

# Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting

Hosted by SeaWorld San Diego  
(17 Dec – 18 Dec 05)  
San Diego, CA, USA

## FINAL REPORT



### Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Staufacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

# Contents

- 1.1 Introduction**
  - 2.1 Meeting Objectives**
  - 3.1 Summary of Objectives**
  - 4.1 Post-Survey Monitoring**
    - 4.1.1 Visual Monitoring
    - 4.1.2 Acoustic Monitoring
  - 4.2 Infrastructural Development at Tian-e-Zhou**
    - 4.2.1 Current Status and Infrastructural Requirements
    - 4.2.2 Staffing Requirements
    - 4.2.3 Analysis of Cetacean Carrying Capacity in Oxbow
  - 4.3 Capture-Translocation Operations**
    - 4.3.1 Safe Capture Methodology
    - 4.3.2 Pre-Capture Training
    - 4.3.3 Translocation to Tian-e-Zhou
    - 4.3.4 Capture-Translocation Timetable
    - 4.3.5 Soft-Release Strategies
  - 4.4 Formation of International Steering Committee**
  - 5.1 Project Implementation Timetable**
  - 6.1 Working Budget for First Three Years of Baiji Recovery Programme**
- Appendices**
- A.1 Emergency Implementation Meeting Agenda**
    - A.1.1 Timetable
    - A.1.2 Host and Moderation
    - A.1.3 Organisational Structure
    - A.1.4 Emergency Implementation Meeting Key Personnel
    - A.1.5 Executive Emergency Implementation Agenda Committee
    - A.1.6 Emergency Implementation Meeting Sponsors
    - A.1.7 Participants
  - A.2 Agenda**
    - A.2.1 Emergency Implementation Meeting: Day One (17<sup>th</sup> December 05)
    - A.2.2 Emergency Implementation Meeting: Day Two (18<sup>th</sup> December 05)

## Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Stauffacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

## 1.1 INTRODUCTION

The Yangtze River dolphin or baiji (*Lipotes vexillifer*), the only cetacean endemic to the Yangtze River system, has declined rapidly in recent decades. An intensive survey in November 1997 produced a total count of only 13 dolphins, and fewer than 50 individuals may survive today. The species is listed as Critically Endangered on the IUCN Red List (under the criteria A1bc, C2b, D), and it is probably the world's rarest and most endangered cetacean. It may in fact be the world's most endangered mammal species, and will almost certainly be the next one to die out unless there is a concerted international effort to save it. As the only living member of the Lipotidae, an ancient mammal family thought to have separated from all other cetaceans 20-40 million years ago, its extinction would represent a major loss of evolutionary history – a branch rather than a twig on the Tree of Life.

The factors responsible for the decline of baiji in the wild (severe habitat degradation; rolling hook, electric and explosive fishing; collision with vessels) are still at work, and it is unlikely that conditions in the Yangtze will improve in the foreseeable future. Establishment of a viable *ex situ* breeding population under conditions very close to those of the Yangtze is now widely regarded as an essential short-term goal for the continued survival of the species, for re-release back into the Yangtze when threats have decreased and the natural environment has improved. The favoured site for translocation of captured baiji is the Tian-e-Zhou National Baiji Reserve, a recently formed 21 km long oxbow lake adjacent to the Yangtze near Shishou City, Hubei Province. This currently supports a translocated breeding population of finless porpoises, suggesting that conditions will also prove suitable for baiji to survive and breed.

The baiji *ex situ* recovery programme has been recommended by numerous scientists and policy makers for two decades, and has been endorsed by the Chinese Ministry of Agriculture, who designated the Tian-e-Zhou oxbow as one of two Official Baiji Reserves in 1992. The 2004 International Workshop on Conservation of the Baiji and Yangtze Finless Porpoise (see website of IUCN Marine Programme and baiji.org Foundation for full report) also recommended *ex situ* conservation as a necessary short-term goal for conservation of the baiji in conjunction with an immediate range-wide baiji survey, with capture efforts to target areas identified as being most threatened. However, although a survey of the entire historical range of the baiji is being organised for late 2006 by the baiji.org Foundation and the Institute of Hydrobiology, Chinese Academy of Sciences, the crucial *ex situ* recovery programme has yet to be concertedly implemented or even planned. It is imperative that capture-translocation efforts to initiate this recovery programme must also take place in the immediate future, or it will simply be too late to save the species from extinction. However, before this is possible, a series of requirements must be fulfilled, involving both infrastructural and staffing improvements at Tian-e-Zhou, and technical and financial support for the capture-translocation operations themselves.

