

Hebridean Whale and Dolphin Trust



Progress Report November 2003



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NÀDAIR

(Nature and Sustainable Development in the Argyll Islands)

In 2000, the NÀDAIR Trust (Nature and Sustainable Development in the Argyll Islands) secured Heritage Lottery funding for 32 individual heritage-based projects throughout the Argyll islands. All the projects focus on the sustainable development of the outstanding natural, archaeological, historical, cultural and geological interest of the Argyll islands, whilst protecting existing jobs and creating new employment opportunities.

HWDT contributed three projects as part of the NÀDAIR programme and these three projects have been the basis of most of HWDT's activities since their commencement:

NÀDAIR Project 5: Marine Interpretation and Education Project

NÀDAIR Project 28: Marine Life Monitoring and Marine Outreach Project

NÀDAIR Project 29: Community Sea Life Sightings Project

The three projects are primarily funded by the Heritage Lottery Fund, with additional funding from Scottish Natural Heritage and Argyll and the Islands Enterprise.

These three-year projects began in September 2001 and this report describes the progress and achievements of these projects (as of November 2003).

Overall Aims of Projects

- To raise public awareness, through education and communication, about the presence of whales and dolphins in the Hebrides and the threats that they face.
- To conduct benign research into cetaceans, their environment and associated species and to disseminate the results of this research to the public and relevant organisations.
- To promote the sustainable use of the Hebridean marine environment.
- To work within and support the local economy of the Hebrides through sustainable ecotourism, education/training and job opportunities, and to encourage stewardship of the marine environment.



I. Marine Interpretation and Education Project

NÀDAIR Project 5

Background

The coastal waters of the Argyll islands are one of the most important marine habitats in Europe. The area is inhabited by substantial populations of conservation priority species. For example, 19 species of whales and dolphins have been reported from the region; basking sharks abound in the summer months; otters dwell in most of the sea lochs; seabirds, such as gannets, puffins, shearwaters, petrels and sea eagles live on the coastal cliffs and skim over the waves; and beneath the surface dwell thousands of fish and crustacean species, with fragile habitats such as serpulid reefs and maerl beds.

However, despite this wealth of marine life, awareness of this great diversity, and its importance, is relatively low. Explaining the need to maintain this diversity through conservation is especially important as the economies of many coastal communities (through the fishing industry and boat-based tourism) depend upon the diversity of marine species in their coastal waters and the continued health and sustainability of these species.

This diversity of marine life in Argyll could also assist the future economy of the region. In a recent visitor survey, the seascape and marine wildlife were put forward as two of the main reasons that visitors came to the Argyll island of Mull. Bringing the attention of both potential visitors and local inhabitants to Argyll's marine environment will help to boost tourism-based business in the region – the largest employer in the Argyll islands.

The Scottish, UK and EU Governments have all admitted on several occasions that our knowledge of the marine environment and its conservation falls woefully behind the conservation of the terrestrial environment.

By raising public awareness through education and interpretation, HWDT hopes to safeguard the future the Argyll marine environment and the animals and communities that it supports.

Interpretation, Education & Training:

The interpretation of the Argyll islands marine environment and the production of education/interpretation materials is the main focus of Project 5. Materials produced under the project have provided interpretative materials for all ages and sections of society with specific materials being aimed at different education sectors (e.g. primary, secondary, higher/further and adult education). These resources are also utilised through the Marine Outreach Project taking marine education around the Argyll islands.

Project 5 has also encompassed a training programme (aimed primarily at young people, the unemployed and members of the local community) through which knowledge about the marine environment and valuable skills (such as computing, design, dealing with the public and organisational skills) have been learnt.



Marine Discovery Centre

The NADAIR project funding has allowed the refurbishment and renovation of HWDT's Marine Discovery Centre in Tobermory. The production of display boards, new shelving and the "yellow submarine" video unit have added new and eye-catching attractions, enhancing the centre. Throughout the duration of the Marine Education and Interpretation project the HWDT Marine Discovery Centre has attracted over 26,758 visitors (See Table 1, Appendix I).



Window displays and interactive activities focusing on different aspects of the marine environment are being produced regularly. The aim of these displays is to provide the local community as well as visitors with opportunities to learn about different aspects of the marine environment and incentives to keep returning to the centre.

In addition, centre staff dealt with 1072 public inquiries about local wildlife and tours, and through referring customers to local tour operators secured bookings for Mull wildlife tour operators.

Educational & Interpretative Resources

A number of different educational and interpretative resources have been produced as part of the NADAIR projects for use in the Marine Discovery Centre, in conjunction with the Marine Outreach project, school visits, community talks and events.

- **Display Boards**

Project 5 provides funding for the production of 8 interpretative display boards giving information on marine mammals, island-specific marine heritage and conserving the sustainable use of the marine environment. Five boards have been produced to date on: whale biology, resident cetacean species, minke whales, bottlenose dolphins and the work of HWDT.





One set of boards has been put on display in the HWDT Marine Discovery Centre. Sets of boards have also been sent to the Scottish Sea Life Sanctuary (Oban), The Millport Aquarium, Ardnamurchan Lighthouse Visitor Centre and the Islay Natural History Trust. 2 further sets have been produced for use in shows, events and in school/community group visits.

- **Whale Models**

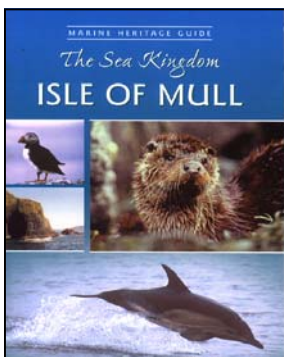
Three models of a minke whale, a bottlenose dolphin and a harbour porpoise have been constructed. These models are lightweight and approximately a metre long and are used to illustrate what whales and dolphins look like in interpretative shows, school visits and activity days.

- **Inflatable Whale and Dolphin**

In addition to the metre long cetacean models, life-sized inflatable minke whale and bottlenose dolphin have been produced and these attractive and highly visual inflatables help children and visitors get an idea of size of these animals and what these amazing creatures really look like. These inflatables are easy to transport and have been used extensively in interpretative shows, school visits, and activity days, as well as in the Marine Outreach Project (NADAIR project 28).



- **Marinelife/Heritage Booklets**



Local author Rosalind Jones was contracted to help produce a series of books on the marine heritage of the Argyll Islands. Books on the Isle of Mull and the Isles of Coll and Tiree have been produced providing information on a variety of topics including historic wrecks, sea-related legends, coastal walks, indigenous wildlife, as well as descriptions of rocky shores and local fishing practices. One thousand copies of each book have been produced.



- **Newsletter**

Over the period of the NÀDAIR project HWDT has funding to produce 6 newsletters detailing HWDT’s latest activities (both educational and scientific) as well as articles on recent conservation issues and the marine heritage of the Argyll Islands. So far six newsletters, 3 for our adult members (“Wave”) and 3 for our youth members (“Wavelet”) have been produced. 1200 copies of each newsletter were printed and distributed.



- **Dolphin and Puffin Costumes**



A bottlenose dolphin and a puffin costume were commissioned from local artist Lee Hendrick. These costumes made their debut appearance at the Tobermory Lifeboat day and caused quite a stir. Apart from their appeal to children at this event, the costumes helped raise over £100 to support the local lifeboat crew. These colourful costumes are particularly useful

in local interpretative shows, events, and children’s activity days.

- **Environmental Library**

The NÀDAIR project funding has allowed HWDT’s environmental library to get a well needed boost. Over 200 books covering a variety of subjects including whales and dolphins, seabird biology, fishing and aquaculture and coastal and marine history, were purchased. In addition 6 magazines (such as *BBC Wildlife* and *British Wildlife*) and 5 journals (e.g. *Journal of Animal Ecology*) have been subscribed to. Also multimedia items have been acquired for the library including 19 CD-ROMS, the BBC documentary series *The Blue Planet* on Video, and interactive resources such as an environmentally-themed board game for children.

The library is used by HWDT staff, school children, university and college students, wildlife tour guides, the Mull Ranger Service, and a variety of local community groups.

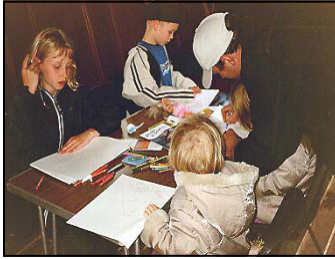
School Visits

51 school visits (Table 2, Appendix I) have so far been conducted under the auspices of NÀDAIR Project 5. A total of 39 schools were involved in these visits, all of which were island or mainland Argyll and Bute schools, with a total audience of over 1568 primary and secondary pupils.



The format of the visits included talks on whales, dolphins and the marine environment of West Scotland. Specific topics covered during the visits included dolphin biology, the marine food web, cetacean diversity, local whales & dolphins as well as a question and answer session.

Children's Activity Days



Thirteen children's activity days have been conducted over the two years. Some of these days were conducted jointly with the Mull and Iona Ranger Service. The activity days included a variety of environmental themed games and talks as well as providing hands-on interpretative materials. One of the activity days involved local children participating in a beach clean. These events were attended by over 200 children.

Public Talks & Events

To date, approximately 40 talks (Table 3, Appendix I) have been given to a variety of audiences including tourists, local residents, scientists, students, representatives of governmental bodies and environmental charities. Topics covered in these talks include whales & dolphins of Argyll and West Scotland, whale-watching & ecotourism and marine mammal conservation. These talks were attended by a total audience of over 900 people.

In addition, HWDT has given three presentations at two international conferences on cetaceans and marine ecotourism in Argyll and West Scotland, namely the Society for Marine Mammalogy Biennial Conference in Vancouver and the European Cetacean Society Annual Conference in Liege, Belgium. The total estimated audience for these presentations was 2,100 marine mammal students and scientists.

Eight interpretative exhibits have also been presented at a variety of local and national events (Table 4, Appendix I). These exhibits typically involved the display of new educational materials produced through NADAIR Project 5 (e.g. the new interpretative display boards, models and costumes), as well as computers running marine environmentally themed programs, children's activities and games run by attending HWDT staff.

Educational Website

HWDT's website (<http://www.hwdt.org>) is being completely redesigned and a total of 83 pages have been written, providing key facts on various whale and dolphin species, conservation threats to the marine environment, as well as information on Argyll's marine heritage, including pages on marine and coastal wildlife, local wrecks, and myths and legends regarding the sea.

The website has proven to be hugely successful, garnering over two-thirds of a million hits since the start of the NADAIR project.



Higher/Education Course Materials

Providing educational materials for college and university students is a new aspect of HWDT's education programme. Under the NADAIR project, HWDT has funding to develop 3 higher/further education courses. Two of these courses have been undertaken and comprises 14 lectures on:

- Cetacean evolution
- Baleen whales
- Toothed whales
- Dolphins and porpoises
- Cetacean identification
- Cetacean adaptations
- Cetacean behaviour
- Threats faced by whales and dolphins in West Scotland
- Law and the protection of marine mammals in Scotland
- Cetacean research being conducted in Argyll
- Marine ecotourism in Argyll and whale-watching

These lectures were given to university and college students at a course by the University Marine Biological Station Millport (Glasgow) as part of a course on conservation priority marine species [17/07/02 - 23/07/02 and 20/07/03 - 25/07/03].

In addition to the above lectures, field classes were also arranged for the students.



These classes included:

- Land-based field trip to observe otters and seals
- Field trip to the Treshnish Isle *Special Area for Conservation* for seals
- Cetacean survey field class on the HWDT monitoring & education vessel *Silurian*

Seven of the above lectures were also given to students on the University of the Highlands and Islands Marine Science degree course [29/11/02 & 24/01/03].

Conferences & Forums

One educational aspect of Project 5 was to attend a variety of conferences and forums and to raise awareness of Argyll cetaceans and marine environmental issues at these venues. To date HWDT has attended :

- **8 International Conferences/Forums**, including the International Whaling Commission Scientific Committee and the European Cetacean Society Conference;
- **16 National Forums/Seminars**, including the Tourism and the Environment Forum and the UK Bio-Diversity Action Plan Steering Group for Cetaceans;



- **17 Regional Forums/Seminars**, including the Argyll and Bute Regional Environmental Education Forum;
- **20 Local Forums/Meetings** such as the Mull and Iona Land and Sea Forum and the Hebridean Marine National Park Partnership meetings.

Marine Environmental Awareness Monitoring

In order to gauge the level of marine environmental awareness in the population of Argyll and in key target groups two questionnaires were produced and 5 area and 1 special interest focus groups were questioned including:

- Mull (50 respondents)
- Islay (50 respondents)
- Tarbert (50 respondents)
- Campbeltown (50 respondents)
- Glasgow (52 respondents)
- Marine wildlife tour operators (26 respondents)

These studies revealed that the awareness of cetaceans in Argyll is low. The majority of participants underestimated the number of cetacean species present in the waters of Western Scotland, most answering that there are about half of the actual number. Moreover, although the majority of participants identified fishing as being a major source of income for Argyll, it was clear that many participants were also aware of environmental impacts of some forms of commercial fishing methods, with over-fishing being the most common threat to the Argyll marine environment. The other main threats quoted being sewage pollution and marine litter. Approximately a fifth of those questioned thought that there were no threats at all to the marine environment of Argyll or did not know of any. In general, awareness of marine issues was poorest in those people under 20 years of age or over 50 years old. Inhabitants of Tobermory, followed by Islay, demonstrated the greatest levels of environmental awareness. Within Argyll, the lowest level of environmental awareness was found in Campbeltown, although inhabitants of Glasgow scored the lowest marks on all indicators of marine environmental awareness.

Reports Produced

Scott, N.J. and Parsons, E.C.M. 2001. Marine Environmental Awareness in Argyll, West Scotland. 97pp.

Bridgeland, R. 2002. A study of the extent of interpretation in marine wildlife tourism in Western Scotland. 67pp.

