

Farmer: Peter Knight
County: West Sussex
Farming system: Mixed
Farm size: 1,240HA

What key conservation measures have been undertaken on the farm and what evidence is there of benefit for wildlife?

Birds

Through HLS, ELS and voluntary management, the Norfolk Estate has created a range of habitats that provide the 'Big 3' for farmland birds. On the arable land, 12% of the area has been designated for conservation measures. Nesting habitat is provided by beetle banks that break the rolling downland into approximately 30 acre blocks, thus producing a patchwork quilt type of landscape. This is further supplemented by grass margins in most fields. Summer insect feeding areas are created through 10m conservation headlands, floristically enhanced margins, field corner management and undersown cereal crops, whilst overwintered stubbles, wild bird seed mixes, unharvested headlands and brassica fodder crops provide a plentiful winter seed source. Away from the arable land, grazing and water level management on the wet grassland in the Arun Valley is targeted for wintering waders and wildfowl.

Targeted management for farmland birds began on the Norfolk Estate in 2003, when a total of three pairs of grey partridge were recorded. Annual monitoring through the implementation of these conservation measures has resulted in 360 pairs of grey partridge in spring 2012, beating the previous best set back in 1959. Alongside this, other priority farmland species are also showing in good numbers including (2011 figures) 61 singing male corn bunting, 35 lapwing pairs, and 18 different species of raptors culminating with a palid harrier present on the Estate for six weeks during the autumn of 2011.

Butterflies

The flagship butterfly species on the Norfolk Estate is the Duke of Burgundy, which was discovered in 2008 after disappearing in 1999. In an attempt to boost this population, the Estate is working with Butterfly Conservation to manage woodland rides on rotation to provide a diverse range of habitats and allow migration through the area. This is proving very successful, with numbers now at 18. As well as the Duke of Burgundy, 90 Pearl-bordered Fritillary's were recorded in the summer of 2011.

Plants

The introduction of conservation headlands within the arable rotation has significantly helped broadleaved plant populations. Annual monitoring has shown that abundance is 2.5 times higher in these headlands compared to normal, and the number of species increases 3 fold. Regularly occurring red-list species include cornflower, few flowered fumitory, narrow fruited cornsalad and prickly poppy. The community of broadleaved arable plants found on the Norfolk Estate now is very similar to that described for light calcareous soils in the 1930's, long before herbicides were used.

Other wildlife

Increasing the diversity and abundance of insects on the Estate has been an important aspect within the grey partridge project, with results showing that abundance and diversity has almost doubled since 2003. A woodland insect survey on the Estate in May 2012 discovered 174 species, including the rare Fringe Homed Mason Bee, showing that the coppice management is benefitting more than just butterflies.

As well as farmland birds, many mammals have also benefitted from the arable management and rotation. Brown hares have flourished in the grass leys and spring crops, reaching a 2012 winter total of 520. Short tailed field voles and harvest mice are also doing well, which is not only good for their own populations, but also the local barn owls and kestrels.

Is the farm a well-run commercial operation and on what basis has this been assessed?

Peter has been managing the Norfolk Estate for 24 years, and has supervised the change from a fully production based system to a commercially managed Estate that has conservation at its heart. The mixed farming arable and sheep system works well for the environment as well as the farm, and pays the commercial rent rate set across the Estate. Rotational two year grass leys are followed by undersown spring barley. Stubble turnips are grown between harvest and spring crops, utilising the output of the land, whilst also helping to build soil fertility. This is coupled with a varied crop rotation that includes wheat, barley, peas and oil seed rape, thus providing good breaks for the land and an option to clean up unwanted species such as sterile brome.

ELS and HLS are also very important to the Estate, with over 20 different options being used to implement the environmental work. The financial support received is vital in substituting the income forgone from taking areas of land out of production, and helps to keep the project moving forward. Options have been chosen so that they dovetail with the crop rotation, and can be moved between fields to reduce weed burdens. Less productive areas, such as steep slopes, ancient and wet grassland are included within the scheme, utilising both their income for the Estate and the conservation value.

How has the farmer demonstrated they understand how the conservation action benefits the wildlife on the farm and shown enthusiasm for the conservation work undertaken?

