Paper presented to the Scientific Committee at the 52nd Meeting of the International Whaling Commission, 11-28 June 2000, Australia.

Marine wildlife tourism and whale-watching on the Isle of Mull, Scotland

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ABSTRACT

Marine wildlife tourism is a small, but increasingly important, part of Scotland's tourism image. As fishing and agricultural industries struggle, specialist sectors, such as whale-watching, can attract tourists to remote rural areas in the Scottish Highlands, thereby contributing to the local economy. This study considers the social, economic and educational impacts of marine wildlife boat trips on the island community of Mull, West Scotland (with a special focus on whale-watching).

Data was gathered from questionnaires given to tourists taking boat trips from Mull. The data was then used to create a visitor profile and to assess the status of marine wildlife tourism on the island. Results showed that visitors taking marine wildlife boat trips tended to be well-educated, environmentally aware, middle-aged and likely to have a high disposable income. The visitor profile reflected previous studies of whale-watcher profiles. Passengers also had a good knowledge of, and interest in, marine issues.

Marine wildlife tourism is well-established on Mull and a range of trips are on offer to the visitor. An estimated value for the industry was calculated (£650,000) and the wider implications discussed. The report concludes that although marine wildlife tourism is only a small component of tourism on Mull, the generated revenue is not necessarily being maximised on the island and proposes ways in which this might be achieved.

KEYWORDS: WHALE-WATCHING; MARINE WILDLIFE TOURISM; ECONOMIC VALUE; SCOTLAND

INTRODUCTION

The decline in the primary economic sectors in Scotland has led to tourism becoming one of the country's most important economic activities, particularly in rural areas, such as in the Highlands and Scottish islands. Two of Scotland's major assets for tourists are its rich diversity of wildlife and the marine environment.

In 1997, over 1900 full-time and 600 part-time jobs were involved in wildlife tourism in Scotland, either directly, or in businesses which offered wildlife viewing as part of their activities. Of those directly involved in wildlife tourism (600), 420 jobs were located in the Highlands and Islands region, 111 in the county of Argyll alone. For Argyll, this represents 18.5% of the total number of Scottish wildlife jobs in an area that contains <1.5% of jobs in Scotland (A & M Consultants, 1997). Wildlife tourism is, therefore, a significant player in the Argyll rural economy.

Scotland and Marine Wildlife Tourism

Marine wildlife tourism is not new to Scotland. Defined as 'any tourist activity with the primary purpose of watching, studying or enjoying marine wildlife' (Masters *et al.*, 1998), this specialist sector of Scotland's tourism market is already worth £9.3million to the Highlands and Islands region and in 1996 supported 400 jobs (A&M Consultants, 1997).

The main centre for marine wildlife tourism in Scotland (and probably the UK) is the west coast of Scotland. The greatest concentration of boats taking visitors to see wildlife is in the county of Argyll (principally the Isle of Mull and Oban on the mainland). In the Minch area, 76 operators are involved with wildlife tourism of which 61 offer boat trips (Morrison, 1995).

Marine wildlife tourism can bring a range of social and economic benefits to the wider local community. Indirect revenue from marine wildlife tourism is estimated to be in excess of £57million and to provide as many as 2,670 jobs (Masters *et al.*, 1998). Boat operators help support the marine infrastructure and services (especially with the collapse of the fishing industry) and boat excursions may encourage people to stay longer in an area, thereby spending more money on accommodation and food, as well as encouraging them to return.

Boat operators in West Scotland offer a range of itineraries ranging from trips focusing on key species, such as whale-watching, to more general wildlife trips and scenery-based trips, where wildlife, particularly seabirds, are seen but less emphasis is put on wildlife as a whole. The duration of these boat trips last from a few hours to a several days.

Unlike other destinations around the world, whale-watching in the UK tends to be peripheral to most tourists' motivations for visiting an area. Despite the relative abundance of cetaceans in British waters, the tourism industry, local enterprise authorities and conservation bodies have been slow to pick up on the appeal of cetacean-watching trips in terms of potential generated revenue and environmental education opportunities.

The first British commercial whale-watching operation began in Scotland in 1989 on the Isle of Mull, the focus of this current study. By 1994, this had grown to 7 main whale and dolphin-watching operators established in Scotland and West Wales, with an additional 14 companies engaged in whale-watching on a part-time basis (Hoyt, 1994). In 1991, only 400 people were involved in whale-watching in the UK, generating a total income of £192,000; this figure rose to 15,000 people generating £6.5 million total income (£850,000 direct revenue) in 1994 (Hoyt, 1995a; Arnold, 1997). The growth of the industry over this four-year period suggests that the UK has a considerable potential for further expansion.

The Marine Wildlife Tourist

For the effective development and marketing of Scotland's marine heritage, identification of the market is important. Scotland's natural heritage appears to be important to visitors and anecdotal evidence suggests that visitors to Highlands and Scottish islands who are interested in wildlife tend to be educated and affluent - precisely the market segment which will bring most economic benefit (Masters *et al.*, 1998). This corresponds with the generally acknowledged idea that nature-orientated visitors spend more than "conventional" tourists (Shackley, 1996).

Morrison (1995) reported that the majority of marine wildlife tourists were not "wildlife experts but were keen to learn more". This was reflected in a report on wildlife tourism in Scotland where 76% of passengers on daily boat trips classified themselves as general visitors, only 28% considered themselves to be wildlife enthusiasts (A&M Consultants, 1997).

Passengers on whale-watching trips have been studied in a number of locations, ranging from Canada and the USA, to New Zealand and Hawaii. In general, passengers were well-educated (79% of participants in the California study had four years of college education; Tilt, 1987), affluent (68% of respondents in the Canadian survey earned more than $40,000 per annum; Duffus, 1988), middle-aged (the average age of passengers was 41 (Duffus, 1988), and more likely to be female than male (37% males, 67% females; Tilt, 1987).

One of the criticisms of whale-watching is its dependency on sighting whales and dolphins on every trip. Passengers often pay considerable sums of money to see these species and their expectations are raised. To avoid this, boat operators must be able to ensure that passengers understand the unpredictability of cetacean distribution. Also, they should promote the idea that although cetaceans may not have been seen, sightings of other marine species should be equally valued.

Market knowledge can help marine wildlife operators design interpretative material which is at an appropriate level for visitors to enjoy. Marine wildlife trips therefore provide excellent platforms for education. These cruises provide opportunities for all ages and backgrounds to learn more about particular species, the marine environment, local history and a variety of environmental issues (local, regional, national and international). Appreciation of these issues may promote a degree of responsibility, or even involvement in helping to alleviate problems, in both tour operators and tourists (Wilson, 1994).

The Island of Mull and Marine Wildlife Tourism

The Island of Mull is the third largest island in West Scotland (Fig. 1). The island is sparsely populated with around 2,800 residents scattered over its 925sqm area. The main population centre is Tobermory in the north, with smaller settlements located across the length of the island. Tourism has become a vital part of the economy, especially with the decline of the fishing and agricultural industries.

The island receives 350,000 visitors per year, the majority of which visit between May and October. Of the 350,000 visitors recorded, 150,000 use Mull as a thoroughfare for day trips to the Island of Iona which is located at the south westerly tip of Mull.

Marine tourism is well established on Mull. Commercial boat trips to the nearby islands have been operating for almost 30 years. Today, there are five commercial boat operators, all of which provide wildlife/sightseeing day trips and are the focus of this study. There is only one boat offering purely whale-watching trips, the others offer a mixture of wildlife (including cetacean) watching and sightseeing. Trips range from 3 hour to full day excursions. The area is also popular with recreational fishermen and SCUBA divers who utilise the extensive maerl beds and numerous wrecks for their activities.

