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amphibian ark



# Workshop

AT THE ZOOLOGICAL SOCIETY OF LONDON & EUROPEAN XENOPUS RESOURCE CENTRE | UNIVERSITY OF PORTSMOUTH

6-8 September 2010

## TOWARDS A BIOBANKING STRATEGY FOR AMPHIBIAN CONSERVATION

organised by Rhiannon Lloyd, Matt Guille, Kevin Zippel, Oliver Ryder, Dominik Lermen and Andy Kouba

Approximately one-third of the 6,260 amphibian species assessed to date are described as critically endangered, endangered or vulnerable. **Biobanking** is one of the key interventions highlighted in the Amphibian Conservation Action Plan (2007), formulated in order to help abate the Amphibian Extinction Crisis. The **Amphibian Ark Biobanking Advisory Committee (ABAC)** was formed in 2008. This group, consisting of individuals actively engaged, or with a strong interest, in amphibian biobanking has since expanded and now includes over 30 members worldwide.

The purpose of this workshop is to bring ABAC-members; biobanking practitioners from traditionally separate disciplines of *Xenopus*, fish and conservation research; and stewards of endangered amphibian populations (both *in situ* and *ex situ*) together for the first time for a series of presentations, discussions and demonstrations. Together, these will provide the most up-to-date information on, as well as hands-on experience in, existing and emerging biobanking methodologies and will also highlight promising techniques not yet applied to amphibians. Furthermore, an inventory of existing amphibian biobanks, samples and facilities; a biobanking protocol handbook, and a strategy for expanding the number of amphibian biobanks/biobankers worldwide will be formulated.

### Main Outputs

- Synergy between ABAC-members, biobanking practitioners and stewards of endangered amphibian populations

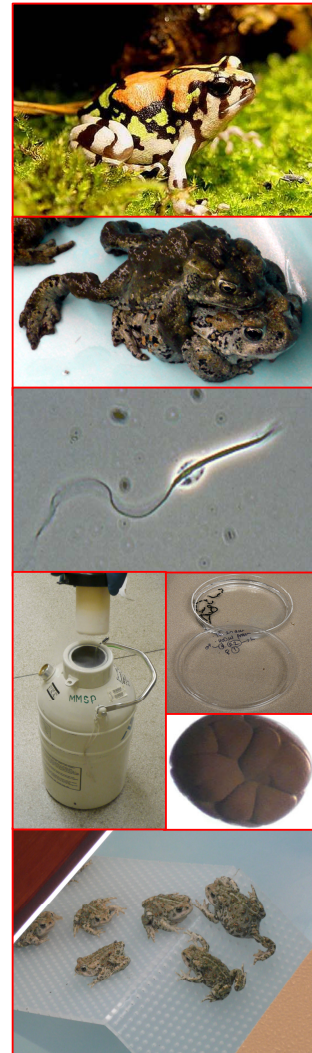


Image credits: Richard Gibson, Rhiannon Lloyd & Andy Kouba

- A handbook detailing existing biobanking protocols
- Increased number of individuals with hands-on experience in biobanking
- Interactive web-database detailing existing repositories and the samples they contain
- First draft of the Amphibian Ark Biobanking Strategy

### **List of Contributors**

Simon Stuart, IUCN Species Survival Commission, UK  
 Gordon McGregor Reid, North of England Zoological Society, UK  
 Shogo Higaki, Tottori University, Japan  
 Andy Kouba, Memphis Zoo, USA  
 Richard Gibson, Amphibian Ark, UK  
 Bill Holt, Zoological Society of London, UK  
 Marlys Houck, San Diego Zoo's Institute for Conservation Research, USA  
 Blair Hedges, Pennsylvania State University, USA  
 John Clulow, University of Newcastle, Australia  
 Haiko Wick, Fraunhofer-Institut für biomedizinische Technik, Germany  
 Anna Noble & Alan Jafkins, European Xenopus Resource Centre, UK  
 Jim Groombridge, Durrell Institute of Conservation & Ecology, University of Kent, UK  
 Tony Sainsbury, Zoological Society of London, UK  
 David Rawson, LIRANS Research Institute, University of Bedfordshire, UK  
 Shoko Ishibashi, University of Manchester, UK  
 Lyle Zimmerman, MRC National Institute for Medical Research, UK

### **List of Sponsors**

World Association of Zoos and Aquariums  
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**TOWARDS A BIOBANKING STRATEGY FOR AMPHIBIAN CONSERVATION  
DAY 1**

