

## ***Darwin Initiative Annual Report***

### **Important note:**

To be completed with reference to the Reporting Guidance Notes for Project Leaders – it is expected that this report will be about 10 pages in length, excluding annexes

**Submission deadline 30 April 2008**

### **Darwin Project Information**

Project Ref Number	14-005
Project Title	Conservation of Pakistan's Marine Cetacean Biodiversity and Pelagic Environment
Country(ies)	Pakistan
UK Contract Holder Institution	University Marine Biological Station Millport (University of London)
UK Partner Institution(s)	University Marine Biological Station Millport (University of London)
Host country Partner Institution(s)	1) WWF-Pakistan & 2) Centre for Excellence in Marine Biology (CEMB) at Karachi University
Darwin Grant Value	£167308
Start/End dates of Project	01 October 2005 / 31 September 2008
Reporting period (1 Apr 200x to 31 Mar 200y) and annual report number (1,2,3..)	01April 2007 to 31 March 2008: Annual Report 3
Project Leader Name	Dr. Mauvis Gore
Project website	<a href="http://www.gla.ac.uk/centres/marinestation/index.html">http://www.gla.ac.uk/centres/marinestation/index.html</a>
Author(s), date	Dr. Mauvis Gore, Prof. P. Jamal Siddiqui, Dr. Ejaz Ahmad / Dr. Ghulam Akbar, 30 April 2008

### **1. Project Background**

As summarised in the previous Report, evidence before the start of the project indicated that significant, previously unstudied populations of over 20 species of whale and dolphin (App. 1.3) occur within the Pakistani EEZ (NE Indian Ocean). Little had been published on marine mammals or the marine ecosystem conservation of Pakistan. Work on illegal whaling off

Pakistan in the 1960s suggests large numbers of different whale species at that time. Thus, it was surmised that whales may use particular areas for both calving and feeding, complementing the deep-water upwelling regions off Oman. Subsequent to the whaling, the International Whaling Commission designated the Indian Ocean Sanctuary to protect the area from whaling. Research in Oman comprise the main information source on cetaceans in the Arabian Sea and North Indian Ocean, but information for Pakistan is missing. At the same time, cetaceans are vulnerable to several impacts. The oil spill off Karachi in June 2003 demonstrates the vulnerability of the Pakistani marine ecosystem of vulnerable to harm. Pakistan has increased both fish exports and the number of licences for foreign trawlers fishing in Pakistani seas, leading to overfishing. The impact on the ecosystem is felt by the removal of a level of the food chain, such as oil sardines, and the increased likelihood of the main problems cetaceans face in Pakistani seas. These problems include ship strikes and entanglement in fishing gear. Staff at both WWF Pakistan and Centre of Excellence in Marine Biology, Karachi University in Pakistan, have recognised the need for urgent action to gain information on cetacean abundance and the pelagic ecosystem. The project emphasises, through Karachi University, capacity building and training of Pakistani students, academics and fisheries officers. Sustainability will also be achieved by establishing, with WWF-Pakistan, an active national cetacean conservation group.

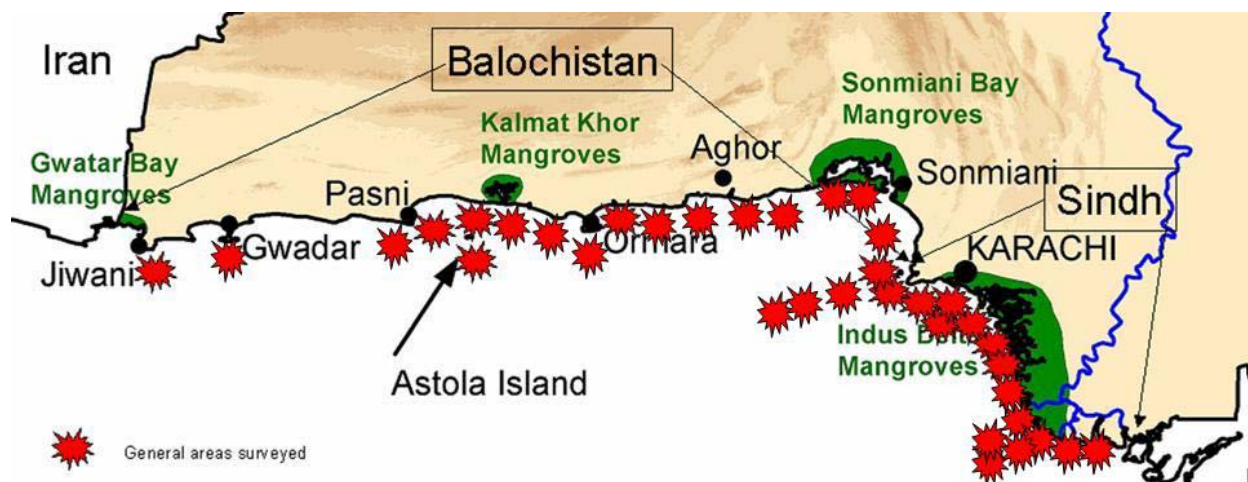


Fig. 1 Map of Pakistan coast, showing areas surveyed to date.

## 2. Project Partnerships

Our two lead partners in Pakistan are WWF-Pakistan (WWF-P) and the Centre of Excellence in Marine Biology (CEMB) at Karachi University (KU). The combined project team, Cetacean Conservation Pakistan (CCP), includes two Project Officers (PO) based at WWF-P, and two Research Officers (RO) based at CEMB at the offices of Prof. Siddiqui. Through WWF-P, the team has worked on raising awareness, focusing on fisher communities, and conducted extensive community (App. 1.5-6) and beach surveys. They have also been responsible for the launch and initial running of the national cetacean conservation group “Pakistan Whale &

Dolphin Society”. WWF-P provides office facilities and logistics for the field and community work. Through CEMB, the ROs have worked on boat surveys (App. 1.7), updating the databases and undertaking analysis with office, and reporting from laboratory facilities within CEMB. During our periods in Pakistan, the Darwin Initiative (DI) CCP team meet at CEMB (KU) or at WWF-P Karachi office, on a daily basis. WWF-P has also helped source significant supplementary funding for the project work through the UNEP and government funded Pakistan Wetlands Programme (PWP). Through the Darwin Initiative, our CEMB partner has also obtained a British Council DELPHE grant, which takes time to sustain and run.

