RSB East Midlands: Knepp Estate Conservation and Rewilding Safari

14 August 2022

It is a swelteringly hot, summer Sunday in Surrey, with a blue sky so intense it hurts to look at it. Here twelve lucky people are gathering to meet for the first time and to wander the majestic rewilding paradise of Knepp Estate. The area has been owned by the Burrell family for over 220 years, most of which, until recently, was devoted to traditional arable and dairy farming. But in 2001, based on a continuous trend of losing money, it shifted its focus from intensive farming to conservation. A minimal intervention and restoration effort driven by the guiding practice of rewilding. It is now 14:00 and our tour guide Paul is ready to lead us out to see for ourselves what this hidden ecological project has managed to achieve.

Quickly, we learn that Knepp is divided into three conservation zones. Each area is separated from the others by boundary fences and careful management. This essentially allows different strategies to be trialled in each of the zones. The separation of the estate into smaller areas was also essential in transitioning the site from pastureland into its current rewilded state, with the typical pasture herding and set ups being phased out year by year. We are told that the estate has always had trouble with typical agricultural practice due to the thick layers of clay beneath the topsoil. This has made it difficult to graze cattle, as well as ploughing the fields in order to grow cereal and other vegetable crops. The shift to wild roaming cattle and other animals, including pigs and deer, have ensured that no one area of the estate is being over grazed, with tight population limits in place, as well as a reliance on the animals' natural ability to roam and shape their environments for their dietary needs. The simple fact that the cattle can roam through 1000 acres of land without running into fences means that they have a far greater access to a variety of crops to graze upon, a unique difference from normal straw and soy fed cattle in the rest of the UK.

The tour begins, we follow a dirt trail laid bare by years of hikers and the movement of herbivores. We stop frequently to listen to Paul, our guide, about how Knepp is set up and how a hands-off management scheme has shaped the landscape around us.

We journey through the estate, relishing in the sun-soaked fields of natural shrub land and expanding hedges of holly and thistle. We are told that in areas of low initial tree cover dense bushes of brambles can act as excellent tree nurseries, protecting young developing trees from grazers. Once the tree has grown beyond the graze line, the height at which herbivores can no longer reach the leaves or lower branches of the tree or shrub, the trees begin to blot out

more sunlight from their bramble cradles, which are left to recede and grow in other areas. This phenomenon is exquisitely highlighted within Knepp and sadly absent from other areas of the country.

Paul explaining to us about the graze line, the height at which plants, trees and shrubs begin to escape the grazing impact of deer and other grazers.

Our group is guided along a dried river bed, weaving a trail through ancient oaks, and magnificent ash trees, although even in the open areas of Knepp the Ash face the threat of Ash die back, a harrowing fungal disease spread by the invasive Emerald Ash Borer beetle; a beautiful insect that spreads a deadly disease.

Taking refuge from the sun under some of the mighty oaks that have been on the site for upwards of 500 hundred years.

Paul explains to us that there are now only six adult female pigs on site. Initially when the project began a variety of pig were selected to best match the foraging behaviour of the now extinct British wild boar. The boar, whilst it still exists within other countries in Europe, is unable to be reseeded within the UK due to its registration as a dangerous animal under UK law. Until the law is changed Knepp will have to make do with its tamer pig relatives. At the beginning of the project, numerous male and female pigs were released on site at once. However, the negative impacts of their natural rooting behaviour of so many pigs within only a few 1000 acres was not fully comprehended, and they ended up doing a lot more damage than good to the re-establishing ecosystem. Thus, it was decided to reduce the population of pigs to ensure that individuals had a larger area to roam, allowing them to continue their natural foraging without causing irreparable damage to the conservation zone.

Paul draws our eyes to the foraging and rooting work of the pigs, their ability to radically alter the landscape and create areas of exposed earth for a new generation of plants to colonise. As they root through the ground seeking insects, fungi and tubers they create small islands of raised ground surrounded by flattened and turned earth.

