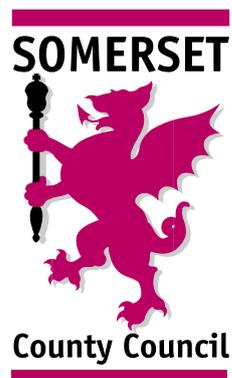


The Aggregate Landscape of Somerset: Predicting the Archaeological Resource

Aggregates Levy Sustainability Fund
English Heritage Project Number 3994PD

Interim Report for Aerial Survey Component
Somerset Levels Block 2: ST 34 30 to ST 39 36

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SUMMARY

The Aggregate Landscape of Somerset: Predicting the Archaeological Resource is an English Heritage funded survey of the aggregate mineral producing areas within the county of Somerset. The Aggregates Levy Sustainability Fund (ALSF) was introduced in 2002 to provide funds to address a wide range of problems in areas affected by aggregate extraction.

The aerial survey component is targeted at two specific areas: an area of Limestone extraction in the Eastern Mendips and an area of the Levels situated on the Burtle Beds. Both areas will be surveyed using the National Mapping Programme methodology developed by English Heritage.

This interim report focuses on Block 2: a 5km by 6km block in the southern Levels. The area covered by this report is situated mainly in the parishes of Westonzoyland, Middlezoy and Othery with smaller areas in Aller, Burrowbridge and Moorlinch. Main settlement sites in the area are located on the island of Sowey. The island and some of the peat moor around it, including the site of the Battle of Sedgemoor, are covered. 33 new records were created and 40 were amended. 6 additional records were created in order to break up 2 records of composite sites.

The new sites identified through aerial survey were predominantly found in the peat moor areas around the island of Sowey, including possibly Prehistoric trackways and post medieval stack stands. The most numerous category of new site found on the island is the sand quarry pit. These pits may be medieval or post medieval in origin, demonstrating the exploitation of the sand deposits of the Burtle Beds during these periods.

The results for the modern period are concerned with Westonzoyland Airfield. It has been possible through the aerial survey to complete the picture of development of the airfield. Access to the 1942 photographs in particular helped to clarify the nature of cropmark sites on an area that has previously been looked at in some detail..

The Somerset Levels have been the subject of a great deal of archaeological interest prior to this survey, carried out as part of *The Aggregate Landscape of Somerset: Predicting the Archaeological Resource*, for example, the work of the Somerset Levels Project from 1973. A previous aerial survey of the whole region, the SCPD Claylands AP survey, has also been carried out. The new records created for the Somerset HER as a result of the current survey demonstrates that, despite previous work, there is still more to learn about the archaeology of the Levels.

ACKNOWLEDGMENTS

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MAPPING CONVENTIONS

Convention Layer



Ditch

Used for drawing all negative features seen as cropmarks and earthworks, e.g. ditches, hollow ways and pits



Bank

Used when drawing upstanding earthworks or levelled features



Structure

Used for structures e.g. a concrete pillbox or wooden posts



Pits &
Quarries

Used for extraction pits, bomb craters and other cut features

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1. INTRODUCTION

The Aggregate Landscape of Somerset: Predicting the Archaeological Resource is an English Heritage funded survey of the aggregate mineral producing areas within the county of Somerset. The Aggregates Levy Sustainability Fund (ALSF) was introduced in 2002 to provide funds to address a wide range of problems in areas affected by aggregate extraction. This aerial survey is one part of a wider project looking at a number of aggregate producing areas in Somerset. The overall aim of the project is to enhance the archaeological record of the aggregate mineral producing areas of the county by collecting and integrating information from the following sources:

- Relevant geological information.
- The Somerset County Historic Environment Record.
- The National Monuments Record. Published and unpublished text and map information relevant to the geology, archaeology and history of the area.
- Aerial photography and LiDAR information where available.

The Somerset Sites and Monuments Record database and Geographic Information System will be used to assimilate and present the recovered data. This corpus of data will then inform strategic and local management policies and act as a basis for further academic research and for strategic and development control planning advice (Somerset ALSF Archaeological Survey Project Design).

The aerial survey component is targeted at two specific areas:

- Block 1, in the Eastern Mendips: an area of Limestone extraction including the large quarries of Merehead, Whatley, Moons Hill and Asham. The survey covers a 10km by 10km area, from Chesterblade in the south west to Buckland Dinham in the north east. ST 6641 to ST 76 51
- Block 2, in the southern Levels: the survey area is located on the Burtle Beds which have been quarried for sand deposits and covers a 5km by 6km area, from Burrowbridge in the south west to Moorlinch in the northeast. ST 34 30 to ST 39 36

This interim report focuses on Block 2: a 5km by 6km block in the southern Levels. The area covered by this report is situated mainly in the parishes of Westonzoyland, Middlezoy and Othery with smaller areas in Aller, Burrowbridge and Moorlinch. Main settlement sites in the area are located on the island of Sowey. The island and some of the peat moor around it, including the site of the Battle of Sedgemoor, are covered (see figure 1 for location maps).



Figure 1: Location of survey area

1.1 Aims of the Aerial Survey

To incorporate aerial photographic data for the aggregate producing areas into the County HER and trial the effectiveness of LiDAR and IFSAR data in identifying sites of archaeological potential. (Somerset ALSF Archaeological Survey Project Design Objective 6.5)

1. To use National Mapping Programme (NMP) methodology in appropriate areas to produce digital mapping and textual descriptions of all archaeological sites using the Somerset HER GIS and database and to assess non-NMP methodologies for different landscapes and levels of survey.

A decision was taken to record all areas of the survey to NMP standard.

2. To assess the usefulness of digital vertical aerial photographs in the Somerset Historic Environment Record (HER) GIS for archaeological survey.

While these photographic layers of 1946 and 2001 were useful as reference tools, they could not be used directly for mapping of archaeological sites. The NMP mapping process requires very accurate rectification of photographs over specific areas. A wide range of photographs were consulted and the optimum example from which to map an archaeological site, even if from the same date as the HER GIS layer, was not always from the same sortie.

4. To assess the usefulness of LiDAR data, in conjunction with conventional aerial photography, for archaeological survey.

In the time frame of the project so far, information from a LiDAR survey of the Mendip hills has not yet been available.

5. To produce a short report summarising the methodology and results of the project.

The interim results given here will later be incorporated into a final report. Information on the aerial survey component of this project has also been disseminated via the Somerset County Council and English Heritage internet sites.

1.2 NMP Methodology

The NMP methodology entails the interpretation, mapping and recording of all archaeological sites from the Neolithic to the twentieth century from aerial photographs (see Appendix 1 for NMP drawing conventions). Good vertical and oblique photographic coverage was available for the whole of the study area.

All available aerial photographs from the National Monuments Record, Somerset HER and Cambridge University Collections were consulted. In addition to aerial photographs, books, journal articles and map sources were consulted. The map sources included: the first edition and current Ordnance Survey and maps produced by the Geological Survey of Great Britain (Sheet 281) and Soil Survey of England and Wales (Sheet 5). Photographs were rectified using Aerial and archaeological features were mapped on to the Somerset HER GIS in MapInfo. NMP drawing conventions were used throughout (see Appendix 1 for more information). The new sites and additions to old sites were recorded on to the Somerset HER Access database.

