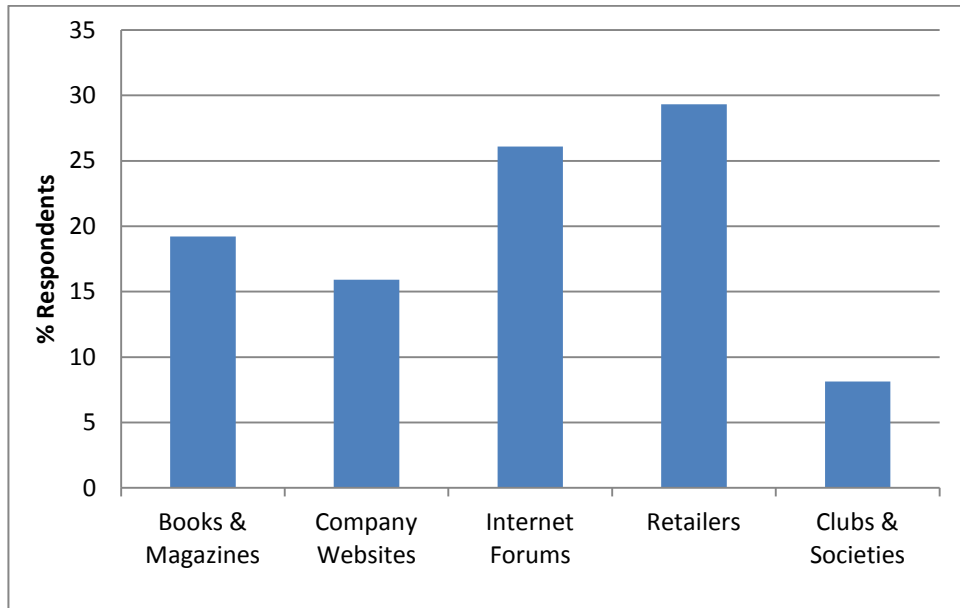
- *Retailers are the most popular source of information for fish keepers regardless of demographics and type of fish kept.*
- *Internet forums as well as other online resources are also seen as an important source of information, but are generally more popular with the younger generations.*
- *Books and magazines are still an important source of information, but are most appreciated by the older generations.*

The penultimate question asked in our survey was concerned with determining a fish keeper's preferred method of finding out about their hobby.

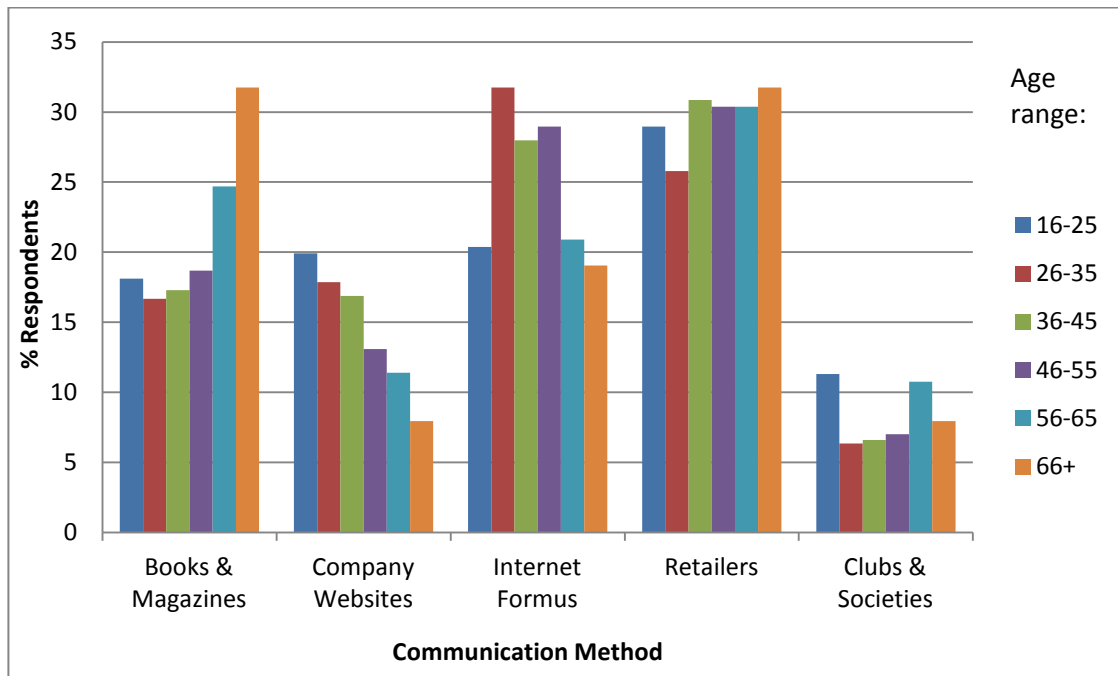
From all the responses received, fish keepers state they rely heavily upon their retailers as a source of information (Fig 17). With the internet now being easily accessible to all, many respondents also seek information on internet forums. Such places allow fish keepers to exchange information and experiences with others. The same could be true of fish keeping clubs and societies; however, this was the least popular of the options provided in our survey. This is probably due to the scarcity of fish clubs and societies and also the ease in which such information can be sought via other routes.

