A Report Looking at the Reptile Keeping Hobby,

Those Who Want it Banned and Why?

By
Becky Clark

Project submitted in partial fulfilment of the requirements for the BSc in Applied Animal Science at the University of Kent and Canterbury College
Acknowledgements

I would like to take the time to personally thank the people who have helped me put together this report; Chris Newman and Tony Jones (FBH/EUARK) for offering to assist me by putting my questionnaire on the Federation of British Herpetologist’s web page, as well as pointing me towards the information I was seeking throughout this project; Terry Matthews at Penfolds Reptiles for putting me in touch with Chris and for imparting his extensive reptile knowledge on me during the writing of this report; the regulars who lurk on the FBH section of Captive Bred forums and RFUK for the encouragement, all of those who replied to my questionnaire and not forgetting my mother who spent many hours helping me tally up all the results.
## Contents

<table>
<thead>
<tr>
<th>Introduction</th>
<th>Page 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aims and Objectives</td>
<td>Page 6</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>Page 6</td>
</tr>
<tr>
<td>Literature Review</td>
<td>Page 7</td>
</tr>
<tr>
<td>Method and Materials</td>
<td>Page 14</td>
</tr>
<tr>
<td>Results and Discussion</td>
<td>Page 15</td>
</tr>
<tr>
<td>Conclusion</td>
<td>Page 33</td>
</tr>
<tr>
<td>Future Work</td>
<td>Page 36</td>
</tr>
<tr>
<td>References</td>
<td>Page 37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Figure 1</th>
<th>Age Range of Participants</th>
<th>Page 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2</td>
<td>Main Occupation of Participants</td>
<td>Page 15</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Number of Reptiles Owned</td>
<td>Page 16</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Species Kept Comparison</td>
<td>Page 19</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Number of Snakes Owned</td>
<td>Page 19</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Number of Lizards Owned</td>
<td>Page 18</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Number of Chelonian Owned</td>
<td>Page 18</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Would a Ban Affect You?</td>
<td>Page 19</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Views on Importing Wild Caught and Captive Farmed Animals for the Pet Trade</td>
<td>Page 20</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Views on Importing Wild Caught and Captive Farmed Animals for Conservation</td>
<td>Page 20</td>
</tr>
<tr>
<td>Figure 11</td>
<td>How many reptiles died within 12 months?</td>
<td>Page 25</td>
</tr>
<tr>
<td>Figure 12</td>
<td>Wild Caught/Captive Farmed/Captive Bred?</td>
<td>Page 26</td>
</tr>
<tr>
<td>Figure 13</td>
<td>Cause of Death?</td>
<td>Page 26</td>
</tr>
<tr>
<td>Figure 14</td>
<td>Hard to find Correct Information?</td>
<td>Page 30</td>
</tr>
<tr>
<td>Figure 15</td>
<td>Where is most Information Found?</td>
<td>Page 30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Injuries Caused by Animals</th>
<th>Page 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2</td>
<td>Number of Wild Caught and Captive Farmed Reptiles</td>
<td>Page 21</td>
</tr>
<tr>
<td>Table 3</td>
<td>Common Parasites</td>
<td>Page 23</td>
</tr>
<tr>
<td>Table 4</td>
<td>Zoonotic Diseases</td>
<td>Page 28</td>
</tr>
</tbody>
</table>
Abstract

Reptiles have been kept in the United Kingdom as pets since the thirteenth century and have begun to emerge over the last 25 years as popular pets. The reptile keeping hobby has come under repeated threat from animal welfare/rights groups over the years who want the keeping of reptiles banned, along with the importing of them. These groups often use outdated and out of context information in documents as concrete evidence as to why reptiles should not be kept as pets. This study looks at some of the most used statements and evidence compiled by various groups and compares it to factual evidence which is up to date and properly researched. To help dispel some of the statements a questionnaire was designed and distributed among the reptile community asking specific questions in order to target key areas of interest which required fresh evidence. The results once analysed did dispel a number of statements frequently used by animal groups and also backed up several counter arguments which were already in place. The findings allowed concrete evidence and conclusions to be drawn regarding the argument that reptiles should not be kept as pets for various reasons. The results showed mortality figures to be much lower than stated by groups, the ability to find care guides as easy and that salmonella is not such a large health risk to humans. These findings can be used in future efforts by pro reptile keeping bodies to continue their fight against the animal welfare/rights groups.
Introduction

Reptiles have been kept in Britain for centuries with the earliest records dating back to the Tower of London menagerie which was founded in the thirteenth century. Records show that the Bishop of London, William Laud, purchased a Spur-Thighed Tortoise in 1625, and eight years later when he became the Archbishop of Canterbury the tortoise moved with him to Lambeth Palace. The animal lived for another 120 years before its long life was cut short in 1753 when a gardener accidentally decapitated it. The earliest records of reptile breeding date back to 1828 when a pair of pythons (presumed to be Burmese) bred and laid eggs in the same collection. The snakes had been in captivity for over two years prior to this event, however it is unknown if the eggs hatched (Jones, 2012).

Over the last 25 years reptiles have shed the majority of their image as ‘evil’ and ‘menacing’, which has resulted in them emerging as a hugely popular pet. This is probably due to most of them not being demanding animals; for example, apart from fresh water being readily available, most lizards do not need to be fed every day, and snakes only require feeding (depending on their size) from once a week up to once a month. This general low level of maintenance is thought to be a contributing factor in the steady rise in the number of UK households keeping reptiles as pets, rather than the more traditional companion animals such as dogs, cats and rabbits (Jones, 2012). It has even been said by the Companion Animal Welfare Council (CAWC) that “it may be easier to keep some non-domesticated species to high welfare standards than some that are domesticated. Thus, meeting all the requirements – space, dietary, social, thermal, and so on – of a small, hardy, reptile may be more readily achievable for many people than adequately fulfilling all the needs of some breeds of dog” (CAWC, 2003; EUARK, 2012).
Aims and Objectives

- Looking at whether certain animal welfare organisations and animal rights charities are right or wrong about wanting the UK to ban the import of all reptiles, along with the keeping of them as pets.
- Will a ban on importing/keeping reptiles affect the people within the hobby?
- Do we need to import certain species who are wild caught or captive farmed? This will look at species which are imported for conservation purposes and others who are imported mainly because there are very few captive bred animals in the country.
- What are the risks of importing wild caught and captive farmed reptiles? Infectious diseases and parasites which can result in animal mortality, spreading the disease to other reptiles if proper quarantine methods are not used. Also the risk of humans becoming infected with salmonella which some reptiles are known to carry.
- To discuss whether we can provide everything a captive reptile needs to meet its welfare requirements. Many of the animal charities claim that “no one” can provide reptiles with the level of care they need when kept as pets, and many say they are hard work and therefore are unsuitable as pets.