1.3 Summary of Results

In contrast to the interim results for Block 1 in the East Mendip hills, a large proportion of sites for which records were amended or added are from the pre-Roman Prehistoric periods. In another contrast, a large proportion were identified through cropmarks reflecting the difference in agricultural regimes as well as landscape morphology. 33 new records were created and 40 were amended. 6 additional records were created in order to break up 2 records of composite sites.

Many of the RAF sorties were carried out during periods of flooding or during winter when Southlake Moor is deliberately flooded. Some earthwork sites show up in the waterlogged peat moor either as upstanding banks or water filled ditches. Sites as disparate as possible prehistoric trackways and post medieval stack stands were identified from photographs taken in flooding conditions.

The Somerset Levels is a unique and interesting area, which has been exploited by humans since the Mesolithic period, judging by excavation evidence. The existence of timber trackways connecting the islands has long been recognised through the work of the Somerset Levels Projects (formed in 1973). Examples of Neolithic and Bronze Age trackways are found throughout the Levels and have been identified through excavation in the north east of the study area at Greylake. The routes of other possible trackways were identified through the aerial survey in the peat moorland to the north and west of Westonzoyland and may be Prehistoric in origin.

Further evidence of exploitation of the area during the pre-Roman period comes from Bronze Age burial mounds situated across Westonzoyland airfield which were mapped and recorded during the survey. Rectilinear enclosures, possibly Iron Age in date, were mapped on Westonzoyland airfield and around Middlezoy.

The earthworks of a deserted medieval hamlet and three deserted farmsteads were identified in the south of the area at Poole Farm, Middlezoy and to the east of Othery. In each case the deserted settlements are located at the edge of the island and may be the result of unsuccessful forays onto reclaimed land. The fact that this process of shifted or shrunken settlement is continuous is demonstrated by the post medieval hamlet of Langacre, Middlezoy. The hamlet was removed by the Royal Air Force during the Second World War and only survives as earthworks.

An intriguing feature in the south west of the survey area is Burrow Mump, a natural hillock surmounted by the ruined St Michael's Church. The sides of the mound appear to have been terraced in the medieval period for cultivation, possibly because dry land was at a premium at the time.

A number of sand quarry pits were identified around Westonzoyland which may have originated in the medieval or post medieval periods. Their presence demonstrates the exploitation of the sand deposits of the Burtle Beds.

The main class of monument in the results for the post medieval period is the stack stand. Often used in wetland areas for temporary storage of crops, these are found throughout the peat moor areas surrounding Sowy island.

The results for the modern period are concerned with Westonzoyland Airfield. The airfield was developed in three stages: when the site was first used in the 1920s it had very few permanent buildings; the airfield was remodelled in the late 1930s with two arrays of technical buildings, anti-aircraft defences and a pattern of painted field boundaries camouflaging the site from the air; and in 1943, the airfield was reconstructed with two concrete runways and additional buildings. The

sequence of development in the 1940s and subsequent decay of features as the airfield went out of use can be followed on the historic aerial photographs.

Overall, the new sites identified through aerial survey were predominantly found in the peat moor areas around the island of Sowy, including trackways and stack stands. The most numerous category of new site found on the island is the sand quarry pit.

The nature of the source material means that the findings are biased towards archaeological sites visible as earthworks or cropmarks which means in effect that a survey must start from the Neolithic, when monumental archaeology begins to appear in the landscape. If the aerial survey were conducted in isolation the picture of the archaeology of the area might be distorted. Therefore, these results need to be considered in the wider context of complementary forms of survey.

2. GEOLOGY OF THE SURVEY AREA

The Somerset Levels cover an area to the north and south of the Polden Hills in the centre of Somerset. The majority of the area is covered by thick peat deposits underlain by soft sticky clay of the Jurassic Lower Lias inter-bedded with thin Limestones (Hardy 1999: 185). The clay subsoil is interspersed with islands of sand and rock around which the flat peat lands were formed. During times of high sea level, such as the last interglacial the sea flooded the entire area of the Levels depositing sand and marine clays to form these islands. One such island is Burtle after which the sand deposits are named: the Burtle Beds. Another such island is Sowy on which Westonzoyland, Middlezoy and Othery are located.

Deep peat soils with earthy topsoil are found on the flat ground around the island of Sowy and groundwater is controlled by ditches and pumps. These soils are typically associated with permanent grassland and dairying in Somerset, which is true of the survey area. The soils on the island are fine and loamy with some free draining areas. These soils are typically associated with a mixture of arable and pastoral agriculture, which again is true of the survey area (Soil Survey of England and Wales 1983: Sheet 5).

Isolated hills of Triassic rock are found through the Levels, a result of local disturbances in the ground causing harder, old rocks to be raised above the surrounded softer rocks. The harder rocks gradually become elevated due to erosion of the rocks around them (Hardy 1999: 196). Examples are Glastonbury Tor, Brent Knoll and, within the survey area, Burrow Mump.

3. LANDSCAPE CHARACTER

The study area is located around the island of Sowy on Sedgemoor to the south of the Polden Hills. The flat, fen-like expanses of land in the Levels are relieved by low islands on which most of the villages are located, such as Sowy island on which the villages of Westonzoyland, Middlezoy and Othery are found. As mentioned above (p9) the isolated hill of Burrow Mump is located in the southwest of the study area adjacent to the River Parrett. Programmes of drainage and land reclamation have been carried out since the early medieval period, and possibly earlier, in this area. The current pattern of regularly laid out field intercut by rhynes or drains is a product of enclosure and land improvement in the late 18th century.

The majority of the land in the Levels lies below the high water mark, so in constant danger of flooding. Sluices are used to prevent the incursion of sea water and pumps transfer surplus water from the moors, first to the network of ditches, than to the larger rhynes and finally to rivers (Dunning 2004: 1). It is this system of drainage ditches and rhynes that gives the area its distinctive appearance from the air. The pattern of regularly laid fields extends from the peat moorland onto the sand island of Sowy. On the lower ground, the fields tend to be narrower and are surrounded by drainage ditches. On the islands the fields are still laid out in the regular patterns associated with Acts of enclosure, but tend to be broader. King's Sedgemoor Drain cuts through the north of the survey area and the straightened course of the Sowy River runs to the east of Othery. The only curving lines seen on maps or photographs are found where the edge of the island meets the moorland and from the curving course of the River Parrett which flows through Burrowbridge in the south west of the survey area.

4. PREHISTORIC AND ROMANO-BRITISH – UP TO AD 410

The results of the aerial survey for the Prehistoric period demonstrated that the majority of sites were located on the higher ground in the north of Sowey island in Westonzoyland parish. Many of the Prehistoric sites have been identified prior to the aerial survey. However, through the survey it has been possible to plot monument locations more accurately and to depict details of monument forms and spatial relationships for the Somerset HER.