The fact that fish keepers continually engage with their retailers for information emphasises the importance of good quality staff training to ensure that their customers are receiving correct and accurate information. Being able to provide customers with good information not only helps to ensure that the welfare needs of the animals are being met, but can also help to ensure that customers return to the same store for future sales. This is in contrast with information obtained through internet forums. Information shared in this way is often the opinions from a select few people based on variable personal experiences, rather than knowledge gained through formulated training.

**Fig 17. Methods that fish keepers prefer to find out about their hobby**

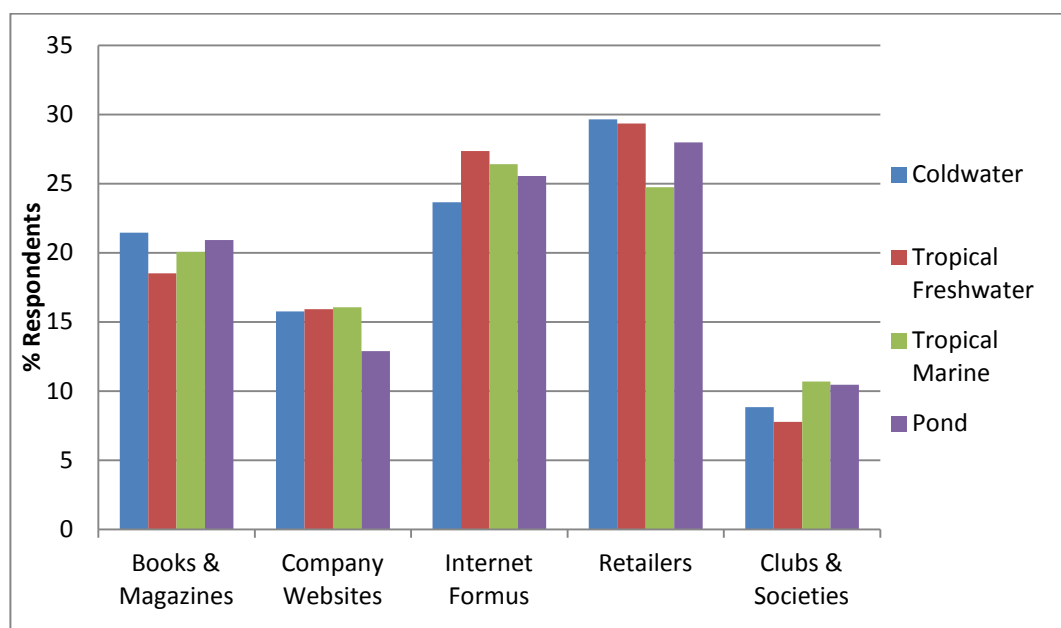


There appears to be little difference in preferences of seeking information on fish keeping between men and women. However, when it comes to different age ranges, some differences are apparent (Fig 18). Perhaps not unsurprisingly, books and magazines are more popular with the older generations, while the internet is more popular with the youngsters.



**Fig 18. Methods that fish keepers prefer to find out about their hobby by age range.**

Further observations can be made when looking at the different types of fish keepers and can be seen in Fig 19.



