River Rhee, Clock Holt, Haslingfield

Project Aims:

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

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.

River Rhee, Shepreth Riverside Walk

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

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

Bulbeck Mill, River Rhee and Lower River Shep, Barrington

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.

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).

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

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.

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 macro-invertebrates 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.

Water storage near Elmdon

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

Specific objectives:

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

Barrington/Foxton road bridge, River Rhee

Project aims:

- To facilitate fish passage through the bridge

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.

Fen Road reedbed

Project aims

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

River Granta, Linton flood protection

Project aims:

- To protect Linton, and downstream communities, from flooding

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 (ie on and downstream of Linton recreation ground)
- To improve fish passage over amenity weirs through Linton

Coldham's Brook, Coldham's Common, Cambridge

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 runnoff prior to entering the River Cam.

St John's College

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. Provision · Introduce floating reedbeds and other emergent habitats by introducing island, coil rolls and matting without changing the structure of the pool or channel.

· 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.

Cambridge Past, Present & Future: Bin Brook at Coton

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. 1.2ha and due to the low level of the Brook significant excavation would be required to create wetland ponds and channels.