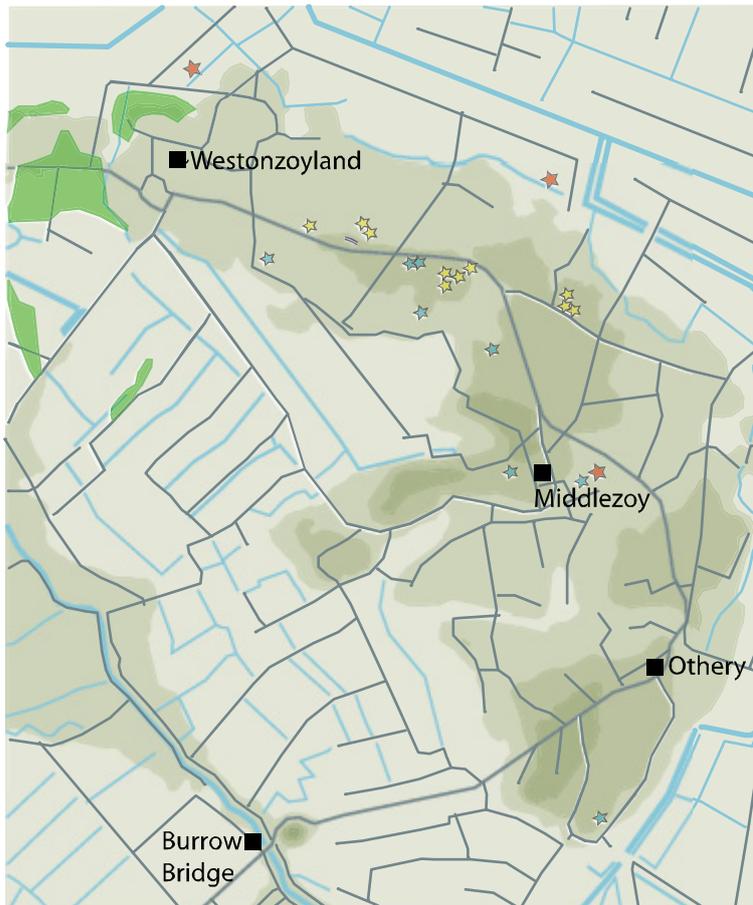


Figure 2: Prehistoric/Romano-British sites

(Green shaded areas = field systems; Stars: red = trackways, yellow = barrows, blue = rectilinear enclosures)

Possible trackways have been mapped and recorded to the north of Westonzoyland (PRNs 12105 and 18910) and to the north of Westonzoyland airfield (PRN 18916), which may be Prehistoric in origin. Trackways dating to the Bronze have been found though excavation to the north of Greylake. The other trackways are also located in the peat moorland and may have been part of a route across the swampy ground constructed in the Bronze Age or earlier.

The remains of an extensive system of tracks, droves and fields has been identified over a large area to the east of Bridgwater of which two parts can be seen in the study area to the south and southwest of Westonzoyland (PRN 11250). This system may be Prehistoric in origin or may relate

to land reclamation activities in the medieval period. The section seen in the study area consists of two areas of cropmarks: in each case trackways with field boundaries leading off them. The two areas follow different alignments and it is hard to see that they are part of one overall planned landscape. Small fields defined by ditches are found in the area to the south of Westonzoyland separated from a double ditched trackway by a circular feature. The area is situated on low-lying land and it seems unlikely that this could have been a settlement in the Bronze Age or Iron Age. An interpretation of medieval land use may be more appropriate (refer to numbered illustrations).

Field systems in two separate areas to the west of Westonzoyland do however appear to be connected to one overall system (PRN 11861). The two areas are laid out along the 5m and 10m contour lines with small rectangular fields leading off them. They predate the modern pattern of fields and appear to have been laid out in a period before land had been reclaimed around the island. Therefore they are probably prehistoric in date.

A double ditched trackway identified as a possible Neolithic cursus has been identified in the centre of Westonzoyland airfield (PRN 11907). It has been suggested that this cropmark site was associated with features relating to the pre-1943 layout of the airfield. However, comparison of rectified photographs from 1942 and the late 1940s on the site could not find any feature of the airfield which might explain the cropmark. It is similar in morphology to trackways found in the south east of the airfield (PRN 11908) with which it appears to be in alignment. Cursuses are found in various forms but often consist of a rectangular enclosure of varying length with round or square terminals (Whittle 1999:71). The fact that this cropmark consists of two parallel ditches only could mean that this is all that remains of a monument eroded through agriculture, but it would seem more likely that it is a trackway after comparison with other examples in the area.

Two (or possibly three) groups of ring ditches are located across the south of the airfield. They range in diameter between 8m and 33m and the ditches measure between 1m and 2.6m in width. The ring ditches have been interpreted as Bronze Age burial mounds, or round barrows, based on their morphology. Round barrows tend to vary in size, form and width of ditch. The ditch is probably the result of excavation in order to build a circular mound (Wilson 2000: 107). The majority of the monuments are single ring ditches, which are likely to be the remains of ploughed out bowl barrows. The barrow recorded as PRN 18926 is formed of two concentric ditches suggesting that it had a more complicated form, for example, a bowl barrow with an outer bank and ditch.

The variety and morphology of the ring ditches suggests that they are the remains of barrow cemeteries rather than the remains of roundhouses, which tend to be similar in shape and size (ibid: 115).

The first two groups are situated on the 10m contour which may have been intentional. Bronze Age barrows are frequently situated on high ground, whether a hilltop or a false crest, making use of landscape features in such a way as to make them visible on the horizon as they are approached (Field 2001: 58). PRNs 11904, 11905, 11907, and 19032 are located to the north and west of the airfield and PRNs 18925, 18926 and 18928 are in the southeast.

