CASE STUDY

Sensitive techniques for managing vegetation (beds and banks)

Project Summary

Title: River Cam weed control (downstream of Whittlesford Bridge)
Location: Whittlesford, Cambridgeshire, England
Technique: Weed control with the use of herbicide
Cost of technique: £
Overall cost of scheme: £
Benefits: £
Dates: 2011 - present

Mitigation Measure(s)

Sensitive techniques for managing vegetation (beds and banks)

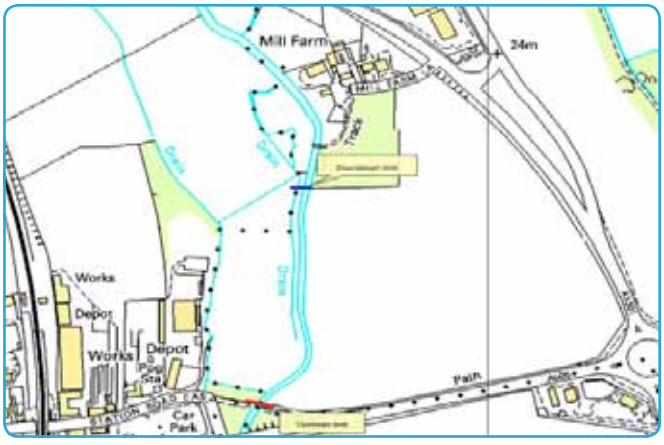
How it was delivered

Delivered by: Environment Agency

Uniform channel before herbicide application.

Background / Issues

The control of aquatic weed through the targeted application targeted application of the Defra approved herbicide Roundup Pro Biactive by trained and experienced staff to reduce flood risk has been considered beneficial in comparison to the less discriminate mechanical removal using weed cutting boats or land-based plant machinery. In this method, herbicide application is targeted at emergent vegetation which reduce the ability of the channel to convey floodwater. Treatment early in the growing season is still an effective control method and can be beneficial in situations where channels become choked with vegetation later in the season and are then at risk from reduced dissolved oxygen levels when the plant material breaks down as well as presenting an increased flood risk.

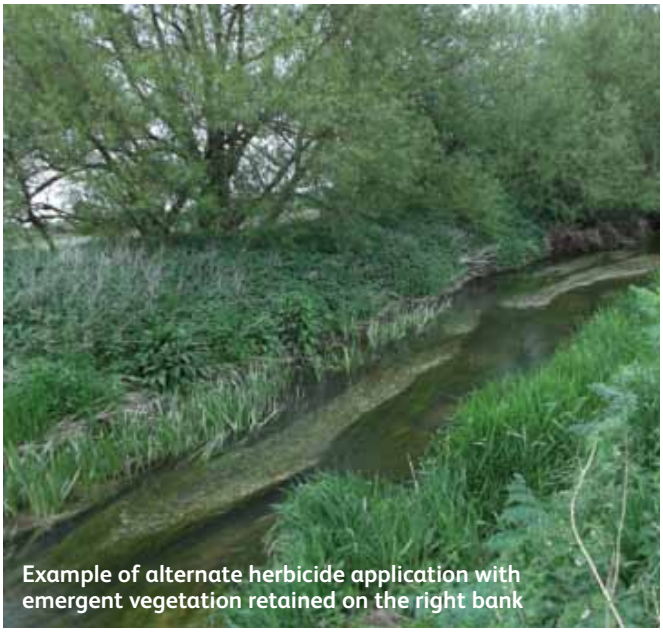


Location map for herbicide application works at Whittlesford.

CASE STUDY

Step-by-step

- The herbicide was applied using boat-mounted apparatus
- Subject to the specific flood risk of particular stretches, herbicide was applied to the central parts of the channel only. Vegetated margins of at least 0.5 m width were retained on either side of the channel.
- Where possible, application was undertaken on alternate banks to provide refugia and promote the creation of a sinuous channel.
- Herbicide application was undertaken early in the growing season and targeted species like the Norfolk reed, reed canary grass and reed sweet grass, which are indicative of eutrophication and less than good ecological status.



Example of alternate herbicide application with emergent vegetation retained on the right bank

Benefits

- 55 to 60 % in cost savings compared to less discriminate mechanical removal;
- The die back of plants in the channel occurs over time, allowing the invertebrate and fish communities to re-distribute as the die-back takes place, thus preventing in-channel ecology from degrading.
- By allowing the chemical to take effect and the plants to die back, the root systems are also killed (unlike a weed cut where root systems remain). Once the root system has died, the next significant flow event will wash away the entire plant. This in turn removes the silts, which congregate around the roots of the emergent vegetation, helping to reduce recolonisation in subsequent years.

Resulting sinuous channel requiring less vegetation management

Lessons Learnt

- Flood defence teams are finding evidence that the creation of sinuous channels using this technique is contributing to more self-sustaining systems and diminished need for subsequent weed control. This indicates that this technique is more effective at controlling plants than traditional cutting, with fewer impacts on ecology and geomorphology.

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