### **Other Collaborations**

1. Project Advisory Panel (PAP): includes (App. 5) representatives of key organisations (6 governmental, 3 NGO, 1 university with 3 depts) involved with conservation issues in Pakistan. These organisations/institutions had not worked together before the DI Project and this has been of crucial importance in advancing conservation issues in Pakistan. (App. 1.4)

In addition, specific and pertinent collaborations in the past year have included:

#### GOVERNMENT DEPARTMENTS AND INSTITUTIONS

2. Pakistan Navy: continued through our Liaison Officer Commander Liaquat Ali to help with logistics and advice on visiting restricted areas near the coast and at sea. Through Cdr. Liaquat, the Navy offered to fund 50% of the KU-based Marine Mammal Course.
3. National Institute of Oceanography (NIO): We met with the Director-General Dr. M. Rabbani, Dr. Samina Kidwai (Principal Scientific Officer) and Dr. Ali Rashid Tabrez (Head of Geology and Geophysics Section) to discuss ongoing collaboration and further mutual interests. We have provided NIO research staff with protocols, guides and training to aid them in their monitoring of cetaceans offshore, in collaboration with the DI project objectives. The first results have been obtained and will be analysed once cleared with the company, BP, for whom they were conducted.
4. Marine Fisheries Dept. (MFD): Discussions with the Director General Javed Ishrat and Director F&T Shaukat Hussain led to an agreement that training of MFD commercial deep-sea fishing vessel observers to record cetaceans would be advantageous. It is anticipated that this training will take place under the auspices of CEMB. Discussions with MFD Senior Research Assistants Amjad Ali and Baradi Warayani brought more information on the type of cetaceans that would be found. Moazzam Khan, Director of MFD Planning and Statistics has continued to be a very supportive and valuable colleague, providing information on cetaceans and fishing for the DI CCP team.
5. Zoological Survey Dept. (ZSD): Abrar-ul-Hassan, Officer in Charge, has continued to provide advice and has requested training for another of their wildlife officers. Three staff participated in the training session run by the DI CCP team at ZSD museum.

6. Sindh Wildlife Dept. (SWD): Dr. Fehmida Firdous, Head of Sindh Wildlife South, has similarly provided advice and requested training for another of their wildlife officers. Two staff participated in the training session run by Dr. Gore the DI CCP team at SWD museum.

#### NON-GOVERNMENTAL ORGANISATIONS

7. Pakistan Wetland's Programme (PWP) (a GEF/ UNDP initiative): We have established a close collaboration with the PWP who have provided equipment, vehicle, boat, funds for training and services in kind that have allowed us to strengthen the monitoring, survey and training in our projects. The National Programme Manager and Chief Technical Advisor, Richard Garstang, has been an invaluable partner with his advice and support. The PWP GIS team, led by Syed Md. Raza has offered assistance with maps and analysis. Co-operation between the DI CCP team and PWP Site Manager Makkran Coastal Wetlands Complex Abdul Rahim and with Asghar Shah, marine biologist (members of point 11) has produced a draft document outlining setting up eco-tourism focusing on cetaceans (App. 4.3).
8. Oman Whale and Dolphin Research Group (OWDRG): We have strengthened our collaboration with the only other national cetacean conservation and research group in the NE Indian Ocean, with a return visit by an RO and PO to the OWDRG in Oman (partly funded by the PWP) to discuss mutual interests and programmes, and to observe methods used. It should be noted that very little work on cetaceans or their conservation is carried out in neighbouring countries.
9. Save Wildlife and Nature (SWAN): the President Ghazanfur Ali Langreh, has continued to support our raising awareness of the DI project work in the Punjab region.
10. Sport Fishing: Both the Pakistan Game Fishing Association and the Agha Sport Fishing Club have welcomed involvement in raising awareness of cetacean conservation among their members and have invited the team to attend fishing competitions to give short talks.
11. Conservation Science Society Pakistan: see point 7
12. Indus For All Programme: the DI CCP team has begun to work closely in relation to our Sindh marine work with this new WWF and Royal Netherlands Embassy funded programme. In particular, Dr. Ghulam Akbar (Director), Syed Ghulam Shah and Rab Nawaz have been very supportive in our surveys based in Keti Bundar.

#### UNIVERSITIES

13. Marine Reference and Resource Collection: Mr. Qadir Ali has been responsible for the work on the zooplankton samples collected for the DI project by the CCP team and has been instrumental for logistics in surveys.
14. Lasbela University (Balochistan): Discussions initiated by the Dean of Marine Sciences Prof. Dr. Shahid Amjad have led to plans for furthering training of students in cetacean biology and conservation at both the undergraduate and graduate levels.

15. Jinnah University for Women (Sindh): Dr. Ghazala Butt, Botany Lecturer, has continued to collaborate with us on phytoplankton, giving us an index for primary productivity in the areas that we work and have sampled.

One of the ROs is well advanced towards achieving his PhD and will be well placed to lead the CCP team to fulfil teaching objectives at the school to university level.

