VEGETATION MAP OF THE FOREFIELD OF RETREATING GLACIER, ADMIRALTY BAY AREA, KING GORGE ISLAND (MARITIME ANTARCTIC)

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The most spectacular vegetation changes due to local climate warming are observed in the forefields of retreating glaciers in the maritime Antarctic. When glacier retreats, new lands are exposed, which change the albedo properties depending on which plants that are established in the forefields. The main aim of this study is to develop an ultra-high resolution baseline map for plant succession studies in the forefields of the Sphinx glacier, located on the west coast of Admiralty Bay area (ASPA No. 128) on King George Island. This glacier has retreated about 500 m during the last 37 years. We use the Cryowing Scout, a twin engine fully electric Unmanned Aerial Systems (UAS) with a wingspan of 2.5 m and maximum flying time of 90 minutes. The UAS is hand launched and well suited to be operated in the field with no need of a runway. For this particular experiment the UAS was equipped with a NDVI camera and a on square kilometre large area in the forefield was mapped with a spatial resolution of 7 cm. The preliminary results shows that about 480m from the glacier front a 250 square meter large moss-bed have been developed in a mesic area and that moss-patches of less than 10cm can easily be mapped, but not on species level. In dryer areas the vascular plants *Deschampsia antarctica* and *Colobanthus quitiensis* occurs frequently, however only the largest individuals (> ca 7 cm) of these can be mapped.