A successful recent Stage 1 application to the Darwin Initiative, a UK conservation trust, requesting £220,000 GBP of financial support for *ex situ* baiji conservation, stated that capture-translocation attempts would commence immediately following the late 2006 range-wide survey. In order to remain eligible for this substantial offer, it is therefore necessary to develop a viable logistical and financial framework that will enable the recovery programme to be put into operation by early 2007.

### Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Stauffacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

## 2.1 MEETING OBJECTIVES

Before active conservation action can finally be taken for the baiji, it is necessary to make decisions about potential capture strategies based on previous knowledge of dolphin handling from both Chinese and international participants, and knowledge about the Yangtze system from IHB scientists. It is further necessary to plan capture logistics based on what was required for previous capture-translocation work by the Chinese for both the baiji and the Yangtze finless porpoise. It is also imperative that a realistic budget for this capture work (including associated infrastructural developments at Tian-e-Zhou) is organised at the meeting, as well as a time-frame over which this necessary capacity-building should be developed.

The main purpose of the Emergency Implementation Meeting was therefore to address exactly how a series of capture-translocation operations, and associated infrastructural capacity building at Tian-e-Zhou, could be implemented and financially supported following the observation of baiji during the forthcoming 2006 range-wide survey. The meeting aimed to determine the specific ways by which these necessary logistical goals can be achieved, as well as maintaining open communications between the different parties. Logistical and financial information breakdowns for each stage of the *ex situ* conservation effort were also incorporated into a second, lengthy Stage 2 application for the Darwin Initiative.

The Emergency Implementation Meeting also provided an opportunity to further refine the proposed methodology for the forthcoming range-wide baiji survey (not discussed below).

## 3.1 SUMMARY OF OBJECTIVES

1. Calculate a logistical breakdown and detailed budget for financing infrastructural capacity building at the Tian-e-Zhou National Baiji Reserve, and organise a timeframe over which these operations should be implemented.
2. Calculate a logistical breakdown and detailed budget for financing a series of baiji capture-translocations, and organise a timeframe over which these operations should be implemented.
3. Discuss and develop an *in situ* post-survey monitoring strategy for surviving baiji individuals or groups in the main channel of the Yangtze.
4. Integrate this financial and logistical information into the Darwin Initiative Stage 2 application.
5. Identify other potential funding sources capable of providing long-term financial support for the baiji *ex situ* recovery programme, and plan suitable methods and timeframes for approaching these sources.
6. Discuss and clarify the methodology to be used in the forthcoming range-wide baiji survey.

### Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Staufacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

## 4.1 POST-SURVEY MONITORING

### 4.1.1 Visual monitoring

**Monitoring strategy.** Any baiji encountered during the forthcoming Nov-Dec 2006 range-wide survey should be monitored for as long as possible, to obtain invaluable behavioural and ecological data which can be used to inform future capture-translocation attempts. However, it is recognised that previous attempts to observe baiji have been unable to follow them for more than a day, and it is assumed that like other dolphin species they continue to move at night when detection is problematic.

**Monitoring team.** A team dedicated to observing dolphins should maintain contact with the animals, move with them, and have as little effect on them as possible. Ideally this monitoring team will consist of trained cetacean behaviourists, such as scientists from the Sarasota Dolphin Research Program, but given the need to deploy observers at short notice following opportunistic sightings at any point during the survey, trained fishermen may instead have to be used.

**Monitoring boat.** The principal large survey boats will be too slow for this purpose, and the faster Zodiac also to be used in the survey is too low to allow effective observation of baiji. The design of this monitoring vessel has yet to be decided.