### **CBD focal point**

As outlined in the project proposal, our project supports Pakistan's implementation of Articles 6 - 5%, 7 - 10%, 8 - 10%, 10 - 10%, 12 - 5%, 13 - 5%, and 18 - 5%, with emphasis on Biodiversity & Tourism: 5%, Ecosystems Approach: 10%, Marine & Coastal Biodiversity 20%, Protected Areas: 5%, Public Education & Awareness: 5%, and Sustainable Use & Biodiversity: 5%. Little was known of the status of Pakistan's marine cetaceans, but 2 species were considered endangered and 1 vulnerable. The Darwin Initiative project is determining seasonal occurrence and abundance, identifying local threats, and providing key information for the development of species action plans to promote *in situ* conservation. The project is assessing the status of their habitat, the pelagic ecosystem (including plankton, fish and sea-birds), and promoting its sustainable use and biodiversity, including developing eco-tourism involving dolphin-watching as an alternative use. It is also promoting public awareness of Pakistan's cetacean population and has established, through WWF-P, a national cetacean conservation group called "Pakistan Whale and Dolphin Society". The project is liaising with CBD focal points in the Ministry of the Environment through the department responsible (Zoological Survey Dept.) and the Ministry's CBD working party, which includes project counterparts from both WWF-P and KU, and now directly through the PWP.

## **3. Project progress**

### **3.1 Progress in carrying out project activities**

The purpose of the DI project is the conservation and management of cetacean (whale, dolphin and porpoise) biodiversity in the NE Indian Ocean (Pakistan), and of the pelagic resources on which they depend, through research, protective measures, capacity building and Darwin-badged public awareness and participation programmes. We are particularly pleased with our achievements in this past year on eco-tourism, the new national cetacean conservation society, further training and experience for Pakistani colleagues in the UK and Oman, our peer-reviewed scientific publications, and the overwhelming interest in the DI project work and collaboration from a variety of organisations and people.

#### **PROGRESS OF ACTIVITIES UNDER THEIR OUTPUTS AND TIMING**

1. Boat-based surveys have been undertaken as planned in inshore waters of Sindh (App. 1.19) and Balochistan (App. 1.9, 1.11-14, 1.20), as well as some offshore. The latter are

now being complemented by collaboration with both the MFD and NIO offshore mammal observers.

2. Beach-based surveys have been undertaken along both Sindh and Balochistan coasts (App. 1.15). Further surveys are given a lower priority as the fisher reporting scheme now provides information on strandings to which the DI CCP team respond (App. 1.16).
3. Training by the UK-based Marine Mammal Course (MMC) of 4 Pakistani personnel was completed in project year 2 with an additional 3 Pakistani personnel trained. Funding has been secured by the PWP to have an additional 3 to be trained in the UK (the course has only 2 places available at present). The field training is on target, with the confidence and ability of the DI CCP team noticeable during fieldwork and in their reporting.
4. Teaching of the KU-based Marine Mammal Course is due to take place again later this year, when a slot in the academic year opens as the original slot came at a difficult time for Pakistan.
5. Publicity has been largely based on press releases and interviews, distribution of an DI annual report and educational material, and by joining forces with WWF-P for internet options.
6. Government liaisons through our PAP members provides a forum for them to discuss issues with NGOs and university departments. This is the first forum for this to take place in Pakistan and has been very much welcomed. Due to distances and schedules, annual meetings have proved to be the norm, while contact between time for help and advice to the DI project team has always resulted in a positive outcome.
  - a) Workshops for leaders of the fisher communities of both Sindh and Balochistan were held in July as scheduled last year. The workshop break-out and final discussion sessions proved very active. (App. 4.1)
  - b) Stakeholder liaison has also kept to schedule. During the fisher workshops, the concept and idea of cetacean-watching businesses were first discussed. This has led to the first 2 initial eco-tourism tours to be run in the area between the two coastal provinces in this last year and a working document on eco-tourism.
  - c) Laboratory work has been completed for our phytoplankton samples by colleague Dr. Ghazala Butt, although our KU colleague has not yet managed to analyse the zooplankton samples. The databases have been established as planned, and are being cleaned and kept updated for analysis. Our new collaboration with the PWP GIS laboratory as provided access to satellite imagery.

- d) Reporting of the DI project through 3 peer-reviewed scientific publications has already been achieved as we now stand at 5 (App. 2.1-5). We have published and distributed our second annual report (App. 4.2) through our partners, the PAP, the PWP and general public (App. 3.1-10) where appropriate. Cetacean biodiversity action plans and management options have been discussed with our PAP and drafts are due this coming 6 months.
- e) Networking has been achieved through exchange visits with the only other NE Ocean cetacean specialist group, the OWDRG of Oman. OWDRG has also acted as a check on our methods and techniques both in Pakistan and on the DI CCP team members visit to them in Oman in the last year. The visits have taken much communication as the OWDRG is a volunteer based group that has undergone significant changes in membership in the last few years.

### **3.2 Progress towards Project Outputs**

The overall progress of the DI project has exceeded expectation, particularly given the baseline of little or no knowledge of cetaceans in Pakistan. It has been crucial that the support and enthusiasm of partners and team has been high and the effect of our interest has certainly improved public knowledge. We have already published 5 scientific articles have already been published and distributed compared to the 3 envisaged. 2 of the 3 annual reports have been published as planned with the third on course. The databases have been developed and data now regularly updated. A report on recommendations for establishment of MPAs and other protective actions is the next target to be drafted for completion. At the recent PAP meeting, the panel expressed interest in helping to shape the document.

From an initial 4 envisaged, 7 Pakistani personnel have already attended the UMBSM Marine Mammal Course (MMC) and funding for a further 3 has been found (places available on the course for only 2 to date, however). The first annual MMC has been held at Karachi University and was limited to 50 initially. Prof. Siddiqui intends to continue the course on an annual basis and both Pakistan Higher Education Commission funding and through our PAP member in the Navy are available to significantly if not fully support the course.

The national cetacean conservation group, Pakistan Whale and Dolphin Society, has been established. A generous patron, officers and general committee were appointed and a constitution agreed. Membership is being sought and it is likely to prove a very popular society. The fisher communities are visited on a regular basis and the fisher workshop was well attended. Fishers now report cetacean strandings, allowing the DI CCP team to collect valuable data from the remains. To provide sustainability for the fishers, whose livelihood is precarious with falling fish stocks, a whale-watching business was envisaged. The team collaborates with the PWP team in Balochistan and the Indus For All Programme in Sindh, and have agreed to pursue eco-tourism involving cetacean watching and we have put together a working document on our discussions (App.4.3). Working closely with the fishers will be key to the success of the

businesses, to agree on the same expected outcomes. Two initial tours for visitors have taken place in Sonmiani Hor recently (App. 1.8).