Hypothesis

- The majority will agree that an EU wide ban on the importation and/or keeping of reptiles would affect them.
- There will be mixed views on importing wild caught and captive farmed animals for the pet trade.
- The majority will support the importing of these animals for conservation purposes.
- The statement “75% of all reptiles die within the first year of being in the home” is false and the number will be much lower.
- The number of people who have contracted salmonella from their reptiles will be low.
- The majority of keepers will get the information they need to care for their animals from the internet.
Literature Review

Since 1991 the UK’s reptile industry has grown to an estimated 6.5 million animals being sold per year, and in 2012 it was estimated that there are now 8 million reptiles being kept as pets, across 1.1 million households. The value of the reptile sector of the UK pet industry in 2012 reached £200 million, with 1000 vivariums being sold per week by just one manufacturer. There are over 1000 stores selling reptiles in the UK and approximately 250,000 reptiles and amphibians being bred in the UK each year, which is steadily increasing. As the number of reptiles being kept rises, so does the production of food for them. In 2004 UK cricket farms were producing approximately 10 million crickets per week, however the data for 2012 shows this figure has risen to 25 million a week. It is also estimated that over 2 million frozen rodents are sold each week for snake food. (EUARK, 2012).

Threats to the Reptile Industry

It has not all been plain sailing for reptile keepers and enthusiasts though, as over the last 15 years the British reptile industry has been fighting against unfair legislations and refuting the claims of animal rights extremists. Animal welfare and animal rights are terms which are often misused and confused. In terms of internally generated legislative oppression, the UK branch of this hobby is safe; however those who oppose the keeping and importing of reptiles have found a new avenue to champion their cause. Realising that legislation generated in Brussels will automatically affect the UK (as well as the rest of the EU); this is where the animal rights groups across the whole of Europe are focusing their campaigning and lobbying efforts to implement changes. Should these changes be agreed by the European Commission, every reptile hobbyist, retailer, trader, importer, manufacturer, and enthusiast across Europe will be affected (EUARK, 2012). There are a number of groups who are opposed to the keeping of reptiles as pets, and some are also against the importation of them, be they wild caught or captive bred. The RSPCA, Eurogroup for Animals (EGA), ENDCAP (formed of several organisations including; Animal Public, The Animal Protection Agency, Born Free and Code for the Wild), and the Animal Protection Agency (APA) are currently the biggest threats to the hobby in Europe and the UK, but there are others also interlinked with these groups.

The RSPCA is the world’s oldest animal welfare organisation with an annual income of over £100 million. They recently had an open declaration for animal rights removed from a policy document due to the charity commission threatening to remove their charitable status. Animal welfare can be simply described as “To prevent suffering and cruelty to animals”, whereas animal rights can be
defined as “To end all human exploitation of animals” (Newman, 2006). Despite calling themselves an animal “welfare” organisation, the RSPCA openly oppose; the sale of animals from pet shops; the trade in wild caught animals; the breeding of captive bred wild animals; and the confinement of animals in captivity (EUARK, 2012). These are usually the type of statements associated with animal rights groups and organisations.

The RSPCA act as the secretariat to the Associated Parliamentary Group for Animal Welfare (APGAW); a group which directly influences and informs British politicians and Peers about animal welfare issues. This group is the primary route taken by lobbyist and campaigning groups to directly influence politicians, legislators and law makers. Shortly before the commencement of the new British Animal Welfare Bill (2002), the RSPCA and other animal rights groups produced several professional and scientific publications calling for a ban on the trade and keeping of reptiles and amphibians (EUARK, 2012). One of these documents by the RSPCA is entitled ‘Shell Shock; the continuing illegal trade in tortoises’ produced in 2001. They claim tortoises are captured from the wild and transported illegally into the UK for the pet trade, and that they make unsuitable pets with nine out of ten dying within four years. For the same report, they quoted statistics from a survey of pet shops, which was carried out to investigate the mortality of Spur-Thigh and Herman’s tortoises following importation. The claims were that an average of 26.5% died within the first year, older specimens averaged at a 48% death rate, and within four years 92% were dead (RSPCA, 2001). However, what they failed to mention was that the statistics were produced in 1986 when the standard of reptile knowledge was lower, and that the figures were therefore 15 years out of date when the report was published.

All the other documents produced by the RSPCA and other animal rights groups before 2002 were seemingly backed by statistics and scientific research, and were distributed to all the political parties, as well as being produced for reference and as evidence in several APGAW meetings. The Reptile and Exotic Pet Trade Association (REPTA) utilised letters and papers produced by advocated scientists and veterinarians from across Europe and refuted the poorly formulated documents produced by the RSPCA. The European Union's own Scientific Review Group (SRG) discredited the 'scientific reports' produced by the RSPCA and they were subsequently disregarded in this statement:

“The outcome of the discussions was that the Scientific Review Group felt unable to accept the conclusions of the RSPCA/Pro-Wildlife report. The SRG felt that the report was based on an incomplete review of the literature, contained inaccuracies and gaps in knowledge” (EUARK, 2012)
However, many organisations continue to use this document as reference, circulating information from it to legislators and media organisations across Europe. The most recent to cite and quote from this discredited report was Eurogroup for Animals (EGA) in summer 2012. Realising that the way legislations were formed and implemented was shifting to Europe; the RSPCA instigated and formed a new organisation called Eurogroup for Animals, based in Brussels. EGA is a coalition of animal welfare organisations from across 40 European countries, its broad goal is to improve the treatment of animals throughout the European Union from farming, animal testing, skin trade and all aspects of the pet trade and companion animals. EGA is a successful organisation as they are able to rally the millions of citizens who support their affiliate organisations. With so many voices supporting their causes, the influence EGA has on European, national and local decision makers is substantial (EUA RK, 2012). Some of the major achievements EGA have accomplished in recent years are; calves are not allowed to be kept in small veal crates in the EU as of 2006; it was illegal as of 1st January 2012 to keep battery hens in barren cages; and there is now a legal obligation under the EU treaty to consider animals as sentient beings when drafting legislation (EGA, 2012).

