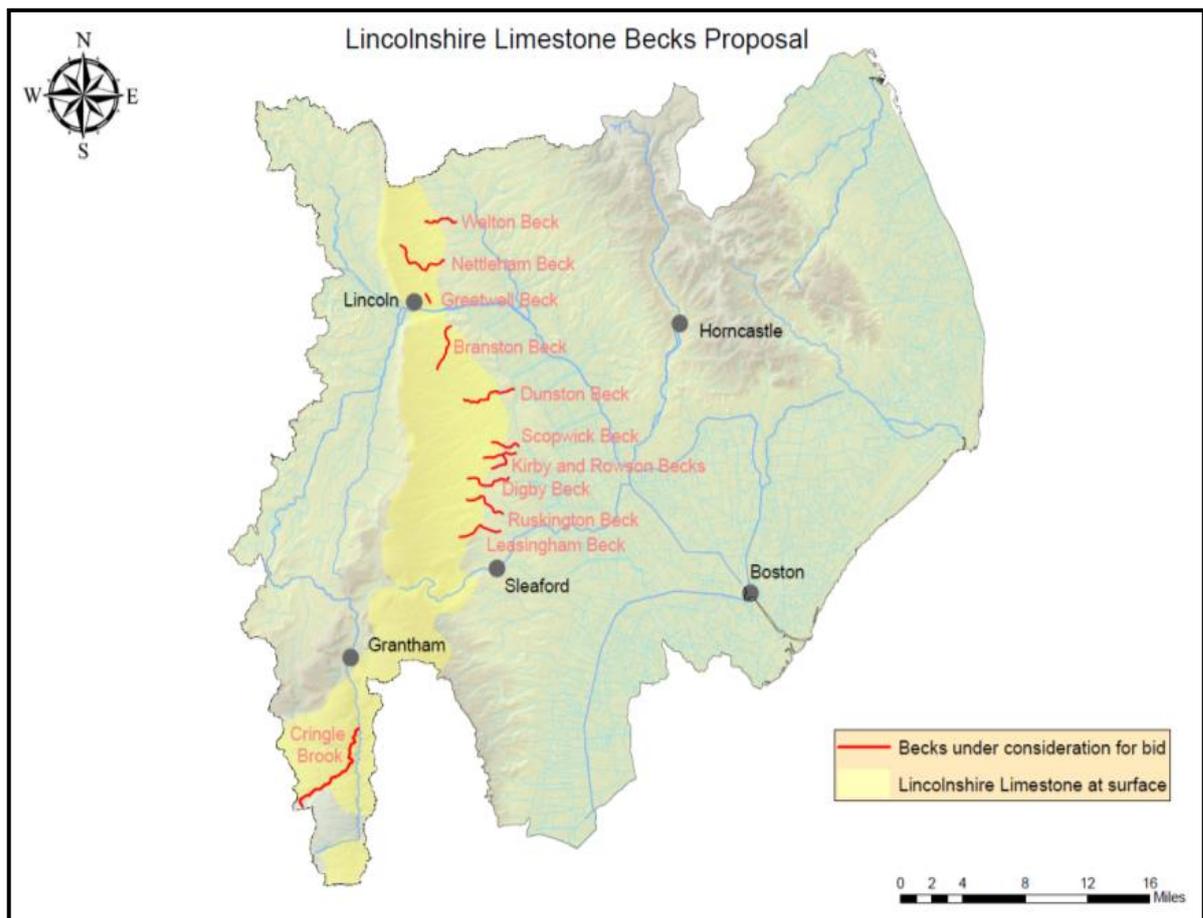


Project name

Lincolnshire Limestone Becks

Location

All Becks rising from the Lincolnshire Limestone outcrop (yellow area in the plan below) are to be considered as part of this bid. This stretches from an area to the North of Lincoln down to the South of Grantham. It predominantly covers the Natural England, [Southern Lincolnshire Edge](#), National Character Area. The Becks hi-lighted in red are some of the more familiar in this area but there may be other suitable ones that are identified as the bid is developed.



Supporting Group

[Witham Catchment Partnership](#)

Contacts/ Leads

[Lincolnshire Rivers Trust](#) and [Wild Trout Trust](#)

Supported by

Environment Agency

Primary benefices

Local Communities

Secondary beneficiaries

Environment Agency, Lincolnshire Rivers Trust, Wild Trout Trust, Landowners

Overall Project aim

Raise awareness of, protect and restore the natural heritage and preserve and promote the cultural heritage of the Lincolnshire Limestone Becks for the benefit of local people and wildlife.