### 3.3 Standard Measures

**Table 1 Project Standard Output Measures**

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Total planned from application
Established codes							
4A a	Pakistani undergraduates & graduates at MMC, Karachi University		50	Due later this year		50	160
4A b	Pakistani undergraduates & graduates at MMC, UMBSM	3	3	1		7	4
4B a	Hours training		49				60
4B b	Hours training	81	81	81			60
4C	Postgraduate training (Research Officers)	2	2: 1 new	2 continued		3	2
4B	Weeks training	29	31	21		81	90
6A	Pakistani Project Officers	3	2 contd	2 contd		3	2
6B	Duration of training	29	31	21		81	90
7	Package to teach MMC		1			1	1
8	UK staff weeks in Pakistan	2 for 27	4 for 29	2 for 18		4 for 74	4 for 60
9	Management/Action Plan			Draft begun			1
10	Fisher reporting scheme id cards: Package	1				1	1
11A	Peer-reviewed papers		1	4		5	3
11B	Draft		2	3		5	3
12A	Databases ^		2	2		4	2
13A	Species reference		2	2		2	2



	collections ^^						
14A	Fisher workshops			2		2	3
14B	Attendance at CZM by CCP team		3	2		5	4
15A	National press releases in Pakistan	4	4	4		12	12
15C	National UK press					0	3
16A	Newsletters to be produced	1	1	2		4	4
16B	Estimated circulation	300	500	1000			Not estimated
17A	Dissemination networks established		1	1		2	2
18A	Pakistani national tv programmes ^^		3	6		9	3
21	Marine Mammal Unit at KU			1		1	1
23	Value of resources raised from other resources for project			PWP OPCF		£100,000 in kind	£70,000
New - Project specific measures	Marine National Park		1 proposed	1 awaiting govt. designation			
	Govt. officers trained	4	4 cont			4	0

^ cetacean, zooplankton, seabird and environmental parameters; ii) fisher & other reports

^^ i) zooplankton, ii) cetacean skeletal and other remains

^^ NB: 19A radio is barely apparent so our attention has been on tv.

**Table 2 Publications**

Type *	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Peer-reviewed scientific publication *	New records of neonatal whale shark ( <i>Rhincodon typus</i> ) from the Northern Indian Ocean. Rowat, D., Gore, M.A., Baloch, B.B., Islam, Z., Ahmed, E., Ali, Q.M., Culloch, R., Hameed, S., Hasnain, S.A., Hussain, B., Kiani, S., Siddiqui, J. & Ormond, R.F. 2007	Env. Biol. Fishes	DOI: 10.1007/21064 1-007-9280-z	Free

Peer-reviewed scientific publication *	Cuvier's beaked whale, <i>Ziphius cavirostris</i> , remains recovered on the Pakistani coast. Gore, M.A., Ahmad, E., Ali, Q.M., Culloch, R.M. Hasnain, S.A., Hussain, B., Iqbal, P., Kiani, S., Macleod, C.D., Parsons, E.C.M, Siddiqui, P.J., Ormond, R.F., Waqas, U. 2007	JMBA2 Biodiversity Records 5920	Online pdf	Free
Peer-reviewed scientific publication *	Phytoplankton communities of Pakistan: I Dinophyta and Bacillariophyta from the coast of Sindh Butt, G, Ormond, R, Hannah, F 2006 (out in 2007)	Intl. J Phycology & Phytochemistry	Dr. Butt	photocopy
Peer-reviewed scientific publication *	Phytoplankton communities of Pakistan: I Dinophyta and Bacillariophyta from the coast of Balochistan Butt, G, Ormond, R, Hannah, F 2007	Intl. J Phycology & Phytochemistry	Dr. Butt	photocopy
Awareness T-shirts *	Darwin Project & CCP: Pakistani cetacean species imprinted for fishers to use to point out species when discussing		Distributed at our two Fisher workshops	Free but stock finished
Poster *	Darwin Project, CCP, PWP		WWF-P Karachi Office and PWP Islamabad	Free as paper or pdf
2 <sup>nd</sup> Annual Report on DI Project for general release *	Darwin Project, CCP, WWF-P, CEMB, UMBSM		WWF-P Karachi Office	Free

### 3.4 Progress towards the project purpose and outcomes

The project's purpose has been the conservation and management of whale and dolphin biodiversity in the NE Indian Ocean (Pakistan), and of the pelagic resources on which they depend, through research, protective measures, capacity building and Darwin-badged public awareness and participation programmes. To this end, we have built on our training and networking to increase awareness of, understanding of and support for cetacean protection. The PWDS is in its infancy, but it is enthusiastic and will be a major focus for cetacean conservation in Pakistan.

The level of assumptions for the project's purpose remain valid. That is, i) cetacean populations are not affected by impacts beyond the control of the conservation programme, such as by-catch mortality outside Pakistani waters, and ii) the effects of economic factors do not exceed the benefits of increased public and official support for cetacean conservation. The indicators for measuring the outcomes of the purpose have largely been achieved or are being tackled: i) at least 1 cetacean hotspot to be established as a Marine Protected Area (MPA): an MPA is awaiting designation from the new Pakistani government (App. 1.10), ii) steps taken to reduce threats to cetaceans: our work with the fisher community has provided insight into their thinking and practices and rapport with them to bring about change where needed, iii) conservation & research projects established in KU and WWF-P: this has been achieved, iv) national cetacean group established: this has been achieved, v) fishers and others participating in sustainable use initiatives: several steps have already been taken to achieve this.