Eurogroup for Animals produced a document in 2011 looking at the risks of keeping exotic animals. They stated that there is increasing evidence that importing exotic species for the pet trade threatens the survival of wild species and biodiversity, along with the health of humans and domestic animals from the transmission of zoonotic diseases. According to EGA, wildlife trade both legal and illegal has a significant impact on populations of species as well as individual animals. Some wild animals are 'harvested' at unsustainable levels, captured under dire conditions and often face high mortality rates due to being transported and detained in holding centres (Eurogroup for Animals, 2011). EGA recommends creating a Positive List of animal species which are allowed to be kept by private owners. These animals must be easy to hold, and kept in respect of their essential physiological, ethological and ecological needs; species that are kept cannot be aggressive and/or dangerous or represent a particular danger to human health; and data must be available concerning the keeping of these animals (Eurogroup for Animals, 2011).

All the animal organisations who are against the keeping and importing of reptiles reproduce the same arguments and claims in their documentations. The main four sections that appear are; animal welfare, conservation, human health and invasive alien species.

**Animal Welfare**

In 2012 the RSPCA made five pledges, the last of which was “to reduce the number of exotic animals kept as pets and increase their humane care”. This pledge stated that not all wild animals
kept as pets have been bred in captivity, for example, reptiles which are being caught in the wild and then transported long distances in unacceptable conditions to be sold as pets in the UK. It also highlights that these animals can be difficult to look after, they live for a long time and need specialist care. They also claim that high quality care information can be hard to find which means that animals suffer welfare problems and even die. The RSPCA state that the number of reptiles being imported into Europe and the UK, including the proportion that have been taken from the wild is increasing. The figures have risen from an estimated 5.9 million reptiles in 2005 to just over 15 million in 2009 (RSPCA, 2012).

The Animal Protection Agency produced a short document entitled ‘Hands Off Exotics’ in which they state that “exotic animals do not make good pets and are not suited to a life in captivity” (APA, 2012). The document does not specify what they mean by 'exotic' however it probably includes mammals as well as reptiles. Looking at the rest of the document with just reptiles in mind, it is clear that the APA have not looked at all the facts and scientific evidence available to them.

According to the APA exotic pet keeping is “a ‘hobby’ of ignorance” where the keepers know little about the biological needs of their animals and the sellers of reptiles rely on this uninformed market. They also state that the exotic pet industry creates a demand for these animals by marketing them as low maintenance and easy to keep, but the APA say this is a deceptive and damaging message which is being countered more and more by veterinary and biological professions (APA, 2012).

The APA then go on to say that the traders of these animals along with pet shop staff “commonly lie about the origins of their animals, leading customers to believe that they are captive bred when in fact they have been snatched from the wild” (APA, 2012). Another claim made by the APA in August 2012 is that “a new scientific study of the exotic pet trade has found that at least 75% of pet snakes, lizards, tortoises and turtles die within one year in the home” (APA, 2012), and this statement is being circulated in various documents and papers produced by other animal welfare organisations. Elaine Toland, Director of the Animal Protection Agency says: “The fact that most reptiles die within a year is truly tragic, and is probably unresolvable because reptiles and captivity simply don’t mix… A ban on this high turnover trade in ‘disposable’ animals is long overdue.” (APA, 2012).

There are risks related to the importing and keeping of exotic animals in terms of their welfare, especially a lack of knowledge or expertise in the handling and care of such animals. This could
refer equally to owners, traders, transporters and veterinarians. Claims have also been made that there is a lack of readily available and reliable information on the husbandry requirements of many exotic species, which leads to inappropriate keeping conditions by owners who cannot satisfy the physiological and ethological needs of the animals (Pipis, 2012).

**Human Health**

The biggest cause of concern about keeping reptiles as pets is the risk of infection by salmonella. Salmonellosis is a digestive disease which can be severe, and is sometimes fatal to the very young and elderly. There are approximately 300,000 cases of human salmonellosis per year in Western Europe. It is the most important zoonosis linked to the husbandry of reptiles, who host salmonella in their digestive tract without showing any symptoms, and excrete it in their faeces (EGA, 2010). In the UK alone it is estimated that there may be approximately 5,600 cases of reptile-related salmonellosis annually.

The main reason that all the animal groups who are against keeping reptiles as pets use salmonella as a lobbying factor in their fight to get the animals banned, is because that approach was successful in 2005, when wild-caught birds being used for the pet trade was banned. The disease cited in that case, which was considered to be a threat to human health was avian influenza. (ENDCAP, 2012). Using a disease that could potentially be a risk to human health, is a very good tactic when lobbying governments and legislation formers to take action by banning certain animals from entering or leaving a country.

There is a second possible zoonosis; Pentastomosis is caused by porocephalida parasites, which are parasites of reptile lungs (snakes and lizards) and are present in Asia, Africa, tropical America and Australia. Humans can be contaminated through the ingestion of eggs which are present in faeces and from the saliva of infected snakes. The main zoonotic cases are linked to imported snakes but these are rare (EGA, 2010).

Whilst there are risks with keeping any type of animal, it has been proven by assessments and statistical analysis for injuries and disease risks that reptiles are the second safest pet to keep, just behind tropical fish (EUARK, 2012). The Home Accident Surveillance System (HASS) produced reports from 1999-2002 from data collected relating to injuries caused by animals:
<table>
<thead>
<tr>
<th>Year</th>
<th>Dogs</th>
<th>Cats</th>
<th>Rabbits, Hamsters etc.</th>
<th>Reptiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>70581</td>
<td>16022</td>
<td>3676</td>
<td>402</td>
</tr>
<tr>
<td>2000</td>
<td>66915</td>
<td>16126</td>
<td>3264</td>
<td>426</td>
</tr>
<tr>
<td>2001</td>
<td>62172</td>
<td>13548</td>
<td>2196</td>
<td>428</td>
</tr>
<tr>
<td>2002</td>
<td>64063</td>
<td>15006</td>
<td>2932</td>
<td>328</td>
</tr>
</tbody>
</table>

Table 1 – Data taken from HASS website (2002)

Figures from the NHS Trust Health and Social care Information Centre (2012) show that 6,450 people were admitted to hospital for injuries caused by dog bites during the 12 months to April 2012 which had risen by 5% from the previous year. Children under 10 accounted for more than 1,000 admissions, 75% of which needed surgery, with 494 requiring plastic surgery and 278 requiring oral and facial surgery. It is also estimated that 350,000 people a year in the UK become infected with toxoplasmosis which is spread by direct contact with dog or cat faeces or eating contaminated food. In terms of salmonellosis, there were more than 17,250 cases reported in humans in 1999, but only 7 of these were confirmed as being contracted from a reptile source (EUARK, 2012).