### 4.1.2 Acoustic monitoring

Baiji produce species-specific 4-7 KHz low frequency whistles (as well as 70 KHz high frequency clicks), and acoustic monitoring can provide information on presence/absence (although not abundance) of baiji in a given area. An acoustic monitoring package can be left underwater on the riverbed at baiji 'hotspots' identified from the forthcoming range-wide survey, and left to record continuously for long intervals (equipment should be changed alternately every five days for monitoring low frequency whistles, and every month for monitoring high frequency clicks). This represents a relatively low-cost monitoring strategy, for which equipment is already available, and so should be employed in conjunction with visual monitoring and surveying.

## 4.2 INFRASTRUCTURAL DEVELOPMENT AT TIAN-E-ZHOU

### 4.2.1 Current status and infrastructural requirements

**On-site research facility.** A building partly funded by the IHB will be completed in early 2006, and has 17 full-time and additional part-time staff, but still lacks any laboratory, veterinary or support equipment, and also requires high-speed internet access to facilitate external communication.

**Holding pen complex.** This should be built in modular form to allow future expansion, and must be constructed offshore with associated boat access, as the oxbow is too shallow near the research facility to permit construction adjacent to the shoreline with direct land access. A hydrological survey to assess water quality, depth, current, and other physical/biological characteristics in the oxbow is required to identify an appropriate candidate site for this complex. Construction should be overseen by an experienced construction engineer with contractors, rather than local workers. Small-mesh nets should be used to avoid the risk of baiji becoming entangled, and will require regular cleaning with pressure washers or scrubbing to prevent fouling in freshwater conditions.

**Boats.** Two small boats are already available at the reserve, but 2-3 further small inflatable craft are also required to access the offshore holding pen area, monitor and manage dolphins and porpoises in the reserve, and enforce local fishing restrictions. It is recommended that these should be 5 m Zodiacs with 4 stroke/30 hp engines. These will require further long-term maintenance which must also be budgeted for.

**Medical equipment.** To include ultrasonic machine, endoscopes, semen sampling equipment etc. To be fully inventoried and costed by SeaWorld/Anheuser-Busch veterinarians in the near future.

**Water quality monitoring.** It is not necessary to employ permanent staff to monitor water quality at the reserve, but the existing on-site laboratory must be equipped to allow IHB staff to visit regularly and conduct water quality/toxicology analysis. Microbiological samples should instead be sent for analysis in SeaWorld or other research facilities.

**Fish.** Fresh fish for baiji should be bought locally, and stored in ice chests for short periods of time. It is estimated that 10 kg/animal/day should be provided. Feeding may need to be continued following soft-release into the reserve.

#### 4.2.2 Staffing requirements

**Baiji/holding pen support staff.** Two dolphin keepers and six associated support staff must be employed to maintain the holding pen complex and work with baiji translocated to or being monitored in the holding pen complex and oxbow. Six people (including both keepers) should be employed for day work and two people for night work. These staff should be rostered in 3-month shifts, with two staff members on permanent shift for consistency. Fewer than 3-4 people/day is not considered to be workable. The support staff can include people already employed at the existing research facility, but dolphin keepers must be new employees with veterinary training. Some of these staff will also be required to monitor dolphins from small boats each day following soft-release of baiji into the oxbow.

**International participants.** Once baiji have been translocated to the holding pen complex until some time after their soft-release into the reserve, further professional staff must also be on-hand to monitor their health and behavioural status and administer appropriate veterinary care. This will require:

- International veterinarian (Ocean Park Corporation, SeaWorld/Anheuser-Busch)
- International cetacean behavioural specialist (IUCN CSG)

These experts should spend several months working with baiji in the holding pens and in the reserve, and provide on-going training for Chinese scientists and technical staff/students, although it is recognised that personal commitments and the necessity for salaried support may make long-term participation prohibitive. Behavioural observations in the reserve following soft-release will be invaluable even if only one baiji is present, as they will provide greater understanding of how baiji utilise the reserve and interact with the translocated finless porpoise population.

**Reserve wardens.** A small team of local people are already employed as wardens for the reserve on a semi-permanent basis, and further staff will be employed to form a larger local protection team following successful soft-release of baiji into the reserve.