### **3.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits**

The DI Project will have provided a confirmed cetacean species identification list and hotspots, which will be the basis for all further work on Pakistan's cetacean biodiversity and sustainable use. The development of management plans will benefit fishers and their livelihood by providing guidelines on the protection and sustainable use of the pelagic environment, and through support for marine protected areas, which are shown to improve sustainable use of the marine habitat and support biodiversity.

The general public appears to be fascinated by media pieces about cetaceans but it is our work with the local fisher communities has revealed the attitudes and use of cetaceans and their pelagic environment. These data will be key in bringing about a change in the use of and attitude towards cetaceans. Planned development and promotion of eco-tourism businesses will also contribute to the provision of sustainable livelihoods.

## **4. Monitoring, evaluation and lessons**

Monitoring and evaluation of the DI Project has been discussed in 3.1-3.4 and in general, we meet and discuss our progress and use report writing to ensure that outcomes are noted and considered. The Project Advisory Panel (PAP) advises on progress, and assesses indicators, with specific attention to links with government agencies, staff positions, establishment of the cetacean conservation group, the fisher reporting scheme and workshops, field & laboratory work, training and academic courses, stakeholder awareness and the recommendations for marine protected areas, and habitat & species management action plans. The PAP has been a very valuable asset to the project. Further, project output production is verified against the measures noted in the Logical Framework.

We have found that communication is key, not just between individuals but between institutions. Some difficulties have been experienced linked to differences in priorities between

academic and conservation institutions. These have been partly resolved through meetings of the three partners. Some problems have also been experienced where the central University of London has apparently lacked experience with the administration of this type of grant, leading to delays in fund transfer, scheduling and communication. Flow of funds has been an issue from the UK institution and solutions had been found.

## **5. Actions taken in response to previous reviews (if applicable)**

Our previous reviewer noted that project is comprehensive, well-planned and ambitious, targeting relevant biodiversity issues within Pakistan. The reviewer appreciated and was kind enough to mention that the progress and achievements of the project to date were impressive, and that it constituted an example of how the efficient implementation of a Darwin Project can lead to substantial benefits to the host country in meeting its CBD obligations. The reviewer went on to note that our practises were highly commendable and should be an example for other DI projects, suggesting that they also understood the conditions under which the project was running. As a result of the review, we have continued to work towards our goals as planned.

## **6. Other comments on progress not covered elsewhere**

The journey to democratic elections in Pakistan had its rough patches that hindered our plans to some extent, but the CCP team continues to work well together (App. 1.18).

## **7. Sustainability**

As an exit strategy, the DI Project aims will be sustained through 1) WWF-P, a large, highly proactive NGO with 27 regional offices and over 300 staff, committed to a long-term role in promoting conservation & management of Pakistan's cetacean population directly, within which the WWF-P POs are expected to continue in post, 2) the new national cetacean conservation group "Pakistan Whale & Dolphin Society", 3) KU, which will continue to offer the Marine Mammal Module in their degree programme, so training future biologists and stimulating public interest & awareness, and where one RO is on course to completing the first PhD on cetacean biology in Pakistan, 4) the SAPs and other policies developed through the project, which will influence the work of the responsible government agencies (Fisheries and Zoological Survey Departments) into the future, and 5) the Project Advisory Panel, which will specifically address issues of impact and legacy.

Considerable effort has been made through the press, talks, lectures, publicity, printed material and the number of collaborations to have a high profile for the DI Project in Pakistan and to promote the work, as can be seen from the outputs, progress and achievements listed in this report.

## 8. Dissemination

In the last year, we targeted the new national cetacean conservation group, the Pakistan Whale and Dolphin Society (PWDS), and two fisher workshops. The PWDS members all have an interest in cetaceans, their conservation and the environment, and include academics, government employees and members of NGOs and societies, and although the profile of the newer members has not been researched, it appears to provide a broader base from the public. The fishers invited to the workshops were also community leaders who could communicate and disseminate information from the workshop to their communities. Fisher community surveys conducted by the DI CCP Project Officers continued to reach the communities of Sindh and Balochistan. Furthermore, 4 peer-reviewed scientific articles were published and the media have continued to show mutual interest in the project by providing coverage of our activities. The PAP continues to meet to report and advise on project progress, providing an efficient monitoring body.

## 9. Project Expenditure

**Table 3 Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)**

Item	Budget (please indicate which document you refer to if other than your project application)	Expenditure	Balance
Rent, rates, heating, overheads etc			
Office costs (eg postage, telephone, stationery)			
Travel and subsistence			
Printing			
Conferences, seminars, etc			
Capital items/equipment			
Others			
Salaries (specify)			
TOTAL			

Highlight any agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget.

**10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes**

[I agree for ECTF and the Darwin Secretariat to publish the content of this section](#)

1. The WWF-P has decided to develop a national marine programme and have also requested that they include the DI Project activity in its National Marine Programme being drafted currently.

2. The establishment of the Pakistan Whale and Dolphin Society is a very significant step in a sustainable means of ensuring that issues related to the conservation of cetaceans and their marine environment will remain alive through raising awareness and funding further research. A beautiful inaugural poster was designed and printed (App. 6). A generous patron has offered a paid position for a conservation officer for the daily running of the society, and the officers, committee and members come from a wide variety of backgrounds. Ongoing support and encouragement will be needed to sustain progress initially.

3. The Pakistan Project Advisory Panel was designed to provide advice on the DI Project's activities. They discuss and advise on progress, and to assess indicators, with specific attention to links with government agencies, staff positions, establishment of the cetacean conservation group, the fisher reporting scheme and workshops, field & laboratory work, training and academic courses, stakeholder awareness and the recommendations for marine protected areas, and habitat & species management action plans. The PAP has been a very valuable asset to the project and has recently decided to expand its membership to include the Ministry of Environment's Pakistan Wetlands Programme and another member of the government's National Institute of Oceanography.

