

River Restoration Planning and implementation on River Sites of Special Scientific Interest in England: National Progress Update

3 December 2013

Jenny Wheeldon, Natural England and Environment Agency river restoration adviser

Executive Summary

Natural England (NE) and the Environment Agency (EA) are implementing a river restoration remedy on SSSI rivers affected by physical habitat degradation, contributing to unfavourable recovering or favourable condition, and Good Ecological Status or Good Ecological Potential. They are jointly responsible for the remedy, which requires development (and initial progress with implementation) of strategic whole river restoration plans. The river restoration remedy has been translated as the “river restoration programme for protected areas” measure in River Basin Management Plans.

The remedying of physical constraints on the SSSI river network will help achieve favourable condition and will also improve the hydromorphological condition of these bodies of water, which is one of the key environmental objectives of the Water Framework Directive.

As at December 2013 a total of 15 river SSSIs (11 SACs), involving approximately 1251 km of river (1055 km SAC) have strategies completed and signed off by EA and Natural England.

Initial implementation measures are in place on 83% of all the SSSI rivers (by length) that have the remedy assigned, and 93% of those that are also Natura 2000 sites. Whilst these figures are encouraging, there is full recognition that to ensure the river restoration remedy continues to progress requires continued effort over long timescales.

The emphasis is now increasingly on moving to implementation of restoration strategies, in order to meet SSSI and Water Framework Directive commitments. Implementation of river restoration is likely to be expensive and requires being funded over long timescales from a range of sources. Currently restoration is being implemented using a mixture of EA and NE WFD Grant in Aid, Catchment Restoration Funds, environmental stewardship, and European funding.

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1. Background

The Environment Agency and Natural England have a joint national river restoration programme for SSSI rivers, including funding an officer to co-ordinate the development and implementation of river restoration plans. Addressing physical habitat degradation in the SSSI river network will help achieve favourable condition and will also improve the morphology of these waterbodies, so linking closely with the objectives of the Water Framework Directive. Many SSSI rivers are also Special Areas of Conservation (SACs) under the Habitats Directive, and as 'protected areas' have an associated river restoration measure in the River Basin Management Plan.

Physical habitat restoration is being progressed in parallel with actions to address other impacts on SSSI river systems, particularly abstraction, discharges, siltation and invasive non-native species. The combination of these activities will deliver a range of environmental improvements and benefit people that live and work along these rivers.

Physical restoration of rivers is fundamental to delivering improvements to biodiversity and multiple ecosystem benefits. Physical habitat degradation of the Site of Special Scientific Interest (SSSI) river network is a complex issue to address. Much of it is linked to large-scale historical damage, and/or on-going uses of rivers e.g. abstraction and flood defence and their floodplains e.g. for agriculture and urban development.

The SSSI river network covers 2522 km, of which 1684 km is also designated as Special Area of Conservation (SAC) – 2182 km requires some assessment of river restoration needs to achieve "favourable condition"¹, though not all of this river length will require active restoration measures. There should be no doubt that physical restoration of river SSSIs is a major undertaking.

For many years, physical restoration of SSSI rivers was not given a high priority compared to problems on SSSI rivers that had clear mechanisms for improvement works (particularly Asset Management Planning). It was simply too difficult, and efforts were restricted to cherry-picking a few small reaches as demonstration exercises. In 2004, the Public Service Agreement target for SSSIs forced a more strategic approach to the problem – guidance was generated that took a whole-river, geomorphologically and ecologically based approach to identifying problems and solutions, and to implement measures in a coordinated and sequenced way to bring about favourable condition.

The initiative gained momentum with the creation of a national river restoration project officer post, jointly funded by Natural England and the Environment Agency. The officer was to oversee the full roll-out of Restoration Planning Guidelines (Wheeldon *et al.* 2010) across all affected SSSI rivers, initially with the aim of getting as many sites into 'unfavourable recovering'¹ condition in respect of physical habitat condition by 2010, and then to get the river restoration measure for protected areas underway by 2012.

¹ "Unfavourable recovering" condition is when appropriate management actions are in place to restore the required conditions for the designated habitats and features. "Favourable" condition is achieved when appropriate management actions are in place and the special habitats and features are judged to be in a healthy state and conserved for the future.