Creating Employment

Through the NÀDAIR Marine Education and Interpretation programme alone a total of 15 people were employed for educational projects, of which 9 were local Argyll residents. In total the equivalent of three full-time positions were created as a result of the various



educational contracts. In addition one full-time position was protected through the employment of a manager for Project 5 activities.

Marine Education & Interpretation Staff 2000 – Present (October 2003)

Marine Discovery Centre: Andrew Livingstone, Fabian Rabin
Display boards: Julie Paton, Phil Johnston, Alison Gill, Georgia O’Neil
School visits: Julie Paton, Phil Johnston
Whale models: Kathy Roche, Chris Parsons
Children’s Activity days: Julie Paton, Phil Johnston
Newsletter: Julie Paton, Georgia O’Neil, Nicole Freire
Public Talks: Chris Parsons, Phil Johnston, Juliet Shrimpton
Dolphin & Puffin Costumes: Lee Hendrick
Inflatable Whale & Dolphin: Andy Starbuck
Website design: Dave Forward
Webpages: Rosalind Jones, Chris Parsons, Nicole Freire
Higher/Further Education Courses: Chris Parsons
Mull Marine Heritage Guide: Rosalind Jones
Coll and Tiree Marine Heritage Guide: Rosalind Jones
School Pack: Chris Jones
Project 5 Overall Management: Chris Parsons (2001-2003), Caroline Lathe (2003-2004)

Social & Cultural Heritage

Many of the interpretative materials produced in Project 5 have not only dealt with marine wildlife and issues of marine conservation, but also have interpreted many aspects of social and cultural heritage such as the marine built heritage (e.g. Argyll shipwreck wrecks), the history of communities’ connections with the sea (e.g. information on fishing practices and the life of fishermen on the Argyll islands) and Gaelic tradition (stories about selkies, kelpies, sea monsters and other legendary figures).

Community Involvement

Many of the projects in the marine education and interpretation project involve community participation. For example, schools visits, talks to community groups and lectures given to courses at the University of the Highlands Islands and Argyll College), the island-specific booklets and children’s activity days.

Green Tourism, Sustainable Development, Positive Economic Impact

In a research project carried out by HWDT in 1999 it was estimated that marine wildlife tourism brings £650,000 to the Isle of Mull, with a further £8.5 million from indirect income (accommodation for wildlife tourists etc.). A large proportion of these tourists heard about these wildlife trips/given information through the activities of HWDT (e.g. up to 50% of



whale-watching trips were as the result of visits and enquiries to the HWDT Marine Discovery Centre in Tobermory alone). The HWDT Marine Discovery Centre is central to many of the Trust's educational activities, and through activities and displays run through this centre it also helps to enhance the experience of tourists to the Isle of Mull, as well as educating them about the marine aspects of their holiday destination.

Moreover, several interpretative materials produced by the marine education and interpretation project have been designed to focus the opportunities for watching wildlife in the Argyll Islands regions, which will be of benefit to green tour operators, and promote the benefits of sustainable development. In particular, HWDT's website (over 700,000 hits annually) has pages specifically focusing on these topics. Furthermore, some of the FE/HE course materials produced by the marine education and interpretation programme have been designed to promote the financial and educational value of wildlife tourism and also to promote proper management of this sector of tourism, so ensuring that it is truly sustainable and provides as many benefits to host communities as possible.



2003 / 2004 PROJECTS

As well as continuing to develop and update the schools work programme in the Argyll Island Area and the interpretive projects, the plan during the next year is to expand into some new areas.

Drawing on the experiences gained working with the primary age students, HWDT are to produce a CD-ROM for use in schools which will contain worksheets, schemes of work and activity ideas. All these will be tied directly to the requirements of the National Curriculum for Scotland and will be based on the marine environment of the Argyll Islands. This will include topics for use in Science, Social Studies, Art and Design, Technology as well as for cross-curriculum use. Not only will this cover Biology and Environmental Science issues but also the region's historical and cultural links with the sea.

HWDT will also be working with the Argyll Island High Schools to promote their interest and involvement in the marine environment and this programme will again be directly linked to the curriculum and the needs of these schools and their students.

In the summer of 2004 there are plans to host a symposium which will draw together experts in marine life and the environment of the Argyll region. This should help HWDT and others, to promote the involvement in the development and care of this precious resource.

Production of a video publicising Argyll's diverse and spectacular marine life with footage is already well underway after some very successful filming trips around the islands. This is presently being edited and narrated and not only will it be used as an educational tourism marketing tool but it will also touch on the threats faced by marine life in this area. It will therefore be useful for a very wide audience of all ages.

Other educational resources are currently being planned in conjunction with educational partners on wildlife, marine habitats and eco-tourism.

Supported by the
Heritage Lottery Fund



II. Marine Outreach Programme

NÀDAIR Project 28

The Marine Outreach Programme can be divided into two main projects:

- Education Outreach Project
- Marinelife Monitoring Project

These projects are both delivered via the motor sailing vessel *Silurian*, a 65 ft ketch-rigged yacht and achieved through three staff: a Marine Ranger, an Education Outreach Officer and the Skipper of the “floating classroom”.

A. Education Outreach Project



Background

The coastal waters of the Argyll Islands, warmed by the North Atlantic Drift, are one of the most important and productive marine habitats as well as being some of the least polluted waters in Europe. The transition from southern warmer waters to northern cooler waters is reflected in the mixture of marine species. There are a large number and a great diversity of whales, dolphins and porpoises (cetaceans) and other marine species. As well as important marine species, there is a wide variety of marine habitats of international importance from rocky reefs, turbulent tidal streams, sand and gravel beds to deep water channels. The coastal landscape on the islands varies dramatically, from the sheer cliffs of Scarba to the long stretches of sandy beaches on Tiree, the high sand dunes of Coll, to the raised beaches on the west of Jura and the exposed coast of Colonsay and Oronsay. There is a need to raise the awareness of the importance of maintaining this rich diversity for not only the marine life but for the communities which rely on it as an essential resource. How people use the sea, the significance of the waters connecting the Argyll islands – and the wildlife it is home to - has changed significantly over the past 50 – 100 years. An innovative and effective education programme will interpret this to the Argyll islands and the wider communities.



Aims

The Marine Outreach programme aims to raise awareness of the rich marine and coastal bio-diversity and the importance of its conservation through education and communication thereby helping to protect it for future generations and for those who make a living from the seas. The project dovetails with the Marine Education and Interpretation Project (NÀDAIR project 5) which helps to provide materials and information geared towards the Scottish school curriculum that are communicated to all the islands.

Many of the widespread and often remote communities of the Argyll islands are difficult to access. To reach these communities HWDT purchased the motor sailing vessel *Silurian* previously seen in the BBC TV series *The Blue Planet*. The inside of the *Silurian* was redecorated and equipped to become a "virtual floating classroom" that is able to reach all the islands and also be an appropriate and exciting display facility.

School Visits on the “Floating Classroom”



One of the key activities of the Marine Outreach Project has been a programme of school visits on the *Silurian*. This programme has been developed in conjunction with the staff of Scottish Natural Heritage (SNH), local authorities and island teachers, so that the visits fit in with the Scottish school curriculum and governmental objectives for marine environmental conservation and education.

Between September 2002 and November 2003, 17 primary schools from 9 Argyll islands (Mull, Iona, Jura, Tiree, Coll, Islay, Gigha, Colonsay, and Lismore) were welcomed aboard the *Silurian* (Table 6, Appendix I).

During each visit the *Silurian* was moored alongside a pier and up to fourteen children were brought on board for a visit of up to three hours. On the day preceding the children's visit to the *Silurian*, the Marine Education Officer gave an introductory talk at each school involved.

Description of Resources and Activities

The main educational resources onboard the *Silurian* are a touch tank, the navigation instruments (such as compass and radar), a hand-driven electricity generator, a hydrophone, interactive computer software, plankton nets and microscopes. The touch tank is a large plastic tub that is filled before the school visit with a variety of Hebridean marine life (make-shift aquarium). On a good day, it may contain several crab species, a lobster, a fish, starfish, mussels, limpets, anemones and seaweed. The contents depend on the catch of the *Silurian*'s creel pot and the generosity of local fishermen. The children have a chance to touch the animals. There is also a discussion of adaptations such as camouflage and the protective carapace of crabs.





Depending on the age of the children, a brief tour of the Silurian includes a selection of the following: tying knots; hoisting a sail; measuring water temperature and wind speed; generation of electricity; and demonstration of the compass, Global Positioning System (GPS) and radar.

The plankton nets are used for collecting plankton and are either deployed from the shore or from the Silurian. These samples are viewed with magnifying glasses and microscopes.

Using the hydrophone, the children listen to the underwater sounds at the pier. Following this activity, they listen to, and learn to identify recorded vocalizations of whales, dolphins and porpoises. For most of the time aboard, the children are split into two groups, to ease supervision and to optimize the use of the boat's small spaces. It is possible though to fit (at a squeeze) groups of fourteen children around the table in the saloon. The children get together in the saloon to make shapes of marine animals (or plants) using salt dough, to discuss an Admiralty chart of the Hebrides, to see a baleen plate and a whale tooth and to have a juice or lunch break.

Since the start of September 2002, approximately 464 children have participated in HWDT's Marine Outreach Project. At the smaller primary schools of Lismore and Gigha, all the children came aboard in one day. At Arinagour (Coll) and Tobermory, children were aboard over two days. At the other primary schools, such as Tیره, Kiells (Islay), and Salen (Mull), it took three days to accommodate the larger numbers of children. Finally, at Bowmore (Islay) two separate trips were needed to bring all the children aboard. The first trip to Bowmore was completed successfully with 38 children participating. The second trip with the final 39 children from Bowmore school had to be cancelled twice due to inclement weather. A visit to complete Bowmore school will be scheduled for the summer of 2003.



Public & Community Group talks

In tandem with the trips to the Argyll Islands for school visits, open evenings have been held aboard the Silurian in Tobermory, Islay, Coll and Tiree. During these open evenings presentations are given about the Argyll Marine environment as well as specific information about the HWDT NÀDAIR projects themselves.

Project Monitoring

Following the visit to the Silurian, each school was asked to respond to an evaluation questionnaire (Appendix II). The feedback has been very positive with all the schools saying that the visit was beneficial for their students and fit in well with the curriculum (Appendix II). One common opinion expressed initially was that the project could be improved by having a plenary session in schools following the visit to the Silurian. This plenary session was subsequently added when possible to the school visits in the summer of 2003.

Feedback was also received from the school children. On the day of the visit, exclamations ranged from “Cool !” and “*We want to come back tomorrow !*” to “*Can I have a job on the boat?*” The children also sent thank-you letters and a description of the visit (Appendix II).



Work Plan 2003 / 2004

The very successful programme of school visits will be extended to include coastal and mainland schools. Educational materials aimed at the upper primary and secondary area will also be produced. These resources, as most educational resources, will be utilised in both this project and the Marine Education and Interpretation Project (NÀDAIR 5). Where possible some of the educational materials will be produced in Gaelic in order to answer the specific needs of many of the Argyll island children.

HWDT will continue to develop links and contacts with teachers, educators, and community groups. The education officers work closely together as well as liaise with local teachers and educators in the production of resources. Links are to be developed to the Argyll and Bute Volunteer Centre's programme to aid the promotion of employment of local people who have found it difficult to gain experience in the workplace.

The school visits to all the Island Primary Schools in the Argyll area have almost been completed. Over the winter not only will educational and interpretation materials be produced but plans are in place to visit schools in the coastal and mainland areas. Links with local schools will be further developed, in particular with students from Tobermory High School. A group from the school visited the centre on the 27th October for a talk on Marine Pollution and they are going to work with staff on preparing materials on the topic of classification and the use of keys and produce a display on Seaweeds for the centre. Senior students are also going to help prepare permanent slides of plankton for use on the boat and in the centre.

The Discovery Centre has a new display on the subject of plankton and feeding and there is a microscope set up for the public to use to view samples from the tank. It is intended to alter the subject of the displays and interactive materials regularly and to tie these in with what the local schools may be covering in class. Later on there will be fact sheets and worksheets available too, the website will follow these topics and so will the Junior Newsletter "Wavelet".

Work is continuing on the HWDT Website with a target date of completion by May 2004. It will include better links around the site and to other websites. There will be direct links to the Silurian and more educational pages for teachers and schools.

Supported by the
Heritage Lottery Fund



B. Marinelife Monitoring Project

Background



Photo Courtesy of John Cunningham

19 species of whales and dolphins have been recorded in Argyll waters as well as two species of seal, otters and basking sharks. These animals are all species needing conservation under both UK and European law. Despite the fact that Argyll is arguably one of the most important habitats for marine mammals and basking sharks in the UK, little is known about their distribution and status. There is no information even on exactly how many whales and dolphins inhabit Argyll waters, despite their importance as a resource to the Argyll tourism industry or their conservation status.

Aims

- To establish the range of species found in Argyll waters and investigate their distribution.
- To use this information to establish relative abundance of species throughout Argyll waters and identify 'hotspots' of activity.

Methods

During the monitoring trips the following is undertaken:

- Visual observation watches
During these sightings information of all cetaceans, basking sharks and seals is collected. All environmental condition data is logged and recorded. In addition information is logged about marine litter and boat activity.



