River Basin Planning: Challenges and Choices consultation

Historic England response September 2020

Context and background:

Historic England is the Government's statutory adviser on all matters relating to the historic environment in England. We are a non-departmental public body established under the National Heritage Act 1983 and sponsored by the Department for Digital, Culture, Media and Sport (DCMS). We champion and protect England's historic places, providing expert advice to local planning authorities, developers, owners and communities to help ensure our historic environment is properly understood, enjoyed and cared for.

Historic England welcomes the opportunity to comment on the future direction of River Basin Planning.

An integrated approach to water management should take account of the whole environment, including the historic environment. The historic environment is essential in understanding why places are the way they are today, and what that might mean for their future sustainable management; the historic environment can make a positive contribution to understanding place, identifying the most sustainable options and engaging people in planning for a sustainable future. An integrated approach to water management should include the protection of the historic environment alongside the natural environment, in fact the two are often interrelated and can be mutually beneficial.

Changes to river basin/water management can have intended or unintended consequences for people and the wider environment. This includes effects upon the historic environment such as through:

- the construction and operation of new infrastructure and Sustainable Drainage Systems, and changes in land management, which can have the potential to impact on the significance of heritage assets and their settings. This includes impacts on water-related or water-dependent heritage assets;

- the abstraction of water resources can impact groundwater flows and chemistry on buried, waterlogged archaeological and palaeo-environmental remains of significant interest and fragility;

- the alteration of the physical characteristics of a water body (hydromorphological alterations) comprising the modification/removal of weirs or other in-channel structures may impact the significance of heritage assets, as might other physical changes to rivers such as de-canalisation or re-cutting old meanders – these may potentially destroy or harm archaeological and palaeo-environmental remains;

- the introduction of measures that reduce the vulnerability to and improve the resilience of heritage assets (designated and non-designated) to flooding, including occasional flooding;

- the management of river catchments in ways that serve to conserve and enhance heritage assets, this including sustaining and enhancing the local character and distinctiveness of historic townscapes and landscapes.

General comments:

Today's landscape is shaped by people's historic interaction with it over millennia to the extent that very few of our watercourses follow entirely 'natural' courses. Human activity has shaped watercourses since prehistoric times and large scale water management can be seen from at least Medieval times, and earlier in some places. This history still influences our watercourses today and the physical remains of this historic activity are often preserved in the landscape (e.g. historic weirs, bridges) or have resulted in distinctive, historic landscapes (such as water-meadows, flood meadows or the Norfolk Broads) many of which are also important for biodiversity.

Water management and the historic environment are, therefore, closely linked; and changes to the former can have far-reaching impacts on the latter, but conversely an understanding of historic approaches to water management, at

a landscape and local level, can offer vital clues to the functioning of a particular water system over time, which can help inform future water management. The often low-carbon technologies and concepts behind traditional/historic approaches to water management can help inform better and more sustainable approach to future water management. **We would, therefore, recommend that understanding the historic character of a landscape should be a starting point for any holistic approach to water management.**

Whilst recognising the links the consultation document draws between water management and the natural environment, it is unfortunate that the linkages with the historic environment are not more explicit. We note that *A Green Future: Our 25 Year Plan to Improve the Environment* recognises the value of protecting and enhancing the historic environment, and it also incorporates indicators (G2) relating to the condition of heritage features (including designated geological sites and scheduled monuments). We would hope any policy direction, or guidance notes, informed by the current consultation will incorporate similar recognition, and indicators, for the historic environment, something Historic England would be happy to work with the Environment Agency to develop.

In addition to our comments on this consultation we would hope that the Environment Agency's own historic environment specialists (including archaeologists) are similarly engaged with this strategic document. We hope they are similarly engaged in individual river basin management plans, and detailed proposals, such as for new flood defences, creation of up-stream forests and woodland to manage waste run-off, or in habitat creation.

Response to consultation questions:

1. **The way we treat water today will shape all our futures. What changes can you make to improve the water we rely on?**

Understanding the history of people and their management of water in places can help understand how past human activities affected water availability and quality.

