

Whale Watching in Scotland, with a case study on the Isle of Skye

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ABSTRACT

Whale watching in Scotland is a growing part of the Scottish tourism industry. This thesis reviews and studies whale watching in Scotland in order to fill the void of published knowledge concerning the industry. It is made up of two sections, a broad ranging literature review, followed by primary research into the present situation in the Scottish industry. The primary research consists of a survey of operators across Scotland and a case study into tourism and whale watching on the Isle of Skye. This work was completed through the use of telephone interviews and postal questionnaires. The questionnaires used during the case study were either self-completion, or completed during face-to-face interviews.

The data from the operators survey is collated and discussed to give an outline of the present situation in Scotland. A typical whale watching business is represented as being a small enterprise, supporting fewer than five full time equivalent jobs, and supplying an income to the operator that is often supplemented by other means. Most operators are marketing their businesses through tourist boards and operators associations, however the potential for further advertising is discussed, including facilitating the use of the Internet, for tourists to easily find operators' web sites.

The case study in Eastern Skye focuses on the attitudes and profiles of tourists, whale watchers and locals in the area, to give a picture of the local tourism trade. The differences between whale watchers and tourists are highlighted through an investigation into the visitor profiles of the two groups. The direct and indirect spending of whale watchers is analysed to conclude the case study, and displays the higher economic input into the community by whale watchers over general tourists.

Finally, recommendations are made for regulation of, and further study into, whale watching in Scotland.

CHAPTER 1: INTRODUCTION

1.1 Rationale

The main aim of this study is to determine the extent and impact of the marine mammal tourism industry in Scotland. This is accomplished by focussing on the objectives outlined below. Initially a literature review was undertaken to summarise the present knowledge and research that has been carried out on whale watching (see Chapters 2-3) and on whale watching on the Isle of Skye (see Chapter 4). The primary research (see Chapter 5) in this thesis was split into two sections, the first a survey of marine mammal tour operators across Scotland, and the second a case study on the Isle of Skye. The tour operators survey was conducted using a postal, self-completion questionnaire and telephone interviews. The case study on the Isle of Skye focussed on Eastern Skye, from Kyleakin to the Point of Sleaf, and involved the completion of three different questionnaires by three different demographic groups: locals, general tourists, and whale watchers. The local and general tourist questionnaires were filled out during face-to-face interviews, and the whale watcher questionnaires were handed out for self-completion during trips.

1.2 Objectives

- To assess the extent of the marine mammal tourism industry in Scotland.
- To assess the economic and environmental impacts, and viability of those businesses.
- To collate data on marketing and advertising strategies, and suggest changes that could be made.
- To assess the economic input of marine mammal tourism into small rural communities on the Isle of Skye, including estimates of direct and indirect spending by whale watching tourists.

CHAPTER 2: ECOTOURISM

2.1 Introduction

Tourism is considered to have become the biggest global industry, with spending on travel expected to reach \$4.2 trillion (US) in the year 2000 and accounting for 10% of jobs globally (Honey 1999). In its turn, ecotourism has become the largest and most rapidly expanding sector of this industry (Honey 1999). Swanson (1992) explains this disproportionate growth in ecotourism through examining the dominant social paradigms of the 1950's and 1960's and comparing them with those that emerged in the 1970's. The shift was from a materialistic outlook, with no recognisable limits to economic growth, to a new environmental paradigm whereby people:

- value nature for its own sake;
- plan and act to control personal and environmental risk;
- recognise that there are real limits to growth;
- believe in the needs of a new society;
- encourage the participation of individuals who are not necessarily involved in the marketplace or government (Swanson 1992).

Ecotourism can be an integral part of a sustainable use strategy for a country's natural resources and if managed properly provide political and economic backing for conservation and boost rural economies (Agardy 1993). Although the issue of whaling versus whale watching has not been tackled directly, many studies have been carried out to show that a 'charismatic' animal is worth more alive, in tourist dollars, than dead (e.g. extensive studies in Amboseli National Park (Western & Henry 1979, Thresher 1981, Western 1982)). Roger Payne of the Whale Conservation Institute was instrumental in initiating the establishment of humpback whales as 'charismatic' animals after playing back recordings of their haunting songs to the public. Subsequently humans have developed an affinity with all cetacean species,

anthropomorphising their interactions and characteristics (Amante-Helweg 1996).

The requirements for ecotourism were summarised by Ceballos-Lascurain (1996) to include that:

- *“It promotes positive environmental ethics and fosters “preferred” behaviour in its participants;*
- *it does not degrade the resource;*
- *it concentrates on intrinsic rather than extrinsic values;*
- *it is orientated around the environment in question and not around man;*
- *it must benefit wildlife and the environment;*
- *it provides a first-hand encounter with the natural environment;*
- *it actively involves the local communities in the tourism process;*
- *its level of gratification is measured in terms of education and/or appreciation;*
- *it involves considerable preparation and demands in-depth knowledge in the part of both leaders and participants”.*

Whale watching is often considered to be a subset of the ecotourism industry (IFAW 1999) falling under nature tourism and wildlife tourism. However it is hard to place whale watching into an exact category, as there are so many badly defined terms that may be appropriate (Goodwin 1996). The definition chosen for this report places whale watching under wildlife tourism, involving tourists experiencing animals in their natural habitats (Smyth 1998). This in turn falls into the category of ecotourism, part of nature tourism, which is defined by its benefits to local conservation, peoples and cultures (Honey 1999).

2.2 Economic impacts

Ecotourism, as the fastest growing sector of the world's largest industry is expected to continue growing into the foreseeable future. This can only happen with good conservation and management (Goodwin 1996). Ecotourism competes for scarce resources at the expense of other uses and users (Wall 1997). However, special interest nature tourism such as whale

watching can be a very effective sustainable development tool, providing local employment, income from outside the local economy and incentives to change traditional resource uses to more sustainable ones (Goodwin & Swingland 1996, Smyth 1998, Wunder 2000).

If a new project is to succeed, It is essential that the local community benefit economically (Bookbinder *et al.* 1998). It may be possible to use financial mechanisms, which will encourage only those projects that demonstrate clear economic benefits to the local economy (RSPB 1998a). In 1997 wildlife tourism in Scotland supported more than 1,500 full-time equivalent (FTE) jobs, most of them in rural areas, and provides an opportunity for diversification or self-employment where traditional employment is proving unprofitable (Smyth 1998).

Whale watching is just one of a number of possible uses for cetaceans yet it is rapidly being recognised as the most economically viable sustainable use (IFAW 1999). However, the total value of whale watching is not solely economic, and includes many market and non-market values, such as the sense of wonder gained through interacting with cetaceans (see Table 1)(Duffus & Dearden 1990, Arnold 1997). The value of whale watching can also include the development of a populace that is more aware of environmental issues (Duffus & Dearden 1993).

- Aesthetic
- Spiritual/psychological
- Political
- Vicarious experience through the stories of other people
- Remote viewing, e.g. books, film, TV
- Education
- Scientific
- Recreation
- Financial
- Cultural
- Heritage
- Social
- Environmental amenity values
- Ecological services value
- Combination

Table 1. List of the potential services/values provided specifically by the whale watching industry (adapted from IFAW 1999, Figure 3 p11).

These values must be weighed against the other potential uses of cetaceans and their habitats, which are summarised in Table 2. It is not the case, however, that whale watching must occur with the exclusion of other uses. Many of those listed below can continue in the presence of whale watching, e.g. swimming with dolphins, dolphin therapy, fishing and shipping, and some of the uses may even be aided by whale watching, e.g. research, filming and photography. Many of the alternative uses do not come into conflict with whale watching in Scotland. This is due to a number of factors including: present legislation (e.g. the International Whaling Commission (IWC) moratorium on commercial whaling), cultural taboos (e.g. anti-whaling), and the lack of available resources or common practices (e.g. log boom storage). Also due to Scotland's long coastline there is a plentiful supply of most resources, and direct conflicts are low.

Other uses of cetaceans	Other habitat uses
<ul style="list-style-type: none"> • Research (including use of cetaceans as biological indicators) • Removal (capture for aquaria, research, military) • Commercial deep sea fishing (e.g. dolphins helping to find tuna) • Traditional co-operative fishing (dolphins helping to drive and catch fish) • Cultural (e.g. for lucky charms) • Icons (art, souvenirs, literary, political) • Hunting (whaling) • Filming and photography • Swimming with them • Medical uses • Dolphin therapy 	<ul style="list-style-type: none"> • Fishing • Aquaculture • Mining and exploration • Log boom storage • Military • Impact testing • Recreation • Shipping • Thermal energy production and water mills • Tidal power • Marine protected areas • Sewage/garbage/hazardous materials disposal • Monitoring/research (e.g. ocean thermography) • Land based/coastal developments • Moorings • Various structures (e.g. dams, coastal defences) • Religious and cultural uses

Table 2. Summary of the alternatives to whale watching for cetacean use and the related habitat (adapted from IFAW 1999).

The economic additionality of whale watching is poor in Scotland, as it is not marketed in such a way as to bring tourists to areas, rather it is acting as an extra attraction once they arrive (Masters *et al.* 1998). However even this can help the local economy as if tourists are encouraged to remain in an area for longer, they will inevitably spend more money (Smyth1998).

2.2.1 Pricing and economic theory

Pricing of a trip is very important especially when starting up a new business and economic theory, although often ignored, can be useful for the new businessman. Examining the pricing structures of competitors and co-members of operators associations are good initial methods of setting a reasonable local price for the trip on offer. Economic theory can lend a more scientific overview to the pricing structure and explain the logic behind pricing structures. Outlined below is a brief summary explaining the supply and demand diagram in Figure 1.

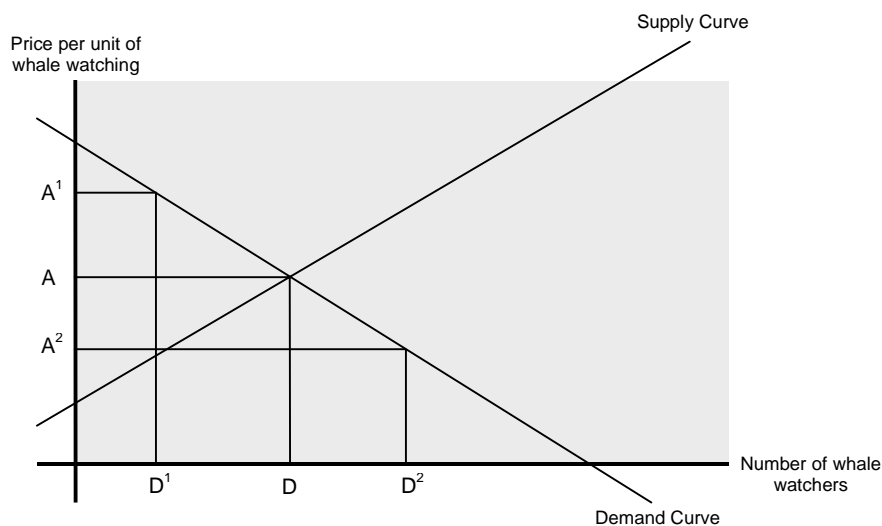


Figure 1. Supply and demand for whale watching (adapted from IFAW 1999).

If the price is set at A, D consumers will take trips and the market is cleared as all the suppliers willing to supply are being utilised by consumers. If the

price is raised (A^1), then more suppliers are willing to supply, but fewer consumers will take trips (D^1). If the price is lowered (A^2) then there are more consumers willing to take trips (D^2) than there are supplied. If competition is low then it may be viable for the supplier to raise prices, as long as the number of consumers multiplied by the price remains viable (the gross income), however this may encourage new competition.

2.3 Environmental and animal related impacts

2.3.1 Environmental impacts

It is important that tourism in Scotland is carefully monitored to keep impacts to a minimum. Too many tourists can destroy the resource for others (Smyth 1998) and wildlife viewers are potentially very damaging because if unregulated they may actively seek and approach wildlife (Jacobson & Lopez 1994). The population of Scotland are aware of the coastal environment, 82% percent of a sample collected by Cobham Resource Consultants (1996) agreed or strongly agreed with the statement the *"Marine wildlife in Scotland's seas and coasts is under threat"*. Almost all (94%) of the same sample agreed with the statement that *"Areas of the seas and coast around Scotland should be specially protected for their wildlife"*.

It is important that any operation should have appropriate facilities, such as paths, hides, car parks and boats, that can cope with the visitor numbers expected (Smyth 1998). These facilities can also be used to regulate the number of visitors in remote places. For example the Forestry Commission Otter Sanctuary at Kylerhae on the Isle of Skye has a relatively small car park, which means that only a certain number of visitors can park at any one time and consequently the hide does not become overly crowded. Operators have also noted that visitors will tend to come back once it is less busy. For larger operations, larger car parks may be necessary and for lower environmental impact, links to good bus routes, post bus services or local cycle tracks (Smyth 1998). It is also important to manage the numbers at a reasonable level for the local road network (Smyth 1998). Another major problem as

visitor numbers increase is their direct effect on the environment, this can be through erosion or littering, so it is important to account for both of these. Littering can be dealt with through the provision of rubbish bins, and notices, and on boats can be regulated by the skipper. Erosion, being a land based problem must be tackled through preventing visitors from going where they may "*initiate or accelerate the natural erosive processes*" (ASH Consulting Group 1994). People will usually follow the path of least resistance, the "*desire line*" (ASH Consulting Group 1994), which can be altered and controlled through a path network to keep them away from sensitive areas.

2.3.2 Disturbance of land mammals

Much research has been completed on disturbance in land mammals, and certain generalisations can be made. These have been split into six categories of effects, which are displayed in Table 3 together with examples from the extensive literature on disturbance. The effects of disturbance on marine mammals can reasonably be assumed to be as varied as those on land mammals, however they are more difficult to measure, so it is useful for management regimes to take into account all possibilities.

Category	Examples	Source
1) Wild mammals may habituate to steady and predictable human activities.	North American Elk <i>Cervus elaphus</i> have adapted to present levels of human disturbance along normally and sometimes heavily used roads.	Schultz & Bailey 1978 as cited in IFAW <i>et al.</i> 1995
	Flights were less common in fallow deer <i>Dama dama</i> in areas of high human presence and consequent habituation.	Recarte <i>et al.</i> 1998
	Marmots <i>Marmota marmota</i> show habituation to tourists on consistently used paths.	Mainini <i>et al.</i> 1993, Ingold <i>et al.</i> 1993
	Chamois <i>Rupicapra rupicapra</i> show less disturbance from close approach of paragliders in commonly used areas, than in newly used areas.	Ingold <i>et al.</i> 1993
2) Wild mammals are less likely to habituate to unpredictable or unusual events, and close approaches or pursuit.	Mule deer <i>Odocoileus hemionus</i> may respond more intensely to unpredictable than predictable human activity.	Stephenson <i>et al.</i> 1996

(continued overleaf)

	Marmots show greater reactions to hikers coming close to their burrows, than to those staying on well used tracks. They also show an even greater reaction to unpredictable events such as approaches from dogs on leads.	Mainini <i>et al.</i> 1993, Ingold <i>et al.</i> 1993
	Bighorn sheep <i>Ovis aries</i> react more to helicopters when they are higher up the slopes, and consequently the helicopters are closer.	Stockwell <i>et al.</i> 1991
	Mountain goats <i>Oreamnos americanus</i> will respond significantly more strongly to close helicopter approach, than to distant fly pasts.	Cote 1996
3) Reactions to disturbance can vary with reproductive and nutritional status, habitat, or the experience of the animal.	Caribou <i>Rangifer tarandus</i> will react significantly more strongly, to overflights of sub-sonic U.S. Air Force jets, when with young.	Maier <i>et al.</i> 1998
4) Wild mammals may significantly change behavioural patterns in response to disturbances.	Mountain goats displayed temporary range abandonment and changing observability indices (habitat use and activity patterns) associated with areas of intense hydroelectric exploration activities.	Foster & RaHS 1983
	Male chamois left areas close to commonly used hiking trails.	Gander & Ingold 1997
5) Disturbance patterns can be species or individual specific.	Individual mountain goats reacted differently to disturbance.	Foster & RaHS 1983
	Individual fallow deer display strikingly different reactions to disturbance.	Recarte <i>et al.</i> 1998
	Red deer <i>Cervus elaphus</i> show significant individual variation in responses to humans.	Pollard & Littlejohn 1995
6) Disturbance may have long term stress-related impacts on wild mammals.	Long term fitness was effected in mule deer, following harassment by all-terrain vehicles. This was shown by reproductive pauses in the following breeding season.	Yarmoloy <i>et al.</i> 1988
	Mountain goat mortality may have been increased during a period of intense hydroelectric exploration. Also panic from close approach of helicopters can lead to severe injury.	Foster & RaHS 1983, Cote 1996

Table 3. Summarising the 6 different categories of disturbance effects in land mammals (adapted from IFAW *et al.* 1995).

2.3.3 Disturbance of marine mammals

A useful way to consider disturbance in marine mammals is to define 6 categories, based on the duration of the effects caused by disturbance (see Table 4).

		Effect
Immediate	Direct	Change in an individual's behavioural status or health, for example as a result of a collision
	Indirect	Death of an individual, for example due to a collision, which may have immediate and possibly long term consequences for the success of the breeding group
Short-term	Direct	Interference with important behaviours such as those related to breeding, courtship and care of young
	Indirect	May temporarily shift use of range, which may develop into permanent range reduction or shift
Long-term	Direct	Alteration of range size or distribution
	Indirect	Potential reduction in reproductive capability and fitness, leading to a decline in population

Table 4. Summary of the disturbance effects on marine mammals (adapted from Duffus & Dearden 1993).

Some or all of these effects have been demonstrated in many well-studied populations of marine mammals, for example beluga whales (Blane & Jaakson 1994, Lessage & Kingsley 1998), killer whales (Duffus & Dearden 1993), humpback whales (Corkeron 1995, Mori & Kato 1999), grey whales (Duffus 1996), fur seals (Richardson *et al.* 1995 as cited in Constantine 1999), Hector's dolphins (Bejder *et al.* 1999) and bowhead whales (Richardson *et al.* 1995). However reactions to disturbance are species specific.

Many of these effects are similar to those seen with land mammals. Habituation has also been demonstrated in cetaceans (Connor & Smolker 1985), along with sensitisation after harassment (Richardson & Würsig 1997).

At present there is little evidence to link short and long term effects of whale watching, and IFAW *et al.* (1995) have laid out a set of guidelines for monitoring impacts, which include research into long term impacts of whale watching.

2.3.4 Disturbance of Scottish marine mammals

One of the main threats to British marine mammals is that of entanglement in fishing gear and anti-predator nets around fish farms. This can be a particular problem for grey and common seals, harbour porpoises and common dolphins (Northridge 1988 as cited in Hammond 1992). Collisions with boats are also a problem in UK waters (Hammond 1992).

- **Seals**

Many adverse effects of disturbance have been identified in seals as well as their ability to habituate to regular disturbance. This is in part because they are easier to study than cetaceans due to their haul out behaviour, spending time basking on rocks (Hammond 1992). Disturbance at certain times of year, can cause fewer pups to be born, and for them to wean at a lower weight (e.g. grey seals, Lidgard 1998). Both of the UK species of seal will respond to unfamiliar boats and humans with increased vigilance, thus altering their time budgets when disturbed, causing them to spend less time, for example feeding or tending to their young (Taylor *et al.* 1998).

Direct disturbance of seals in the UK includes killing to protect fishing and fish farming, under the provision of the Conservation of Seals Act 1970. There is also discussion at present of a proposed cull in Scottish waters.

- **Cetaceans**

The cetacean species found in Scottish waters have been relatively well studied, and below is a brief outline of some of the present knowledge relating to the more common species. A lot of the research has been completed abroad on different populations of the same species, and although populations will react differently it is reasonable to assume a certain degree of similarity in their behaviours.

The main threat to cetaceans in Scottish waters is that of boat traffic. The volume and behaviour of which can cause permanent damage to cetacean populations, especially those that are already marginal (Arnold 1997).

- **Bottlenose dolphin**

One of the few long term cause and effect relationships to have been studied relating to cetaceans is that of the bottlenose dolphin feeding programmes in Australia. At Monkey Mia, Shark Bay, dolphins have become habituated to human contact through years of feeding, with behaviours ranging from stroking with pectoral fins to rubbing and biting of humans (Connor & Smolker 1985). However, the offspring of these habituated animals have a reduced chance of survival, as they do not learn to forage effectively for food and may pick up contaminated or inappropriate food items or starve (IFAW *et al.* 1995). This demonstrates that although the animals can habituate it is not always beneficial. The feeding of dolphins in America has been made illegal as it is seen to disturb their natural behaviour (Anon 1993).

Janik and Thompson (1996) have found individuals in the bottlenose dolphin population of the Moray Firth surface considerably less often when in the vicinity of a boat. It is unclear however whether this behavioural reaction and others are due to boat noise, or direct harassment by whale watching vessels (Curran *et al.* 1996).