Changes project will make

Limestone Becks will be protected, better understood and managed, habitat is enhanced, stresses are reduced and their profile is raised within the local community.

Difference project will make

- Becks flourish and return to a more natural state with a more diverse range of native wildlife and habitat.
- Benefits are sustained in the long term through local ownership, education and development of appropriate skills in local communities.
- Local communities become more actively involved with the natural environment of the Becks and the recreational opportunities they can provide.
- The cultural significance of the becks is preserved and their stories are passed on.



In channel river restoration involving the local community led by the Wild Trout Trust and the Lincolnshire rivers Trust.

Project Objectives

- Actively improve habitat at appropriate locations on the limestone becks through the smaller scale installation of in-channel features and where appropriate, larger scale reconnection of Becks with their flood plains.
- Reduce the risk posed on the becks by invasive, non-native species through education, monitoring and eradication works.
- Work with local landowners to promote water friendly, sustainable land management and maintenance practices along the Becks and in the catchments that drain into them.
- Establish and support local volunteer groups and train them with the necessary skills and knowledge to complete the improvement works set out above and continue them after the completion of the project.
- Enable a broad range of people from the local community to better understand and enjoy their local becks.
- Where possible make linkages with other relevant wildlife projects and habitats to promote wildlife corridors e.g [life on the verge](#), [B-Lines](#).
- Record, preserve and promote the cultural heritage of the Becks.

Project need / justification

The spine of limestone which runs up through western Lincolnshire is bounded by the Upper Witham and Trent Vale to the west and Witham and Ancholme Valley lowlands to the east. It is this context which makes the environment unique, as it represents an isolated lowland aquifer, giving rise to a large number of spring-fed streams. These streams are, in turn, geographically isolated and unique, supporting a rich aquatic fauna and flora rarely found in eastern England.

Cringle Brook, south of Grantham, is designated as part of an international ecological surveillance network and is of critical importance because of its aquatic invertebrate fauna and flora, which includes native crayfish and a substantial array of regionally and nationally rare riverfly, Diptera and beetle species. The Lincoln Heath and northern limestone streams should support a similarly important flora and fauna, but a range of pressures have damaged these environments to such an extent that all of them are substantially poorer ecologically than Cringle Brook. Typical pressures include deterioration in habitat quality through changing management practices, the introduction of invasive species, water abstraction and the impact of pollution, including diffuse run-off of sediment and nutrients from rural areas.

A full programme of restoration and management to address these pressures before they become irreversible will result in other limestone beck sites achieving an ecological condition approaching that of the Cringle Brook, supporting a similarly important and distinctive fauna and flora. One or two rare and restricted species do occur in Lincolnshire limestone streams other than Cringle Brook from time to time, but establishment of a consistently excellent and unique fauna and flora requires extensive intervention.

Our project would build on a small pilot project that has been undertaken recently on a short section of the Dunston Beck downstream of the village. This area of the Beck had deteriorated significantly following a range of pressures. Through collaboration between the Lincolnshire Rivers Trust, the Wild Trout Trust, a local land owner, Dunston Parish Council and the Environment Agency, remedial habitat improvements were installed using local volunteers. Ecological surveys before and after the restoration works showed that they have increased the invertebrate diversity and tripled the brown trout population on the relevant section of the Beck. Engagement and involvement of the landowner has ensured that the improvements will be protected in the future and also meet their needs. Local people have begun their own monitoring of the becks and there are plans to start a fishing club. The success in this short section has inspired us to develop this project bid for other

sections of the Dunston Beck and across other Limestone Becks mentioned above.

Each of these becks is centred on and often named after the local village community. For example, the name Welton is derived from the Saxon 'Welltuna', meaning head of the well or bubbling spring. Recent surveys of local residents have taken place in many of these villages to help inform the parish council driven local neighbourhood plans. Before more detailed local engagement takes places as part of the project it provides a view on local attitudes to the environment and certain becks. It is clear from these plans that the becks are valued as an amenity, recreational and wildlife resource. In the case of Nettleham it states, 'the area along the beckside forms important natural habitat and also a recreational area so natural enhancement of this area as part of any development will be supported. In Scothern, 'over 97% of respondents to the summer 2015 survey supported the aim of encouraging proposals to retain a green corridor either side of the Beck, (in particular to the appearance of the concrete sections) to improve the setting of the beck and to enhance the amenity, bio-diversity and recreational value of the beck'.