Photo Courtesy of John Cunningham



- Acoustic monitoring of cetaceans

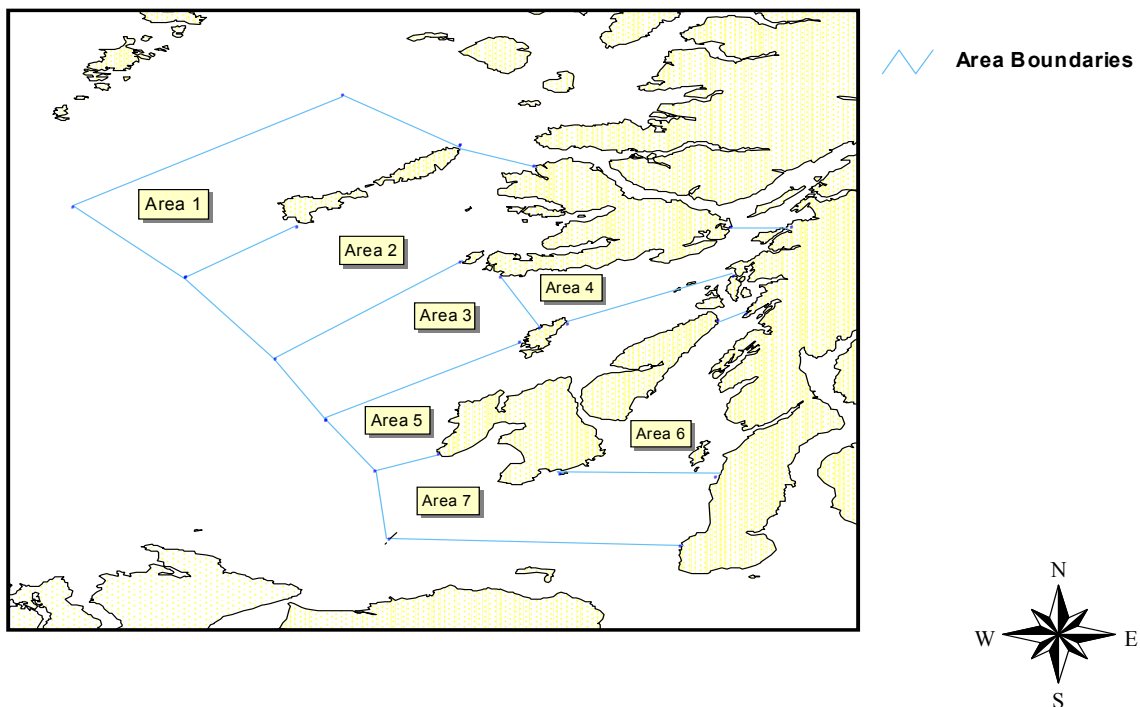
Hydrophone systems are used on board Silurian. One is a high frequency system designed to detect and record harbour porpoise click vocalisations. The second system is an audio hydrophone which detects all those species which vocalise within the human range of hearing e.g. bottlenose dolphin, Risso’s dolphin and the common dolphin. Direct digital recordings are made of all the sounds for analysis and for training and educational purposes.

- Photographic identification work
This focuses specifically on bottlenose dolphins, minke whales, basking shark, killer whales and Risso’s dolphins
- The use of Silurian as a platform to trial new equipment or techniques.



HWDT monitors all Argyll waters from North Mull down to South Islay. The area has been divided in seven survey blocks which can be surveyed in approximately one day depending on conditions. The monitoring area is defined below.

Survey Areas within Marine Outreach Project



HWDT's 2003 monitoring season started in April and continued until October. In total, eight monitoring trips have been undertaken during the 2003 season. Every month Silurian spends at least 10 days at sea undertaking monitoring surveys throughout the survey area. Two 10 day trips were undertaken in July. On average 500 nautical miles is covered per trip, totalling 4000 miles this season. A broad range of species has been sighted including harbour porpoise, bottlenose dolphin, minke whale, common dolphin, white sided dolphin, Risso's dolphin, basking shark. In addition to this scheduled monitoring work two winter surveys were also undertaken in January and February in collaboration with EcoCruz (Sea Life Surveys). During monitoring trips opportunities are also taken to distribute leaflets and flyers around the islands to encourage people to report their sightings. The boat is always open to visitors wanting to find out more.

Results and Partnerships

The interim results from the 2003 season will be summarised in the annual Marine Life Monitoring report to be produced at the end of 2003. HWDT has developed several links with external organisations in order to maximize the capacity in which the data collected during the monitoring trips can be utilised for maximum conservation gain. Below is a summary of HWDT's current working partnerships.

- Sea Mammal Research Unit (SMRU) and Dunstaffnage Marine Laboratory (DML)

SMRU and DML are partners in a three year project investigating the distribution of marine mammals on the West Coast in relation to oceanographic variables. During the period 2003 – 2006 HWDT will be sharing all data collected from Silurian with SMRU and DML. This will contribute to this wider study of the west coast. SMRU and DML have assisted HWDT by providing necessary equipment and technical advice. HWDT are working with SMRU to utilise Silurian as a platform to undertake a range of pilot projects. This includes suction cupping of minke whales and testing of seal tags.

- Marine Biological Association (MBA)

HWDT is a partner in a three year project, along with MCS, TST, IFAW, MER to investigate the UK population of basking sharks. HWDT are contributing all effort related sightings data from Silurian, all photo identification obtained and all casual sightings data from our community sightings scheme.

- Sea Watch Foundation

Sea Watch is the national coordinating group for cetacean records in the UK. In July HWDT and SeaWatch carried out a joint monitoring trip of the southern Argyll waters. This allowed the two organisations to share ideas and working practices. All casual sightings data is transferred to SeaWatch on an annual basis.



Training

During every trip, in addition to three core crew (skipper, 1st mate and marine ranger) HWDT are assisted in our monitoring work by five volunteer ‘trainee observers’. These observers are usually undergraduate students seeking field experience in survey techniques, marine mammal science and marine biology. At the beginning of the trip all volunteers are trained in species identification, familiarisation with underwater sounds, survey methods, protocols and data collection and climbing to the crows nest! Throughout the monitoring trip all are involved in observation watches, and data collection and recording. All volunteers are also involved in the sailing of the Silurian and the domestic chores. Over the 2003 season we have trained 35 volunteer observers. At the end of each trip each volunteer is asked to provide feedback about their experience of the project via a questionnaire.

HWDT also collaborates with Millport Marine Station and provides 3 days of marine mammal survey training for students attending their marine mammal course.

Operation Logger

HWDT are working with local boat operators to encourage consistent recording of effort related sightings of cetaceans and basking sharks. This is being done by installing Logger (IFAW) – a computer based data logging program which is connected to the ships Global Positioning System. This is the same system that is used on board Silurian. The program has been modified slightly to make it compatible for use on commercial vessels. In 2003 HWDT has provided the necessary computer equipment to use this software to Flamer (Inter island Cruises) and EcoCruz (Sea Life Surveys). In addition we have also provided photographic equipment to maximise the collection of photo-identification data. HWDT is responsible for downloading and managing this data. Next year we are hoping to expand this scheme to include at least two more boats.

Talks and Forums

The following talks were given this year to the following groups:

- Argyll Wildlife Trust (75 people in attendance)
- Argyll Bird Club (60 people in attendance)
- Arran Natural History Society (35 people in attendance)
- Marine Harvest (25 people in attendance)

The following forums were taken part in:

- Hebridean Marine National Park Partnership (Committee member)
- Argyll Biodiversity Forum (partner)
- Firth of Lorn SAC Management Forum (advisor)
- Land and Sea Forum



Filming Trips

- To acquire footage for HWDT's educational video (1 week)
- With WWF International for an eight minute news piece to be aired on Sky International (1 week)

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III. COMMUNITY SEALIFE SIGHTINGS PROGRAMME

NÀDAIR Project 29

Background



The coastal waters of the Argyll islands are one of the most important marine habitats in Europe for a variety of marine conservation priority species (e.g. 19 species of whales, dolphins and porpoises, 2 species of seals, 4 marine turtles, basking sharks and otters). Whilst they are an intrinsic part of the natural heritage, there is little known about the distribution, abundance, and habitats of these key species.

Aims

- To help gather information on distribution, abundance, and habitats of marine conservation priority species (whales, dolphins, porpoises and basking sharks).
- To increase an awareness of these species in the eyes of marine users, visitors, and island and coastal local communities.
- To encourage members of coastal communities in the Argyll region to take an active interest in the marine life in their waters and to report sightings that they make of a variety of marine species.
- To collate, analyse and disseminate sightings data to many sectors of the community and wider public, via a variety of formats.



Nature Conservation

The sightings programme provides essential information on the distribution of a variety of nationally and internationally important conservation priority species. The information gathered will allow the identification of key marine habitats (which is the first step in the conservation of these habitats) and the monitoring of the status of various marine-life species.

The data collected in the Community Sealife Sightings scheme is passed onto national databases to increase the status and knowledge of conservation priority species nationally.

- cetacean sightings are passed to the Seawatch Foundation
- basking shark reports are passed to Marine Conservation Society, the Shark Trust and International Fund for Animal Welfare (IFAW).

Observations regarding floating debris and other potential hazards are collected on the HWDT education and monitoring vessel *Silurian*. HWDT also participates in the Marine Conservation Society's Beachwatch, a nationwide effort to collect data on beach litter and debris. For Beachwatch 2003 (September 21st), HWDT staff and volunteers collected debris and data at Calgary beach (Isle of Mull). This adds another important dimension to the sightings information and shows the presence of threats and the importance of conservation.

Interpretation, Education and Training:

Workshops, talks, newsletters, articles and displays produced by this programme help to increase an awareness of the marine environment in many sectors of the public: marine users and the members of the coastal communities.

The staff involved in the project themselves have received training, namely attending a course on GIS mapping and geographical analysis, courtesy of the University of Aberdeen. This has allowed sightings to be mapped and eventually compared with geographical features such as sea temperature and depth—a vitally important requirement when investigating which areas are important habitats to cetaceans and other marine life species.

Sightings Summaries and Webpages

There are currently 7 webpages on the HWDT website about the Community Sightings Programme. These pages present a summary of sightings received in 2000, 2001 and 2002 as well as a distribution of the most common species related to these years. A summary of sightings received between January and mid-July 2003 is also presented and a commentary of the most recent reports is regularly updated and illustrated with pictures sent by people.

In 2003, 3 reports were produced in February, April and July (see Appendix III for July report). These reports give information about sightings the Community Sea Life Sightings Programme received. These reports were sent to local boat and wildlife operators and



members of the fishing industry (fish farmers and fishermen) and widely distributed to the local community during workshops, talks and presentations. A fourth and final report in January will provide a summary of sightings for 2003.

In addition, a summary of sightings has been written and published in the HWDT newsletter (see Project 5).

Sightings Workshops and Events

HWDT participated in a variety of public events this year (see Appendix I, Tables 5 and 6) in which the opportunity was taken to promote the Community Sealife Sightings Programme, raise awareness of the different species of cetaceans commonly seen in the West Coast of Scotland and the importance of their conservation.

During the Mull & Iona wildlife week, initiated for the first time by wildlife operators (10-17th May 2003), HWDT organised ferry surveys on board Caledonian MacBrayne's Ferry between Craignure and Oban. Species identification boards, leaflets, and reports were displayed on the ferry and information on cetacean survey methods was discussed with the public.

HWDT also took part in two Agricultural Shows on the Isle of Mull: Bunessan (8th August) and Salen (14th August). The stands at both shows were well visited by locals and tourists alike with the public showing a great interest in the information boards and sightings packs.

West Highlands Week (August 1st - 8th) is a sailing race gathering a large number of sailors and sea lovers. On Wednesday the 6th of August, the boats stopped in Tobermory and on that night an open evening was held at the Marine Discovery Centre. Many yachtsmen and spectators attended the event in which staff and volunteers discussed cetaceans of the west coast of Scotland and the importance of their conservation. Many were interested in reporting their sightings and a large number of sightings packs (which contain sightings forms and a species identification guide) were distributed.

HWDT also participated in the National Whale & Dolphin Watch Weekend on the 30-31st August 2003. The aim of the event was to encourage as many people in the UK as possible to become involved in reporting cetacean sightings. During the weekend, HWDT had displays posted about the event, offered species identification training, and also placed observer teams in different places on the Isle of Mull, Isle of Islay and Ardnamurchan Point.



Photo Courtesy of Mark Harvey
Volunteers at Tobermory Lighthouse during the national Whale & Dolphin Watch Weekend.

In addition, a land-based cetacean survey was conducted at Tobermory lighthouse (Rubha nan Gall) on 2nd August 2003. Fourteen people took part in the survey. A presentation of cetacean species was given and methods of land-based cetaceans surveys were shown.



Talks and Presentations

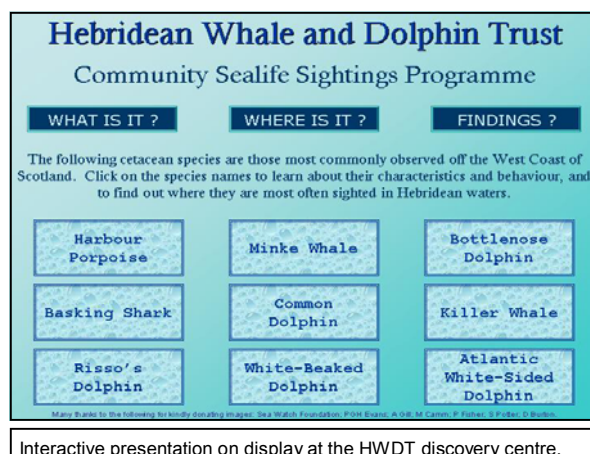
In 2003, HWDT gave different talks and presentations about the Community Sealife Sightings Programme and the different species of cetaceans commonly seen in the West Coast of Scotland. In March, HWDT was invited to give a talk by the local community at Fionnphort (Isle of Mull). An audience of 30 people was present.

Two talks for employees at the aquaculture company Marine Harvest was given in March at Portree (Isle of Skye) and in June at Fort William. A total of 28 employees were present.

Thirty-five people attended a presentation at Kilchoan in the Community Centre on 28th September.

In addition, training presentations on cetacean identification were given to all the 58 HWDT volunteers coming to help with different projects in the Marine Discovery Centre, on the boat or in the office. Another presentation has been planned at the Royal Highland Yacht Club (RHYC) in Oban next Spring. The club has about 50 members.