Bottlenose dolphins seem to be able to tolerate the high levels of disturbance present in their habitats (Hammond 1992). They may allow close approaches or initiate encounters that include bow riding (Shane *et al.* 1986). However, disturbance can become more significant in areas used for specific purposes such as breeding, mating or birthing (Duffus & Dearden 1990). The main negative impacts of the bottlenose dolphin watching industry in the Moray Firth have been identified as:

- direct collision, resulting in injury or death;
 - marine pollution from spilt fuel oils or litter;
 - disturbance from harassment and engine noise, which can lead to disruptions in mother-calf social bonds and other stress (Curran *et al.* 1996).
- **Solitary dolphins**
 Lone sociable wild dolphins sometimes appear around the UK and Irish coasts, and can arouse a great deal of interest from the public. This in turn can lead to harassment from large numbers of tourists, although the animals are free to leave the area. Such animals can also have further reaching effects, as the public awareness of, and interest in, marine mammals rises, which in turn can lead to greater levels of disturbance in general (Hammond 1992) or increased conservation efforts.
- **Common dolphin**
 Common dolphins have been recorded changing their travel directions in response to course changes from nearby vessels perhaps even avoiding them (Au & Perryman 1982, Salvado *et al.* 1992).
- **Harbour porpoise**
 The harbour porpoise has been seen to react with a decrease in avoidance behaviour towards the end of each whale watching season, this may be due to habituation or because calves were sufficiently grown to be less vulnerable (Evans *et al.* 1993).
- **Pilot whales and Risso's dolphin**
 Changes in prey availability due to environmental disturbance, such as pollution, can adversely affect species with restricted diets, which feed mainly on species that are vulnerable to disturbance. For example long finned pilot whales and Risso's dolphins both feed on squid, a sensitive prey species (Hammond 1992).

- **Whales**

At present there is a general lack of knowledge relating to the populations of whales that move through UK waters, it would therefore be good to continue the work that has already been initiated (e.g. minke whales (Northridge *et al.* 1995, Leaper *et al.* 1997)). For a review of current knowledge see Evans 1997.

2.4 Whale watching

Whale watching became a commercial activity in 1955 along the southern California coast (Hoyt 1992), and since the IWC's moratorium on whaling in 1986 has become perhaps the most economically viable use of cetaceans. Many former whalers and fisherman around the world have turned to using the resource they know best in a different way, taking tourists to see the cetaceans they might normally have killed (Maddox 1984, Hoyt 1993).

Whale watching has continued to grow rapidly through the 1990's, tourist numbers and numbers of destinations growing along with value (see Table 5).

Year	Number of countries and overseas territories	Value (GB£ million)	Number of tourists worldwide (million)
1983	12		
1991	31		4
1994	65	311	5.4
1998	87	655	9

Table 5. Summary of the growing worldwide value of whale watching (adapted from Hoyt 1992, Hoyt 1995b, Hoyt 2000).

If managed properly, whale watching can be defined as non-consumptive wildlife-orientated recreation (NCWOR), as such one person's activities do not detract from the experiences available to others, and it can said to be a sustainable activity (Wagar 1969 as cited in Duffus & Dearden 1990, IFAW *et al.* 1995). Duffus & Dearden (1990) define NCWOR as:

“A human recreational engagement with wildlife wherein the focal organism is not purposefully removed or permanently affected by the engagement”.

It should also be noted that even temporary harassment or disturbance should be kept to a minimum. Whale watching is defined by the IWC as:

“Any commercial enterprise which provides for the public to see cetaceans in their natural habitat”

(IWC 1994 as cited in Berrow & Holmes 1999).

This definition includes whales, dolphins and porpoises, but could be improved if it included a clause stipulating sustainable use of the resource. Good whale watching is that which provides maximum benefit to both the tourists and the target species (Hoyt 1999). This can be accomplished by providing an experience for the tourist and contributions to conservation through research, education and money.

Visitors are generally happier if the tour they take is ecologically sensitive, and there are a number of factors that add to the enjoyment of the trip even if cetaceans are not seen (Ritter & Ladner 1996, Orams 2000). At its best whale watching can offer the 'deeper' experiences associated with ecotourism (IFAW 1999). Thus there is great potential for selling an 'image' as long as the educational, scientific, conservation and socioeconomic aspects are heeded (Hoyt 1999).

Whale watching is a versatile activity that can be conducted from fishing boats, rubber inflatables, sailboats, kayaks, dinghies, barges, cruise ships, aeroplanes, helicopters, and shore lookouts (Hoyt 1992). In the UK all of these platforms can potentially be used, however most whale watching is conducted from old fishing boats, rubber inflatables, the shore and sailboats.

2.5 Scottish tourism and whale watching

The tourism industry in Scotland is very important to the country's economy, bringing in over £2.5 billion annually and creating over 180,000 jobs (System Three 2000). Two of the most important assets for this industry are the world famous landscapes and the wildlife. Figures from the Scottish Tourist Board (STB) indicate that 40% of European visitors consider wildlife one of Scotland's most liked features (Smyth 1998) and with no point in Scotland more than 65km away from the 11,770km of coastline (Downie & Davies 1991) the marine and coastal wildlife is very important. 67% of tourists in Scotland use either hire or private cars giving them good mobility (System Three 2000) and 49% of Scottish adults visited the coast for at least a day trip in 1994 (Greene 1998). The importance of marine wildlife was illustrated in a recent survey of Scotland's most popular wildlife attractions, wherein marine or coastal animals and birds came 1st, 2nd, 3rd, 7th and can be included in 5th (see Table 6).

1. whales and dolphins
2. sea birds
3. seals
4. wildfowl
5. birds of prey
6. badgers
7. otters
8. deer
9. pine marten
10. capercaillie

Table 6. Showing the most popular wildlife attractions in Scotland (from Smyth 1998).

There are attractive and unspoilt landscapes in most of Scotland, which combined with the possibility of seeing many different and interesting species, can create a memorable experience even if the target species of a trip is not seen (Smyth 1998). For example, 89% of whale watchers not seeing dolphins in the Moray Firth still enjoyed their trip (Arnold 1997), which is considerably higher than the 35% of tourists in Australia being satisfied when a whale is not seen on a trip (Orams 2000). This could be attributed to a number of factors including the local scenery, the quality of the tour, other wildlife seen and the

other passengers on the boat. Whatever the explanation this figure should be encouraging to Scottish operators as it shows that despite the possibility of not getting close to or seeing cetaceans, tourists will probably be happy if other factors are emphasised.

Whale watching in Scotland began on the Isle of Mull in 1989, however general nature tours offering the chance of seeing whales, dolphins or porpoises have been running considerably longer across the country. Most of the whale watching in Scotland is based on transient sightings (Duffus & Dearden 1990) with minke whales a common sight off the West coast (Hoyt 1995a). The most reliable whale watching in Scotland is based around the resident populations of bottlenose dolphins off the Outer Hebrides and in the Moray Firth (Hoyt 1995a). The Moray Firth has the only resident population of bottlenose dolphins along the North Sea coast and offers some of Europe's finest shore based whale watching sights (Hoyt 1992).

The potential economic impact of whale watching in Scotland is considerable, and direct and indirect spending has been rising since 1991 along with total visitor numbers (see Table 7).

Year	Direct spend (UK£)	Indirect spend (UK£)	Number of tourists
1991	25,000	850,000	400+
1994	850,000	6,500,000	15,000+
1998	1,170,000	5,140,000	121,125+

Table 7. Summary of the growing value of whale watching in the UK (adapted from Hoyt 1995b, Hoyt 2000).

Nature conservation is intrinsic in the whale watching business, as cetaceans are the main attraction and can be used as part of a marketing strategy (Rayment 1997). Whale watching operators on Mull suggest that the numbers of local tourists have been decreasing over recent years (Warburton *et al.* 2000), so marketing is becoming increasingly important. Scientific information is also an important part of conservation and whale watching

operations are used as a useful source of long term data on Mull (Leaper *et al.* 1997).

2.5.1 Marketing

Marketing of whale watching in Scotland is important, as it has not yet reached its full potential with few tourists coming to the country specifically to watch cetaceans (Masters *et al.* 1998). Marketing presently takes on a number of forms, internationally over the World Wide Web, through the local and national tourist boards, in travel guides and magazines, and through specialist tour companies. These methods also form part of the marketing at national and local levels together with posters and billboards, postcards and fliers, newspaper articles, word of mouth and marketing groups. Marketing groups and tourist boards are particularly good as they provide some kind of quality assurance for the tourist by insisting that all members comply to a set of safety guidelines and a code of conduct. The marketing groups are also a useful source of educational material for both the tourists and the operators and experience for new operators (Arnold 1997, Smyth 1998). Advertising can be used to give the tourists a good idea of what to expect from their tour, for example from a board with a list of recent sightings on it (Smyth 1998). Examples of marketing groups or operators associations can be seen in Table 8.

Scottish Marine Wildlife Operators Association (SMWOA)
Skye and Lochalsh Marine Tourism Association (SLMTA)
The Dolphin Space Programme, Moray Firth (DSP)
The Minch Project
Scottish Tourist Board (STB)
Highlands of Scotland Tourist Board (HoSTB)
Western Isles Tourist Board
Other local Tourist Boards
Shetland Isles Tourist Board
Holiday Mull
Ardnamurchan Tourist Association (ATA)

Table 8. Showing some of the more important associations for marketing of marine tours in Scotland.

CHAPTER 3: MANAGEMENT AND REGULATION OF WHALE WATCHING

3.1 Management

Management of whale watching must out of necessity look to the future of one of its main resources, the target cetacean populations. This means that a long term perspective is necessary, which is common in many ecotourism projects (Wall 1997), as a tendency to produce short term solutions may lead to unsustainable use (Yaffee 1997). The relationship between the tourists and operators, and the wildlife must be symbiotic in nature rather than parasitic or coexistent (Jacobson & Lopez 1994). Many management strategies for both endangered species and their habitats now have to take a more integrated approach to include tourism (Goodwin 1996). This in turn ensures economic benefits, which must be maximised for both the community and the local area in order to ensure long term success (Faulkner & Tideswell 1997). Management strategies must be adapted with input from the local communities and conservation groups, otherwise tourism can become an area of conflict for all concerned parties (Fairburns 1995, Goodwin & Swingland 1996, Smyth 1998).

At present there is very little evidence of impacts, especially in the long term, whether beneficial or otherwise, and so it is necessary to follow a precautionary management plan that is flexible to allow for feedback from scientific studies (IFAW *et al.* 1995).

In the management of whale watching, human behaviour is the most malleable locus for the control of activity, licensing and peer pressure being two of the main techniques for keeping operators ecologically sensitive (Duffus & Dearden 1993). These and other processes help to fill the vacuum that is left by the lack of institutional regulation in the UK. There are however, already many commonly used management techniques that can be easily adapted for whale watching, for example; outdoor recreation management, wildlife management, whale management and ocean environment management (Duffus & Dearden 1993).

Management regimes can be formed through the interaction of all the operators in an area (e.g. through the SMWOA, and the DSP), who will agree to follow a code of conduct, and use their organisation for joint marketing (Smyth 1998).

It is important for management regimes to recognise a continuum of human-wildlife interactions (see Figure 2) and to try and keep the non-consumptive act of whale watching as near to zero impact as possible.


Amount of physical interaction	Interaction type
	Hunting, culling, predator control Live capture Research Non-consumptive recreational use Conservation and lobby group membership Option existence and bequest value

Figure 2. Showing the continuum of human-wildlife interactions (adapted from Duffus & Dearden 1990).

It has been suggested that highly goal orientated non-consumptive uses may differ little in their impact from highly interactive activities (Duffus & Dearden 1990). However, whale watchers have been demonstrated to be not simply orientated by the one goal of seeing a cetacean and instead are satisfied by a combination including; the scenery, the weather, and the boating experience (Duffus & Dearden 1993, Arnold 1997, Orams 2000).

3.2 Monitoring

It is necessary to include continued monitoring of the species or habitats in question and to propose alterations of flexible management plans (Blane & Jaakson 1994). Ideally, scientists unconnected to the operations or areas in question should complete any monitoring although the most accessible source of long term information is often from the operators themselves

(Leaper *et al.* 1997). A number of recommendations are made by Arnold (1997) for future monitoring of the bottlenose populations in the Moray Firth, these include to:

- continue monitoring the resident bottlenose population to assess changes in distribution, habitat-use patterns and relative abundance;
- develop a population model to assess the viability of the bottlenose population under different conditions;
- monitor boat traffic to see how it changes and if this affects the population;
- continue post-mortems to get a better picture of causes of mortality and general dolphin health;
- investigate short and long term effects on the dolphins from the boat traffic;
- investigate the reactions of dolphins to boat noise including jet skis;
- assess the economic impact of wildlife tourism especially whale and dolphin watching;
- record visitor numbers to shore based stations to assess impact on locals;
- assess whether whale watching influences peoples opinions on conservation of the marine environment etc.;
- assess how well current guidelines are being followed by the boat operators.

In order to accurately monitor any effects that whale watching may be having on a target population, it is necessary to have good pre-disturbance baseline data for that species (Duffus & Dearden 1990). Too often wildlife use begins without knowledge of the possible effects on the target species and businesses take off before the animals can be studied in detail (Mangel *et al.* 1996). The most important data to collect are those on population size, habitat use, home range and behavioural ecology (Constantine 1999). Management policies must be adapted to be relevant to the particular ecological systems concerned (Mangel *et al.* 1996, Yaffee 1999). In order to obtain a realistic picture of effects it is also necessary to have good long term data, which can only accurately be collected through the use of standardised

methods (Fairburns 1995). For example through the simple to use 'LOGGER' software, developed by IFAW to record details of sightings (Airoldi *et al.* 1999). Table 9 shows a summary of Swartz's (1999) recommendations for how whale watching can be used as a tool for assessing the status of whales and what must be measured.

Measurement	Results
Whale watching effort (e.g. number and seasonality of whale watching trips).	Assessment of numbers of cetaceans encountered per unit effort, which can be examined over time.
Seasonality of presence of cetaceans in the whale watching area.	Assessment of timing of cetacean migrations and ranges to detect changes.
Measurement of the specific areas and habitats used by cetaceans.	Assessment of changes in habitat use patterns of cetaceans.
Measurement of reproductive success of individual cetaceans that are exposed to whale watching activities (e.g. calving rates and success of recruitment of offspring).	Production of guidelines and advice on specific activities that pose a direct threat to cetacean populations.
Collection of evidence of physical injury or disease that could have resulted from exposure of whale watching activities	Production of guidelines and advice on specific activities that pose a direct threat to cetacean populations.

Table 9. Summary of recommendations for long term study of cetacean populations from whale watching vessels (adapted from Swartz 1999).

On top of this it is necessary to make accurate health measurements of individuals, however this is not possible without direct sampling or capture (Arnold 1997), both highly disruptive and stressful techniques. At present health of wild animals can only be accurately assessed through the necropsy of dead animals, however carcasses are rarely found in Scotland in a good enough condition (Arnold 1997), needing to be less than a few days old.

Monitoring may be necessary if an operator is to apply for funding, or may be a requirement of the funding (Smyth 1998). Funding may be given preferentially to ecologically sound operations, with minimum or zero impact, projects offering local economic growth, or those with direct benefits for species or habitats listed in the UK Biodiversity Action Plan, 1994 (Anon) (RSPB 1998b). It is also useful for the operators and funding bodies to monitor visitor satisfaction, which can be done in a number of ways, including;

visitor books, comments slips, watching visitor behaviour and questionnaires (Smyth 1998).

The results of monitoring can be used to help justify new legislation. Table 10 gives a summary of the potential localised and dispersed threats to marine mammals in Scotland, and how they can be overcome through local, national, or international legislation.

Potential threat	General objective	Specific action	L/D	L/N/I
Traumatic death & injury	Reduce the risk of boat collisions	Limit the speed of boats	L	L
		Encourage recreational boats to use areas which are not favoured by dolphins	L	L
		Encourage the use of propeller guards etc.	L	L
		Extend the publicity for SNH Dolphin Awareness Scheme	D	L
	Prevent direct killing or injury Minimise risk of entanglement	Enforcement of Wildlife & Countryside Act	D	L
Education programmes to reduce litter & marine debris		D	L/N	
Effects of contaminants	Reduce risk of direct effects of petroleum hydrocarbons	Encourage good practice when handling fuel oils	L	L/N
	Reduce marine discharges of toxic chemicals	Decrease the risk of accidental discharges	D	L/N/I
Contact with novel pathogens	Reduce contact with novel pathogens	Discourage swimming with, and feeding of, cetaceans	D	L/N
Disturbance	Minimise the risk of disturbance from boat traffic	Encourage recreational boat users to avoid sensitive areas	L	L
		Introduce management for dolphin watching boats	L	L
		Continued publicity for SNH Dolphin Awareness Scheme	D	L
	Reduce the risk of disturbance by noise	Avoid new noise sources such as seal scarers	L	L/N
		Encourage development of low-noise engines and propellers	D	N/I

Table 10. Adapted from the management scheme for the dolphin population in the Moray Firth, Scotland (adapted from Curran *et al.* 1996).

L/D indicates localised or dispersed threats,

L/N/I indicates action to be taken at local, national or international level.

In a new tourism field, the initial visitors will be specialists with specific interests in the field (A, S>G) (see Figure 3), but the whale watching industry is now sufficiently developed in Scotland to have more general tourists

(between B & C). This could account in part for the accelerating growth in the number of whale watchers, which must be regulated carefully to stop animal harassment or poor boating practice (Duffus & Dearden 1993). If the resource is degraded past an acceptable limit, then the visitors numbers may continue to increase (E), a situation that would indicate an alternative resource or attraction is being utilised. Alternatively they may remain stable an equilibrium position (F) that must be carefully monitored, or they may decline (D), a situation indicating that the resource has been over used and declined in value (Duffus & Dearden 1990)

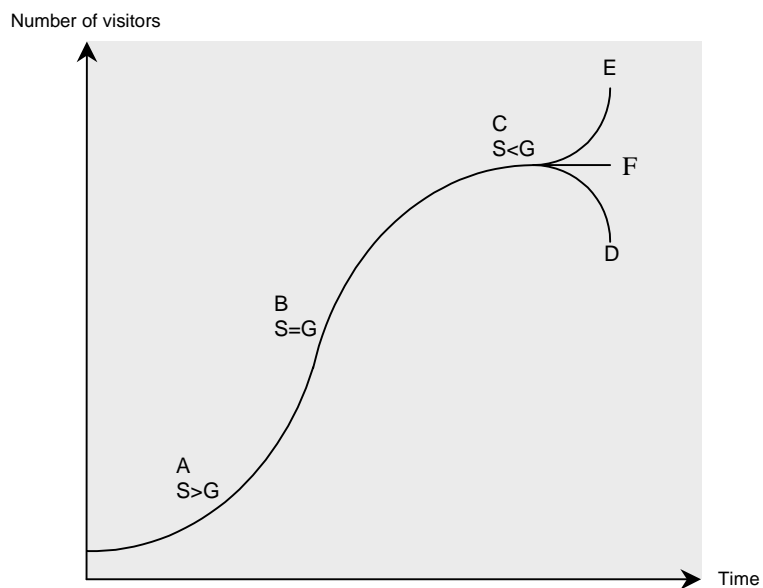


Figure 3. A reproduction of Bryan's leisure specialisation spectrum, showing how a more developed industry encourages more general tourists (adapted from Bryan 1977, Bryan 1980 as cited in Duffus & Dearden 1990). S=specialist tourist, G=general tourist.

3.3 Legislation relevant to whale watching in Scotland

Summarised below are the main laws and controls relevant to whale watching in Scotland, for a full chronological list see Appendix 1. Review adapted from Hammond 1992, Thompson 1992, Cleater & Irvine 1995, SNH *et al.* 1995, Arnold 1997, SNH *et al.* 1997, Smyth 1998, Young 1998, Council of Europe 2000, Hedley pers. comm. (Cardiff Law School) 2000, UNEP / CMS Secretariat 2000a&b.

- **The Whaling Industries (Regulation) Act 1934**

This act legislates against the commercial harvest of Baleen whales in UK waters.

- **Convention for the Regulation of Whaling 1949**

This convention initially set up the IWC for the international regulation of the whaling industry, but since the moratorium on commercial whaling in 1986 the IWC has been increasingly concerned with other uses of cetacean stocks.

- **Countryside (Scotland) Act 1967**

This act includes a requirement for effective silencers on pleasure boats.

- **Convention on the Conservation of European Wildlife and Natural Habitats, Berne 1979**

The Berne convention was ratified by the UK in May 1982 and requires signatories to take particular actions. The convention is concerned with the conservation of wild flora and fauna, particularly endangered and vulnerable species and natural habitats. It also promotes the conservation of migratory species, strengthened through the adoption of the Bonn Convention. Planning and development processes are required to include measures against harmful effects and education of the general public is encouraged. The convention has four annexes, each of which has different articles associated with it:

Annex I	Plants with complete protection
Annex II	Animals with complete protection
Annex III	Animals with some exploitation permitted
Annex IV	Prohibited means of killing and capture

Relevant to the Scottish marine mammal tourism industry, the harbour porpoise and the bottlenose dolphin are both listed in Annex II. This prohibits deliberate capture, killing, disturbance, damage to breeding and resting sites, and all forms of internal trade of parts of the animal concerned.