The west coast of Scotland is one of the most productive marine environments in Europe, and the diversity of marine species in this region is a testament to this fact. The marine wildlife of particular interest to tourists are key species such as seabirds (large breeding colonies of puffins, guillemots, razorbills and Manx shearwaters on nearby islands), sea eagles, the European otter (which inhabits coastal areas and sea lochs on Mull and the surrounding islands), grey and common seals and cetaceans.

Species such as seals and seabirds are frequently sighted in the area but it is the opportunity to see species such as the minke whale and a variety of dolphins that makes the area extraordinary. Of the 28 species of cetacean that have been sighted off the coasts of Britain, nineteen have been recorded in waters neighbouring Mull and six species are regularly sighted in the region. The most commonly sighted species are the harbour porpoise (*Phocoena phocoena*) and minke whale (*Balaenoptera acutorostrata*), although common, bottlenose and Risso dolphins (*Delphinus delphis, Tursiops truncatus* and *Grampus griseus*, respectively) are also regularly seen and, seasonally, killer whales (*Orcinus orca*).

As the awareness of whales and dolphins in the Hebrides is increasing so is the image of Mull as a whale and dolphin-watching location. The increasing number of reported whale sightings in the area, whale-watching operations and the work of a local charity, the Hebridean Whale and Dolphin Trust (HWDT) all contribute to raising the profile of cetaceans in this area.

The Hebridean Whale and Dolphin Trust (HWDT) has been a registered charity since 1994 and has pioneered the study of whales and dolphins around the Hebrides and the west coast of Scotland. One of its key aims is to raise awareness of cetaceans and other marine species (and issues pertaining to the conservation of these species) in the waters around Mull and the rest of the Hebridean islands. The HWDT visitor centre in Tobermory opened officially in 1998 and attracted 14,000 visitors in its first four months. The centre provides a much needed wet-weather year-round visitor facility on the island and is popular with visitors to Tobermory. Over 19,000 visitors were received at this centre in 1999 (HWDT, 2000).

The centre serves as an information point for Hebridean wildlife tourism (both marine and land-based) distributing tourism brochures and collecting and collating sighting of marine wildlife. It also acts as a vendor for locally-made crafts with a marine-mammal theme, which are sold on the premises and income from merchandise sales in 1999 exceeded £11,000 (HWDT, 2000). There is no other centre providing wildlife information on the island.

While whale-watching is a small part of marine wildlife tourism, cetaceans may have a greater value to tourism on Mull in a wider context. This is in terms of raising the profile of cetaceans in British waters, broadening the nature tourism base, the possibility of branding Mull as a wildlife tourism destination, raising conservation issues and using cetaceans as a figure head for education of conservation issues through whale-watching and the work of HWDT.

This report aims to provide initial statistical evidence on the nature of marine wildlife tourism, in particular whale-watching, on the Island of Mull. It is the first study of its kind to be undertaken on Mull and identifies some of the unique possibilities the island has to offer in terms of marine wildlife tourism. It also considers ways in which the economy of Mull can develop by establishing itself as a quality wildlife tourism destination that attracts both new visitors and encourages tourists to return.

MATERIALS AND METHODS

The current study was designed to investigate the knowledge and expectations of visitors who chose to take marine wildlife-watching day-trips from Mull and the operators who conducted these trips. The data was collected through questionnaires, either self-administered or conducted by the researcher.

The study was conducted during the early tourist season of 1999 (May-June), characterised by the avoidance of the main school holidays. It provides statistical evidence drawn directly from the experiences of tourists. It also takes into account the views of tour operators and is the first such research to be undertaken on the island. The questionnaires were piloted before arrival on the island and on Mull itself, prior to the study period commencing.

The five main operators on Mull offering boat-based wildlife cruises were asked to assist with the distribution of questionnaires to passengers on their boats. Three of the operators helped with this part of the study and additional information was gathered through a second questionnaire which was distributed to general visitors to Mull via accommodation providers.

A number of questionnaires were left with the operator at the beginning of the season (more were available on request) and were collected at the end of the study period (mid July). 183 passengers completed questionnaires during the boat trips. As completion of the questionnaires was dependent on a crewmember distributing forms at an appropriate time, and due to the problems of completing forms in rough, wet weather, the survey cannot claim to be fully representative of the views of all passengers.

The researcher formally interviewed three of the five tour operators on Mull. Data for the two remaining operators was collected through promotional material, brief informal discussions with the operators themselves and information direct from passengers regarding the nature of the trip. The boat operators were grouped into three categories, according to the emphasis on wildlife during the cruise (Table 1).

RESULTS

Marine Wildlife Tourist Profile

More women than men took marine wildlife trips (61.8% female; 38.9% male). The majority of passengers were between 30-60 years of age (Table 2). Only 18.6% of the respondents were under 30 years of age and less than ten percent of respondents were over 60.

Marine wildlife tourists tended to be well educated: 64.9% of the respondents were in formal education until the age of 21 (Table 3). They were also predominately British (91.8%; Table 4). Respondents from countries other than the UK and North America were limited (Table 4). North Americans represented only 7% of the sample.

Holiday Profile

The majority of wildlife tourists responding to the survey were staying on the Isle of Mull itself (90.3%). The thirteen individuals (9.7%) who were not staying on the island were likely to have been staying on the neighbouring island of Iona or on a day trip from the mainland.

Of those staying on Mull, 51% of the respondents were staying in the northern part of the island, 18% were staying in the central part of the island and only 13% were staying in the south. One might predict an uneven distribution across the island owing to the uneven distribution of tourist accommodation. Accommodation tends to be focussed around Tobermory in the north and the villages of Bunessen and Fionnphort in the south (which have good access to Iona). Therefore, the small proportion of marine wildlife tourists staying in the southern part of the island was surprisingly low.

Accounting for the variation in sample size, there did appear to be an association between where people stayed and the location of the harbour where the boat trip left from (Table 5). Eighty-five percent of visitors staying in the northern part of the island used boat operators using harbours in the north and 62.5% of visitors staying in the south took boat trips from the south. Although 14.2% of those staying in the north travelled to a boat operator leaving from south of the island (a distance of over 80km) only 4.2% of those staying in the south travelled north.

The average length of stay for those tourists taking wildlife boat trips was 5.6 nights (SD 3.7), with a modal value of one week (Table 6). Over half of the respondents (52%) were first time visitors to Mull. Of the 87 visitors who had visited previously, 9.2% had visited more than 10 times, 16.1% had visited 6-10 times before and 51.7% had only visited 1-5 times previously (22.3% gave no response) (Table 6).

Reasons for Visiting Mull

In response to the question why people come to Mull for their holiday, over 80% of respondents considered the land and seascapes to be important or very important in their decision to visit the island (Table 7). Seventy-eight percent rated wildlife-watching as important or very important. Hebridean culture ranked fifth, below hiking/walking, which demonstrates that the natural environment is a key factor in attracting marine wildlife tourists to Mull.

Knowledge and Awareness of Marine wildlife tourists

General environmental awareness

As a means of gauging the ‘environmental awareness’ of marine wildlife tourists, respondents were asked if they were a member of an environmental organisations. Over half (58%) of the tourists surveyed were members of one or more environmental organisations (Table 8). The Royal Society for the Protection of Birds (RSPB) was represented most strongly (48%). Other popular organisations were the National Trust (27.5%), local wildlife trusts (22.8%) and the World Wide Fund for Nature (WWF) (22.5%).

The main UK charities involved with cetacean conservation, such as the Whale and Dolphin Conservation Society (WDCS) and the International Fund for Animal Welfare (IFAW)[1] were not represented. However, five percent of participants were members of the Hebridean Whale and Dolphin Trust (Table 8).