Paul leads us to several guard plots; small areas fenced off to protect them from grazing. This allows the botanists at the station to understand how each area is being impacted by those grazers. If the plant life on one side of the fence is different in type as well as abundance and height, it is an observable way of identifying what impacts the grazing animals are having on the site's composition. It may reveal that deer target certain plant species over others, or that after an area has been rooted by pigs new plant life is able to take over and begin to grow.

We are told that four deer species call the Knepp Estate home. The herds unfortunately must be controlled using selected culling or shooting as it is commonly called. There are ambitions to return to a predator prey control system in the future, however the introduction of Lynx still seems a far distant dream. The estate is home to red deer; which are large, red and with large branched antlers, fallow deer; with their dappled backs, the real life Bambi's, roe deer; which are greyish in colour and have small antlers, and muntjac deer; which are small, hare-like deer with small forked antlers. If the populations were left unchecked the relatively small wild areas of Knepp would soon become overrun and decimated by overgrazing. Knepp is hoping to connect itself to woodlands and other natural areas in the future. By expanding the number of natural corridors for nature to flow it will allow greater numbers of deer to be established as they are able to move out of areas that have already been grazed.

The plots we were shown held an almost identical collection of plants inside the zone than outside.

Leaving the open fields, we venture into a shaded path eventually to cross a dwindling stream. The drought has impacted the estate much like the rest of the country, water levels are down, and the staff are on constant alert for wildfires.

Stopping on a wooden bridge we are told the hysterical tale of the beavers that were brought to Knepp and attempted to be released. Both male and female beavers immediately escaped the 3000-acre site and went their own ways. Unfortunately, the male died on his journey, and after another escape attempt the female was rehomed away from Knepp. Beavers were once abundant in the UK but were hunted to extinction for their fur. Beavers are excellent ecosystem engineers and regulators, being herbivores that graze on plants, leaves and bark. They are well known for building dams on water ways, which allow them to raise the water levels and flood fields. This allows them to remain safe within the water whilst they graze on the shoots and plants they crave. The creation of these flooded zones helps regulate the amount of water available within an ecosystem and can better protect areas against droughts. Beavers create perfect habitats for wetland plants and animals and are a keystone species. Knepp has big plans to reintroduce beavers back into the estate. However, for now they are just going to be working with one breeding pair to get a feel of what they require from their ecosystem and how much territory one beaver couple is likely to use.

Our first sighting of the wild pigs occurs along the shaded trail, the pigs were not afraid of humans and had no issue foraging near us. We were told that these pigs were likely just separated from their mother and were striking out on their own.

Pigs are very social animals and after leaving their mother these two pigs remained as a foraging team. Pigs are remarkably social and will continually call to one another to check in and reassure themselves. Pigs typically root in the ground for their food, using their powerful sense of smell and excellent digging abilities. However, the heatwave had made the ground too compacted and difficult to dig in. When this occurs, the pigs switch to grazing on grasses and foraging. When we came across this pair, they were just beginning to devour some apples fallen from a nearby tree. Paul elaborates on the unexpected connections and interactions observed throughout the estate. In the case of the pigs, a connection to the endangered turtledove species has been hypothesised. Knepp Estate currently has one of the only growing populations of turtledoves in the country. It has been suggested that the rooting behaviour of the pigs has created spaces for smaller grass species to establish, the seeds of which the turtledoves combine with water to create food for their young. The wild pigs are acting as a keystone species that is creating beneficial habitat for other struggling species to take refuge.

The pigs had no fear of us.

