

Environmental Committee Paper

Title: Falklands wetlands and aquatic habitats: baselines for monitoring future change

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Purpose: Update on SAERI's Darwin Plus 116 Wetlands Project for the Environment Committee

1. Project Background

The Falkland Islands (FI) historically lacked herbivorous mammals. The introduction of grazing animals has led to vegetation changes and soil erosion. The impact of these changes on wetland and aquatic habitats is not well-understood; limited past research suggests that water quality may remain fairly natural and is largely influenced by sea salt deposition and humic acids from peat runoff. Some studies, however, have shown evidence of human impacts, such as elevated nutrient concentrations in some ponds.

Climate change also presents several threats. A predicted temperature rise could directly impact on aquatic biota and increase water evaporation rates, which could reduce freshwater availability and lead to the loss of some habitats. Increased storm frequency or severity, will change water quality and may alter the hydro-morphology of drainage systems and wetlands. These impacts on aquatic biota can be understood by regular monitoring.

The Falkland Islands Biodiversity Framework (FIBF) is a threats-based policy that outlines response strategies for identified threats. One of these strategies is the 'Falkland Islands Ecoregions, Habitats, Species and Sites Strategy', which identifies 11 ecoregions for the Falkland Islands and requires each of these to have an action plan. Five ecoregions are directly relevant to this project: freshwater (riverine), freshwater (ponds, lakes), lowlands, montane and estuarine. Working closely with the Falkland Islands Government and local stakeholders, the overarching aim of this project is to facilitate the development of action plans for Falklands wetland and aquatic habitats, which will support the FIBF.

2. Project Partners

Falkland Islands Government (FIG)

UK Centre for Ecology and Hydrology (UK CEH) – Prof. Chris Evans

University College London (UCL) – Prof. Julian Thompson and Emeritus Prof. Roger Flower

Independent consultant David Stroud.

3. Project Objectives & Scope of Work

The project intends to fulfil the following objectives:

1. Identifying gaps in baseline data

All existing data and literature around wetlands in the Falkland Islands will be brought together, including outputs from previous DarwinPlus projects and data from published and unpublished research. All open data will be uploaded into the Falkland Islands data portal, reviewed and analysed to identify gaps in knowledge about wetlands. All spatial data will be compiled into a GIS database.

2. Filling the gaps in baseline data

Gaps in data around wetlands will be addressed by an intensive field assessment of freshwater wetland ecosystems within at least six representative river-estuary catchments distributed across the Falkland Islands. Within each catchment we will study representative examples of the five ecoregions of interest where we will collect a range of biological, chemical and hydrological field data on the aquatic systems.

3. Producing action plans and defining indicators

Recommendations for action plans for each of the five ecoregions will be based on the science outputs of the projects. Measurable indicators for ecosystem condition will be defined and recommendations for long-term monitoring will be made. Infrastructure for basic hydrological long-term monitoring will be deployed.

4. Project Update

Originally, most of the fieldwork should have been carried out in this summer with the assistance of project partners. However, the current Covid situation means that they were unable to travel to the Falklands, which shifts some of the fieldwork to the upcoming summer 2021/22. At the time of writing the project had acquired most fieldwork and labwork equipment and started the initial fieldwork campaign. An email was sent to all landowners, which explained the aims of the project and invited them to participate in long-term monitoring of waterbodies on their land. By the end of March 2020 the literature review will be completed and made available on the project website. Existing data from previous research and data collected during the fieldwork campaign will have been added to a new Wetlands webGIS project.