



THE FROZEN ARK PROJECT

Saving the DNA and viable cells of the world's endangered species



BACKGROUND

The Frozen Ark is a biobanking charity based at the School of Life Sciences, University of Nottingham, also with a base at Cardiff University.

The charity aims to co-ordinate and enhance biobanking for endangered species that are UK. We have recently been granted National Lottery Heritage Fund funding to develop a UK National Archive for DNA and tissues of endangered and threatened species. Part of this funding is to develop activities to support the Frozen Ark to strengthen its leadership, governance, management and operations.

Our Charitable objects and activities are:

- A. **To promote the conservation of Earth's animal biodiversity on the planet for the benefit of the public by:**
 - i. **collecting and conserving genetic material in the UK, from endangered animals in the UK and worldwide.**
 - ii. **supporting the establishment of genome resource banks of endangered animals worldwide.**
 - iii. **establishing databases to identify where genetic material is stored and to identify which gene pools are in need of collection and preservation and the time scales involved.**
 - iv. **Providing a source of genetic materials to combat the loss of genetic diversity in conservation efforts.**

- B. **To advance the education of the public by:**
 - i. **contributing to scientific knowledge by carrying out research and disseminating the results to discover the best methods of collecting, storing and using samples for the long-term preservation of tissue, DNA and viable cells of endangered animals and for use in conservation management.**
 - ii. **providing resources and information from the collection and conservation of genetic material for the advancement of scientific knowledge.**

The Charitable activities

A. i. Sample collection will focus initially on the many thousands of non-human vertebrate and invertebrate animal species that are expected to go extinct in the next few decades. They will be collected from captive breeding programmes, zoos and wild populations. Tissue samples will be preserved and stored for the long term at a low enough temperature to preserve the DNA and cells and for active use in conservation programmes. DNA and tissue collections will be held in dedicated spaces at the University of Nottingham and Cardiff University and with other national



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Frozen Ark Consortium Partners. Cell cultures will be prepared and stored as a viable resource and preserved at very low temperatures at other national Partner Centres having the necessary facilities. Partners, as part of their current international sample collecting programme, will collect samples for the project as part of standard veterinary interventions.

A. ii. The International Partnership of the Frozen Ark has been created and is being coordinated at the University of Nottingham. Countries that already belong to the Partnership include India, the United States of America, Colombia, Germany, Norway, Ireland, Korea, Vietnam, Malaysia, Australia, South Africa and New Zealand. Partners are expected to promote the project globally, contribute to the database, collect and store samples from native species, send a duplicate collection of samples to another Consortium Partner for safekeeping and ensure, when they are no longer able to support their collection, it is transferred to a suitable facility elsewhere as far as permissible under the Nagoya Protocol. Partners will establish their own Frozen collections, carry out research and use the genetic resources under their own countries statutory regimes and regulations.

A. iii. A database will be set up at the Frozen Ark office. It will include information about the collections of samples of DNA, tissue and viable cells of endangered animals that have already been collected worldwide. Details of their location, methods of collection, preservation and storage will be recorded. Access to the database will be open to all Partners and registered users on the website. Lists of animals known to be endangered will be taken from the IUCN Red Data Lists and from other local, national, international and speciality lists. Funding will be sought to provide the salary of a bio-informatic scientist to establish the database on the Internet. Initially, lists will be collected and compiled at the Frozen Ark office. There will be no benefit or commercial gain of any aspect from the information contained in the database whatsoever.

A. iv. The stored material will provide a renewable resource to use in animal captive breeding programmes when populations have become too inbred to be viable. As necessary technologies become available, the material will be released to professional bodies to save individual species from extinction. The mission of the Frozen Ark is to collect and preserve the material while it still exists. All use of stored material will be carried out under appropriate Home Office Licenses by professional scientists regulated by current statutory regimes.

B. i. A research programme will be carried out at the University of Nottingham and Cardiff University to clarify and solve the problems of DNA damage during tissue storage. The different methods of preservation of tissue will be evaluated where necessary (freezing, freeze-drying, preserving in ethanol, dried samples). Methods of tissue preservation that do not involve freezing will be necessary for the collection and



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storage of samples in developing countries. Here the greatest biodiversity and the most unreliable electrical supplies exist. Short-term experiments will be made to detect small amounts of DNA damage.