Our first cow sighting occurs as we leave the shaded woodland path and begin making our way to the banks of a shallow stream. These animals were huddled together in the shade. The females had calves to feed and were eager to get some rest in the shade. The cows on this site are selected to be as close to the non-domesticated, now extinct auroch variety that has been replaced by diary and Shetland cattle. Dairy cattle are typically so unnaturally large and weak that they are unable to walk long distances and so would not have been able to integrate back into a normal nomadic lifestyle like these longhorn cattle have been able to do. We are told that whilst these cattle can roam where they want within the 1000-acre zone, they are still killed for meat. Whilst most cows for slaughter make it only 6 months these cattle are allowed to live for far longer, up to three years or more. The animals' lives on site are significantly greater than others of their kind. The ability to roam and select their own food has seen an improvement in cattle diet and health, with the animals seeking out natural medicines for aliments by altering their diets, as well as having a more diverse and robust gut microbiome.

We break for snacks further up the stream from the relaxing cattle. Whilst we are there we are witness to the aerial dances of numerous dragonflies and other insects. We are told how the purple emperor butterfly (*Apatura iris*) has seen a recovery in its numbers due to the increased presence of sallow bushes. The females of the species will only release their eggs onto the underside of the sallow leaves. The roaming activity of the deer and pigs have given sallow the opportunity to grow within the spaces these animals have cleared out. Knepp has shown once again that as one species thrives, it creates the spaces and opportunities for others to thrive as well. Nature is no longer red in tooth and claw, but warm in the glow of co-operation and mutual benefit.

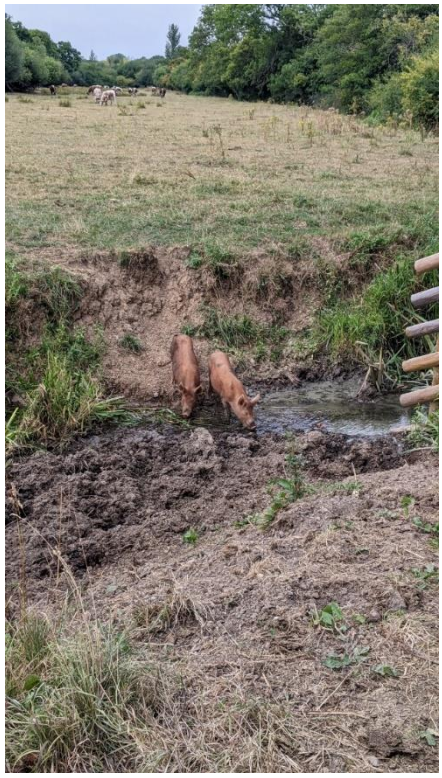
We are provided a light snack on our walk, including elderberry drinks and brownies.

Our tour takes an unexpected turn after our snack break when an enormous cloud of flying royal ants, the winged male and female generation released to create new colonies of their own, is sighted above the trees. The spawning is perfectly timed so that all the ants from multiple colonies take to the skies as one. It was akin to the murmuration of starlings, the effect being both slightly unnerving and immensely beautiful. The fact that the surrounding area is left to completely manage itself, seed sown where the wind carries it, weeds no longer weeds but essential components of the terrain.

The clouds of insects create a noticeable shadow over the trees.

Our group will soon be forced to run as the ant swarms start raining down on us, and no apparent beauty or rare occasion is going to be able to fight off the need to escape the descending clouds of ants.

As our tour is coming to an end we are treated to another magical site as a herd of cows moves majestically in the background whilst a mother pig and her piglets play and dance in the mud near a stream. A sight we didn't expect to see, granted at the conclusion of our day.



What Knepp Estate has managed to achieve is truly inspirational. Whilst they certainly have a long way to go to ensure that the animals can be left truly alone to wander undisturbed, the effort and love of the team cannot be questioned. The site offers a truly unique opportunity to study the interactions of animals and plants within the UK on a truly unprecedented scale. The wildlife and flora on display on this site is truly extraordinary and only highlights just how stripped our lands have become of animal and insect life. The scheme here should certainly be trialled in other regions of the country. As we step away from wasteful farming practices, why not step back and allow nature to once again thrive in this once green and pleasant land.

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