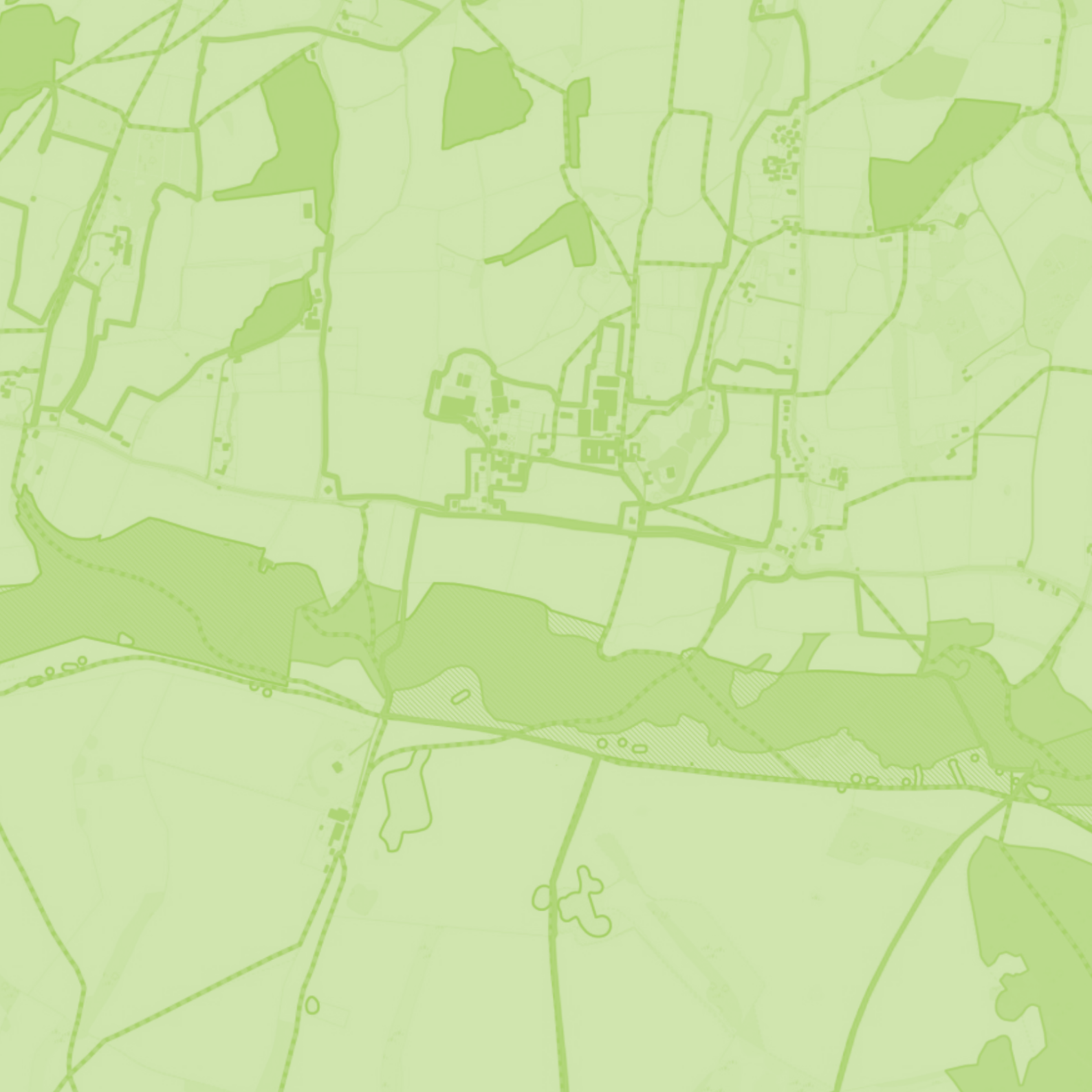
EST. 1926

PLUMPTON COLLEGE

Plumpton College Estate Ecological Strategy

2017 2020



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INTRODUCTION

Plumpton College has built up an excellent reputation for delivering vocational skills training for the land based sector and rural businesses over the past 90 years. We recognise that our ability to build sustainable relationships with employers, partners and the wider community is key to this success.

An integral part of achieving this is to ensure that our wider college estate is managed to the highest possible standards for the benefit of the environment and our many estate users. This also enables us to provide the highest quality educational opportunities for studying best practice land management along with environmental and wildlife conservation.

This report has been developed by undertaking an extensive ecological review of all the various environmental surveys, reports and management plans, which have been produced over recent years. It has consulted with key organisations including Natural England, the Forestry Commission, the Ouse and Adur Rivers Trust, Wild Trout Trust and Sussex Flow Initiative, to produce a comprehensive 2017 Ecological Survey and Management Plan for the Plumpton College Estate. This booklet provides a summary of the report and highlights the key activities we are committed to delivering over the next three years.