Ninety-one percent of respondents stated that they were regularly involved in one or more wildlife-related activities. The most common activities were visiting the countryside (88%), watching natural history television programmes (76.6%) and reading about wildlife (68.4%). Over half the

[1] IFAW was involved in whale-watching research on Mull in previous years (Leaper *et al*., 1997).

respondents (55.7%) spent time bird-watching, which corresponds with the high RSPB membership. Only 12% went on natural history holidays suggesting that the average participant of a marine wildlife tour may not be sufficiently interested in wildlife take a specialist holiday (Table 9). The most participatory category - people who engaged in voluntary work for environmental groups - was represented by over 18% of respondents (Table 9), suggesting that a proportion of marine wildlife tourists are very environmentally motivated.

Knowledge of local wildlife

Overall, general knowledge about the occurrence of named species in and around Mull was good (Table 10). The majority of respondents correctly identified from a list those species which lived in the area. Respondents had a marginally better knowledge of those species which did not inhabit the area (beaver, 98%, wild boar, 99%, albatross, 94% and humpback whale 91%) than those that did. Marine wildlife tourists knowledge regarding the occurrence of the bird species was comparatively poor (31% & 26% did not know that sea eagles and golden eagles lived on Mull), as was knowledge about cetacean species (35% and 30%, respectively). Table 10 compares the level of marine wildlife tourists' knowledge of local species occurrence with the level of knowledge displayed by the average Mull tourist (Warburton, 1999). Marine wildlife tourists were less aware of local avian and terrestrial wildlife but displayed greater awareness of local marine wildlife (Table 10).

Awareness of the impacts of whale-watching upon cetaceans

Two-thirds of the respondents (66%) thought that whale-watching could have an effect on whale and dolphins (Table 11). When asked in what way, 46.3% of respondents thought whale-watching had a positive effect on cetaceans, primarily through raising awareness and educational opportunities (40.2%) (Table 11). Other factors included protecting the species and helping with research. Forty-seven percent provided negative impacts ranging from interference with the whales' behaviour (33%) to increasing sea pollution (1.2%) (Table 11).

General knowledge of cetaceans

Marine wildlife tourists were asked to name three facts about whales and dolphins. The responses are summarised in Table 12. The most common response was identifying whales and dolphins as mammals (36%). The proportion of responses to the other nine categories were approximately equal, ranging from 12% (possess unique adaptations) to 4% (cetaceans migrate).

Knowledge of threats to cetaceans

Respondents were asked to name a major threat to cetaceans. Marine pollution was the most frequent response (31% of respondents) (Table 13). Whaling (20%), fisheries by-catch (17%) and over-fishing (15%) were the next frequent groups of responses. No more that 5% of the sample mentioned each of the other 6 categories (Table 13).

Some interesting differences were noted when comparing the responses from marine wildlife tourists to responses to the same question from the general Mull tourists (Warburton, 1999). Unsurprisingly tourists on marine wildlife trips did not really consider whale-watching to be a risk to cetaceans, with only 1% of respondents stating that the issue was a major threat, compared to 6% of general tourists (Table 13).

More intriguing was the disparity between marine wildlife tourists and general tourists over the threat of commercial whaling to cetacean populations. Twenty percent of marine wildlife tourists considered this to be a major issue compared to only 3% of general tourists. Further investigation of this issue showed that more marine wildlife tourists were aware of the continuation of commercial whaling by Norwegians and Japanese scientific whaling. General tourists were under the impression that, since the moratorium was put in place, all forms of whaling had ceased.

Marine Wildlife Tours

Value for Money, Cost and Duration of marine wildlife trips

Ninety-four percent of the sample considered their trips to be value for money. The cost of the different boat trips ranged from £11 - £42 and corresponded with the length of trip (ranging from 3 hours - over 6 hours) (Table 14). The whale-watching trips were the most expensive and, on a cost per hour basis, the sightseeing cruise was the best value for money (Table 14).

Satisfaction of marine wildlife tours

Respondents were asked to assess the quality of the tours by rating various components of the trip (overall quality, guides' knowledge, guides, boat facilities, talk quality) (Table 15). Their level of satisfaction was generally high (Table 15). Overall, trips were rated as excellent (4.73 out of 5.00). The quality of the talks provided on the boat commanded the lowest rating, however, this still equated to 'good'. Ninety-eight percent of respondents stated that they would recommend the trip to a friend, reflecting an exceedingly high satisfaction level for all trips.

Interpretation provided on marine wildlife tours
Information about marine wildlife was provided to 91% of passengers. It should be noted that the 9% of passengers who did not receive information on their trip were not from any one boat operator. This suggests that, on occasion, boat operators may not give out information (or the passenger was not in a position to receive any).

Seventy-seven percent of the respondents had access to information leaflets, 60 % received talks, 20% had other display materials made available to them and activities for children were available on some trips (2%). The activities for children were provided on the whale-watching boat in the form of a quiz, introduced the year of the study.

On average, talks were less than 10 minutes in duration (31%), which would have included a talk detailing safety information. Only twelve percent of passengers commented that talks were more than 20 minutes in duration. Twenty-two percent received a commentary as and when appropriate (referred to as 'intermittent' in the questionnaire).

Most respondents on the whale-watching boat received a brief 5-10 minute talk (82.4%), as did those on the sightseeing trips (57.2%) (Table 16). Few passengers on the whale-watching trip (5.9%) received a talk of more than 10 minutes. The wildlife trip operator provided information intermittently (44%), probably when species were sighted and 36% of respondents received a talk of more than 10 minutes.

Cetacean sighting frequency and customer satisfaction
Cetaceans were seen by all categories of boat trip. On average 52% of the respondents saw whales and dolphins on their trips. Unsurprisingly, the dedicated whale-watching boat trips had a significantly higher sighting rate - 83% of tourists saw cetaceans. Cetacean sightings on general marine wildlife-watching trips and sightseeing trips were less frequent (44% and 42%, respectively).

All respondents who saw cetaceans enjoyed the experience. Moreover, only 2% of the overall respondents commented that not seeing whales and dolphins had spoilt the enjoyment of the boat trip.

All operators agreed that seeing cetaceans added value to their trips. Tours operators were confident, but not overconfident, in their knowledge about various aspects of the marine environment and all were aware of the importance of marine conservation. Two operators who were involved directly with marine wildlife followed a whale-watching code of conduct (Table 17).

Marketing of marine wildlife tours
Most respondents heard about the boat trips initially through word of mouth/recommendation (42%). Tourist Information Centres also generated 26% of passengers [2]. Table 18 shows the other forms of marketing and their relative effectiveness.

The whale-watching marketing pattern varies slightly from the general pattern as advertising in guidebooks and wildlife magazines generates a higher percentage of custom (30.5% in total). Advertising through such mediums tends to be accessed further afield (i.e. before arrival on the island) and, therefore, this suggests that whale-watching may catch the attention of visitors at an earlier stage of their holiday-planning than other boat trips. One implication being that whale-watching has a greater potential to actually draw passengers to the island and, thus, is a valuable marketing tool for the island as a whole.

The Hebridean Whale and Dolphin Trust Visitor Centre
The majority of information displayed in the centre is in the form of poster displays. However, a 3-D map of the area is the focal point of the centre and other exhibits such as a dolphin skeleton, cetacean bones and baleen are on display. Many of the interactive displays are aimed at children and care has been taken to ensure that microscopes and exhibits are at the correct height for children to access. There are also a number of CD-ROM computer programmes and a video showing cetaceans filmed from the local whale-watching boat.

Forty percent of respondents had visited the Hebridean Whale and Dolphin Trust Centre in Tobermory. This represents 46% of whale-watching respondents and 42% of respondents on wildlife trips (both are based in or near Tobermory), but only 11% of those taking sightseeing trips (mainly based in the southern end of the island). Both the type of trip which visitors took (χ^2=23.2, df = 2, p<0.001) and the locations of their accommodation (χ^2=7.4, df = 2, p<0.025) were statistically significant as to whether they visited the centre.

