Managing soil and water on the Estate

The way that land is managed can significantly affect how vulnerable it is to environmental damage and erosion. For example, compacted soil is less able to absorb water, so run-off into nearby watercourses is increased.

Being located on Breckland’s sandy soils, run-off can be a problem due to a low water holding capacity. This can make its way off the farm via tracks and tramlines, where it has the potential to reach the River Lark – an internationally rare chalk river, containing a diverse range of flora and fauna (Figure 1).

Using surface flow pathway maps to identify where run-off is most likely to occur, mitigation work took place in summer 2018 (Figure 2). A range of silt traps were installed including track interceptor drains and field corner bunds (Figures 3 - 4).

How do sediment traps work?
The traps capture and slow down run-off, which enables the sediment solids to settle out. This is important as the solids can have pollutants such as phosphates attached to them.

The traps are maintained by removing the accumulated sediments and any attached nutrients. This can then be returned to the field where it will benefit the farm.

Water stewardship awareness

Important steps to reduce pollution from agriculture and to conserve water had already been employed by the farmer including:

• Two 400,000 cubic metre reservoirs have been constructed on site. These are winter-filled;
• Moisture probes are used to assess soil moisture levels, and an on-farm weather station predicts rainfall and plant transpiration rates. Consequently, irrigation levels can be adjusted, and water wastage avoided;
• Assessments of headland and edge management best practice have taken place e.g. buffer strips have been introduced for better soil health;
• Green cover crops are sown in the Autumn to reduce nitrate losses from the soil and reduce soil erosion; and
• Run-off trials have been carried out to monitor the benefits of various tramline disruption machines and to test different water irrigation regimes for reducing run-off.