OUR MISSION

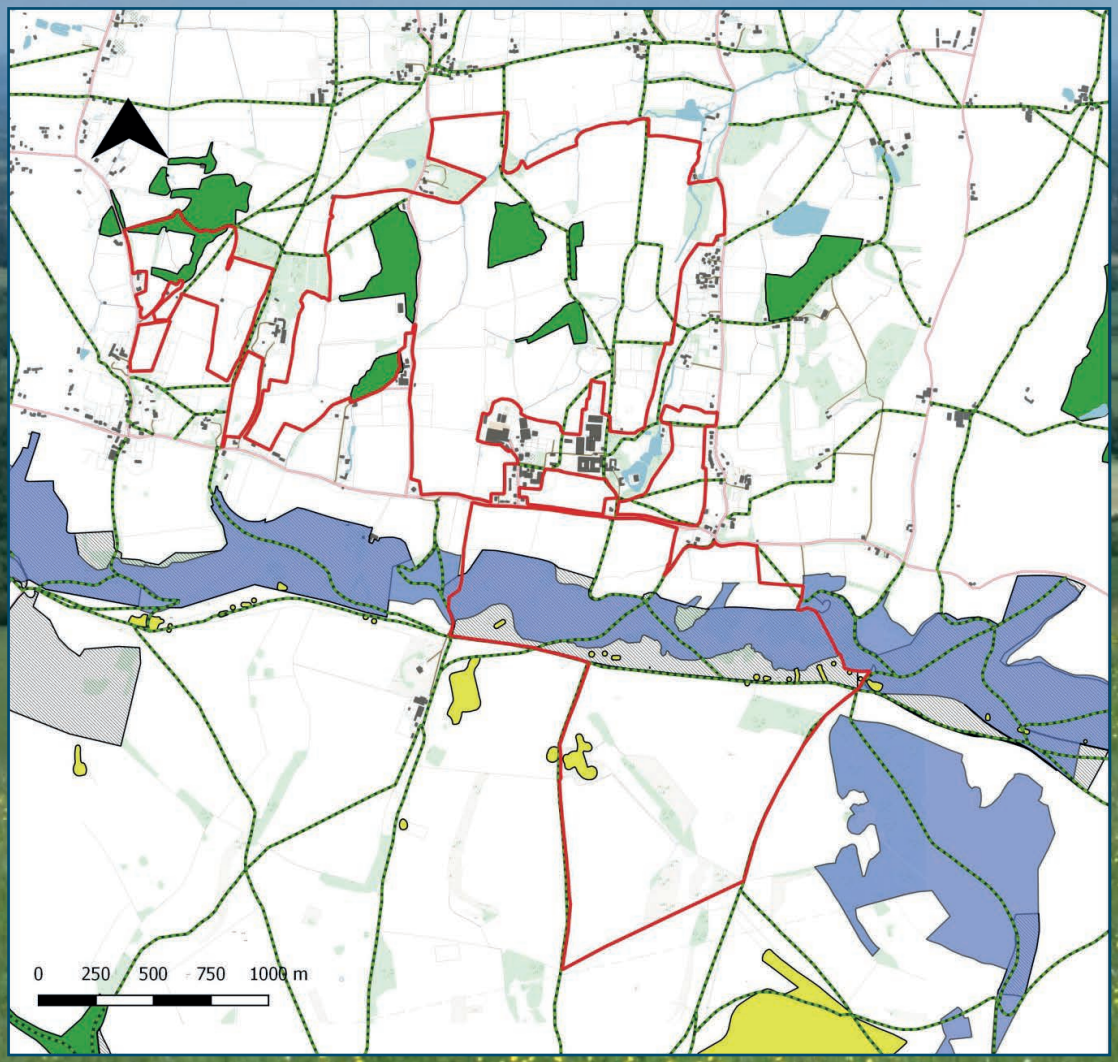
To consistently provide high quality training and education in a safe and welcoming environment that enables our students and employers to be successful.

OUR VISION

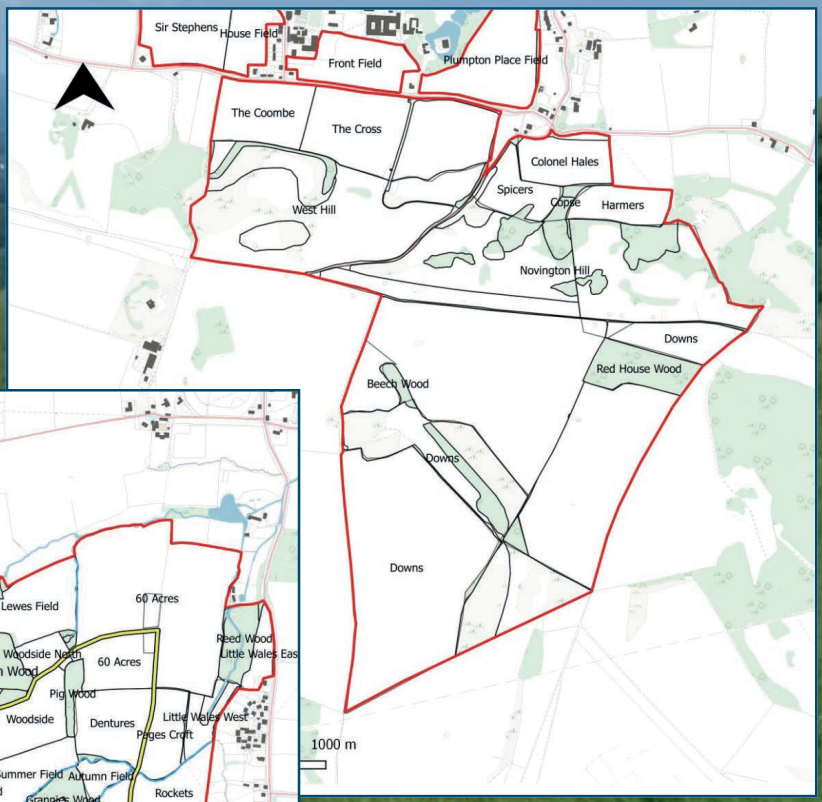
To be an innovative and inspirational college delivering excellent education, training and research that enables our students and employers to play a leading role in future industry growth and development.