- **Convention on the Conservation of Migratory Species of Wild Animals, Bonn 1979**

This conference provides international protection for animals which regularly cross state boundaries and would otherwise be difficult to conserve in each member state. The UK ratified the convention in 1985. To date 7 agreements have come out of the conference, the most pertinent for the marine mammal tourism industry in Scotland being ASCOBANS (see below). Species with 'unfavourable conservation status' are placed in Appendix 2 and include North Sea populations of bottlenose dolphin, harbour porpoise, Risso's dolphin, white-sided dolphin, white-beaked dolphin, common dolphin and pilot whale.

- **Wildlife and Countryside Act 1981 as amended in 1986**

Since the quinquennial review in 1986, all cetaceans are protected under schedule 5. The act prohibits the deliberate killing of all cetaceans in British Territorial waters. Further to this the act makes it illegal to damage any site which an animal uses for shelter or protection or to intentionally disturb an animal whilst at or in that site. These sites can be easily defined for seals, but the nature of cetacean movements makes it hard to enforce this law. This act also allows for the designation of Sites of Special Scientific Interest (SSSIs).

- **United Nations Convention on the Law of the Sea (UNCLOS III) 1982.**

This convention was signed by the UK in 1997 and supersedes much of the 1958 Geneva Convention (see Appendix 1).

- **Fisheries Act 1987**

The fisheries act protects all cetaceans from fishing activity within the 200mile limit of the UK's Exclusive Economic Zone (EEZ), adding to the Whaling Industries (Regulation) Act 1934 and concurring with the 1986 moratorium on whaling imposed by the IWC.

- **Environmental Protection Act (EPA) 1990**

The EPA relies on bodies such as the Joint Nature Conservation Committee (JNCC) advising and informing ministers, the public and organisations on issues relating to nature conservation.

- **Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) 1991**

This agreement covers many aspects of the conservation of small cetaceans of the Baltic and North seas and requires the close co-operation of its signatories in preserving the conservation status of the species concerned. It came into force in 1994.

- **Biodiversity the UK Action Plan 1994**

Following the 1992 Convention on Biological Diversity at the UN Conference on Environment and Development (UNCED)(the Earth Summit, Rio), the UK government devised a biodiversity action plan. This plan states the government's strong support of the development of the whale watching industry as a non-lethal and sustainable use of the cetaceans in UK waters. It also sets out the government's commitment to the conservation of biodiversity (Anon 1994).

- **NATURA 2000 Council Directive 92/43/EEC (of 21 May 1992) on the conservation of natural habitats and of wild fauna and flora (The Habitat and Species Directive 1992) and The Conservation (Natural Habitats, &c) Regulations 1994**

Natura 2000 is a major part of the EC commitment to the 1992 Rio Earth Summit. The Natura 2000 network includes Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The regulations are enforced in the UK through The Conservation (Natural Habitats, &c) Regulations 1994 and include specific mention of three species of British marine mammals:

- Grey Seal;
- Common or Harbour Seal;
- Bottlenose Dolphin.

The Natura 2000 network is designed to contribute to the sustainable development or restoration of the sites involved and ensures the conservation of rare and threatened habitats and species. The sites themselves have specific management schemes sensitive to the local peoples, which are flexible as new research comes to light. All signatories have a responsibility to report on the status of each site. In 1999 the UK Department of Trade and Industry were taken to court as they had only been enforcing the directive within the 12mile territorial seas. This was changed following the court case in the High Court, to include the 200mile EEZ, as the Directive is based on the Berne Convention and talks of 'European territory'.

- **United Nations Convention on the Law of the Seas (UNCLOS) 1994**

In 1994 UNCLOS lead to the extension of Territorial Seas from 3 to 12 nautical miles and the Contiguous Zone from 12 to 24 nautical miles. Also signatories are responsible for conserving and managing natural resources, and protecting and preserving the marine environment within the EEZ.

- **Other**
- **Coast Protection Act 1949**
This Act is concerned with conservation policy and is the responsibility of Scottish Office Agriculture and Fisheries Department (SOAFD)
- **1972 Convention Concerning the Protection of the World Cultural and Natural Heritage.**
This convention, signed by Britain in 1984, concerns the designation of World Heritage Sites. These sites have legal protection from the state in which they are situated.
- **Civic Government (Scotland) Act 1982**
Gives local governments the power to regulate pleasure boats.
- **There are nine regional councils in Scotland split into 53 District councils.**
These are responsible for tourism and areas outside the 12-mile limit.
- **Most operators limit passenger numbers to 12 and stay near to the coast in order to meet with safety regulations (Arnold 1997)**

Many surveys have been carried out, which suggest that the general public want better legislation to protect wildlife (e.g. 84% (Robertson Bell 1997, as cited in RSPB 1998a)). At present there is no specific legislation in the UK governing boat-based whale watching (Arnold 1998). The best method of providing some protection appears to be through extension of the Wildlife and Countryside Act 1981, giving legal power to the UK Cetacean Biodiversity Action Plans (RSPB 1998a, Simmonds 2000). Also inclusion of local peoples in the policing and preparation of new laws, with an extension of enforcement powers to marine agencies such as the coastguard (Fairburns 1995, Simmonds 2000). Finally it may be possible to create laws that actively discriminate against non-ecologically sensitive and consequently unsustainable ecotourism businesses (Burton 1998).

3.4 Codes of conduct

There are many different codes of conduct both internationally and within the UK. They are all voluntary in the UK, and as yet there are no licensing laws requiring compliance with one code or another. The codes may be concerned with safe and considerate boating, cetacean watching, seal watching, marine mammal watching or marine wildlife watching in general. The codes are designed primarily to prevent disturbance of marine wildlife, however they also form an effective marketing tool for the tour operators, as they allow tourists to choose an ecologically aware company. Often the companies are members of associations thus advertising the other members by presenting their code of conduct on an advertising flier (Masters *et al.* 1998). Despite the variety of codes of conduct in the UK there are certain common themes, which are outlined below. Table 11 lists the codes of conduct consulted for this review, some of which can be found in Appendix 2.

Name of Code

1. DETR Minimising Disturbance to Cetaceans from Whale Watching Operations
2. DETR Minimising Disturbance to Cetaceans from Recreation at Sea
3. Dolphin Awareness Code (with SNH) for Recreational Boats and Jet Skis
4. Dolphin Space Programme 1995 (with SWT & SNH & EU Life Programme)
5. HWDT Seal Watching Code of Conduct
6. HWDT Whale and Dolphin Watching Code of Conduct
7. IWC Recommendations on the General Principles of Whale Watching
8. Minch Project (see also Sea Watch Foundation)
9. Navigate with Nature
10. Scottish Marine Wildlife Operators Association Code of Conduct
11. Sea Life Cruises Code of Conduct for Watching Minke Whales
12. Sea Watch Foundation Code of Conduct
13. Skye and Lochalsh Marine Tourism Association Code of Conduct
14. Special regulations in Broadford Bay regarding Bottlenose Whales.
15. Whale and Dolphin Conservation Society Code of Conduct

Table 11. List of the codes of conduct consulted for this summary.

The most common points in UK codes of conduct include the following (see Table 12), and although these are good guidelines it should be remembered that they must be flexible to allow for the results of future research.

Cetaceans

- Encounters should be no longer than 15 minutes
- Approach from behind or at an oblique angle very slowly
- If possible avoid going closer than 100m / 200m unless the animal comes to you
- Avoid having more than 1 vessel within 300m / 200m of a group
- No more than 3 boats within 1km at any time
- Do not drive through a group

Seals

- Avoid approaching too close
- Do not approach within 100m of pupping sites by boat, where channel width permits
- Do not approach pupping sites on foot

General

- Special care should be taken around juveniles and parents
- Do not come between mother and young
- Let the animals decide the nature of the encounter
- Avoid travelling at high speed
- Maintain no wake speed during encounters
- No sudden course changes or speed changes or noises
- Shroud propellers to reduce risk of injury
- Do not feed animals
- Do not swim with animals
- Do not touch the wildlife
- Do not chase animals
- Back off if birds or animals show signs of distress
- Use binoculars for a better view
- Do not allow littering or pollution
- Respect local interests
- Use an accredited tour guide
- Do not harass animals
- Monitor the effects of new and existing businesses
- Encourage education of tourists

Table 12. Guidelines for production of a code of conduct

Following a voluntary code of conduct may often pre-empt future legislation (Smyth 1998, Honey 1999) and tourists are often happier if their tour appears ecologically sensitive (Ritter & Ladner 1996). In the Shannon Estuary, Ireland, some operators already follow a voluntary code of conduct. They will consequently have fewer adjustments to make to their practice if the new legislation that has been called for comes into effect (Berrow & Holmes 1999). Other codes of conduct may be instituted very quickly as short term measures in specific circumstances, for example the notices posted around Broadford Bay, Isle of Skye, whilst two Bottlenose whales were occupying the area (Simmonds 1999).

One example of a recently established voluntary code of conduct is that of the DSP, which has proved to be only partially successful, but a definite improvement on the previously unregulated situation (Arnold 1998).

Once legislation is brought in to regulate wildlife tour operators it can be used to aid conservation through licensing schemes whereby licenses are only given upon payment of a performance bond, the money from which can be used to rehabilitate an area if necessary (Greiner *et al* 2000). This is an example of the 'polluter pays principle'.

CHAPTER 4: WHALE WATCHING IN EASTERN SKYE

4.1 Introduction

The Isle of Skye has many wildlife tour operators including the two chosen for the case study. These operators were chosen as they both specifically mention whales and dolphins in their advertising and were willing to cooperate. The tour operators consulted for this survey were Seacruise, based in Kyleakin, and Sea.fari, based in Armadale (see Figure 4a). Each of these two areas has its own dynamics as far as tourist movements and income are concerned. For the purposes of this work, Eastern Skye is defined as the area of the Isle of Skye from Kyleakin to Point of Sleet (see Figure 4b).



Figure 4a. Map showing the study area of Eastern Skye, with the areas used by each operation highlighted. Seacruise around Kyleakin and Sea.fari around Armadale (adapted from Ordnance Survey 1999).

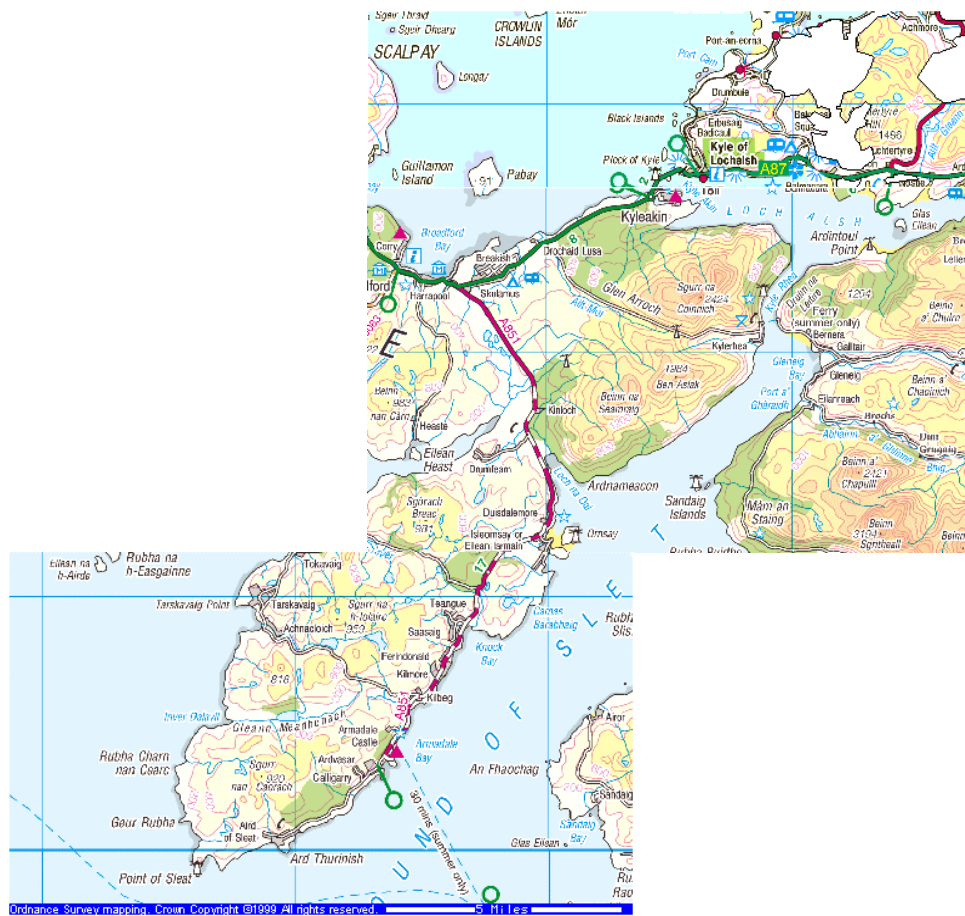


Figure 4b. Map showing the study area of Eastern Skye (Ordnance Survey 1999)

Wildlife that can be seen in the area includes: sea and golden eagles, shearwaters, puffins, grey and harbour seals, and various whales, dolphins and porpoises. However, only 18% of visitors to Skye and Lochalsh stated that they had participated in wildlife related activities during their visit (System Three 1999). Several operators commented that at the start of the 2000 season the sightings in the area were noticeably low, as piers are being constructed on many of the surrounding islands, to fit in with new EU regulations. The piers require a lot of blasting and also seal scarers are being used, primarily for safety reasons. Both of these could cause disturbance but sightings started to return to more usual levels for the time of year around the end of July, possibly due to habituation of the animals to all the new noises. The operators also stated that most minke whale sightings are nearer the end of the season.

The tourism industry on Skye has been showing a gradual decline over recent years, indicated by a drop in visitor numbers to tourist information centres on the Isle, from 357,598 in 1996 to 320,791 in 1999, following a period of rapid growth (HoSTB 2000). Figure 5 shows that an increasing proportion of the tourist trade has moved to Portree and the North end of the Isle.

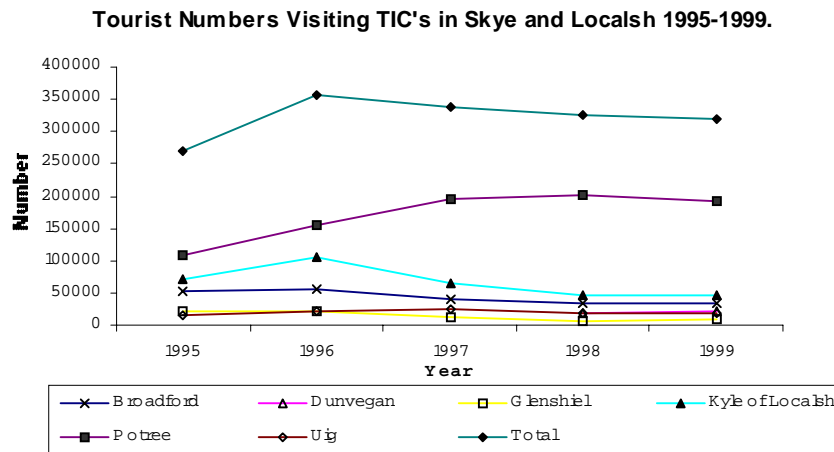


Figure 5. Showing the increasing proportion of visitors to the Portree Tourist Information Centre (TIC) and the dropping overall numbers of tourists (adapted from Highlands of Scotland Tourist Board 2000).

In 1999 the total number of tourists visiting the Isle was 427,686, with 357,319 of those staying for an average of 3.73 nights. In total they spent £65.7 million, with an average spend of between £45 and £47.06 per person per night and £27.83 per person on day trips (System Three 1999, HIE & EKOS 1999 as cited in Highlands and Islands Enterprise (HIE) 2000)

A higher proportion of tourists coming to the Isle use 'convenient' transport than travelling around Scotland in general, with 73% of visitors (*cf* 67% (System Three 2000)) to the area using either their own car or a hire car (System Three 1999).

4.2 Ardvasar / Armadale

4.2.1 Introduction

Tourist numbers in Armadale have dropped off significantly over the last five years, the populace also complain that the majority of tourists come to the ferry terminal and leave as soon as they can, either by public or charter buses, or private transport. This is because most tourists coming onto the island head straight to the North end to visit towns such as: Broadford, Portree, Sligachan, Dunvegan, Uig etc. The facilities in Ardvasar/Armadale are listed with those for Kyleakin in Table 14.

4.2.2 Sea.fari

The operator of Sea.fari is an active member of a recently established group called the Skye and Lochalsh Marine Tourism Association (SLMTA). This group is starting up to specifically advertise the tours based in and around Skye and Lochalsh and will concentrate intensively on the potential local market. This operator is also a member of the SMWOA, which is a useful method of advertising and marketing, and an excellent source of educational material for both the operators and their customers.

Before the start of the trip tourists are given waterproofs and life jackets and the owner makes sure they are wearing something warm. A quick informal talk gives information on what has been seen recently and the likelihood of seeing animals that day depending on the weather (a lot more is generally seen when it is calm as fins can be seen from further away without being concealed behind wave crests). The boat route varies according to the weather. If there are high seas the route will go into the sheltered Loch Nevis, otherwise it will be down the Sound of Sleat out past Point of Sleat to deeper water where whales are often seen. The trip then moves up between Rhum and Eigg and then back to the Lighthouse at the Point of Sleat. Finally the route brings the boat back along the coast to Armadale (see Figure 4a), the trip takes 2 hours, and charters can be arranged for groups. Whilst in the Sound of Sleat the boat will often be driven very slowly for a time, and the

engine put into neutral so that the owner or his crew can talk to the tourists. The engine is sometimes stopped for a while and a look out kept. When in the presence of any marine wildlife the skipper follows the code compiled by the SMWOA and causes only minimal or zero disturbance to the animals of birds. The trip itself offers something for everyone, as it can be exhilarating, full of birdlife and seals, and there is the chance of seeing whales or dolphins and regularly porpoises. To supplement these wildlife tours, the owner runs day trips to the Small Isles at the weekends and also an evening trip to The Old Forge at Inverie on Knoydart (officially the Guinness Book of Records' remotest pub in mainland Britain (Kynaston 2000)). Table 13 shows a price list for Sea.fari's services.

Adult	£20.00
Child <15 years	£15.00
Concession	£17.00
Family 2+2	£55.00
Rhum return	£26.00
Rhum non-landing	£17.00
Three Lights/Gavin Maxwell	£20.00
Old Forge (inc. meal and drink)	£20.00

Table 13. Sea.fari price list.

Sea.fari has started selling merchandise in the form of a cap for £10. This is selling well and there are plans to extend the range of souvenirs to key rings, badges, stickers, pens, t-shirts, etc.

Sea.fari does not compete directly with the other local boat operator, South Skye Boats, as they operate in different markets. The Sea.fari trip lasts for 2 hours, but because the boat is fast it can get to interesting areas in that time. The South Skye Boats boat is slower, and offers a more tranquil ride. Because of its speed it is ideal for a day charter, and offers fishing trips as well.

4.3 Kyleakin

4.3.1 Introduction

Kyleakin is a small town at the east end of Skye situated where the ferry used to come across from Kyle of Lochalsh. On the 16th October 1995 Kyleakin was by-passed with the opening of the Skye Bridge. Since then the tourist numbers have dropped considerably and local businesses dependent upon the connected trade have had to diversify or come up with new advertising ploys to survive. The Skye Bridge has had little positive impact on the tourist trade, with 50% of visitors disagreeing with the statement that 'the Skye bridge has made me more likely to visit Skye' and only 24% agreeing (System Three 1999).

One of the main tourist attractions in the area has been less affected by the bridge as it is a famous sight not only for viewing otters but for visiting the last home of author Gavin Maxwell. This is The Bright Water Visitors' Centre and the allied Eilean Ban or 'White Island'. There are less whales and dolphins in this area than the South of the island and they are rarely seen on trips. Table 14 shows a comparison of the facilities and tourist attractions in the two areas used for the case study.

	Armadale/Ardvasar	Kyleakin
Accommodation:	1 Hotel 1 Scottish Youth Hostel Numerous Bed and Breakfasts (numbers changing from season to season depending upon trade.) Further accommodation in Sleat including, 2 independent hostels, various bed and breakfasts and other hotels e.g. in Isle Ornsay.	2 Hotels 1 Scottish Youth Hostel Numerous Bed and Breakfasts (numbers changing from season to season depending upon trade.) 2 Independent Youth Hostels
Shops:	Post Office Sleat Trading Petrol Station Ragamuffin Mace Pier Craft Shop Sea.fari (Merchandise) Octave Organic Nursery	Post Office The Craft Shop Petrol Station The Bright Water Visitors Centre (The Eilean Ban Trust).
Tour Operators:	Sea.fari South Skye Boats	Seacruise Sea Probe Atlantis
Other Attractions:	Clan Donald Centre	Gardens The Eilean Ban Trust Castle Moil (Caisteal Maol)
Facilities:	Car parking Tourist Information board Toilets at the 'CalMac' office Public showers and toilets at Sleat Marine Public toilets at the village hall	Car parking Tourist Information board Public toilets at the old 'CalMac' office

Table 14. Showing a comparison of the facilities and tourist attractions in the two areas used for the case study.

4.3.2 Seacruise

The route for the Seacruise trip includes going around Eilean Ban, down the Kyle Akin, into Loch Alsh and under the bridge (see Figure 4a). There is information given by the operators throughout the trip. To supplement their business, Seacruise also run a ferry service to Kyle of Lochalsh (mainly for backpackers) and regularly to Eilean Ban in co-operation with the Trust.