An independent study titled CLASSP looked at the risk of salmonella infection with exposure to reptiles took place in England between 2004 and 2007. At the end of the study, there were 2,276 cases of salmonella in people who didn't own reptiles as pets, compared to 34 cases amongst people who did have reptiles as pets (Aiken et al 2010).

There is sufficient evidence to counter all the health scares that the animal welfare organisations are claiming, regarding the transmission of salmonella from reptiles to humans. Providing good hygiene is practised (i.e: washing hands after handling, wearing gloves to clean the housing and, keeping young children away from them until their immune systems are well developed), there is no real risk of the disease being spread to humans. As the studies have shown, salmonella is more likely to be contracted from other animals (dogs, cats, birds) or, by eating poorly prepared food.

**Conservation**

The APA have a very strong view on keeping exotics as pets claiming that “purchasing an exotic animal also means supporting a trade that involves a high level of cruelty and environmental destruction” as they imply that many of these animals are captured straight from the wild (APA, 2012). There are benefits related to the importing and keeping of reptiles such as acquisition of
knowledge about the species, which come from the hobbyists; and the maintenance of genetic diversity, by preserving the gene pools of certain species. However, alongside the benefits there are also risks such as a population decline in the natural habitats of wild caught animals; damage to non-target species if there is destruction of the natural habitats due to indiscriminate means of capture; and also the risk of environmental consequences due to invasive alien species; possible transmission of diseases to other livestock and also the risk of zoonotic diseases (Pipis, 2012).

An example of the conservation of a species by the monitored removal of it from its natural environment is the case of the Golden Mantella frog. These amphibians are under the highest IUCN protection status, being listed as critically endangered. These frogs are numerically and geographically restricted, and under threat due to mining and other types of habitat destruction. The Madagascan government prevented further mining of the Golden Mantella’s habitat, and instigated a conservation program where by a certain number of the frogs were collected for use in the pet trade to ensure the long term survival of the species. The proceeds from this activity are being invested back into local community projects which protect and guard these amphibians and the bodies of water they inhabit (EUARK, 2012). The combination of being collected for the pet trade and the local projects protecting them means that the extinction of the Golden Mantella is no longer inevitable, as it had been if no intervention had happened at all.

**Invasive Alien Species**

Reptiles may find themselves in the wild for a number of reasons, for example; being released by their owners due to their size, or unwillingness to continue to care for them, or some may simply escape. All these animals have the potential to establish themselves within the environment. In the UK a problem already exists with red eared sliders (terrapins) in the Southern ponds and rivers. These animals run the risk of unbalancing the natural ecosystems and may pose a threat directly to humans. It is possible to encounter boa and python species in the UK as well, however due to the cold winters they will usually not survive (Jessop, 2012). This applies to the majority of common reptiles kept as pets in the UK as the climate is too cold for many of them to survive even in the summer months. It is usually only our native reptiles which survive here.
Method and Materials

The main method of collecting new evidence is in the form of a questionnaire, distributed online through various Reptile Forums, Facebook pages and groups. It consists of 14 questions with some targeting specific points of interest such as:

- The number of Wild Caught and Captive Farmed reptiles in people’s collections.
- The number of reptiles which have died within the first 12 months of being at home.
- Whether a ban on reptile keeping or importing would have an effect on keepers.
- Do reptile keepers agree on importing wild caught and captive farmed animals for the pet industry and conservation purposes?
- How many reptile keepers have been infected with salmonella from their animals?

The results will be used alongside research to either disprove or agree with certain statements that have been made by various groups, and to also prove or disprove the hypotheses stated earlier.
Results and Discussion

The questionnaire was distributed over the reptile keeper's networks on the internet and respondents had five age categories to choose from, along with six main occupations. Figure 1 and 2 shows the results:

![Age range of questionnaire participants](image1)

**Figure 1**

![Main occupation of questionnaire participants](image2)

**Figure 2**
As expected the number of older reptile keepers was greater than younger ones, and it also corresponded with most people having full time jobs. Some of the respondents did mention that there should have been a wider age range, as a number of them said they were actually retired, and not unemployed. Had there been more age ranges to choose from it is likely that the majority of reptile keepers would be between 20 and 45. The numbers would decrease as the age range became older.

The respondents were asked how many reptiles they owned in their collection, which was then split into snakes, lizards and chelonian with the following results:

![Figure 3](image)

As the graph shows the majority of people keep 15 or more reptiles with the second most popular number of reptiles being six to 10. The majority of people who kept the highest number of reptiles were in the higher age ranges, and either full time or self-employed. Statistically within the number of usable replies received (817), the number of reptiles being kept by the survey group is between 6992 and 7887 but is likely to be much higher as those numbers have been calculated using the lowest and highest options available. If there had been a higher range of answers for this question it would have provided a more accurate figure, also if the option had been given to report the exact number of animals owned.

Snakes were the most kept species of reptile with the majority of people keeping six or more, giving a minimum of 2931 snakes out of the total number of reptiles. Lizards were the next most
commonly kept with the majority of people keeping six or more, resulting in a minimum of 2065 lizards out of the total number of reptiles. Chelonians were the lowest kept group of reptiles with a minimum of 358 individuals being kept. The most common number to be kept was one or two. Interestingly, those who kept both snakes and lizards tended to not keep chelonians as well.
One of the aims of this questionnaire was to find out whether if a ban came into force which prevented either the importing or keeping of reptiles, it would affect people within the hobby? As predicted in one of the points in the hypothesis, the majority answered “Yes” to that question with only a few disagreeing.
If a ban was put in place to prevent the keeping of all or some species of reptiles within the EU it would have serious consequences for the animals and their owners. Other countries in the EU have already tried to ban the keeping of reptiles but these legislations have been lifted or are due to be lifted, as they did not stop reptile enthusiasts from pursuing their hobby. By prohibiting reptiles, the trade was pushed underground, and out of regulatory control. This would eventually have an impact on the welfare of the animals as many keepers would be reluctant to seek veterinary help for fear of being prosecuted. (EUARK, 2012).

