



## Best Practice Information Sheet

A joint project between the Environment Agency and Natural England, funded by Defra and the Rural Development Programme for England, working in priority catchments within England.

# Land management

## Silt Trap Interventions

### Why install?

Silt traps and ponds are areas that collect runoff and allow for sediment particles to settle out. They also collect valuable nutrients and pesticides that reduce pollutants from entering watercourses. These can include items such as sediment ponds, in channel works, swales, bunds and wetlands.



These features can provide benefits to the farm through:

- The collection of valuable sediments and nutrients before they leave the field. These can then be re-spread on the land
- Reducing crop losses by diverting excess water into traps
- Reducing the risk of flooding by slowing the flow of runoff
- Providing environmental benefits through improved water quality and protecting watercourses from silt build-up



### Steps to success

- 1. Review the current situation:**
  - Identify where there are soil and water movements within the field. Detect any high risk fields that have steep topography. Look in streams to find areas of sedimentation and trace the inputs.
- 2. Identify the potential opportunities:**
  - See if there are any other methods to decrease runoff which will reduce the need for a silt trap.
  - Seek help from a local advisor who will be able to identify where there are risks on the farm using catchment and risk mapping.
  - Recognise which fields or watercourses are suitable for these features. In-channel features can be very successful at trapping silt and are easily managed with good access. There may already be wet areas in fields or old ponds that are unproductive.
  - Ask yourself if there is a need for a gateway at the bottom of the field? It could be as simple as removing this and bunding the low point.
- 3. What are the cost benefits of implementing a silt trap?**
  - Decreasing the amount of sediment entering watercourses can reduce de-silting operations and flood risk.
  - Capturing sediment and nutrients before they leave the field means that they can be spread back on the land. This can save costs and will benefit future crops, as well as soil structure.
  - Making use of unproductive crop areas which are out of production and sit wet.
  - Grants are available for silt trapping type interventions through Catchment Partnerships and Stewardship Schemes.
  - Cost benefits can be gained by meeting all cross compliance and legislation requirements.
- 4. Implement the action plan:**
  - Prioritise high risk fields that have steep slopes and are nearby to watercourses.
  - See if you can reduce runoff through infield solutions such as cultivations, cropping rotations and soil management.
  - Speak with an advisor to help plan and check for any permissions, legislation and planning which may be required.
  - Design a practical device to implement and remove silt in the future. Prepare good access before work starts.
  - Ensure that the trap is sufficiently large to minimise maintenance, as well as a suitable depth and length to slow the water and allow sediment to drop. Add an outflow if large quantities of water are likely to enter the feature to avoid banks collapsing.
- 5. Monitor progress:**
  - Look at soil and water movements after rainfall. Measure levels of silt and water entering regularly.

# Land management

## Sheet 51b

### Silt Trap Interventions

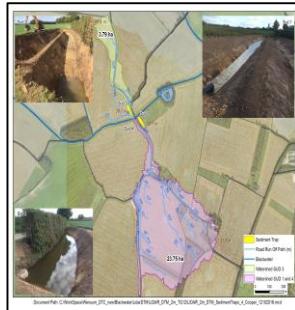
#### Practical examples

##### **Collecting valuable sediments and nutrients from entering a chalk stream**

After reviewing Scimap risk mapping and working directly with the farmer, runoff was found to be leaving fields and a Sugar Beet pad and leaching onto a nearby road. Three silt traps were created to stop the runoff before it entered a nearby chalk stream.

The designs, permissions and installation were undertaken in partnership with WWF/Coca Cola funding, as well as some in kind costs from the farmer.

After just one year, substantial amounts of sediments and nutrients were collected. These were then put back on the land. The full costs were approximately £2,500 per trap and were fully grant aided.



##### **Using a mix of sediment trapping techniques**

Runoff was occurring on an arable farm in Norfolk containing medium soils. The runoff was flowing down tracks and wheelings before entering into a stream.

Regular cross drains were implemented, which ran into a nearby hedge, to collect the sediment. Additionally, in channel silt traps were installed, using logs and a swale, to let sediments and nutrients settle out before entering the main stream.

The cross drains were 350mm deep by 450mm wide and were filled with gravel to allow for infiltration. This also meant that large machinery could still access the fields.

The total cost was approximately £5,800, and this covered the cost of the swales, silt traps and 20 cross drains. There was also some in kind time from the farmer.



#### Remember

- See if you can reduce the issue of runoff in field
- Design features appropriate to the issue and make them large enough to cope with significant rainfall events
- Make sure that legislation, consents and permissions are followed, in terms of installation and any removal of sediments
- Speak to a local advisor for design advice and to see if there are any grants available

This information sheet is part of a series providing farmers with advice on land management practices to protect water bodies, produced by The Rivers Trust with support from Catchment Sensitive Farming. The advice will also enable farmers to use farm resources more efficiently and help meet Nitrate Vulnerable Zone and Soil Protection Review requirements under Cross Compliance and environmental regulation. Information for these sheets was provided through the Broadland Catchment Partnership and Cam and Ely Ouse Catchment Partnerships Water Sensitive Farming project.



**A clear solution  
for farmers**  
CATCHMENT SENSITIVE FARMING



**Disclaimer:** Whilst The Rivers Trust has endeavoured to ensure the accuracy of this guidance it does not accept any liability arising from its use.

Whilst the production of this publication was part-funded by Catchment Sensitive Farming (CSF), the content does not necessarily reflect the agreed policy of Natural England, the Environment Agency or Defra. Copyright The Rivers Trust, Registered Charity Number: 1107144