Seacruise does not directly compete with Sea Probe Atlantis, the other local boat operator, as they have different markets, Sea Probe Atlantis offering a glass bottomed boating experience. Table 15 shows a price list for Seacruise's services.

Adults	£5.50
Children	£3.00

Table 15. Seacruise price list.

CHAPTER 5: METHODOLOGY

5.1 Introduction

The study was split into two sections. First a general survey was conducted to discover the extent of the Marine Mammal Tourism Business in Scotland. This involved compiling a list of contacts and sending out questionnaires across the country. The second part of the study involved a direct case study on the Isle of Skye. This island was chosen as it is a popular tourist destination and has a lot of marine tourism with 6 operators on the East side of the island alone. The case study involved three different questionnaires, which were either self administered or conducted by the researcher at two of the sites. The questionnaires for the case study were designed with consultation from the Hebridean Whale and Dolphin Trust (HWDT) and were piloted on Mull before the beginning of the study. The study period for this part of the survey was the month of July, chosen for its high tourist numbers. All questionnaires include some questions that will not be examined within the scope of this thesis. They were included for use in further studies and as part of a report being compiled by the HWDT for the Department of the Environment, Transport and the Regions (DETR).

5.2 Survey of the operators around Scotland

This questionnaire was piloted on an initial group of 32 well-advertised tour companies (see Appendix 3), a further 33 questionnaires being sent out after the exclusion of question 17. A good response rate was encouraged through telephone calls to the operators before the questionnaires were sent, the assurance of confidentiality and the offer of a summary report to any of the operators who requested it. A covering letter (see Appendix 4) was included with the questionnaire to further explain the study and a stamped addressed envelope to reduce cost and effort involved in completion and return. This survey was initiated early in the season (June) to ensure that operators would

not feel they were too busy to help. A further 26 companies were contacted by telephone, with a summarised questionnaire, to ensure quick results and so that more probing questions could be asked, such as those relating to income.

This survey was carried out in order to ascertain the state of marine mammal tourism across Scotland. It included questions on viability, tourist numbers, how long operations had been running, advertising, and whether or not they followed a code of conduct. A total of 26 completed replies (40%) were received from the postal questionnaire, and all 22 companies that were telephoned co-operated. This makes a total of 48 replies.

5.3 Case study in Eastern Skye

5.3.1 Survey of general tourists

After trying a few areas in each town (Kyleakin, Armadale and Ardvassar), the tourist questionnaires (see Appendix 5) were almost exclusively carried out at the Caledonian MacBrayne ferry terminal in Armadale. This was the best place to find people willing to co-operate, with time to spare. Asking the next person encountered after the completion of each interview insured a random sample.

This questionnaire was designed to assess the attitudes and profile of tourists in Eastern Skye, and included questions to ascertain why they came to Skye, their knowledge of local whale watching, their group composition, and what they considered to be the most important local industries. 265 general tourist questionnaires were completed face-to-face.

5.3.2 Survey of locals in Armadale/Ardvassar and Kyleakin

The local survey (see Appendix 6) was split randomly between the two sites in order to avoid biases. The survey was randomised by walking around the two

villages and approaching the next person to be encountered after the end of each interview.

This survey was designed to assess locals' knowledge of cetaceans, their thoughts on tourism, and why they thought tourists came to the area. 100 questionnaires were collected from the local people through face-to-face interviews.

5.3.3 Survey of whale watchers

Passengers from Sea.fari in Armadale and Seacruise in Kyleakin completed the whale watcher questionnaires. The boat-based questionnaires (see Appendix 7) were handed out for self-completion on the Seacruise vessel, however this was not possible on Sea.fari as the boat is an 8 metre rigid inflatable Humber with no shelter. To combat this problem the tourists were asked if they would comply before their trip, and the questionnaires were handed out upon their return.

This questionnaire included many of the same sections as the general tourist questionnaire, but importantly it also included a section on direct and indirect spending by whale watchers within the local area. 78 questionnaires were collected from Sea.fari, and 31 from Seacruise.

5.4 Justification of methodology

For the operators survey, questionnaires were used as an efficient way of gathering a comprehensive data set within the time available. This is also in part because it was not possible to get telephone numbers for all the operators. Telephone interviews were conducted as part of this survey, as they are a better way of insuring co-operation when asking sensitive questions, and the interviewer can gauge the responsiveness of the interviewee.

The case study on Skye was exclusively researched using questionnaires, as this was the only way to get a detailed data set from a large number of locals, tourists and whale watchers within the time available.

CHAPTER 6: RESULTS

6.1 Survey of Operators around Scotland

For this section, not all of the questions asked are reported, the others being used for further studies. Each question will be coded with the letter O and the question number (e.g. O:4 = Operators questionnaire, question 4). A total of 48 sets of responses are analysed.

6.1.1 History of the operation

O:top

The data was split into regions for further determination of results relative to area, the descriptions of which and number of respondents are listed in Table 16.

Area	Description	No. respondents
East	From Berwick-upon-Tweed to Wick	7
North	From Cape Wrath to Wick	2
North Isles	The Islands off the North Coast	2
West	From Solway Firth to Cape Wrath	16
West Isles	The Islands off the West Coast	21

Table 16. Showing the geographical distribution of the respondents to the operators survey.

The numbers of respondents in each area are incidental, and are not indicative of the total number of tour operators in each of those areas. The West and Western Isles are well represented due to the locality of the case study, which made these areas more accessible.

O:1

This question was asked to ascertain how many years each business had been running.

Mean	11.2
Median	9
	N=39

These values show that although there have been a few long-term businesses, their numbers are growing, as the median is lower than the mean.

O:3

This question was asked to determine whether the majority of businesses were run by locals who had lived in each area for a long time or by incomers.

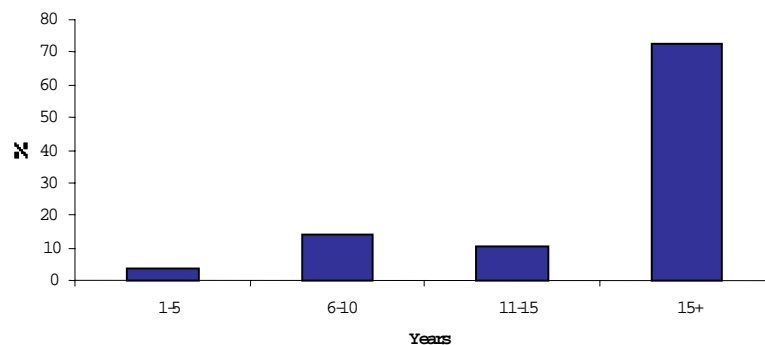


Figure 6. Showing how long operators have lived in the area where they work (N=29).

This graph shows that a large percentage (72.4%) of the operators can be classed as locals, through either being born in the area, or living there for more than 15 years.

O:6

This question was designed to assess the percentage of operators that had come to the business from an unrelated background. A large percentage (70.8%, N=24) of operators stated that they had no formal training in wildlife tourism or business management.

6.1.2 Economics of the operation

O:4

This question was designed to assess the number of FTE jobs provided by each operation. These were usually friends and family, and almost exclusively utilised local people.

FTE jobs: 5 or less 86.4%

FTE jobs: 6 or more 13.6%

N=44 For this survey 1 FTE was taken to mean 2 part-time year-round or 2 full-time seasonal jobs.

O:5

This question was asked to discover what percentage of marine mammal tour operators had other sources of income. Over half (63.2%, N=38) of tour operators stated that marine mammal tours were not their main source of income.

O:7

A high percentage of the respondents (72%, N=25) to this question stated that they had obtained financial aid for their operation, either through grants, or from the bank.

6.1.3 Viability of the business

O:9

This question was designed to determine whether business was increasing or decreasing for each operator, by asking if tourist numbers were going up or down.

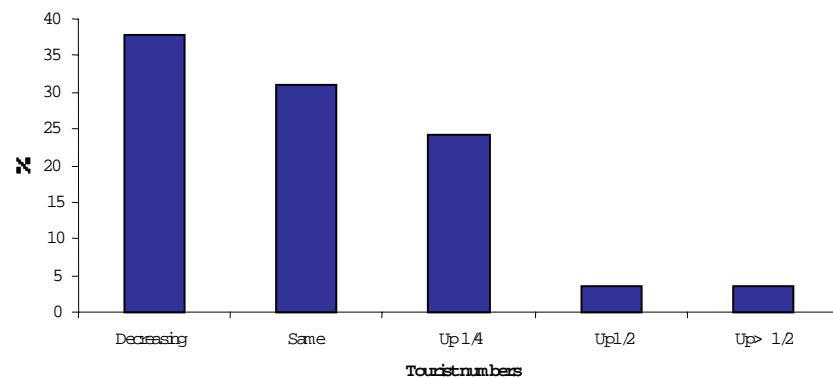


Figure 7. Showing the perceived trends in tourist numbers over recent years (N=29).

Figure 7 shows that most operators believe that tourist numbers are falling (37.9%), remaining the same (31%) or changing very little (24.1%).

O:11

This question was designed to discover the operators' opinions as to the viability of their businesses.

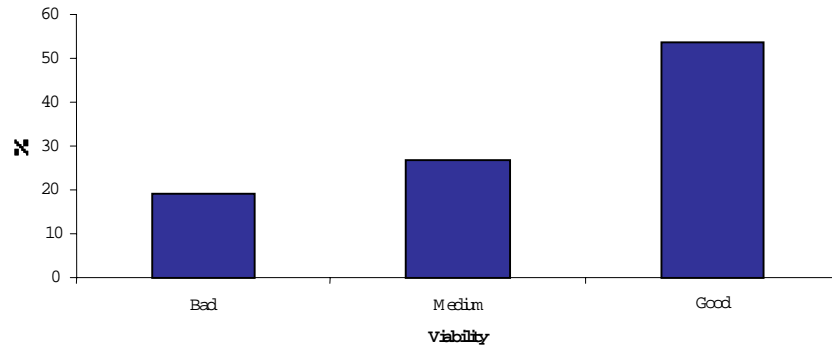


Figure 8. Showing the operators' assessment of viability (N=26).

Figure 8 shows that 80.9% of operators believe their businesses to be at least reasonably viable into the future.

O:16

All the respondents (N=27) to this question stated that they get return visitors, many responded that it is an important part of their business.

6.1.4 Marketing and advertising of the business

O:12

Almost all of the respondents (97.5%, N=40) to this question stated that they were members of at least one Tourist Board (local or national). The single respondent that was not a Tourist Board member stated that this was because

"STB insist on classification and do not listen to views of operators. They cannot accept that small operators of businesses (especially B&B) might just know a little bit about their own business and area. And their inspectors do not have an "operator friendly" attitude."

33 respondents also stated that they were members of at least one other marketing group (for examples see section 2.5.1).

O:10

Almost all of the respondents to this question (89.5%, N=38) stated that they follow a code of conduct, be it one of the commonly used ones (see section 3.3), or one of their own devising.

O:13

This question was designed to ascertain how operators advertised.

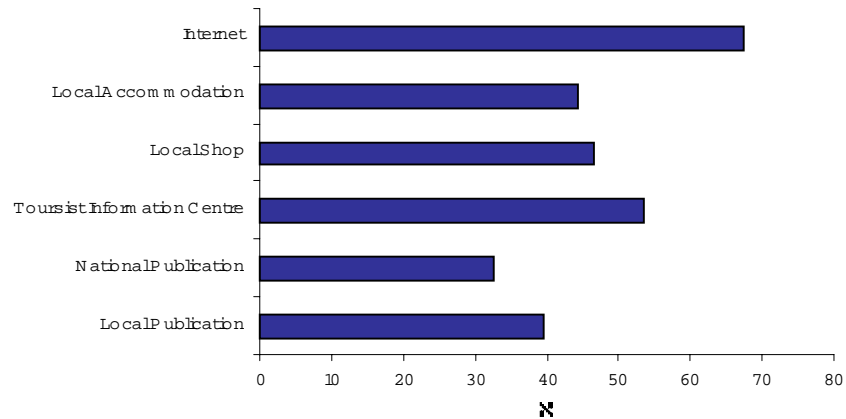


Figure 9. Showing which methods of advertising are commonly used by operators (N=43).

Although not categorised in this study, word of mouth was considered to be very important by the operators. This graph illustrates that the Internet was the most common form of marketing, used by 67.4% of the operators. The graph also demonstrates the diversity of advertising methods used, with around half the respondents using; local publications, tourist information centres (TIC), local shops and local accommodation, on top of their Internet coverage.

6.1.5 Impact on the ecosystem

O:17

This question was asked to ascertain how environmentally sensitive the operators were, however almost all operators answered that they did not disturb the animals they were viewing (94.5%, N=18). This was perhaps because the question was being misinterpreted as a question on good practice and was therefore not included in the second draft of the questionnaire.

O:19

This question was designed to show the operators opinions on the trend in numbers of marine mammals in the area.

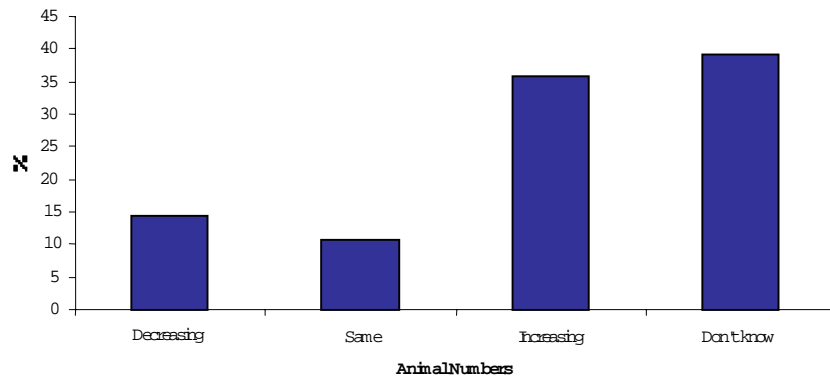


Figure 10. Showing perceived trends in numbers of animals in the area over time (N=28).

Figure 10 shows that many operators (35.7%) consider animal numbers to be increasing.

O:20

This question was designed to show the operators opinions on variety of marine mammals in the area.

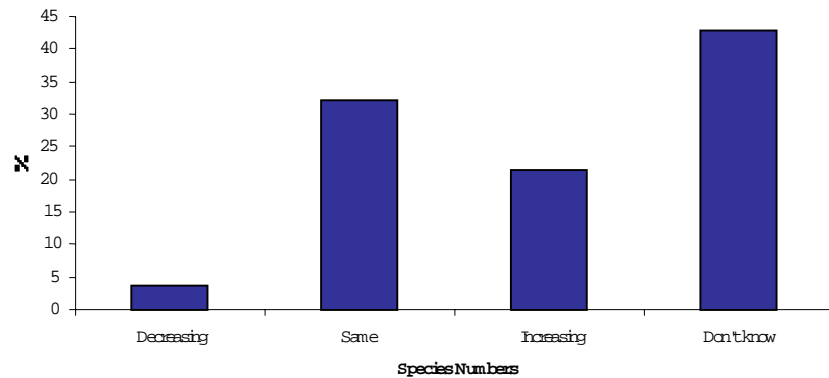


Figure 11. Showing perceived trends in numbers of species in the area over time (N=28).

Figure 11 shows that most operators feel that species numbers are remaining the same (32.1%) or increasing (21.4%).

O:26

This question was designed to see how many operators kept a sightings record, and ascertain the potential for the use of operators in long term scientific research into the cetacean stocks in the area. Over half (60.9%, N=23) stated that they did keep a sightings record, many of them already being used for research purposes.

O:27

The final question in this questionnaire was incorporated to find out how many species there were around Scotland, and could be compared with viability and locality of each operation.

6.1.6 Cross comparison of data

To complete the results some of the data was cross tabulated in order to reveal any other trends. Below is a summary of the more interesting results.

Data from questions **O:top** and **O:9**

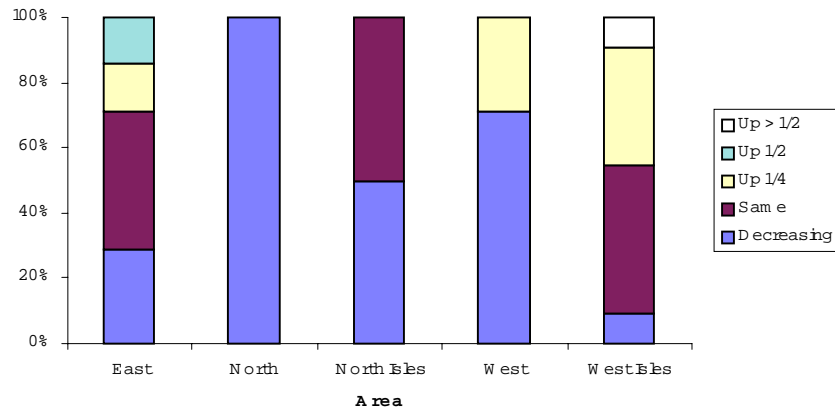


Figure 12. Showing how the operators' perceived trends in tourist numbers varied with location.

This graph shows that trends in numbers are quite different across the country with the Western Isles and the East Coast having the best perceived growth in tourist numbers, and the North a perceived decline. However, the graph for the North and Northern Isles is only drawn from two data points in each case and may not be representative of the whole of the Northern area.

Data from questions **O:top** and **O:11**

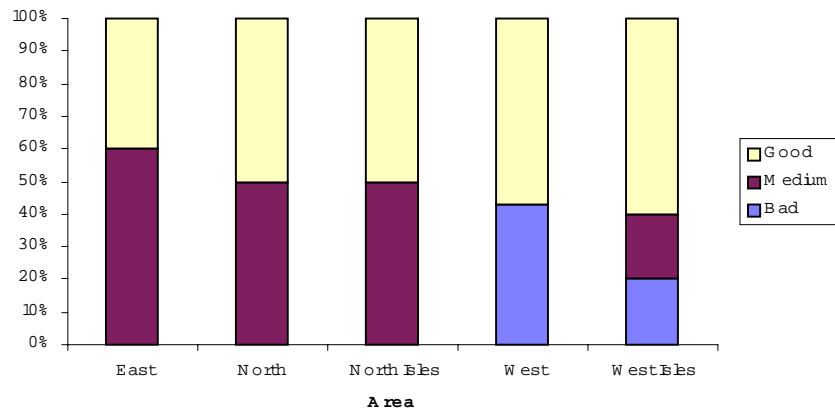


Figure 13. Showing how perceived viability varied with location.

Figure 13 shows that most operators perceived their businesses as being viable, with only a small percentage in the West and Western Isles (43% and 20% respectively) describing their businesses as having bad future viability.

Data from **O:top** and **O:19**

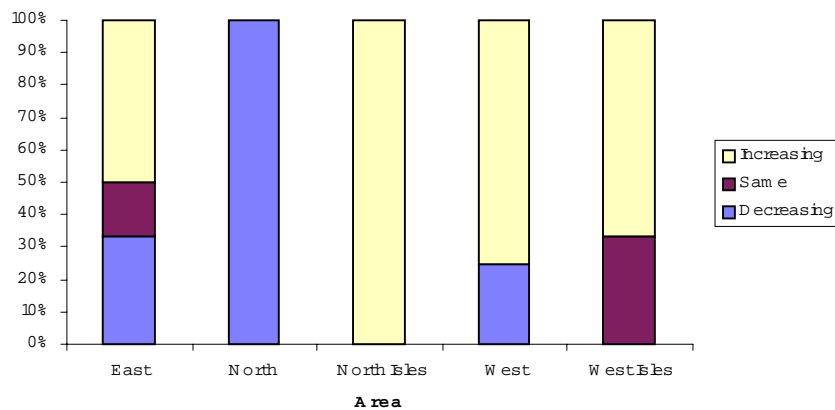


Figure 14. Showing the perceived trends in numbers of marine mammals against location.

This graph shows that generally numbers of animals are thought to be increasing, however operators off the Northern Isles disagree with this trend. More work needs to be completed there, as only two operators were surveyed from that area.

Data from questions **O:top** and **O:20**

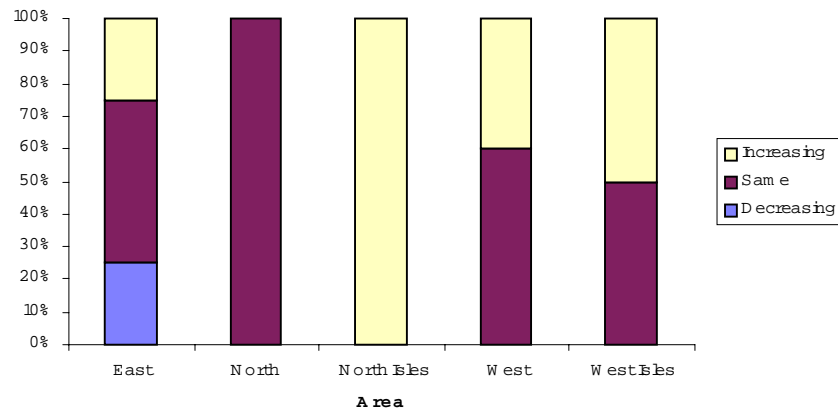


Figure 15. Showing the perceived trends in numbers of different species of marine mammals in each area.

This graph demonstrates that the majority of operators responding in each area perceive numbers of species to be staying the same or increasing.