Overseeing the management of the entire farming system, Peter has effectively managed and implemented the conservation minded changes since 2003. The farmland bird package has been designed specifically for grey partridge, providing a perfect blend of nesting, summer and winter feeding opportunities. Annual monitoring shows that this has had similar benefits for a wide range of priority farmland birds. Full time game keepers provide legal predator control, which is done as a package alongside the provision of first class habitat. All ground and nesting birds and mammals thrive using this recipe.

Peter makes the overall decisions, but also works closely with a number of organizations who have provided expert advice and opinions. This includes Natural England, Dr Dick Potts (previously GWCT) and the Butterfly Conservation Trust. As well as this practical advice, Peter is also the first to admit that mistakes have been made along the way, but that it is all part of the learning curve and a very

good way of improving things moving forward. As an example, a more environmentally friendly insecticide spraying programme was developed to help sustain insect survival.

His interest, involvement and understanding are all clearly demonstrated by his ability to talk in depth about the species and farming practices on the farm, and how the current management is mutually beneficial for both. Coming from a commercial farming background, Peter's aim is to make all aspects of the Estate a commercial entity in their own right, including their conservation work.

How has the farmer been successful in maintaining, restoring and creating habitats on the farm?

As well as providing the correct mix of options, the Norfolk Estate is also very keen to create and manage them so that they deliver the best benefits. Much of this has been learnt through trial and error as well as advice from specialists.

Problems with the arable options include a profusion of sterile brome in the early conservation headlands. This was a potential pitfall for the Estate, so they introduced a rotation that included peas and oil seed rape. This break from a straw crop allows specific chemicals to be used that can control sterile brome and keep it at tolerable levels. Alongside this, adaptations to the seed drills have allowed automatic blankers to be used on alternate spouts when drilling the conservation headlands. This creates a more open crop, and allows more broadleaved weeds to emerge, which in turn attract a larger diversity of insect life.

Peter also works very closely with Natural England, and is keen to discuss and look at ways in which options can be created and managed to deliver maximum benefits. As the Estate has developed, this has included the planting of some 12km of conservation hedges on top of beetle banks, which provides corridors for the movement of wildlife between areas and extra winter cover. Bespoke wild bird seed mixtures have been designed that work on the light soils and provide maximum seed and protection benefits.

What future improvements does the farmer plan to make to further enhance the wildlife value of the farm?

Now in their 5th year of HLS, the Estate feels that they have now found the right rotation and management for their conservation measures. This has been reflected in the increases in birds, hares, insects, butterflies and plants. However, being a heavily populated and well walked area, these increases have attracted a lot of interest, particularly from bird watchers and nature lovers. Although welcomed onto the Estate, there have been some disturbance issues that the Estate is keen to rectify.

To do this, they are hoping to further increase the number of site visits by all kinds of groups so that the changes on the Estate and subsequent increases in wildlife can be fully explained. This will be combined with signage so that one off visitors can also discover that management being undertaken. The annual monitoring from 2003 has been tracking the great increases seen in a wide range of species, which the Estate hopes to use as a platform to demonstrate wildlife management within a commercial farming system.

Has the farmer demonstrated a willingness, and/or ability to successfully promote the conservation messages of their activities to others?

The Norfolk Estate is well known within the South East, and more widely across the country, for the environmental gains they have managed to achieve. Due to the steps taken, and the learning curve whilst getting the right mix of options, it provides a very good showcase of what can be achieved when managing for the environment. To show this, Peter has led a wide range of groups around the farm, from farmers to members of the public, showcasing what the Estate is doing, how they are doing it, and more importantly the successes achieved to date. Presentations have also been given at meetings and conferences, including the Sussex Ornithological Society AGM, where local bird watchers learnt about what the Estate has achieved and the management that is being undertaken.

Peter is also able to discuss the more technical details of the management, and the issues encountered along the way. He is very conscious of how previous EU farming policies have been detrimental to farmland bird populations, not least on the Estate, and how the practices now in place are aiming to reverse this.

Peter is extremely passionate about the conservation work he is doing, and is keen to inform and involve interested groups with the processes underway. He looks for any opportunity to explain and educate others in this, and is very keen that conservationists and farmers meet and discuss practical management options that deliver for wildlife, whilst forming an effective part of the farm business.