The Cam Valley Forum is an unincorporated association, registered with HMRC as a charity.
info@camvalleyforum.uk
https://camvalleyforum.uk

Dr Alan Woods
Hon Secretary
Cam Valley Forum

aw@awassocs.co.uk

20 July 2020

By email

'Kemi Akingbade
FRCM Asset Performance Team Leader
Environment Agency
Heron House
Prickwillow Road
Ely CB7 4TX

Dear 'Kemi

ENVIRONMENT AGENCY ADDITIONAL HERBICIDE CONSULTATION

Thank you for your letter of 10 July. We note that all consultees have received the same letter rather than a tailored response addressing specific points. Please note that contrary to your references to 'subsequent discussions', no-one from your team has yet approached the Forum to discuss our particular concerns.

In response to your query in section 3, the Cam Valley Forum does not 'manage' any specific section of watercourse or bank but we do have a care for the ecological health of the entire Cam Valley catchment.

Flood risk management
The Environment Agency's statutory responsibilities for managing flood risk need to be exercised within the bounds of national policy, as most recently set out on 14 July in the Policy Statement on Flood and coastal erosion risk management. This places a much stronger emphasis than ever previously seen on the need for the Environment Agency to adopt 'nature-based solutions' and to tackle flood risk by 'slowing the flow'.

The following extracts from the Policy exemplify the approach now expected of the Environment Agency:

> *Managing the flow of water through catchments can reduce pollution of rivers and streams; helping to ensure enough availability in times of drought and slow and store water in times of excess.* (Page 19)
>
> *We will increase the number of water management schemes across catchments to reduce flood risk and help manage drought risk. We recognise there may be more untapped opportunities to maximise the temporary and permanent storage of water in places or times when flood risk is highest, and, where possible, capture that water to be used when or where needed. Unlocking this potential means looking across the catchment from source to sea, using a range of small and large scale actions that slow, hold and release water when needed.* (Page 20)
>
> *In the upper catchment this might include opportunities to slow or divert flow, or taking actions to allow temporary water attenuation. In the middle of catchments it might mean large flood storage areas to better protect communities, smaller scale flood ponds or basins in urban areas and well managed flood plains or washlands. In the lower catchment and low lying areas it could include better links between land drainage and water storage needs.* (Page 20)

The *Policy Statement* contains not a single reference to the need to hasten the flow of water downstream. Instead, the Environment Agency is now expected to hold water back, in particular in 'upper' catchments such as the Cam, by taking opportunities '*to slow or divert flow, or taking actions to allow temporary water attenuation*'. The Asset Performance Team accordingly needs to rethink the entire rationale for its use of the funds allocated to herbicide spraying. The actions it funds must be consistent with Government policy. As indicated in our earlier response, these funds should be used instead for positive habitat modifications.

Environmental concerns

We expect the Asset Performance Team not only to comply with its legal obligations but also to take particular care to avoid damaging Chalk streams, of which some 85% of the global total are found in the UK. These are rare habitats that support a specialised fauna and flora. They are highly valued by our members and the many river protection and restoration groups that exist in the Cam Valley.

The 'Channel maintenance' and 'Fisheries management' sections of Table 5.1 in the Chalk Rivers Handbook, published by English Nature and the Environment Agency in 1999, highlight the damaging impacts of various maintenance activities on Chalk streams, as set out in the extract below.

Activity	Potential direct effects
Weed-cutting (Channel maintenance)	Loss of fauna in cut weed; loss of vegetative habitat/cover, flow diversity and focused substrate scour; reduction in summer and winter water levels. Removal of marginal fringe and exposure of banks to erosion. Reduction in winter scouring of gravels (through root mass wash-out).
Weed-cutting (Fisheries management)	Depends on intensity and nature of cutting programme. Over-enthusiastic cutting can denude channel margins, remove too much submerged vegetation, and reduce gravel scour. Good practice mimics a natural patchwork of submerged plants and bare gravel with active marginal vegetation.
Disposal of cut weed	Smothering of riparian and floodplain vegetation (which can also cause bank instability), pollution via run-off, soil enrichment, encouragement of ruderal vegetation.
Dredging	Reinstatement of overlarge channel (see channel modifications above), loss of benthic infauna, high solids remobilisation within channel.
Disposal of dredgings	Smothering of riparian and floodplain vegetation (which can also cause bank instability), steepening of bank edges (also increasing instability), soil enrichment, encouragement of ruderal vegetation, pollution via run-off.
Weed dredging (Bradshaw bucket)	Combination of effects generated by weed-cutting and conventional dredging.
Herbicide spraying (Fisheries management)	Risk to flora/fauna of river channel and riparian area.