Of those who had visited the centre, 100% enjoyed it. Of those who had not visited the centre, 35% commented that they would make an effort to visit it, 8% said that they would not (no reason

[2] The Tourist Information Centres on Mull do not provide a booking service for boat trips

asked for). The majority of respondents who had not visited the centre said that they would only visit if they were passing (57%).

DISCUSSION

Marine Wildlife Tourists

In general, the profile of the marine wildlife tourist on Mull is comparable to the profile produced in previous studies on the demographics of whale-watching tourists (Table 19) and appears to be indicative of the general tourist to Mull i.e. middle-aged, affluent and well-educated (Warburton, 1999).

The age distribution of people taking boat trips did alter slightly from the general Mull tourist pattern, with boat trips attracting a higher proportion of passengers between 30-60 years of age. This could be due to older people and families with young children being less inclined to travel by sea, preferring activities on land which may be more comfortable and less exerting. However, some older visitors clearly do enjoy boat trips (10%) and the range of trips available from the island caters for most abilities in terms of access, degree of comfort and protection from the weather.

The majority of visitors taking boat trips were staying in accommodation on the island. The most common length of stay was a week (as for the general sample), which implies they were self-catering and, therefore, had time for specific excursions which might include a visit to Iona, a drive around the island, a castle visit, a walk, shopping - and a boat trip.

One might assume that boat trips appeal to first-time visitors more than repeat visitors. This does not appear to be the case. The proportion of repeat visitors (48%) taking trips was favourable with the general profile (44%) (Warburton, 1999).

Only a small proportion of those taking trips were from overseas (8%) and there is a potential for increasing this market. Language might be one obstacle to attracting overseas customers and none of the operators currently offer multi-lingual information. Visitors from abroad may also be working to an itinerary, which does not give enough flexibility to take a marine wildlife trip.

If it is true that nature tourists tend to be more affluent than ‘conventional’ tourists (Shackley, 1996), then the type of visitor described in the findings of this report should be encouraged. Marketing of the island should concentrate on attracting the older, affluent visitor, rather than young backpackers and families. Emphasis could be placed on Mull as a quality destination, offering comfort and service but also allowing people to be independent. The image must not only attract new visitors, but also encourage them to return.

Knowledge of Marine Wildlife (and Cetaceans) and the Threats Facing Them

The environment is currently a popular issue and considering the profile of marine wildlife tourist one might expect passengers to be well informed about environmental issues. The results show that visitors to Mull have a clear interest in nature and wildlife. Marine wildlife tourists (91%) were involved in a range of wildlife related activities from the sedentary: watching wildlife on television and reading about it, to the active: volunteer work, taking natural history holidays and bird-watching.

Many participated in wildlife conservation through membership of wildlife and environmental organisations. The RSPB and National Trust accounted for the majority of environmental memberships and it might be inferred that these two organisations have added appeal because they offer tangible membership benefits throughout the United Kingdom. Membership of charities involved in cetacean conservation was noticeably low (the main UK-based cetacean charities were not represented at all) although support for the Hebridean Whale and Dolphin Trust was recorded.

Marine wildlife tourists on Mull also appear to take an interest in species characteristic of the area and were rated as knowledgeable about species living in or around the island. Although visitors to Mull in general appear to be well informed, marine wildlife tourists had a slightly better knowledge of marine species than the average Mull tourist (Warburton, 1999). Whether this knowledge was acquired prior to taking the boat trip or as a result of information provided on the trip is not available.

General knowledge regarding whales and dolphins was relatively broad and accurate, with incorrect information rarely given. The majority of respondents could identify whales and dolphins as mammals and could provide at least one other aspect unique to these species. The most common response, other than mammals, was the endangered status of many species.

Awareness of threats to cetacean populations were also well-known and broad, with the majority of respondents providing three threats facing whales and dolphins. Whales and dolphins have been subject to high profile campaigns by wildlife charities over the years and the ‘Save the Whale’ campaign to stop commercial whaling, and dolphin-friendly tuna to reduce cetacean by-catch in the tropical tuna purse-seine fishery, have brought cetaceans into the public eye. Respondents demonstrated an awareness of the global threats to cetaceans (whaling, global pollution) but were less aware of activities which more directly threatened local populations, such as military activity, noise pollution and fish farms (Parsons *et al.*, 2000). This suggests that there is room for education of visitors to the island about local conservation issues.

A very small proportion of respondents (1%) considered whale-watching to be a major threat to marine mammals. Interestingly, 46% of marine wildlife tourists saw whale-watching as a positive activity by raising the profile of marine conservation and using the activity as an educational platform. This suggests that many passengers may be unaware of, or choose to ignore, the environmental consequences of their own actions.

Interest in Marine Wildlife Tourism

The visitor to the west coast of Scotland is clearly not coming for bright lights and sunbathing! Analysis of the general questionnaires shows quite clearly that most are coming for the natural heritage, i.e. scenery and wildlife. Warburton (1999) noted that 51% of tourists visiting the island were aware of the availability of whale-watching trips. When asked what activities they would be interested in whilst on the island, general marine wildlife boat trips and whale-watching were the second and third most popular activities (57.8% and 52.9% of respondents expressed an interest, respectively). Thirty-six percent of tourists stated that they were intending to take a wildlife trip, three-quarters of which said it would be boat-based (Warburton, 1999).

Thirty-one percent of tourists surveyed in the general questionnaires went on a boat based wildlife tour, 15% visited the Hebridean Whale and Dolphin Trust Visitor Centre, but only 10% of tourists actually went on a dedicated whale-watching trip (Warburton, 1999). Therefore, even though wildlife-watching was identified as an important motivation for coming to Mull and interest levels were high, levels of active participation were lower.

The proximity of attractions to the respondents' accommodation also appeared to effect participation levels. Respondents staying in the north part of the island took trips from the same area, but a small number would also travel southwards to take marine wildlife tours, possibly on the way to Iona. However, tourists staying on the southern end of the island were less likely to north. A statistically significant number of visitors to the HWDT Visitor Centre in Tobermory were staying in the northern part of the island and over half of the boat respondents who had not already visited the centre said that they would but only if passing. Convenience, therefore, appears to be a persuasive factor.

The Current Status of Marine Wildlife Tourism on Mull

Marine wildlife tourism on Mull is well-established and has developed into a significant part of Mull's identity as a tourist destination. Boat trips provide an excellent excursion for visitors and boat operators offer trips of different price, duration and comfort, to different destinations and to see different wildlife species.

Boat trips are an important component of Mull's tourist attractions. Not only do visitors have opportunities to visit the islands of Iona and Mull but also Staffa, the Treshnish Islands, Coll and Muck (Fig. 1). The current number of boats meets current demand and the level of satisfaction appears to be high. However, most operators admit that passenger numbers have dropped in the last couple of years by up to 15% (wildlife tour operators, pers. comm.) and, therefore, the apparent interest (but low participation) should be developed and maximised.

Other than the initial ferry journey to the island, most visitors do not go on a boat during their stay (Warburton, 1999). This could be due to a number of reasons such as poor weather (the weather during the study period was fine), the cost of tours (although prices ranges from £12-£42), limited itineraries (the high satisfaction rate tends to deny this) or a limited demand for boat trips in general (however, 58% of respondents expressed interest in boat trips). An additional factor might be that the market is not being reached. This last factor is one that can be approached on a local level by increasing the profile of marine wildlife tourism as a whole through co-operative marketing. The marketing of marine wildlife tourism is discussed later.

