



Natural Environment Group (NEG) Project Bidding Pro Forma

Please complete all sections and read the eligibility criteria and timescale at http://www.solentems.org.uk/natural_environment_group/NEG_Projects/.

Project Title:	Salt marsh passive regrowth promotion – Lands End, Old Bursledon
Project Sponsor/Lead (and full contact details):	<p>Dr Simon Bray and Dr Ilse Steyl, AQASS Ltd (www.aqass.co.uk) and visiting researchers, Biological Sciences, University of Southampton.</p> <p>AQASS Ltd, Unit 16, Sidings Industrial Estate, Hound Road, Netley Abbey, Southampton, SO31 5QA.</p>
Project Description and Objectives:	<p>It is a recognised symptom, not least in the Solent region, where over 80% of the coastline is protected, that saltmarsh and mudflat habitats have seen area decline due to coastal squeeze / sea level rise, increase storms and algal smothering (excess nutrients). Beneficial dredge spoil use has been researched for Solent wide site consideration (e.g. see Williams et al., 2010) and to a lesser extent on the River Hamble (Bray et al., 2016).</p> <p>At Lands End, Old Bursledon, there is a saltmarsh continuation of the HCC managed Hackets Marsh. The area is privately owned, has shown significant decline (see Figure 5.1 Bray et al., 2016) and was not recommended for beneficial use trials. However, there is interest from the land owner in attempting localised passive restoration through sediment retention and pioneer marsh plant species regrowth techniques on a suitable bifurcating intrusion into the Marsh.</p> <p>The project will aim to:</p> <ul style="list-style-type: none"> • Undertake drone surveys of suitable sites (three possible – Fig. 1) of the marsh and use photogrammetry and GIS analysis to establish the optimum site for: <ul style="list-style-type: none"> ○ Slope; ○ Elevation; and ○ Drainage. <p>Following analysis of imagery, the most suitable of the three sites will be chosen for a trial passive sediment retention program. This will involve appropriately designed placement of</p>

sediment retention sheet or brushwood, active transfer of *Spartina* / *Salicornia* (spp) from within chosen creek to encourage pioneer growth, management of algal mats to remove them from retention structures, ongoing monitoring of change using aerial imagery analysis and ecological / sediment monitoring; note, some remnant attempts by a former land owner do show minor localised promotion of pioneer marsh species.

Note, there is also a possible purchase of sustainable sediment retention structures to trial as plant growth promoters (see: <https://www.bese-products.com/article/salt-marsh-restoration/>) though this will be limited due to cost per unit.

If the initial trial shows success, it is intended to partner Environmental Sciences (University of Southampton), to create ongoing monitoring of further sites (of the three possible) through 3rd year undergraduate or master's projects.



Figure 1. Site 1 (blue), Site 2 (red) and Site 3 (green) as potential small scale passive restoration studies for sediment retention.

What is the value of the project to the Solent European Marine Sites (SEMS), other designated sites or areas of conservation interest?

The site is part of the Solent / Southampton Water SPA / Ramsar and contains qualifying features to be included within the Solent Maritime SAC.

Project Outputs:

Baseline mapping, prioritised initial site, field trials for sediment retention and flora promotion / regrowth accompanied by ecological / sediment survey and follow up (3 monthly) aerial survey.

Project Timescale and Milestones:

1 year period, survey, monitoring, management and field report.

- March / April 2020 – baseline aerial survey and ecological data collection;
- April 2020 – data analysis, trial site selection;
- April / May 2020 – initial placement of sediment retention structures and localised transfer of pioneer species

	<p>(with possible use of BESE product if budget allows);</p> <ul style="list-style-type: none"> • Ongoing management for algal smothering and retention structure integrity, initial weekly checks to extend as appropriate; • Monthly collection of plant growth data and visual assessment of morphological change; • 3 monthly repeated flights with GIS and photogrammetry analysis to assess slope / angle / sediment profile effects; • 1 year end project report and feasibility consideration for remaining creeks at Lands End.
<p>Overall Project Cost (£): <i>Please detail other funding sources secured / sought.</i></p>	<p>Propose budget of 5k (with HMRC offset of R&D tax allowance) to cover survey, data collection and analysis, plus ongoing management of structures / purchase of retention material (wood / netting etc.). Plus, initial liaison with Natural England (NE) to ensure Natura2000 site regulation is adhered to as / if required, but if NE require formal HRA / AA, the project may not proceed as this approach will be prohibitively expensive – any remaining allocated funding will be returned if already in place.</p>
<p>Funding contribution sought from NEG (£): <i>The amount requested should be match funded.</i></p>	<p>£2.5K</p>
<p>Will the project still go ahead without NEG funding?</p>	<p>Yes, but in restricted format as drone flights and data analysis are time consuming and labour intensive.</p>
<p>Geographical coverage of the project: <i>The project must cover some aspect of the coastal or marine environment of the Solent.</i></p>	<p>Figure supplied. Lands End saltmarsh (component of Hacketts Marsh), Old Bursledon, Hamble River.</p>
<p>Please list any project partners:</p>	<p>SAND Geophysics Ltd (https://www.sandgeophysics.com/). Sharing the same building as SAND Geophysics, SAND and AQASS partner one another in projects where geophysical survey requires compliment marine ecological approaches and / or GIS analysis of complex spatial results.</p>
<p>Additional information to support the Bid:</p>	<p>Hopefully all aspects are covered.</p>

Submission date: 24/02/2020

Please email completed forms to info@solentforum.org by the 28 February.