Environmental Standard Operating Procedure

ESOP Name	Installation and replacement of quay heading
ESOP Number	23
Revision Date	22/02/2024
Related ESOPs	2 Biosecurity 6 Erosion protection 24 Oil and fuel use

Aim

Piled structures are features of the Broads' waterways where public and commercial access, between water and land, is required. The construction of new or replacement heading and piling often requires considerable bankside excavation and disturbance.

This standard operating procedure aims to provide a framework by which hard-engineering solutions can be installed with minimal risk to the surrounding habitats and species.

Standard Methodology

- Method will alter depending on most appropriate design.
- Pre-works surveys to establish necessity and location of the most appropriate edge construction and design.
- Pre-works surveys to identify potential protected species issues, particularly water vole and reptile.

- Time works to prevent wildlife disturbance

Procedure

Pre-works

- Early discussion with the BA Rivers Engineer to determine planned design & construction approach
- Carry out a survey to identify if any species of conservation concern are within or close to the work area and identify any potential for protected species so mitigation can be put in place.

Operational

- Where new locations for piling, i.e. where piling isn't currently present, are proposed, limit new piling to the absolute minimum length and install only in sections where it is most needed;
- Use softer erosion protection solutions wherever possible, particularly near key habitat features, such as dyke inlets;
- Evaluate if like-for-like replacement of existing piling is necessary and explore use of softer erosion protection measures;
- Keep the top of the piling as low as possible, e.g. 200 mm above normal high water.
- Restore disturbed ground behind piling after the works have finished and encourage natural vegetation to re-establish, if subsequent usage allows.

Consultation

- Internal BA consultation: planning department to establish whether planning permission will be required for the works and BA rivers engineer for design and construction management
- If works are within 500m of a designated site, and HRA will be needed. Natural England will also need to be consulted if a water vole licence is required

- Further information can be found in the Broads Authority's mooring design and river bank stabilisation guides [Broads planning guides (broads-authority.gov.uk)]

Risk Assessment

Hazard	Initial Risk			Controls / Safeguards / Precautions	Revised Risk		
	S	L	R		S	L	R
Loss of natural riverside habitat to newly piled sections.	**4**	**5**	**C**	Restrict new piling to high priority sites, and Planning Permission process.	**4**	**1**	**A**
Disturbance to water voles in old sections of piling	**3**	**3**	**B**	Pre-works survey for water voles and appropriate mitigation put in place if they are found to be present.	**3**	**1**	**A**
Inappropriate backfill material used.	**2**	**4**	**B**	Use geotextile or similar membrane to prevent erosion; ensure non-toxic backfill material is used, aim to use locally sourced sediment, if suitable.	**2**	**1**	**A**

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.