The prohibition of keeping these animals may also lead to invasive species issues as some could be released into the wild by the owners. Animal groups against the keeping and importing of reptiles have been known to claim that many of the animals for sale in reptile shops and reptile shows are not captive bred but are in fact wild caught. Some animals are indeed wild caught or captive farmed specifically for the pet trade, and this issue was used in another of the questions asked, to which people responded in a mixed manner.
As the graph shows there were very mixed opinions on this question. Some commented and felt that wild caught and captive farmed animals should only be used by established breeders to either introduce a captive bred market or to expand the gene pool in the current market. Interestingly, some of those who answered "No" to importing wild caught or captive farmed reptiles for the pet industry had one or more within their collection. When asked if these animals should be imported for conservation purposes the answers were much more positive as shown by the graph below:
Those responding to the questionnaire were asked if they owned any wild caught or captive farmed reptiles within their collection and the following table shows the results out of 817 replies:

<table>
<thead>
<tr>
<th>Wild Caught or Captive Farmed?</th>
<th>Number of People with these Animals in their Collection</th>
<th>Total number of Animals Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild Caught</td>
<td>139</td>
<td>455</td>
</tr>
<tr>
<td>Captive Farmed</td>
<td>260</td>
<td>1323</td>
</tr>
</tbody>
</table>

*Table 2 – Number of Wild Caught and Captive Farmed reptiles*

**Wild Caught vs Captive Bred**

The big question is, is there still a need for wild caught and captive farmed reptiles to be imported for the pet trade? Pet keepers have been buying wild caught reptiles for many years and often have no trouble with them at all. However the revolution in captive breeding over the last 30 years has meant that there has been a huge shift away from wild caught animals, with an estimated 90-95% of reptiles in the pet trade being captive bred. Captive bred reptiles are undoubtedly better pets than those brought in from the wild as breeders have selected the most desirable genetic traits such as colour, temperament and dietary habits. Captive bred reptiles are also not subjected to the stresses of large scale transportation and storage (Jones, 2012).

The image of the wild caught reptile trade as portrayed by animal rights groups is very different to the reality. According to a report by Pro Wildlife to the RSPCA in 2001, it was stated that wild caught specimens for live reptile imports once represented about 90-95% of the trade. Even with the focus on captive bred animals being high, some groups claim that many species do not breed well in captivity, and are still harvested from the wild, with research showing that 90% of wild-caught reptiles die prematurely (Eurogroup for Animals, 2011). However, the number of reptiles being imported from the wild has actually reduced over the years, and due to increased husbandry knowledge, the shipping and holding procedures have improved resulting in low mortality rates. A report was produced in 1993 entitled “The UK Trade in Live Reptiles and Amphibians” which looked at the nature and status of the reptile and amphibian pet trade between 1980 and 1992. In this report it was stated that the mortality in transit was found to be less than 0.5% in 15 shipments of over 8,000 animals which were examined at Heathrow Animal Quarantine Station (Smart & Bride, 1993). A similar report was published 10 years later in 2003 where the mortality rate of approximately 500,000 reptiles being imported via Heathrow was examined and found to be 0.47% dead on arrival (Jones, 2012).
It is important to remember that the species being imported for the pet trade have changed too as more information is available advising which ones make the best pets. Popular pet species such as Corn Snakes and Leopard Geckos are rarely imported due to the high numbers being produced in captivity. Any which are imported from the wild are ordered by professional breeders to expand captive bloodlines (Jones, 2012). Some species are captive farmed in their native countries, for example; tortoises such as Hermann’s and Horsfields (although more are being bred in captivity now), uncommon monitor lizards, and some snakes which are extremely difficult to breed in captivity such as Boelen pythons. While many will not consider these captive bred, they do display many of the same merits. Also as knowledge of how to successfully breed these animals in captivity improves, less will need to be imported.

Without the wild caught imports there would never have been captive breeding. The importing of these animals has allowed the reptile industry to discover that it is possible to keep chameleons in captivity where once it was thought impossible. Crested geckos that were once thought to be extinct, until they were rediscovered on their native island of New Caledonia in 1994, are now the fifth most commonly bred lizard in captivity due to some being imported and bred. There are also more veiled chameleons in captivity than in the wild. Thanks to the efforts of breeders working with wild caught and captive farmed animals, these species are now being bred in large numbers across the world and are essentially safe from extinction (Jones, 2012).

**Health Risks of Importing Wild Caught Animals**

One of the issues keepers are most likely to encounter when dealing with wild caught animals is parasites. Serious parasitic infections can lead to a loss of appetite causing the animal’s condition to decline, and if treatment is not sought, death is a high possibility. The most common type found in reptiles is intestinal parasites. In the wild, the animals are exposed to parasites and do develop infections. However, a co-existence has formed over a long period of time between the reptile host and the parasite, leading to a level of tolerance being built up (Castille, 2013).

When reptiles are brought in to captivity from the wild and introduced to vivarium surroundings, the sudden change in environment can alter many of the factors which allowed the stable relationship between host and parasite to exist. The reduced space in captivity means the microscopic parasite eggs which are shed in the faeces can build up to a much higher level than they would in the wild. Also the natural elimination of parasitic eggs by exposure to intense sunlight, or being washed off by rain does not occur, meaning the reptile is exposed to higher numbers of the parasite which becomes a burden and soon overwhelms the immune system. Stress factors such as incorrect
temperatures, nutritional deficiencies, fear and social stressors in breeding groups can also have a negative effect on how the animal's immune system functions, resulting in further hampered defences. This means the natural immune response to the parasites is weakened, which may lead to them invading deeper into the tissues, multiplying more effectively and causing more damage as a result of the host being unable to resist them (Castille, 2013).

In pet shops and homes containing more than one species of animal, parasites from wild caught and captive farmed animals may be transferred easily through handling, housing, equipment or in water. Although these parasites can live in harmony with their natural host species, by bringing together different species there is a high risk of introducing new parasites to species which have not previously encountered them, and this can have unpredictable and possibly detrimental effects (Castille, 2013). It is important to get a faecal test performed on any animal entering a collection, but more so those who have been wild caught or captive farmed. The most commonly found parasites in captive reptiles are as follows:

