STREAM

Advice note

Planning River Restoration

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Advice note

Planning River Restoration

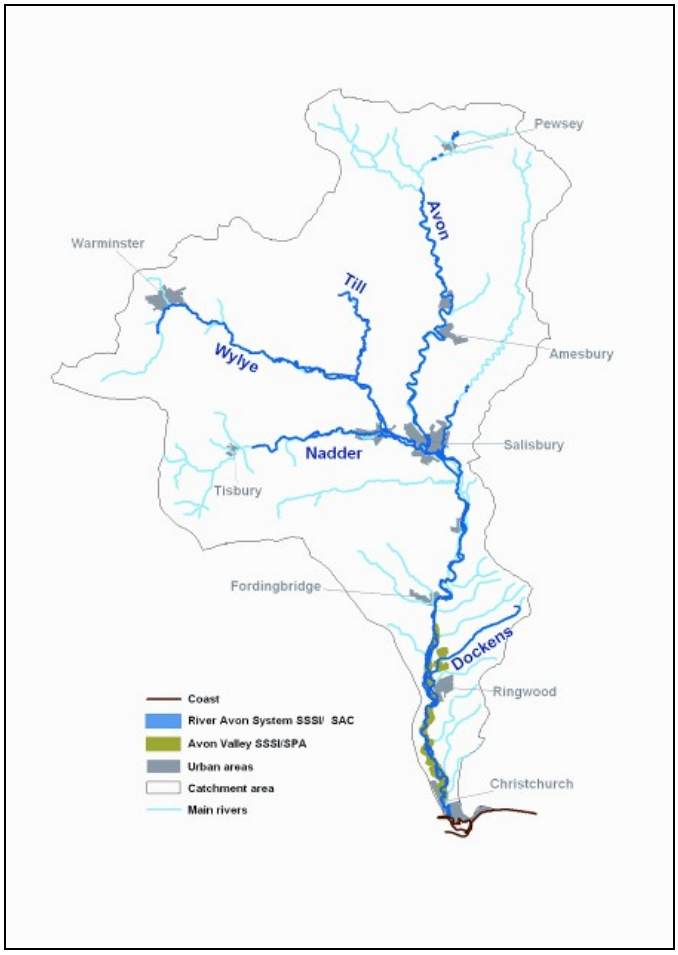
Demonstrating **ST**rategic **RE**storation **A**nd **M**anagement (STREAM*)* is a £1 million four-year conservation project centred on the River Avon and the Avon Valley in Wiltshire and Hampshire, Southern England. The STREAM project is supported financially by the European Commission's LIFE-Nature programme.

STREAM has worked to address two key issues: the need for a strategic approach to large-scale river restoration, and the need to integrate the management of the river and valley. It is part of a broader initiative that encompasses restoration of designated sites, wider biodiversity work and a programme of community engagement.

This advice note summarises the STREAM project's experience of river restoration planning and obtaining permissions for river restoration projects. It is one of three STREAM advice notes, covering planning and delivery of river restoration and operating protocols for water level management structures. For more information visit www.streamlife.co.uk

Background

The River Avon and its main tributaries are designated as a Special Area of Conservation (SAC), and the Avon Valley is designated as a Special Protection Area (SPA) for birds.



Past drainage activity has resulted in many parts of the river channels being widened, deepened and natural bed material removed, resulting in

- Destruction of habitats, channels too wide and deep for natural river flows
- Damaged vegetation communities
- Silting up of naturally clean river gravels, reducing habitat for fish, plants and insects
- Disconnection of the river from the floodplain, resulting in loss of wetland habitat

Within the River Avon SAC, STREAM has undertaken strategic river restoration activities and linked management of the river and valley to benefit the river habitat including water crowfoot and populations of Atlantic salmon, brook and sea lamprey, bullhead, Desmoulin's whorl snail, gadwall and Bewick's swan.