**MONDAY 6 SEPTEMBER 2010  
PRESENTATIONS/DISCUSSIONS  
FINAL PROGRAMME**

**ZOOLOGICAL SOCIETY OF LONDON**

**8.00 Registration opens**

**8.50 Welcome**

*David Field, Zoological Society of London, UK*

**BACKGROUND**

**Chair: TBC**

**9.00 Amphibians in crisis**

*Simon Stuart, IUCN Species Survival Commission, UK*

**9.25 History of biobanking in zoos and applications in conservation**

*Gordon McGregor Reid, North of England Zoological Society, UK*

**SESSION I: ESTABLISHING & MANAGING BIOBANKS FOR AMPHIBIAN CONSERVATION**

**Chair: TBC**

**9.50 Priority amphibian taxa for biobanking**

*Richard Gibson, Amphibian Ark, UK*

**10.15 Fundamental aspects of cryobiology: sample, individual and species differences**

*Bill Holt, Zoological Society of London, UK*

**10.40 General discussion**

**11.00-11.20 TEA/COFFEE/POSTERS**

**11.20 Databank systems for biobanks**

*Haiko Wick, Fraunhofer-Institut für biomedizinische Technik, Germany*

**11.45 Biobanks: genetic resources for informing conservation strategy**

*Jim Groombridge, Durrell Institute of Conservation & Ecology, University of Kent, UK*

**12.10 The importance of disease risk analysis for biobanks – title TBC**

*Tony Sainsbury, Zoological Society of London, UK*

**12.35 General discussion**

**12.55-13.55 LUNCH**

**SESSION II: NEW AND EXISTING BIOBANKS, SAMPLES & FACILITIES FOR AMPHIBIAN CONSERVATION**

**Chair: TBC**

**13.55 Initiating the biobanking of Caribbean amphibians**

*Blair Hedges, Pennsylvania State University, USA*

**14.20 Progress towards amphibian biobanking in Australia and New Zealand: roadblocks, strategies, opportunities and target taxa**

*John Clulow, University of Newcastle, Australia*

**14.45 Assisted Reproductive Technologies and Cryobanking Genetic Resources at the Toronto Zoo: past, present and (amphibian-friendly) future**

*Stacey Hayden, Toronto Zoo, Canada*

**15.00 Establishing a Genome Resource Bank for the Panamanian Golden Frog (*Atelopus zeteki*)**

*Gina Della Togna, Center for Species Survival, Smithsonian Conservation Biology Institute, USA*

**15.15 General discussion**

**15.35-15.55 TEA/COFFEE/POSTERS**

### **SESSION III: EXISTING AND EMERGING BIOBANKING METHODS FOR AMPHIBIAN CONSERVATION**

*Chair: TBC*

**15.55 Establishing and cryopreserving cell cultures: Procedures developed for the Frozen Zoo®**

*Marlys Houck, San Diego Zoo's Institute for Conservation Research, USA*

**16.20 Spermic urine (collection, short-term storage, cryopreservation and use in IVF)**

*Andy Kouba, Memphis Zoo, USA*

**16.45 General discussion**

**17.05 End of Day One**

**17.30 WORKSHOP BBQ & PIMMS RECEPTION - tickets to be booked in advance**

**TOWARDS A BIOBANKING STRATEGY FOR AMPHIBIAN CONSERVATION  
DAY 2  
TUESDAY 7 SEPTEMBER 2010  
PRESENTATIONS/DISCUSSIONS  
FINAL PROGRAMME  
ZOOLOGICAL SOCIETY OF LONDON**