The use of herbicides as a management tool to control vegetation in or adjacent to Chalk streams is not mentioned once in this Handbook. We infer that the authors considered this to be inappropriate and/or unacceptable. The application of herbicides in or near Chalk rivers is mentioned only as a threat to flora and fauna. We are not aware of any other Environment Agency Area in the country that uses herbicides as a general management tool on watercourses on the scale proposed for East Anglia.

We also doubt whether spray operators have sufficient knowledge to be able to identify and avoid spraying the many sparsely-distributed native riverine species that now survive in only a few locations. Unless operators are very carefully trained and supervised, their actions could threaten further to deplete a flora that has already been severely impoverished.

We also understand that Environment Agency supervision is limited. Operators are given broad guidance but largely decide themselves exactly what and where to spray. We have seen some shocking examples of poor practice (e.g. on the Mill River, where the Environment Agency accepted responsibility and paid compensation). The risks of environmental damage should be avoided completely by ceasing this practice.

Section 6.3.1 of the Chalk Rivers Handbook summarises best practice for weed-cutting (not spraying) as follows:

> *Best practice for nature conservation purposes is to allow plant succession to progress as naturally as possible, starting with a mosaic of submerged plants (Ranunculus and other species) and bare gravel in spring and early summer, leading into progressive dominance by encroaching marginal vegetation with a central, strongly scoured channel, and consequent decline in submerged growth in late summer. Good submerged plant cover in spring allows water levels to remain high, with the necessary hydrological contact between the river, its banks and riparian meadows at this critical time of year. Retention of considerable amounts of marginal growth in the late summer and autumn allows focused scouring in the main channel and protects banks against water erosion over the winter period.*
>
> *In practical terms, the desired effect can be achieved by limiting the frequency and spatial intensity of management to the minimum necessary, and using cutting patterns that mimic the characteristic habitat mosaic and encourages a central low-flow channel. For this to happen, a new understanding needs to be found between interested parties that allows the river to function more naturally, in terms of the diversity and seasonal succession of plant communities and the habitats they provide, but without compromising operational objectives.*

In short, this guidance, which is apparently still current, excludes the use of herbicides as a management tool and expresses concern about the damaging impacts of any weed-cutting. Rather than seeking to remove vegetation, the Asset Performance Team should instead be following the advice in the Handbook:

- retaining vegetation in the channel to help to keep water levels high, ensuring good contact between the river, its banks and riparian land; and

- retaining considerable amounts of marginal growth in the late summer and autumn to allow focused scouring in the main channel and protect banks against erosion in the winter.

The Asset Performance Team should also be prepared to adjust its programmes in response to weather patterns. The Monthly Water Situation Report for June shows that 'The flow in the River Cam is exceptionally low at 41% of the Long Term Average'. Water flows are low or even negligible in many Chalk streams and pose no current risk of flooding. Graphs provided by the Environment Agency at its 'drought' meeting on 14 July indicate that even with 100% of average rainfall from now onwards, the Ely Ouse at Denver will be only at 'normal' or 'below normal' levels from now onwards well into 2021. Without a winter deluge, there will be no risk of flooding.

Even if there were ever a case for weed control in Cam Valley Chalk streams, the likely water resources situation this year surely calls for its abandonment in 2020. All current efforts should be focused on maintaining rather than reducing river levels in the interests of the environment and of the adjacent charge-payers, whether they farm water-hungry arable crops or graze livestock on parched pastures.