**Fig 19. Methods that fish keepers prefer to find out about their hobby by fish keeping type.**

### 13. How far do customers travel to reach retailers?

- *Most customers travel approximately 5 miles to reach an aquatic retailer.*
- *25% of customers travel 10 miles or more.*
- *The longest distance travelled by any one customer was 182 miles!*

The last question that features on the reverse of the survey card aims to find out how far fish keepers are prepared to travel to a fish retailer. The average distance travelled by all respondents was approximately 5 miles and 25% of respondents travelled more than 10 miles. In one instance, one respondent declared that they had travelled 182 miles to reach a store. It is not known if this person travelled to reach this one store specifically, or if part of a “shop tour”.

Examining the data to see if there is any link between the distance travelled and the other parameters such as gender, age, type of fish keeping and duration in the hobby, there are no obvious differences. One might expect certain groups might be prepared to travel further if they are after a specific item or species not available at their local store, but this is not apparent from this survey. For interest only, Fig 20 shows the average distance travelled by fish keeping type. The medians (see Annex 4 for further explanation) for all groups is between 5 and 7 miles. As the confidence intervals cover the same range, it is probably that there is no difference between distance travelled and type of fish keeping.

Overall, while most fish keepers visit local stores, some fish keepers will travel long distances to reach certain stores, although there appears to be no clear explanation for their primary motives.

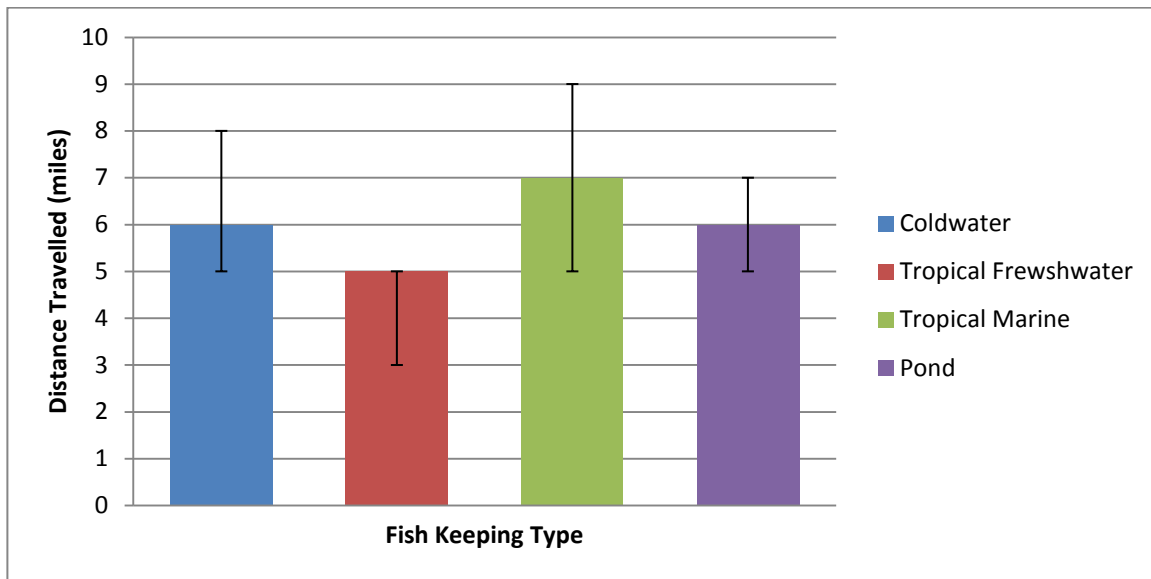


Fig 20. Mean distance travelled by fish keepers of varying ages – the black bars denote “95% confidence intervals” (see page Annex 3 for a further explanation)

\*\*\*

#### 14. Summary

The interpretation of data from all surveys needs to be treated with care. Statistics can only ever show possible links or correlations and not necessarily cause and effect. In some cases, it may be possible to identify a probable explanation of a correlation, and some attempt has been made to do so. However, these are only speculations and there may be other equally valid explanation that may help to describe these correlations.