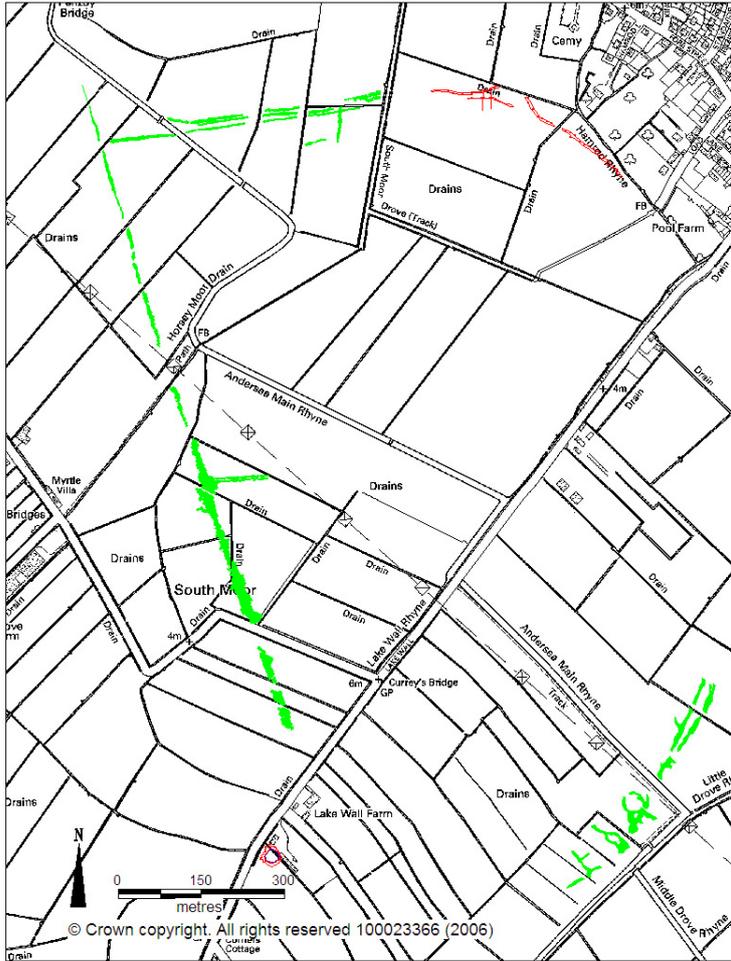


Figure 3: Two areas of field systems south west of Westonzoyland

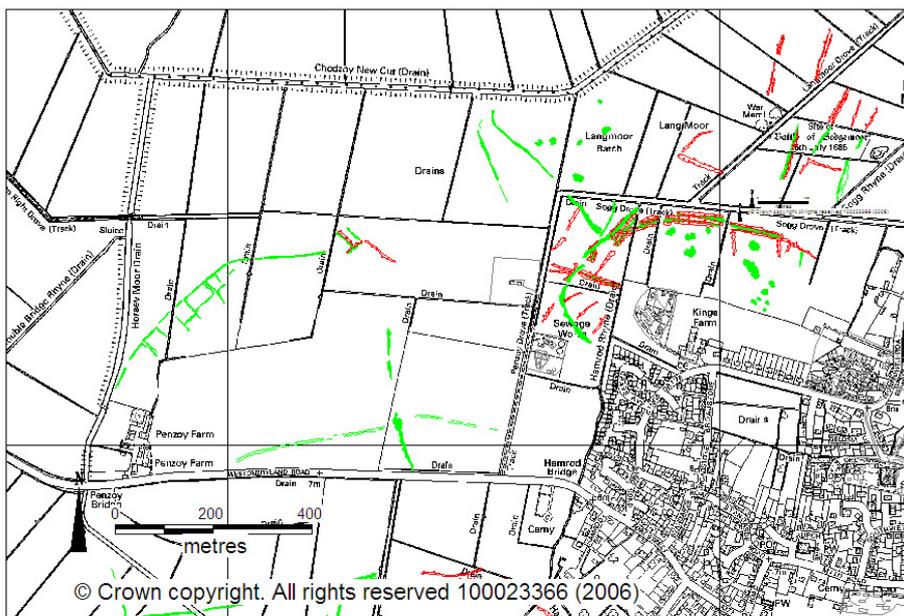


Figure 4: Field systems following contour lines to the north west of Westonzoyland

