Environmental Standard Operating Procedure

ESOP Name	Erosion Protection
ESOP Number	6
Revision Date	22/02/2024
Related ESOPs	2 Biosecurity 10 Working with Water Voles 23 Installation or replacement of quay heading or piling

Aim

Installation of new bank erosion protection, which may include soft erosion protection or piling, is required to protect river banks from the effects of waves and scour.

The standard procedure aims to minimise the accelerated rates of sediment loss and promote natural vegetation growth.

Standard Methodology

- Works to be identified at least 18 months prior so that an ecological assessment can be undertaken in advance of the main species survey season.
- Carry out protected species survey and any mitigation in line with ESOP 10 - 14. If tree/scrub clearance is required, consult ESOP 4
- Hard engineering options include sheet metal piling, wooden piling, gabion baskets – floating and land-based plant, backfill required
- Soft engineering options include alder pole piling, hazel faggoting, bituminous matting, nicospan geotextile, coir rolls (floating and land based).
- For faggoting and coir roll option, gravel or similar sized backfill material will be required
- Plant up with appropriate vegetation

Procedure

Pre-works

- Identify the most appropriate method of erosion protection for the site, depending on the characteristics of the site and level of protection required. Soft erosion protection should be used where possible.
- All erosion management work to be planned at least 18 months prior, ensuring works are spaced both spatially and temporally.
- Ecologists to undertake site assessment during the spring/summer of the year preceding planned works to identify species of interest/concern, confirm whether works can be undertaken in such a way to avoid impacts on water voles & identify any access improvements required, e.g. tree management.
- Assessment to include water vole surveys to determine presence & the identification & location of burrows.
- If assessment results indicate that planned works will impact water voles or their habitat, works will need to be re-designed or a wildlife licence applied for through Natural England.
- Results of assessment will be mapped & used to form a site-specific Method Statement to guide the machinery operator, alongside a pre-works site visit.

Operational

- Access routes can be strimmed to a height of 15cm, in line with ESOP 11 (reptile mitigation), to assist machinery movements & visibility. However, where water voles are present, vegetation must be retained at least 3m from the bank edge to ensure cover and food remains available for water voles. Strimming to be undertaken by hand.
- Machinery & mats to remain at least 3m away from water's edge.
- Where backfill material is required, this needs to be an inert material, preferably locally sourced sediment. In heavily boated or industrial areas, a sediment chemical quality report is required prior to use.
- Works will aim to provide as natural a bankside environment as possible

Consultation

The following must be confirmed by the Ecology team before works commence:

- Natural England assent if site is designated.
- Wildlife licence application for protected species – to be determined by Ecology team through pre-works site assessment and survey.
- Environment Agency permit if works are within 16m of a main river
- Internal Drainage Board permission if works impact a main drain

Risk Assessment

Hazard	Initial Risk			Controls / Safeguards / Precautions	Revised Risk		
	S	L	R		S	L	R
Loss of natural bank vegetation	**4**	**5**	**C**	Choose an appropriate method of erosion control and ensure that re-planting with native, local species is undertaken at the end of the work.	**4**	**3**	**B**
Harm to protected species and/or habitat	**4**	**5**	**C**	Pre-works survey to be undertaken and mitigation methods put in place as directed by the ecology team.	**4**	**1**	**B**
Continued loss of bankside habitat due to use of inappropriate backfill material.	**4**	**4**	**C**	Use geotextile or similar membrane to prevent erosion; ensure non-toxic backfill used. Aim to use locally sourced sediments if suitable.	**4**	**1**	**B**

Matrix

		LIKELIHOOD				
		Very unlikely	Unlikely	Moderately likely	Likely	Very likely
SEVERITY		1	2	3	4	5
Low (minimal, short-term disturbance levels and negligible damage to native habitats.)	1	A	A	A	A	A
Medium (moderate, short-term disturbance levels, some damage to native habitats/species. Regenerates quickly.)	2	A	A	A	B	B
High (high disturbance levels over a longer period and displacement of species. Damage to native habitats. Significant time to regenerate)	3	A	B	B	C	C
Very High (Long-term disturbance with displacement/death of species. Significant damage to native habitats that takes a significant time to regenerate.	4	B	B	C	C	C

RISK	
A	OK. Work to provisions in risk assessment
B	Proceed with caution. Dynamically review risks.
C	Cancel task. Approach project in a different way.