Bearing in mind the limitation of our survey as stated at the beginning of this report, the key findings of this survey are as follows:


- *Up to 3.9 million homes in the UK keep fish.*
- *There are between 117m and 134m fish kept in the UK.*
- *70% of customers visiting retailers keep tropical freshwater fish. Half of these keep this type of fish only.*
- *Pond fish keeping is the next most popular type of fish keeping. While marine fish keeping is the less frequently kept, 1 in 5 customers visiting retailers keep marine fish.*
- *13.7% of customers keep tropical freshwater and pond fish and 5.1% keep coldwater, tropical freshwater and pond fish.*
- *22% of customers visiting retailers are aged between 36-45, but those aged 26-35 and 46-55 were as equally numerous.*
- *Approximately 63% customers are male.*
- *Pond ownership becomes more likely with increasing age.*

- *Tropical freshwater and tropical marine fish are more popular with the younger generations.*
- *Coldwater fish appear to be equally popular with all age ranges.*
- *Tropical freshwater and marine fish are equally popular with men and women, yet coldwater fish are more popular with women and pond fish are more popular with men.*
- *Fish keepers are over 6 times more likely to own reptiles and birds than non-fish keepers and nearly twice as likely to own dogs, cats or rodents.*
- *15% of customers are new to the hobby or have been keeping fish for 1 year or less.*
- *50% of all customers have been keeping fish for 7 years or longer.*
- *Coldwater fish keepers own the fewest fish, on average, owning no more than 5 fish.*
- *Tropical freshwater and pond fish keepers own the most fish.*
- *Customers only keeping coldwater fish are most likely to own just 2 fish.*
- *Customers visiting retailers place greatest priority on the quality of the live stock sold and the knowledge of the retail staff.*
- *This preference is not affected by age, gender or type of fish kept.*
- *Customers are most likely to keep fish for relaxation.*
- *A customer's interest in animals or biology and their decorative appeal are the next most likely reasons for customers keeping fish.*
- *The relaxing quality of fish is more greatly appreciated as age increases.*
- *The decorative appeal and interest in biology or animals is more likely to be chosen as a reason for keeping fish among younger people.*
- *Marine fish keepers are more likely to have an interest in animals or biology than other types of fish keepers.*
- *Retailers are the most popular source of information for fish keepers regardless of demographics and type of fish kept.*
- *Internet forums as well as other online resources are also seen as an important source of information, but are generally more popular with the younger generations.*
- *Books and magazines are still an important source of information, but are most appreciated by the older generations.*
- *Most customers travel approximately 5 miles to reach an aquatic retailer.*
- *25% of customers travel 10 miles or more.*
- *The longest distance travelled by any one customer was 182 miles!*

As with all these findings, one needs to take care about the certainty of these statements. The more respondents a survey achieves, the greater the likelihood of this accuracy. If you have found the data within this report useful or interesting, why not help us and take part in our next survey?

Annex 1: The Survey Card

At least 50 cards were distributed to over 100 stores and were encouraged to display them at the point of sale for their customers to complete.



Ornamental Aquatic Trade Association Ltd  
 1st Floor Office Suite, Wessex House, 40 Station Road,  
 Westbury, Wiltshire, BA13 3JN  
 Tel: 01373 301353 Fax: 01373 301236  
 info@ornamentalfish.org www.ornamentalfish.org

	Coldwater	Tropical	Marine
How many aquaria do you own?	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>
How many fish do you keep?	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>
How many ponds do you own?	<input style="width: 50px; height: 20px;" type="text"/>	With how many fish?	<input style="width: 50px; height: 20px;" type="text"/>
How long have you been keeping fish? _____			
Which other pets do you own? (please circle)			
Reptiles/Amphibians   Cats   Dogs   Hamsters/Mice   Birds   Other (please specify).....			
Age? 16-25 <input type="checkbox"/> 26-35 <input type="checkbox"/> 36-45 <input type="checkbox"/> 46-55 <input type="checkbox"/> 56-65 <input type="checkbox"/> 66+ <input type="checkbox"/> Gender: M <input type="checkbox"/> F <input type="checkbox"/>			
OATA Ltd is interested in gathering data on the number of pet fish and other pets kept in the UK.      PTO ➡			

**When visiting an aquatics store, which of the following services do you find the most important?  
 (please rank – 1 being the most important, 6 the least important)**

<input type="checkbox"/> Car parking	<input type="checkbox"/> Water testing	<input type="checkbox"/> Quality of fish
<input type="checkbox"/> Price of goods	<input type="checkbox"/> Knowledge of staff	<input type="checkbox"/> Other (please specify) _____

**Why do you keep fish? (please tick one only)**

<input type="checkbox"/> Relaxing	<input type="checkbox"/> Gift/prize	<input type="checkbox"/> Decorative
<input type="checkbox"/> Breeding	<input type="checkbox"/> Interest in animals/biology	<input type="checkbox"/> Other (please specify) _____