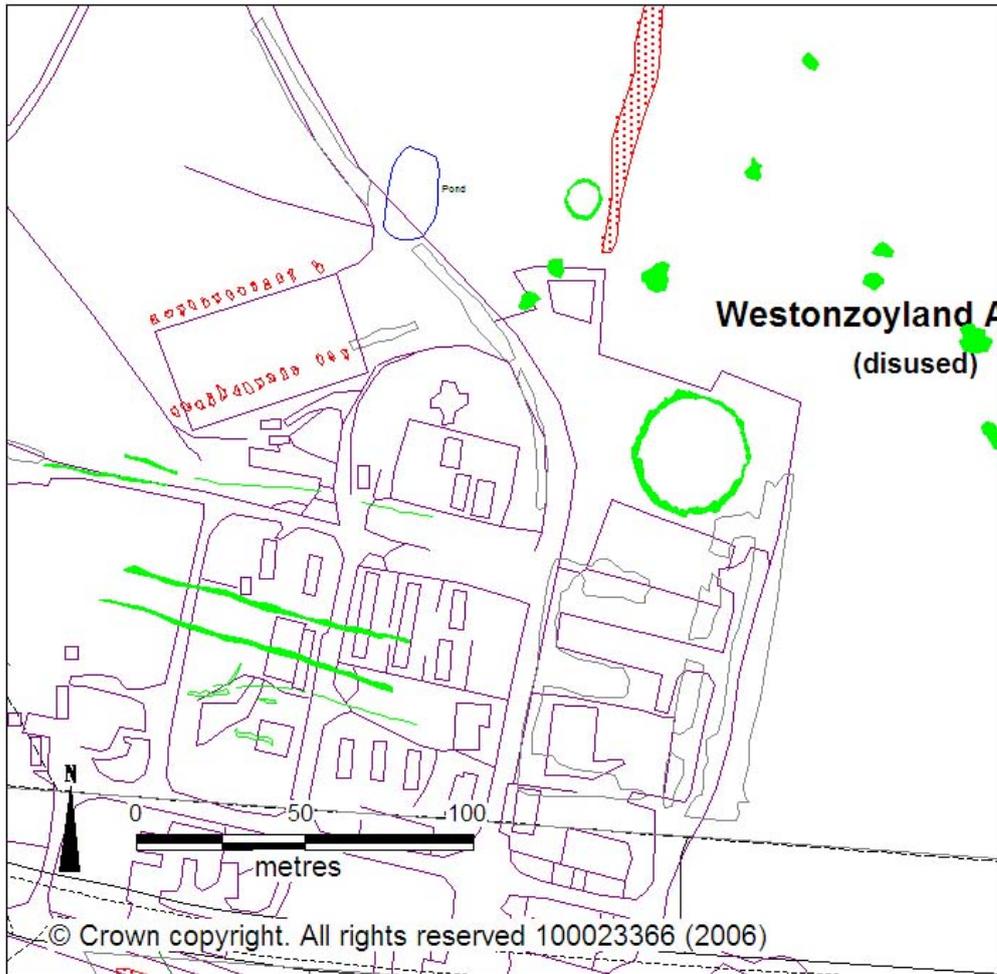


Figure 5: Ring ditches and possible cursus, Westonzoyland Airfield

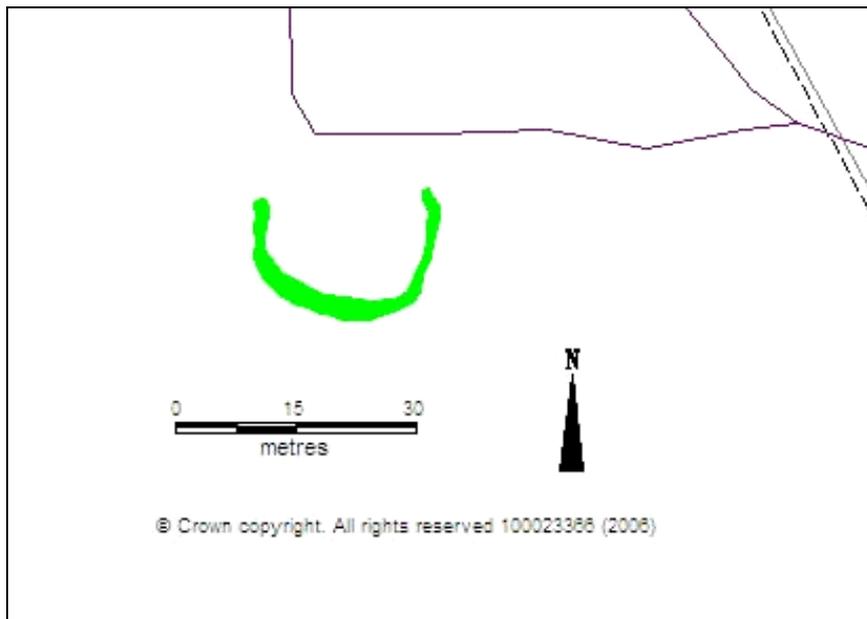


Figure 6: Ring ditch, west of Westonzoyland Airfield

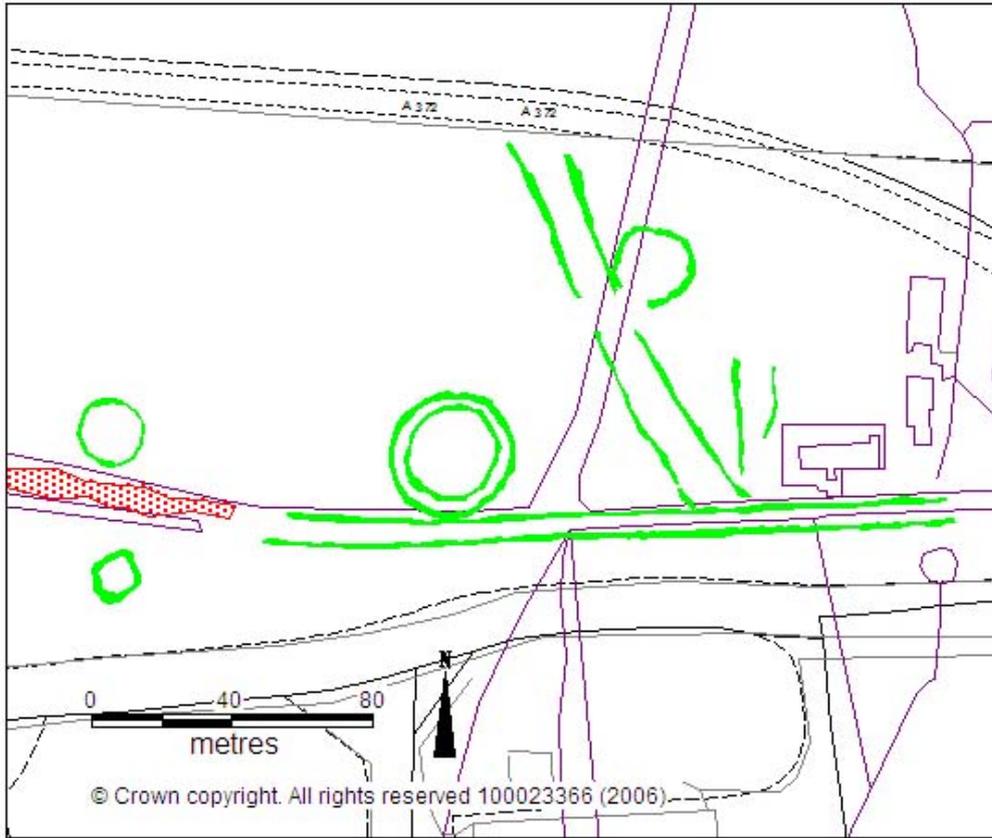


Figure 7: Ring ditches in south east of Westonzoyland Airfield

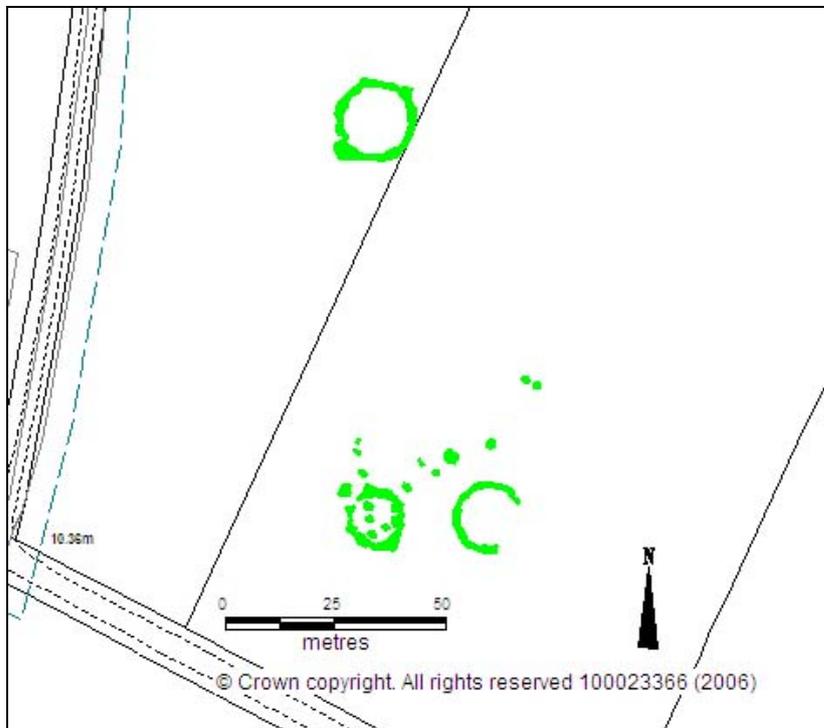


Figure 8: Ring ditches and pits to the east of Westonzoyland Airfield

A third group is located to the east of the airfield (PRNs 10579, 18922 and 18923). The ring ditches are similar in size and not situated on the highest contour for the area. This may mean that they should be interpreted as the remains of roundhouses, part of a possible Iron Age settlement. However, the local topography may be such that the monuments would be sited in an area where they were clearly visible and therefore may be barrows. They may also be located where a line of site could be maintained with the other two groups of barrows.

A number of rectilinear and trapezoidal enclosures have been identified as cropmarks in the survey area on Westonzoyland airfield and to around Middlezoy (PRNs 11269, 12718, 12719, 11911, 12791 and 12797). These enclosures are of a similar size, between 40 and 48 metres wide and between 40 and 60 metres long. They are similar in morphology to an enclosure excavated by the University of Winchester in Ivyton, found to date to the later Iron Age and Romano-British periods. This enclosure appeared to have functioned as a small settlement (www2.winchester.ac.uk...). The similarity in size and shape of the enclosures on Soway island suggests that they may also be the remains of small settlements that were Iron Age/Romano-British in date, although further investigation would be needed to confirm this. The enclosure sites are found on open ground close to current areas of settlement. An extensive settlement site dating to the Iron Age with occupation into the Romano-British period was found through excavation prior to the building of housing estates in Westonzoyland (PRN 10928), confirming exploitation of the area during these periods.

