

A plan for all seasons

How water meadows play a vital year-round role in today's landscape

By William Alexander
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Water meadows are a particular feature of chalk valleys, although they are not exclusive to these landscapes. They are relics of a system – started in the late 1500s and used into the 1900s – to encourage the premature growth of grass to provide stock with an early bite.

Water was diverted from the river by adjusting the height of a sluice that sent a flow into a carrier or main ditch, from which it was then diverted into a series of wide depressions, spreading out like fingers across the field.

Any surplus surface water ultimately rejoined the main river further downstream.

Farmers

Precision soil levelling during construction and skilful management of water levels by a 'waterman' or 'drowner' (who would often be employed by a group of neighbouring farmers) was essential to facilitate the precision 'floating' of these meadows.

Irrigation was used in early spring to keep frosts off the ground with relatively warm water running across the surface and so encouraging the grass to start growing several weeks earlier.

Later, if the summer was dry, more water was provided to keep the grass growing.

Once the hay was made in the summer sun, the meadow could again be floated to encourage another grass flush for late season grazing.

This system also allowed the ground to absorb any plant nutrients or silt carried by the river water. These deposits fertilised the fields and provided superior crops of grass, enabling the farmer to rear more livestock, usually beef cattle or sheep, on his acreage each year.

Today, tell-tale field undulations indicate where these historical practices were once employed and can be observed in various meadows adjacent to the river Darent.

There is a particularly good example evident in the meadow to the south of Castle Farmhouse, where 'ridge and furrow' formations can still be seen. Although the original brick-built sluice remains, the associated header ditch has long since gone.

With climate change resulting in more weather variability and more

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Flooded water meadows in the Ver valley, Herts, January 2007

frequent drought periods, the intelligent use of water in agriculture and horticulture has become imperative. Water resources, their management and conservation have now become regular topics of discussion among farmers.

Reservoirs

One environmentally acceptable approach now being encouraged is to create new reservoirs that are filled from rivers when surplus water flows are available during wet winter months and store it for use as irrigation water during the dry summer months.

Water is such a valuable resource and I like to think that it will be more effectively conserved in future, so perhaps we can learn from those traditional water management systems? Who knows, we may even see the return of watermen!
● This article first appeared in the Shoreham Gazette

Chairman Alan Williams wrote to local parish councils over DRiPS' concerns for the River Darent.

I trust that you have all received notification from the Environment Agency (EA) of the proposed Change to Abstraction Licences in the Darent catchment. This is the final stage of the Darent Action Plan (DAP) as agreed by EA, Thames Water (TW) and the Darent River Preservation Society (DRiPS). The plan was completed some years ago and the delay was due to a disagreement over who would pay the compensation due to TW. Finally Defra has agreed to do so if it is completed in this financial year.

Sadly, that does not mean that the Darent will automatically become a strong and healthy river again. We have measured river flows at Otford, Lullingstone and Hawley since the work began. It is clear that the river has improved, but at Otford and Hawley it still sometimes fails to meet the environmentally acceptable flows. Therefore I do not think that the DAP will achieve the targets set.

Standards

The European Water Framework Directive (WFD) will impact on the Darent in many ways. The classification of surface water (rivers and lakes) is far from reasonable especially when applied to rivers that suffer from low flows. It sets standards for the chemical and ecological status for rivers to be classified as "good". It does not give any indication of minimum flow. In fact it does state that a river cannot fail "good" standard by reasons of hydrology alone. Therefore if in low flow conditions you can satisfy the chemical and ecological standards that have been set, then the river must be "good". In the case of the Darent, even though we have to pump water in at three locations from an already stressed aquifer in order to keep the river flowing, it is still classified as good.

We raised this in the early stages of River Basin Planning, and it was agreed to refer it to the National Committee. Their reply was that this was a European directive and could not be changed as it applied to all rivers in Europe. However, they did add that the Darent should be a special case.

DRiPS hoists danger signal

The WFD also states that fish must be able to migrate freely, and we agree with that in principle. However there are approximately 29 significant impounding structures (weirs or sluices) on the Darent and many minor ones. The Environment Agency initially said it intends to remove all structures to enable the migration of fish.

We believe that will be very damaging to the river, for without these structures the river will flow faster. It will not increase the volume of water in the river, merely speed it on its way to the estuary. It could also impact visually on the valley itself, for some of these structures have been in place for centuries and create habitats of their own in the impounded water.

This was clearly demonstrated by a report on the South-East TV news. It showed EA personnel removing some of our native crayfish (the endangered white clawed species) from the Darent to put into other waters. It was stated that these creatures have only survived in our river because they are shielded from the signal crayfish (an alien species) thanks to impounding structures preventing their passage.

Damaging

Before removing any privately-owned structures the Agency would need the approval of the riparian owner of each structure. There is of course an alternative, and that is to build a fish pass over every weir or sluice. However, the EA says the cost would be prohibitive.

DRiPS has told the EA it will oppose the removal of these impounding structures, for we believe this would be damaging to the river. They now say they will not remove all structures. We have said that any removal must be preceded by a full environmental impact assess-

ment and a cost benefit analysis. They must follow their own Good Practice Guide and adhere to the overriding instruction of the WFD that any work carried out must be of social and economic benefit to the community. As for fish migration, we do not believe the river at present is capable of supporting a self-sustaining fishery and will not be able to do so until there is a more constant minimum flow. Removing these structures will only exacerbate the low flow to which the river is prone.

Restoration

In all of the surveys carried out on the Darent over many years – including the current Darent Action Plan – **not one** of them suggests that the removal of impounding structures would benefit the river. In fact several low flow weirs were installed during the DAP.

The North-West Kent Countryside Partnership and waterway charity Thames21 are now receiving funds from Defra to set up catchment improvement groups and carry out some restoration work on the river. DRiPS has attended both the Darent and the Cray groups. They have to submit their plans to the EA for approval. Unfortunately, the Agency will only check that the plans conform to the flood risk and biodiversity regime. They will not comment on the suitability of the plan. We would therefore ask all who are interested in the river if you are approached by anyone to carry out work on the Darent, make sure you understand what is proposed and what the effect will be on the entire river.

We must all care for the river as a whole and ensure that the natural beauty of the valley is retained for future generations. DRiPS is always willing to advise and assist. We have a new website being developed at www.darent-drips.org.uk