4. Eco-tourism in Pakistan: the eco-tourism business scheme, involving dolphin-watching, is being developed by the DI Project, collaborating with the PWP and Indus For All Programme. Eco-tourism as opposed to wildlife tourism reinforces the concepts of conservation and awareness of our footprint on threatened environments. It is considered by the DI CCP team and our collaborators essential to work with the local community to bring about sustainable livelihoods for the fishers. Following discussions between the DI CCP team and PWP, and taking our initial results of our fisher community surveys a working document has been drawn up and circulated. The first two eco-tours have been made in Sonmiani Hor for the bank employees of the Karachi HSBC bank, to test the concept. Local community enterprises (Gwadar Development Agency, Sonmiani Development Organisation) have been approached by

our CCP POs and our collaborating colleagues, and initial eco-tourism trip with 22 visitors focusing on cetacean conservation and the marine environment have taken place in Sonmiani Hor. The first tour was for the bank employees of the Karachi HSBC bank, to test the concept. Formal publicity is planned for the eco-tourism business, but work of mouth has already sparked considerable interest.

## Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2007/08

Project summary	Measurable Indicators	Progress and Achievements April 2007 - March 2008	Actions required/planned for next period
<p><b>Goal:</b> <i>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</i></p> <p><i>The conservation of biological diversity,</i></p> <p><i>The sustainable use of its components, and</i></p> <p><i>The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</i></p>			<p><i>(do not fill not applicable)</i></p>
<p>Purpose</p> <p>Conservation &amp; management of whale &amp; dolphin biodiversity in the NE Indian Ocean (Pakistan), and of the pelagic resources on which they depend, through research, protective measures, capacity building and Darwin-badged public awareness and participation programmes.</p>	<p>At least 1 cetacean hotspot to be established as a Marine Protected Area (MPA). Steps taken to reduce threats to cetaceans. Conservation &amp; research projects established in KU and WWF-P. National cetacean <u>group</u> established. Fishers and others participating in sustainable use initiatives.</p>	<p>This period has been very productive, with the highlights being the collaborative effort on eco-tourism for sustainable livelihood for fishers, a further Pakistani colleague trained in the UK on our Marine Mammal Course, two Pakistani team members on a return visit to a neighbouring cetacean research group in Oman, five peer-reviewed scientific articles have been published already,</p>	<p>DI CCP Project team members to complete the remaining programme for inshore, creek, shore and fisher community surveys. The next Marine Mammal Course to be run in Pakistan by our CEMB partner, and Pakistani government conservation officers to attend the course running in the UK. Recommendations and management guidelines for cetacean conservation to be drafted in collaboration with Pakistani</p>



		several new Pakistani NGOs and Universities have joined us for collaboration on the DI project work and the government depts. continue to be actively involved with new training possibilities developed, the new national cetacean conservation society has brought in a keen committee and envisage not only raising awareness of cetacean conservation issues but also financially supporting cetacean research projects.	government, NGOs and university associates. Drafts of further scientific papers to be finalised and submitted. Further collaborative work on eco-tourism to be achieved.
<b>Output 1.</b> Regular monitoring of cetaceans & pelagic environment established with two partner institutions	3 annual reports & 3 scientific articles published & distributed (after 3 yrs) Database running	2 <sup>nd</sup> general annual report (separate to this DI annual report) & 5 scientific articles already published & distributed. Databases constructed & input continuing. Monitoring continues to be related to security situation on coasts & weather conditions.	
Activity 1.1 Boat surveys		Surveys & monitoring of cetaceans and pelagic marine habitat continued along Sindh coast in creeks and inshore. Permits (for foreigners) were not available this year for Balochistan.	
Activity 1.2 Beach surveys		Surveys continued along Sindh & Balochistan coasts in response to the fisher reporting scheme reports of strandings. Permits (for foreigners) were not available this year for Balochistan.	
Activity 1.3 Training		Carried out practical on measurements and initial assessment of cetacean from beach casts, and further training on species identification from	

		stranded material. Training continued for team members and also for staff of Zoological Survey Dept. and Sindh Wildlife Dept.
Activity 1.4 Lab work		Further phytoplankton samples have been analysed by our colleague at Jinnah University for Women, Dr. Butt. Training and work on how to preserve samples of cetacean beach casts has continued.
Activity 1.5 Stakeholder liaison		Meet with fishers in their communities, on the beach by their boats and on board. Collaboration with Pakistan Game Fish Association and Agha Sport Fishing Club have increased our understanding of deeper water cetaceans. Our liaison with 6 government depts., 4 NGOs and 4 universities (see Point 2 for discussion of PAP and list) has allowed the DI project a broad base in the community.
Activity 1.6 Reporting		2 <sup>nd</sup> annual report has been printed and distributed. Data analysis has slowed related to other priorities coming to the fore in the ROs for a period, but scientific and popular level articles have been produced and distributed as have a number of press articles been published on the DI project.
Activity 1.7 Other: Community surveys		Surveys conducted in Sindh and Balochistan fisher communities. Opportunistic surveys have also been conducted during boat and beach surveys.
<b>Output 2.</b> Understanding of threats to cetacean populations.	Specific reports and scientific article published.	Ongoing work as analyses of data needed to prepare report and article. This has not been as efficient as hoped for given a change of priorities in the ROs for a period, but we have nonetheless produced more peer-reviewed scientific articles than envisaged for the entire DI project.
Activity 1.1 Boat surveys		See reference above
Activity 1.2 Beach surveys		See reference above