2. **What more can we do to tackle the impacts of climate change on the water environment and what additional resources (including evidence, targets, tools and additional mechanisms/measures) do we need to do this?**

The impacts of climate change will exacerbate many of the environmental challenges we have already experienced. Taking a 'long view', particularly through applying historical and archaeological techniques, could help understand how these challenges were addressed in the past and their success/failure from which we can learn today. But realising the potential of this approach means including understanding the historic environment from the outset, not just as something to avoid or minimise, or mitigate harm to but as part of an environmental understanding that can help inform better sustainable decisions.

3. **What can we do to address this biodiversity crisis and meet the 25 Year Environment Plan targets for wetlands, freshwater and coastal habitats and wildlife?**

The biodiversity of our watery places is closely linked to their history and cultural heritage. Understanding how human activity in the past, over the long term, has influenced our biodiversity today will help, particularly where in order to create comparable habitat those historical activities needs to be replicated.

It is also worth noting that the 25YEP recognises the value of protecting and enhancing the historic environment, and it also incorporates indicators (G2) relating to the condition of heritage features (including designated geological sites and scheduled monuments). We would hope any policy direction, or guidance notes, informed by the current consultation will incorporate similar recognition, and indicators, for the historic environment, something Historic England would be happy to work with the Environment Agency to develop.

4. **Environmental targets can generate action and provide a strong signal of intent. Could additional statutory targets contribute to improving the water environment? If so, what types of targets should be considered?**

If any targets are considered these should bear in mind that the 25YEP recognises the value of protecting and enhancing the historic environment, and it also incorporates indicators (G2) relating to the condition of heritage features (including designated geological sites and scheduled monuments). We would hope any targets will incorporate recognition, and indicators, for the historic environment.

Challenge 1: Changes to water levels and flows and Challenge 2: Chemicals in the Water Environment

Actions which increase, or decrease, water levels and flows, such as changes to dredging patterns, or realignment of existing water-courses, require consideration of direct impacts on the historic environment. There is also a need to ensure longer term impacts of new erosion and sedimentation patterns are fully understood and accounted for. This includes impact within river basins and in estuarine, intertidal areas and beyond.

Changes to land management offer the opportunity to protect landscapes, historic settlements, and individual heritage assets, such as historic bridges, from the effects of increased water-flow and subsequent flooding, this includes opportunities to look after and improve the condition of heritage assets that are on the national Heritage at Risk Register.

Measures to prevent runoff from agricultural land, reduce soil erosion and chemical leaching may also have a beneficial effect on monuments affected by cultivation. Increased soil erosion can expose buried archaeological remains to increased risk from plough damage. Positive interventions to farming practices, to reduce water run-off might include reversion minimum tillage, direct drilling, cover crops and increasing the organic matter content of the soil.

However, changes to land management, resulting in changes to ground water levels, and the chemical make-up of that water, can impact on the survival rates of designated and undesignated archaeology, and need to be carefully considered (examples of the impact of dewatering upon archaeological deposits, can be seen from research at the Mesolithic site of Star Carr in Yorkshire (e.g. High, K. (2014) Fading Star: Understanding accelerated decay of organic remains at Star Carr. PhD thesis, University of York), and Must Farm in Cambridgeshire, both sites have exceptional preservation of organic remains which only survive if below ground conditions can be maintained). For example, possible re-forestation, to address carbon-sequestering and water run-off, can also impact on below ground archaeology, as well as the important areas such as the peat uplands in some National Parks. If not carefully considered, in terms of location and species, new woodland can also have a negative impact on valued landscapes and their natural and cultural heriage.

Elsewhere, provision of new natural landscape habitats and of new flood water storage areas, such as attenuation ponds, also have the possibility to impact on the historic environment, if they are not properly considered at an early stage. For example, creation of new habitats such as coastal wetlands can alter localised salination levels which may impact on archaeological deposits.