Displays



Several static displays were produced in 2003. An interactive presentation of the Community Sea Life Sightings Programme is now on display at the Marine Discovery Centre in Tobermory. This display presents the goals and objectives of the project, species identification and shows maps of the latest sightings and accompanying interpretation.

A poster (see Appendix IV) has also been produced. It underlines the great diversity of whales, dolphins and porpoises in the West Coast of Scotland and invites people to report sightings of marine life to the HWDT. Moreover, another poster will be designed and displayed on Caledonian MacBraynes Ferries. This poster will include information about HWDT, cetacean species and the Community Sealife Sightings Programme. It will be displayed in both English and Gaelic.



A sightings reporting postcard (see Appendix V) is being printed. This postcard will allow people an easy and convenient way to report their sightings. This postcard will be widely distributed to tourist information and visitors centres as well as to boat and wildlife operators to give to their customers. Currently there is the discussion of the possibility of putting the postcard on the Scottish Tourist Board website. In addition, development and design of a species identification flyer is in progress.

Community Involvement

Community Involvement is the essential keystone and basis of this current project. The project staff are responsible for enlisting as many contributors from as many sectors of the community as possible. Through gathering and reporting their sea life sightings, members of the community will be able to feel that they are actively contributing to the conservation and interpretation of sea life species in their local marine environment.

The number of sightings reports has already increased since last year. Over 1500 sightings have been received so far in 2003 (compared with 1347 in 2002) with a number of sightings waiting to be catalogued. The constant increase in the number of sightings reflects the growing level of public awareness and interest in the species of whales, dolphins and porpoises found in Scottish waters and the dedication of a number of people, both members of the public and local boat operators who regularly report their sightings.

In 2002 and 2003, over 600 people reported sightings. 29 boat & wildlife operators and 36 fish farms actively participate in the scheme. They all receive regular information and updated sightings reports about the Community Sealife Sightings Programme.

Sightings Forms and Data Collection

Several sightings forms have been produced by HWDT. Each form is custom designed with different marine users in mind. A study of sightings forms used by different marine user-groups was carried out and a scientific paper produced from this results. The paper was presented to the Scientific Committee at the 55th Meeting of the International Whaling Commission, 26 May-6 June 2003, Berlin, Germany (abstract in Appendix VI). At the conclusion of this study, a sightings report form was produced (see Appendix VII). This form, showing a map of a specified area, is specifically dedicated to boat and wildlife operators.

Two boat operator companies have recently been equipped with *Logger* cetacean population-monitoring program. This software, designed by IFAW, will considerably improve the accuracy of data collection.

Ecotourism, Sustainable Development, Positive Economic Impact:

The regular dissemination of the results of this project is helping to demonstrate to tourism businesses and visitors to the Argyll islands the diversity of marine wildlife, the frequency with which wildlife can be seen and the best places to see it. This helps to provide a market for marine wildlife tourism. The information will also help local people wishing to develop



their own wildlife tour companies, or wishing to diversify their current businesses, by demonstrating where marine wildlife can reliably be observed.

Moreover, the sightings programme is supplied by data collected by several wildlife tourism operators. Through this assistance, they themselves, help to promote the conservation of the species upon which their livelihoods depend. In addition, by acknowledging the support of individual operators contributing the scheme in publications and materials produced by the project, those marine tour operators that contribute to the scheme receive additional publicity and gain a marketing advantage.

Community Sightings Project Officer and Assistant

The Community Sealife Sightings project entails two staff: a project officer who is primarily responsible for generating and overseeing the activities encouraging a wide spectrum of people to report sightings of marine life. The project officer is helped by a project assistant, who is also responsible for entering sightings data into the Trust's sightings database, as well as plotting sightings on a GIS (Global Information System) map of Argyll, and representing HWDT at various events and shows.

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Appendix I

Education and Interpretation Project



Table 1. Visitor Numbers per month to the Marine Discovery Centre from the period of September 2001 to November 2003

MONTH	YEAR	ADULTS	CHILDREN	TOTAL	CUMULATIVE FIGURES		
					ADULTS	CHILDREN	TOTAL
September	2001	1371	141	1512	1371	141	1512
October	2001	1092	322	1414	2463	463	2926
November	2001	162	11	173	2625	474	3099
December	2001	96	26	122	2721	500	3221
January	2002	61	16	77	2782	516	3298
February	2002	118	50	168	2900	566	3466
March	2002	467	152	619	3367	718	4085
April	2002	681	298	979	4048	1016	5064
May	2002	958	146	1104	5006	1162	6168
June	2002	1188	374	1562	6194	1536	7730
July	2002	2096	843	2939	8290	2379	10669
August	2002	1794	832	2626	10084	3211	13295
September	2002	816	117	933	10900	3328	14228
October	2002	621	200	821	11521	3528	15049
November	2002	38	3	41	11559	3531	15090
December	2002	25	8	33	11584	3539	15123
January	2003	19	8	27	11603	3547	15150
February	2003	65	23	88	11668	3570	15238
March	2003	74	12	86	11742	3582	15324
April	2003	444	264	708	12186	3846	16032
May	2003	753	243	996	12939	4089	17028
June	2003	948	180	1128	13887	4269	18156
July	2003	1592	720	2312	15479	4989	20468
August	2003	2403	1223	3626	17882	6212	24094
September	2003	1185	233	1418	19067	6445	25512
October	2003	685	387	1072	19752	6832	26584
November	2003	121	53	174	19873	6885	26758
TOTALS					19873	6885	26758



Table 2. Details of Schools Visited by HWDT*

SCHOOL	DATE	ATTENDANCE
Tobermory Primary	21/11/01	33
Lochdon	16/01/02	11
Lochdon	23/01/02	11
Iona	05/02/02	10
Bunessan	21/02/02	27
Salen	22/02/02	56
Tiree	13/03/02	64
Berneray Primary	04/02/02	14
Stoney Bridge Primary	04/02/02	20
Paible Primary	04/02/02	75
Paible Secondary	04/02/02	75
Solas Primary	04/02/02	7
Lach Maddy Primary	04/02/02	26
Caranish Primary	04/02/02	30
Balivanich Primary	04/02/02	55
Balivanich Secondary	04/02/02	43
Tobermory Primary	30/05/02	11
Newton Primary	24/06/02	9
Port Charlotte	24/06/02	44
Bowmore	25/06/02	40
Bowmore	25/06/02	30
Keills	26/06/02	35
Port Ellen	27/06/02	48
Port Ellen	27/06/02	44
Cardross	13/09/02	105
Colgrain	13/09/02	62
Gairelochhead	13/09/02	22
Kilcreggan	13/09/02	31
Kirn	13/09/02	28
Lochgoilhead	13/09/02	27
Lomond	13/09/02	26
Luss	13/09/02	33
Rhu	13/09/02	45
Roseneath	13/09/02	25
St Josephs	13/09/02	143
Brodick	05/11/02	42
Shiskine	05/11/02	38
Lamlash	06/11/02	35
Whiting Bay	06/11/02	30
Pirnmill	07/11/02	12
Kilmory	07/11/02	34
Corrie	07/11/02	12
TOTAL ATTENDANCE		1568

*Note: HWDT visited approximately 9 additional schools not included in the table above.



Table 3. Talks Given

TALKS		
LOCATION	DATE	AUDI- ENCE
Bristol	08/09/01	16
Perth	18/09/01	12
Edinburgh	27/09/01	16
Tobermory	03/10/01	23
Tobermory	03/10/01	23
Edinburgh	16/01/02	17
Edinburgh	16/01/02	17
Inverarry	19/02/02	34
Salisbury	28/02/02	32
Tiree	12/03/02	29
Lochgilphead	15/03/02	32
Cumbræ	17/03/02	15
Cumbræ	17/03/02	66
Cumbræ	17/03/02	66
Oban	18/03/02	13
Loch Maddy	12/04/02	30
Tobermory	21/06/02	65
Port Charlotte	11/07/02	57
Glasgow	15/09/02	20
Glasgow	16/09/02	21
Glasgow	19/09/02	25
Glasgow	20/09/02	18
Glasgow	07/11/02	71
Charleston	03/02/02	29
Glasgow	22/02/03	59
Various Other talks on the Argyll and Bute area and Outer Hebrides	Summer 2003	Over 100
TOTAL ATTENDANCE		Over 906

Table 4. Events Attended

EVENTS		
Scottish Wildlife & Countryside Fair		
Loch Leven Perth	03/09/01 - 04/09/01	12,000
Loch Leven Perth	31/08/02 - 01/09/02	15,000
Argyll & Bute Environmental Fair		
Helensburgh	14/09/02	400
Oban	2/06/03 - 3/06/03	
Local Fetes/Shows		
Tobermory Lifeboat day	10/08/02	
Islay Show	08/08/02	
Islay Lifeboat day	28/08/02	
Port Charlotte Fair	31/08/02	
Salen Charities Day	02/11/02	
Firth of Lorne Event	30/05/03	
Marine Com- munity Fair (Dunoon)	19/07/03	100
Aros Park Open Day	26/07/03	
West High- land Yachting Week	6/08/03 - 7/08/03	
Bunessan Agricultural Show	8/08/03	
Salen Agricultural Show	14/08/03	



Table 5. Number of articles appearing in the media about HWDT activities

	TYPE OF MEDIA	NO OF ARTICLES
SEPTEMBER 2001	Local newspaper	1
	Regional newspaper	1
	National newspaper	1
OCTOBER 2001	National magazine	1
DECEMBER 2001	Local newspaper	1
	Regional newspaper	1
	National magazine	1
JANUARY 2002	Local newspaper	2
FEBRUARY 2002	TV – BBC1	1
APRIL 2002	Local newspaper	1
	Regional newspaper	1
	National newspaper	1
	National magazine	1
	Local radio	3
	TV – BBC1	2
MAY 2002	Local newspaper	1
JUNE 2002	Local newspaper	3
	National newspaper	1
JULY 2002	Regional newspaper	1
AUGUST 2002	Regional magazine	1
	National newspaper	1
SEPTEMBER 2002	Local newspaper	3
	Regional newspaper	1
OCTOBER 2002	Regional newspaper	2
NOVEMBER 2002	Regional newspaper	1
	National newspaper	2
DECEMBER 2002	Local newspaper	1
	Local magazine	1
	National magazine	1
JANUARY 2003	Regional newspaper	1
FEBRUARY 2003	Local newspaper	1
	National newspaper	1
	TV – BBC2	1
MAY 2003	Regional newspaper	1
JULY 2003	National newspaper	1
SEPTEMBER 2003	Regional newspaper	1



Table 6. Schools visited by the Marine Outreach Project from 8/02 - 9/03

School	Island	Begin date	End date
Salen primary	Mull	9th September	12th September
Tiree primary	Tiree	17th September	20th September
Arinagour primary	Coll	24th September	26th September
Kiells primary	Islay	3rd October	9th October
Gigha primary	Gigha	28th October	29th October
Lismore primary	Lismore	6th November	7th November
Tobermory primary	Mull	25th November	28th November
Dervaig primary	Mull	24th March	28th March
Lochdonhead Primary	Mull	2nd April	2nd April
Small Isles Primary	Jura	22nd April	23rd April
Port Ellen Primary	Islay	25th April	1st May
Ulva Ferry Primary	Mull	26th May	26th May
Port Charlotte Primary	Islay	17th June	19th June
Bunessan Primary	Mull	24th June	25th June
Iona Primary	Iona	26th June	26th June
Bowmore Primary	Islay	26th August	29th August
Kilchatten Primary	Colonsay	30th October	31st October



APPENDIX II
Marine Outreach Project
Feedback from Teachers and Students



Sample Evaluation Questionnaire

Mrs Margaret Hickson
Headteacher
Lochdonhead Primary School
Mull

date

Dear Margaret,

Thank you for participating in the Outreach Education Project run by the Hebridean Whale and Dolphin Trust. It was a pleasure having Lochdonhead Primary School aboard. It would be very helpful if you could answer the following questions (on a separate sheet or by email) to assist with future school visits.

1. How well were your expectations of the visit to Silurian matched by your experience aboard?
2. Did the activities for the children tie in with the curriculum?
3. Was the 'pitch' appropriate to the knowledge of the different age groups?
4. Were there any activities that you would like to be repeated or extended in a future visit?
5. Having been aboard for the educational session and seen the resources on the Silurian, do you have any suggestions for additional activities?
6. Was the introductory talk at the school, prior to the visit to Silurian, useful for staff and schoolchildren?
7. Did the follow-up session at the school consolidate the visit to the Silurian?
8. Is there an email address for the school to which HWDT can send any updates?
9. How much curriculum time is spent by the children on the internet?
10. Do you have any suggestions for ways we could use the internet in our work with schools?

Thank you very much for giving your time to this evaluation. Please also add any general comments on your experience of the Education Outreach work, particularly any suggestions that you may have for improving or diversifying the project.

Whilst the children were aboard the Silurian and during the sessions at school, we photographed the different activities. With your consent, these photographs could be used in internal HWDT reports and in slideshows / talks. Please could you contact parents to request their consent for the use of photographs of the schoolchildren on the internet and in newspaper articles.

Yours sincerely,

Cheryl Jones
Education Officer
HWDT



To: <education@hwdt.org>
Sent: 30 June 2003 21:50
Subject: Visit to Silurian

Dear Cheryl

Thank you once again for a wonderful outing. I will now endeavour to answer the questions from your questionnaire.

1. We were all looking forward to our visit after the talk that you gave us in school. The outing proved to be just as good as we had expected.
2. All the activities tied in with the 5-14 curriculum and were age appropriate for all the children as they had all had used pipettes before and really enjoyed the practical experience of searching for the plankton by using the microscope.
3. The activities were an appropriate time as none of the children became restless or inattentive. Some of my children had a short concentration span but none showed this when we were on the boat.
4. What we took part in was of great interest to all the children. (You have me here as I was very satisfied with the activities that you gave us)
5. Very useful.
- 6.
7. I am in the house at the moment so I am not sure of the e-mail address for the school but I will get it to you but as I check mine every day you could send information through mine.

