

Hoveton Restoration Project Flood Risk Activity Permit Consultation

Comments from Analysis and Reporting team, East Anglia (East)

██████████ and ██████████

1. Technical corrections/errors

Document - Updated WFD compliance assessment

River Bure macrophytes – the EA has made an error in CPS and two sites are included in the tidal Bure waterbody (GB105034050931) that are actually in the section above. In fact no sites have been assessed for macrophytes in this section of the river.

The report says there is no assessment for phytobenthos but CPS has results recorded from Horning Ferry.

Document - HWRP Appendix 4 Monitoring Plan v4 and HWRP Monitoring Plan addendum

Page 1 The text is confusing as there isn't a clear distinction between monthly water quality project monitoring at the 5 locations vs the EA monitoring at 2 locations. No details of EA analyses are given.

Document - Hoveton Fisheries Advisory Group

The use of the term 'Upper Bure' (pages 1 and 2) is confusing – this is the lowest section of the river as a whole. Even within the tidal, Broads section of the river it is in the middle section.

None of these issues has a material effect on assessment of the FRAP but are provided for information and to aid the clarity of the documents.

2. Hoveton Fisheries Advisory Group

The setting up of this group is very much welcomed and we think its roles will have a great benefit to attempts to mitigate the potential impacts of the project, addressing concerns of anglers and aiding understanding within the angling community. It must be supported and continued during the life of the project.

We welcome the funding but feel there is some confusion over what this will be used for in the text of this section on page 3:

Specific work to also include:

- *Spawning Habitat Surveys -habitat improvements in the wider river system may be appropriate in places that could be identified by monitoring*
- *Post Barrier Installation, to commission spring spawning observational work*

•*Barrier monitoring –to consider the best methodology to use in commissioning work.*

•*eDNA monitoring–in partnership with the PSG, augmenting the Project's planned e DNA surveying as deemed necessary or useful by the group*

Does this mean the group's funding will be used to pay for monitoring? We recommend there is a clear understanding of the monitoring that is necessary to cover the risks the project poses to the Broads fish community – as agreed between this group and the project. We believe spawning habitat surveys and spring spawning surveys definitely fall in this category.

The project should then fund this, leaving the £25K budget for the group to be used mainly for mitigation measures such as improving spawning habitat plus any additional monitoring that goes beyond the remit of the biomanipulation project. Otherwise there is a danger that a large part of the money will be used up in potentially expensive monitoring to the detriment of measures to mitigate the effects on fisheries or angling.

3. Monitoring plan including addendum

Fish

PASE surveys on HGB/HB are proposed every 3 years after biomanipulation. More frequent surveys could be useful to show the effectiveness of biomanipulation – removal of fish on such a large waterbody is challenging.

PASE surveys on other broads is proposed in the year following barrier installation, alongside eDNA which will then take over as the main assessment of fish populations. We think there is a risk in having only one year with both assessments carried out. We would like to see another year with both methods used in order to provide robust calibration between both estimates of fish populations. There are also limitation to eDNA in terms of the information it gives on population density, biomass estimates and size distribution. A further PASE survey after 3-5 years would give this additional information.

Fish tracking – there needs to be a commitment to continuing this, regardless of ability to set up PhD/post doc.

Spawning surveys – There should be confirmed plans for more spawning surveys for bream, roach and pike to try and find where they spawn in the absence of HGB/HB.

Other elements

Monitoring plans seem adequate although more invertebrate monitoring a few years after biomanipulation would help show benefits and that a diverse, stable community is developing. This could be a good student project.

4. Impact on general ecology

We accept the impact on the ecology of HGB/HB as a whole is likely to be positive. The evidence is very well presented and very thorough. The option of partial biomanipulation would seem to have a significantly lower likelihood of success.

There may be some risk of detrimental impact on the ecology of other broads and the River Bure due to the displacement of fish from HGB/HB and their feeding impacts on invertebrates and macrophytes. However, there is a poor level of information on ecology and what there is, indicates rather low value communities are present. Therefore there is not evidence of a likely significant effect.

We accept the assessment that there is no predicted significant risk of deterioration in the measured WFD compliance although this is hampered by the low level or lack of monitoring of many elements in both the broad and river waterbodies.