The remedying of physical constraints on the SSSI river network will help achieve favourable condition and will also improve the hydromorphological condition of these bodies of water, which is one of the key environmental objectives of the Water Framework Directive.

2. The Planning process

Development of the plans involves geomorphological appraisal to assess the current physical state of the river and an accompanying ecological appraisal to interpret the impact on the river ecology. This helps to establish a ‘restoration vision’ for the river, identify and prioritise restoration measures, and set out how they can be delivered in partnership with key interested parties.

River restoration planning has been applied consistently across the SSSI river network. It is based on evidence-based information, clear and transparent decision-making, and the involvement of those interested in, or impacted by, the proposals.

The river restoration plan is necessarily high-level as it covers the whole river. It results in the broad identification of appropriate restoration measures for each river reach (a reach may be a few hundred metres to several kilometres long). The local decision-making process for developing a restoration strategy is summarised in Figure 1.

The delivery phase involves the detailed planning of measures with individual landowners at the river reach level. This is a long-term, on-going activity and is now the main focus of the SSSI river restoration programme. Projects are being implemented with owner-occupiers and other partners.

Using the plan to prioritise the individual reach-level projects, rolling bids are being made by the Environment Agency, Natural England and others to Defra Water Framework Directive funding streams, Environmental Stewardship, and Woodland Grant Schemes. This is alongside opportunistic bids to a range of other funding sources. Work in-kind from partners, including the River Trusts, Wildlife Trusts and angling clubs is a critical part of implementing restoration actions.

3. Summary of progress and achievements

As at December 2013 a total of 15 river SSISIs (11 SACs), involving approximately 1251 km of river (1055 km SAC) have strategies completed and signed off by EA and Natural England. River restoration plans were in place and initial works were being undertaken on 83% of all the SSSI rivers (by length) that have the remedy assigned, and 93% of those that are also Natura 2000 sites. Whilst these figures are encouraging, there is full recognition that to maintain sites in favourable or recovering condition in the face of various pressures, and to ensure the river restoration remedy continues to progress requires continued effort over long timescales. A number of rivers require the restoration remedy to be applied in ENSIS in 2013.

This is a major success, albeit that the vast majority of the task of physical restoration lies ahead. It is not only a success for the Biodiversity 2020 and WFD targets – Natural England and the Environment Agency have worked hard to show the relevance of this work to the wider UK river network, in relation to achieving Water Framework Directive (WFD) objectives.

SSSI river restoration has placed NE and EA at the forefront of catchment-scale, strategic coordination of restoration works, based on an understanding of geomorphological behaviours and dependencies within the river system. The emphasis is now increasingly on moving to implementation of restoration strategies, in order to meet SSSI and WFD commitments.

The river restoration planning and implementation work makes an important contribution to improving the condition of SSSI rivers. For non-designated rivers, the resources available for restoration planning may be more limited, but the principles of the process are all transferrable to the wider river network.

- Consistent whole-river (catchment) planning;
- identifying and prioritising reach scale works for future decades;
- involving all stakeholders and forming partnerships;
- clear and transparent decisions;
- single focus for resources and developing funding bids.

The SSSI river restoration plans are being made easily accessible on the RRC website, so that the investment in SSSI rivers will both demonstrate the strategic approach, and improve the available evidence base for restoration by reporting the site specific works that are undertaken.

4. The road ahead

Progressing required programmes of river restoration on SSSIs initially requires prioritisation of actions, logical sequencing, costing, and securing delivery mechanisms. The programme will be based on multi-partner working, time horizons suited to the nature and scale of each site's problems and solutions (typically 20-50 year time horizons), a negotiated settlement to any disagreements, and a best endeavours approach to implementation. Assisted natural recovery is encouraged wherever possible, rather than implementing costly, high-intervention measures.

Detailed reach-level plans and designs need to be produced and agreed with landowners, other users of the river such as fishing and navigation rights and the wider local community. This will not be easy owing to often inherent local concerns about changes to river management, especially in relation to perceived flood risk and land management change. Funds need to be secured to maintain best endeavours over time, including rolling bids to obvious budgets such as EA FCRM capital works, Defra WFD River Basin Management Strategy (RBMP) delivery, Environmental Stewardship, and Woodland Grant Schemes, but also opportunistic bids to a range of other funding sources including European programmes. Work in-kind from third parties, including 'third sector' partners such as the River Trusts, is also a critical part of best endeavours that forms an important part of the design and implementation of strategies.