The children use the internet quite a lot for research work.

We all enjoyed our day and hope to do it again sometime.
Thanks
Liz



Small Isles Primary School,
Craighouse,
Isle of Jura,
Argyll PA60 7XG
25/6/03

Miss Cheryl Jones,
Education Officer,
Hebridean Whale and Dolphin Trust,
28 Main Street,
Tobermory,
Isle of Mull,
Argyll PA75 6NU

Dear Cheryl,

Many thanks for your recent letter and digital phonographs taken during the Silurian visit. You will I think already have received some letters from our pupils. They must give a clear idea of how enjoyable and informative we all found our day with you and your colleagues. The activities which they were able to participate in linked well with the science area of the 5-14 curriculum (Living Things and Life Processes.)

It's always difficult in a small school to cater for the differing age range and the widely differing spread of ability which that brings. However, I do think that with the extra adult input/assistance which we were able to offer the younger, less able pupils, sufficient differentiation was provided and everyone was able to engage with tasks/situations at his or her own level.

I thought that the visit to the school beforehand was important. In fact this was probably an essential element in the whole project. When you're taking groups of pupils into a different "environment" it's important to prepare them in advance (in terms of what they might be expected to see, appropriate behaviour etc.) Our pupils certainly found it useful. Some of them said to me that it was a good preparation for what they'd be doing the following day, without actually spoiling the surprise and spontaneity of the visit itself.

Incidentally I've asked for their opinions prior to tackling this evaluation so what I'm forwarding to you very much reflects their views of this visit.

Our email address for any future updates/communications is enquiries@smallisles.argyll-bute.sch.uk

It's difficult to respond to your enquiry about time spent on the Internet. This varies. It tends to be used to support projects/activities which are on going in the school at any time, so it's used as a learning/teaching aid when required but it's difficult to put a time on this. The children have, of course, accessed your site. They think it's really tremendous. We spent quite a bit of time discussing this. We also discussed favourite parts of the visit to the vessel itself and got a wide range of responses. All activities which you had organised for them proved to be popular and enjoyable (plankton sampling and listening to underwater sounds through the hydrophones were particularly mentioned by many pupils) One pupil found the touch pool to be of less interest than the other activities. (He had already done this twice at the Sea Life Centre in Oban and reckoned that you could do this kind of thing at any time on a place like Jura). This was, however, an isolated response which no one else agreed

with and I would personally question just how much time our children spend examining rock pools during out of school hours.

All activities were certainly of great educational value and should be incorporated into future visits.

We have already discussed the possible use of photographs taken during the visit during our recent telephone conversation. I regret, again, that it will not be possible to include photographs of pupils in any web pages for inclusion on the Internet.

However for purposes of internal HWDT presentations / exhibitions etc we are only too happy for slides/photographs of the children to be utilised.

I hope that this evaluation may prove to be of some use. Please accept our thanks, once again, for all your work (and that of your colleagues) with our pupils. It really was a most enjoyable visit and one that we hope may be repeated at some future date. (We have not forgotten the pennants and these will follow under separate cover in the new school session)

With best wishes from everyone at Small Isles,

Yours sincerely,

Sandy Oatson.



Lochdonhead Primary School
Lochdon
Isle of Mull
PA64 4AP

02/07/2003

Dear Cheryl

Please find my response to the visit we had to Silurian as requested.

1. The visit was excellent. I must say that I did not have any clear expectations, since I had such a variety of primary stage children with me and I wondered how the activities would meet their needs.
2. I found that the information given about the boat by the crew was pitched entirely at the correct level for the children and delivered in a positive and friendly way.
3. The children were not phased by any questions or discussions, but were enthusiastic about the activities and joined in discussion readily. It was really good to get the opportunity to dip and observe 'sea life'. It was good from my point of view because you all had the expertise to deal with the scientific aspects in a way which would not have been possible in the school.
4. I think that the activities should maintain a scientific basis - possibly opportunities to sketch specimens and do a little research on them could be added to existing activities.
5. The introductory talk was very useful - it set the scene for the visit and provided valuable opportunities for assessing the children's prior learning, knowledge and understanding.
6. Can't answer this yet.
7. email addresses are as follows:-
 - school:-
enquiries@lochdonhead.argyll-bute.sch.gov
 - children:-
class1@lochdonhead.argyll-bute.sch.gov
 - me:-
hicksonm@lochdonhead.srgyll-bute.sch.gov

Time spent on the internet varies according to the needs of a specific topic. Off the top of my head perhaps you could set up

quizzes

specific tasks for enquiry related to visits

*follow up reports
design tasks
questionnaires*

Perhaps you could schedule a specific task for a time when you are in Tob? Maybe it could be prior to the visit, following the lines of some specific things you wanted the children to find about that would be relevant to their time on board. You could indicate a specific web site where they could access the information, perhaps.

I am sending the children's 'Thank Yous' with many apologies for their lateness - I thought I had already sent them !!

I hope the above is of some use. I look forward to seeing you in Aug/Sept.

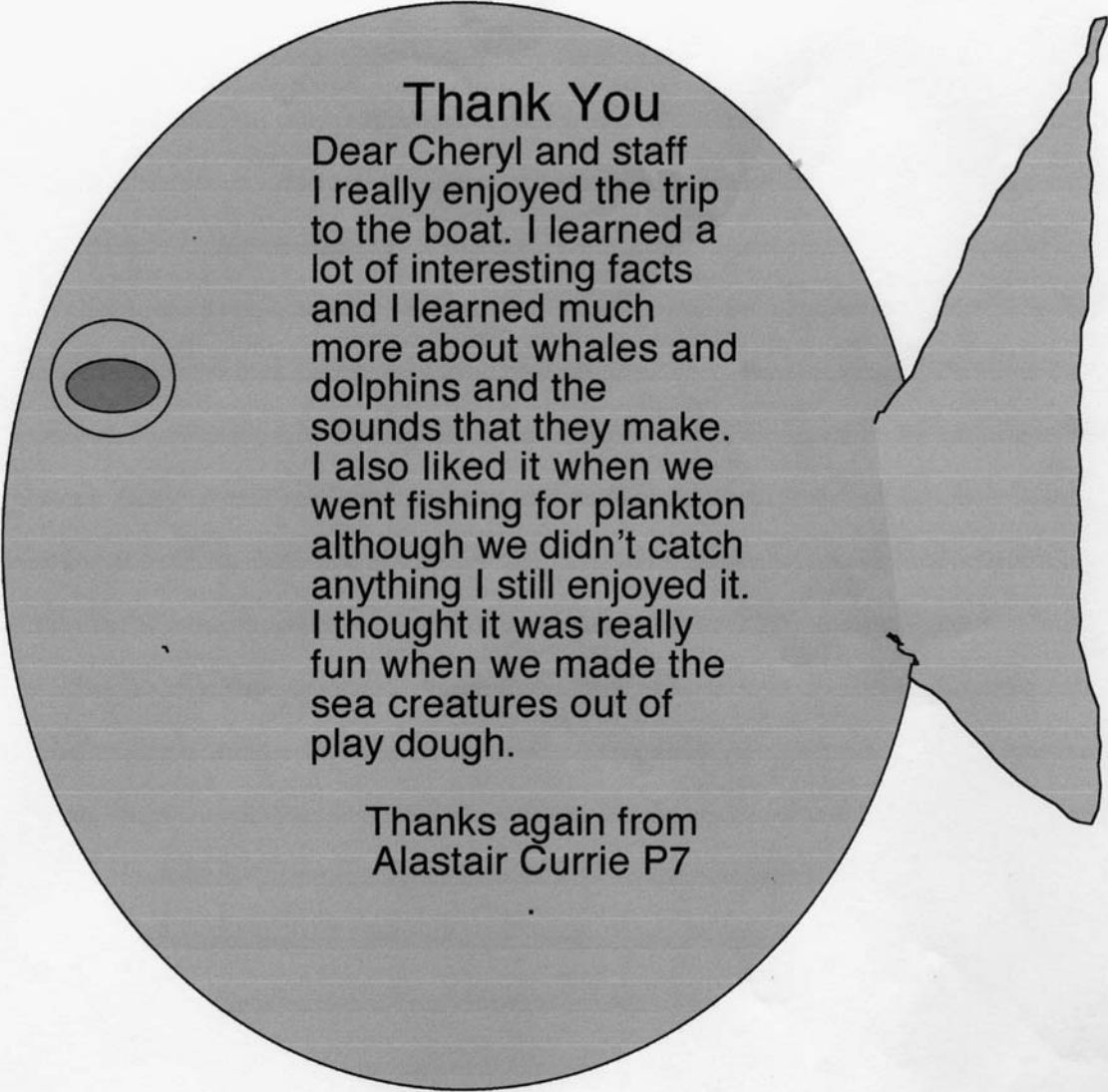
Cheers

Annie

Annie Hickson

P.S. The staff all had a great day too !





Thank You

Dear Cheryl and staff
I really enjoyed the trip
to the boat. I learned a
lot of interesting facts
and I learned much
more about whales and
dolphins and the
sounds that they make.
I also liked it when we
went fishing for plankton
although we didn't catch
anything I still enjoyed it.
I thought it was really
fun when we made the
sea creatures out of
play dough.

Thanks again from
Alastair Currie P7





Sea is no match for the Silurian boat.

It is a beautiful vessel

Lucky were we to be able to visit

Underwater was the hydrophore. I enjoyed listening

I **R**eally enjoyed seeing the plantation

It was great meeting the crew

Animals swim around the boat fishes, dolphins and whales I hope

Now we are to leave on no. I had a great time thank you

by Heather Gosh

P6

Derrisig school



Lochdonheadprimary school
Lochdon
Isle of Mull
PA64 6AP

Dear Alan

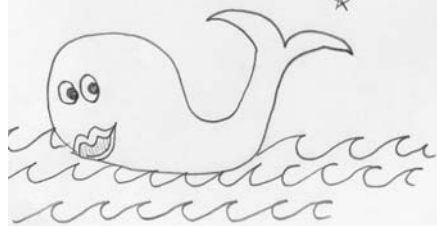
Thank you so much for inviting us to your lovely boat, the Silurian.


We really really enjoyed seeing the plankton through a microscope and hearing all the sounds underwater and the noise of the whales, dolphins a seal and a porpise; they were cool!


I had a great day on the silurian.

Thanks again.

Hazel Kedd
*




Small Isles Primary School,
Isle of Jura,
8th May 2003
Dear Miss Jones,
Thank you for letting
us go on the boat Silurian. My
favourite thing was listening
to the underwater sounds. I
liked looking at the crabs and
the model whale. It was very
interesting. From
Nicky



APPENDIX III
SIGHTINGS SUMMARY REPORT



HWDT Community Sealife Sightings Programme



July 2003

Tom Gaillard



Community Sealife Sightings Programme

This report presents an overview of sightings of cetaceans and basking sharks that HWDT has received over the past 7 months. A summary of different sightings for each month is presented in pages 2 and 3. Distribution maps of the observations are shown in pages 4, 5 & 6. Please remember that the report is not exhaustive and the number of sightings will undoubtedly increase for this period as HWDT are still receiving data from May, June and July.

So far in 2003, HWDT has received 683 reports in the West Coast of Scotland. The details of the sightings are shown below. Of the reported sightings so far, 25.3% were from HWDT team on board *Silurian* and those working on the Hebridean Bottlenose Dolphin Project (HBDP) based on Islay, 52.1% from boat and wildlife operators, 0.9% from people working in the fishing industry and 21.7% by members of the general public and yachtsmen.

SPECIES	Month							TOTAL
	Jan	Feb	Mar	Apr	May	June	July	
Harbour Porpoise	14	2	4	34	99	166	39	358
Minke Whale	0	0	0	13	68	32	60	173
Bottlenose Dolphin	26	0	1	26	23	12	5	93
Common Dolphin	1	1	0	7	11	11	3	34
Dolphin species	0	0	1	8	3	4	1	17
Basking Shark	0	0	0	0	1	1	2	4
Killer Whale	1	0	0	0	1	0	0	2
Cuvier's Beaked Whale	0	0	0	0	1	0	0	1
Large Whale species	0	0	0	1	0	0	0	1
TOTAL	42	3	6	89	207	226	110	683



JANUARY

New Year welcomed a group of 12 Bottlenose dolphins to the Sound of Mull. The group were spotted at different occasions during the first week of January between Craignure and Tobermory. Within the group, 3 calves accompanied the others. HWDT team on board *Maid of The Mist* (J. Fairbairns, Sea Life Surveys, Ecocruz) undertook a winter survey (9/01/2003) in the Sound of Mull where 5 porpoises were seen that day between Salen and Tobermory.



Bottlenose dolphins

©S. Potter

Harbour porpoise is the smallest cetacean found in UK waters. It's also the most distributed species. Porpoises have a small triangular dorsal fin, are very boat shy and usually travel in small groups or solitarily. **Bottlenose dolphins** are much more robust animals. They will frequently bow-ride and leap out of water. They are often in groups of 5 to 20 individuals. Both Harbour porpoise and Bottlenose dolphin are commonly seen in coastal area, sounds and lochs. They may be seen all year round.

FEBRUARY

Only 2 Harbour porpoises and an unconfirmed sighting of 2 Common dolphins were reported during the winter survey by the HWDT team on board *Maid of the Mist*



Harbour porpoise

©Sea Life Surveys

MARCH

Few sightings of Harbour porpoise, Bottlenose dolphin were recorded. HWDT received some sightings of dolphins but the species was not identified. Bad weather in March could have influenced the poor sightings rate.



Minke whale with *Silurian* in the background

©J. Cunningham

APRIL

April is usually the start of the season for many boat & wildlife operators around the islands. The number of sightings consequently increased to 89 reports.