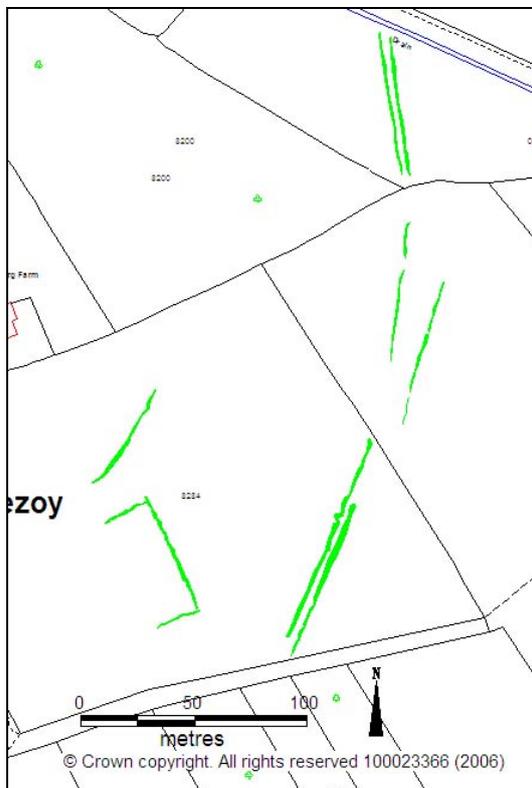


Figure 9: Rectilinear enclosure and trackway to the east of Middlezoy

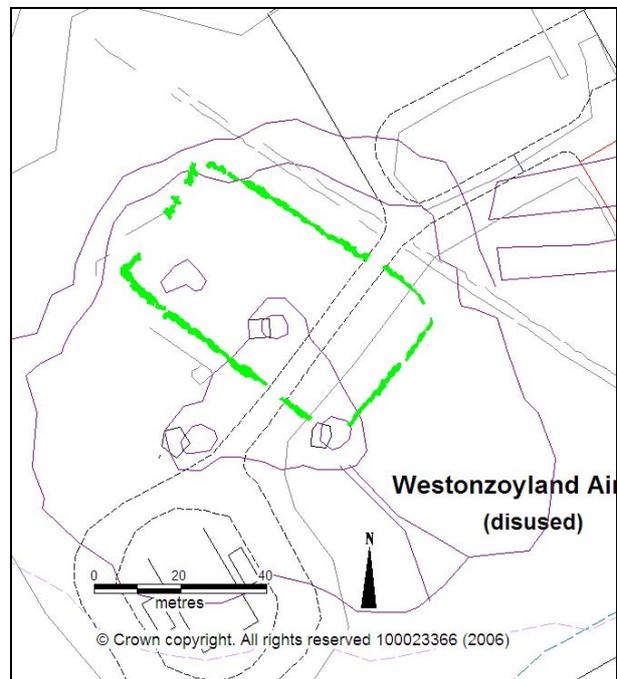


Figure 10: Rectilinear enclosure in south east of Westonzoyland Airfield

Discussion of the Results from the Prehistoric to Romano-British Periods

The survey results suggest that the settlement pattern in the survey area may have been established from the later Prehistoric periods on. It is likely that a decision over what areas to settle in this area have been governed by the topography. The Somerset Levels Project has provided information that suggests a human presence here from at least the Neolithic. The areas of high land were made accessible from the Polden Hills by a series of trackways. The trackways mapped and recorded to the north and east of Westonzoyland through the aerial survey, together with the Greylake excavation results, suggest that this system was spread throughout the Levels.

The island of Sowy, together with other high areas of land in the Levels may have been a focus of interest from the earlier post glacial periods on for spiritual as well as material benefits, such as plentiful fish and wild fowl. Watery landscapes such as this are thought to have had ritual significance both in their natural form and in how they were adapted (Bradley 2000: 154). The placing of the Bronze Age burial mounds on a high area of land would have meant that they were visible from a great distance around. A visual relationship between the groups of barrows may also have been significant in their locations. The possible cursus located near to one of the barrow groups contributes to the picture of this area as a ritual landscape in the Prehistoric period and may have influenced the positioning of the barrows (Watson 2001: 207). Burrow Mump may have also been a focus of ritual interest, sitting as it does overlooking the flat land around it next to a river, possibly representing a gateway between the earth and the sky and earth and the water, or one world and another (Bradley 2000: 12)).

The rectilinear and trapezoidal enclosures found to the east of Westonzoyland and to the north of Middlezoy may indicate settlement from at least the Iron Age in this area. A settlement originating in the Iron Age and continuing into the Romano-British people was found through excavation in Westonzoyland. The enclosures and the occupation site are found near to modern villages which may indicate continuity of occupation on Sowy island and suggest that more information about the later Prehistoric and Romano-British periods is hidden under later settlements.

Evidence of Roman exploitation is recognised in the northern Levels from salt workings, or salterns, found in the Brue Valley between Huntspill and Burtle (Dunning: 2004: 2). While there is no evidence of this kind in the survey area, further evidence from the Romano-British period may be obscured by medieval and post medieval large scale drainage works (see below, chapters 5 and 6). This may also be true of the pre-Roman periods and the true picture of the Levels in the Prehistoric and Romano-British periods may only be provided by considering these results together with complementary forms of survey.

5. MEDIEVAL – AD 43 TO 1540

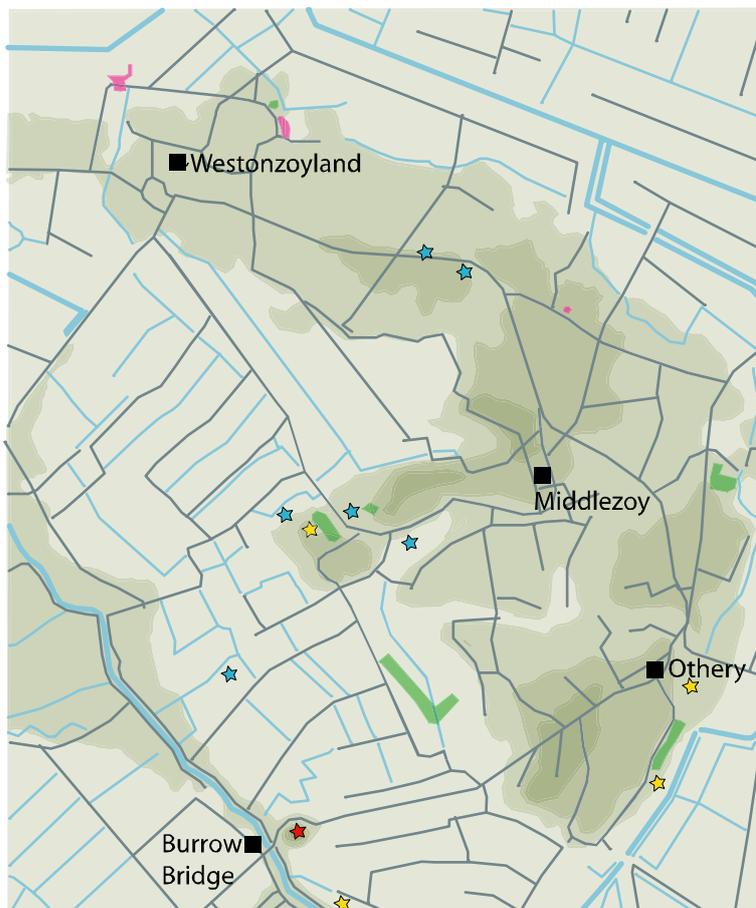


Figure 11: Medieval sites

(Green shaded areas = field systems; pink shaded areas = sand pits; Stars: blue = trackways, yellow = shrunken/deserted settlements, red = strip lynchets)

Settlement Form

The current pattern of settlement on Sowy island is that of nucleated villages but the evidence from the aerial survey of a deserted hamlet and deserted farmsteads suggests that this also included a dispersed element in the Medieval period.

It is unclear whether the current villages evolved in the Anglo-Saxon period. Dunning suggests that the place names *Westonzoyland* and *Middlezoy* indicate an Anglo-Saxon origin (2004: 114, 192) and it may be possible that evidence that would support this is hidden under the modern settlements. However, it is unclear whether there was continuity of occupation on Sowy island from the Anglo-Saxon to the later Medieval period.

One factor that may support continuity of occupation is the topography of the area as the higher ground amid the peat moor would have provided a better site for settlement. The modern villages are found on the higher ground of the island of Sowy or on the embanked areas around the River

Parrett. An example of how topography has dictated settlement location is demonstrated by Pathe which is situated on a spur of the island reaching out into the surrounding moorland. Aerial photographs taken during times of flooding clearly demonstrate which areas of land would have been easier to settle than others. Water comes up to the southern and western edges of the spur on which Pathe is located. A deserted farm to the southeast of Othery (PRN 54919) is located on a smaller, even more distinct peninsula.

The settlements are irregular and varied in form and appear for the most part to have developed organically. Othery may have originally been laid out along a straight road which was then diverted in a curve to the south towards farms bordering Aller Moor (Dunning 2004: 136). The land in the survey area formed part of the Sowy estate of Glastonbury Abbey, in addition to a large proportion of the Levels as a whole (Betley 1988: 63), but there are no signs that any re-planning of the villages in the survey area were ever carried, as took place on other estates owned by the Abbey (Aston 1988: 76).