<table>
<thead>
<tr>
<th>Protozoa</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flagellates</strong></td>
<td>The most common flagellates are <em>Hexamita</em>, <em>Trichomonas</em>, <em>Giardia</em> and <em>Leptomonas</em>. Small numbers of these protozoans in clinically normal animals are likely to be commensal organisms. Large numbers usually coincide with gastrointestinal dysfunction, including prolonged anorexia, gastroenteritis and infection by other parasites. <em>Hexamita</em> have been associated with renal disease in tortoises.</td>
</tr>
<tr>
<td><strong>Ciliates</strong></td>
<td>The most common ciliates are <em>Balantidium</em> and <em>Nyctotherus</em> and are primarily found in chelonians. As with the flagellates, these found in small numbers are likely to be commensal, but large numbers may be found in gastrointestinal disease.</td>
</tr>
<tr>
<td><strong>Entamoeba</strong></td>
<td><em>Entamoeba invadens</em> is thought to be a commensal organism in the gut of herbivorous reptiles, however in snakes the amoebae burrow into the intestinal lining and cause haemorrhagic enteritis, resulting in high morbidity and mortality rates.</td>
</tr>
<tr>
<td>Parasite Type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>Coccidia</strong></td>
<td><em>Isospora spp.</em> are very common in inland bearded dragons, frilled lizards, veiled chameleons and leopard geckos. These lizards present with anorexia, weight loss and diarrhoea. Coccidiosis infection may be just one of several health issues affecting the animal at one time. It is not unusual to diagnose sick inland bearded dragons with coccidiosis, metabolic bone disease and adenovirus infection at the same time.</td>
</tr>
<tr>
<td><strong>Pinworms</strong></td>
<td><em>Oxyuris spp.</em> is particularly common in chelonians and lizards. These worms have a direct life cycle and are thought to be acquired through faeco-oral contamination from other infected individuals. They live primarily in the lower gastrointestinal tract and usually cause little damage.</td>
</tr>
<tr>
<td><strong>Ascarids</strong></td>
<td>Roundworms are a common reptile parasite which has an indirect life cycle. They are acquired by the animal ingesting the intermediate hosts such as frogs, fish, rodents and lizards. Reptiles can tolerate a moderate infection of these parasites as they do not attach to the walls of the gastrointestinal tract. The most common pathology is that of secondary malnutrition, as roundworms can absorb up to 40-50% of what the animal consumes. In a stressed animal that is not eating well, this can be a significant problem.</td>
</tr>
</tbody>
</table>
| **Cryptosporidia** | A coccidian parasite; *Cryptosporidium serpentis* produces two primary syndromes in snakes:  
- The acute form is characterised by regurgitation within a few days of eating due to the parasite colonising the gastric crypts which leads to intense inflammation.  
- The chronic form is where the snake gradually wastes away and rarely regurgitates, partially due to it being anorexic. Cryptosporidiosis is also a cause of chronic wasting disease in several lizard species, one being leopard geckos. |
| **Mites** | *Ophionyssus natricis*, the snake mite, is the most commonly known ectoparasite and the easiest to be diagnosed. They are usually found in between scales, cloacal folds and the corners of the mouth among other places. The mites may be moving on the host and can appear as red, grey, brown or black depending on the life stage and whether the mite has been feeding. Mites have been implicated in the transmission of bacterial and viral agents such as inclusion body disease in boid snakes. |

*Table 3 – Common parasites in captive reptiles (Klingenberg, 2004)*
75% of all Reptiles Die within One Year

The biggest statistical claim made by the Animal Protection Agency is that 75% of all reptiles die within one year of being in the home, and it is a claim which has been published in several lobbying documents used as evidence to ban the importing and keeping of reptiles. It has recently come to light in a radio interview for BBC 4 (Costing the Earth – Exotic Pets) exactly how the APA reached that figure:

“Over a five year period we (APA) compared the number of animals coming into trade against the numbers in private ownership. We worked out over a five year period an average of 700,000 reptiles per year were coming into trade. Around the same number were being kept in private homes but significantly the numbers in private homes didn’t change year on year even with the additional influx of animals each year. So we very conservatively estimated that around 75% of reptiles were dying within a year in the home” – Elaine Toland, (BBC 4 interview).

Estimating such an important figure is not very scientific, and the methods used to reach this figure are also questionable. One of the most important questions on the questionnaire given to the reptile community was “How many reptiles have died within the first year of being in your home?” followed by further details about the animal such as whether it was wild caught, captive farmed or captive bred, and what the animal died of if known, the results are as follows:

![Figure 11](image_url)

**Figure 11**
163 keepers put that at least one of their animals had died within the first year, which equated to a minimum of 227 reptiles deceased within 12 months, the majority of which being captive bred.

The main known cause of death was disease or infection, however almost half of the respondents did not know the cause of death. Some people commented that genetic issues were not an available option with the closest being disease or infection, so they contribute to a fraction of that total. It would have been interesting to know which disease or infection it was that caused the fatality, however this was not a given option, but it would be included if this question was asked in
a future project. Out of people who replied only seven selected incorrect care as the cause of death, which could be due to the large amount of conflicting information available on the internet for certain species, or if they did not go to a reputable shop to purchase the animal or equipment. The majority of animals reported dead within 12 months were captive bred. This was unexpected as there are quite a few wild caught and captive farmed animals in the number of people surveyed, and they would be the first suspected to die due to possible internal parasites or diseases they may be carrying. However, the captive bred deaths may have included babies from breeding projects and may have fallen under the unknown category.

It's important to note that while eight people put that five or more of their animals died within 12 months, this does not necessarily show a lack of care, as two people explained that they had been trying to establish new species which had been wild caught or captive farmed into their collection. Some species are very difficult to get acclimatised to life in captivity especially if there is limited information on how to care for them. This is something that also would have happened decades ago when reptiles were first being caught and kept as pets. Without these people trying to establish new species, there would not be such a wide range of reptiles, or the husbandry knowledge available to enable enthusiasts to buy and successfully care for captive bred animals.

The main purpose of putting this question into the questionnaire was to try and prove the claim that 75% of all reptiles die within one year of being in the home as false. By taking the minimum number of reptiles owned within the survey, and the 227 deaths, the percentage of animals dying within 12 months of being at home equates to 3.25%. This is just a fraction of the percentage claimed by the APA and a more realistic number. If the figure of 75% was correct then the number of deceased reptiles in a year would have been around the 5000 mark.

**Reptiles and Human Health**

Another of the major points made by animal rights groups to try and stop people from owning reptiles is the apparent high risk of salmonella and other diseases that can be transferred to humans. According to ENDCAP, amphibians and reptiles act as a reservoir of known pathogens with 90% of captive reptiles harbouring salmonella. An increase in reptile keeping is believed to be responsible for the current level of reptile-related salmonella which is 4-5% of all salmonellosis cases equalling 70,000 cases annually (ENDCAP, 2012).

Salmonella is the only zoonosis in reptiles which affects humans; however the number of people contracting it from their pets is very small. In 1999 there were more than 17,250 cases of human
salmonellosis reported, but only seven of these were confirmed as being contracted from a reptile source (EUARK, 2012). This calculates at 0.04% cases annually compared to the 4-5% figure stated by animal rights groups.

There are over 2000 serotypes of salmonella with over half of salmonellosis cases being caused by just two; S. enteritidis and S. typhimurium, neither of these are normally found in reptiles, but they are found in chickens. Salmonella bacteria can be found in a wide range of species (dogs, cats, cattle, pigs, birds and more) and are commensal organisms, living within the gut of the animal host but causing them no illness and being excreted in their faeces. Reptiles do commonly carry salmonella, but only 30-70%, not 90% of all captive reptiles as stated by animal rights groups and it is predominantly the unusual serotypes (Allen, 2003).