Between 2006 and 2009, the STREAM Project restored a total of seven kilometres of river at six sites on the Avon, Nadder, Wylye and the Dockens Water.

The aim of the restoration work is to:

- Restore suitable conditions for the River Avon SAC habitats and species
- Address the effects of past engineering and land drainage
- Demonstrate innovative techniques and proven habitat enhancement methods
- Share best practice through advice notes, demonstration days, seminars and community conservation days

A whole river restoration plan is currently being developed for the River Avon SAC. The plan will support restoration of the Avon to a naturally functioning and self-sustaining system that exhibits the full range of characteristic habitats that benefit the distinctive chalk stream flora and fauna.

Whole river restoration planning

Any river restoration project should be part of an overall approach to restoring the whole river. Strategic or whole river restoration planning supports the future restoration of rivers to naturally functioning, self-sustaining systems. The plans identify degraded reaches and suitable restoration actions in the context of the whole river system. They also give an indication of the likely costs. Whole river restoration plans are therefore a vital first stage in sustainable restoration of rivers. For more information see the STREAM River Restoration Techniques Advice Note.

Where a whole river restoration plan is not available, existing physical and ecological information can be used to identify degraded river reaches. Suitable data sets include River Habitat Survey, fluvial audit, condition assessments (for designated rivers), routine monitoring data etc. In the absence of data, expert judgment can be used to identify sites.

Using the information above, a vision of the restored river as a naturally functioning system typical of its type can be developed. This should be done without regard to the availability of funds – future restoration works can be implemented as money becomes available, safe in the knowledge that they contribute to the overall plan.

Many rivers are affected by a numerous sluices and impoundments, and their impact on habitat can be significant. The influence of structures should be identified at the planning stage and addressed before any other restoration is done. For more information please see the STREAM Linking River and Floodplain Advice Note.

Numerous publications are available on the subject of restoration planning: Planning for River Restoration gives a practical introduction to the subject.

Restoration aims and objectives

Restoration projects are most successful when clear aims are identified at the start. The aims must link to the overall vision for the restored river (as set out in the whole river plan), and work with natural river processes at all times. Quantifiable aims are always preferable but can be difficult to define precisely.

As an example, the primary restoration objective may be to improve brown trout adult habitat to support a 10% increase in population in 5 years. In this case a secondary, supporting objective would be to create suitable habitat to support this population (i.e. 3 riffle-pool features in a 100m reach).

Monitoring against project aims and objectives is a key part of evaluating how successful restoration has been, and to identify any problems with the techniques used. Monitoring and evaluation requires the collection,

management and analysis of relevant information, of attributes of the physical and biological environment prior to and after the restoration works. At the simplest level this may be repeat photographic monitoring but may extend to the repeat measurements of the target species and characteristics of the river that the restoration programme is seeking to enhance.

A framework for setting (and monitoring against) river restoration aims is currently being developed by the River Restoration Centre through a series of workshops. The STREAM monitoring protocol and reports, and the Assessment of STREAM restoration report detail two approaches to evaluating the success of river restoration.

Planning and permissions

Expert advice and the relevant permissions should always be sought before carrying out any work within rivers. Key areas that must be considered include site selection, restoration aims, flood risk, species protection and health and safety. Permissions likely to be required include flood defence consent, waste, felling and species licences, and planning permission. More detailed information on some of the legal aspects in England and Wales can be found in the Wild Trout Trust Chalkstream Manual and the Environment Agency website.

The table overleaf lists the planning stages and permissions that may be required for a river restoration project, summarises lessons learnt during the STREAM project and provides examples of relevant documents and internet pages. It is based on the experience of the STREAM project officer implementing river restoration in the River Avon SAC as an employee of Natural England, in partnership with the Environment Agency and Wildlife Trusts. Permissions will vary where the works are carried out by other voluntary and statutory bodies and on non- designated sites.