The Current Status of Whale-Watching on Mull

At the time of this study, only one operator was offering exclusively whale-watching trips from Mull. The role of cetaceans in the Mull tourist industry therefore should not be over-played. The current operator had been operating since 1989 building both a national and international reputation. Whereas two-thirds of tourists to Mull were aware of whales and dolphins living in the area, only 10% of respondents actually participated in whale-watching trips (Warburton, 1999).

Factors, such as limited places (maximum of 12 passengers), high cost (£42 for 6 hours), its location on the north end of the island (less access to tourists staying in the south), the fact that the company has no booking office (all booking are made by telephone) and uncertainties about the weather, may discourage tourists from booking.

Other boat operators are not perceived as competition to the whale-watching operator, in fact the other operators benefit from the overspill, by offering a more economical (wildlife trips charge £30 for 6 hours, sightseeing trips charge from £12 for 3 hours) and well-rounded view of the marine environment. Demand for whale watching trips remains high (B. Fairbairns, pers. comm.) and with high cetacean sighting rates on these trips (83%), the current status of this particular company is healthy.

Interpretation and Education

All tour operators provided some information about the marine environment in the form of a brief talk. During the trip, most gave additional information and were available to answer questions. Three operators provided written material in the form of free leaflets and/or reference books. Although only available in English these were especially useful to non-English speakers (see below).

The content of the talks varied in length and quality between operators and the amount of information proved to be inversely related to the number of passengers aboard (Table 16). However, the amount of time spent talking with the passengers by the whale-watch crew was low (the boat carries only 12 passengers), and considering this was the most expensive tour one might expect more interaction between crew and passengers. There was a feeling amongst operators that the scenery and species found in the area were sufficient to satisfy passengers without the need for additional information. Variation in the quality of marine wildlife interpretation was reflective of the relative importance of marine wildlife to the trip rather than a lack of knowledge by the operators.

In spite of this criticism, all aspects of the trips were individually well-rated including the guides' knowledge, the boats' facilities and the quality of the talk. People were remarkably uncritical and trips were judged to be value for money and worth recommending to friends. It appears that most visitors take only one boat trip during their stay and, therefore, have no frame of reference on which to compare different trips. Whereas visitors appeared to be satisfied with the product, they are perhaps not the best source of information if a comparative study is to be undertaken.

The sightseeing trips tended to use set commentaries whilst the wildlife and whale-watch operators, with smaller groups and increased passenger contact, had a less defined pattern, varying the information depending on the species encountered during the trip.

Although the information provided on the marine wildlife trips was both informative and accurate, it is felt that current levels of interpretation could be improved and many educational opportunities are being missed.

Boat trips are comparatively expensive and passengers have high expectations. As with all wildlife tours, no sightings can be guaranteed and, by providing quality information about the marine environment in general, the potential for disappointment can be alleviated and passengers do not feel cheated. The operators appear to be sufficiently knowledgeable (and sufficiently confident with their knowledge) of local wildlife to provide an impressive commentary to the trip.

Appropriate interpretation can not only raise the awareness of tourists to marine issues and the importance of marine conservation but can also improve the quality of the tourism product and further increase satisfaction levels, thereby encouraging repeat visits and recommendations for the tours.

The provision of written interpretation for foreign visitors is one sector of the visitor market that is poorly represented. The production of laminated information (weather-proof) which covers certain aspects of marine wildlife are already used by some operators to good effect and overseas visitors may be encouraged to participate in boat trips if written information was available (either in basic English or other languages). Leaflets on marine wildlife could be made available from places such as the Tourist Information Centres and the Hebridean Whale and Dolphin Trust visitor centre.

The whale-watching boat and the wildlife operator has a history of working with the Hebridean Whale and Dolphin Trust on research projects and is, therefore, well positioned to take advantage of the expertise and resources of the Trust's marine education programme. In general, the sightseeing boats are less involved with the Trust owing to their location on the southern end of the island and the lesser importance of cetaceans to their trips. They are better placed, however, to promote marine issues and responsible tourism due to the larger number of tourists taking their trips.

Marketing and Destination Management

The results of this study confirm the findings of Masters *et al.* (1998) that comparatively few people visit Scotland specifically to see its marine wildlife. Rather than standing alone, marine wildlife tourism complements the overall image of Scotland as an area rich in wildlife and natural beauty. However, as Masters *et al.* (1998) reported, if there is not a wildlife boat trip, other local attractions will do just as well and there is a high degree of substitutability between marine wildlife attractions and many other types of attraction many of which are not specifically wildlife.

Realisation by operators of the draw of marine wildlife tourism is reflected in the distribution of advertisements. Through experience, most operators have assessed the effectiveness of different forms of advertising and admit that national advertising gives a poor return at high cost. All the operators are members of the Scottish Tourist Board, however, other than an advertisement in the Area

Tourist Board's brochure and references in guidebooks, most do not advertise further than the nearest mainland town (Oban).

The whale-watching operator can, and does, aim at the national market owing to its unique product. Their leaflets are distributed at the Scottish Tourist Board visitor centre in London and advertisements are placed in a number of high profile wildlife magazines (e.g. Natural World and the BBC Wildlife Magazine). The success of whale-watching around the world demonstrates that people are prepared to travel considerable distances and pay substantial sums of money for the experience. Whale-watching in the UK is relatively undeveloped and resources are relatively untapped.

As over 65 countries have proved, there is a market for whale-watching and cetaceans alone can attract people to an area. The level of interest in cetaceans and marine wildlife is reflected in visitor numbers at the Hebridean Whale and Dolphin Trust visitor centre, where, during 1999, over 19,000 people visited the centre, purchasing merchandise, inquired about boat trips or simply read the displays on local cetaceans.

The market for cetacean and marine wildlife watching has been proved, but awareness is low. Despite features on whale-watching in mainstream wildlife magazines and acclaim in whale-watching books, most people do not appear to associate the area (or Scotland in general) with whale-watching. Whale-watching tends to be thought of as an activity which can only be done abroad, in glamorous destinations such as Hawaii, Mexico, Alaska or Argentina and, by raising public awareness of cetaceans in UK waters, people may be persuaded to take a significantly cheaper holiday in Scotland. This would not only result in increased revenue for the local rural community but also give Mull a sense of place. In this way, the presence of the whale-watch operation helps raise the profile of Mull as a wildlife destination and spread national conservation awareness of the importance of these populations.

Economic Impact of Marine Wildlife Tourism to the Local Community

Whereas people do not appear to come to Mull specifically to take boat trips, the opportunities when they arrive do add value to the quality of their visit. The attractions of the other offshore islands, the rich bird life and the whale and dolphin sightings all combine to create a unique product for the island to develop. The fact that an island with a population of 2,800 can support five long-running boat operators during the summer months demonstrates that these companies are part of the island's tourism economy, both in terms of tourism revenue generated and in shaping the image of the island itself.

Using the results of this report, and following the methodology described in Masters *et al.* (1998), one can begin to estimate the economic value of tourism and marine wildlife tourism on Mull. Care should be taken when interpreting these values as they are based on a number of assumptions. They do, however, provide some indication of the value of this market and offer a comparison with the 1998 study.

On a general basis, it is estimated that tourist expenditure on Mull is more than £38.4million per year, assuming that, on average, each of the 200,000 visitors (Touchstone Heritage Management Consultants, 1999) stays for 4.8nights and spends £40 [3] per day (includes accommodation, food, travel and excursions).

Direct annual expenditure on marine wildlife tourism amounts to £0.65M per year[4] (spend associated directly with daily boat trips as discussed in this report). This estimate is based on a season from April to September, sailings every other day at two-thirds capacity.

Using the ratio of jobs to visitor spend from Masters *et al.* (1998) whereby 1 full-time equivalent (FTE) created by every £21,500 of visitor expenditure, a total of 30 people should be employed directly in marine wildlife tourism. Even including the boat owners themselves, the actual number of people employed in the marine wildlife tourism as discussed in this report is a maximum of 21 individuals. This calculates as a 1 FTE created by every £31,000 of visitor expenditure.