Using the Dunston approach of involving the local community to deliver sustainable improvements, education and the development of appropriate skills, the becks could become much more of an asset to local people. This will be vital for their long term protection and sustainability beyond the duration of this project.

There is also a rich cultural history to the Becks that is little understood, at risk of being lost and currently difficult to access. The last known well dressing ceremony on a Lincolnshire Beck took place in 1924. This was a tradition that involved decorating the local spring to act as a 'thanksgiving to Almighty God for the blessing of bountiful supply of pure water to Welton.' Snippets of information can be found for becks of interest including Nettleham where a Roman aqueduct supplied water to Lincoln from the roaring meg spring, Branston, Lincoln and Ancaster. For many of the Limestone

Becks we were unable to find any information on their cultural significance. We believe this cultural history should be collected, shared and celebrated.



The Dunston Beck upstream of the village has historically been modified from its original course and lost connectivity with its flood plain. This field could offer the opportunity to return the beck to a more natural meandering state with wet meadow flood plain.

Description of activities

●Improve habitat

Walkover studies to identify potential project ideas along becks of interest have been conducted by the Wild trout trust. These reports will be shared with local communities through their parish councils to help understand the types of project people would like to see on their Becks. For those that are interested, visits to see the works already completed on the Dunston Beck could be arranged. At present we believe the Welton, Nettleham, Greetwell, Branston, Dunston, Scopwick and Ruskington Becks offer the greatest potential for habitat improvements.

Smaller scale restoration techniques can include the installation of structures made from locally-sourced, natural materials to create more natural variations to the habitat and provide areas for wild trout to spawn and grow. This would also make the Becks more resilient at times of lower flow. Natural materials for such works could be sourced from local coppiced woodland. These works are typically undertaken in winter months and we would look to train local volunteers to undertake them. Coppicing works would also improve local biodiversity in surrounding woodlands as well help train volunteers in traditional woodland management skills, in an industry where there is a high demand but currently limited skilled labour filling this niche.

On a larger scale the habitat improvement plan should look for opportunities to re-connect the Becks with their flood plains to return them to a more natural state. Such an opportunity has been identified upstream of the village of Dunston as well as within an existing wetted area in Branston. Not only will these opportunities be beneficial for wildlife but in some circumstances and at appropriate locations they can help to reduce the risk of flooding through slowing the flow of water and providing extra storage.

● **Manage invasive species**

Invasive and non-native species are another significant threat to the Becks with mink and Himalayan Balsam examples of two species that pose a threat to native wildlife. We would like part of this project to involve the local identification of hotspots and targeted volunteer action to reduce the impact of invasive species. Volunteers would be supported by for example training in identification and suitable management techniques at appropriate times of the year. Lincolnshire Rivers Trust would lead on this part of the project.

With the necessary skills and an enthusiastic volunteer base developed this is an area of work that we could eventually look to expand across the wider catchment area and an important on-going legacy of the project. We also anticipate raising awareness with

landowners as an important part of the on-going management of invasive species

● **Influencing management practices**

Sustainable management of the Becks is essential to improving and protecting their ecological value while enabling the other functions such as land drainage and the conveyance of water. We would like to work with landowners, local communities and anyone else involved with the management of the Becks to encourage sustainable maintenance and even demonstrate how improving habitat and holding back flow in some areas can have wider benefits. This would be done through community events and also where possible with one to one visits to landowners.

In addition to the management of the Becks themselves we would like to work with local landowners in the upstream catchments. The way the land is managed can have a significant effect on the Becks. Soils and nutrients lost from fields will end up in the becks where it can have a detrimental impact of wildlife and water quality. We envisage this part of the project would involve a [catchment sensitive farming](#) educational approach to help advise local landowners through workshops and one-to-one visits. This would need to be done by people or organisations with the necessary skills and experience funded through the project.

This area is currently outside of any catchments covered by the Natural England catchment sensitive farming initiative.



The close relationship between agriculture and the Becks can be seen in this photo where a Limestone spring enters the Nettleham Beck just upstream of the village.