Strategic ongoing review

We welcome your reference to a strategic review but wholly reject its proposed basis. We urge the Environment Agency instead to take the opportunity provided by the Government's latest Policy Statement to bring about a step-change in its approach to Asset Performance Management. The Environment Agency should now be putting in place 'nature-based solutions' and tackling flood risk by 'slowing the flow'.

The strategic actions now needed in our view are as follows:

(a) To review and reconfigure the work of the Asset Performance Team so that it is aligned with Government policy as set out in the Policy Statement on Flood and coastal erosion risk management. For all the reasons set out in that document, the Environment Agency should be switching its focus away from hastening flows to slowing them, bringing benefits in terms of drought resilience when flows are low, and of flood risk management when flows are high.

(b) To cease the use of herbicide as a standard management tool for the control of submerged or bankside vegetation. The only situations in which we can see that herbicide use in or adjacent to Chalk streams might be justified would be for the spot-spraying of invasive non-native species, or agricultural 'noxious' weeds, and then only when such irruptions cannot easily be controlled by hand or machine.

(c) To review current practice on cutting weeds to ensure that any future such programmes on Chalk streams undertaken by the Asset Performance Team comply fully with the recommended approach set out in the Chalk Rivers Handbook, taking as a starting point the guideline that 'Best practice for nature conservation purposes is to allow plant succession to progress as naturally as possible.'

(d) To put in place a process to ensure that any programmes of weed control work can be adapted to changing environmental conditions. In some years, probably including 2020, the lack of flow in our rivers and streams could well mean that no action of any sort need be taken to control vegetation.

(e) As an alternative to herbicide spraying, to develop a programme of habitat restoration and improvement projects to correct the damage caused by historic channel modifications and to enhance, rather than further threaten, biodiversity, to be funded by monies raised through the General Drainage Charge. Six of the 11 priority projects identified by the Cam Catchment Partnership in 2014, and apparently not yet fully implemented, offer flood risk management benefits. This 'starter' list is set out in the Annex.

(f) To press for action to improve water quality by reducing nutrient inputs that enhance plant growth, especially when flows are low. More needs to be done to protect watercourses from sediment and nutrient inputs from farmland, to strip nutrients from sewage effluent, and to replace combined sewer overflows.

We would welcome a meeting with the Area Deputy Director, Simon Hawkins, and relevant senior colleagues, to discuss our concerns. We also consider that the necessary realignment of the work of the Asset Performance Team in light of the Government's latest Policy Statement would merit discussion in the Great Ouse Regional Flood and Coastal Committee, and ask for our proposals to be made available to the Committee to inform those discussions. In particular, the Committee needs to find new ways to use General Drainage Charge receipts that are consistent with the valued status of Chalk streams and deliver positive habitat enhancements to restore and protect them for the future.

We look forward to hearing from you.

Yours sincerely

Dr Alan Woods
Hon Secretary

cc:
Simon Hawkins, Environment Agency
Brian Stewart OBE, RFCC
Nigel Wood, RFCC Secretariat
Cameron Adams, Environment Agency
Rob Clapham, Environment Agency
Kye Jerrom, Environment Agency
Alex Malcolm, Environment Agency
Lesley Saint, Environment Agency
Natalie Wren, Environment Agency
Ruth Hawksley, Wildlife Trust
Rob Mungovan, Wild Trout Trust
Peter Landshoff, CamEO Partnership

ANNEX: PROJECTS PROPOSED BY THE CAM CATCHMENT PARTNERSHIP

Downloaded from the webpage http://www.damtp.cam.ac.uk/user/pvl/river/projects_web.pdf.

The list includes 11 projects. Projects 2, 4, 5, 10 and 11 specifically mention flood risk benefits. Other projects may also provide some benefits in terms of alleviating or attenuating flood risk. As far as we are aware, none of these projects has yet been fully implemented, although some may be in progress.

1. River Rhee, Clock Holt, Haslingfield

1.1 Project Aims:

- Increase in-channel habitat heterogeneity to provide increased habitat diversity for aquatic plants, macro-invertebrates and fish.