5. Risk of detrimental impact to fish populations and angling interest

The evidence presented shows HGB/HB are currently well used by Broadland bream, roach and to a lesser extent, pike. The area looks to be especially important as a spawning site. The tracking and camera work also shows regular movements in and out of HGB/HB for other purposes, presumably feeding and resting.

The EA has legal duties to maintain, develop and improve freshwater fisheries and to enhance the economic and social value of fisheries. There are also reputational risks due to the perceptions and concerns of the angling community.

Perspectives and assessment of the potential impact on these varies within the A&R team.

- Staff with fisheries expertise feel there is significant risk of short term harm to the present fish community of the Broads and that recovery may be very slow or incomplete. They also believe there is a significant risk to the actual or perceived value of the fishery and hence to the local economy.
- Staff with a lakes restoration background feel the short term harm will be outweighed by the likely long term benefits to both the whole ecosystem and the fish community.

These points are explained more fully in Table 1.

Table 1

Impact	Worst case scenario	Best case	Comment
Reduced spawning of bream, roach and pike	Reduced spawning until HGB/HB reopened due to lack of spawning habitat leading to long term negative impact on populations	Fish find other sites to spawn. Mitigation increases spawning sites. Density-dependant mortality reduces, leading to increased survival.	A short term negative impact is likely. Need to monitor this closely to understand impacts and direct effective and sufficient mitigation.
Reduced growth/survival of bream and roach at all life stages	Less feeding opportunity, disruption of normal patterns of movement to find sites for feeding, resting and spawning = more energy use, damage during competition at spawning sites. Negative long term impact on populations	Impact is temporary and reversed when HGB/HB opened again. Or this leads to a more balanced, healthier fish community that is seen as equally valuable by the angling community	A short term negative impact on bream and roach is likely. Long term impact is predicted to be beneficial to the fish community as a whole and the wider ecosystem but uncertain. Ongoing monitoring is important by all appropriate methods eg PASE, hydroacoustic, tagging, eDNA
Knock on effect on pike populations	Reduced population of cyprinids leading to reduced pike growth and populations	Long term benefit from more diverse fish community and better pike habitat	Monitor to understand potential impact
Reduced angling opportunities if fewer adult bream and roach in the Bure system, or perceived reduced quality	Fewer fish are caught, leading to reduced angling visits. Local economic impact. Negative press comments, reputational damage.	Impact is short term and small	Monitor to understand the impact on fish populations. Maintain good contact with angling community and ensure good two way communication.
Long term impact on fish communities	Recovery from short term impacts is very slow and possibly incomplete	A healthier fish community that is attractive to anglers is quickly established	Ensure all possible mitigation put in place. Take all possible steps to aid rapid stabilisation of restored lakes so barriers can be removed asap

6. Yes if approach

In taking a 'yes if' approach, the key requirements would be monitoring and mitigation:

- The immediately obvious mitigation is to create more favourable spawning habitat to at least partially replace that lost. Expert advice should be sought to determine the best locations and methods.
- Spawning surveys should be conducted to see how fish use areas available to them after the barriers are constructed, including any enhance habitat.
- The distribution of fish should be monitored using the best available methods to understand changing patterns of use.
- The movement of fish should be tracked to understand changes. We suggest this includes that tagged fish should be monitored to see if they appear at the barrier sites trying to enter (and possibly exit) HGB.

We welcome the creation of the Fisheries Advisory Group to help direct these efforts and communicate with the angling community. Sufficient budget should be allowed to cover both mitigation and monitoring. Effective monitoring and communication of the results will help safeguard against reputational risks. Sufficient staff resource also needs to be available in the EA to service the project, the advisory group and provide monitoring effort and expertise.

7. The role of the EA in monitoring

Currently the EA aims to carry out annual hydroacoustic fish surveys on the tidal River Bure as part of our national monitoring programme. If Covid restrictions to current operations are eased, this should be possible this year. There has also been some support to fish tracking work as part of our local monitoring.

However, with the current resourcing of the Analysis and Reporting and Monitoring Field teams, this is limited and unlikely to improve. There have also been recent changes to personnel in the Fisheries, Recreation and Biodiversity team. Potential consideration should be given to providing some funding from the project or from the EA to increasing the monitoring staff resource available for this work.

This option should be considered to see if it is achievable, cost effective and brings the right skills to the work. It would be a useful complement to work carried out by contractors and partners.

■ [REDACTED] 15/4/2021