HWDT on board *Silurian* (HWDT vessel) conducted the first cetaceans survey around the Argyll Islands. During a 10 day trip, they reported sightings of Harbour porpoises, Bottlenose dolphins and the first sightings of Minke whales, off the west coast of the Isle of Islay. Sea Life Surveys also reported sightings of Minke whale during this week (3rd—9th April).

Minke whale is one of the smallest of the baleen whales (about 10m long) and is commonly sighted in the Hebrides between April to October. They are often in association with a number of seabirds when feeding.

MAY

May saw a considerable increase in the number of sightings, a total of 207 records. This is also the month with the richest diversity of species so far this year.

From a Cuvier's Beaked whale travelling off the Isle of Eriskay to a family of 4 Killer whales (2 adults, 2 juveniles) enjoying a pleasant evening off Sorisdale, Isle of Coll, May offered, so far, the richest diversity of species. 8 species have been identified and some sightings of unidentified dolphin were also recorded.

Killer whales are classified in two groups; some of them are called 'transient', they cover a large area and feed on marine mammals such as seals, porpoises or dolphins. The other group, called 'resident' tend to feed principally on fish.

A resident population of Killer whales has been observed around the West Coast of Scotland. One of them, a male called 'John Coe' has been seen for the past 15 years. He's recognised by a large nick at the base of the trailing edge of his fin. (see picture)



Killer whales. 'John Coe' in front.

©Sea Life Surveys

JUNE

A total of 226 sightings have been gathered in June, 73% of reports were Harbour porpoise, the Sound of Mull and Jura were hotspots.

A sunny day and mirror seas brought ideal conditions for people on board *Silurian* to watch over 40 Harbour porpoises in total between the Gulf of Corryvreckan and Sound of Jura on 16/06/2003.

The most common species of Hebridean waters were seen in June, such as Harbour porpoise, Bottlenose dol-



Common dolphin

©PGH. Evans

JULY

In July, HWDT started land-based cetaceans surveys at Ardnamurchan lighthouse. A team of 4-5 volunteers each month will carry on the project till September. During these 3 months of survey, they will investigate habitat use and cetacean interaction with boats.

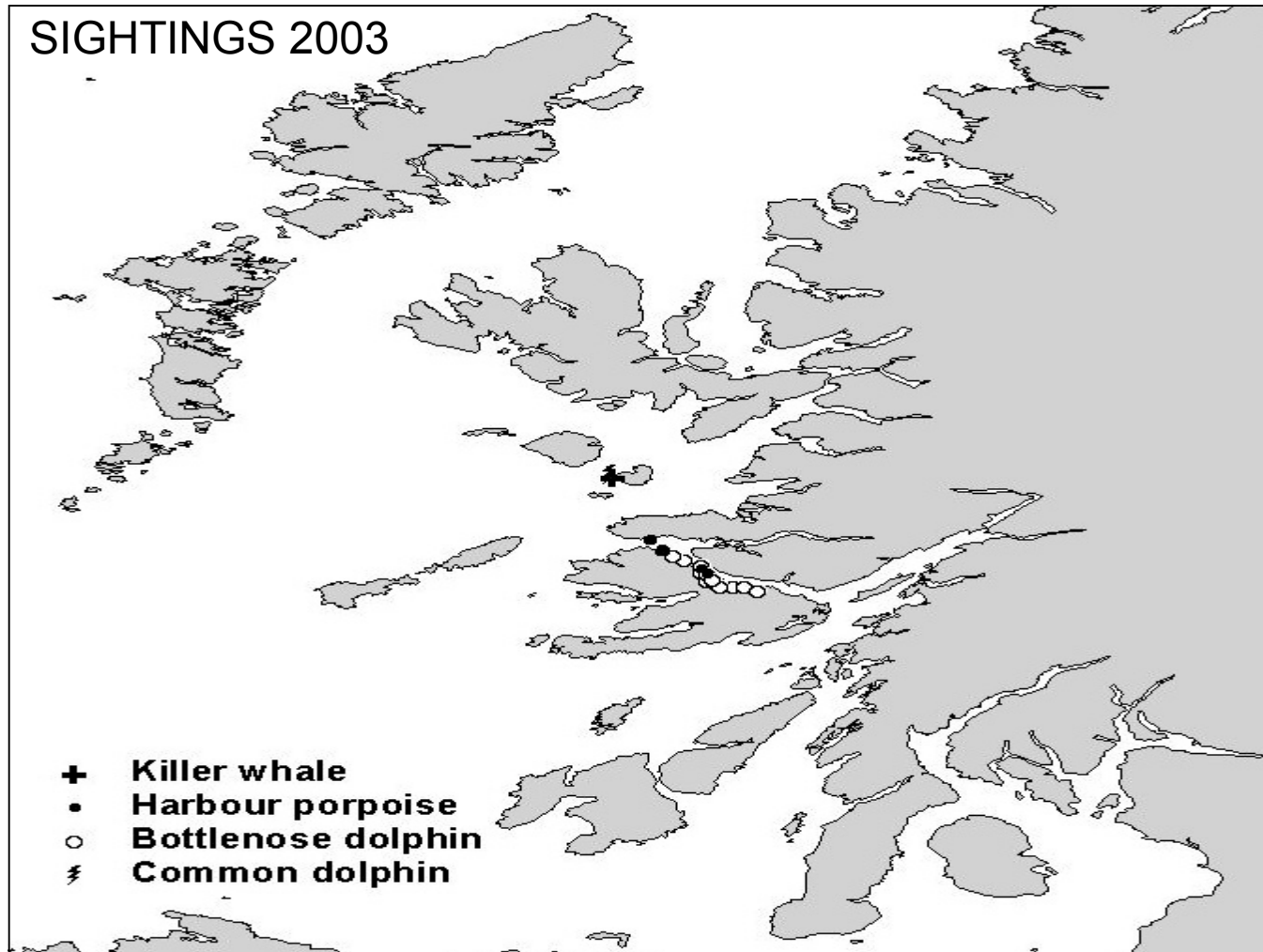
So far a large number of Minke whale have been spotted around Ardnamurchan and the Isles of Muck and Eigg. These baleen whales are now beginning to move further north than during May or June.

Passengers on board *Alpha Beta* (Whale Watch Scotland, Sea Life Surveys) and *Flamer* (Inter Islands' Cruises) witnessed a pod of 400 Common dolphins bow-riding and jumping out of the water off the North Coast of Coll.

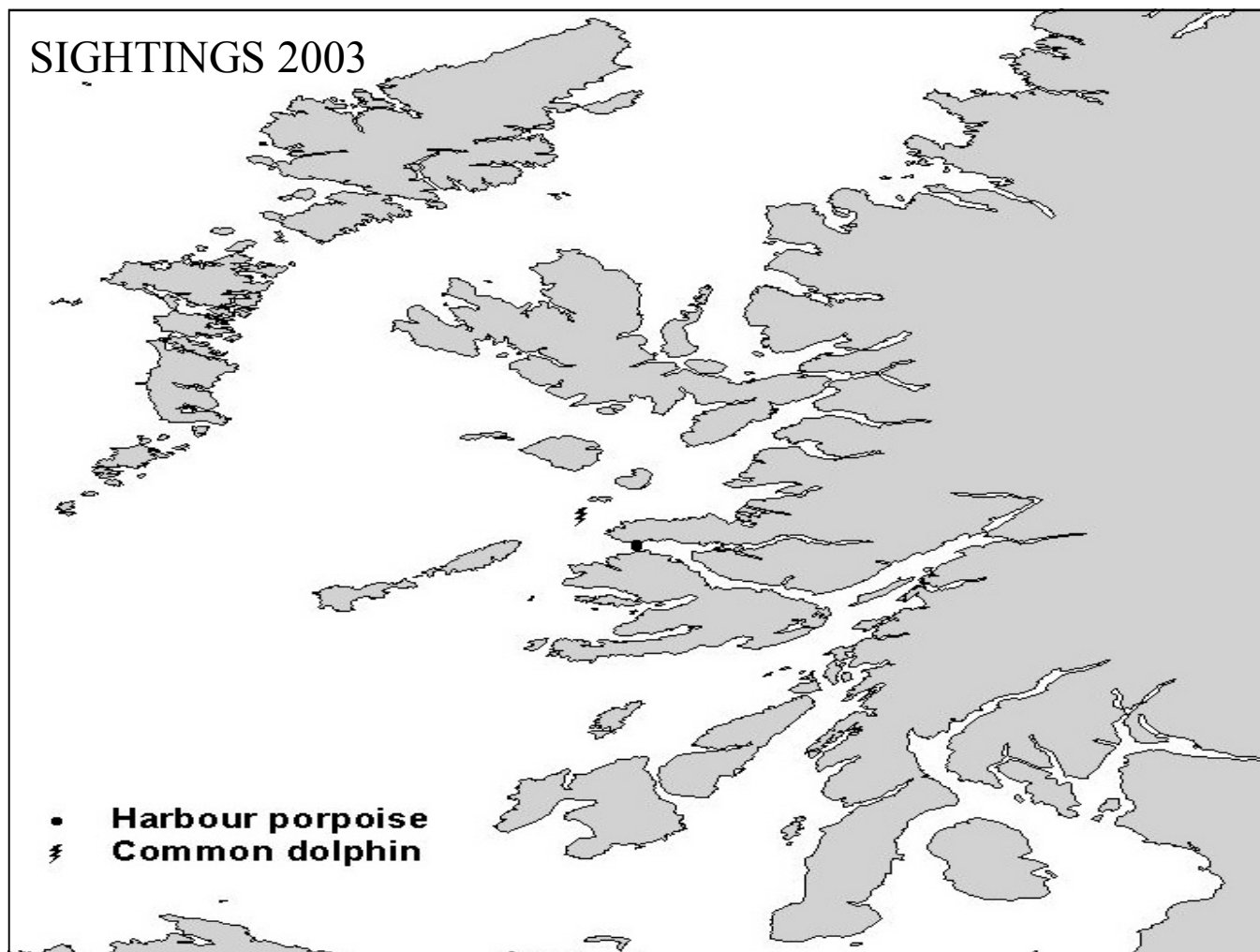
We have had 110 sightings so far. The number of sightings in July is not complete. Species such as Killer whale, Risso's dolphin or Sei whale have already been seen this month, and summer has only just started!!!!

Common dolphins have a sleek shape with a characteristic hour-glass colouration on their flanks. They are fast-moving and very active, often bow-ride and breach. Common dolphins travel in large groups of 50 up to 500 individuals.