**SESSION IV: MARRYING METHODS IN XENOPUS AND FISH RESEARCH WITH AMPHIBIAN CONSERVATION**

*Chair: Dominik Lermen*

**9.00 The European *Xenopus* Resource Centre**

*Matt Guille, European Xenopus Resource Centre, UK*

**9.25 Transgenesis procedures in *Xenopus* now and in the future**

*Shoko Ishibashi, University of Manchester, UK*

**9.50 Gynogenesis and androgenesis: haploids and viable whole-genome manipulations in *Xenopus***

*Lyle Zimmerman, MRC National Institute for Medical Research, UK*

**10.15 General discussion**

**10.35-10.55 TEA/COFFEE/POSTERS**

**10.55 Fish Biobanking: Current Activities, Lessons and Opportunities**

*David Rawson, LIRANS Research Institute, University of Bedfordshire, UK*

**11.20 Embryo vitrification and primordial germ cell transfer in fish**

*Shogo Higaki, Tottori University, Japan*

**11.45 General discussion**

**12.05-13.05 LUNCH**

**13.05 Behind the scenes tour of amphibian and reptile house**

**SESSION V: SUMMARY AND WAY FORWARD**

*Chair: Bill Holt*

**13.35 Summary**

*Rhiannon Lloyd, Zoological Society of London, UK*

**13.55 Way forward**

*All delegates invited to contribute*

**14.35 End of Day Two**

**15.00 BUS TRANSFER FOR DELEGATES AND INSTRUCTORS ATTENDING THE PRACTICAL DEMONSTRATIONS TO THE EUROPEAN XENOPUS RESOURCE CENTRE (PORTSMOUTH)**

**18.00 PRACTICAL DEMONSTRATION PREPARATION (INSTRUCTORS)**

**TOWARDS A BIOBANKING STRATEGY FOR AMPHIBIAN CONSERVATION  
DAY 3  
WEDNESDAY 8 SEPTEMBER 2010  
PRACTICAL DEMONSTRATIONS  
FINAL PROGRAMME  
EUROPEAN XENOPUS RESOURCE CENTRE**

**9.00 -11.00** Testicular spermatozoa (isolation, cryopreservation and IVF)  
*Anna Noble and Alan Jafkins*

**11.00-11.20** TEA/COFFEE

**11.20-13.20** Sperm nuclear injection  
*Shoko Ishibashi*

**13.20-14.20** LUNCH

**14.20-15.20** Embryo vitrification  
*Shogo Higaki*

**15.20-15.40** TEA/COFFEE

**15.40-17.40** Tissue cell culture (isolation, cryopreservation and culture)  
*Marlys Houck*

**17.40-18.10** IVF and sperm nuclear injection embryo check  
*All delegates*

**18.10** *End of Day Three*

**THURSDAY 9 SEPTEMBER 2010**

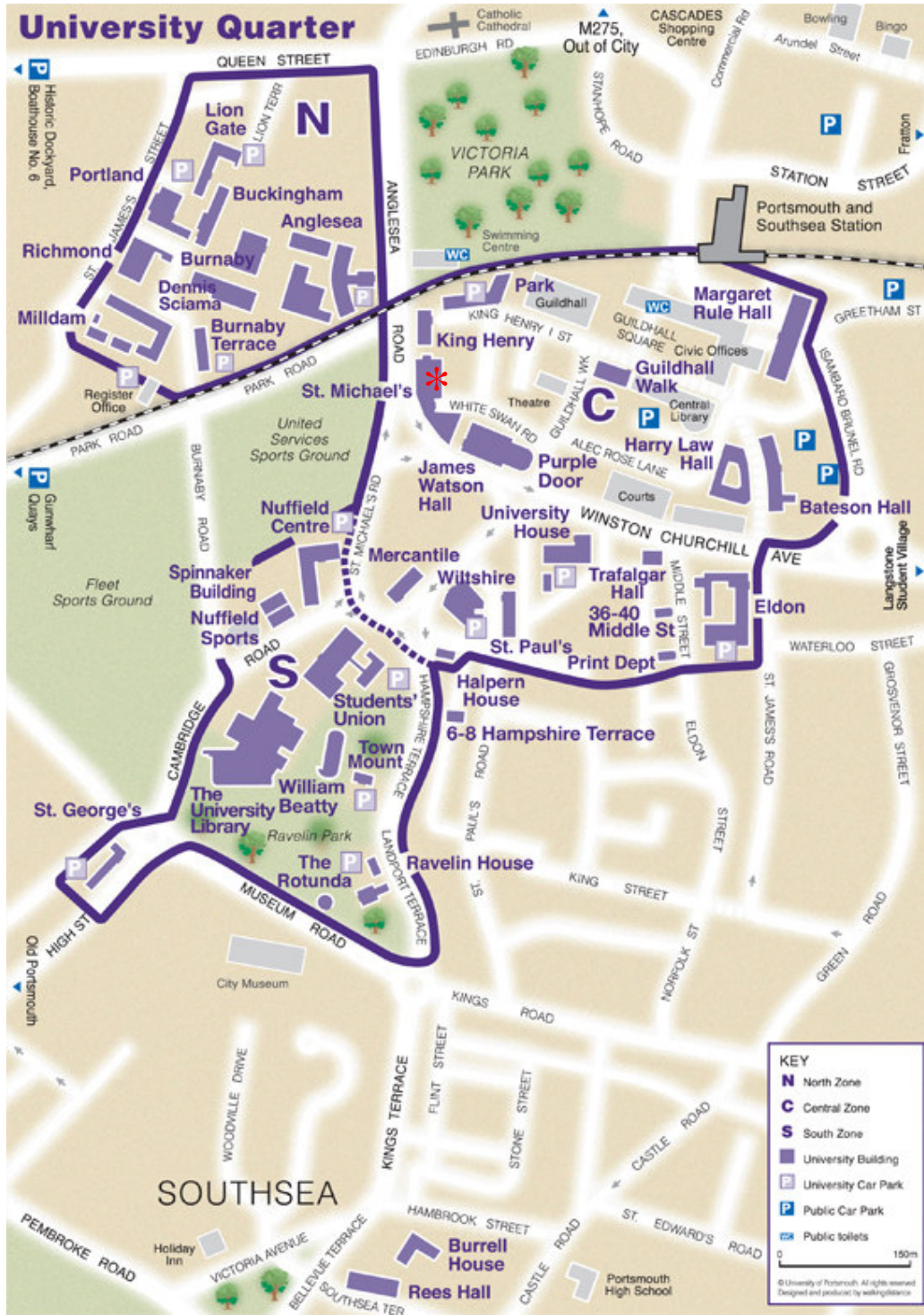
**8.00 RETURN BUS TRANSFER FOR DELEGATES ATTENDING THE PRACTICAL  
DEMONSTRATIONS TO LONDON**