Activity 1.6 Reporting	See reference above
Activity 1.7 Other: Community surveys	See reference above
Activity 1.4 Lab work	See reference above
<b>Output 3.</b> Recommendations for establishment of MPAs and other protective actions.	Specific report published and distributed.  Working in collaboration with Ministry of Environment directly with its Minister of State for the Environment and its Pakistan Wetland Programme (PWP), an area centred on Haft Talar/Astola Island was recommended for establishing an MPA. This has been recommended by the previous Prime Minister of Pakistan. A new democratically elected government has just been voted in and we will work with them through the Ministry of Environment and the PWP.
Activity 1.5 Stakeholder liaison	See reference above
Activity 1.6 Reporting	See reference above
Activity 1.6 Reporting	See reference above
Activity 3.1 Government Liaison	Liaised with relevant government depts, institutions & programmes: Zoological Survey Dept (Dept responsible for CBD), Marine Fisheries Dept., Sindh Wildlife Dept, Forestry & Wildlife Dept of Balochistan, National Institute of Oceanography, Pakistan Wetland Programme and with Ministry of the Environment.
Activity 3.2 Workshop	Two fisher workshops in Sindh (Karachi) and Balochistan (Gwadar) have been successfully taken place as planned with 49 key fisher community leaders invited and participated, receiving certificates for their participation.
Activity 3.3 Publicity	Press releases have been prepared and released by the CCP team and the WWF-P media officer. The CCP team has given interviews to the main national newspapers (Dawn, The Nation, The Daily News) and to Aaj TV,

		<p>with further publicity through WWF-P and PWP newsletters.</p> <p>Our DI CCP team have already had feedback from the fisher workshops, recognising team members and finding enthusiasm from the communities for discussing their local findings.</p>
<p><b>Output 4.</b> Training of Pakistani academics and project officers.</p>	<p>At least <u>6</u> Pakistani personnel attend UMBSM courses.</p>	<p>Training has gone very well. ROs and POs have been training conservation officers and technicians to carry out cetacean stranding photography for species identification and sampling safely, articulating and understanding cetacean skeletal material. The ROs and POs have been involved in putting together articles from basic principles. 7 Pakistani personnel have already attended the UMBSM courses and a further 2 places have been approved and funded.</p>
<p>Activity 4.1 Teaching</p>		<p>To date, 7 Pakistani personnel (2 research officers, 2 academic staff, 2 project officers, 1 Navy cdr.) have attended the Marine Mammal Course at UMBSM and a Navy colleague also attended the Coastal Zone Management Course at UMBSM. 2 CCP team members went to Oman to meet with the neighbouring Oman Whale &amp; Dolphin Research Group to build contact and to exchange information.</p>
<p>Activity 1.3 Training</p>		<p>To date, 6 CCP team members have been trained in field, lab and theoretical methods and the 4 current team members continue their training. 1 Zoological Survey Dept., 1 Pakistan Wetland Programme and 2 Ocean Park Conservation Foundation funded Hong Kong students have had shorter training courses focused largely on fieldwork.</p> <p>Dr. Gore carried out practical demonstrations <i>in situ</i> on the best methods for assessing the state of a stranded cetacean or cetacean material, to obtain standard measurements, and the methods of sampling and</p>

		<p>preserving cetacean material for DNA as well as pollutants with the DI CCP team. She also held practical demonstrations at the museums of Sindh Wildlife Dept. and Zoological Survey Dept. (see photos attached on CD) with 2 and 3 key personnel (respectively) and the DI CCP team on the articulation, measurement and species identification of cetacean species from skeletal bones. The DI CCP team and Dr. Gore also went on the PNS Karsaz to work with the material in the naval museum. She also held a class on stranding cetacean stranding photography for species identification and for clues to possible threats (e.g. fluke removed) and produced guidelines to carry this out with the team.</p> <p>ROs and POs have now given training to conservation officers and technicians to carry out cetacean stranding photography for species identification and sampling safely, articulating and understanding cetacean skeletal material. ROs and POs have been involved in putting together articles from basic principles. 7 Pakistani personnel have already attended the UMBSM courses and a further 2 places have been approved and funded.</p>
<p><b>Output 5.</b> Cetacean biology teaching established Karachi University.</p>	<p>Annual module attended by total of <u>80+</u> students.</p>	<p>Partner Dr. Siddiqui led the Marine Mammal Course and felt that a limited and specific audience (50) should attend the first course last year. It was very well received by the students and interest has been expressed widely for the course a) to continue at KU, b) at other universities (Lasbela, Shah Abdul Latif, Jinnah University for Women) &amp; Kinnaird College in Pakistan, and c) to include a wide audience, a legacy for the DI project. The course is expected to be an annual event and Prof. Siddiqui plans to run it again later this year when a slot in the academic calendar opens.</p>

<p><b>Output 6.</b> National cetacean conservation group established.</p>	<p>Membership of at least <u>100</u>. Regular newsletter.</p>	<p>The new society, Pakistan Whale &amp; Dolphin Society (PWDS), had its inaugural meeting on Jan 5 2008, A patron, president, secretary, treasurer and general committee have been set up and the patron has very generously offered that his company fund a conservation officer to help run the day to day business of the society. An <i>ad hoc</i> meeting this year supported the role of the society not only to raise awareness and increase interest in cetacean conservation issues, but to support related research financially in the future.</p>
<p>Activity 6.1 Networking</p>		<p>The PWDS officers and committee have been networking with contacts to draw attention to and interest in the group.</p>
<p>Activity 3.3 Publicity</p>		<p>WWF-P and CCP have prepared &amp; distributed press releases about the group. A beautifully photographed dolphin sequence was generously provided for an inaugural poster for the society and a dedicated website is under consideration.</p>
<p><b>Output 7.</b> Awareness by stakeholders (e.g. fishers) of potential for sustainable use.</p>	<p>Fishers cetacean reporting scheme and whale-watching business launched.</p>	<p>The fisher cetacean reporting scheme has begun, supplementing the survey data taken. The whale-watching business scheme has been discussed with colleagues and the DI Project is collaborating with the PWP and Indus For All Programme to provide a solid basis for the business. Eco-tourism as opposed to wildlife tourism has been agreed to reinforce concepts of conservation and awareness of our footprint on threatened environments. After discussions with the DI CCP team and PWP and taking our initial results of our fisher community surveys, a working document has been drawn up and circulated. The first two tours have been made in Sonmiani to test the concept.</p>