Certain minor works are considered to be 'permitted development' and thus do not require planning permission. However these 'permitted rights' are granted to specific bodies and agencies and thus the need for planning consent can depend on who is doing the development

This list of permissions is not exhaustive, and legislation and policies can change, so advice should always be sought as to what permissions are required for each restoration project. The documents are examples only and may not be appropriate for other locations.

Summary of main river restoration permissions and associated issues

Permissions[1]	General comments and STREAM experience	Example documents and references[2]
Flood defence consent	Some level of flood risk assessment is likely to be required as part of obtaining consent-seek guidance from the EA early on. The assessment should be proportionate to risk and does not have to involve complex modelling. At some sites it may be appropriate to use conveyance estimation, which is a relatively simple way of checking the impact of the work on water levels. If complex modelling is required, there may be an existing model that can be adapted. With increasing variability in flows due to climate change, the impact of restoration works on water levels may be disputed. Some level of modelling is therefore strongly recommended even if not required for consenting.	CES website CES hydraulic assessment Full hydraulic modelling Woodford post-modelling
EIA Scoping and screening	You should contact the local planning authority to find out if statutory Environmental Impact Assessment (EIA) and planning permission is required. River restoration is an unfamiliar area for many planners, so contact them early and provide as much information as possible to help them make a decision. Providing clear examples and documentation of other similar successful restoration projects or visits to existing and proposed sites are a useful way of explaining your plans.	Screening request
Environmental Impact Assessment (EIA) and reporting	A statutory Environmental Statement may not be required for your project, however it is still good practice to do some level of EIA. Offering a voluntary environmental report may avoid the need for a formal EIA and will help the planning officer understand the benefits of river restoration. This does not need to be onerous and is a useful way of identifying, managing and designing out potential impacts. The assessment should be done by someone very familiar with the site, its ecology, access routes and proposed restoration techniques so that they can quickly focus on critical risks. The environmental report covers relevant issues for all of the permissions required. Whatever level of EIA is carried out, it should be done by someone very familiar with the site, its ecology, access routes and proposed restoration techniques. This allows them to quickly focus on critical risks. Ideally the same ecologist will be leading the design process ensuring true integration of environmental issues throughout the design process.	EIA: A guide to procedures Environmental Report and EAP
EIA -advertise report	Where permitted development rights are being used to implement restoration, this must be advertised a minimum of 30 days in advance on site and in local papers.	EIA advert
Planning permission	See EIA screening and scoping above. If planning permission is required it will take 2-6 months to prepare the submission, and longer if formal EIA or Appropriate Assessment is needed. The statutory period for determination of the application is 8-13 weeks where no EIA is required, and 16 weeks minimum where EIA is required. However, planning applications often take longer, so it is crucial that you talk to the local planners early.	See EIA screening and scoping

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Permissions[3]	General comments and STREAM experience	Example documents and references[4]
Appropriate Assessment (AA)	Where restoration of river is proposed on a site of European importance (SPA/SAC) all permissions are subject to Appropriate Assessment by the agency granting them, unless the work is undertaken for the purposes of conservation management of that site. The restorer will be obliged to provide sufficient information (in the form of a habitat regulations Assessment (HRA.) For the STREAM project, river restoration is identified as a conservation management requirement for the River Avon SAC and thus no appropriate assessment (or HRA) was required. It is useful to consult with the Natural England, Countryside Council for Wales or Scottish Natural Heritage officer responsible for the European site to establish this prior to starting any consents.	Section in guidance on planning law and nature conservation in England
Waste licences/ exemptions	Waste licensing has the potential to be complex, however careful planning and choice of materials means you can design out many potential licensing issues. The choice of materials can affect what licences are needed and there are a number of exemptions available for "low risk" activities.	Waste regulation in England and Wales Simple waste exemptions
Felling licences and tree protection orders	A felling licence may be required from the Forestry Commission to cut down trees, with various exemptions related to the volume felled in any calendar quarter, diameter of trees for thinning or coppicing, health and safety concerns and provision of a statutory duties. Where tree protection orders and conservation areas apply, permission from the local planning authority is also needed. Tree protection should be included in the EIA screening letter to planners. A landscape assessment provides a way of assessing the visual impact of felling works.	Forestry Guide to felling licences Felling licence docs Landscape assessment Tree survey report
RPA/ Agri-enviro derogation	The Rural Payments Agency and Natural England should be formally notified of any restoration project that affects agricultural land. If they are not notified in advance, single farm payments and scheme payments are at risk.	RPA derogations ELS/OELS derogation notice HLS derogation request
Protected species licences	See river restoration design-surveys. The recent increased protection for water voles makes it more important than ever to consider them early. If river restoration is for conservation rather than associated with development, a licence should be obtained. If protected species are present contact Natural England for guidance early on.	Wildlife management and licensing Water vole method statement