Marine wildlife tourism therefore appears to contribute 2% (£0.65million as a percentage of £38.4million) to the economy of Mull and indicates that a significant amount of money needs to be spent by tourists before additional full-time positions are created.

Masters *et al.* (1998) valued marine wildlife tourism in Scotland at £9.3M per year and, assuming that the measures are somewhat comparable, this implies that marine wildlife tourism on Mull may account for 6% of marine wildlife tourism revenue in Scotland.

Marine wildlife tourism, therefore, plays a role in both the tourism economy on Mull and in Scotland. Whereby boat trips may not necessarily draw visitors to the island, the excursions provide another reason for visitors to stay another day and, therefore, spend more money. Further product differentiation may lead to a subsequent increase in the length of stay.

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[3] Based on the conservative estimate that accommodation costs, on average £20 per person per night and other activities, food and travel will cost in the region of £20 per day.

[4] Based on boat sailing every other day (to allow for bad weather), at two-thirds capacity (of all boats) at an average cost of £25 (from current findings) between April and September.

Other economic impacts of marine wildlife tourism

As well as adding to the image of the island, the marine wildlife tourism businesses bring indirect benefits to the local community. All operators are island residents (although two operators live on Iona) and, therefore, much of their income is reinvested in the island itself. All the businesses are family-run and operators are involved in many aspects of community life (including sitting on various committees and volunteering for lifeboat service). The boats also help support a healthy marine infrastructure and maintain a number of harbours in working condition.

Although the businesses are relatively profitable, most, if not all, operators have alternative sources of income, either during or out of season. The tourist season is comparatively short and, for those who depend on the tourist pound alone, the revenue generated between May and October has to last all year. Alternative income may be generated through accommodation rents or in the farming or fishing industry over the winter months.

Employment opportunities for others are not particularly high, although seasonal employment is generated by all businesses. Most boat operators drive their own boats and therefore, only require one crewmember per boat. Those businesses running two boats do employ a second skipper and also administrative staff to deal with bookings. Work can be sporadic, dependent on weather and sea conditions and the rate of pay is low. The majority of employees are either family or non-local (room and board is often part of the 'wage'). Unemployment during the winter is high across the island. Opportunities for local employment in the marine wildlife tourism sector is poor and locals often prefer non-seasonal employment. This occurs in many communities which rely on tourism during the summer. The cost of a boat precludes many from entering the sector.

Merchandise

The whale-watching tour operator was the only boat operator who sold merchandise, in the form of promotional items, during the trips. Many of the other operators did not consider this to be appropriate owing to problems of handling stock and cash on the boat in a limited space, especially in bad weather. However, wildlife-related merchandise was well represented in the local shops, highlighting another way marine wildlife tourism brings money to the community. Twenty-four percent of the tourists to Mull purchased wildlife-related souvenirs and the average spend was high (over £18 per person) (Warburton, 1999). Seventeen percent of the total amount spent on wildlife merchandise was for the purchase of whale and dolphin related items. Warburton (1999) also investigated the percentage of shop shelf stock relating to wildlife in Tobermory the location of most of the shops on Mull (Table 20). An estimated 18% of stock in the island's souvenir shops was wildlife related, 13% of which related to cetaceans (Warburton, 1999). Unsurprisingly, merchandise sold in the HWDT visitor centre was entirely cetacean and marine wildlife related. Therefore, people will buy wildlife souvenirs even if they have not seen the animal and despite the relatively low profile of whales and dolphins on Mull and the few people who actually saw them, cetacean merchandise featured extremely prominently.

The Hebridean Whale and Dolphin Trust Visitor Centre.

The turnover of the Whale and Dolphin Visitor Centre helps support the HWDT's work and the centre relies on an interest in cetaceans to attract visitors. The comparatively high turnover (£15,000 p.a.) of merchandise indicates that there is a significant market for marine wildlife souvenirs.

The centre's presence on the main street in Tobermory provides another tourist attraction, open all year round and in all weather conditions. It also provides an excellent facility for raising awareness of cetaceans in the area as well as educating visitors and local residents about the issues affecting the marine environment as a whole throughout the year.

The centre brings other benefits to the community; the Trust's Tobermory visitor centre currently has two full-time members of staff, three part-time staff and two full-time placement students. Local school pupils are encouraged to help at the centre and children's clubs and school visits are regularly arranged (on Mull and elsewhere). Volunteers assist with the running of the shop and office and indirectly bring revenue to the local community through their expenditure on residential lets, and consumables.

The HWDT team has an important role to play in the development of marine wildlife tourism on Mull. By remaining impartial to the promotion of particular operators, the centre acts as an information point for visitors interested in the marine environment. Other than promotional advantages, the centre can also support local operators through the provision of literature and up-to-date information regarding local, national and international conservation issues. The key is to attempt to get boat (and land) operators to work together in promoting Mull as a wildlife destination. The Hebridean Whale and Dolphin Trust well-placed to do this.

CONCLUSIONS

Marine wildlife tourism is not a problem on Mull. Current levels of boat-based wildlife tourism do not appear to threaten marine and coastal wildlife, although the lack of baseline data on the subject means that, for many species, subtle changes in numbers would be difficult to detect.

Of more concern to boat operators is not declining wildlife but declining passenger numbers. Therefore, the value of this report is not so much to advise on the negative impacts of tourism, but to draw out Mull's positive marine assets and highlight particular areas where boat operators can increase their share of the tourism market.

It is perhaps obvious, but important, to highlight the need for the careful development of the tourism industry in fragile environments such as Mull. The low population density leaves many areas uninhabited, giving visitors a sense of wilderness not experienced in other parts of the UK. The skill of developing the tourism economy on Mull is through a series of subtle changes that increase the availability of information to visitors without impinging on their freedom.

Mull is well placed to establish itself as a quality destination in terms of wildlife viewing and tourist facilities. Wildlife opportunities need to be complemented by the provision of appropriate services, such as good quality accommodation and food. The market appears to be middle-aged, relatively affluent and well-educated and therefore Mull needs to market itself accordingly.

The season for boat-based wildlife tourism is governed by the weather, off-season strategies are, therefore, of limited benefit to boat operators. Boat operators need to ensure that their boats are full during the summer season and to do this the customer needs to be identified and then reached.

The type of visitor taking boat trips is unsurprisingly similar to the general profile of tourists to the island, although slightly younger and therefore the pool from which boat trips draw their passengers is generally from people staying on the island. The study identified an interest in nature and wildlife by visitors and, therefore, wildlife boat trips were appealing to most. However, the number who actually participated was comparatively few. Further research is needed to investigate this discrepancy but one can speculate that it is owing to a number of factors, including cost, weather and convenience.

The potential for educating visitors about wildlife during the summer is substantial. Opportunities to see marine wildlife throughout the season are excellent, and if people are more informed about the wildlife opportunities on and around the island, they may be more inclined to take advantage of them. The Hebridean Whale and Dolphin Trust visitor centre in Tobermory goes some way to promoting this by providing unbiased advice on the different trips. Simple methods, such as a sightings board outside the centre, provide an indication of the frequency of cetacean sightings in the area, and thereby raising their profile. The centre also acts as a valuable wet-weather attraction that is open all year round, therefore continuing marine wildlife interpretation during the winter months, when the boat operators are not running.

As noted previously in this paper, it is felt that current standards of interpretation on boat trips could be improved. Boat passengers are a captive audience and therefore, by increasing the quality not the volume of information provided, operators could be encouraged to raise a number of issues. Rather than providing basic information on key species, such as puffins or seals, wildlife could be placed in a wider context resulting in a deeper understanding of the marine environment and man's use of, and impacts upon it. These possibilities are particularly appropriate for whale-watching and wildlife boats which carry small numbers of passengers on 6 hour trips.