## Location

**Presentations and discussions:** The Zoological Society of London's Mappin Pavilion is next to the "Outback" exhibit, within ZSL London Zoo, Regent's Park. Cars may be parked in the London Zoo visitors' car park – please contact Mrs Claire Rutter to arrange a special parking rate for the workshop. The nearest public transport is by the 274 bus (to the Zoo), or by Underground (to Camden Town).



**Practical demonstrations:** The EXRC is inside “Old St. Michaels building” (see asterix), part of the University of Portsmouth’s School of Biological Sciences. Cars may be parked in the public car parks (marked in blue on the map). Nearest public transport is by train (Portsmouth and Southsea station, 5 min from the venue) or by bus (coaches to Portsmouth arrive at The Hard next to Portsmouth Harbour train station, 10 min from the venue).



## Notes

**Attendance:** All places must be booked in advance.

**Attendance fee:** £100.

**Registration for presentations/discussions (ZSL, London):** To register for the presentations/discussions please complete the registration form (enclosed) and email or post it to Mrs Claire Rutter by **23 August 2010**.

**Registration for practical demonstrations (EXRC, Portsmouth):** The number of places for the practical demonstrations is strictly limited to 16. To register for the practical demonstrations please complete the registration form (enclosed) and fill in the box explaining why you want to attend the practical demonstrations and how you are likely to benefit from attending and email or post it to Mrs Claire Rutter by **2 August 2010** for consideration by the organisers. Successful applicants will be notified by **9 August 2010**.

**Abstract submission:** The organisers invite interested parties to submit abstracts on aspects relating to amphibian biobanking. Submitted abstracts will be reviewed and selected for presentation (either as an oral communication or as a poster). Abstracts of no more than **250 words** can be emailed or posted (using enclosed abstract submission form) to Mrs Claire Rutter (details below) by **2 August 2010** for consideration by the organisers. Authors of accepted abstracts will be notified by **9 August 2010**.

**Meals and refreshments:** Coffee, tea and a buffet sandwich lunch will be served during breaks on all days and are included in the ticket price.

**Workshop BBQ and Pimms reception:** A BBQ and Pimms reception will be held at the end of the first day; tickets cost £30 each and must be purchased no later than **23 August 2010**. Please state if you have any special dietary requirements, including vegetarian.

### **Abstract submission and registration forms:**

Please send to:

Mrs Claire Rutter,

Room 1.36,

Biophysics Laboratory,

School of Biological Sciences,

King Henry Building,

King Henry I Street,

Portsmouth,

PO1 2DT, UK.

E: [Claire.Rutter@port.ac.uk](mailto:Claire.Rutter@port.ac.uk); T: +44 (0)23 9284 2047; F: +44 (0)23 9284 2053.

### **Enquiries:**

Please contact:

Rhiannon Lloyd,

Institute of Zoology,

Zoological Society of London,

Regent's Park,

London,

NW1 4RY, UK.

E: [cryobanking@amphibianark.org](mailto:cryobanking@amphibianark.org); T: +44 (0)20 7449 6664; F: +44 (0)20 7586 2870.