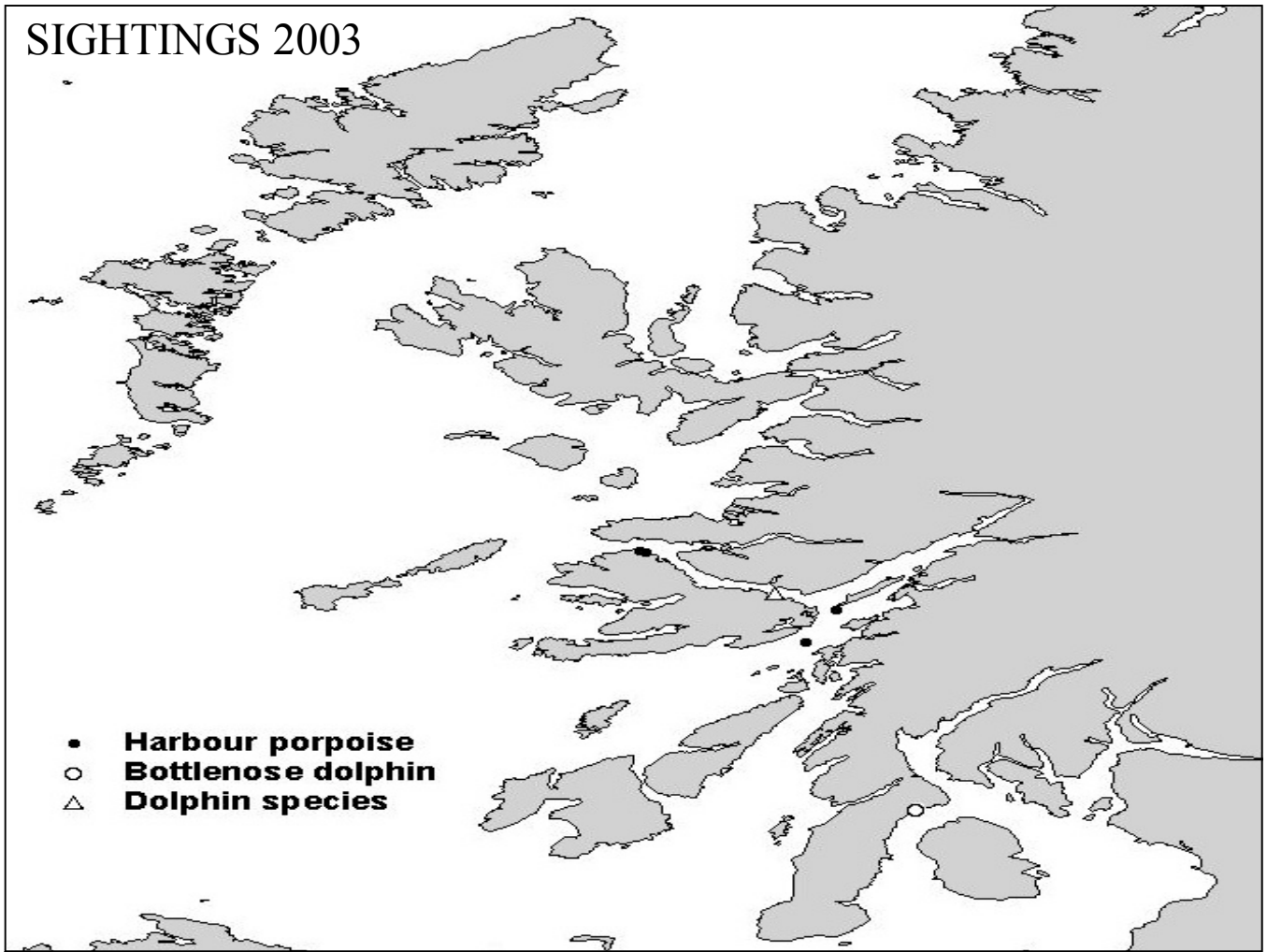
SIGHTINGS 2003



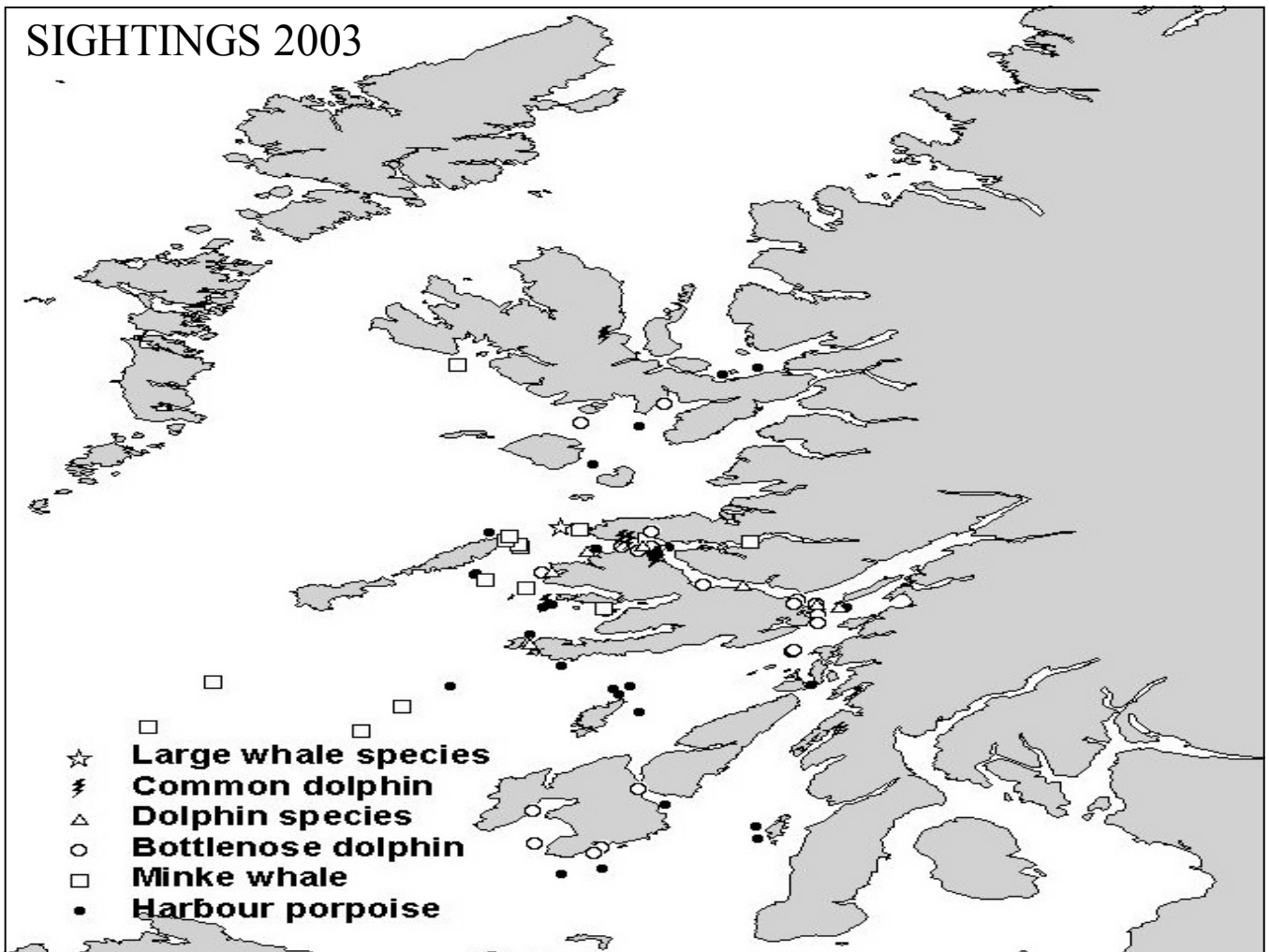
SIGHTINGS 2003



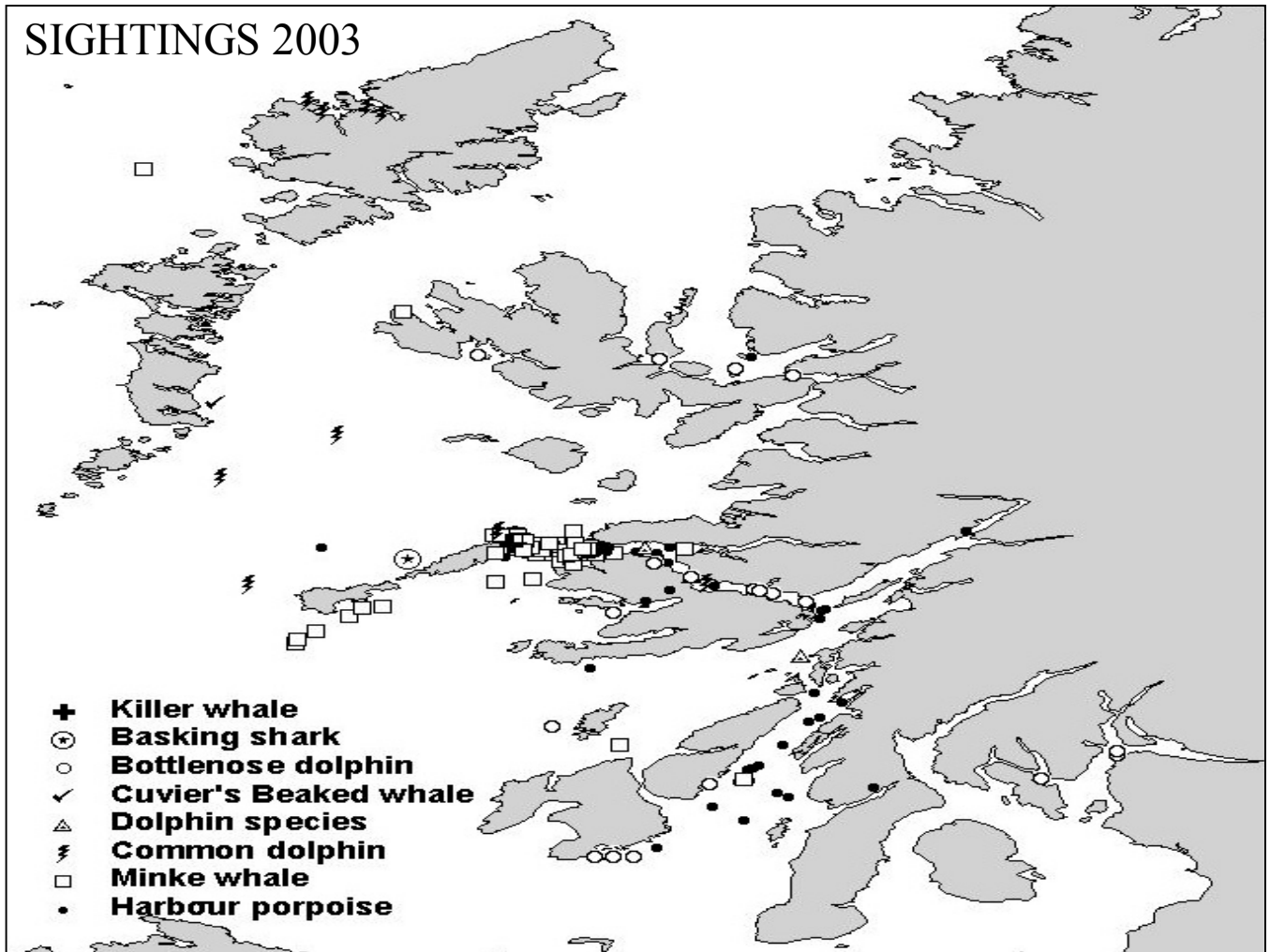
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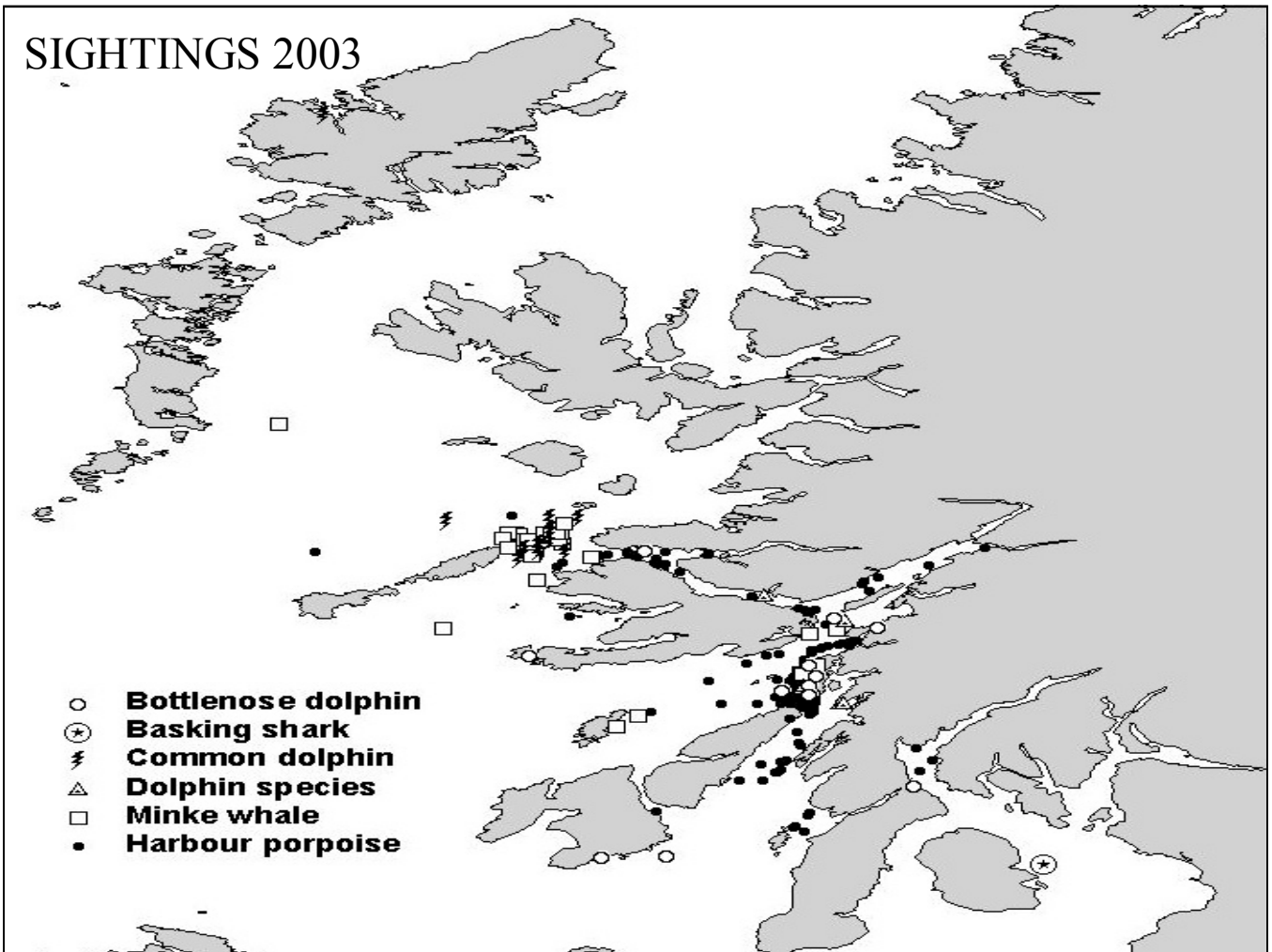
SIGHTINGS 2003