**Where would you like to be able to find out information on fish keeping?**

<input type="checkbox"/> Books & magazines	<input type="checkbox"/> Company websites	<input type="checkbox"/> Internet forums
<input type="checkbox"/> Retailers	<input type="checkbox"/> Fish keeping clubs/societies	<input type="checkbox"/> Other (please specify) _____

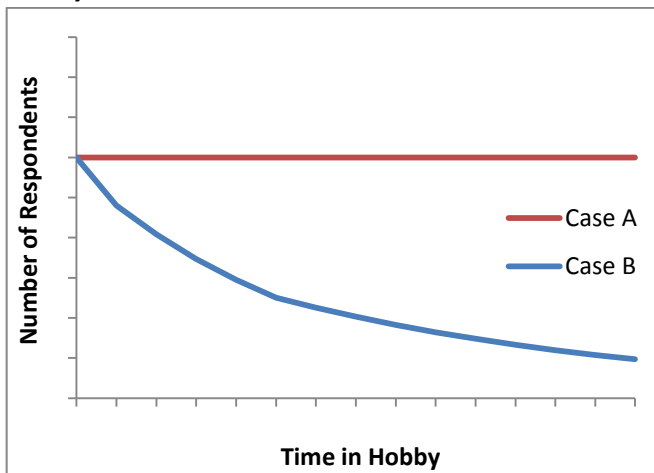
**Approximately how far have you travelled to reach this store today?**  
 \_\_\_\_\_ miles/kilometres

**THANK YOU FOR TAKING PART IN THIS SURVEY**

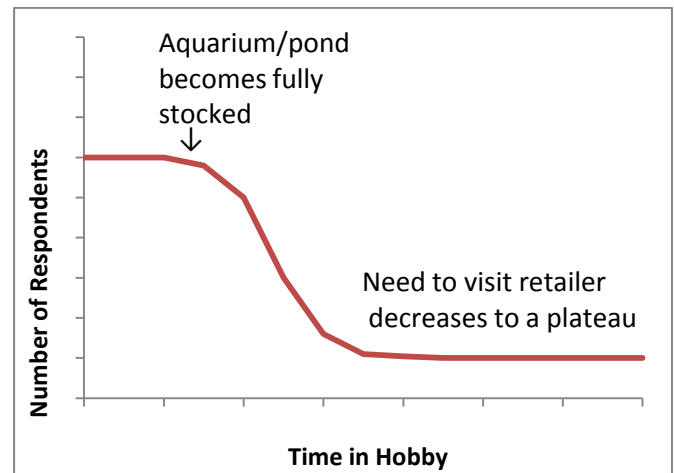
### Annex 2: Sampling error in attempting to calculate decay of fish keepers in the hobby

Section 7 in this report attempts to evaluate fish keepers leaving the hobby using the same methods used in OATA's previous 1995/6 and 2005/6 reports. This was done by analysing the number of respondents and their duration within the hobby. If all fish keepers remained within the hobby and the same number of fish keepers starting each year, there would be no decay curve, but a steady horizontal line (Case A on Fig 21). As would be expected, this is unlikely to occur and fish keepers will invariably leave the hobby (Case B on Fig 21). As such, there will be a relatively high number of fish keepers starting out and only a few that have been keeping fish for a long time with a curve in between. This model curve is similar to those found in Section 7 of this report.