### **4.2.3 Analysis of cetacean carrying capacity in oxbow**

An updated systematic study of fish biomass is required at the oxbow to assess cetacean (finless porpoise and baiji) carrying capacity. This should be monitored over the course of a year to assess seasonal variation between wet and dry seasons, and compared with known baiji prey species to assess the subset of total fish biomass that is available to support translocated baiji. Comparison with historical data on fish densities in the reserve will indicate whether environmental conditions are changing in the reserve, notably as a result of the closure dam and possibly also due to upstream construction of the Three Gorges Dam. As boats and all relevant equipment are already available at the existing on-site research facility, this study only requires IHB staff time, and represents a potential study for a PhD student associated with the baiji recovery programme.

## **4.3 CAPTURE-TRANSLOCATION OPERATIONS**

### **4.3.1 Safe capture methodology**

Former baiji and finless porpoise capture attempts have utilised 15+ boats, ~2 km long nets, and 50+ people to prevent dolphin entanglement. It is now considered that relatively small-scale capture operations will be not only less expensive but will also pose less danger of accidental entanglement and drowning to captured animals by using smaller nets. Several possible capture strategies and designs were discussed, but the eventual consensus advocated the use of two fast 28 ft × 10.5 ft capture net boats ('kicker boats') with 200 hp Yamaha 4-stroke engines, similar to those used by the Mote Marine Laboratory's Sarasota dolphin project, deploying two 500 metre long, 7-8 metre deep fine-mesh nets which can be fastened together. Longer nets are not required because these boats are substantially faster and more manoeuvrable than those used in previous capture attempts and can encircle baiji more rapidly, and also allow a more flexible approach. Once suitable safe capture sites in shallow water have been identified, these capture boats will make a fast circle around the animal(s), then slowly drag this open circle close to the shore and constrict the circle by dragging more netting into the boats. Capture boats will be assisted by a limited number of additional, unspecialised speedboats and fishing boats which are able to quickly reach the net, and with a maximum involvement of 20-30 crew and 6-10 boats. Two of these boats will be situated at either end of the capture area to control boat traffic.

### **4.3.2 Pre-capture training**

Training sessions, hopefully involving 'dry run' practice captures involving all capture staff and fishermen, will be attempted in the main channel of the Yangtze before each capture operation. Three Chinese participants (IHB/Tian-e-Zhou staff) will be trained in safe dolphin capture, handling and release methods at the Sarasota Dolphin Research Program (June 6-16, 2006) in Florida, USA.

### **4.3.3 Translocation to Tian-e-Zhou**

Previous finless porpoise capture-translocations in the Yangtze involved maintaining animals in circle nets located in side-channels, for an adjustment period lasting up to two weeks prior to translocation. However, the consensus is that any captured baiji should instead be moved immediately to the holding pen complex at Tian-e-Zhou. Transporting captured baiji requires slings, transport boxes, circulation pumps and a medical box. Fast helicopter transport is the preferred option, as it will minimise stressful translocation time for captured animals.

Helicopter hire was previously arranged by the army, but will now involve considerably more expensive commercial companies in addition to requiring government approval for translocation flights.

#### **4.3.4 Capture-translocation timetable**

Each capture operation should take up to two months, and can only be carried out during the Yangtze low-water period (Oct-Apr, excluding Chinese New Year period). It is planned that 5 capture-translocation operations should be attempted between 2007 and 2009, in Feb-Mar 07, Oct 07-Mar 08, and Oct 08-Mar 09, in order to establish a viable *ex situ* breeding population of baiji at Tian-e-Zhou before the Yangtze population undergoes a further decline or becomes extinct.

#### **4.3.5 Soft-release strategies**

Some informal discussion also considered alternate strategies for managing baiji following translocation into the holding pens at Tian-e-Zhou. It will be necessary to ensure that any translocated baiji are healthy and eating normally before soft-release into the reserve, which may require up to two weeks. It was also considered that training baiji to return to the holding pens using fish rewards may be useful, to facilitate future medical analyses and potential reproductive enhancement of the *ex situ* breeding population.