Marine wildlife tourism need not be solely boat-based. The designation of vantage points, where cetaceans, seals and seabirds can be seen, may encourage people to consider the marine as well as the terrestrial environment. A number of sites have already been identified and are regularly used by the land-based tour operators. Hides could also be constructed to enable people to watch coastal marine wildlife in adverse conditions. Similarly, the placing of small interpretative boards would explain a little about species that might be seen in the vicinity.

There is only one dedicated whale-watching boat on Mull; it is not an industry. Therefore, the development of whale-watching on the island is directly related to the attitudes and aspirations of the proprietor. A report on whale-watching on Mull would, therefore, be a business plan for an individual company rather than an impartial report. Whale-watching is just one way in which the marine environment can be interpreted and has become particularly popular over the last few years. However, other marine operators offer equally valuable wildlife viewing experiences and the *range* of trips available means that interested visitors can take a number of trips and experience different aspects of the marine environment.

Mull is an excellent platform on which marine wildlife tourism can develop due to a long-established industry and marine infrastructure: its popularity with other marine users such as divers, fishermen and sailors and the presence of the HWDT. Popular species such as cetaceans (already high profile worldwide) could act as a figurehead for marine wildlife tourism in the area, encouraging people to the region.

There are many ways, beyond the scope of this report, in which tourism on Mull can be moved forward into the next decade. However, it is hoped that marine wildlife tourism develops in a sustainable way bringing further benefits to the local rural community and ensuring that the species being watched are not adversely impacted by the marine wildlife tours. This can only be achieved through further investigation and the development of a strategy to manage the industry.

ACKNOWLEDGEMENTS

We wish to thank the staff at HWDT for their support with this study and also Inter-Island Cruises, Sea Life Surveys and Staffa Trips who assisted with the distribution of questionnaires and the other tour operators on Mull who provided information.

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Table 1

A summary of the main characteristics of marine tour operators on the Isle of Mull.

Category	Landings	Length of trip	Trips per day	Focus of trip	Number of passengers	Number of operators
Whale-watching	No	4-6hrs	Up to 3	Cetaceans	12 (max)	1
Wildlife	One/two	6-8hrs	Daily	All wildlife, (seabirds & seals, also sharks & cetaceans)	10-63 (max)	2
Sightseeing	One	2-3hrs	2	Fingal's Cave, Staffa (birds & seals seen)	72 (max)	3
Other	Two of the sightseeing boats also carry excursionists based in Oban. Day trips to Mull, Iona and Staffa from Oban include ferry crossing and bus transfers across Mull. These boats did not distribute questionnaires.					
	Sea-fishing charters also operate from Mull					
	Chartered dive-boats and wildlife cruises (not day trips) tend to operate from Oban/Mallaig.					

Table 2

A summary of the age distribution of marine wildlife tourists.

Age group	Percentage of respondents
<18	3.7%
19-29	14.9%
30-44	32.8%
45-60	38.8%
60+	9.7%

Table 3

A summary of the age at which marine wildlife tourists completed their formal education.

Age when finished education	Percentage of respondents
16	17.6%
18	17.6%
21+	64.9%

Table 4

A summary of the nationality of marine wildlife tourists.

Nationality	Percentage of respondents
British	91.8%
N. American	6.7%
Australian	0%
German	0.7%
Scandinavian	0.7%
Other	0 %

Table 5

Table showing the location of tourist accommodation in relation to location of harbour from which marine wildlife tours were departing/ located.

	Accommodation location		
Harbour location	North	Central	South
North	85.3 %	46.9 %	4.2 %
Central	0%	9.4 %	33.3 %
South	14.7 %	43.7 %	62.5 %
Total per region	100%	100%	100%

Table 6

Table summarising the length of stay of marine wildlife tourists on the Isle of Mull.

Length of stay (no. of nights)	Percentage of respondents
1	8.9 %
2	11.2 %
3	13.6 %
4	11.8 %
5	4.7 %
6	9.5 %
7	26.6 %
8	3.0 %
9	0.1 %
10	0.0 %
>10	10.1 %

Table 7

The rating distribution of features for deciding on Mull as a holiday destination (1 = not important as a reason for visiting the island, 5 = very important reason).

Feature	1	2	3	4	5	*n*	Average	Rank
Landscape	2	2	22	51	102	179	4.5	1
Seascape	4	2	27	50	96	179	4.4	2.5
Watching wildlife	3	11	25	36	103	178	4.4	2.5
Hiking	33	23	35	46	35	172	3.5	4
Hebridean culture	24	38	67	32	17	178	3.0	5
Diving/sailing	109	25	15	11	9	169	2.3	6

Table 8

A summary of environmental organisations that marine wildlife tourists supported.

Organisation	Percentage of respondents that were members
Royal Society for the Protection of Birds	48.0 %
National Trust (& National Trust for Scotland)	27.5 %
Local Wildlife Trusts	22.8 %
Worldwide Fund for Nature	22.5%
Greenpeace	14.7 %
Friends of the Earth	7.9 %
Hebridean Whale and Dolphin Trust	4.9%
Royal Society for the Prevention of Cruelty to Animals	2.9 %
Whale and Dolphin Conservation Society	0 %
International Fund for Animal Welfare	0 %
Other	38.8 %

Table 9

A summary of levels of participation in environmental activities demonstrated by marine wildlife tourists.

Activity	Percentage of respondents that participated
Visiting the countryside	88.0 %
Watching wildlife TV programmes	76.6 %
Reading about wildlife	68.4 %
Bird-watching	55.7 %
Supporting wildlife charities	50.6 %
Visiting wildlife parks	20.3 %
Environmental voluntary work	18.4 %
Natural history holidays	12.0 %
Other	6.0 %

Table 10

A summary of the answers to the question "*which of these species occur in the Mull region*?" For comparative purposes, the percentage of correct responses from marine wildlife tourists are compared with the percentage of correct responses received from the average Mull tourist (Warburton, 1999).

Species	Percentage of correct responses from marine wildlife tourists	Percentage of correct responses from general tourists *
Beaver	98 %	95 %
Wild boar	99 %	99 %
Albatross	94 %	96 %
Humpback whale	91 %	90 %
Golden eagle	74 %	84 %
Sea eagle	69 %	84 %
Minke whale	70 %	61 %
Bottlenose dolphin	65 %	62 %
Grey seal	85 %	71 %
Common seal	94 %	90 %
Red deer	74 %	85 %
Otter	77 %	87 %

* Source: Warburton (1999)

Table 11

A summary of respondents' opinions on how whale-watching could affect cetaceans.

Response	Percentage of respondents
Raising awareness/education	40.2 %
Other positive impacts	6.1 %
Interference with individuals	32.9 %
Noise pollution	9.8 %
No comment	6.1 %
Other negative impacts	3.7 %
Increasing marine pollution	1.2 %

Table 12

A summary of facts about whales and dolphins stated by marine wildlife tourists.

Response	Percentage of respondents
Cetaceans are mammals	36.0 %
Possess Adaptations (e.g. blowhole, flippers etc.)	12.0 %
Intelligent	9.0 %
Social animals	8.0 %
Communicate acoustically	7.0 %
Large size	5.0 %
Undertake migrations	4.0 %
Associate with humans	4.0 %
Other	5.0 %

Table 13

A summary of perceived threats to cetaceans by marine wildlife tourists. For comparative purposes the responses gained for same question from the average Mull tourist are shown (Warburton, 1999).