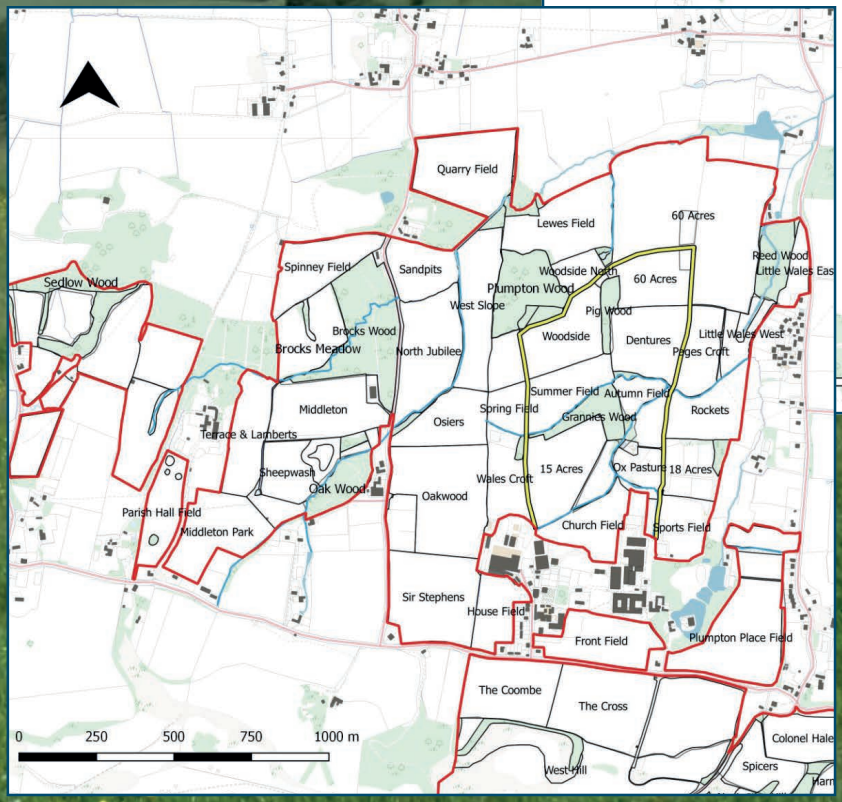
ESTATE FIELD MAPS

MAP 1: PLUMPTON COLLEGE ESTATE: LOCATION AND DESIGNATIONS



MAP 2: FIELD NAMES





BACKGROUND

Plumpton College is a land-based college near Lewes in East Sussex, situated at the foot of the South Downs.

The College has a large estate of 460 hectares (1,140 acres) which undulates gently northwards over the Sussex Low Weald. To the south, it runs up the steep north-facing scarp slope of the South Downs to the South Downs Way and beyond it on to Plumpton Plain. Additional rented land is not included in the Ecological Survey and Plan.

The geology ranges from chalk at an altitude of 210 m above sea level to heavy Gault clay in the Weald at 40 metres above sea level, meeting the Lower Greensand at the northern boundary of the estate. This varied geology gives rise to a range of soil types. Shallow, chalky, free-draining soils on the Downs contrast with the heavy and poorly drained clay soils of the Weald and again with the slightly acidic, sandy soils in the north of the estate. This range of soil types makes the land suitable for a variety of farming enterprises, mostly arable, dairy and sheep. Between them they support a wide range of wildlife habitats from species-rich chalk downland to ancient Wealden bluebell woodlands linked by a network of historic shrubby hedgerows and grassy field margins. Where permeable chalk meets impermeable Gault clay along the bottom of the Downs, springs give rise to a series of chalk streams. These form a network which crosses the Wealden part of the estate from south-west to north-east to form the Plumpton Mill Stream. This flows into the Bevern and eventually joins the Ouse at Barcombe Mills.

Most of the College estate lies within the South Downs National Park. On the scarp slope of the Downs, West Hill and Novington Hill form part of the Clayton to Offham Escarpment Site of Special Scientific Interest (SSSI). This important belt of chalk grassland was first designated in 1953 for its importance as a nationally uncommon habitat.

THE RANGE OF SOIL TYPES MAKES THE LAND SUITABLE FOR A VARIETY OF FARMING ENTERPRISES, MOSTLY ARABLE, DAIRY AND SHEEP.

WHERE PERMEABLE CHALK MEETS IMPERMEABLE GAULT CLAY ALONG THE BOTTOM OF THE DOWNS, SPRINGS GIVE RISE TO A SERIES OF CHALK STREAMS.

THERE IS A WIDE RANGE OF WILDLLIFE HABITATS FROM SPECIES-RICH CHALK DOWNLAND TO ANCIENT WEALDEN BLUEBELL WOODLANDS.

HISTORY

The Domesday Book of 1086 recorded that the Plumpton estate belonged to the de Warrene family, William de Warrene being a friend of William the Conqueror. By the time of the dissolution of the monasteries in the 1530s, Plumpton Manor had passed to the Bardolf family.

The name, Wales Farm, can be traced back many centuries to the family of Walter de Westwales in a reference of 1332. In the 16th and 17th centuries the surname appears in the parish registers simply as Wales. The name was changed to Lambert Farm in 2015 in honour of the retiring college principal, Des Lambert.

The wooded 'V' on the Downs opposite the College was planted to commemorate Queen Victoria's jubilee. The story is that the original plan had been to plant a 'VR' but the money ran out after planting the 'V'.

THE ESTATE WAS BROKEN UP IN THE 16TH CENTURY AND IN 1555, JOHN MASCALL BOUGHT PLUMPTON PLACE, WALES FARM AND A NUMBER OF 'HALF YARDLANDS' IN THE PARISH.

1555

BY THE LATE 17TH CENTURY, THE MANOR HAD PASSED ON FIRST TO THE SPRINGETT FAMILY THEN IN 1736 TO JAMES PELHAM AND THROUGH HIM TO THE EARLS OF CHICHESTER.