Given the nature of the work outlined above, all this adds up to a considerable body of on-going work over a considerable number of years, for NE, EA and a range of partners. The roll out of restoration planning on SSSI rivers will greatly increase confidence in a large-scale, strategic approach to river restoration, and feed into decision-making about restoration of the wider river network under the EC Water Framework Directive.

5. References

Mainstone, C.P. and Holmes, N.T.E (2010) Embedding a strategic approach to river restoration in operational management processes — experiences in England. *Aquatic conservation: Marine and Freshwater Ecosystems*. Published on-line, [DOI: 10.1002/aqc.1095](https://doi.org/10.1002/aqc.1095).

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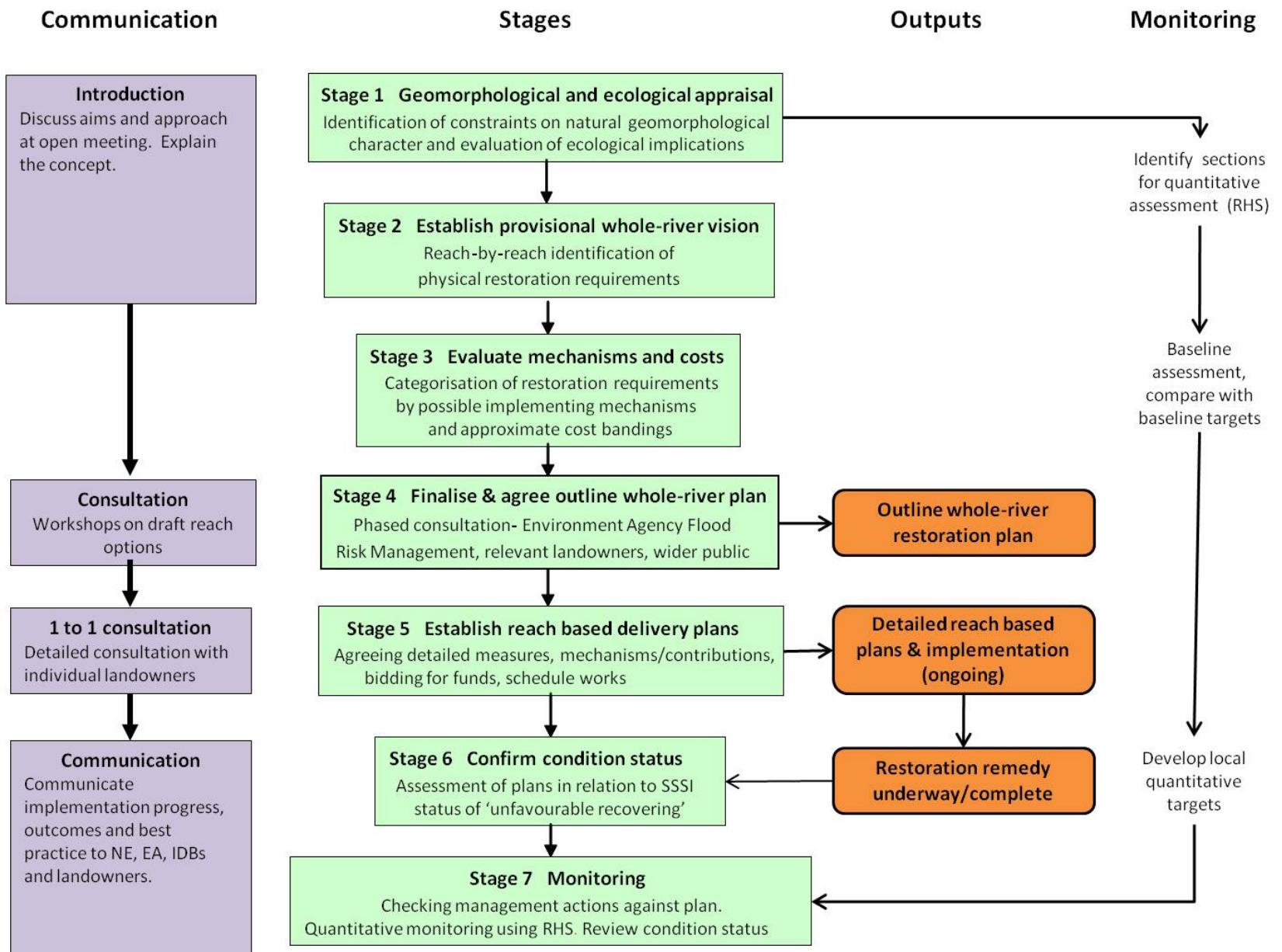