# TOWARDS A BIOBANKING STRATEGY FOR AMPHIBIAN CONSERVATION

**6-8 September 2010:** Presentations and discussions (6-7 September 2010) in the Zoological Society of London's Mappin Pavilion, Regent's Park, London, NW1 4RY, UK. Practical demonstrations (8 September 2010) in the European Xenopus Resource Centre, St Michael's Building, Portsmouth, PO1 2DT, UK.

**Attendance Fee:** £100.

**Deadline for Registration:** 23 August 2010 (presentations/discussions). 2 August 2010 (practical demonstrations and abstract submission).

Please return one form per person to:

Mrs Claire Rutter,  
Room 1.36,  
Biophysics Laboratory,  
School of Biological Sciences,  
King Henry Building,  
King Henry I Street,  
Portsmouth,  
PO1 2DT, UK.

E: [Claire.Rutter@port.ac.uk](mailto:Claire.Rutter@port.ac.uk); T: +44 (0)23 9284 2047; F: +44 (0)23 9284 2053.

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## REGISTRATION

Please register me for the following PRESENTATIONS AND DISCUSSION DAYS at ZSL, London (please tick as appropriate):

Monday and Tuesday [  ]

Monday [  ]

Tuesday [  ]

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Please register me for the following PRACTICAL DEMONSTRATIONS on Wednesday at EXRC, Portsmouth (please tick box)\*:

Tissue cell culture (isolation, cryopreservation and culture) [  ]

Testicular spermatozoa (isolation, cryopreservation and IVF) [  ]

Blastomere (isolation, cryopreservation) [  ]

Embryo vitrification [  ]

Oocytes (isolation, defolliculation and maturation) [  ]

Sperm nuclear injection [  ]

Nuclear transplantation [  ]

*\*Please note that this list of practical demonstrations is provisional.*

Please explain (briefly) why you would like to attend the practical demonstrations and how you think you will benefit from attending\*\* .....

.....  
.....

\*\*Please note successful applicants will be notified by 9 August 2010.

Please send me [ ] tickets for the BBQ AND PIMMS RECEPTION on Monday 6 September (£30 each) and list any special dietary requirements below.

**YOUR DETAILS**

**Title:**.....

**First name:**.....

**Surname:**.....

**Name** (as you would like it to appear on your badge):.....

**Position:**.....

**Organisation:** .....

**Email:**.....

**Tel:** .....

**Special dietary requirements** (please specify, including vegetarian):  
.....

**Mailing address (billing address should be provided for card payments):**  
.....  
.....  
.....

**Delegate list:** We would like to make a list of delegates. Please indicate here if you **do not** want your information (name, position, organisation, email address) to be included  
[ ]

**PAYMENT DETAILS**

**Cheque:** I enclose a cheque for £100 [ ] or £130 [ ] (please tick as appropriate) made payable to: The Zoological Society of London.  
Please note that cheques can only be accepted in Sterling drawn against a UK bank.  
Direct payment by Euros or US\$ may also be possible; please contact Mrs Claire Rutter for information.

**Card:** Please complete all details below and return by fax or by post:

Please debit my Visa / Mastercard (delete as appropriate)

Amount £100 [ ] or £130 [ ] (please tick as appropriate)

Card Number ..... / ..... / ..... / .....

Expiry Date ..... / .....

Card security code (CVV2/CVC2) .....

Name on Card ..... (capital letters please)

Signature of Card Holder .....

Date .....

If you would prefer to give card details over the telephone please call Mrs Claire Rutter (details given above).

**Cancellations** must be received in writing five working days prior to the symposium and will be refunded less a £15.00 processing charge. Substitutions may be made at any time without charge; please notify Mrs Claire Rutter of any change in attendee details.

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E: [Claire.Rutter@port.ac.uk](mailto:Claire.Rutter@port.ac.uk); T: +44 (0)23 9284 2047; F: +44 (0)23 9284 2053.

<b>Surname:</b>	<b>First Name:</b>	<b>Title (eg Prof/Dr/Mr/Mrs etc):</b>
<b>Position (e.g. Lecturer/PhD student etc):</b>	<b>Email:</b>	
<b>Institution / University:</b>	<b>Telephone:</b>	
<b>Other Authors:</b>		
<b>Abstract Title:</b>		

**Abstract [expand box as necessary]**

**NOTES:**

- All abstracts will be published in the workshop's abstract book and online at <https://aark.portal.isis.org/Biobanking/default.aspx>.
- Please note responsibility for accuracy rests with the author(s).