1736

A SUBSTANTIAL PART OF THE CHICHESTER ESTATE WAS SOLD IN 1913 AT WHICH TIME WALES FARM WAS BOUGHT BY WILLIAM WELLS.

1913

The Jubilee 'V'

1919

IN 1919, EAST SUSSEX COUNTY COUNCIL TOOK A SEVEN YEAR LEASE ON THE FARM, WHICH THEY LATER BOUGHT. AT THAT TIME, THE FARM WAS ONLY 166 HECTARES (411 ACRES).

IN 1926, PLUMPTON AGRICULTURAL COLLEGE WELCOMED ITS FIRST INTAKE OF STUDENTS. BY 1934, WALES FARM HAD EXPANDED TO INCLUDE AN AREA OF DOWNLAND.
THE COLLEGE HAS CONTINUED TO ACQUIRE LAND OVER TIME AND ENTERED INTO ENVIRONMENTAL STEWARDSHIP AGREEMENTS FROM THE EARLY 90'S. THESE ARE IN PLACE ACROSS THE ENTIRE ESTATE TODAY.

1926 -2017

ARCHAEOLOGY

There is an extensive archaeological record across the estate. Most of the visible ancient earthworks occur on the Downs. The first Bronze Age settlement is situated 400m south of the South Downs Way and dated at 800 to 700BC in the late Bronze Age. It consists of a cluster of four enclosures, linked by sinuous roads and surrounded by fields marked by lynchets. These are ridges created by the ancient ploughing system.

The second settlement is situated a further 400m to the south-east along a wide drove-way and is marked only by a small bank and a ditch. Many lynchets can be seen at certain stages of crop development and Neolithic flint axes suggest that this extensive field system probably dates from the Neolithic or Early Stone Age. There are also many prehistoric burial mounds roughly in a line along the South Downs Way.

On the Weald, the most important archaeological site is the Plumpton Roman Villa in a field called Sixty Acres . Since 1977, several archaeological surveys have been carried out. They show that the villa is set in a ditched enclosure with rubbish pits and a possible kiln to the south. Tracks and a field system surround the villa which was probably a working farm. Since 2015, the Sussex School of Archaeology has carried out six-week field excavations of the site each summer and in 2017 unearthed a Iron Age Burial Urn from the site. The excavations will continue over the next few years involving students where possible. An exhibition of the finds is planned along with a detailed interpretation board at the site.

ON THE WEALD, THE MOST IMPORTANT ARCHAEOLOGICAL SITE IS THE PLUMPTON ROMAN VILLA IN A FIELD CALLED SIXTY ACRES.

WILDLIFE

The Wealden part of the estate consists of a mosaic of small fields, a mix of grassland and arable, divided by a network of species-rich native hedgerows and streams. Dotted across the landscape are a number of small ancient woodlands, the archetypal Sussex 'bluebell woods'. Many rare and protected species have been recorded on or near the estate. Most of these live either in the ancient woodlands in the Weald sector or the unimproved chalk downland on the Downs. Of particular interest is the Hazel Dormouse, which is protected at European level and is recorded in Brocks Wood, and several rare butterflies. These include Wall, Small Heath, Silver-Spotted Skipper and Small Blue on the Downs and Brown Hairstreak in the Weald.

The birds on the estate have been studied extensively and a wide variety of woodland and farmland birds thrive here, despite national declines. Barn owls nest regularly in the barn owl boxes and hunt field voles along the field margins.

ON THE DOWNS, THE CHALK GRASSLAND OF THE STEEP SCARP SLOPES, UNIMPROVED BY AGRICULTURE, HOLDS A RICH DIVERSITY OF WILDFLOWERS AND THE SPECIALIST BUTTERFLY COMMUNITY ASSOCIATED WITH THEM.

WOODLANDS

The woodlands on the Plumpton College Estate consist of several small woods with the majority located in the Wealden part. Most of the woods are ancient woodlands which have existed at least since 1600. Each woodland has its own character though they all share a number of ancient woodland features such as old woodbanks marking boundaries, veteran trees and coppice stools, and a rich ground flora with bluebells, wood anemones, primroses and other ancient woodland indicator species. The larger woodland areas show evidence of typical historical Wealden woodland management as hazel or ash coppice with oak standards.

In the Wealden part of the estate, there are also examples of wet woodland, an increasingly uncommon woodland type, for example, Reed Wood in the north-east of the estate.

THE VISION FOR THE WOODLANDS IS THAT THEY SHOULD BE MANAGED PRIMARILY FOR CONSERVATION WHILE PROVIDING FIRST-CLASS EDUCATIONAL OPPORTUNITIES FOR FORESTRY, GAMEKEEPING AND COUNTRYSIDE MANAGEMENT STUDENTS. THEY SHOULD BE AN EXEMPLAR OF MULTI-USE FARM WOODLANDS.

Central to the woodland management strategy are restoration of the historic hazel coppice rotation; thinning the woodlands where they are overcrowded; converting conifer plantations on ancient woodland sites back to native broadleaf woodland, and improving the rides both for their wildlife value and for extraction purposes. The College follows a Forestry Commission-approved Woodland Management Plan for the woods.

EARLY PURPLE ORCHID

SILVER-WASHED FRITILLARY and THE HAZEL DORMOUSE, WHICH IS PROTECTED AT EUROPEAN LEVEL AND IS RECORDED IN BROCKS WOOD.

HEDGEROWS

There is a well-established network of native species-rich hedges across the Wealden part of the estate. Many are likely to be over 400 years old and the parish boundary hedges may even be Saxon in origin. The hedges are diverse. Hawthorn and blackthorn are the most abundant shrubs and hazel, field maple, dog rose and dogwood all occur frequently.