Data from questions **O:top** and **O:27**

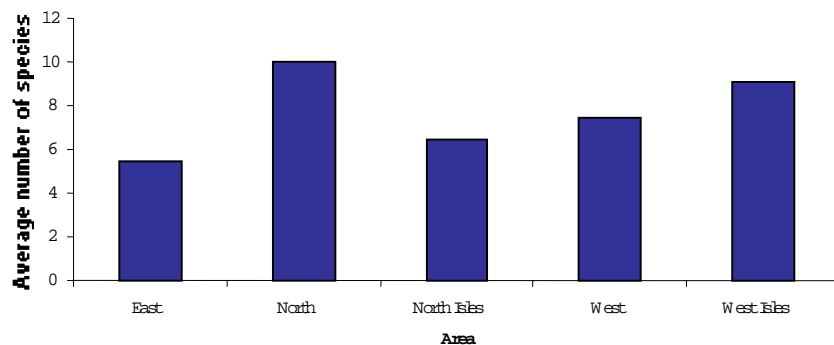


Figure 16. Showing the number of species relative to area.

This graph shows that on average there are less species (5.4) seen by operators on the East Coast of Scotland than elsewhere in the country, the most being off the North Coast (10) and the Western Isles (9.1). However, for accurate statistical analysis, a larger sample size is needed.

Data from questions O:11 and O:9

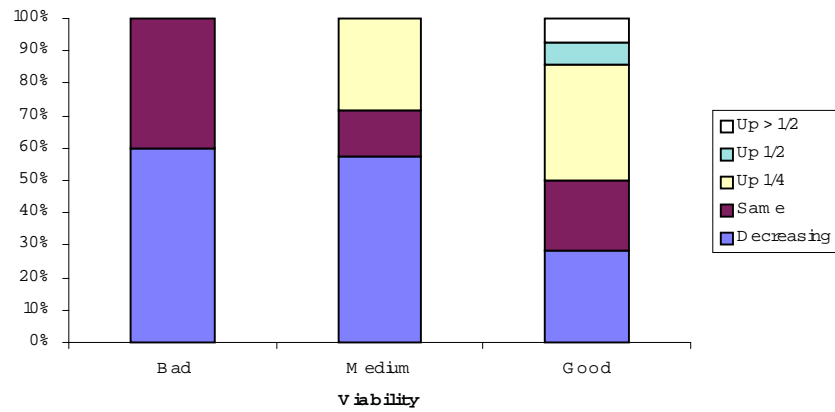


Figure 17. Showing perceived trends in tourist numbers against perceived viability of each operator.

This graph shows none of the operators who perceived their viability as bad thought that their visitor numbers were increasing, and only some of those with good perceived viability thought that tourist numbers were increasing by more than 1/4.

6.2 Case Study in Eastern Skye

Throughout this section the questions will be coded as follows, referring to the questionnaires that can be found in the relevant Appendix.

Questions from:	Code	Appendix	E.g.
Local questionnaire	L:1	6	L:1 (local questionnaire, question 1)
General Tourist questionnaire	T:7	5	T:7 (general tourist questionnaire, question 7)
Whale Watchers questionnaire	WW:15	7	WW:15 (whale watcher questionnaire, question 15)

The results from similar or identical questions are compared across questionnaires, with the assumption that the different layouts and methods of questionnaire completion have no significant effect. For clarity, only the results relevant to this study are analysed, the others being used for a more extensive tourist survey by the HWDT under commission from the DETR. The data is split into sections denoted by the areas addressed in each question.

6.2.1 Local industries

The following questions were asked to discover which are the most important local industries and how they are perceived.

L:3, T:12:

This question was designed to ascertain what were considered to be the most important industries in Eastern Skye.

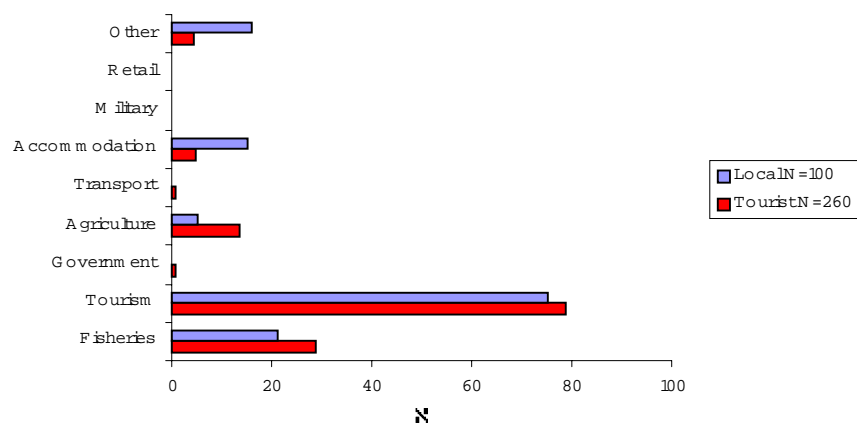


Figure 18. Showing the local and tourist perceptions of the importance of various local industries.

Tourism was considered by most locals (75%) and tourists (78.8%) to be the primary local industry, followed by fisheries at 21% and 28.8% respectively. The small proportion of 'Other' results were mainly identified as employment by the Gaelic College (Sabhal Mór Ostaig), Southern Skye.

If more than one answer was given, they were all taken so the percentages in the graph represent the percentage of responses for each category.

T:13

Figure 18 demonstrated that the tourism industry is considered to be the most important in the area. This question was asked of the tourists to ascertain how important they considered various types of trip to be to the local tourism industry.

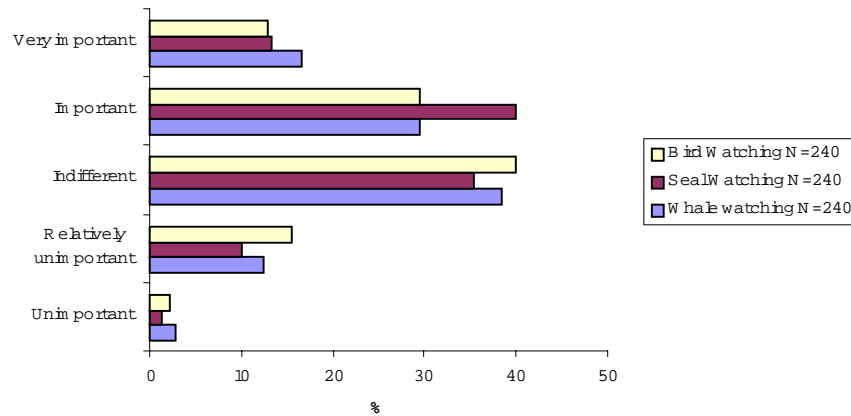


Figure 19. Showing tourist perceptions of the local tourism industry.

This graph shows that the tourists considered these three types of trip to be only slightly important to the local tourism industry, with the majority of answers falling into the indifferent or slightly important categories (Whale watching 67.9%, Seal watching 75.4%, Bird watching 69.6%). This question may have been misunderstood, as many respondents stated that they were giving their personal views on each type of trip, rather than how important they considered them to be.

6.2.2 Why tourists come to the area

The following questions were asked to discover why tourists come to the area and why the locals think tourists come.

L:7

This question was put to the locals to discover the reasons they think tourists come to Eastern Skye.

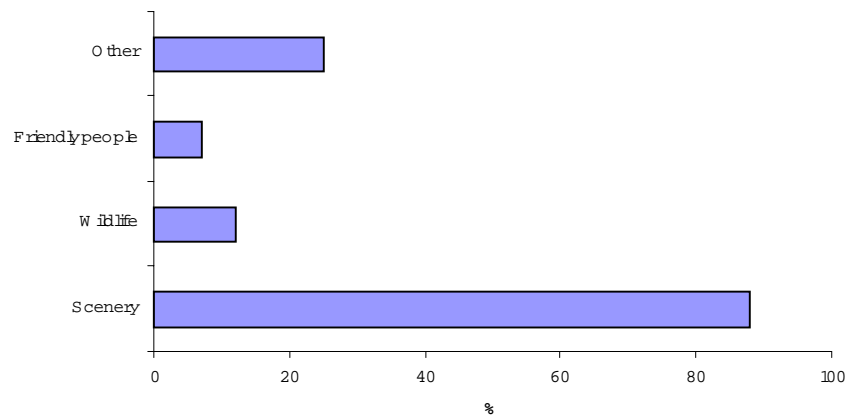


Figure 20. Showing the reasons that locals gave for tourists coming to the area (N=100).

Figure 20 shows that 88% of locals considered scenery to be the most important attraction for tourists to the area.

T:6, WW:6

This question was designed to discover the key elements that attract both general and whale watching tourists to Eastern Skye, and can be compared to Figure 20.

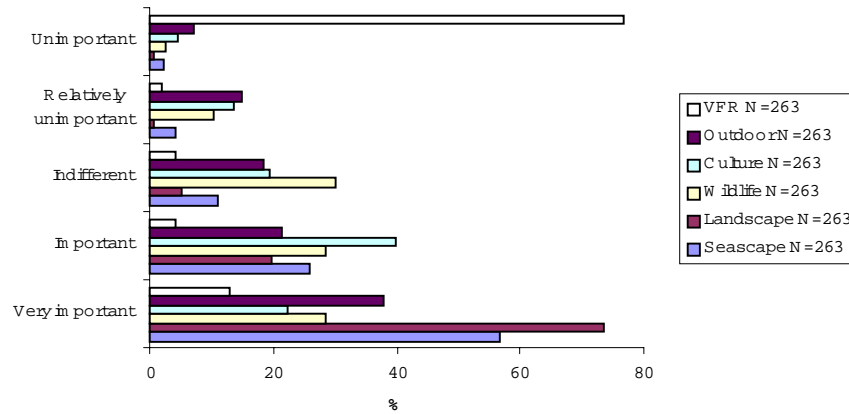


Figure 21a. Showing how importantly general tourists rated various attractions when choosing to come to the area.

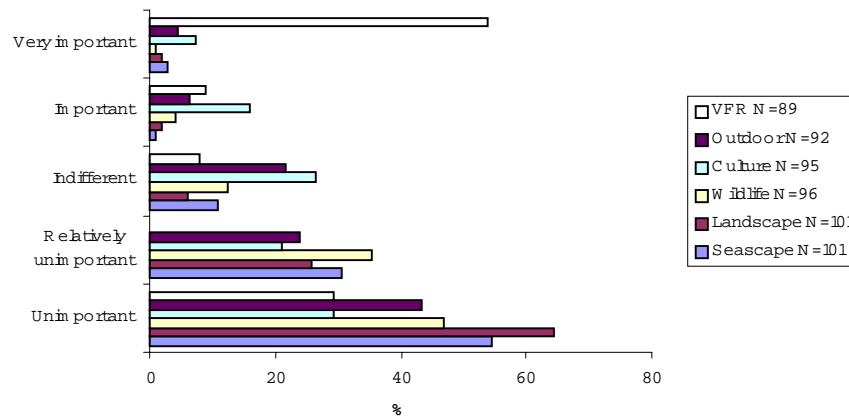


Figure 21b. Showing how importantly whale watchers rated various attractions when choosing to come to the area.

The two graphs are very similar, and display two basic features. Firstly that visiting friends and relatives (VFR) was an unimportant reason for coming into the area (general tourists 76.8%, whale watchers 53.9%). Secondly, that seascape and landscape were important or very important for both general tourists (seascape 82.6%, landscape 93.2%) and whale watchers (seascape 85.2%, landscape 91.1%). This correlates well with L:7, showing that the locals were correct in their assumption that scenery was an important

attraction for tourists to the area. Finally it should also be noted that wildlife and outdoor activities rated highly.

L:2, L:3

Almost half (42%) of the locals questioned were directly involved with the tourism industry (N=100), and a total of 83.8% of locals (N=99) stated that they would like to see more tourists in the area.

6.2.3 Visitor profile

The following questions were asked to put together the profile of a typical tourist in Eastern Skye and to ascertain whether or not the characteristics of tourists that go whale watching are different from a general tourist.

T:16, WW:28

This question was asked to determine each respondent's country of origin.

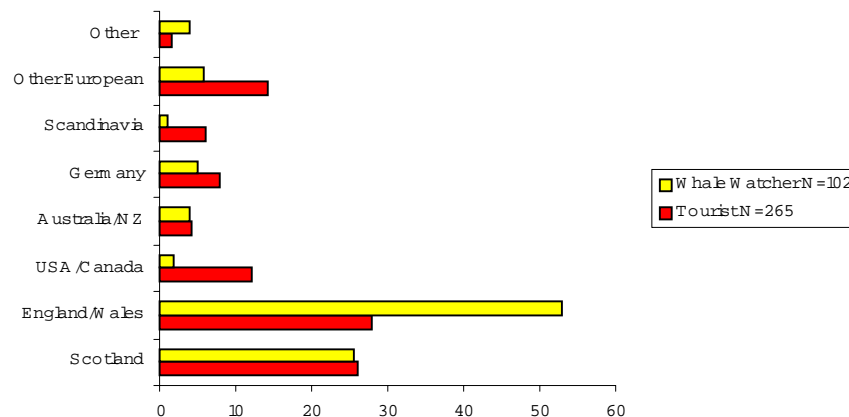


Figure 22. Showing the countries of origin of the visitors.

This graph shows that the majority of both general tourists (53.9%) and whale watchers (78.4%) taking a holiday in Scotland were from the UK. This graph also highlights the fact that the proportion of whale watchers from the UK is higher than the proportion of general tourists.

L:10, T:19, WW:32

This question was asked to determine the respondents' age for the three surveys.

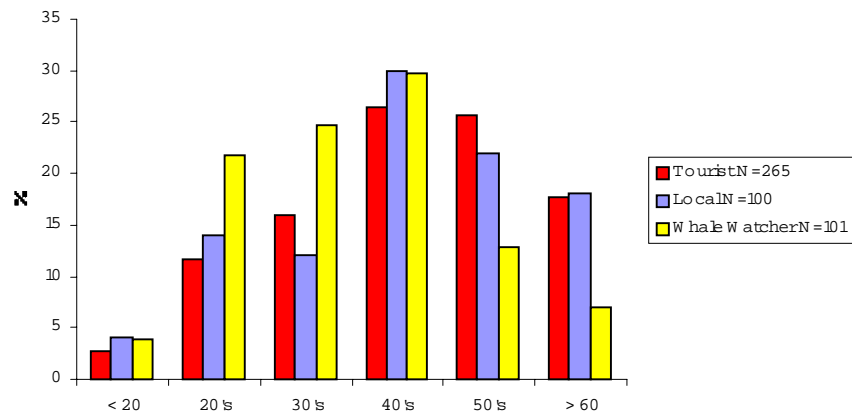


Figure 23. Showing the age distribution of the three study groups.

This graph demonstrates that the average whale watcher seems to be younger than the average general tourist.

T:17, WW:30

This question discovered the typical group structure of the two different types of tourist.

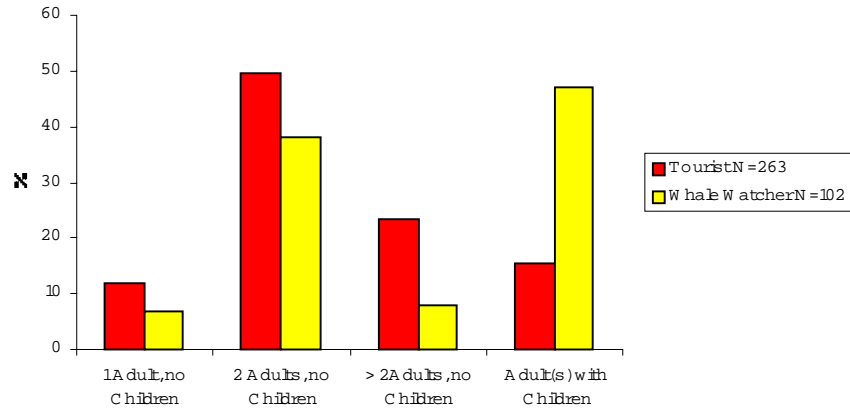


Figure 24. Showing the group structure of the visitors.

This graph shows that most general tourists come to the island without children (84.4%), whereas 47.1% of whale watchers and only 15.6% of general tourists have at least one child.

T:5, WW:5

This question discovered how each type of tourist categorised their holiday.

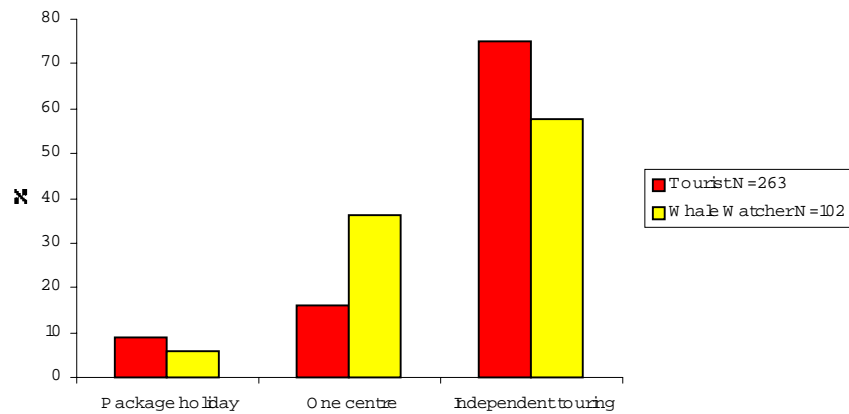


Figure 25. Showing the category of holiday taken by each tourist.

The majority of tourists in eastern Skye were touring independently (70.1%), but the graph shows that a larger proportion of whale watchers (36.3%) than general tourists (16%) were staying in one centre.

T:4, WW:4

This question asked in what kind of accommodation the tourists were staying.

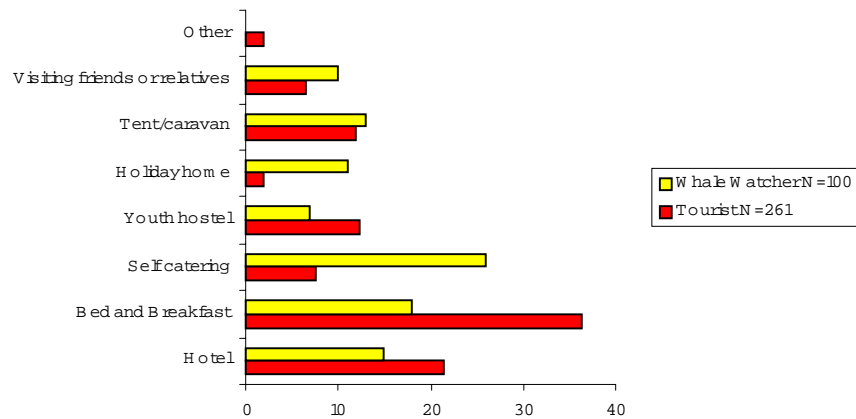


Figure 26. Showing the accommodation used by tourists.

This graph displays that a larger percentage of general tourists (36.4%) than whale watchers (18%) stayed in Bed & Breakfast accommodation, with a similar situation for hotels (21.5% and 15% respectively). Also whale watchers (37%) were more likely to stay in self-catering accommodation or holiday homes than general tourists (9.6%) were. These figures are a good estimate for general tourists, and are comparable to figures from System Three (1999) for all tourists in the Skye and Lochalsh area, of 40% (N=461) in Bed & Breakfast accommodation and 13% (N=461) in self-catering accommodation.

T:1, WW:1

This questions showed that whale watchers (40.4%, N=109) and general tourists (45.7%, N=265) were just as likely to be on their first visit to Scotland.

T:3, WW:3

This questions were asked to discover how long each type of tourist was staying on the island. General tourists were found to be spending an average of 4.1 nights (N=252) and whale watchers 7.5 nights (N=102).

6.2.4 Whale watching

The questions in this section were asked to aid with determination of marketing for the operators, by asking why people go whale watching, and how they hear about the trips that they take.

WW:23

This question was designed to see why tourists go whale watching.

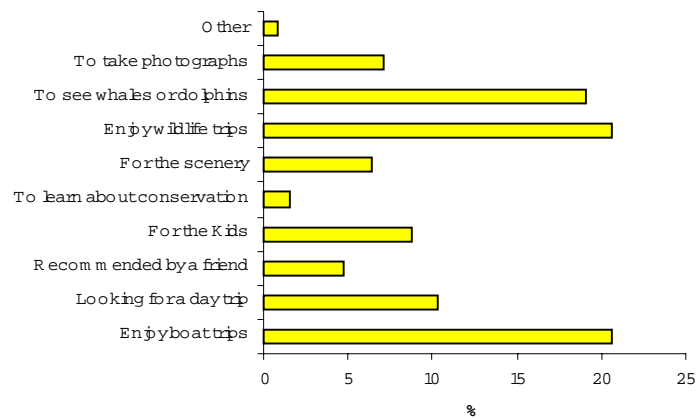


Figure 27. Showing the reasons that whale watchers gave for going on trips (N=126).

Reasons for going whale watching seem to be highly varied, however enjoyment of boat trips (20.7%), enjoyment of wildlife trips (20.7%) and the possibility of seeing whales and dolphins (19%) appear to be the most popular reasons.

T:10, WW:13

This question was designed to assess the effectiveness of advertising, using different methods, to tourists before they arrived in the area.