### **4.4 FORMATION OF INTERNATIONAL STEERING COMMITTEE**

The establishment of a formal committee, inclusive and representative of the various interests involved in baiji conservation and constituting a core group of scientists and decision makers, is also considered essential for the success of the recovery programme. The International Committee for the Recovery of the Vaquita (CIRVA), which now constitutes an advisory group to the Mexican government with regard to the Critically Endangered porpoise of the Gulf of California, could be used as a useful model for the establishment of this committee.

#### **Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting**

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Staufacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)



## 5.1 PROJECT IMPLEMENTATION TIMETABLE

Date	Key milestones
Year 1	• Assemblage of baiji capture fleet on the Yangtze, and infrastructural capacity-building at Tian-e-Zhou; first baiji capture-translocation operation.
Year 2	• Two further capture-translocation operations, with extensive participation of international cetacean veterinarians and behaviourists at oxbow and on Yangtze.
Year 3	• Two further capture-translocation operations, leading to establishment of viable <i>ex situ</i> baiji breeding population.
Mar 06	• Two-week pilot survey.
Jun 06	• Three-week hydrology assessment by international specialist working with IHB staff, to identify best site for baiji holding pen complex at the Tian-e-Zhou oxbow.
Jun 06	• Training of 3 × Chinese project participants in dolphin capture/handling skills (Sarasota, Florida).
Jun 06, Jan 07	• Analysis of fish density in Tian-e-Zhou across wet and dry seasons, to determine cetacean carrying capacity.
Jul-Aug 06	• Educational campaign about baiji conservation for Yangtze fishermen, focusing on former baiji strongholds of Tongling, Balijsangkou and Honghu.
Aug 06	• Appointment of Ph.D. candidate to research baiji ecology, behaviour and captive management.
by Oct 06	• Construction of off-shore holding pen complex at Tian-e-Zhou (built in modular form, to allow future expansion).
by Oct 06	• Increasing capacity of existing on-site research facility at Tian-e-Zhou (improvement of wet/dry laboratories; acquisition of veterinary and fish storage equipment; 2 × small boats; high-speed internet connection).
by Oct 06	• Appointment of 8 × staff members (dolphin keepers/support staff) at Tian-e-Zhou.
by Oct 06	• Formal establishment of International Baiji Committee; meeting of Chinese and international project participants to plan animal handling and management requirements/processes for forthcoming capture-translocations, through working group discussion.
Nov-Dec 06	• IHB/baiji.org Foundation range-wide Yangtze baiji survey.
Dec 06	• Identification of optimal locations for baiji capture-translocation operations, based on baiji survey.
Dec 06-Feb 07	• Post-survey observational work by IHB staff of baiji individuals sighted on IHB/baiji.org Foundation survey.
by Dec 06	• Construction of baiji capture fleet on Yangtze at Wuhan (2 × specialised

### Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
 Baiji.org Foundation, Staufacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
 Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
 Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

	capture vessels; 2 × 500 m long, 7-8 m deep nets; 4 × speedboats).
Feb-Mar 07	• Two-month baiji capture-translocation operation, preceded by two-week training session.
Apr/May 07	• Proposed soft-release of first baiji from holding pen complex into semi-natural oxbow reserve.
Feb-May 07	• Baiji monitoring during captures and at oxbow, and training of Chinese project participants, by SeaWorld veterinarian.
Jun-Aug 07	• Baiji monitoring at oxbow by IUCN CSG behaviourist.
May 07	• Meeting of International Baiji Committee at Tian-e-Zhou to review recovery project status, with subsequent formal report.
Jun 07	• Submission of scientific publication on status of baiji recovery project to international peer-reviewed journal.
by Oct 07	• Development of report/publication on water quality and cetacean carrying capacity at Tian-e-Zhou.
Oct-Nov 07	• Two-month baiji capture-translocation operation, also incorporating regional conservation educational campaign.
by Dec 07	• Establishment of standardised baiji semi-natural management and husbandry guidelines.
Feb-Mar 08	• Two-month baiji capture-translocation operation.
May 08	• Meeting of International Baiji Committee at Tian-e-Zhou to review recovery project status, with subsequent formal report.
Jun 08	• Submission of scientific publication on status of baiji recovery project to international peer-reviewed journal.
Jul-Aug 08	• Baiji monitoring at oxbow by SeaWorld veterinarian.
Oct-Nov 08	• Two-month baiji capture-translocation operation.
Feb-Mar 09	• Two-month baiji capture-translocation operation.
by Mar 09	• Establishment of viable <i>ex situ</i> semi-natural breeding population of baiji at Tian-e-Zhou.
by May 09	• Establishment of medium-term baiji translocation plan (for continuing Yangtze captures, and translocations to other protected lake reserves), and long-term reintroduction plan.
by Jun 09	• Submission of scientific publication on status of baiji recovery project, and/or organochloride risk to baiji fertility, to international peer-reviewed journal.

**Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting**

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Stauffacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

**6.1 WORKING BUDGET FOR FIRST THREE YEARS OF BAIJI RECOVERY PROGRAMME**  
(all costs in \$USD)

	<b>1st low-water season (06-07)</b>	<b>2nd low-water season (07-08)</b>	<b>3rd low-water season (08-09)</b>	<b>TOTAL</b>
<b>Infrastructural developments at Tian-e-Zhou</b>				
- International hydrologist 3-week survey	1,900	0	0	1,900
- Hydrologist salary	3,000	0	0	3,000
- Dolphin holding pen complex	30,000	0	0	30,000
- Chinese construction workers' salary	2,000	0	0	2,000
- Ultra-low temperature freezer	7,000	0	0	7,000
- Ice machine	700	0	0	700
- 2 × small boats at Tian-e-Zhou	12,000	0	0	12,000
- Cetacean veterinary equipment	30,000	0	0	30,000
- Pressure washer for holding pen nets	800	0	0	800
- Basic water chemistry equipment	8,500	0	0	8,500
- High-speed internet access	800	300	300	1,400
<b>Pre-capture training</b>				
- 3 × Chinese staff to Sarasota Dolphin Research Program (flight costs only; remainder Subsidised by CZS)	2,700	0	0	2,700
- 30 × fishermen training costs	3,000	0	0	3,000
<b>Development of capture fleet and equipment</b>				
- 2 × dolphin capture boats	77,500	0	0	77,500
- 2 × 500 m small mesh capture nets	12,000	0	0	12,000
- 4 × speed boats (for locating/herding baiji)	72,000	0	0	72,000
- Equipment for transporting baiji	700	0	0	700
- Pathfinder, binoculars, depth measure etc.	15,000	0	0	15,000
- Re-equipment of research vessels	17,000	0	0	17,000
<b>Capture-translocation operations</b>				
- 5 × 6 fishing boat hire/capture operation	6,000	12,000	12,000	30,000
- 5 × 2 research vessel hire (fishery management)	5,500	11,000	11,000	27,500
- Fuel for 5 × capture operations	28,000	56,000	56,000	140,000
- Meals for 5 × capture operations	11,000	22,000	22,000	55,000
- 30 × local fishermen's salaries	12,500	25,000	25,000	62,500
- Bedding for fishermen	1,000	1,000	1,000	3,000
- Port charges during capture operations	850	1,700	1,700	4,250
- Helicopter translocation of captured baiji	15,000	30,000	30,000	75,000
- Boat servicing/repair costs	2,000	4,000	4,000	10,000
<b>International participants</b>				
- IUCN CSG on-hand expertise at oxbow	0	3,800	3,800	7,600
- SeaWorld veterinarian	21,600	21,600	21,600	64,800
- Other capacity-building/capture participation	13,600	16,300	19,600	49,500
- Capture specialist salaries	8,000	16,000	24,000	48,000
- Cetacean behaviourist salaries	0	12,000	12,000	24,000
<b>Ongoing maintenance costs at Tian-e-Zhou</b>				
- 8 × staff at Tian-e-Zhou	12,000	24,000	24,000	60,000
- Fish for baiji in holding pens (10 kg/animal/day)	500	3,000	3,000	6,500
- Holding pen maintenance costs	100	150	150	400
- Transport of samples for analysis	500	1,000	1,000	2,500
- Fuel for small monitoring boats	3,000	10,000	10,000	23,000
<b>Other costs</b>				
- Education campaign for Yangtze fishermen	15,000	15,000	0	30,000
- International Baiji Committee costs	12,000	12,000	12,000	36,000
- 2 × participants (Chinese/UK) to attend international conservation conferences	0	2,500	2,500	5,000
- Commissioning, writing and printing reports	5,000	5,000	5,000	15,000
- International/national calls, faxes, internet etc.	1,000	1,000	1,000	3,000
<b>TOTAL COSTS</b>	<b>470,750</b>	<b>306,350</b>	<b>302,650</b>	<b>1,079,750</b>

**Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting**

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
 Baiji.org Foundation, Stauffacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
 Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
 Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

## **A.1 EMERGENCY IMPLEMENTATION MEETING AGENDA**

### **A.1.1 Timetable**

17 December 2005 – Day 1

IHB-Baiji.org Survey (including Identification of Capture Sites); *in situ* Post-Survey Research and Protection; Infrastructural Requirements at Tian-e-Zhou Reserve

18 December 2005 – Day 2

Infrastructural Requirements at Tian-e-Zhou Reserve; Capture-Translocation Logistics

### **A.1.2 Host and Moderation**

The Emergency Implementation Meeting was hosted by SeaWorld San Diego. It was co-chaired and moderated by Dr. Randall Reeves and Dr. Wang Ding.

### **A.1.3 Organisational Structure**

The Emergency Implementation Meeting was co-organised by the Bureau of Fisheries, Ministry of Agriculture of China; the Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China; the Institute of Hydrobiology, Chinese Academy of Sciences; the Zoological Society of London; and the Baiji.org Foundation.

### **A.1.4 Emergency Implementation Meeting Key Personnel**

The following people were responsible for coordinating sponsors, managing the meeting budget, and organising and running the Emergency Implementation Meeting.

Wang Ding	- Meeting Director and Co-Chair
Randall Reeves	- Co-Chair
Sam Turvey	- Meeting Coordinator
Leigh Barrett	- Meeting Coordinator

### **A.1.5 Executive Emergency Implementation Agenda Committee**

The following people were responsible for finalizing the Emergency Implementation Meeting Agenda:

Wang Ding	- Wuhan Institute of Hydrobiology
Xianfeng Zhang	- Wuhan Institute of Hydrobiology
Xiangguo Fan	- Chinese Ministry of Agriculture
Huibai Zhuang	- Changjiang Fisheries Management Resource Committee
Randall Reeves	- IUCN Cetacean Specialist Group
Sam Turvey	- Institute of Zoology, Zoological Society of London
Leigh Barrett	- Baiji.org Foundation

### **A.1.6 Emergency Implementation Meeting Sponsors**

Ocean Park Conservation Foundation  
Conservation International

### **A.1.7 Participants**

#### **Chinese Decision Makers and Scientists**

Xiangguo Fan	- Chinese Ministry of Agriculture
Huibai Zhuang	- Changjiang Fisheries Management Resource Committee
Dr Xianfeng Zhang	- Institute of Hydrobiology
Dr Wang Ding	- Institute of Hydrobiology
Dr Wang Kexiong	- Institute of Hydrobiology

#### **Conservationists and IUCN CSG Scientists**

Randall Reeves	- IUCN Cetacean Specialist Group
Gill Braulik	- Downstream Research Group
Randall Wells	- Chicago Zoological Society
Nick Gales	- Australian Antarctic Division
Jim McBain	- SeaWorld
Sam Turvey	- Institute of Zoology, Zoological Society of London
Leigh Barrett	- Baiji.org Foundation
August Pfluger	- Baiji.org Foundation
Lorenzo Rojas-Bracho	- National Institute of Ecology, Mexico
Jay Barlow	- Scripps Institute of Oceanography
Bob Pitman	- Southwest Fisheries Science Center
Tomonari Akamatsu	- National Research Institute of Fisheries Engineering, Fisheries Research Agency

#### **Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting**

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Stauffacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

## **A.2 AGENDA**

### **A.2.1 EMERGENCY IMPLEMENTATION MEETING: DAY ONE (17<sup>th</sup> DECEMBER 05)**

#### **9am – 9.15am: SEAWORLD SAN DIEGO CONFERENCE ROOM**

Programme starts with a short speech from our two chairmen and a brief explanation of the meeting agenda, the product that will result from the meeting, its target audience, and how it will be produced and distributed.