Burrow Mump (PRN 44199), an isolated hill in the southwest of the survey area adjacent to the River Parrett may have been a focus of settlement. The embanked land alongside the Parrett would have provided firm ground for settlement (Wilson 1989: 176) and settlement seems to have occurred in a ribbon either side of the hill, for example the deserted hamlet found to the south (PRN 44296). Burrow Mump is a startling feature in a flat landscape. It was owned by Athelney Abbey (founded by King Alfred) from 937 and the ruined church of St Michael is situated on the top of the hill giving it an appearance similar to Glastonbury Tor.

Drainage and Land Reclamation

As such a sizeable landowner in the Levels, Glastonbury Abbey was able to carry out land reclamation and drainage works on a large scale (Betley 1988: 63). In the 13th century flood walls were constructed, watercourses were straightened and new watercourses were dug on the Abbey's possessions in the Levels (Dunning 2004: 3).

This process of drainage and reclamation may have led to changes in the settlement pattern in the medieval period. The deserted farmsteads identified in the survey area to the south and east of Othery (PRNs 11276 and 54919) and to the west of Thorngrove (PRN 11272) and the deserted hamlet to the south of Burrowbridge (PRN 44296) may be examples of incursions onto reclaimed land in the moor, possibly later abandoned due to flooding. The hamlet and farmsteads have survived as earthworks on peninsulas of land but the agricultural holdings, which accompanied them, may have been made unusable by flooding in the medieval or post medieval periods.

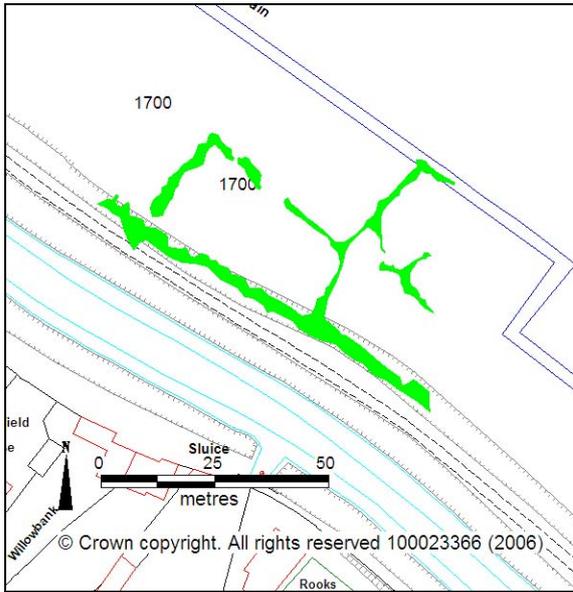


Figure 12: Deserted hamlet south of Burrowbridge

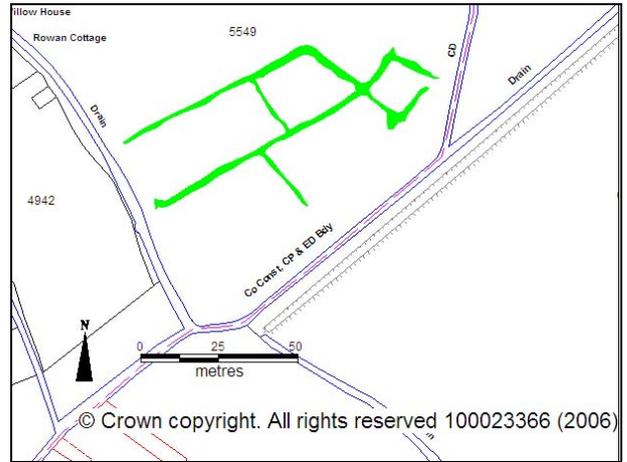


Figure 13: Deserted farm site east of Othry

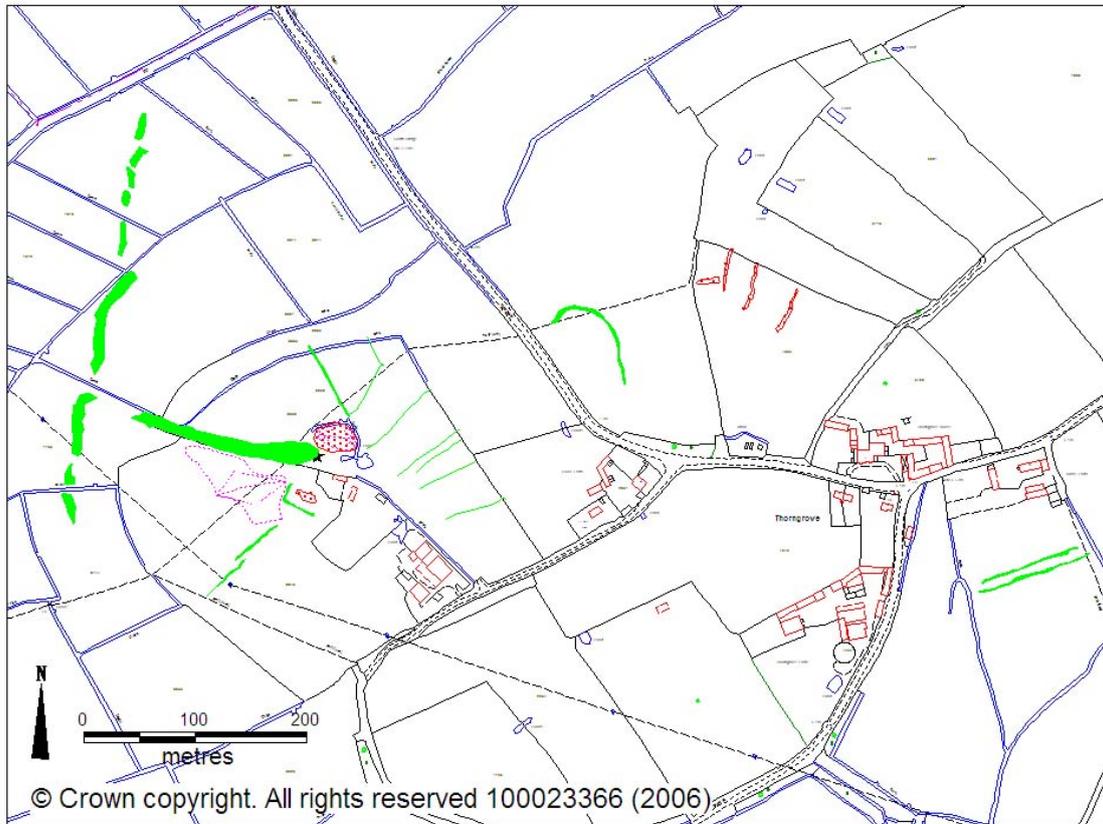


Figure 14: Deserted farmstead east of Poole Farm, with trackways to east and west

Agriculture

The new sites recorded for the survey area may also reflect the 13th century land reclamation and the large scale works of Glastonbury Abbey on their estate. Field boundaries were recorded on Lang Moor (PRN 18908) and a field system and trackway east and north east of Othery (PRNs 18898 and 18900) which may be survivals from this expansion into the peat moor. Other previously identified trackways, may also relate to this period: on Earlake Moor, north east of Burrowbridge (PRN 11273), on Westonzoyland airfield (PRNs 11908 and 18927) on Lang Moor (PRN 12105) and north of Poole Farm (PRN 11271).