<p>Activity 1.5 Stakeholder liaison</p>	<p>POs have been visiting and re-visiting fisher communities to build up rapport with the fishers and community members. Reports have begun to arrive from these communities, supplementing the data from surveys. Local community enterprises (Gwadar Development Agency, Sonmiani Community Authority) have been approached by our CCP POs and our collaborating colleagues, and initial eco-tourism trips focusing on cetacean conservation and the marine environment have taken place in Sonmiani Hor. It is considered by the DI CCP team and our collaborators essential to work with the local community to bring about sustainability for the fishers.</p>
<p>Activity 3.3 Publicity</p>	<p>Fisher communities are each visited by PO. Formal publicity is planned for the whale-watching business, but work of mouth has already sparked considerable interest.</p>

## Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Purpose</p> <p>Conservation &amp; management of whale &amp; dolphin biodiversity in the NE Indian Ocean (Pakistan), and of the pelagic resources on which they depend, through research, protective measures, capacity building and Darwin-badged public awareness and participation programmes.</p>	<p>At least 1 cetacean hotspot to be established as a Marine Protected Area (MPA).</p> <p>Steps taken to reduce threats to cetaceans.</p> <p>Conservation &amp; research projects established in KU and WWF-P.</p> <p>National cetacean <u>group</u> established.</p> <p>Fishers and others participating in sustainable use initiatives.</p>	<p>Proposals for MPAs and other protective actions published.</p> <p>Correspondence with ministries concerning implementation.</p> <p>Researchers and project officers in post, and publishing papers and reports.</p> <p>Cetacean group with membership of at least <u>100</u>.</p> <p>Fishers set up 1+ whale-watching business, and attend workshops.</p>	<p>Cetacean populations are not affected by impacts beyond the control of the conservation programme, such as by-catch mortality outside Pakistani waters.</p> <p>The effects of economic factors do not exceed the benefits of increased public and official support for cetacean conservation.</p>
<p>Outputs</p> <p>Regular monitoring of cetaceans &amp;</p>	<p>3 annual reports &amp; 3 scientific articles published &amp;</p>	<p>Reports, articles and database copied to Darwin Initiative.</p>	<p>Security situation on coast continues to be acceptable.</p> <p>Weather conditions not</p>



pelagic environment established with two partner institutions.	distributed. Database running.		atypical.
Understanding of threats to cetacean populations.	Specific reports and scientific article published.	Reports and article copied to Darwin Initiative	Reasonable progress with survey work.
Recommendations for establishment of MPAs and other protective actions.	Specific report published and distributed.	Report available. Correspondence with relevant Pakistani agencies.	Reasonable progress with survey work.
Training of Pakistani academics and project officers.	At least <u>6</u> Pakistani personnel attend UMBSM courses.	Course registration documentation.	None
Cetacean biology teaching established Karachi University.	Annual module attended by total of <u>80+</u> students.	KU academic records.	Expected interest among students.
National cetacean conservation group established.	Membership of at least <u>100</u> . Regular newsletter.	Group records and newsletters copied to Darwin Initiative.	None
Awareness by stakeholders (e.g. fishers) of potential for sustainable use.	Fishers cetacean reporting scheme and whale-watching business launched.	Publicity material. Reports of data. Workshop proceedings.	Expected interest among fishers.

## **Annex 3 onwards – supplementary material (optional)**

The material below covers work and events of the DI Project in the last year and is in electronic form:

### 1. DI 14-005 Photograph file, Appendices:

1. CCP team with staff at Sindh Wildlife Dept. measuring baleen whale skeleton
2. CCP team M Gore and S Kiani measuring cetacean skull
3. Humpback dolphin at Keti Bundar
4. PAP Meeting Dec 2007
5. CCP PO during fisher community survey in Keti Bundar
6. CCP PO during fisher community survey in Balochistan
7. CCP team taking samples of marine environment
8. First DI dolphin watching trip
9. Humpback whale observed during CCP survey off Pasni
10. Ministry of Environment visits DI CCP team and PWP team on Astola to discuss first Pakistani MPA
11. Spinner dolphin at Ormara a
12. Spinner dolphin at Ormara b
13. Spinner dolphin at Ormara c
14. Spinner dolphin at Ormara d
15. CCP PO responds to cetacean stranding
16. CCP PO during fisher community survey Manjar
17. DI CCP team dinner Dec 07
18. CCP PO during fisher community survey with CCP id card in Balochistan
19. Humpback dolphin at Keti Bundar
20. DI CCP team with spinner dolphins in Balochistan

### 2. Scientific articles

1. Gore et al. 2007 JMBA2
2. Rowat et al. 2007 Env Biol Fish
3. Gore et al. 2007 JMBA 87
4. Butt et al. 2006(7) Intl J Phytochem 2
5. Butt et al. 2007 Intl J Phytochem 3

### 3. Press articles

1. Daily News 08I08
2. Dawn 01I08

3. Dawn 04I08
4. Dawn 08I08
5. Indus Forever Jul-Sep 2007
6. Indus Forever Oct-Dec 2007
7. Panda Post Nov-Dec 2007 p1-4
8. The Nation 08I08
9. Wildlife and Environment Jan 2008 p4
10. Wildlife and Environment Jan 2008 p10

4. Reports

1. Fisher Workshop
2. Darwin Report 2: "Pakistan's whales and Dolphins"
3. CCP Pakistan Eco-tourism Working Document

5. DI Project Advisory Panel List 2007-2008

6. Pakistan Whale and Dolphin Society Inaugural Poster

***Checklist for submission***

	Check
<b>Is the report less than 5MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ectf-ed.org.uk">Darwin-Projects@ectf-ed.org.uk</a> putting the project number in the Subject line.	Yes
<b>Is your report more than 5MB?</b> If so, please advise <a href="mailto:Darwin-Projects@ectf-ed.org.uk">Darwin-Projects@ectf-ed.org.uk</a> that the report will be send by post on CD, putting the project number in the Subject line.	No
<b>Do you have hard copies of material you want to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number.	Yes posted
Have you completed the Project Expenditure table?	Yes
Do not include claim forms or communications for Defra with this report.	Ok