Threat category	Marine wildlife tourists	Average Mull tourists*
Marine Pollution	31 %	25 %
Commercial whaling	20 %	3 %
Fisheries by-catch	17 %	32 %
Over-fishing	15 %	24 %
Oil spills	5 %	2 %
Excessive boat traffic	4 %	2 %
Noise pollution from sonar	3 %	4 %
Global warming	2 %	2 %
Whale-watching	1 %	6 %
Other	2 %	0 %

* Source: Warburton (1999)

Table 14

A summary of the average cost and duration of boat trips on Mull.

Description	Actual average cost	Assumed average cost	Average length	Cost/hour
Overall average	£25.25	£25.56	5hrs 45mins	£4.33
Whale-watching	£42-£30	£33.61	5hrs	£6.72
Wildlife trips	£30	£29.71	6hrs	£4.86
Sightseeing trips	£10-£25	£16.56	3hrs 45mins	£4.35

Table 15

A summary of the respondents' assessment of the quality of various components of their boat trip (1 = poor, 5 = excellent).

Feature	1	2	3	4	5	*n*	Average
Overall	0	0	3	28	96	127	4.7
Guides' knowledge	0	0	1	53	73	127	4.6
Guides	0	3	0	54	60	117	4.5
Boat facilities	0	0	80	66	53	127	4.4
Talk quality (if given)	1	2	8	64	17	92	4.0

Table 16

A summary of interpretative talk length received by tourists in relation to boat trip category.

Length of talk	Whale-watching trips	Wildlife trips	Sightseeing trips
Brief	11.8 %	4.0 %	28.6 %
Intermittent	11.8 %	44.0 %	14.3 %
5-10minutes	70.6 %	16.0 %	28.6 %
10-20minutes	0.0 %	8.0 %	9.5 %
>20minutes	5.6 %	28.0 %	19.1 %

Table 17

The whale and dolphin-watching code of conduct used by marine wildlife tour operators on the Isle of Mull. The code of conduct was developed by the Hebridean Whale and Dolphin Trust for Scottish Natural Heritage.

Always be aware that whales and dolphin 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 whales and dolphin 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 loose 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 a sign of distress.
Harassing and deliberately disturbing a whale or dolphin is a criminal offence!
It is 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 at 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!

Table 18

A summary of where respondents first heard about their particular marine wildlife tour.

Marketing Method	All categories of tour	Whale-watching tour
	%	%
Word of mouth	41.8	27.8
Tourist Information Centre	26.0	22.2
Guide Book	9.5	11.1
Promotional leaflet	8.2	5.6
HWDT Visitor Centre	5.1	8.3
Other	5.1	5.6
Wildlife magazine	4.4	19.4

Table 19

A comparison of marine wildlife tourist profiles.

Characteristic	This study	Previous research
Affluent	>1 holiday; AB socio-economic category.	Affluent [1]; income directly proportional to age [2]; 68% earned more than CAN$40,000 per year [3].
Well-educated	65% finished education after 21.	Well-educated [1]; 79% had 4 year college education [2]; 51% had university degrees [3].
Middle-aged	71% aged 30-60.	Majority of passengers were 20-34years [4]; average age of 41years old [3].
Attractive to female market	61% were female	63% were female [2]; 55% were female [3].

Sources:
[1] Forestell and Kaufman (1990)
[2] Tilt (1987)
[3] Duffus (1988)
[4] Pearce and Wilson (1995)

Table 20

A summary of the estimated percentage of wildlife and cetacean-related merchandise for sale in shops in Tobermory, the Isle of Mull (Warburton, 1999).

Shop type	*n*	Wildlife	Cetaceans	Description
Tourist Information Centre	1	30 %	10 %	Postcards, calendars
Souvenir shops	9	18 %	13 %	Postcards, toys, ornaments, books, clothing, pictures, jewellery
HWDT Visitor Centre	1	100 %	80 %	Postcards, toys, ornaments, books, clothing, pictures, jewellery
Other shops	3	1 %	0 %	Postcards

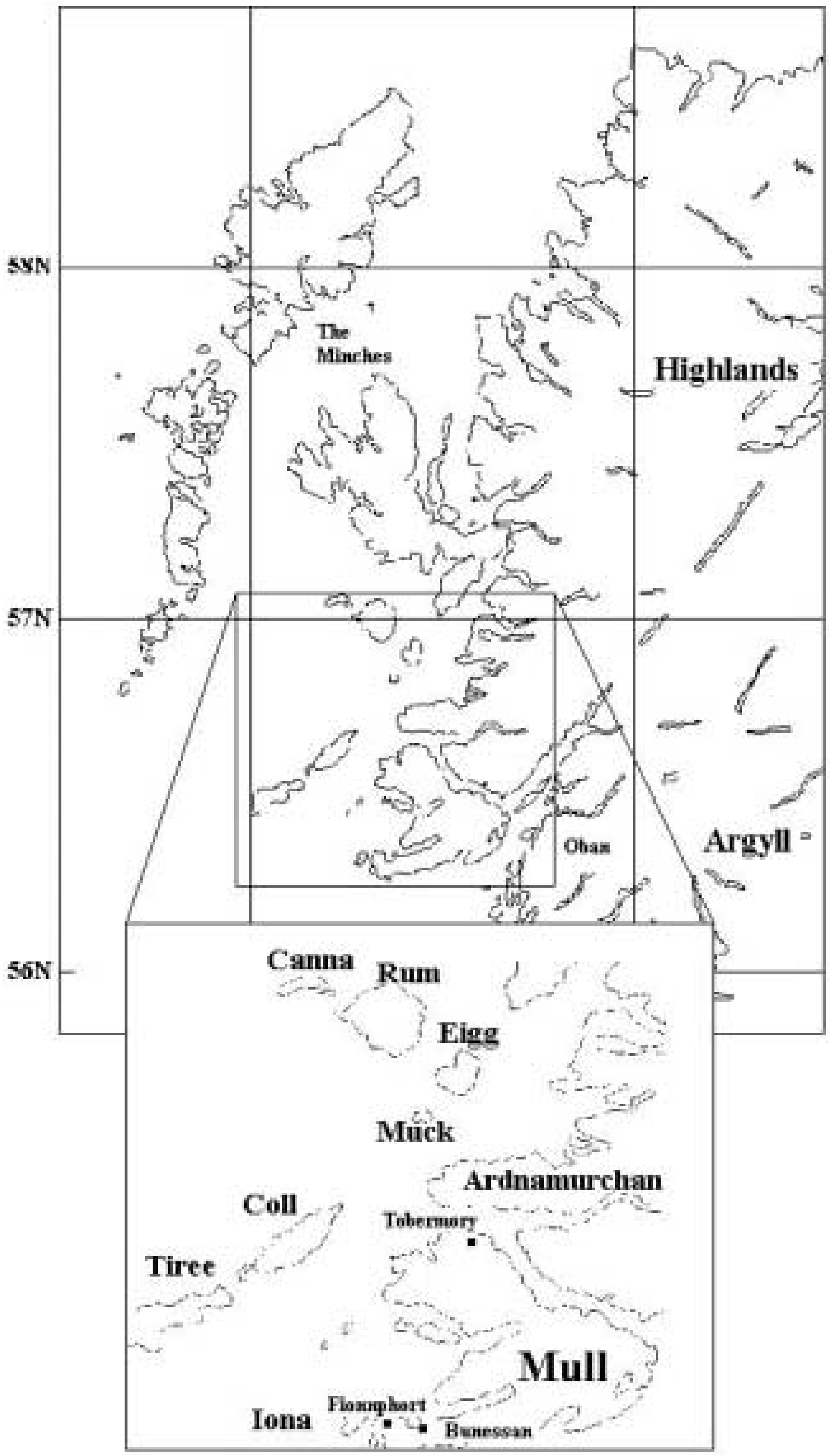

Fig. 1. Map of Scotland showing the location of the study site.