Hedgerow trees, mostly oak, are frequent along the hedges and contribute significantly to their wildlife value. Other species include wayfaring tree, spindle, wild service and, in wetter areas, willow.

YELLOWHAMMER IS A DECLINING FARMLAND BIRD ASSOCIATED WITH HEDGEROWS

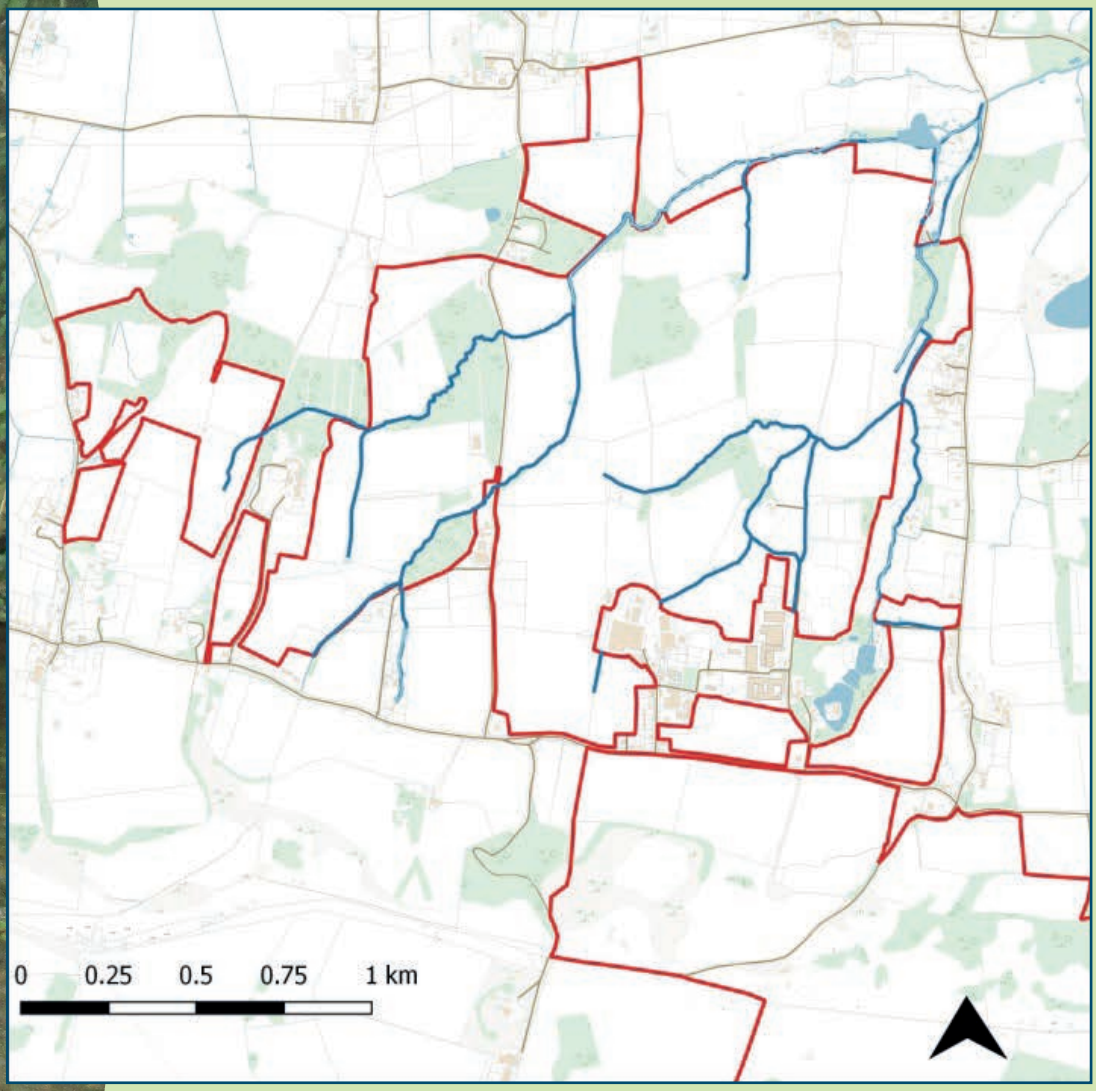
STUDENTS ARE TAUGHT HEDGEROW RESTORATION AND MANAGEMENT SKILLS, INCLUDING TRADITIONAL HEDGE-LAYING.

CHALK STREAMS

A survey in 2010 found that Sussex has some of the finest examples of natural chalk stream habitats in the country. The fish species in these rivers and streams include sea trout, European eel, bullhead (also known as miller's thumb) and brook lamprey. There are regular records of bullhead in Plumpton Mill Stream from student surveys over many years as well as records of diverse chalk stream invertebrates including mayflies, damselflies and dragonflies.

In early 2017 the Ouse and Adur Rivers Trust and Sussex Flow Initiative completed a study of the whole River Ouse catchment including the Plumpton Mill Stream sub-catchment. They have recommended measures to reduce the impact of flooding, improve water quality and increase the ecological status of the catchment. The measures follow the principles of natural flood management, for example by tree-planting, as a cost-effective, sustainable approach to flood management. Further surveys have been carried out by the Wild Trout Trust and their recommendations are also being implemented.

THE FISH SPECIES IN THESE RIVERS AND STREAMS INCLUDE SEA TROUT, EUROPEAN EEL, BULLHEAD (ALSO KNOWN AS MILLER'S THUMB) AND BROOK LAMPREY.



