**Export/sampling permits**

Please note an export permit must be linked to an objectthat has to be created on SAHRIS! If the object you want to work on has not been created yet, you would need to **create an ObjectID**.

Required documents:

* For export of material from KZN, Eastern Cape or Western Cape that involves destructive analysis, the **destructive sampling permit** from the respective Heritage Authority must be submitted;
* A consent letter from the accessioning institution.

The proposal should include (you can fill these in below):

* a list of participants (name, affiliation, phone no, email addresses) and how they are involved;
* the name and address of the facility, including address, it is being analysed at;
* name and address of the museum/university department that currently hosts the object;
* names of the responsible person(s) during transport and while the fossil is at the facility;
* the period/time frame during which the fossil(s) will be outside the country;
* detailed information on the fossil(s), especially as it is a "unique" specimen;
* detailed information on the research project behind it & methodology including expected outcomes (i.e., the reason for export);
* the written confirmation of the institution that currently hosts the object that the object may be used as proposed and be returned in good condition;
* should there be any damage/destructive analysis (e.g., coating for higher resolution) undertaken, this needs to be stated in detail;
* Statement why this study cannot be done in South Africa.

**Applicant (name and affiliation): this is usually the museum curator!**

Dr Romala Govender

**Applied for (principal researcher):**

**Participants with affiliations, email addresses, phone numbers (& their role):**

1) Megan Rose Woolley

Role: This is her honours project for 2018. She will be doing the histological analysis.

2) Prof. Anusuya Chinsamy-Turan

Role: Co-supervisor based at UCT. Assisting with the histological analysis to be carried out and analysis of the pathologies.

3) Dr Romala Govender

Role: Co-supervisor based at Iziko museums. Assisting with the anatomical descriptions and analysis of the pathologies.

The material will be **hand-carried** to University of Cape Town (facility/institution) in January 2017 (month, year) by Romala Govender and Anusuya Chinsamy-Turan (name of person responsible for transport) and brought back by \_\_\_\_\_\_\_\_\_\_\_\_\_ (leave blank if same person as above).

Megan Woolley (name) will be involved with the scanning (e.g., transport/scanning) of objects and sectioning the material for the histological analysis which will be carried out at University of Cape Town under the supervision of Prof. Anusuya Chinsamy-Turan. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (whatever else).

**Institution incl. address that currently hosts the object:** University of Cape Town, Department Biological Sciences, Private Bag X3, Rondebosch, 7700

**Facility incl. address at which the experiment will be done:** University of Cape Town, Department Biological Sciences, Private Bag X3, Rondebosch, 7700

**Table of objects or upload file:**

|  |  |
| --- | --- |
| **Specimen Number** | **Species** |
| N0986 | Mirounga leonina |
| N2244 | Hydrurga leptonyx |
| N3674 | Mirounga leonina |
| N0986 | Mirounga leonina |

**Site including age at which object was found:**

**Time frame:**

Transport to UCT (facility): by mid March 2018 (date)

Return date: Jan 2019 (date)

**Aim/rationale:**

There is little comparative data on skeletal pathologies of modern Phocid seals (Govender et al. 2011) and this study aims to recognize a few of these in order for them to be applied to fossil evidence in future similar studies.

This study will examine pathologies of 3 extant seals viz, a vertebra and skull fragment from leopard seals, and a broken and healed fracture of a maxilla of an elephant seal. These will be examined through anatomical descriptions, CT scanning, and histological methods. These samples will be compared to similar ones exhibited in the fossil seals to better understand the nature and causes of the pathologies present. Thus this study will allow extrapolation to the fossil record, and assist in understanding the Pliocene seals skeletal response to disease and trauma.

This could be especially important in the light of changing climate. Leopard Seals inhabit the ice-packs around Antarctica (Siniff et al. 1977), and Elephant Seals have a more varying range around the Southern Ocean and south Atlantic/Pacific Oceans (Laws 1956). Both regions have been subject to numerous climate change studies in recent years. Though the topic will probably not be covered in this project; it could, however, set a precedent for future studies.

**Methodology (short):**

All the material will be CT scanned to assess the trauma 3 dimensionally at a microanatomical level. Thin sections will be made of the modern elements, and we are currently applying for permits to section the pathological fossil material.

The study will involve anatomical descriptions of the individual specimens, CT scanning and various histological methods.

**Confirmation/permit by museum (**Attached?):

Letter from the museum attached.

**Damage/destructive analysis? (if yes, explain in detail):** Yes.

Representative samples of fossil and modern material will be sectioned for histological analysis.