5. **What can be done to address the challenge of changing water levels and flows?**

No Comment

6. **The abstraction plan, referenced in the changes to water levels and flows narrative, explains our current and future approach for managing water abstraction. What else do we need to do to meet the challenges of climate change and growth while balancing the needs of abstractors and the environment?**

Consideration for the impacts upon the historic environment need to be included here. Waterlogged archaeological deposits in particular are vulnerable to changes to groundwater, both as a consequence of climate change and human activity. The following Historic England publications are reelvant:

- Small Wetlands: identification, significance and threats to their loss. Historic England Research Report 22/2016. https://research.historicengland.org.uk/Report.aspx?i=15547

- Exceptional waterlogged heritage. Stage 1: Inventory https://research.historicengland.org.uk/redirect.aspx?id=6996%7C%20Exceptional%20Waterlogged%20Heritage%20Stage%201:%20Inventory
- Strategy for Water and Wetland Heritage (https://historicengland.org.uk/research/agenda/thematic-strategies/water-wetland/)

7. **What kind of a water flow environment do we want? Should we maintain statutory minimum water flow and level standards universally across England as we do now, or go further in some places based on environmental risk?**

No comment

8. **What can be done to address the challenge of chemicals in the water environment?**

Understanding the distribution of industrial heritage assets is an important aspect of understanding current and future risk for influx of chemicals from historical landuse. E.g. see Howard, A. 2015. Future climate and environmental change within the Derwent Valley Mills World Heritage Site. Historic England Research report 105/2015. https://research.historicengland.org.uk/Report.aspx?i=15750

9. **Do you support the Environment Agency's proposed strategic approach to managing chemicals as referenced in the Chemicals in the Water Environment challenge document? If not, what changes would you make?**
   No comment

Challenge 3: Invasive non-native species

10. **What balance do you think is needed between current chemical use, investing in end-of-pipe wastewater treatment options and modifying consumer use and behaviour?**
    No comment
11. **What can be done to address invasive non-native species?**
    No comment
12. **How would you promote Check, Clean, Dry to all recreational users of water, including those who are not in clubs or attend events?**
    No comment
13. **Are there any barriers stopping you adopting good biosecurity when you are in or near water?**
    No comment

Challenge 4: Physical modifications

We support the proposed sustainable approach to water management, and the recognition that a holistic approach is likely to entail changes to land management, and not just physical interventions such as flood barriers. Existing settlement patterns and locations often respond to historic, or traditional, river basin and water management, and may offer clues to future land management and/or development patterns. We would, therefore, recommend that an understanding of the historic character of the landscape should be the starting point for any holistic approach to water management and any physical modifications proposed. Examples of approaches that look to characterise the historic character of water courses in order to inform future management can be found in Historic England commissioned research by Fjordr Ltd (https://blackdownhillsaonb.org.uk/mapping-the-heritage-of-the-river-culm/ and Firth, A amd Firth ,E. 2020. Historic Watercourses: Dorset Stour. Developing a method for identifying the historic character of watercourses http://www.fjordr.com/uploads/3/4/3/0/34300844/historic_watercourses_dorset_stour_report_280220_web.pdf)

The physical modification to existing water courses requires careful consideration. Whilst sensitively designed, physical flood barriers (either temporary or permanent) can protect both new and historic buildings, if inappropriately conceived, designed, or executed, they have the possibility of detracting from the places they were envisaged to protect. Preserving and enhancing the historic environment should be a key determinant informing the design and location of physical interventions, such as flood alleviation schemes. However, we recognise that physical flood barriers are likely to continue to play a part in flood alleviation and we will continue to work with the Environment Agency, and its representatives, in order to ensure that impacts on the historic environment are taken into account and managed appropriately.

Whilst there may be scope for removing redundant structures to improve water-flow, this needs to be balanced with consideration of their historic importance, as some weirs and dams may be historically significant. Whilst many historically or architecturally significant structures may be nationally designated, others may be of local significance (or may be worthy of national designation), and these should be given due regard when considering physical modifications in and around watercourses.

With regards to land management, we would draw your attention to Historic England's Strategy for Water and Wetland Heritage (https://historicengland.org.uk/research/agenda/thematic-strategies/water-wetland/) which sets out the need to consider their positive management of the historic environment as part of any strategic, or local, plans.