MAP 3: WATER COURSES ON THE PLUMPTON COLLEGE ESTATE

Water courses shown in blue

DOWNLAND

West Hill and Novington Hill form the north/northeast facing scarp slope of the Downs immediately opposite the College. The slopes are grazed by sheep in spring then by cattle during late spring/summer. The resultant downland is rich in wild flowers. It includes several orchid species and rarities such as round-headed rampion (also called pride of Sussex) as well as other specialist chalk-loving flowers such as wild thyme, salad burnet, dropwort and milkwort. This diverse grassland provides habitat for specialist butterflies such as 'the blues', many of which are restricted to the chalk.

COMMON SPOTTED ORCHID

THE COLLEGE FARM MANAGER WORKS CLOSELY WITH NATIONAL TRUST GRAZING OFFICERS TO DELIVER GRAZING MANAGEMENT PLANS TO CONSERVE AND ENHANCE THE BOTANICAL DIVERSITY OF THIS SPECIAL HABITAT.

SUSSEX CATTLE

BIRD AND BOTANY SURVEYS

Since the 1980s, student-led wildlife surveys have been carried out across the estate to monitor the wildlife. In recent years, as government policy changes have encouraged more environmentally-friendly farming systems, monitoring has revealed interesting changes in the wildlife communities. For example we have recorded three new orchid species on Novington Hill but squinancywort has disappeared.

Following the restoration of the coppice rotation in Brocks Wood, nightingale numbers increased dramatically from 1 to 8 breeding pairs and bullfinches doubled in numbers. Overall we are finding an increase in numbers of breeding birds and a small drop in the number of bird species on the estate. The decreases generally reflect national trends however dunnock, linnet and song thrush have all bucked that trend by increasing on the College estate.

THE CURRENT STEWARDSHIP SCHEME INCLUDES A NUMBER OF MEASURES DESIGNED TO CONSERVE AND ENHANCE FARM WILDLIFE AND THE COLLEGE CONTINUES TO MONITOR RESULTING IMPROVEMENTS IN BIODIVERSITY ACROSS THE ESTATE.

BLACK POPLAR PROJECT

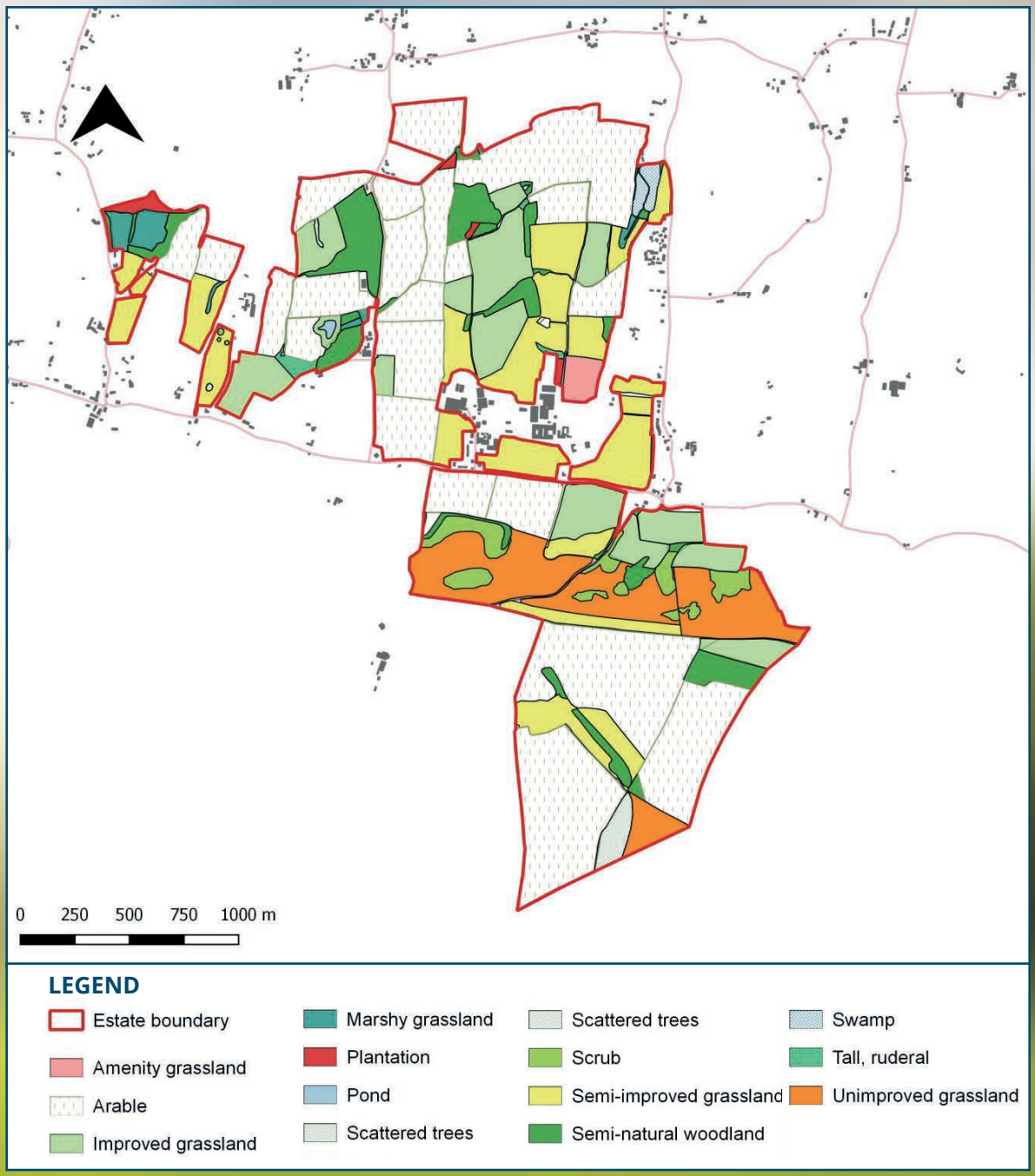
The black poplar is one of our rarest native UK trees. In Sussex, Only 38 mature black poplar trees remain and these trees originate from only five genetic clones. The Sussex Black Poplar Working Group works in partnership with the Royal Botanic Gardens at Wakehurst Place and Sussex Wildlife Trust to conserve this threatened species by collecting cuttings from the remaining trees. A back-up nursery has been established at Plumpton College to conserve the genetic stock in case of disease at the Wakehurst Place nursery.