● **Community engagement**

Effective community engagement will be key to the success of the project and the development of local ownership. It is this ownership which will help to sustain the improvements brought about by the project in the longer term. As well as the training, education and use of volunteers mentioned in the activities above, it is important that we collect data to understand people's attitude towards the becks, how they use them and what changes they would like to see. This could be done through feedback at community events or questioners via the local parish councils. This baseline will allow us to develop the project around improvements people are interested in and understand how attitudes and behaviours change through the project. Such data collection would need to be done at the earliest possible stage within the project.

Elements of the project such as using volunteers to [monitoring the health of invertebrates](#) are another way in which local communities can be encouraged to take ownership of the becks and understand

the benefit of improvement works. Developing relationships with local schools will play an important role in this.

As well as engagement through community events, information and updates on the project would need to be made accessible to local people via a central point on the internet and through social media updates. Interpretation boards by the becks themselves can also be an effective means of communicating information. It may also be possible to link the becks to established local walks to help to engage with people from further afield.

● **Cultural Heritage**

This aspect of the project would involve the collection of any information that is available with a strong focus on evidence including parish records, oral histories, etc. The information would be stored and made available through the web site and community events. We will need to understand and develop links with any relevant, local historical groups.



Well dressing on the Welton Beck in 1922 (Picture from Holy Wells and Healing springs of Lincolnshire, Pixie-Led Publications)

Project Outputs

- Produce a detailed feasibility study on all suitable becks in the target area within 1 year of the commencement of the project to identify areas where improvements can be made and agree potential projects with local communities and landowners.
- Initial target of restoring a least 10 km of in-channel habitat on at least 6 Limestone Becks within 3 years of the commencement of the project.
- At least two schemes completed to reconnect a section of Limestone Beck with its flood plain within 3 years of the commencement of the project.
- Local community led monitoring of water quality and wildlife in the becks is established on each of the targeted Becks within 3 years of the commencement of the project.
- All schools and parish councils within 2km of a limestone beck have been visited and engaged with the project within 2 years of the commencement of the project.
- Plan developed and in place to identify, target and tackle invasive species pressures within 2 years of the commencement of the project. All current, identified invasive species are being routinely targeted by local communities and landowners within 3 years of the commencement of the project.
- 50% or more of landowners in target catchments visited or involved in events to promote sustainable land management.
- Community Engagement plan developed and implemented within 2 years of the commencement of the project using base line data.
- The stories and records of the cultural heritage of each of the becks is collected, preserved, stored accessibly and shared.

Outcomes

- Measurable ecological improvements on targeted becks specifically for fish and invertebrates. This would use Environment Agency as well as locally collected data. Specific target to be set but on the majority of these becks we would in particular like to see suitable conditions created for sustainable brown trout populations.
- Water Framework Directive Good Status achieved for all elements relevant to the bid.
- Sustained, beneficial changes to land management practices in at least 25% of farms within catchment.
- Sustained, beneficial changes to river management practices by riparian owners on at least 25% of length of Becks in targeted area.
- At least 100 local volunteers become involved in improvement work and/or monitoring and recording as a result of the project. New skills and experience are developed that will allow improvements to be maintained and managed locally beyond the life of the project and that could also be put to use in the wider Witham Catchment. Volunteer time is greater than 1000 hours for the duration of the project.
- Significant positive change observed regarding peoples attitude towards the beck compared with the baseline data leaving a legacy of community ownership.

Monitoring and evaluation

- Ecological improvements can be measured through routine Environment Agency surveys and sampling where this is carried out on the becks. If the bid were to be successful the Environment Agency could look to expand their current monitoring on the becks to support the project. As well as the EA data, the network of local volunteers that we establish to measure river fly health and other water quality data will also be used to measure the changes that the project will make. It is important that long term, robust data sets are

established so that changes brought about by the project can be accounted for against natural, short term variations, especially low flows in drier years. Work would need to be undertaken at the start of the project to help set realistic targets for improvement.

- Progress with community engagement could be measured against baseline data collected at the start of the project including questionnaires. It would include volunteer numbers, volunteer hours, % of people who record a change in attitude towards the becks and % of people who report increased recreational use of the becks. The specific target cannot be set until the baseline data has been collected and understood.

- Invasive species management could be measured against an initial map showing species and locations. This could be updated on a yearly basis or whenever stakeholders or volunteers submit additional information.

- Other data such as farm improvement measures would need to be collected during and after visits for comparison against the targets set. Habitat enhancement lengths can be easily measured as works progress to compare against the set target length for improvement.