We would also draw your attention to the following publications from Historic England, or from work commissioned by Historic England which may be of use when considering the historic importance of heritage assets and water management:

- Introductions to Heritage Assets: River Fisheries and Coastal Fish Weirs (https://historicengland.org.uk/images-books/publications/iha-river-fisheries-coastal-fish-weirs/)
- Introductions to Heritage Assets: Water Meadows (https://historicengland.org.uk/images-books/publications/iha-water-meadows/heag237-water-meadows/)
- Water Features in Historic Settings: A guide to Archaeological and Palaeoenvironmental Invesitgations (https://historicengland.org.uk/images-books/publications/water-features-historic-settings/heag265-water-features-historic-settings/)
- Firth, A. 2014. Heritage Assets in Inland Waters: an appraisal of their significance and protection. Historic England Research Report 100/2014 https://research.historicengland.org.uk/Report.aspx?i=15792
- Small Wetlands: identification, significance and threats to their loss. Historic England Research Report 22/2016. https://research.historicengland.org.uk/Report.aspx?i=15547
- Exceptional waterlogged heritage. Stage 1: Inventory https://research.historicengland.org.uk/redirect.aspx?id=6996%7C%20Exceptional%20Waterlogged%20Heritage%20Stage%201:%20Inventory
- Conserving historic water meadows https://historicengland.org.uk/images-books/publications/conserving-historic-water-meadows/
- Introduction to heritage assets: Mills https://historicengland.org.uk/images-books/publications/iha-mills/
- Listing selection guide: Industrial Buildings https://historicengland.org.uk/images-books/publications/iha-mills/
- Historic England technical advice on lakes and water features within designed landscapes https://historicengland.org.uk/advice/technical-advice/parks-gardens-and-landscapes/lakes-and-water-features/#Section10Text
- Waterlogged Organic Artefacts. Guidelines on their recovery, analysis and conservation https://historicengland.org.uk/images-books/publications/waterlogged-organic-artefacts/
- Guidelines on the recording, sampling, conservation and curation of waterlogged wood. https://historicengland.org.uk/images-books/publications/waterlogged-wood/

- Howard, Hancox, Hanson and Jackson. 2017. Protecting the Historic Environment from inland Flooding in the UK: some thoughts on current approaches to Asset Management in the Light of Planning Policy, Changing Catchment Hydrology and Climate Change. Historic Environment Policy and Practice 8 (2) https://www.tandfonline.com/doi/abs/10.1080/17567505.2017.1320855

14. **What can be done to address the physical modification of our rivers and coasts?**

See comments above regarding the importance of considering the historic environment. Many of, if not most of our watercourses, and large stretches of our coastline are not 'natural' but their current form results from human activity over centuries, and in many instances millennia. Understanding this is an important starting point for any plan for physical modification, both because doing so may affect the conservation of heritage assets within that landscape, but also because understanding the way that water behaves in that landscape may not be possible without an understanding of its history. Research commissioned by Historic England from Fjordr has looked at the Stour in Dorset, and more recently the Culm in Somerset/Devon and found that both watercourses have been far more extensively modified than previously thought, and their historic environment underrepresented in local Historic Environment Records and the National Heritage List for England. This work will be developed further in the current 'Building Climate Resilience through Community, Landscapes and Cultural Heritage' AHRC funded research project (University of Liverpool, Historic England, University of Northumbria and University of Glasgow), as part of the 'Resilient Communities' research programme.

15. **Giving more space for rivers and coasts to move and adjust naturally will regenerate habitat, improve wildlife and help us adapt to climate change. What can you and others do to support these changes?**

Using an understanding of the history of these landscapes and places and the way in which people have shaped them over past centuries and millennia will help plan for that space and engage people in the process.

Challenge 5: Plastics pollution

16. **What can be done to address plastics pollution in the water environment?**
    No comment

17. **What actions should the Environment Agency take to reduce plastic pollution?**
    No comment

Chapter 6: Pollution form Abandoned Mines

18. **What can be done to address pollution from abandoned mines?**

With regards to pollution from abandoned mines, we welcome the recognition that many such workings, and their associated landscapes, are of historic interest, with some being scheduled as Ancient Monuments or being within inscribed World Heritage Sites. Many more abandoned mines and quarries may contain undesignated heritage assets. It is also noted that some are now protected for their ecological importance, for example as SSSIs. Often the control of pollution from historic mining activities can be combined with the conservation and public presentation of, and improved access to, historic remains or ecologically important sites or both. For instance, retaining the metal rich waste on 19th century lead ore processing sites by repairing and maintaining revetments can reduce the heavy metals in watercourses while contributing to the conservation of the historic ore processing remains and the conservation of the calaminarian grassland communities on the sites: Nenthead mines and Carr Shield Lead Mine and Ore Works in the North Pennines are useful examples of such.