Figure 1 Key technical stages in the development of a SSSI physical restoration Strategy (green), communication aspects (purple) and main outputs (orange)

Table 2 Summary of progress with restoration planning and implementation on SSSI rivers. Bold indicates SAC rivers.

SAC rivers	Restoration strategy and implementation	River restoration related EA Flood and Coastal Risk Management measure	RBMP deadlines for river restoration for protected areas	
			Annex C actions	Annex D Operational
Priority 1 Remedy not yet underway				
Axe (lower)	Geomorphological action plan done, strategy in development	River restoration programme for Protected Areas (PAs)	2012	2012/15
Camel	Strategy complete, implementation underway	River restoration programme for PAs	2012	2012/15
Clun	Strategy complete, implementation underway	n/a	n/a	n/a
Itchen	Strategy complete, implementation initiated	River restoration programme for PAs	2012	2012/15
Tweed (Till)	Strategy complete, implementation initiated	River restoration programme for PAs	2012	2012
Priority 2 Maintain remedy underway				
Avon	Strategy complete, implementation underway	River restoration programme for PAs	2012	2012/15
Derwent	Strategy complete, implementation underway	River restoration programme for PAs	2010	2012/21
Eden	Strategy complete, implementation underway	River restoration programme for PAs	2012*	
Kent	Strategy complete, implementation underway	River restoration programme for PAs	2010	2012/21
Lambourn	Strategy complete, implementation underway	River restoration programme for PAs	2010	2012/21
Mease	Strategy complete, implementation underway	Flood management programme (incorrect measure)	2012	2012/15
Wensum	Strategy complete, implementation underway	River restoration programme for PAs	2012	2012/21
Yks.Derwent	Strategy complete, implementation underway	River restoration programme for PAs	2012	2012/21
Priority 3 Remedy not yet underway, remedy recently applied, not in RBMP				
Dee	Strategy complete, implementation required	n/a- remedy agreed after RBMP publication	n/a	n/a
Dove (Units 40,41,43)	Restoration vision done	n/a- remedy agreed after RBMP publication	n/a	n/a
Hamps and Manifold (Unit 90)	Geomorphological action plan exists, strategy planned for 2013	n/a- remedy agreed after RBMP publication	n/a	n/a
Lathkill (Unit 1, 16)	Geomorphological action plan exists, strategy planned for 2013	n/a- remedy agreed after RBMP publication	n/a	n/a
Wye (inc. Lugg unit 1)	Strategy in development	n/a- remedy agreed after RBMP publication	n/a	n/a

Table 2 continued Summary of progress with restoration strategies and implementation on SSSI rivers

SSSI rivers are not protected areas as defined in RBMPs, so do not have the corresponding “river restoration programme for protected areas” measure associated with them in Annex D of river basin management plans. They may however have river restoration actions and targets associated with them in RBMPs, if so the deadlines for these actions are shown below.

SSSI rivers	Restoration Strategy and implementation	RBMP deadlines for river restoration actions	
Priority 4 Remedy not yet underway			
Beult	Strategy needs formal sign off, implementation initiated	n/a	n/a
Eye	Strategy and implementation in development	n/a	n/a
Lugg	Strategy and implementation in development	n/a	n/a
Moors River System	Restoration vision complete, strategy underway, implementation planned	n/a	n/a
Teme	Strategy complete, implementation required	n/a	n/a
Test	Strategy complete, implementation initiated	n/a	n/a
Wharfe	Strategy complete, implementation initiated	n/a	n/a
Priority 5 Maintain remedy underway			
Frome	Strategy complete, implementation underway	2012	n/a
Hull Headwaters	Strategy complete, implementation underway	n/a	n/a
Kennet	Strategy complete, implementation underway	2010	n/a
Long Preston Deep	Strategy complete, implementation underway	2012 – rr project	n/a
Nar	Strategy complete, implementation underway	2010 – rr project	