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Issues[5]	General comments and STREAM experience	Example documents and references[6]
River restoration design	Involve construction staff at the earliest opportunity, check if what you are designing is physically possible and make sure feasible access routes are available.	
	The design should preferably be led by a freshwater ecologist with river restoration experience, working with engineers that are comfortable with non-standard designs. If possible, the same ecologist will also be heavily involved in the Environmental Impact Assessment (EIA). This ensures full integration of environmental issues throughout the design process.	
	Three types of survey may be required before restoration starts: physical (width, depth fluvial audit etc) to guide design, protected species to amend design and obtain consents, and monitoring pre and post restoration. Pre-work surveys must be are commissioned early so that they can inform the design. This is particularly important for ecological surveys, which can only be done at certain times of year e.g. water voles survey March – August, juvenile salmonids August – October. Surveys and monitoring may need to commence one or more years before restoration.	Monitoring specification Mammal survey specification Mammal survey report
Design contract	Public bodies and NGOs are often affected by restructuring which can disrupt planning for river restoration. This presents a risk, as restoration funding usually means projects must be completed by a certain date. Splitting time-critical design elements between internal staff and external consultants is strongly recommended. Engineering design and construction contracts take a particular form, and specialist procurement support will be needed. Unless framework contracts are in place already, timescales for tendering can be long for projects over the European tendering threshold, so consult procurement specialists early.	ICE standard engineering contracts
Construction contracts	Engineering design and construction contracts take a particular form, and specialist procurement support will be needed. Unless suitable framework contracts are in place already, timescales for tendering can be long for projects over the European tendering threshold, so consult procurement specialists early. As part of the Environmental Impact Assessment an Environmental Action Plan (EAP) is generated. The construction contract should include a clause to ensure the contractor is jointly responsible for implementing the EAP.	ICE standard engineering contracts
Health and safety	No project should be undertaken without due health and safety planning and the development of appropriate risk assessments. In addition, anyone having construction or building work carried out has legal duties under the Construction (Design and Management) (CDM) Regulations 2007. For notifiable construction work, it also involves appointing a CDM co-ordinator, a principal contractor, ensure a health and safety plan is in place and keep a health and safety file.	CDM guidance

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Issues[7]	General comments and STREAM experience	Example documents and references[8]
Construction	River restoration is not straightforward and it is often difficult to communicate exactly what is required on a standard design drawing. Regular site supervision, supplemented by extra visits at critical times is vital. The EAP is a very useful tool for managing impacts before, during and after the construction period. Implementing the EAP is the responsibility of the contractor, site supervisor and project manager. An environmental clerk of works must visit regularly and ensure the project manager and contractor act on any issues raised.	EAP monitoring
Landowner consultation	You will need the landowners written permission to work on their land, and must formally notify them if applying for planning permission land they own. Allow plenty of time to gain their support for the project aims, input to the designs, and a clear process for consulting them during the design and construction stage is vital. A long term management plan for the site should also be agreed.	
Community consultation	River restoration is a very visible activity and may affect areas or features that are highly valued by the local community. If it is a community led project there will be a lot of consultation, but even so it is important to identify all the people who may be concerned and keep them informed. All communication activities should be guided by a Communication Strategy, be agreed between all project partners and briefing notes should be provided that standard responses can be given to any enquiries. All communications should then follow the strategy and public meetings and press releases appropriately timed.	Communication strategy Briefing note
Public meeting	Hold a meeting in the vicinity of the restoration site before work begins. People can find out about their local river and the restoration and raise any concerns they have. It is important to talk about potentially contentious issues such as tree felling.	Public meeting flyer
Press releases	Local press releases at the start and end of the works are another way to tell a wider audience what is happening. Reports and updates in relevant local newsletters also keep riparian landowners up to date.	Press release
Public open days	Inviting people to come and see the river after the restoration work is done is particularly useful where public access is usually limited, and to encourage follow-on projects.	Open evening invite
Interpretation	Make sure local people can find out about their local river and the restoration before, during and after the works.	Interpretation board