1.2 Specific Objectives:

- Increase variability in channel width and depth over 70m of the River Rhee at Clock Holt, Haslingfield, though the creation of new gravel riffles and backwaters and willow pollarding.
- Increase in-channel aquatic vegetation over 70m through the pollarding of riverside willows to increase light reaching the channel within two years of completion.
- Increase species-richness and diversity of aquatic macro-invertebrates within two years of project completion.
- Increase in fish spawning over 70 m of new gravel riffles within two years of project completion.
- To be able to demonstrate usage of the backwater habitat by juvenile fish within one year post project completion.
- To re-survey the site for water vole and otter following completion of the work with the desired outcome to be usage of the site within one year of completion.

2. River Rhee, Shepreth Riverside Walk

2.1 Project Aims:

- Enhance an area of floodplain habitat through the restoration of a flood meadow and associated ditches.
- Increase in-channel habitat heterogeneity through the restoration of a feed off channel to provide increased habitat diversity for macro-invertebrates and fish.
- To lower levees and undertake bank re-grading to allow flood flows to re-connect to the meadow's ditch system.
- To be able to demonstrate that floodplain connection does not increase the local risk of flooding, particularly to a nearby road.
- Restore the Twin Ditch as a backwater habitat
- Improve drainage function of the Twin Ditch

2.2 Specific Objectives:

- 4 Ha of restored flood meadow through levee removal and restoration of ditches.
- Restore a feed off channel on the River Rhee to provide improved habitat for aquatic macro-invertebrates and fish.
- The flood meadow will be wetter and retain water for longer, and there will be an increase in wetland plant diversity within five years of project completion.
- Increase in fish spawning over 170m throughout the restored reach through the creation of 765T of new gravel beds, placed LWD and suitable vegetated margins (such as Phragmites bed) to be demonstrable following expert post project assessment and fish surveys before and after the project.
- To lessen the frequency and intensity of flooding to the Barrington to Shepreth road following completion of the project (cannot be assessed until the next significant flood event).
- Removal of extensive fallen trees

- Desilting
- Tree thinning

3. Bulbeck Mill, River Rhee and Lower River Shep, Barrington

3.1 Project Aims:

- Increase variability in channel width and depth to provide increased habitat diversity for plants, aquatic macro-invertebrates and fish.
- Remove a barrier to fish migration
- Increase accessibility and amenity value of this locally valued reach of river.

3.2 Specific Objectives:

- Increase variability in channel width and depth over a reach of 40m through the removal of an amenity weir at Bulbeck Mill on the Rhee and its replacement by a suitably formed gravel shoal/spawning riffle.
- Barrier to fish migration removed.
- Increase in species richness and diversity of aquatic macro-invertebrates and fish at Bulbeck Mill, within two years of project completion.
- Improvement to road drainage outfall through the establishment of marginal planting and gravel sediment to buffer local effects of poor water quality.
- Seek expert view on the feasibility of a fish pass beneath or around the mill resulting in an options paper for consideration with EA.
- Creation of 70m of gravel shoal/spawning riffle Lower River Shep (at its confluence with the Rhee).
- Create 70m of habitat ledge through the involvement of Friends of the River Shep community volunteers in order to receive dredged silt.
- Increase in species richness and diversity of aquatic plants (particularly Callitriche sp and Ranunculus sp), aquatic macro- invertebrates and fish populations, within two years of project completion.
- Extending the spawning availability to brown trout, chub, dace, minnow and brook lamprey (all have been observed using the existing placed riffle), increase habitat availability for bullhead (currently severely restricted due silt conditions).

4. Bourn Brook – gravel shoals / riffles & bank re-profiling

4.1 Project Aims:

- Increase in-channel heterogeneity to provide increased habitat diversity for aquatic plants, aquatic macro-invertebrates and fish, and re-connect the river to the floodplain thus reducing flood risk elsewhere.