#### **9.15am – 12pm: IHB-BAIJI.ORG SURVEY**

1. Wang Ding to give a PowerPoint presentation describing the forthcoming IHB-Baiji.org Foundation survey.
2. Open discussion of survey techniques, international participation in planning, design, and conduct of the survey, and identification of potential capture sites along the Yangtze.

#### **12pm – 1pm: LUNCH (Sponsored by SeaWorld San Diego)**

#### **1pm – 3pm: *IN SITU* POST-SURVEY RESEARCH AND PROTECTION**

1. Feasibility of post-survey research.
2. Identify suitable Chinese and international project partners. Develop cooperative milestone plan for funding acquisition and associated implementation of post-survey research work.

#### **3pm – 6pm: INFRASTRUCTURAL REQUIREMENTS AT TIAN-E-ZHOU RESERVE**

1. Development of a holding pen complex at Tian-e-Zhou, to allow veterinary examinations of dolphins before and after they are released into the semi-natural reserve.
2. Water quality monitoring, in both the oxbow and neighbouring regions of the main channel of the Yangtze.
3. Improvement of the on-hand scientific infrastructure at Tian-e-Zhou.
4. Ensuring international cetacean veterinary specialists are on-hand for the duration of capture and translocation attempts.
5. Existing resources and support.
6. Identify suitable Chinese and international project partners. Develop cooperative milestone plan for funding acquisition and associated implementation of infrastructure and capacity building targets.

#### **Conservation of the Yangtze River Dolphin: Emergency Implementation Meeting**

Co-organized by: Zoological Society of London, Regent's Park, London, NW1 4RY [samuel.turvey@ioz.ac.uk](mailto:samuel.turvey@ioz.ac.uk)  
Baiji.org Foundation, Staufacherstrasse 31, 8004 Zurich, Switzerland [leigh@baiji.org](mailto:leigh@baiji.org)  
Administrative Committee of Changjiang Fisheries Resource of the Ministry of Agriculture of China

Sponsored by: Ocean Park Conservation Foundation, Ocean Park, Aberdeen, Hong Kong [opcf@oceanpark.com.hk](mailto:opcf@oceanpark.com.hk)  
Conservation International, 1919 M Street, NW Suite 600, Washington, DC 20036 [hoffmann@conservation.org](mailto:hoffmann@conservation.org)

## **A.2.2 EMERGENCY IMPLEMENTATION MEETING: DAY TWO (18<sup>th</sup> DECEMBER 05)**

9am – 6pm  
SEAWORLD SAN DIEGO CONFERENCE ROOM

9am – 11pm: **INFRASTRUCTURAL REQUIREMENTS AT TIAN-E-ZHOU RESERVE**

Continuation and conclusion of previous day's discussion on this subject.

11am – 1pm: **CAPTURE-TRANSLOCATION LOGISTICS**

1. Open discussion about capture techniques and brainstorming discussion based on potential capture condition scenarios.
2. Existing capture resources.
3. Construction of specialised 'baiji capture' vessels.
4. Purchase of additional speed searching boats.
5. Identify suitable Chinese and international project partners. Develop cooperative milestone plan for funding acquisition and associated implementation of capture logistic targets (including funding for nets, manpower, fuel, and transportation of captured baiji to Tian-e-Zhou).

1pm – 2pm: **LUNCH** (Sponsored by SeaWorld San Diego)

2pm – 5.45pm: **CAPTURE-TRANSLOCATION LOGISTICS** (continued)

5.45pm – 6pm: **SUMMARY, END OF MEETING DAY 2**

Co-chairs to summarise the conclusions of the Emergency Implementation Meeting