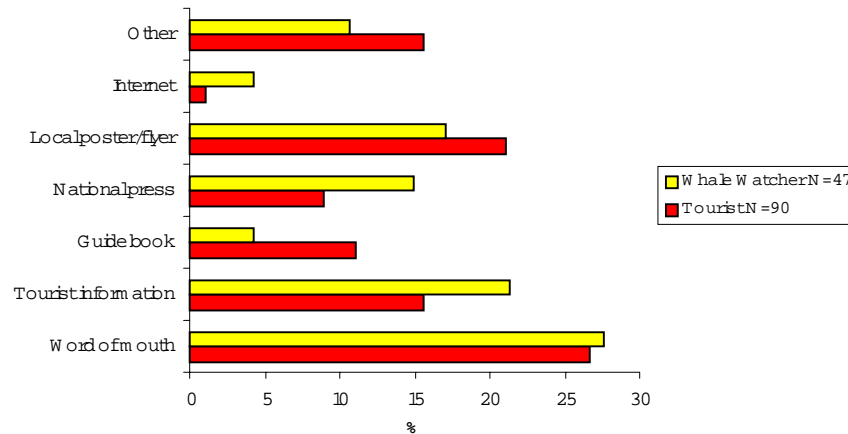


Figure 28. Showing the information sources that provided tourists with prior knowledge of the area's whale watching.

The results show that although word of mouth is the most important marketing tool (general tourists 26.7%, whale watchers 27.7%), it is worth while advertising in many diverse ways.

WW:16

Only 6.6% (N=91) of whale watchers booked their trip before they arrived on the island.

T:10, WW13 & T:8, WW:12 & T:9

Under half of all tourists to the island (37.4%, N=260 general tourists; 47.7%, N=107 whale watchers) were aware of the whale watching trips on the Isle of Skye before their visit. However, 66.4% (N=265) of general tourists and 75.2% (N=109) of whale watchers were aware that cetaceans lived of the West Coast of Scotland before their holiday, and only 11.7% (N=265) stated that this affected their decision to come to the area.

WW:10 & WW:11

Only 8.7% (N=104) of whale watchers stayed extra nights to go whale watching, and only 5.7% (N=106) of whale watchers came to the area specifically for the trip.

WW:17 & WW:18 & WW:19

These three questions were designed to demonstrate customer satisfaction. The information received showed that 98% (N=101) were happy with the cost of the trip, 98% (N=102) would recommend it to a friend, and 97% (N=102) would go whale watching again in Scotland. A good indication as to the quality of the two trips.

6.2.5 Direct and indirect spending

The single question in this section was asked towards the end of the whale watching questionnaire once easier questions had been asked, to encourage its completion.

WW:28

This question was designed to determine the direct and indirect spending of whale watchers in Eastern Skye, which can then be compared to the average spend per person on Skye (£45 and £47.06 per person per night and £27.83 per person on day trips (System Three 1999, HIE & EKOS 1999 as cited in Highlands and Islands Enterprise 2000)).

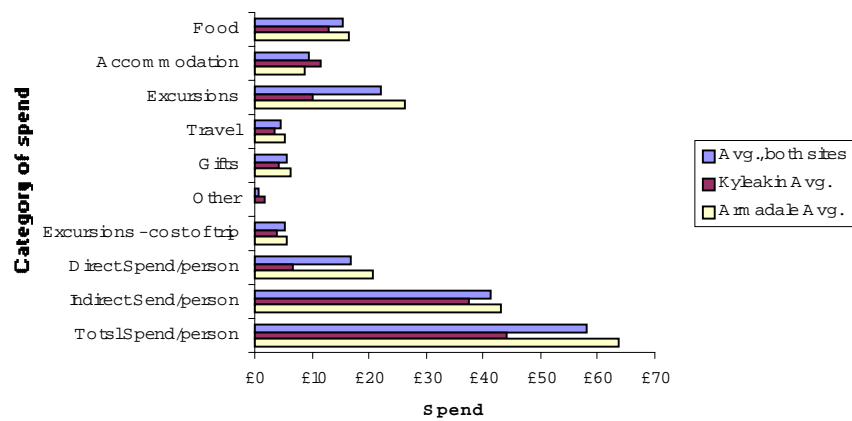


Figure 29. Showing the average spend on various categories by whale watchers.

Expense	Kyleakin (N=20) average spend/person	Armadale (N=53) average spend/person	Total average spend/person
Food	£12.88	£16.58	£15.56
Accommodation	£11.55	£8.79	£9.55
Excursions	£10.25	£26.34	£21.93
Travel	£3.53	£5.12	£4.68
Gifts	£4.15	£6.26	£5.68
Other	£1.75	£0.52	£0.86
Excursions – cost of trip	£3.73	£5.66	£5.13
Direct Spend/person	£6.35	£20.68	£16.80
Indirect Spend/person	£37.58	£42.93	£41.47
Total Spend/person	£44.10	£63.61	£58.27

Table 17. Showing the data summarised in Figure 29.

On average, these values compare favourably with the cited values however the values for the Kyleakin and Armadale sites fall either side of them. This will be further discussed in chapter 7.

CHAPTER 7: DISCUSSION

7.1 Operators survey

This section summarises and discusses the most important findings from the operators survey.

7.1.1 History and economics of the businesses

The average marine mammal tour business from this survey has been running for 11.2 years and is run by a local who has lived in the area for more than 15 years. Most are small businesses supporting fewer than 5 FTE jobs and almost three-quarters of the operators have additional sources of income. This is similar to the responses from a survey in Australia, where 77% of operators had sources of income other than whale and dolphin watching (Australian Nature Conservation Council 1995). The situation is indicative of areas where traditional employment such as fishing or crofting are proving to be unprofitable and rural people have to diversify in order to provide for themselves and bring in income from outside the community (Smyth 1998, Wunder 2000).

The Australian survey also demonstrated the differences between land-based whale watching and boat-based. Land-based whale watching accounting for 55% of visitors, but only 15% of the direct input into the local economy (Australian Nature Conservation Agency 1995). This is in part because of the low running costs of the land-based operations, which means that they are a low cost and consequently low-income method of whale watching.

Although the whale watching industry seems to be expanding in Scotland, with a median of 9 years and a mean of 11.2 years of operation, it is not expanding as efficiently as the global whale watching industry. This is highlighted in Table 18, which shows the percentage increase in various categories for world wide whale watching and UK whale watching.

Year	Change in monetary value %		Change in no. of tourists %	
	UK	World wide	UK	World wide
1991-1994	+740		+3650	+35
1994-1998	-14	+111	+608	+67

Table 18. Showing the growth in global and UK based whale watching (adapted from Hoyt 1992, Hoyt 1995b, Hoyt 2000)

Table 18 shows that the economic value of whale watching in the UK dropped from 1994-1998 compared to a 111% rise globally. The rate of change in tourist numbers in the UK is much higher than globally, but from 1994-1998 this was lower than 1991-1994 suggesting that the rate of growth of numbers is slowing. The higher values can be attributed to the fact that the UK industry is relatively young, and it is possible that they will level out close to the global values in years to come. The drop in economic value from 1994-1998 occurred despite an increase in numbers of 608%. This suggests that the average whale watcher is spending less than in previous years. It may be possible to rectify this situation by improving facilities and increasing spending opportunities in the areas around whale watching operations.

The drop in value of whale watching suggests that the economic value of cetacean stocks has also dropped, as there are few other uses of cetaceans in Scottish waters (see Section 2.2). This is important from a conservation viewpoint, because as this sustainable, low-impact activity becomes less viable other higher-impact activities may come to the fore.

It is essential for operators that they understand the basics of supply and demand, especially if they have never run their own business before. Without this basic understanding, prices may be set at a level that will discourage visitors.

7.1.2 Marketing and advertising

Section 6.1.4 revealed the marketing strategies of the operators, with at least 31 out of the 48 operators being members of marketing groups other than the national or local tourist boards. The comments of one operator brought to light a possible limitation of the present tourist board system, which may need to become more responsive to the needs of small rural businesses.

When Figure 10 is compared to Figure 29, it can be seen that there is a discrepancy between the use of the Internet by operators and tourists. This suggests that there is need for a more consolidated approach by the operators, whereby they efficiently link their web sites under a universal "portal" site, perhaps run by one or more of the operators associations and accessible through the STB. This will make their web sites easier to find for the tourists. Only 3% (N=1,833) of visitors to Scotland in 1999 used the Internet to book their accommodation (System Three 2000), another indication that this resource is not being fully utilised.

7.1.3 Regulation of whale watching

A large percentage of operators (89.5%) stated that they follow a code of conduct, however the sole study of UK whale watching codes of conduct showed the DSP in the Moray Firth to be only partially successful (Arnold 1998). This is in part as there is little regulation of the industry in the UK.

At the present there are a multitude of laws and codes of conduct relating to whale watching in the UK, which may become confusing for operators and the general public (see Sections 3.3 & 3.4). Despite this, the DETR only recommend that their whale watching guidelines (DETR 1999b) are followed in the absence of local codes of conduct and there is no specific legislation relating to the UK industry (Arnold 1998). Along with suggested alterations to the Wildlife and Countryside Act 1981 (RSPB 1998a, Simmonds 2000), formulation of a new set of legislation could provide the institutional controls necessary to ensure adherence to a single code of conduct.

7.1.4 Ecological awareness of the operators

Section 6.1.5 highlighted the operators' awareness of the environment they work in, which could ultimately be used for a general appraisal of the local ecology and possibly a more scientific long term study. However, this section also revealed that over 1/3 of the operators surveyed did not know if numbers of and numbers of species of marine mammal were increasing or decreasing over time (39.9% and 42.9% respectively). This was despite the fact that 60.9% of operators kept a sightings record.

To facilitate the long-term research and monitoring necessary for the conservation of cetacean stocks (IFAW *et al.* 1995), legislation of the UK industry could include a licensing scheme with a commitment to keeping an accurate and extensive sightings record.

7.1.5 Cross comparison of data

The cross tabulated data (Section 6.1.6) illuminated a number of interesting points. The Western Isles and the East Coast seemed to be the best two places to have a whale watching business, with tourist numbers increasing, and viability good. However there seem to be more species on average in the West and North, rather than the East, and viability showed a positive correlation with increasing species number.

It is possible that the better trends in tourist numbers perceived in the Western Isles and the East are due to other factors. The Western Isles may be doing better as there is a longer history of whale watching in the area. The East may be doing well because it is relatively easy to get to compared to the West and North. The Western Isles and the East Coast are also the two most reliable areas for Scottish whale watching, which is based around resident populations of bottlenose dolphins (Hoyt 1995a), and well established operators groups (e.g. the SMWOA formed in conjunction with the Minch Project (Morrison 1999) and the DSP, Moray Firth (Arnold 1997)).

The North coast and Northern Isles remain under utilised as whale watching destinations, a situation that must be remedied for businesses in those areas to remain viable. This could be accomplished through the formation of an area specific marketing group, or perhaps including the tours as part of a package. It may also be possible to alter the price structure of the trips, to include discounts for people who have to travel a long way to get there, altering the price to ensure maximum market clearance for a mixture of tourists.

7.1.6 Discussion of methodology

The results for this section were compiled from questionnaires and telephone interviews, however different questions were asked when using these two methods of data collection, and only some could be compared. Also due to time constraints only a short pilot study was completed. Future studies of a similar nature would be advised to use only one method of data collection, and to perform an extensive pilot study, time permitting. The most useful method of data collection was through telephone interviews with a semi-structured format, as this allowed the interviewer to gauge the level of the conversation and the responsiveness of the interviewee. Operators were also appreciative of this more direct form of contact and were consequently happier to answer questions of a monetary nature. For a more extensive study, a combination of the two methods being used for all operators in the sample would be best, using a questionnaire to gain the bulk of background information, then following it up with a telephone interview.

7.2 Case study in Eastern Skye

This section presents a summary discussion of the main points highlighted in this study.

7.2.1 Local industries

The results in this section illustrated the importance of the tourism industry to the local community. However, in 1997 only 18% (N=477) of tourists to the Skye and Lochalsh area carried out wildlife related activities (System Three 1999), despite 40% of European visitors considering wildlife to be a primary feature of Scotland (STB as cited in Smyth 1998) and 39% (N=579%) of all visitors to Scotland undertaking some kind of wildlife watching (System Three 2000). This suggests that there is potential for the whale watching industry in Eastern Skye to focus on the remaining tourists to increase its profile and economic importance.

The results from questions L:2 and L:3 seem to demonstrate that the local people recognise the benefits of tourism to the local community irrespective of whether or not they work in the industry. Many locals were accepting that tourism is good for the local economy and the community as a whole despite no direct personal gain. This may be similar to the 'altruistic surplus' phenomenon demonstrated by Cunningham (1994 as cited in Faulkner & Tideswell 1997), whereby urban residents accept that "*collective community benefits can supersede individual interests*". However the survey does not account for the locals who are gaining a small part of their income from the tourist industry, without being directly involved in it (for example shopkeepers).

7.2.2 Visitor profile

The visitor profile for whale watchers and general tourists differed in a number of important ways. Firstly a higher percentage of whale watchers were taking a holiday based in one location, they were also more likely to be staying in

cheaper self-catering forms of accommodation. This is good, because they will create better local profits, buying local produce rather than bulk buying from outside the community, as is often the case with hotels (Rayment 1995).

Whale watchers also tended to be tourists that were staying longer in the area, perhaps a cause of their use of cheaper accommodation. A survey in 1999 (System Three 2000) gave the average number of nights in the area to be 5.1 (N=294), which is the same as the overall average for this survey (5.1 nights, N=354). This compares well with another study giving 3.73 nights as the average stay (HIE & EKOS 1999 as cited in HIE 2000). Both these figures highlight the extended length of stay of whale watchers in this study (7.5) as being unusual.

Another important difference in the visitor profiles was in the group composition, with whale watchers being more likely to be families with children under 16 years (47.1%, *cf.* 15.6% for general tourists). The System Three (1999) visitor survey of Skye and Lochalsh also highlights this figure as being unusual with a value of 12% of tourists having children under 18 years.

7.2.3 Whale watching

Although the whale watchers were tourists that stayed longer on the island, almost none of them stated that they had spent extra nights there to go on the trip. It is also interesting that although the reasons given for going on a trip rarely included 'For the Kids', there was a higher percentage than might be expected of adults with children taking the trip (see Figures 27&24).

The results in 6.2.4 also highlighted the fact that improvements were needed to the marketing of the trips, as well under half of the visitors knew of them before their arrival. The apparent answers to this problem would be to improve the best present advertising means, or increase the use of the Internet, which can be easily accessed by tourists and travel companies abroad and elsewhere in the UK. However, tourists are not using this resource, despite extensive use by operators. Consequently the answer may

be to try and change attitudes towards using the Internet, or make it easier to access operators through the suggested 'portal' sites. It is also important to take into account the differences in the visitor profile and target relevant groups, for example families with children.

At present wildlife tourism brings very few tourists to Scotland (Masters *et al.* 1998) and whale watching even fewer. A good way of raising national and international awareness could be to produce television shows focussing on Scottish tourism and whale watching in particular. Especially as cetaceans are considered to be Scotland's most popular wildlife attractions (Smyth 1998).

7.2.4 Direct and indirect spending

The total average spending per person of the respondents to the whale watcher questionnaire was considerably higher than figures quoted by System Three (1999) and HIE (2000), which average to a nightly spend of ~£46 per person staying on Skye. However this was not the case for each of the two sites, with Kyleakin spend per person at £43.24. This could be explained by looking at the price structure of the two trips. It seems that the more expensive Sea.fari trip attracts tourists who are more likely to spend more money. It is also possible that the lower spending in Kyleakin is due to the lower number of shops in the area, especially gift shops. This suggests that there is potential for a new craft shop in Kyleakin.

The higher average figure for whale watchers over general tourists is encouraging for the industry, demonstrating its economic potential for the operators and displaying its potential benefits to local communities. Both of these factors should combine to help ensure the continued success of the industry. Research into the spending of tourists and whale watchers in other areas is necessary to make further predictions.

7.2.5 Discussion of methodology

The methodology used for the case study can be criticised in that it is possible that the comparison of questions across the questionnaires may introduce inaccuracies and biases. This was not however considered to be a problem during the design of the questionnaires. Some of the questions asked were misunderstood, for example T:13, as was witnessed by the questioner. These cannot therefore be analysed with any degree of confidence. During the general tourist survey it was difficult to survey groups from tour buses, as they would often arrive just in time to catch a ferry and when ferries arrived they would leave as soon as their bus was ready. This may have caused a bias in the data for the visitor profile (see Section 6.2.4), however it has been assumed that any other biases were negligible.

Due to the format of the questionnaires, and the time available for completion of the survey, non-English speakers were effectively eliminated from the sample. Also tourists with little or broken English were less inclined to answer questions. These two effects could have caused significant biases with the tourist origin question, however many British people also refused to answer questions, thus reducing the bias.

CHAPTER 8 CONCLUSIONS AND RECOMMENDATIONS

To conclude, the whale watching industry in Scotland is at a fragile stage in its development, with the strong pound encouraging tourists to travel abroad, and discouraging foreigners from coming to the UK. This must be combated by raising the profile of Scottish tourism, especially Scottish whale watching. The Scottish industry must also continue monitoring and adapting its practices to remain as ecologically sensitive as possible, yet flexible to allow for new research or legislation.

Below is a list of recommendations for the whale watching industry in Scotland and for future research into that industry.

- Improve the level and diversification of advertising.
- Raise the profile of Scottish tourism, for example through television.
- Create a 'portal' site for Internet use, which will link to all operators' web sites.
- Initiate directed funding schemes to encourage good practice.
- Create new legislation to include an obligatory licensing scheme, with an official code of conduct.
- Increase income to operators through merchandising.
- Increase income in local areas from whale watching, perhaps through establishment of new shops and raising the profile of each area.
- Initiate future research into the industry with this study as a pilot.
- Continue present studies into disturbance and effects of whale watching.

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Warburton, C.A., Parsons, E.C.M., Woods-Ballard, A.J., Hughes, A.J. and Johnston, P. (2001). *The Economic Impacts of Whale-watching in Western Scotland*. Report to the UK Department of the Environment, Transport and Regions. Hebridean Whale and Dolphin Trust, Mull, Scotland.

APPENDICES

A1: Chronology of Relevant Legislation

- 1934 Whaling Industries (Regulation) Act
- 1949 Coast Protection Act
- 1949 National Parks and Access to the Countryside Act
- 1949 Convention on the Regulation of Whaling
- 1958 Geneva Convention on the Continental Shelf
- 1958 Geneva Convention on the Territorial Sea and Contiguous Zones
- 1958 Geneva Convention on Fishing and Conservation of the Living Resources of the High Seas
- 1967 Countryside (Scotland) Act
- 1970 Conservation of Seals Act
- 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage.
- 1973 Nature Conservancy Council Act
- 1973 Convention on International Trade in Endangered Species of Flora and Fauna (Washington Convention) CITES legally binding in 1975
- 1979 Convention on the Conservation of European Wildlife and Natural Habitats (The Berne Convention)
- 1979 Convention on the Conservation of Migratory Species of Wild Animals (The Bonn Convention) came into force 1983 idea from Stockholm convention in 1972
- 1980 Water (Scotland) Act
- 1981 Wildlife and Countryside Act (as amended in 1986)
- 1982 Civic Government (Scotland) Act
- 1982 United Nations Convention on the Law of the Sea (UNCLOS III)
- 1987 Territorial Seas Act
- 1987 Fisheries Act
- 1990 Environmental Protection Act (EPA)
- 1991 Natural Heritage (Scotland) Act
- 1991 Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS)
- 1992 'Council Directive 92/43/EEC (of 21 May 1992) on the conservation of natural habitats and of wild fauna and flora' (The Habitat and Species Directive)
- 1992 Convention on Biological Diversity
- 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic
- 1994 'Biodiversity: The UK Action Plan'
- 1994 The Conservation (Natural Habitats, &c) Regulations

A:2 Examples of Codes of Conduct

Department of the Environment, Transport and the Regions

Minimising disturbance to cetaceans from recreation at sea

Introduction

Twenty-seven species of cetaceans (whales, dolphins and porpoises) have been recorded as occurring in the coastal waters of the north-east Atlantic. The main species seen include bottlenose dolphins, harbour porpoise, minke whale, Risso's dolphin, killer whale, common dolphin and white-beaked dolphin. Although many of these usually occur in offshore waters, bottlenose dolphins and several other species are regularly seen close inshore.

Cetacean-watching is increasing in popularity. In some places cetaceans come close to the coast and can be seen from the shore without risk of disturbance. People intending to go to sea specifically to watch cetaceans should go with a recognised operator of cetacean-watching trips. These operators will be following specific guidelines, thereby limiting the number of vessels around cetaceans and limiting disturbance.

However, any vessel at sea, for whatever purpose, may incidentally encounter cetaceans. These guidelines are intended for such vessels. The term 'vessel' is taken to mean any ship, boat, dinghy, personal watercraft, windsurf, surfboard, canoe, kayak or surf ski. Recreational boating and water sports are on the increase, and people participating in these activities are likely to want to stop and look at cetaceans.