HABITATS

The wildlife habitats of the College estate have been surveyed using the standard Phase 1 habitat classification developed by the Nature Conservancy Council in 1990. The main habitat types are classified as follows:

HABITAT TYPE	HABITAT DESCRIPTION
SEMI-NATURAL WOODLAND	All woodland which does not obviously originate from planting, including ancient and more recent woods. Woodland with both semi-natural and planted trees is classified as semi-natural if the planted trees account for less than 30% of the canopy.
PLANTATION WOODLAND	All obviously planted woodland, including conifer of any age and broadleaf up to about 120 years.
SCRUB	Locally native shrubs, usually less than 5m tall, occasionally with a few scattered trees. May be dense/continuous or scattered.
UNIMPROVED GRASSLAND	Grasslands which have not had sufficient applications of fertiliser or herbicide or been so intensively grazed or drained, as to alter the sward composition significantly. Further sub-divided on the basis of whether they are acid, neutral or calcareous.
SEMI-IMPROVED GRASSLAND	Grasslands which have been modified by artificial fertilisers, slurry, intensive grazing, herbicides or drainage and consequently have a range of species which is less diverse and natural than unimproved grasslands though they may still have some conservation value.
IMPROVED GRASSLAND	Grasslands which have been so affected by heavy grazing, drainage, or the application of herbicides, inorganic fertilisers, slurry or high doses of manure that they have lost many of the species which one could expect to find in an unimproved sward. They have only a very limited range of grasses and wildflowers.
MARSHY GRASSLAND	Wet grasslands with a high proportion of purple moor grass, rushes, sedges or meadowsweet.
OPEN WATER	Ponds of all sizes.
RUNNING WATER	Streams and wet ditches.
ARABLE	Crops, nurseries, freshly-ploughed land and recently reseeded grasslands such as rye grass and rye-clover leys, often managed for silage.
AMENITY GRASSLAND	Intensively managed and regularly mown grasslands, typical of lawns, playing fields and golf courses.
HEDGES	Includes all hedges from intact to gappy and species–rich (5 woody species or more) to species-poor (less than 5 woody species). Grassy field margins are not mapped but provide important additional wildlife habitat as well as wildlife corridors.

MAP 4: PLUMPTON COLLEGE ESTATE HABITATS MAP



ENVIRONMENTAL STEWARDSHIP

ENVIRONMENTAL STEWARDSHIP is an agri-environmental scheme that provides funding to farmers and other land managers in England in return for delivering environmental management on their land.

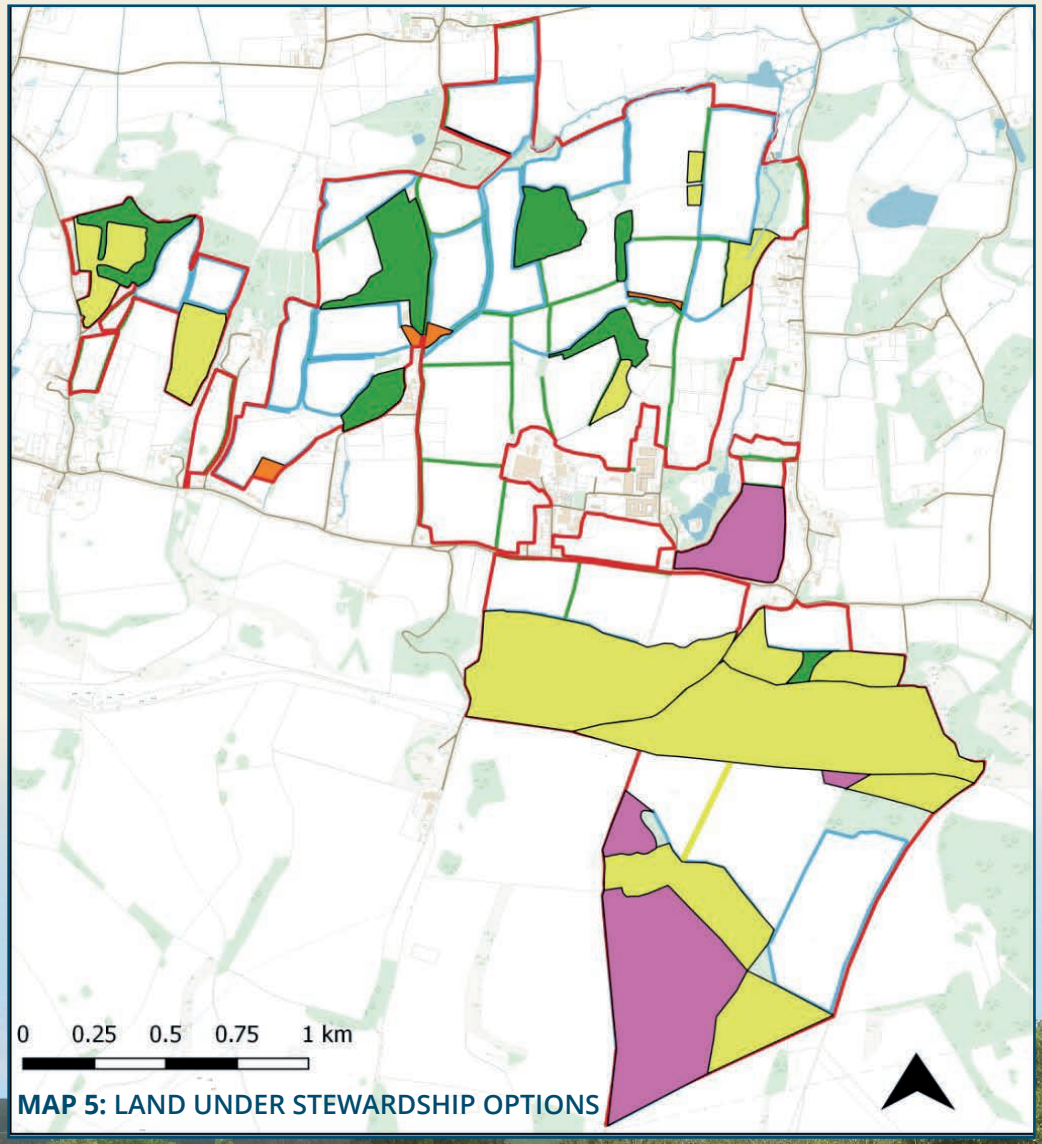
Lambert Farm was entered into a ten-year Higher Level Stewardship (HLS) agreement in October 2013.