There are more diseases which are zoonotic that can come from domesticated animals such as dogs and cats, also farm animals than those which can come from reptiles as the table below shows:

<table>
<thead>
<tr>
<th>Cats</th>
<th>Dogs</th>
<th>Farm Animals</th>
<th>Reptiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter</td>
<td>Brucella canis Infection</td>
<td>BSE (Mad cow disease)</td>
<td>Salmonella</td>
</tr>
<tr>
<td>Cat scratch Disease</td>
<td>Campylobacter Infection</td>
<td>Brucellosis</td>
<td></td>
</tr>
<tr>
<td>Cryptosporidium</td>
<td>Cryptosporidium Infection</td>
<td>Campylobacter Infection</td>
<td></td>
</tr>
<tr>
<td>Hookworm</td>
<td>Giardia Infection</td>
<td>Cryptosporidium Infection</td>
<td></td>
</tr>
<tr>
<td>Leptospiro Infection</td>
<td>Hookwork</td>
<td>E. coli 0157</td>
<td></td>
</tr>
<tr>
<td>Plague</td>
<td>Leptospirosis</td>
<td>Rabies</td>
<td></td>
</tr>
<tr>
<td>Q fever</td>
<td>Lyme disease</td>
<td>Ringworm</td>
<td></td>
</tr>
<tr>
<td>Rabies</td>
<td>Q fever</td>
<td>Salmonellosis</td>
<td></td>
</tr>
<tr>
<td>Ringworm</td>
<td>Rabies</td>
<td>Yersinia enterocolitica</td>
<td></td>
</tr>
<tr>
<td>Roundworm</td>
<td>Rocky mountain spotted fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salmonellosis</td>
<td>Roundworm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tapeworm</td>
<td>Salmonellosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxocara Infection</td>
<td>Tapeworm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxoplasmosis</td>
<td>Toxocara Infection</td>
<td></td>
<td>(Allen, 2003)</td>
</tr>
</tbody>
</table>

*Table 4 – Zoonotic diseases and animals which carry them*
The people answering the questionnaire were asked if they or a family member had ever suffered from salmonella and whether it was reptile related or not. Out of the 817 replies, only 20 had been infected by salmonella with 16 being non-reptile related and four with reptiles as the source. This means that out of just over 800 people the percentage of those who have caught salmonella from reptiles is 0.49%, which is throughout their entire time of keeping reptiles, not annually. One person commented saying a family member caught salmonella when pet turtles were a popular pet due to the “Ninja Turtle” craze. These animals were being bred in large numbers for rapid sale and the public buying them were given little or no education regarding basic husbandry or good hygiene practice (Allen, 2003). This is where the concern about reptiles transmitting salmonella to humans began, purely due to a lack of knowledge.

The greatest risk of salmonella infection comes from animal faeces, which includes cats, dogs, rodents and farm animals who are all major carriers of the two main serotypes of the bacteria, as well as reptiles who carry the more unusual serotypes. In actual fact the risk of faecal contamination is much higher from non-reptile species as it is more easily accessible. If basic husbandry criteria are followed, the faecal matter from reptiles is contained within a clearly defined area which has restricted access, such as within a vivarium, and these areas can be easily decontaminated (Allen, 2003). Providing good personal hygiene is observed when clearing reptile faecal matter, there is no risk of infection.

Is Credible Information Hard to Find?
Another favoured statement made by those who are against people keeping reptiles as pets is that information is hard to find on how to care for these animals. According to some groups, keepers of reptiles know little about the biological needs of their animals and the sellers of them rely on this uninformed market. The exotic pet industry also creates a false demand for these animals by marketing them as low maintenance and easy to keep. This lack of high quality information means the welfare of the animals is impaired and they suffer as a result (APA 2012, RSPCA 2012). Is good quality care information hard to find? This was one of the questions asked on the questionnaire and the results were as follows:
As the graph shows the majority of people do not think it is hard to find correct care information for a variety of reptile species. This would be dependent on where they look and for what animal they are trying to care for. The most established species such as Corn Snakes, Royal Pythons, Bearded Dragons, Leopard Geckos and many more have an abundant range of care sheets available on the internet and in books which will allow even the newest of keepers to look after their animals correctly. However when it comes to species which are not commonly kept, consistently accurate information can be hard to find.
The most popular place for people to search for information is the internet which can provide conflicting answers, depending on the topic being researched. Unfortunately, anybody can create a care sheet for any animal and post it online, the question is are they any good? The majority do contain good quality advice, and allow owners to gain knowledge easily. Internet forums are another place to obtain good information directly from people who keep the same animals. However, again these people may not know best and can give bad advice to new keepers. Books were also a popular choice for keepers to find information. These should provide the best information available as they will have been written by experienced keepers and checked before being published. The only problem is they can go out of date quickly if new evidence is discovered which changes the way a species is kept.

Out of the 817 people who completed the questionnaire, 43 stated they go to their local reptile shop for information. This may be because that is where they bought their animal and received good service and advice. However these shops can also give bad advice, depending on the level of knowledge of the people who work there. The RSPCA carried out a survey in 2003 (Handle With Care: A Look at the Exotic Animal Pet Trade) where 300 shops which sold exotic animals were questioned via telephone about which animals were available to buy and which would make good pets in different circumstances. Many of the shops gave out what the RSPCA considered to be bad advice. However they did mention that despite this, some shops did appear knowledgeable and were happy with the answers given (RSPCA, 2003).

The important thing to remember when looking for information on how to care for a new animal is to compare more than one source and look for consistencies particularly with regard to temperatures required, lighting, humidity and what substrate is commonly recommended.

**Can Reptiles be Cared for Properly in Captivity?**

One of the biggest arguments put forward by animal groups against the keeping of reptiles in captivity is that people cannot meet all the requirements these animals need in order to survive. This claim can be negated in several ways purely by looking at advances in husbandry equipment, knowledge of the animals being kept and the number of reptiles surviving and thriving in captivity. It was once thought that Leopard Geckos did not require UV light due to them being nocturnal animals. However scientific evidence has discovered that they are actually crepuscular, becoming active at dusk instead of at night as previously thought, and as they live in burrows which are placed in line with the suns daily path, they do receive some UV light. Due to them having such thin skin which is thought to be 14 times more transmissive than a Bearded Dragon, they only need
smaller doses of UV light for shorter periods of time. Studies have shown that Leopard Geckos kept with UV light grow quicker, stronger and have brighter colours than those kept without it (Arcadia, 2012).

