

Southern Water Services (SWS)

Little Stour National Environment Programme (NEP) Project: In-channel morphological enhancements

Project Overview

The Little Stour was identified by the Environment Agency as one of 40 priority rivers impacted by low flows caused by groundwater abstractions for Public Water Supply. Concern was raised over the impacts of low flows on the aquatic ecology, hydromorphology and overall Water Framework Directive (WFD) status of this watercourse.

Southern Water Services agreed to implement in-channel river enhancement measures as part of its AMP6 National Environment Programme (NEP) commitment. The measures involved tree clearance work and in-channel morphological enhancements.

The design involved partnership working between Southern Water Services (SWS); Stantec; the Forestry Commission; the Environment Agency; Five Rivers; and local landowners.

Location: Little Stour, Kent, United Kingdom

Stantec Services

- Selection and outline design of the in-channel enhancement features;
- Detailed hydraulic modelling to test the efficacy of the in-channel enhancement features and ensure that impacts on flood risk were avoided;
- Environment Agency engagement during the outline design process;
- Detailed design drawings;
- Flood Risk Activity Permit (FRAP) application support; and
- Reporting to document the implementation of the in-channel enhancement features.

Project Outcomes

Tree Clearance



The completion of the tree clearance work will help to 'daylight' parts of the Little Stour, increasing the amount of sunlight able to penetrate the water column and reach the riparian areas. This will in turn increase photosynthetic potential and the diversity of macrophyte and riparian vegetation communities.

Woody Deflectors



These features will reduce the flow area in the channel of the Little Stour under low to normal flow conditions, which will in turn increase in-channel velocity within the reach opposite each deflector. This will serve to help 'cleanse' the gravel bed by transporting fine sediment and silt that has accumulated in these areas and reduce further deposition of this material. This will create a cleaner gravel bed in these areas, which will provide enhanced salmonid spawning habitats. The woody deflectors will also create areas of low velocity (i.e. 'pools') immediately downstream of each feature. Over time, these more sheltered areas will experience sedimentation and increased vegetation growth, which will help to 'kick-start' the formation of a more sinuous channel morphology typically associated with natural Chalk streams.

Gravel Causeways



The implementation of these features will a) provide a more diverse in-channel habitat type through the creation of sheltered areas directly downstream of each causeway; b) encourage the development of a more sinuous channel through a similar process as described above for the woody deflectors; and c) create a more varied range of in-channel plant species through 'plug-planting' on the top of each causeway.

For more information contact:

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