THE AGREEMENT includes a range of land management options, which were selected from suites of available options on the basis of the environmental benefits they would deliver. These include:

- restoration of woodland
- protection of archaeological features
- restoration of species-rich grassland
- and floristic enhancement of particular field margins to provide seed resources for threatened birds such as turtle dove.

ENVIRONMENTAL OPTIONS ALSO INCLUDE:

- hedgerow management for landscape and wildlife
- buffer strips around arable fields, in particular by water courses
- the provision of grassy areas in some field corners
- sowing wild bird seed and nectar flower mixes to provide nectar, pollen and seed resources for farmland birds and invertebrates.



MAP 5: LAND UNDER STEWARDSHIP OPTIONS

LEGEND

- Plumpton College Estate boundary
- Grassland management options
- Historic & landscape options
- Woodland restoration option
- Field corners out of cultivation
- Hedgerow management options
- Buffer strip options
- Beetle bank

ENVIRONMENTAL STRATEGY AND ACTIONS

ARCHAEOLOGY

- We will monitor the condition of all our archaeological sites to check that there is no degradation.
- We will give our full support to the archaeological excavations on the Roman Villa site.
- We will enhance the interpretation of the site and schedule an exhibition of the finds.

ECOLOGICAL SURVEYS

- We will continue the invaluable wildlife survey and monitoring work which has been ongoing since the 1980s across the estate.
- We will integrate the surveys into student coursework. Where this is not possible, we will invite external experts to do the surveys.
- We will have 'bioblitzes' of the estate to involve students in wildlife survey and conservation led by Plumpton staff.

ENVIRONMENTAL STRATEGY AND ACTIONS

HABITAT MANAGEMENT

- We will implement the Environmental Stewardship prescriptions to the highest environmental standards and where we can, we'll go further.
- We will increase the stream margins from the requisite 6m to 10m where practical to do so.
- We will enhance key field margins floristically to improve the habitat for bumble bees and butterflies and help to fill the 'hungry winter gap' both for resident birds and for seed-eating visitors such as the threatened turtle dove.
- We will apply best practice woodland management methods, as set out in the UK Forestry Standard, to manage our woodlands.
- We will implement our woodland management plan to open up the tree canopy by coppice restoration, thinning, ride improvements and glade creation, all of which will lead to enhancing the wildlife value of the woodlands.
- We will establish a "woodland user group" to ensure management activities are undertaken in a coordinated way by college staff.
- We will protect ancient woodland features such as historic woodbanks, veteran trees and the dead wood which is so important for dead wood invertebrates as well as hole-nesting birds and bats.
- We will develop a pond restoration strategy aiming for a range of ponds across the estate to support as diverse a range of aquatic wildlife as possible.

- Where practical to do so we will implement the recommendations of the Sussex Flow Initiative, The Wild Trout Trust and the Ouse and Adur Rivers Trust to reduce run-off into the chalk streams and improve their water quality and ecological status.

- We will reduce the potential for farm run-off into water courses by a series of planned management actions. This will include identifying ways to reduce water usage and ensuring all contaminated water is managed separately.

- We will improve landscape connectivity for wildlife across the estate to link up important wildlife areas such as the woodlands by hedge restoration and creation. This will include a new woodland between Pig Wood and Plumpton Wood.

- We will improve the stream habitat for fish by creating leaky woody dams and pool habitats to provide safe refuges for migratory fish.

ENVIRONMENTAL STRATEGY AND ACTIONS

COMMUNITY ENGAGEMENT

- We will engage with our local community to ensure they have the opportunity to contribute to our environmental strategy.
- We will set up a steering group to develop our action plan and ensure transparency in its delivery and seek expertise in its implementation.
- We will report annually on our progress as part of wider college communications with the local community.

Written by Dr Petra Billings CEcol MCIEEM

All maps produced by Petra Billings Woodland Consultancy Ltd. Basemaps are Ordnance Survey Vector Map Local supplied by Blackwells Mapping Services (Licenced OS Partner).

Acknowledgements

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PLUMPTON
COLLEGE

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