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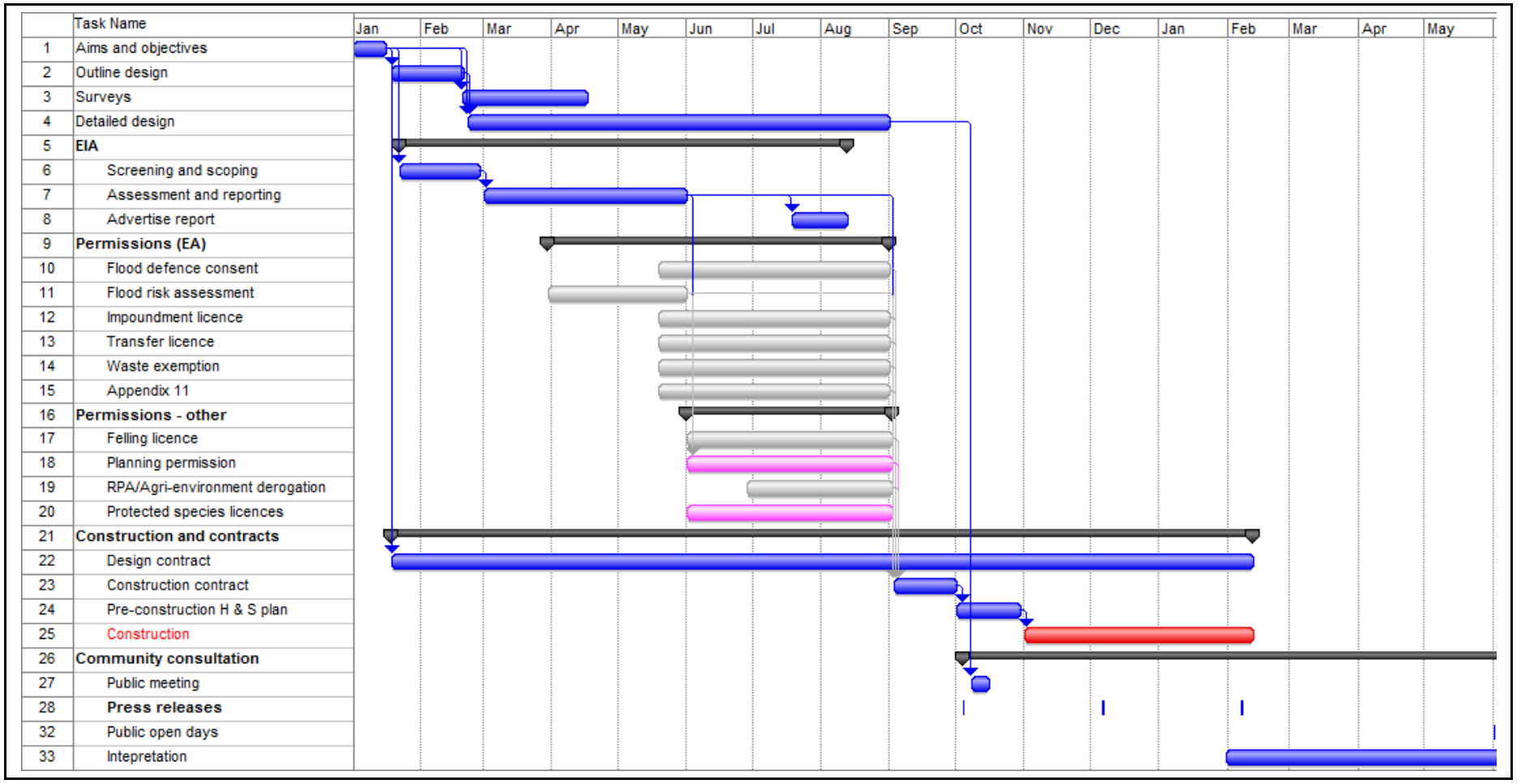
[8] The documents are examples only and may not be appropriate for other locations.