These guidelines are intended to complement existing local guidelines or, where these do not exist, to assist local bodies to develop locally targeted codes of conduct based on the experience of existing voluntary schemes. For example, the Dolphin Space Programme administers an accreditation scheme for dolphin-watching operators in the Moray Firth in Scotland, and guidelines for all boat users can be found in the Boat User's Guide for the Ceredigion Marine Heritage Coast in south-west Wales. Several other, more general, guidelines have also been produced.

A separate set of guidelines has been produced for operators of commercial vessels offering cetacean-watching trips.

Potential adverse impacts of encounters with cetaceans

It is recognised that many people at sea for recreational purposes will wish to enjoy encounters with cetaceans. However, these encounters pose a potential threat to cetaceans unless they are conducted in such a way as to minimise disturbance. Collisions with boats may result in injury or death of cetaceans; engine noise may interfere with their acoustic communication, prey detection and orientation systems; and, erratic patterns of movement of boats may cause the animals to suffer stress.

In addition to the physiological effects of stress, the natural behaviour of cetaceans may be disturbed, resulting in a reduction in foraging time, movement to less favourable areas, disruption of mother-calf bonds, decreases in survival, and possible adverse long-term effects on the population. Although the long-term effects are at present uncertain, there is some evidence that vessels lingering to watch cetaceans may cause short-term disturbance in a way that routine marine traffic does not.

The adoption of precautionary guidelines to minimise such disturbance is in the interest of maintaining healthy cetacean populations.

Requirement for protection of cetaceans in UK waters

In the UK all cetaceans are protected under the Wildlife and Countryside Act 1981 and the Wildlife (Northern Ireland) Order 1985, which prohibits deliberate killing, injury or disturbance.

All cetaceans are listed under Annex IV of the EC Habitats and Species Directive (92/43/EEC) as species being in need of strict protection. Under such protection it is an offence to deliberately disturb cetaceans.

The UK is a Party to the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) which requires signatory states to work towards the prevention of significant disturbance to cetaceans, especially that of an acoustic nature.

The UK is also a Party to the Convention on the Conservation of European Wildlife and Natural

Habitats (the Bern Convention) which requires signatory states to take appropriate measures to prohibit deliberate capture, killing or disturbance of nineteen species of cetacean listed as strictly protected. This includes most of the species commonly found in north-west European waters.

Precautions to minimise disturbance to cetaceans from encounters with vessels

It is a rare privilege to be able to watch cetaceans in their natural environment. The most rewarding encounters occur when the cetaceans are undisturbed. The following guidelines are designed to minimise stress to individual animals and adverse effects on populations. Some of the points may be inappropriate for some classes of vessel.

1. On encountering cetaceans, continue on your intended route making forward progress at a slow, steady, no wake speed (or less than 5 knots). This will present predictable movements and thus minimise the risk of disturbance to, or collision with, the animals. Avoid erratic movements such as circling around the animals or sudden changes in course or speed.
2. To minimise the risk of disrupting mother-calf bonds leave cetaceans with young alone and avoid coming between a mother and her calf.
3. Allow groups of cetaceans to remain together. Proceeding slowly on a steady course will enable cetaceans to remove themselves from the path of a vessel as a group. Avoid deliberately driving through, or between, groups of cetaceans.
4. On sighting cetaceans, fast planing vessels should gradually slow down to a slow, no wake speed. A suggested speed is less than 5 knots. Wait until well clear of cetaceans before gradually resuming original speed.
5. Let cetaceans approach you. If cetaceans do choose to approach the vessel or bow-ride, maintain a steady speed without changing course. Refrain from altering course to approach them and remember that they may choose not to bow-ride.
6. Always allow cetaceans an escape route. If there is more than one vessel in the vicinity avoid boxing animals in. Be aware of your surroundings - cetaceans will have a restricted escape route in enclosed waters such as narrow channels or sea lochs.
7. Move away slowly if you notice signs of disturbance, such as erratic changes in speed and direction, or lengthy periods underwater.
8. There should be no more than two vessels in the vicinity of cetaceans at any one time, with no more than one vessel in close proximity. Refrain from calling other vessels to cetaceans.
9. For the sake of their own safety and for the health of the cetaceans, people should refrain from swimming with, touching or feeding cetaceans. The risks of contracting diseases such as brucellosis should be borne in mind.
10. Be aware of, and attempt to minimise, possible sources of noise disturbance. Maintaining a steady, slow, no wake speed will help to reduce noise disturbance. Excessive noise can also be avoided by keeping the engine and propeller well-maintained. However, care should be taken to avoid collision with cetaceans when using sailing boats or boats with a low engine noise as the animals are less likely to hear the vessel until it is close.
11. People regularly using vessels in areas where cetaceans are known to occur should consider fitting propeller guards to minimise the risk of injury to cetaceans.
12. Remember that it is an offence to dispose of sewerage, fuel, oil and litter at sea.

These guidelines may be revised in the light of new evidence on the impacts of cetacean-watching becoming available.

Compliance with the International Regulations for Preventing Collisions at Sea has priority over these guidelines at all times.

Further information

For further information on cetaceans in your area you should contact your local statutory nature conservation agency - for England, that is English Nature; for Wales, the Countryside Council for Wales; for Scotland, Scottish Natural Heritage; and, for Northern Ireland, Environment and Heritage Service (Northern Ireland). The number of your local office can be found in the Yellow Pages under 'Conservation organisations'.

If you have any comments on these guidelines, please contact the:

European Wildlife Division

Department of the Environment, Transport and the Regions

902A Tollgate House, Houlton Street, Bristol BS2 9DJ.

(DETR 1999a)

**Department of the Environment,
Transport and the Regions**

***Minimising disturbance to Cetaceans
from Whale watching operations***

Whale Watching

It is a rare privilege to be able to watch cetaceans (whales, dolphins and porpoises) in their natural environment. The most rewarding encounters occur when they are undisturbed. The following guidelines are designed to minimise stress to individual animals and adverse effects on populations. Where local guidelines are in place tour operators should follow them (examples are enclosed with this document). Where these are not in place it is recommended that you follow these.

- Maintain slow, steady, forward progress throughout the trip. Deviation towards cetaceans should only occur when they are sighted in open waters with little other boat traffic. Any approach should be slow and at an oblique angle and should not aim closer than 100m.
- If cetaceans are sighted you should slow down gradually to no wake speed (or less than 5 knots) and maintain this speed until well clear.
- Let cetaceans approach you. If cetaceans do choose to approach the vessel or bow-ride, you should maintain a steady speed without changing course. Refrain from altering course to approach them and remember that they may choose not to bow-ride.
- You should move away slowly if you notice signs of disturbance, such as erratic changes in speed and direction or lengthy periods underwater.
- Refrain from driving through, or between, groups of cetaceans.
- You should avoid cetaceans with young.
- You should try to allow a clear escape route for cetaceans.
- Try to plan routes and timetables so there are no more than two boats within 1km of cetaceans. In areas of heavy traffic or in enclosed waters the duration and number of trips should be limited.
- You should consider fitting propeller guards to minimise the risk of injury to cetaceans. Maintain propellers to avoid unnecessary noise disturbance. Where possible, use boats with low engine noise. Be aware of, and attempt to minimise, other possible sources of noise disturbance.
- For the sake of their safety and the health of the cetaceans, passengers and crew should refrain from swimming with, touching, or feeding cetaceans.
- Where possible, the crew of a vessel should include a person who is able to inform the public about the natural history and conservation requirements of cetaceans.
- Remember that it is an offence to dispose of sewage, fuel, oil or litter at sea.

Compliance with the International Regulations for Preventing Collisions at Sea has priority over these guidelines at all times.

If you have any comments on these guidelines, please contact the:

European Wildlife Division
Department of the Environment, Transport and the Regions
902A Tollgate House, Houlton Street, Bristol BS2 9DJ.

(DETR 1999b)

IWC General Principles for whalewatching

(1) Manage the development of whalewatching to minimise the risk of adverse impacts:

- (i) implement as appropriate measures to regulate platform numbers and size, activity, frequency and length of exposure in encounters with individuals and groups of whales; - management measures may include closed seasons or areas where required to provide additional protection; - ideally, undertake an early assessment of the numbers, distribution and other characteristics of the target population/s in an area;
- (ii) monitor the effectiveness of management provisions and modify them as required to accommodate new information;
- (iii) where new whalewatching operations are evolving, start cautiously, moderating activity until sufficient information is available on which to base any further development;
- (iv) implement scientific research and population monitoring and collection of information on operations, target cetaceans and possible impacts, including those on the acoustic environment, as an early and integral component of management;
- (v) develop training programs for operators and crew on the biology and behaviour of target species, whalewatching operations, and the management provisions in effect;
- (vi) encourage the provision of accurate and informative material to whalewatchers, to: - develop an informed and supportive public; - encourage development of realistic expectations of encounters and avoid disappointment and pressure for increasingly risky behaviour.

(2) Design, maintain and operate platforms to minimise the risk of adverse effects on cetaceans, including disturbance from noise:

- (i) vessels, engines and other equipment should be designed, maintained, and operated during whalewatching, to reduce as far as practicable adverse impacts on the target species and their environment;
- (ii) cetacean species may respond differently to low and high frequency sounds, relative sound intensity or rapid changes in sound; - vessel operators should be aware of the acoustic characteristics of the target species and of their vessel under operating conditions; particularly of the need to reduce as far as possible production of potentially disturbing sound;
- (iii) vessel design and operation should minimise the risk of injury to cetaceans should contact occur; for example, shrouding of propellers can reduce both noise and risk of injury;
- (iv) operators should be able to keep track of whales during an encounter.

(3) Allow the cetaceans to control the nature and duration of 'interactions':

- (i) operators should have a sound understanding of the behaviour of the cetaceans and be aware of behavioural changes which may indicate disturbance;
- (ii) in approaching or accompanying cetaceans, maximum platform speed should be determined relative to that of the cetacean, and should not exceed it once on station;
- (iii) use appropriate angles and distances of approach; species may react differently, and most existing guidelines preclude head-on approaches;
- (iv) friendly whale behaviour should be welcomed, but not cultivated; do not instigate direct contact with a platform;
- (v) avoid sudden changes in speed, direction or noise;
- (vi) do not alter platform speed or direction to counteract avoidance behaviour by cetaceans;
- (vii) do not pursue, head off, or encircle cetaceans or cause groups to separate;
- (viii) approaches to mother/calf pairs and solitary calves and juveniles should be undertaken with special care; - there may be an increased risk of disturbance to these animals, or risk of injury if vessels are approached by calves;
- (ix) cetaceans should be able to detect a platform at all times; - while quiet operations are desirable, attempts to eliminate all noise may result in cetaceans being startled by a platform which has approached undetected; - rough seas may elevate background noise to levels at which vessels are less detectable.

1 Any vessel (with or without engine), aircraft or person in the water.

2 Chase (as opposed to follow), causing the whale to change its course or speed.

(IWC 1996)

Sea Watch Foundation Code of Conduct

“It is important to remember that whales, dolphins and porpoises regularly use sound in their daily lives, for locating and capturing food, locating and communicating with one another, detecting predators, and forming a picture of their underwater environment in often very dim light. Many sounds made by craft directly overlap the frequencies used by cetaceans. Engine noise and sounds generated by seismic activities coincide with those used by baleen whales, whereas those caused by cavitation of the propeller at high speed, produce loud broadband, high frequency noise overlapping with those used by toothed whales and dolphins. All these sounds are likely to cause interference with daily activities of cetaceans, and may exclude them from preferred feeding or nursery areas. They can also lead to undue stress, particularly when mothers are pregnant or with small young. Studies have shown that whales, dolphins and porpoises frequently respond negatively to craft moving directly at them; they often change their dive rates and may swim rapidly away from the sound source.

There is no reason why boats and cetaceans should not be able to co-exist if care is taken to observe the following code of conduct:

- Do not chase cetaceans or drive a boat directly towards them; wherever possible, let them approach you.
- Do not respond to them by changing course or speed in a sudden or erratic manner; slowing down as well as stopping suddenly can confuse and even alarm cetaceans as much as sudden acceleration.
- Avoid cetaceans with young.
- Do not swim, touch or feed cetaceans, for your safety and theirs.
- Ensure that no more than one boat is within 100m of cetaceans and no more than 3 boats within 1km of them at any one time.

Note: Further local guidelines may be in place in areas where cetaceans are common, and these should be adhered to.”

(Evans 1995)

Dolphin Awareness’ Code of Conduct for recreational boats and jet skis in the Moray Firth.

“If you are a power boat or personal watercraft user, please follow these guidelines when you see dolphins or porpoises:

- Avoid sudden changes in speed or direction. Slowing down suddenly will confuse and scare dolphins or porpoises as much as speeding up.
- Avoid travelling at high speed.
- Look out for groups of dolphins or porpoises and avoid heading straight for them – they may not be aware that you are there.
- Avoid swimming with, touching or feeding dolphins – for your safety and theirs. Remember, they are wild animals.

Bottlenose dolphins and harbour porpoises are protected by law under the Wildlife and Countryside Act 1981. If you see anyone deliberately harassing dolphins or porpoises, please inform the police.”

(Courtesy of Scottish Natural Heritage, Inverness, 1993 as cited in Arnold 1997)

Sea Life Cruises Code of Conduct for approaching Minke Whales.

1. "Do not alter course or steer directly at a whale or circle around a whale. (Explanation: avoid appearing as a threat to the animal.)
2. Do not suddenly change course or speed in reaction to a sighting or in the presence of a whale: Never go in reverse. (Explanation: Slowing down or stopping can confuse the animal as much as speeding up. The animal needs to be able to monitor your position. Also, there may be other whales in the vicinity you are not aware of.)
3. Avoid getting close to whales with small young. (Explanation: Calves are more naïve than older animals and may not perceive a boat and its propeller as a potential threat. Whales are more likely to feel threatened when they have young.)
4. Ensure that not more than 3 boats are within 1km of a whale. (Explanation: More boats are more likely to harass an animal. The whale is less likely to avoid them all.)
5. After first sighting a whale, limit your speed to a no-wake speed and never more than 5 knots. (Explanation: Lower speeds generate less noise disturbance, boats get particularly noisy when you push them towards their hull speed. Lower speeds give more time for a whale to avoid the boat.)
6. Remain more than 200m from the whale unless the whale chooses to approach you. (Explanation: A whale may be feeding on a very specific area and your approach may disrupt its feeding.)
7. Do not repeatedly approach whales which are obviously shy of boats. (Explanation: Individual whales react differently to boats. You are unlikely to be able to approach a whale which is shy of a boat.)

First Draft 5.8.92: Sea Life Cruises

Developed with advice from Vassili Papastavrou, Marine Education and Research Ltd., Bristol."

(Arnold 1997)

The Dolphin Space Programme Code of Conduct is as follows:

- Maintain forward progress at a slow, steady speed throughout the trip.
- Follow an agreed route within the area of operation without stops or deviations except for safety reasons.
- Always slow down gradually to no wake speed if cetaceans appear directly ahead. Once clear of the animals, slowly resume cruising speed. If cetaceans approach boat or bowride, maintain a slow cruising speed.
- Limit the duration, route and number of trips in certain areas sensitive to marine traffic, such as the Kessock Channel and Chanonry Narrows.
- Dispose of fuel, oil, litter or other contaminants in the appropriate containers ashore.
- For your safety and theirs, do not allow passengers or crew to swim with, touch or feed dolphins or other marine mammals.

Most of the current Codes of Conduct are designed for whale watching and recommend minimum distances between boats and cetaceans, or suggest angles of approach and maximum numbers of boats in the vicinity of whales.

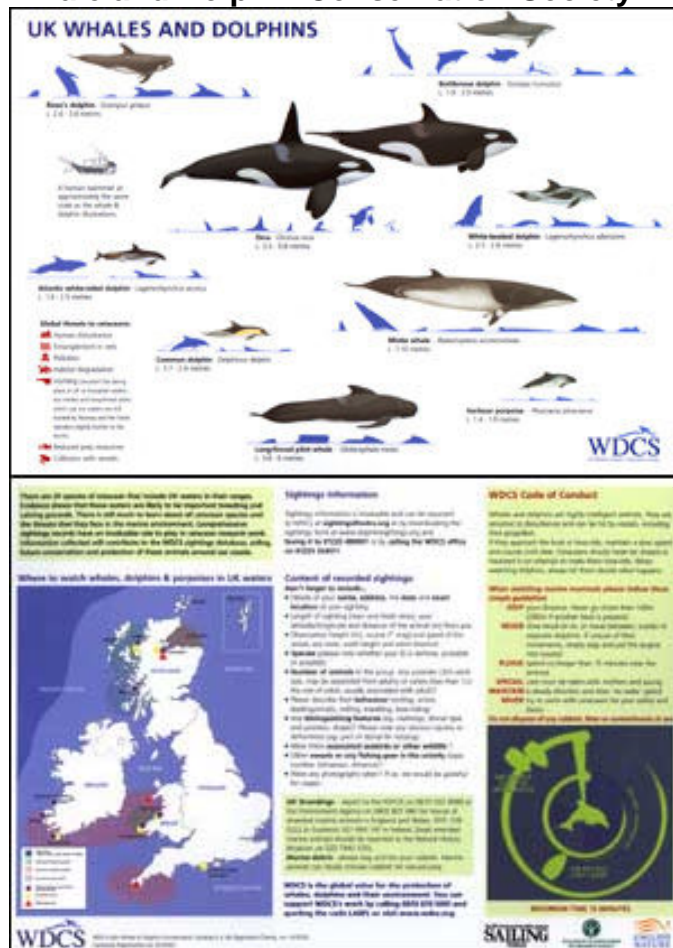
(Hammond 1992)

Poster in Broadford Bay at time of Northern Bottlenose Whale residency

1. Vessels, including kayaks, should not approach the whales closer than 20 metres.
 2. No one should try to touch or swim with the whales.
 3. All vessels should move slowly within the Bay, as long as the whales remain.
 4. No one should drive directly at the whales.
 5. The number of boats in close proximity (i.e. 100 metres) to the whales should be limited at any one time to only two.
- Vessels should not use sonar in the Bay.

(Simmonds 1999)

Whale and Dolphin Conservation Society



WDCS Code of Conduct

Whales and dolphins are highly intelligent animals. They are sensitive to disturbance and can be hit by vessels, including their propellers. If they approach the boat or bow-ride, maintain a slow speed and course until clear. Cetaceans should never be chased or harassed in an attempt to make them bow-ride. When watching dolphins, always let them decide what happens.


When watching marine mammals please follow these simple guidelines

- KEEP** your distance. Never go closer than 100m (200m if another boat is present)
- NEVER** drive head on to, or move between, scatter or separate dolphins. If unsure of their movements, simply stop and put the engine into neutral.
- PLEASE** spend no longer than 15 minutes near the animals
- SPECIAL** care must be taken with mothers and young
- MAINTAIN** a steady direction and slow 'no wake' speed
- NEVER** try to swim with cetaceans for your safety and theirs

Do not dispose of any rubbish, litter or contaminants at sea

(WDCS 2000 (Whale and Dolphin Conservation Society))

Hebridean Whale and Dolphin Trust



TAKE CARE OF SCOTLAND'S WHALES AND DOLPHINS

WHALE AND DOLPHIN-WATCHING CODE OF CONDUCT

The west coast of Scotland is one of the best places in Europe to see whales, dolphins and porpoises. Twenty-three species can be found in this area, from the tiny harbour porpoise to the gigantic blue whale.

Please help us protect these wonderful creatures.

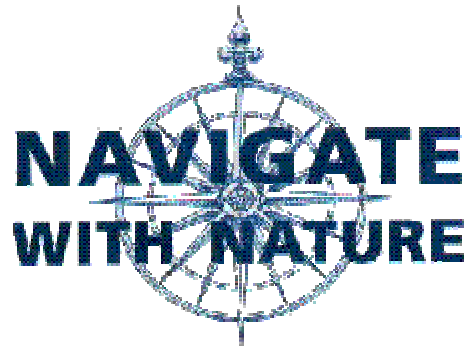
For more information on Scotland's whales and dolphins please contact
The HEBRIDEAN WHALE AND DOLPHIN TRUST
Tel: 01688 302620 Fax: 01688 302725
Website: <http://www.gn.apc.org/whales>

Common Dolphin (Delphinus delphis); photograph courtesy of Sea Life Centre

- Always **BE AWARE** that whales and dolphins may be in the area.
- If you see whales or dolphins nearby **SLOW DOWN** (to no wake speed), keep a **STEADY SPEED** and **AVOID RAPID CHANGES** in direction or speed.
- Always take **EXTREME CARE** when whales and dolphins are nearby.
- If possible, avoid coming closer than 100m and never approach the animals **HEAD ON**.
- Avoid groups containing **CALVES** - they are easily frightened and could suffer.
- If stopping to watch a whale or dolphin - put the gears into **NEUTRAL** or **SWITCH OFF** the engines if stopping for longer.
- Never **CHASE**, **CIRCLE** or **OVERTAKE** whales or dolphins - Let the whales and dolphins come to you.....**IF THEY WANT TO!**
- Avoid having more than **ONE VESSEL** within 300m of any group of whales or dolphins.
- Never let your vessel get into the **MIDDLE OF A GROUP** of animals - you could split the group up and young animals may lose their mothers.
- If the whales and dolphins show any sign of becoming **ALARMED** move away - slapping their tails or hitting their heads on the surface of the water may be signs of distress.
- **HARASSING** and deliberately disturbing a whale or dolphin is a **CRIMINAL OFFENCE!**
- It's not advisable to swim with or touch whales or dolphins - they're wild animals and **CAN BE DANGEROUS**. Treat them with respect.
- Never attempt to **FEED** whales or dolphins.
- Dispose of fuel, food and litter appropriately when back on shore - some types of rubbish can kill, poison or injure whales and dolphins - **DON'T POLLUTE OUR SEAS!**

Seeing whales and dolphins in the wild is a great privilege - enjoy it!