We are already engaged and working with The Coal Authority on the Water and Abandoned Metal Mines Programme. For individual projects, they have been advised to involve relevant local authority/National Park

authority historic environment officers (both archaeological and historic buildings conservation officers), together with Historic England staff for highly graded designated heritage assets, as early in the process as possible. At a more strategic level we have also asked The Coal Authority to provide a list of completed, current and future schemes (with dates) highlighting those with heritage implications and where they are likely to affect both designated/undesignated heritage assets. This will help to further strengthen our relationship, develop an improved communication network and identify further opportunities for partnership working to deliver added value from the programme. Cross agency working is essential to ensure that benefits to water management, the natural and historic environment, and overall public benefits are maximised.

Challenge 7: Pollution from agriculture and rural areas

19. **What can be done to address pollution from agriculture and rural areas?**

20. **How can we support the farming sector to excel at innovative solutions which benefit both productivity and the environment? What should these solutions look like?**

Measures to prevent runoff from agricultural land, reduce soil erosion and chemical leaching may also have a beneficial effect on monuments affected by cultivation. Increased soil erosion can expose buried archaeological remains to increased risk from plough damage. Positive interventions to farming practices, to reduce water run-off might include reversion minimum tillage, direct drilling, cover crops and increasing the organic matter content of the soil.

However, changes to land management, resulting in changes to ground water levels, and the chemical make-up of that water, can impact on the survival rates of designated and undesignated archaeology, and need to be carefully considered. Possible For example, possible re-forestation, to address carbon-sequestering and water run-off, can also impact on below ground archaeology, as well as the important areas such as the peat uplands in some National Parks. If not carefully considered, in terms of location and species, new woodland can also have an impact on valued landscapes.

This is another area where using knowledge of the historic environment to take a long view of human activity and water within a landscape can potentially help.

Challenge 8: Pollution from towns, cities and transport

21. **What can be done to address pollution from towns, cities and transport?**

    No comment

22. **How can sustainable drainage systems and green infrastructure be most effectively used to tackle pollution from urban areas? What challenges are there to using them?**

Many urban areas contain important historic green infrastructure in the form of parks and gardens and designed green spaces. Understanding these as heritage assets, and understanding the contribution they already make, or could make is as important as looking to design new green infrastructure. Any new SuDS and Green infrastructure need to take into account their impact upon the historic environment. It is also worth noting that whilst these sustainable drainage systems could be designed to drain cleaned water into historic water bodies such as lakes and help re-charge water levels, such schemes should not undermine the historic design of the lake, its character and setting, nor undermine the viability of the dam. The SuDS outlet design needs to take account of vulnerability of the lake margins to scouring and erosion, and on-going maintenance.

Challenge 9: Pollution from water industry wastewater

23. **What can be done to address pollution from water industry wastewater?**
    No comment

24. **What opportunities exist for water companies to collaborate with other sectors and organisations on measures to improve the water environment?**

    No comment

Catchment partnership working

Inclusion of the historic environment within catchment partnership data and access to expertise is important from the earliest stages. Early indications from Fjordr research commissioned by Historic England is that the historic environment can also be a powerful way to engage local communities with decision making and could be an important part of the catchment partnership toolkit.

25. **How can local partnerships become more inclusive and representative of all of the stakeholders within their catchments?**

No Comment

26. **How can local partnerships achieve a better balance of public and private funding to support and sustain their environmental work?**

No comment

Who pays?

27. **How should the step change in protecting and improving the water environment be funded and who should pay? Are there any barriers to doing this?**

No comment

Supporting information

28. **Name of organisation or group.**
    Historic England

29. **What is your email address?**
    Hannah.fluck@historicengland.org.uk

30. **What is your name?**
    Hannah Fluck, Head of Environmental Strategy Historic England.