4.2 Specific Objectives:

- Increase variability in channel width and depth through the placement of 15 in-stream gravel shoals and riffles each 15m long (135T gravel) over 500 metres of the Bourn Brook.
- Increase in species richness and diversity of aquatic plants, aquatic macroinvertebrates and fish populations within two years of project completion.
- Contribute to reducing the “flashiness” of the Bourn Brook during flood events, and an increase in storage of flood flows within the floodplain.
- Re-profile the banks of the Brook to create a narrower two-stage channel and less steep banks over 200 metres, to re-connect the Brook with its floodplain.

5. Water storage near Elmdon

5.1 Project aims:

- To reduce the speed and extent of downstream flooding
- To create a water capture and storage reservoir

- To provide water for summer irrigation
- To create a water habitat in an otherwise largely dry “upland” area

5.2 Specific objectives:

• To commission a feasibility study with regard to the ability to deliver a water storage reservoir.

6. Barrington/Foxton road bridge, River Rhee

6.1 Project aims:

- To facilitate fish passage through the bridge

6.2 Specific objectives:

- To increase channel roughness and depth to enable a broad range of fish species to traverse the bridge
- This project would follow the approach already applied by the Wild Trout Trust in a number of situations with differing flow types. For a low velocity bridge with a shallow depth (as this one is) then a pair of opposing oak sleepers would be fixed to the concrete bed using expansion bolts. Exact arrangement of sleepers needs refining on site and discussion with CCC (bridge owners) and EA.

7. Fen Road reedbed

7.1 Project aims

- Use a natural reedbed system to aid water purification
- Use reedbed to provide a complementary habitat to the degraded ditch

8. River Granta, Linton flood protection

8.1 Project aims:

- To protect Linton, and downstream communities, from flooding

8.2 Specific objectives

- Undertake topographical surveys and flood modelling to understand flow patterns.
- To create a flood storage area on farmland upstream of Linton and the A1309
- To create a flood storage area on parish owned land in Leadwell Meadows / pocket Park
- To provide habitat gain in the form of new marginal and floodplain habitats
- To improve habitat capacity of River Granta through suitable soft bank protection, meander point bar creation and low-level flood pathways through tight bends (i.e. on and downstream of Linton recreation ground)
- To improve fish passage over amenity weirs through Linton

9. Coldham's Brook, Coldham's Common, Cambridge

9.1 Project aims

- Investigate solutions of relining the original channel to prevent water loss to the parallel urban drainage ditch. Currently the natural course is dry for much of the year.
- This project would benefit fish passage up Coldham's and Cherry Hinton Brook and benefit the small water vole population that has recently returned to this section.
- Investigate feasibility of a small reed bed on the Newmarket Road compartment of the Common to provide treatment to the East Main Drain runoff prior to entering the River Cam.

10. St John's College

10.1 Project aims

- Diversify the marginal and aquatic habitats adjacent to the Cripps and Fisher buildings
- Enhance the existing habitat of the island in the punt pool to encourage water fowl.
- Introduce floating reedbeds and other emergent habitats by introducing island, coil rolls and matting without changing the structure of the pool or channel.

10.2 Specific objectives

- Modification of Bin Brook to diversify habitats and de-canalise sections of waterway. ·
- Explore opportunities for localised flood attenuation. Renaturalise the edges and create aquatic and marginal habitats and access for aquatic wildlife. New wetland scrapes for marginal habitats with small scale removal of concrete revetment.
- Commission Preliminary Ecological Appraisal working with an ecologist and engaging with naturalists in Cambridge. Explore opportunities to create a reedbed with board walk through the triangle area to the south-east of Playing Fields. Plant scrub willows along water channels, create pollards of other willows.
- Develop a programme of volunteering with the College and wider community such as local schools, in particular St John's College School.

11. Cambridge Past, Present & Future: Bin Brook at Coton

11. 1 Project aims

- Convert an agricultural field next to the brook to create a wetland habitat for wildlife and which could also be used to hold water during flood conditions – however this would not be sufficient to prevent downstream flooding at times of very high flow. The field is approx. 1.2 ha and due to the low level of the Brook significant excavation would be required to create wetland ponds and channels.

***