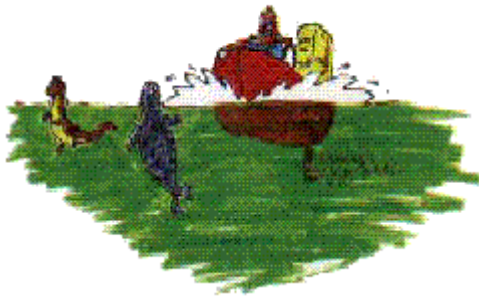
The HWDT also have a code specific to Seal watching.
(HWDT 1999)



The Code of Conduct for Marine Wildlife Operators

Scottish Marine Wildlife Operators Association

General



Allow birds and mammals to continue their normal activities by avoiding noise and physical disturbance which causes them to move away. Boats should avoid altering course or speed quickly.

Back off immediately if birds or animals show any signs of distress.

Remember that wildlife is likely to be less distressed by experienced boat operators or guides who regularly enter these areas.

Use binoculars for close viewing. This increases the wildlife experience and reduces disturbance.

Remember also that there are other marine users, take care not to affect their enjoyment of the area.

Respect the interests of local people who rely on the area for their livelihoods.

If more than one boat is watching the same wildlife be prepared to increase your distance and limit your watching time.

Be considerate when approaching known coastal wildlife sanctuaries.

Maintain a regular speed and do not stop in front of land-based watchers as wildlife may be disturbed by your presence.

Birds

When near birds maintain a slow steady speed or stop at a distance consistent with safety requirements.

Avoid entering rafts of seabirds.

Extra care should be taken during the seabird breeding seasons (April-August); the birds are particularly vulnerable to disturbance at this time.

Avoid disturbance of rare species by keeping knowledge of nest sites to yourself.

Seals

When near seals maintain a slow steady speed or stop at a distance consistent with safety requirements.

Avoid going too close and back off quietly if the behaviour of seals indicates distress.

Additional care should be taken during seal pupping and moulting seasons; haul out sites should not be approached closer than 100m where channel width permits.

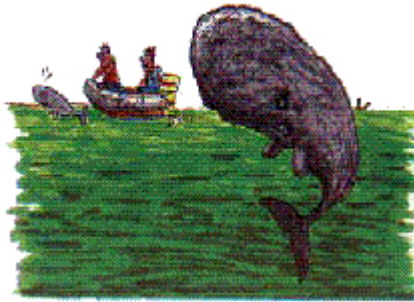
Avoid seals or their pups on the beach as this causes stress and could result in prolonged separation between mother and pup and the death of the pup.

Otters

Care should be taken to avoid disturbing otters; especially near otter sanctuaries or known territories.

Cetaceans

Allow cetaceans to choose whether or not to approach the boat.



Maintain forward progress at a slow steady speed or stop if cetaceans are near; this reduces the risk of collision, harassment and noise disturbance.

If cetaceans approach the boat or bow ride keep the engine running; this helps them to locate the boat.

Swimming with, touching or feeding marine mammals can be dangerous - remember these are wild animals.

On Land

Keep to paths or established routes where possible, to reduce disturbance to wildlife or conflict with other interests in the countryside.



Keep dogs under control.

Respect interests of local people in the countryside.

Remember, the less the wildlife sees us, the more we see them.

Pollution

Litter, fishing tackle, oil and other contaminants directly harm wildlife and their environment. Dispose in appropriate containers ashore.

During overhaul and maintenance always follow best environmental practice.

Advice for the Public on Wildlife Tours



Help us to protect the wildlife of Scotland

Do you want to help protect the wildlife of Scotland, whilst still enjoying views of birds, seals, porpoises, and sometimes even whales and dolphins?

To look after these for the future we must enjoy them on their terms, not ours.

Local boat operators and guides can help us to have an experience of a lifetime, if we all help with these simple rules.

We will

- give the wildlife space
- keep quiet
- be predictable in where we go and how fast
- leave the wildlife if there is a problem
- avoid others who are enjoying the wildlife
- keep a safe distance from groups of birds on land or sea
- allow whales, dolphins and porpoises to decide if they want us around

You can help

- bring binoculars to get a close view without causing disturbance
- don't touch or feed the wildlife
- on land, keep to paths and keep any dogs under control
- be considerate of the people who live and work here

Remember

The less the wildlife sees us the more we see them

If you are not sure about what to do, or why, just ask us and we'll explain.

Enjoy your visit and help us. Let others in the future have the same pleasure as you.

(SMWOA 2000)

A:3 Operators Questionnaire



Marine Mammal Tourism in Scotland

Name:

Company:

For confidentiality please tick here:

If you would like a summary of the results of the survey please tick here:

1. How long have you been running wildlife tours? _____ Years

2. What did you do before you ran tours?

3. How long have you lived in the area?

Since birth

15+ yrs

11-15yrs

6-10yrs

1-5yrs

4. How many people are there in your business?

5. Is wildlife tourism your main source of income?

Yes

Please specify other sources

6. Do you have any formal training in wildlife tourism or business management?

Yes, (please specify)

No

7. Sources of financial aid or business advice if any:

Bank / Small business advisor

Scottish National Rural Partnership

Scottish Enterprise

Local enterprise company (please specify)

Grants (please specify)

8. How did you assess the potential of your business?

9. Are numbers of visitors from year to year:

Decreasing?

Staying the same?

Increasing by ¼?

Increasing by ½?

Increasing by >½?

10. Do you follow a code of conduct compiled by:
- | | |
|--|--------------------------|
| The Dolphin Space Programme? | <input type="checkbox"/> |
| The Minch Project? | <input type="checkbox"/> |
| The Hebridean Whale and Dolphin Trust? | <input type="checkbox"/> |
| Yourselves? | <input type="checkbox"/> |
| Other? (please specify) | |

If you have a written code of conduct would it be possible to have a copy?

11. How would you assess the future viability of your business over the next five years?
- | | |
|--------|--------------------------|
| Good | <input type="checkbox"/> |
| Medium | <input type="checkbox"/> |
| Bad | <input type="checkbox"/> |

12. Are you registered with the Scottish Tourist Board?
- | | |
|-----|--------------------------|
| Yes | <input type="checkbox"/> |
| No | <input type="checkbox"/> |

13. How do you advertise?

14. How do you educate your visitors?

15. Do you give talks about Marine Mammals:
- | | |
|------------------|--------------------------|
| Locally? | <input type="checkbox"/> |
| Nationally? | <input type="checkbox"/> |
| Internationally? | <input type="checkbox"/> |

16. Do you have return clients?
- | | |
|-----|--------------------------|
| Yes | <input type="checkbox"/> |
| No | <input type="checkbox"/> |

17. Do you think you disturb the marine mammals you are watching?
- | | |
|-----|--------------------------|
| Yes | <input type="checkbox"/> |
| No | <input type="checkbox"/> |

18. How close do you get to:
- | | |
|-------------------------|--------|
| Dolphins and Porpoises? | _____m |
| Seals? | _____m |
| Otters? | _____m |
| Whales? | _____m |

19. Over the years have the numbers of marine mammals in the area:
- | | |
|------------|--------------------------|
| Increased? | <input type="checkbox"/> |
| Decreased? | <input type="checkbox"/> |
| Not known | <input type="checkbox"/> |

20. Over the years has the variety of marine mammal species in the area:
- | | |
|------------|--------------------------|
| Increased? | <input type="checkbox"/> |
| Decreased? | <input type="checkbox"/> |
| Not known | <input type="checkbox"/> |

21. How long are sightings on average? _____

22. How often do you run tours?

23. On average, how many boats are there in the animals' vicinity at any one time? _____

24. How do you find the animals? Through contact with other boats
At regularly used areas
By luck
Other, (please specify)

25. Which 5 marine mammal species are seen most often?
 How often?

	Species	Every 1 to 3 trips	Every 4 to 6 trips	Every 7 to 9 trips	Every 10 to 12 trips
1	_____	{ }	{ }	{ }	{ }
2	_____	{ }	{ }	{ }	{ }
3	_____	{ }	{ }	{ }	{ }
4	_____	{ }	{ }	{ }	{ }
5	_____	{ }	{ }	{ }	{ }

26. Do you keep a sightings record from year to year? Yes
No

27. What other species are seen?

Otters	<input type="checkbox"/>	Blue whale	{ }	Minke whale	{ }
Otter	{ }	Melon headed whale	{ }	Long-finned pilot whale	{ }
		Narwhal	{ }	Northern right whale	{ }
Seals	<input type="checkbox"/>	White/Beluga whale	{ }	Northern bottlenose whale	{ }
Common/Harbour seal	{ }	Pygmy sperm whale	{ }	Killer whale	{ }
Grey seal	{ }	Gervais' beaked whale	{ }	False killer whale	{ }
Hooded seal	{ }	Blainville's beaked whale	{ }	Atlantic spotted dolphin	{ }
Bearded seal	{ }	Cuvier's beaked whale	{ }	Risso's dolphin	{ }
Ringed seal	{ }	Sowerby's beaked whale	{ }	Striped dolphin	{ }
Harp seal	{ }	Sperm whale	{ }	White-beaked dolphin	{ }
Walrus	{ }	Humpback whale	{ }	Atlantic white-sided dolphin	{ }
		Sei whale	{ }	Bottlenose dolphin	{ }
Whales & Dolphins	<input type="checkbox"/>	Fin whale	{ }	Common dolphin	{ }
Bowhead whale	{ }	True's beaked whale	{ }	Harbour/Common porpoise	{ }

Thank you very much for your co-operation, and please do not hesitate to contact me if you require any further information regarding my work.

Yours sincerely,

Andy Woods Ballard
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Questionnaire composed with
 reference to: Evans 1980,
 Evans 1982, Thompson 1992,
 Davison 1996, Evans 1997,
 Picton *et al.* 1997, Rice 1998.

A:4 Covering Letter to Operators



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1st June 2000

Dear ,

My name is Andy Woods Ballard and I am currently completing a Masters Degree in Environmental Sustainability at Edinburgh University. I am writing to you to ask for your co-operation in a research project, which will form part of my thesis.

My research will be focussed on the Marine Mammal Tourism industry in Scotland. More specifically I am aiming to look at the economic viability of the industry and potential environmental impacts. In order to do part of this I have compiled a questionnaire, which I hope you will feel able to complete. I have also included a self addressed stamped envelope for ease of return.

Another part of my work will be to assess customer satisfaction with Scottish Marine Mammal Tourism, either by interviews or through a questionnaire and I hope that I may be able to come and see you to ask a few questions myself.

Finally let me assure you that this project is academic research, and any information you care to give will be treated with the utmost confidentiality at your request. This should be indicated by ticking the appropriate box on the questionnaire.

To conclude I would like to thank you in advance for your time and if you have any questions regarding my work please feel free to contact me at the above address.

Yours sincerely,

Andy Woods Ballard

A:5 General Tourist Questionnaire



DATE _____ July, 2000 CODE _____

INITIAL QUESTION...

Have you been on a boat trip during your stay here?

Yes (go to Part A)

No (go to Part B)

Part A: Name of the Operator? _____

Did you complete a questionnaire? Yes, end interview No (continue)

Was the boat trip booked before arrival in the area during your stay On the day

Was it value for money? Yes No

Would you recommend it to a friend? Yes No

Did you see whales/dolphins on the trip? Yes No

Part B: Are you planning to go whale-watching during your stay? (continue)

Yes Maybe No

Continue with Questionnaire....

Your Holiday

1. Is this your first visit to Western Scotland? Yes No

If not, how many times have you visited

before? _____

2. Where are you staying? _____ (nearest town or village)

3. How many nights will you spend in XXXXXXXX? _____ nights

4. What type of accommodation are you staying in tonight?

Hotel B&B Self catering Hostel Holiday home Tent/Caravan VFR

5. Which of the following best describes the type of holiday you are having? (EXPLAIN)

Organised package tour Based in one location Independent touring holiday

6. On a scale of 1 to 5, where 1 is unimportant & 5 is very important, how important were the following features when choosing West Scotland as a holiday destination? (SHOW

CARD)

Unimportant

V.

Important

Seascape 1 2 3 4 5

Landscape 1 2 3 4 5

Wildlife 1 2 3 4 5

Hebridean culture/heritage 1 2 3 4 5

Outdoor Pursuits 1 2 3 4 5

Visiting Friends and Family 1 2 3 4 5

Other, please specify (e.g. Price, Remoteness, Religion) _____

7. Are you planning to take other holidays this year? Yes No
 If so, where? _____

Whale Watching

8. Were you aware of whales & dolphins living off the West coast of Scotland before your current visit? Yes No
 9. Did the presence of whales and dolphins influence your decision to come to this part of Scotland? Yes No
 10. Were you aware of the availability of whale & dolphin watching boat trips before you came to the area? Yes No

If so, where did you hear about them? _____

11. Can you name any whale and dolphin species in the area?
 i) _____ ii) _____ iii) _____

Local Tourism

12. From your time in XXXXXXX, what do you consider to be the most important industry in the local area, in terms of jobs and the local economy? (prompt only if necessary)

Fisheries	<input type="checkbox"/>	Transport	<input type="checkbox"/>
Tourism	<input type="checkbox"/>	Accommodation Provision	<input type="checkbox"/>
Government	<input type="checkbox"/>	Military	<input type="checkbox"/>
Agriculture	<input type="checkbox"/>	Retail	<input type="checkbox"/>

Other _____

13. On a scale of 1-5, where 1 = unimportant and 5 = very important, how important do you consider the following trips to the local tourism industry.

Whale watching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seal watching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bird watching?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14. Local seal populations have increased significantly in previous years, do you think that population numbers should be regulated? Yes No

15. If culls to reduce seal numbers were introduced in Scotland, would this affect your decision to come to the area on holiday? Yes No

About You

16. Where are you from? _____ (please state your home county/country)

17. How many people are in your group, including yourself? Ad: _____ Chd(under 16): _____

18. At what age did you finish your formal education? 16 18 21+

19. What is your age?
 Under 18 Twenties Thirties Forties Fifties over 60

20. What is your current occupation? _____

21. Male/Female (DELETE)

A:6 Local Questionnaire



DATE ____ July, 2000

CODE: LCL _____

1. Do you live in the area? Yes No
 If so whereabouts? _____ (nearest town or village)

2. Are you directly involved in the tourism industry? Yes No
 Occupation (tourism related or not) _____

3. What do you consider to be the most important industry in the local area, in terms of jobs and the local economy? **(prompt by giving list only if necessary)**

Fisheries	<input type="checkbox"/>	Transport	<input type="checkbox"/>
Tourism	<input type="checkbox"/>	Accommodation Provision	<input type="checkbox"/>
Government	<input type="checkbox"/>	Military	<input type="checkbox"/>
Agriculture	<input type="checkbox"/>	Retail	<input type="checkbox"/>
Other	_____		

4. Why do you think tourists come to this town? **(prompt only if necessary)**

Easy to get to	<input type="checkbox"/>	Boat trips	<input type="checkbox"/>
Good facilities	<input type="checkbox"/>	Accommodation	<input type="checkbox"/>
Scenery	<input type="checkbox"/>	Nearby attractions	<input type="checkbox"/>
Wildlife	<input type="checkbox"/>	Friendly people	<input type="checkbox"/>
Other	_____		

5. Would you like to see more tourists here? Yes No

6. Are you aware that whales and dolphins live in local waters? Yes No

7. Local seal populations have increased significantly in previous years, do you think that Population numbers should be regulated? Yes No

8. Have you seen whales or dolphins locally? Yes No
 Were they seen from.. the shore commercial boat trip Independent boat trip

9. Can you name any whale and dolphin species in the area?
 i) _____ ii) _____ iii) _____

10. What is your age?
 Under 18 Twenties Thirties Forties Fifties over 60

11. Male/Female (DELETE)
Any other comments? _____ **continue on back if necessary...**

A:7 Whale Watcher Questionnaire



CODE: WW/ _____

Your Holiday

1. Is this your first visit to Western Scotland? Yes No
 If not, how many times have you visited before? _____
2. Where are you staying... _____ (nearest town or village)
3. and for how many nights? _____ nights
4. What type of accommodation are you using?
 Hotel B&B Self catering Hostel Holiday home Tent/Caravan VFR
5. Which of the following best describes the type of holiday you are having?
 Organised package tour Based in one location Independent touring holiday
6. How important were the following features when deciding on Western Scotland as a holiday destination?
 Unimportant V.
- | | | | | | |
|----------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Seascape | <input type="text" value="1"/> | <input type="text" value="2"/> | <input type="text" value="3"/> | <input type="text" value="4"/> | <input type="text" value="5"/> |
| Landscape | <input type="text" value="1"/> | <input type="text" value="2"/> | <input type="text" value="3"/> | <input type="text" value="4"/> | <input type="text" value="5"/> |
| Wildlife | <input type="text" value="1"/> | <input type="text" value="2"/> | <input type="text" value="3"/> | <input type="text" value="4"/> | <input type="text" value="5"/> |
| Hebridean culture/heritage | <input type="text" value="1"/> | <input type="text" value="2"/> | <input type="text" value="3"/> | <input type="text" value="4"/> | <input type="text" value="5"/> |
| Outdoor Pursuits | <input type="text" value="1"/> | <input type="text" value="2"/> | <input type="text" value="3"/> | <input type="text" value="4"/> | <input type="text" value="5"/> |
| Visiting Friends & Family | <input type="text" value="1"/> | <input type="text" value="2"/> | <input type="text" value="3"/> | <input type="text" value="4"/> | <input type="text" value="5"/> |
- Other, please specify (e.g. price, remoteness, religion) _____
7. Are you planning to take other holidays this year? Yes No
 If so, where? _____
8. Have you been whale/dolphin- watching before? Yes No
 If so, how many times and where? _____
9. Would you go whale/dolphin- watching in any of the following destinations?
 Europe Canada/USA S. America S. Africa Asia Australia/N. Zealand The (Ant)arctic
10. Has coming on this trip resulted in you staying longer in the area? Yes No
 If so, how many extra nights are you staying? _____
11. Did you come to the area especially to go whale/dolphin-watching? Yes No
12. Were you aware that whales and dolphins live off the west coast of Scotland before you visited the area? Yes No
13. Were you aware of boat trips to see whales and dolphins before you came to the area? Yes No
- If so, where did you hear about them? _____
14. Can you name any local whale and dolphin species?
 i) _____ ii) _____ iii) _____

Your Boat Trip

15. How did you *first* hear about this particular trip (please tick one only)
 Word of mouth Tourist Info Centre Guide book Magazine advert Poster in local shop
 Other (please specify) _____
16. Was your trip.. Booked before the holiday Booked during the holiday Decided today
17. Do you consider the trip to be value for money? Yes No
18. Would you recommend it to a friend? Yes No
19. Would you go whale/dolphin -watching in Scotland again? Yes No
20. How much did your tour cost? £ _____ and how long did it last? _____ hours
21. Why did you decide to come on this boat trip today (please tick no more than two)?
 Enjoy boat trips when on holiday The children wanted to do it Enjoy wildlife watching trips
 Looking for an excursion Wanted to learn more about conservation Have always wanted to see whales/dolphins
 Trip recommended by a friend Wanted to see the scenery Opportunity to take photographs
 Other: _____

22. How important was the possibility of seeing the following species to you when choosing this trip.

	Unimportant				V. Important
Whales, dolphins & porpoises	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>
Seals	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>
Basking sharks	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>
Birds	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>

23. Which of the following species did you see during your trip?

Whales	<input type="checkbox"/>	Seals	<input type="checkbox"/>	Porpoises	<input type="checkbox"/>
Dolphins	<input type="checkbox"/>	Basking Sharks	<input type="checkbox"/>	Sea Eagles	<input type="checkbox"/>

24. Were you provided with any information about the local natural history during your trip?

Yes No

If yes, what did they provide? _____

25. If a talk was given, approximately how long was it? _____ minutes

26. How do you rate the educational value of this trip?

Poor Fair Average Good Excellent

27. Do you think the trip affects the marine mammals you see?

	Disturbs them significantly		May disturb them occasionally		Causes no disturbance
Whales, dolphins & porpoises	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>
Seals	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>	<input type="text" value="5"/>

About You

28. Today, how much do you think you will personally spend on

	Value(approx.)		Value(approx.)		Value(approx.)
Food/Drink	£ _____	Excursions	£ _____	Souvenirs/Gifts	£ _____
Accommodation	£ _____	Travel	£ _____	Other	£ _____

29. Where are you from? _____ (please state your home county/country)

30. How many are in your group, including yourself? Adults: _____ Children (under 16): _____

31. At what age did you finish your formal education? 16 18 21+

32. What is your age?

Under 18 Twenties Thirties Forties Fifties Over 60

33. What is your current occupation? _____

34. Are you: Male/ Female ? (please delete)