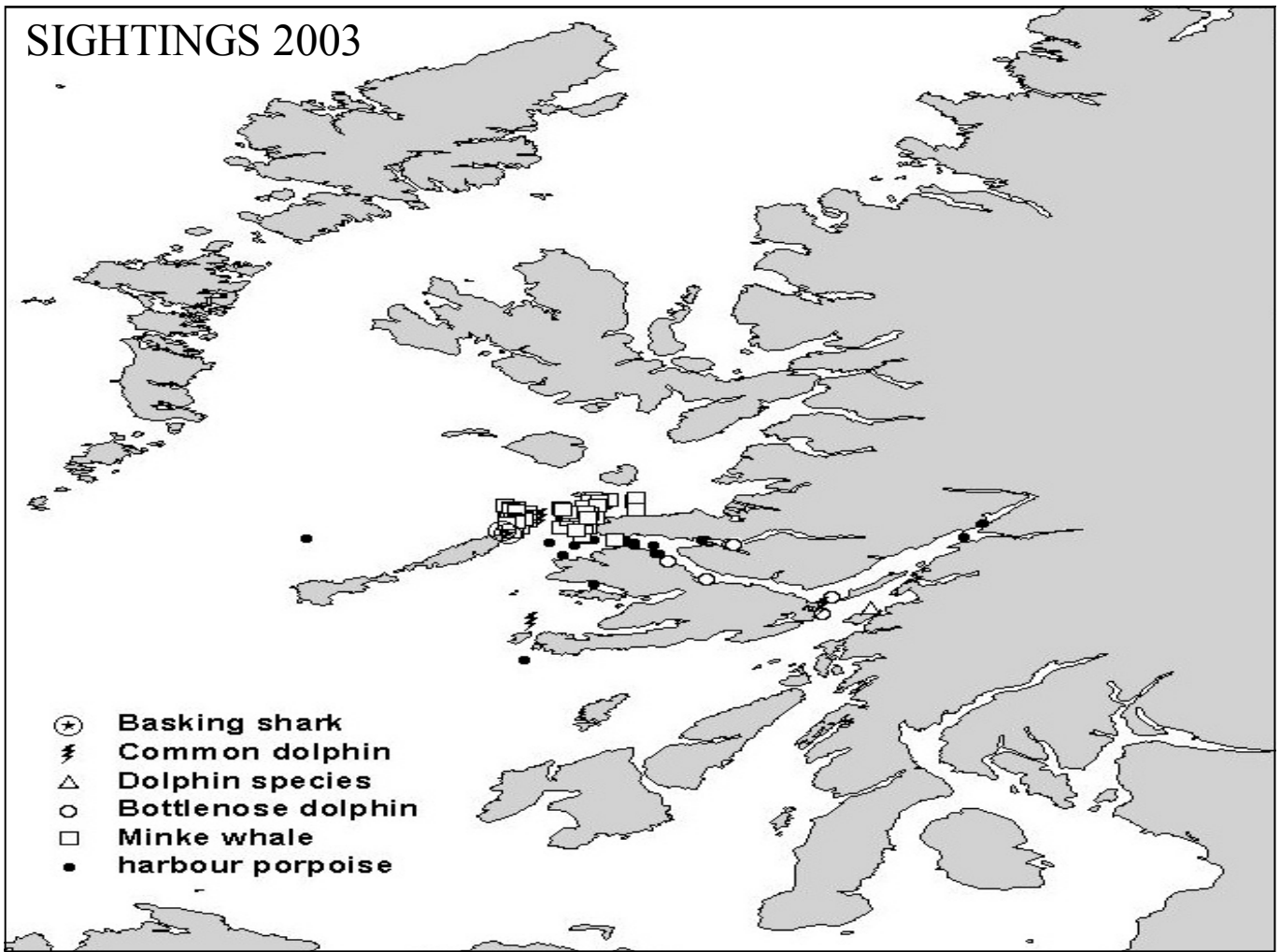
SIGHTINGS 2003



SIGHTINGS 2003



SIGHTINGS 2003



Acknowledgements

Hebridean Whale & Dolphin Trust would to thank all boat and wildlife operators who contribute to the Community Sealife Sightings Programme; Murray Macleod, Calum MacKenzie, Nigel Smith, David Woodhouse, Pam Simmister, Pam & Arthur Brown, Douglas & Mary Lindsay, Tony Hill & his crew, John Bowler, Peter Fowler, Brennen & James Fairbairns and their crews, Robin Coles, David Ainsley, Nick Peake, Annette MacKay, Hamish Munro, Andy Tibbetts, Phillips Duncan, Jeremy & Jenny Matthew, Alec Blanc, Colin & Iain Morrison.

For more information about HWDT, please visit the website at www.hwdt.org. You can also contact us at 28 Main Street, Tobermory, Isle of Mull, PA75 6NU. Tel.: 01688 302 620. Email: hwdt@sol.co.uk



APPENDIX IV

POSTER



APPENDIX V
SIGHTINGS POSTCARD



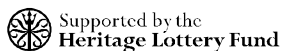









The waters around the Hebrides contain a rich diversity of marine life. 24 species of whale, dolphin & porpoise have been observed in the waters of western Scotland. Please report your observations to the Hebridean Whale & Dolphin Trust. Your sightings will also be incorporated in the national sightings scheme run by Sea Watch Foundation.









For more information, please contact us at sightings@hwtdt.org
or 28 Main Street, Tobermory, Isle of Mull, PA75 6NU. Tel: 01688 302858

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**Hebridean Whale and Dolphin Trust
28 Main Street
Tobermory
Isle of Mull
PA75 6NU
Scotland**



<p>Harbour Porpoise</p>  <p>•Length: 1.4-1.8m •Harbour porpoises have a small triangular dorsal fin centrally placed on the back. The rotund body is dark, but paler underneath. They have a blunt head with no beak. •Rarely leaps clear of water; a common view is a brief glimpse of back and small fin. Usually solitary or in small groups.</p>  <p>©P. Fisher</p>	<p>Common Dolphin</p>  <p>•Length: 1.6-2.6m •This sleek dolphin has a distinctive hour-glass colouration on its flanks. •Fast-moving and highly active; often bow-rides and breaches. Large groups of up to 30 are common, and often in to the hundreds.</p>  <p>©PGH. Evans</p>	<p>Minke Whale</p>  <p>•Length: 7-9m •Only a fraction of the dark grey body is seen on surfacing. But pale underside and striking white band on flippers can be seen on a close encounter. •Usually solitary, the blow is indistinct before the back slowly arches over to show a sickle shaped dorsal fin.</p>  <p>©PGH. Evans</p>	<p>White-beaked Dolphin</p>  <p>•Length: 2.5-3m •Short white beak, large centrally placed fin, dark grey in colour with a white area on the flanks extending upwards over back behind the fin. •Often breaches, tailslaps and bow-rides. Usually in small groups of 4-10 animals.</p>  <p>©D.M. Burn</p>
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<p>Risso's Dolphin</p>  <p>•Length: 2.3-3.8m •This bulky dolphin has a rounded head and no beak. The dorsal fin is tall and curved. The body is grey but white scars accumulate over time and older animals can appear almost completely white. •Usually in small groups and often very active with 'tail-slapping' a common behaviour.</p>  <p>©A. Gill</p>	<p>Bottlenose Dolphin</p>  <p>•Length: 2.6-3.9m •The robust shape and apparently 'bottle-shaped' beak is well known. Uniform grey in colour with paler underside, the bottlenose is surprisingly large and very bulky. •Small groups are often seen travelling very close to the shore. Gregarious in nature, bottlenoses will frequently bow-ride.</p>  <p>©S. Potter</p>	<p>Killer Whale</p>  <p>•Length: 4.5-6.6(F) 5.7-9.5m(M) •Black with pure white belly and 'eye patch' makes a striking sight when seen clearly. The triangular dorsal fin of an adult male is very tall-up to 1.8m. The fin is smaller and more curved in females and juveniles. •Usually seen in small mixed groups or as lone individuals, killer whales range for many miles.</p>  <p>©J.R. Heimlich-Boran</p>	<p>Atlantic White-sided Dolphin</p>  <p>•Length: 2-2.8m •Black on back with a white band along the flanks below the dorsal fin and a yellow band extending backward to the tail stock, large centrally placed dorsal fin. •Active fast swimmers, may leap clear of water. Large group of 100's offshore, although small groups of around 20 can be seen inshore.</p>  <p>©D. Rendtorff</p>
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RECORD AS MUCH INFORMATION AS POSSIBLE, BUT REMEMBER THAT EVEN PARTIAL DATA MAY BE HELPFUL!

Name & Address:

Tel/Email:	Date:	Time:
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Location of Sighting (if latitude & longitude not available, include grid reference or distance to local landmarks):

Sighted from: Land / Yacht / Motorboat / Fishing Boat / Ferry **Name of the Boat or Ferry course:**

Species and Description of Animal Seen: Definite Probable Possible

Details of Behaviour (e.g. blow, slow-normal swim, fast swim, feeding, leap-splashing, bow-ride, rest-milling, sexual):

Direction of animal travel: Associated seabirds:

Number Seen:	Distinguishing Marks
No. Adults: No. Juveniles:	

Sea State

Mirror calm
Slight ripples
Small wavelets
Few whitecaps
Many whitecaps

Swell Height

None
Light (0-1m)
Moderate (1-2m)
Heavy (>2m)

Visibility

< 1km
 1-10km 59
 > 10km

THANK YOU FOR YOUR HELP.
Would you like to receive any further information about the Community Sightings Programme?

Yes No
 In addition, sightings forms are available on-line by visiting our website at www.hwdt.org

APPENDIX VI

ABSTRACT SCIENTIFIC PAPER



GAILLARD, T., PARSONS, E.C.M. and DELL, C. 2003. Field trials of whalewatching data collection forms in West Scotland. Paper presented to the Scientific Committee at the 55th Meeting of the International Whaling Commission, 26 May– 6 June 2003, Berlin, Germany. SC/55/WW3.

ABSTRACT

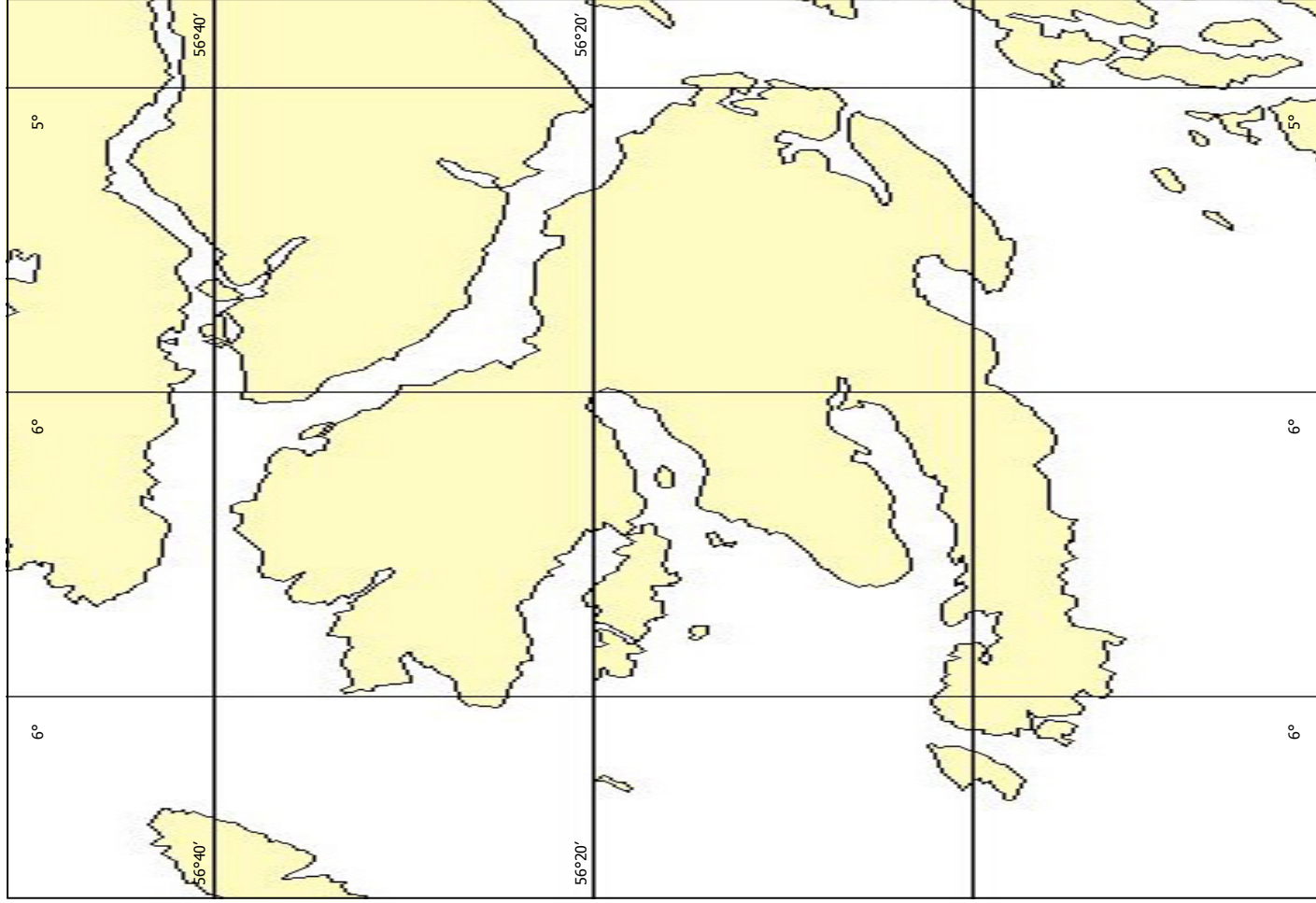
In the summer of 2002, forms derived from the whalewatching Data Recording System (DRS) master form were field tested in West Scotland. Data recording forms were sent to 33 whalewatching companies, of which 23% returned completed forms. In addition a further 23% of companies pledged to record sightings and return forms in the forthcoming year, *i.e.* 45% of operators agreed to record sightings using the DRS derived form. A total of 609 sightings of cetaceans were recorded on the forms given to whalewatching tour operators. Two-third of the sightings were recorded on the simplest of the three forms designed for whalewatching boats. Scientific data fields on all of the returned were completed fully. DRS derived forms were also distributed to members of the public and members of the fishing industry. A further 332 cetacean sightings were reported via these forms, thus indicating that the DRS forms can be applied to other marine user-groups, in addition to whalewatching operations.



APPENDIX VII
SIGHTINGS REPORT FORM



AREA



CONTACT NAME: ...Pam & Arthur BROWN (Discover Mull)

ADDRESS: ...Oskamull Farmhouse, Ulva Ferry, Isle of Mull.....

Sighting Ref	Date	Time	Species	Conf.	Sea State
Total Number:					
Max:					
No. Adults	No. Juvs	No. Calf	Notes (Behaviour, Ass seabirds, distinguishing marks)		

Sighting Ref	Date	Time	Species	Conf.	Sea State
Total Number:					
Max:					
No. Adults	No. Juvs	No. Calf	Notes (Behaviour, Ass seabirds, distinguishing marks)		

Sighting Ref	Date	Time	Species	Conf.	Sea State
Total Number:					
Max:					
No. Adults	No. Juvs	No. Calf	Notes (Behaviour, Ass seabirds, distinguishing marks)		

Sighting Ref	Date	Time	Species	Conf.	Sea State
Total Number:					
Max:					
No. Adults	No. Juvs	No. Calf	Notes (Behaviour, Ass seabirds, distinguishing marks)		

Sighting Ref	Date	Time	Species	Conf.	Sea State
Total Number:					
Max:					
No. Adults	No. Juvs	No. Calf	Notes (Behaviour, Ass seabirds, distinguishing marks)		