Timescales

Careful planning and early consultation with regulatory bodies such as the Environment Agency is required to make sure all relevant permissions are obtained in a timely, cost effective way. A minimum timeline is shown below, assuming the following:

1) Site identification, landowner liaison, and seasonal surveys/monitoring began the previous year
2) Formal EIA is not required, and planning permission (if needed) is obtained in the minimum possible time.



Project team

Successful planning relies on a strong project team made up of people with a range of backgrounds and areas of expertise. Having project members from the relevant consenting agencies can help to ensure smoother progress due to their understanding of the information needs for consents. It is important to spend time putting a team together that will effectively provide leadership, focus, and continuity throughout, and gain skills and experience that can be used in future projects.

Members of the project team will come and go according to the skills needed at each stage of the planning process. Using the STREAM example, the project team involvement in various stages of river restoration planning is shown in green in the table below.

Sector	**Team member**	**Planning stage**					
		Design	Survey	EIA	Permissions	Communication	Construction
Local project manager	Natural England Project Manager	■	■	■	■	■	■
Community/ land managers	Fishing club	■				■	■
	Landowner	■	■		■	■	■
	Parish Council and community				■	■	
Technical specialists	Freshwater ecologist	■	■	■	■		■
	Geomorphologist	■	■	■	■		
	Hydraulic engineer	■		■	■		■
	EA Operations delivery	■	■				■
	EA fisheries	■		■	■		■
	EA/NE procurement and contracts	■					■
	NE Press office					■	
Government agencies/ regulators	EA development control				■		
	EA water resources			■	■		
	EA waste			■	■		
	EA fisheries			■	■		
	NCPMS	■					■
	NEEAS			■			■
	LA development control/planners			■	■	■	
	LA archaeologist			■			
	NE advisers			■	■		
Consultants	River Restoration Centre	■	■				■
	Hydraulic engineer	■	■		■		■
	CDM co-ordinator	■					■
	Engineering contracts specialist						■
	Chalk river restoration specialist	■			■		■
	Geomorphologist		■				
	Fish biologist		■				
	Freshwater ecologist		■				
Contractors	Construction companies						■

Abbreviations

CDM Construction, design and management
EIA Environmental Impact Assessment
NEEAS National Environmental and Ecological Appraisal Service
NCPMS National Construction Project Management Service
EA Environment Agency
LA Local authority
NE Natural England