The final question asked in the questionnaire was ‘As a reptile owner, do you feel that you provide the highest level of care possible in order to meet the welfare needs of your animals?’ and unsurprisingly 96.5% answered “Yes” with the rest saying there was room for improvement. As with all animals there is normally something that could be improved upon such as diet, exercise, housing to name a few, especially if the 3.5% who answered differently keep slightly more unusual reptiles. It is vital that keepers continue improving conditions for captive reptiles, in order to increase their welfare levels.
Conclusion

This report was produced to investigate several of the major claims stated by animal rights charities and animal welfare organisations and to ascertain whether they were right or wrong in these claims. It was also designed to see if the reptile industry would be affected should a ban on the importation, or keeping reptiles come into effect. Also, if those within the hobby felt that the pet trade needed access to wild caught and captive farmed animals.

Animal groups put a lot of effort into trying to push through bans on reptile keeping and importing, but the question is why? These are the claims made by them in a broad overview:

- They say reptiles are difficult or even impossible to care for properly meaning their welfare suffers.
- People are being sold captive bred animals which are actually wild caught.
- Keepers do not know enough about their animal's requirements as there is not enough information available.
- Reptiles are a major health risk to humans because of salmonella.
- Reptiles in the pet trade are being taken from the wild and many die in transit, and 75% die within the first year of being in the home.

All of the documents produced by these groups contain scientific facts and figures to back up their arguments and can appear quite convincing to those who have little or no knowledge of reptiles. However, if more research is conducted on each bold statement made, everything begins to unravel. Much of the data quoted from sources is out of date, inaccurate or taken out of context. If reptiles were impossible to care for properly they would not be such a popular pet in the UK, and the death rate would be much higher. The truth is there for all to see providing research is done properly. The advances in science have meant more knowledge has been gained about different species and their requirements, dietary improvements have been made and the availability of nutritional supplements has increased. Habitat equipment such as heating, UV lighting and substrate have been improving over the years and research is continually being carried out to provide pet reptiles with all the care they require. There is also an abundance of good quality information on how to care for many different species of reptiles on the internet and in specially produced care books.
The majority of reptiles within the pet trade in the UK are captive bred and not wild caught or captive farmed as stated by some groups. Eurogroup for Animals used the claim, which was originally from the RSPCA, that wild caught reptiles imported into the EU once represented 90-95% of the trade (RSPCA, 2001, Eurogroup for Animals, 2011). This document was produced by the RSPCA and Pro-Wildlife yet was discredited by the Scientific Review Group. A more up to date claim says that wild caught animals only make up 15% of reptiles in the pet trade, with 85% of those sold being captive bred (EUARK, 2012). Also the claim made by the Animal Protection Agency that 75% of all reptiles die within a year of being in the home was based on estimations made over a five year period with no evidence to support it. As shown in the results of this report, the actual figure is more likely to be around 3.25%.

The final argument from animal rights and welfare groups is the major health risks that reptiles pose to humans such as salmonella and other unspecified diseases. Research has shown that the only zoonotic disease reptiles carry is salmonella and not all of them do. Those which do carry it tend to have unusual strains which are not found to infect humans. This being said, out of 817 who replied to the questionnaire only four had contracted reptile related salmonella at some point in their time of keeping them as pets. There is plenty of literature available which specifies that as long as personal hygiene is good, there is no real risk of salmonella being contracted.

Unsurprisingly the majority of reptile keepers who answered the questionnaire said that a ban on the importing and keeping of reptiles would affect them. This wouldn’t just affect those who keep them as pets but the breeders who provide the pet trade with the captive bred animals, food breeders for the animals would lose business and shops would also lose trade. Pet owners spend an average of £87 million a week on pet care, and with seven million reptiles being kept in the UK; the reptile industry certainly contributes to this figure. The total spent on pets in the UK adds up to £4.7 billion a year, from which the government gains £1.6 billion in taxes. (ProPets, 2012).

There was a mixed response as to whether wild caught and captive farmed animals should be imported for the pet trade, however many of these animals are brought in due to there being no captive bred market for that particular species. Therefore, if people began to keep more of the imported species and established them so they bred, the numbers being brought in from the wild would theoretically be reduced. As certain animals (e.g. Boelen pythons and Dragon snakes) have yet to be successfully bred in captivity, in order to acquire specific species they will still need to be imported.
Lastly it is well documented that pets provide their owners with health benefits. Pet ownership is associated with lower levels of stress, blood pressure, triglyceride and cholesterol than non-owners, which cannot be attributed to differences such as cigarette smoking, diet, weight or socio-economic profile (ProPets, 2012, Lagoni et al, 1994).

In conclusion, keeping reptiles as pets in the UK has been happening since the 13th Century and the knowledge gained from having these animals in captivity is invaluable, not just to keep them healthy as pets but also for conservation purposes. Despite animal groups trying to prove why these animals should not be kept, by continually reusing old arguments and discredited documents to get their point across, the reptile industry is always producing new evidence to support themselves as to why they should be allowed to continue keeping these animals. If the animal groups really had the ability to prevent reptiles from being kept as pets they would have been able to produce up to date evidence to back their claims. However, there is a lot of scientific evidence available already to refute their claims and statements. With reptiles well on the way to becoming the UK’s most kept type of pet, it may well be easier for those against it to accept this fact and to focus their work on ensuring that these animals are being kept to a high welfare standard instead.
**Future Work**

One area within this report that could be expanded upon for future work is to look at the exact causes of death of reptiles in captivity. The results from the questionnaire only give a general overview, and it would be interesting to investigate further into the diseases and parasites which caused mortality, along with any genetic problems. Also if the owners who said the animal was captive bred were including hatchling and new born fatalities, or if it was all based on animals brought into the home from a shop or breeder.
References


- Arcadia (2012) **Species like the leopard gecko or crested gecko have been kept successfully for years without providing UV lighting**: Available from <http://www.arcadia-reptile.com/faq/questions.php?questionid=14> Accessed 17/04/13 at 16:55


• Jones, T (2012) **Captive Bred vs Wild Caught (Federation of British Herpetologists)**; Available from <http://fbh.org.uk/facts/captive_bred_vs_wild_caught.html> Accessed 06/04/13 at 15:00


• Lagoni, L, Butler, C & Hetts, S (1994) *The Human-Animal Bond and Grief*; Philadelphia, W.B. Saunders Company