**Fig 21. Modelling decay of fish keepers within the hobby.**



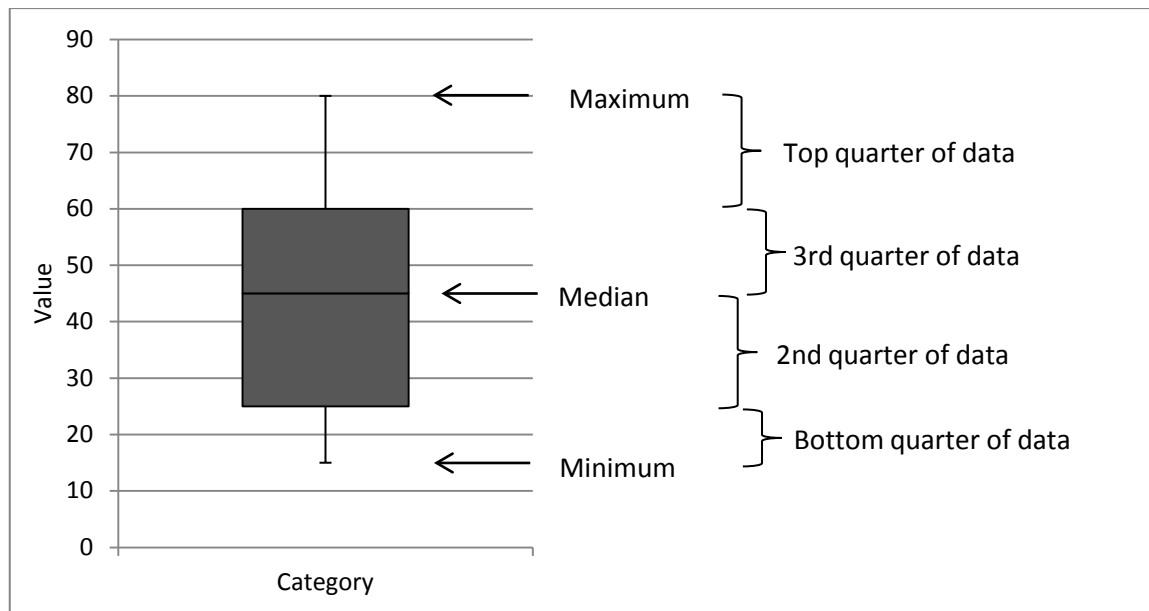
**Fig 22. Modelling likelihood of visiting an aquatic retailer**



However, there is at least another variable that could affect this apparent decay. New fish keepers are likely to pay more frequent visits to their retailer (and complete a survey card) for livestock in addition to the consumables, such as fish food and water conditioner. As their aquarium becomes fully stocked, their need to visit the retailer is likely to decrease. However, such need is likely to plateau, i.e. a fish keeper with 10 years' experience is likely to have the same need to visit an aquatic retailer as a fish keeper with 20 years' within the hobby (Fig 22). However, even this model does not take into account that livestock has a finite life or that an experienced fish keeper might start up another aquarium or pond, meaning that likelihood of visiting a retailer would increase for a short period.

### Annex 3: Box Plots Explained

Box plots, sometimes called “box and whisker” plots are a type of graph that while normally reserved for the likes of scientific papers, they can graphically present a lot of data that is quite easy for most people to read. They are useful in describing the distribution or spread of data, such as the range, minimum, maximum, median and “quartiles”.



In the example above, numerous qualities are immediately apparent, such as the median, minimum and maximum. The dark grey box represents exactly half of the data. Within this box, a quarter of the data lies below the median and another quarter above. Combining this with minimum and maximum, it is possible to get an idea of how spread out the data is, and therefore, how representative the median is of the “average”.