More information

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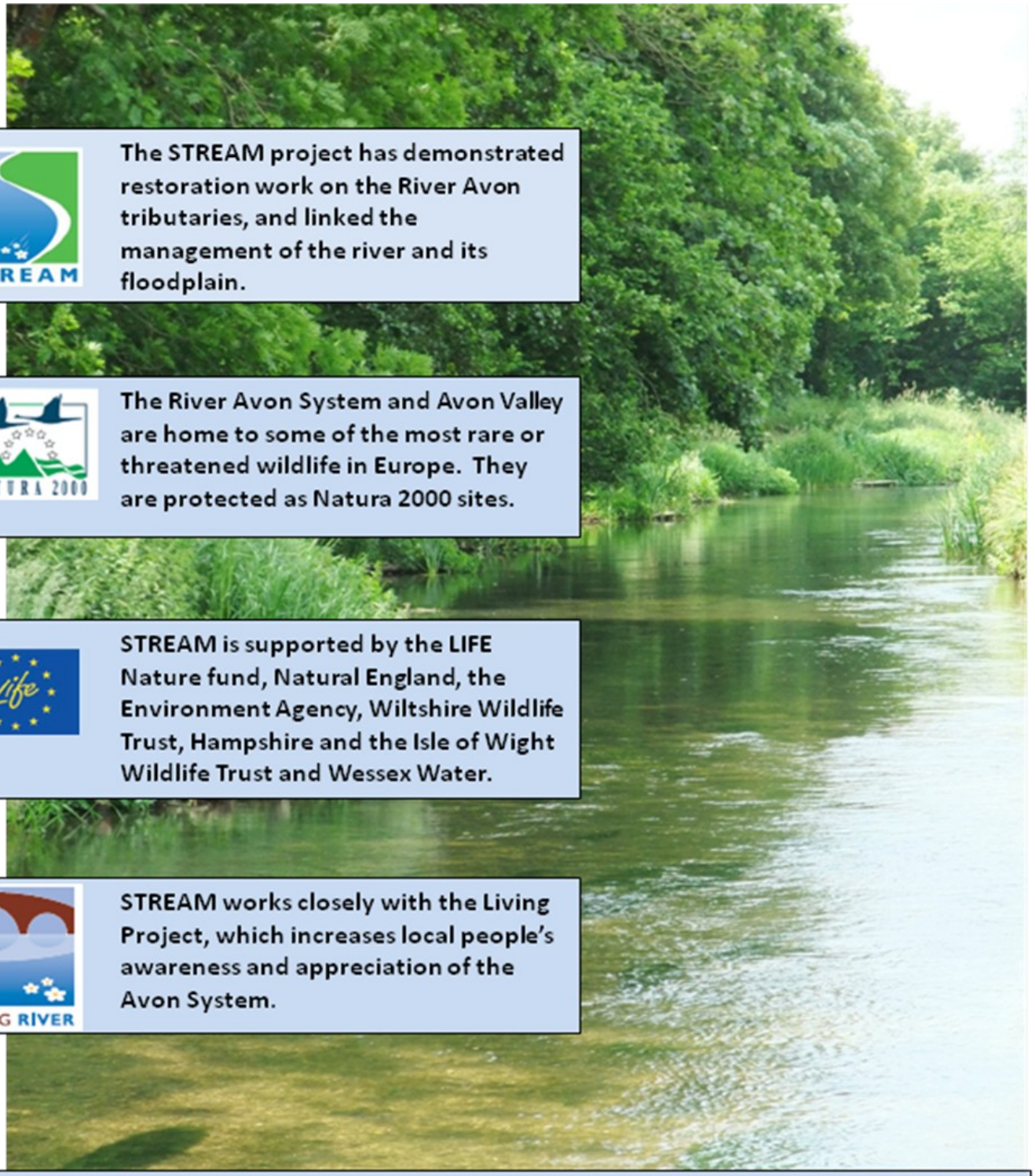

The STREAM project has demonstrated restoration work on the River Avon tributaries, and linked the management of the river and its floodplain.

The River Avon System and Avon Valley are home to some of the most rare or threatened wildlife in Europe. They are protected as Natura 2000 sites.

STREAM is supported by the LIFE Nature fund, Natural England, the Environment Agency, Wiltshire Wildlife Trust, Hampshire and the Isle of Wight Wildlife Trust and Wessex Water.

STREAM works closely with the Living Project, which increases local people's awareness and appreciation of the Avon System.

To find out more

The experiences of the STREAM project are can inform river restoration and floodplain management across Europe. Information on all aspects of the project, including guidance notes and technical reports are available on the STREAM website.