B. ii. The information stored in the DNA sequences, tissues and viable cells (somatic cells, sperm, eggs and embryos) contain great stores of knowledge about the biology of a species. This material will be a resource for educating people about the place of species in the environment. It will be an invaluable resource in the construction of the evolutionary history of extinct and endangered species and will enable the genetic sequences of the animals to be determined. It will also allow future generations to determine the genetic blueprints of species before they go extinct.

The information gained in B i. and B ii. will be disseminated in peer reviewed academic articles, at scientific meetings, through information circulated to Consortium Partners and other interested professional institutions, and also through public social media.

We are looking for an external, professional consultant to facilitate and work with the staff and Trustees of the Frozen Ark to develop:

- Clarity for the organisation and its network of partners to bring clarity to the organisation
- A business plan which will:
 - Restate our vision
 - identify areas of existing activity to further develop as well as potential new areas of activity
 - incorporate the Fundraising strategy and further develop it as required to meet any new identified activities or goals
 - Identify work priorities
 - Set financial targets and risk assessments against the achievement of the plans
- Undertake a governance review of the current Frozen Ark Trustees, staff and UK Partner Board members. in order to identify current skills and future skill requirements within the organization that will be needed to fulfil the business plans.
- Carry out a skills audit in order to identify current skills and future skill requirements within the organization that will be needed to fulfil the business plans
- Identify any training requirements for staff and trustees
- Developing income generation – Explore trading/business activity
- Developing some proposals for income generation with realistic costings included



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The work must take into consideration all current legislation which would affect the project, including Health and Safety, Environmental Health, Licensing regulations, Disability Discrimination.

Methodology

It is anticipated that the study will include both desk and field-based research. The process of Trustee, volunteer and partners involvement in this study is viewed by the client as being of equal importance in the production of the final report / plan. The consultant should allow for time / travel spent doing this in his / her costs.

Reporting to the NHLF Project officer, Jude Smith and Trustee Fiona Crawley, Director, Prof Mike Bruford and Fundraiser, Ruth Greenberg it is hoped that the project would be completed by the end of April 2020.

Costs

The total budget is £10k

It is envisaged that this study should take no more than 12 months to complete, and that the total fee should not exceed £10,000 **inclusive of all costs.**

ACTIVITIES

- Initial meeting with Project Officer (PO) and Fundraising Officer – information gathering, interviews – Leading to first summary report on current state of the charity
- One-day Workshop - SWOT etc. – attended by Board and Staff
- Report in form of Business Plan produced from workshop – presented to Project Officer
- Governance Review – produce questionnaire
- Report and recommendations on governance to include – any restructuring, effectiveness of Board, approach to recruitment of Trustees, skills and capabilities, network, formal governance arrangements, size of board and election methods, effectiveness of meetings – report to PO
- Carry out skills audit of Staff and Trustees to identify any skills gaps and identify any training needs
- Work collaboratively alongside Staff and support and mentor key members of the project team
- Recommend any suitable training
- Deliver a one-off session on legal responsibilities
- Workshop/meeting to present final plans to Board
- Final write up



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Outcomes

- Increase in motivation and involvement of the Trustees, improved financial sustainability and performance
- Development of a plan for each Trustee to support the FA's short- and long-term business plans
- Training in legal responsibilities, fundraising, training in partnership activities and structured mentoring where appropriate

Reporting

The study will be managed by The Frozen Ark. The nominated contact person is Jude Smith, Tel: 01159513219, Email: judesmith@frozenark.org. The consultant is expected to contact the nominated officer at the start of the project and on submission of the draft report, for clarification. Six copies of the draft and final study reports should be submitted by the deadline dates. In addition, an electronic version of the final report should be supplied.

Proposal to Tender

The consultant's proposal to tender for this study should include details of:

- the relevant experience and competency possessed by the consultant and other personnel who will work on the project
- the methodology to be used in the study
- full costs and expenses
- a study timetable

This should be no more than 6 pages long.

Documentation at end of project

Business Plan

Governance Review and Structure

Skills Audit

Closing date for proposals is Friday 29th March at 10 am.

Proposals should be submitted to judesmith@frozenark.org.

Proposals must comply with the requirements set out above.

For further clarification please contact: judesmith@frozenark.org.