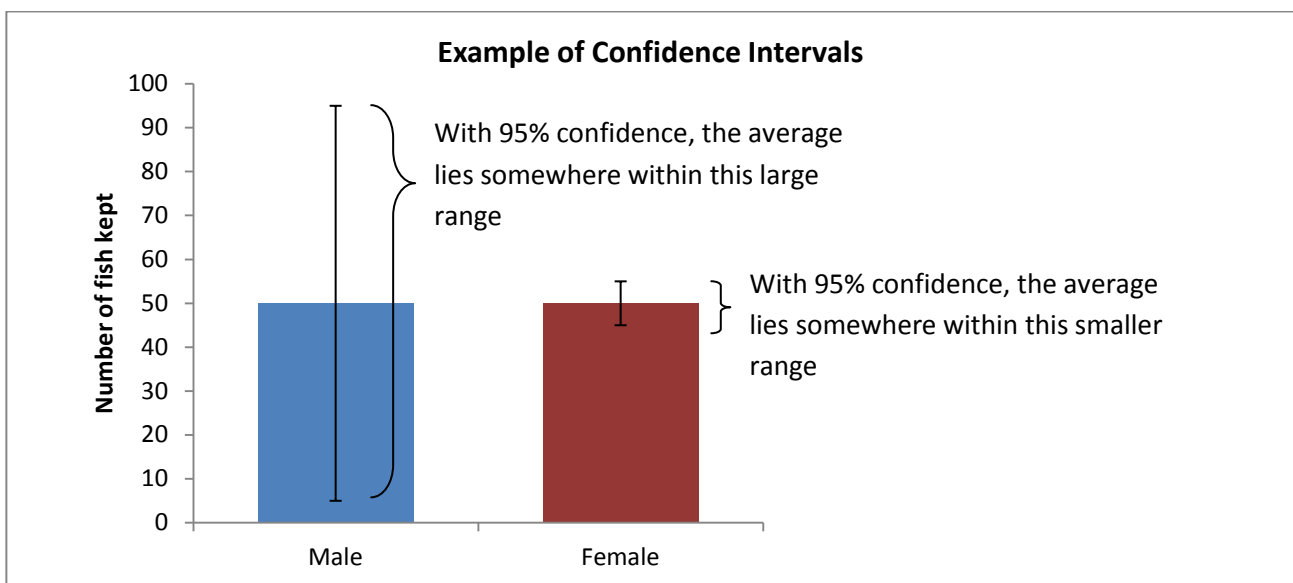




### Confidence Intervals

When presenting averages, it is good to understand how reliable or accurate these figures really are. Using a bit of stats, we can also provide a range about that average to say that we are confident that the actual average lies within this range. This is called the confidence interval. Generally, intervals of 95% confidence are calculated and presented as black lines overlapping the columns on column charts.

The width of this range then provides clues about the accuracy of that figure. For example, we could say that the average fish keeper owns 50 fish with a 95% confidence interval of 5 to 95 fish or a 95% confidence interval of 45 to 55 fish. The latter range provides more useful information, rather than the vagueness of the information provided by the prior; the smaller the interval, the better.



The methods used to calculate the confidence intervals are a bit trickier than those used to calculate the averages. Furthermore, different methods are required when calculating confidence intervals for means or medians. For brevity, the precise methods have been omitted from this report, but can be found at

[https://epilab.ich.ucl.ac.uk/coursematerial/statistics/non\\_parametric/confidence\\_interval.html](https://epilab.ich.ucl.ac.uk/coursematerial/statistics/non_parametric/confidence_interval.html).

Annex 5: Number of respondents owning different numbers of fish by category of fish keeping

Number of fish	Coldwater	Tropical Freshwater	Tropical Marine	Pond	All
1 to 5	106	36	39	26	90
6 to 10	50	76	57	52	106
11 to 15	17	85	15	26	85
16 to 20	8	76	12	31	99
21 to 25	4	40	3	11	42
26 to 30	2	58	3	23	62
31 to 35	0	8	1	9	28
36 to 40	1	40	0	12	40
41 to 45	0	3	0	2	19
46 to 50	0	24	6	10	27
51 to 55	0	1	0	0	11
56 to 60	0	10	0	3	11
61 to 70	1	7	1	2	23
71 to 80	1	7	0	3	18
81 to 90	0	2	0	0	13
91 to 100	1	8	0	4	9
101 to 200	4	6	0	3	18
201 to 500	0	3	0	2	10
500 +	0	3	0	0	3
Total number of keepers	195	493	137	219	714
Mean	10.3	30.8	11.3	26.9	34.5
Median	5	20	7	18	20

Annex 6: Comparing duration of fish keeping and number of fish kept.

Duration of fish keeping / Number of fish	0 to 5	6 to 10	11 to 15	16 to 20	21 to 30	31 to 40	40+	Total
0 to 1 (%)	29 (27.88)	22 (21.15)	14 (13.46)	14 (13.46)	14 (13.46)	3 (2.88)	8 (7.69)	104
1 to 2 (%)	11 (10.28)	15 (14.02)	14 (13.08)	18 (16.82)	21 (19.63)	13 (12.15)	15 (14.02)	107
2 to 3 (%)	3 (5)	10 (16.67)	11 (18.33)	11 (18.33)	12 (20)	6 (10)	7 (11.67)	60
3 to 4 (%)	3 (6.25)	10 (20.83)	9 (18.75)	5 (10.42)	6 (12.5)	6 (12.5)	9 (18.75)	48
4 to 5 (%)	4 (7.27)	8 (14.55)	8 (14.55)	8 (14.55)	9 (16.36)	6 (10.91)	12 (21.82)	55
5 to 10 (%)	16 (8.29)	23 (11.92)	26 (13.47)	27 (13.99)	33 (17.1)	27 (13.99)	41 (21.24)	193
10+ (%)	17 (8.59)	31 (15.66)	29 (14.65)	35 (17.68)	45 (22.73)	41 (20.71)	84 (42.42)	198