Sites of windmills (PRNs 10572, 10576, 10929 and 10652) are located throughout Sowey island, of which one (10929) is thought to have been owned by Glastonbury Abbey (Somerset HER). The sites of the windmills were not clear on the aerial photographs but are attested to in documentary evidence, possibly because all remains of them have been ploughed out. Another possible windmill mound was mapped and recorded as an earthwork from aerial photographs to the north of Burrowbridge (PRN 18896). The presence of five windmills spread over the three parishes on the island (Westonzoyland, Middlezoy and Othery) may indicate the large scale of arable cultivation taking place in this area.

Communal open field farming systems are known from documentary evidence on Weston field to the east of Westonzoyland (O'Neill 1942: 80), the current location of the disused airfield, and between Middlezoy and Othery (PRN 10577). Open fields can be recognised from aerial photographs through ridge and furrow and narrow rectangular fields which preserve the shape of the cultivation strips in the landscape. No evidence of the open fields could be identified on the aerial photographs. A new pattern of regular fields and drainage ditches was laid out over the Levels in the post medieval period which, together with cultivation, may have obscured any traces of the open field systems in this area. Two blocks of possible ridge and furrow recorded from aerial photographs to the southeast of Overy Farm (PRN 18902) may be better interpreted as the remains of tree planting for orchards.

Medieval cultivation terraces or strip lynchets appear to have been cut into the lower slopes on the north and south sides of Burrow Mump. This is a form of cultivation common in upland areas in Somerset often associated with a period of rising population and land hunger in the 12th and 13th centuries (Aston 1988: 87), therefore may account for the lynchets.

Quarrying

Evidence of possible medieval exploitation of the sand deposits of the Burtle Beds can be seen to the north of Westonzoyland. The groups of quarry pits vary in form and size of group, with between 2 and 24 found together (PRNs 18894, 18907, 18911, 18912, 18913, 18917 and 18924). The pits were probably quarried for sand for local building work, possibly under the administration of Glastonbury Abbey.

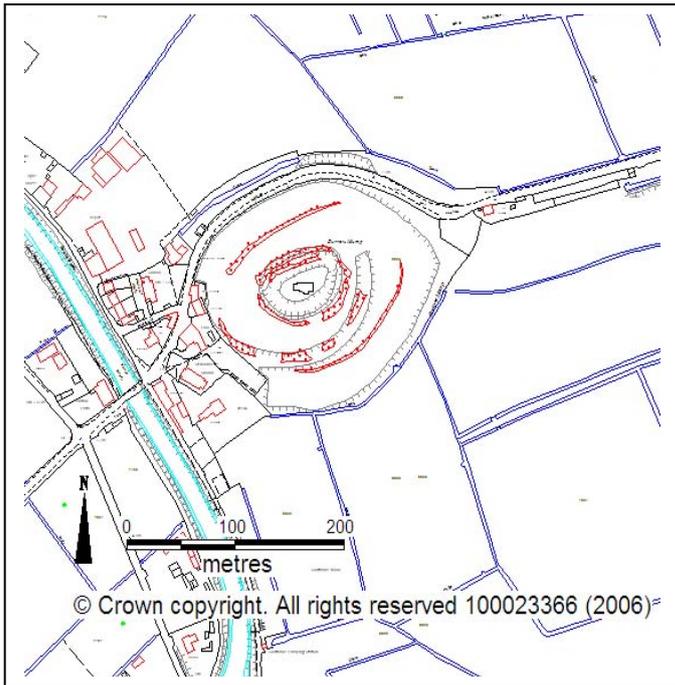


Figure 15: Cultivation terraces on Burrow Mump

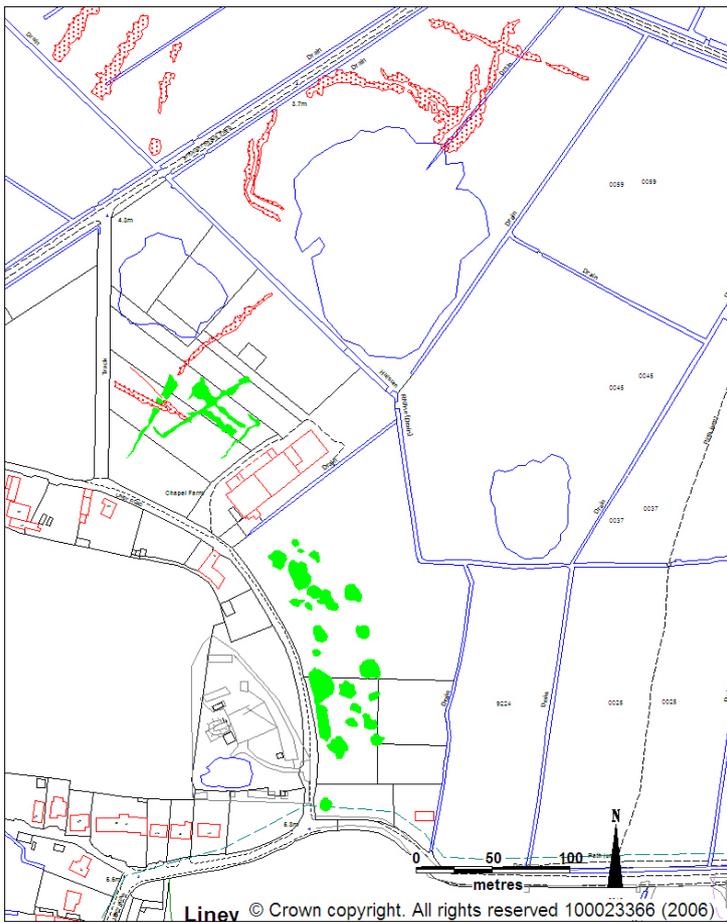


Figure 16: Sand pits and Quarries north east of Westonzoyland

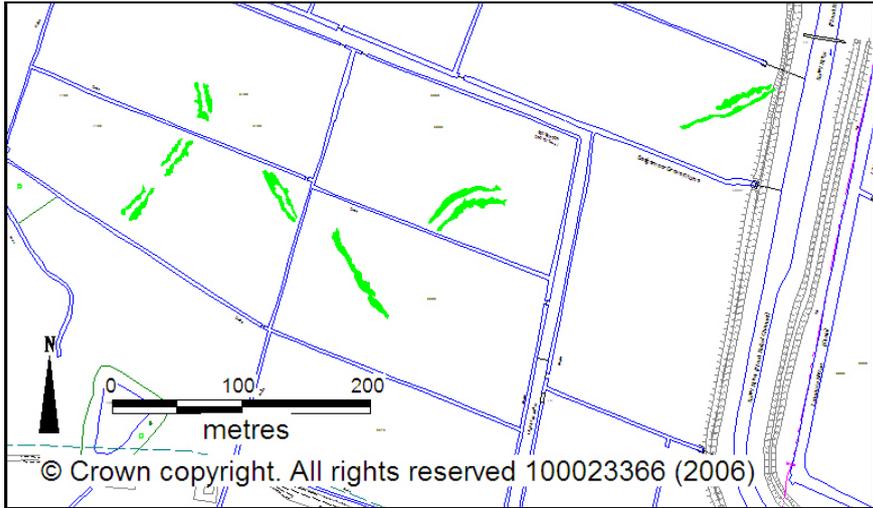


Figure 17: Trackways, north of Westonzoyland Airfield

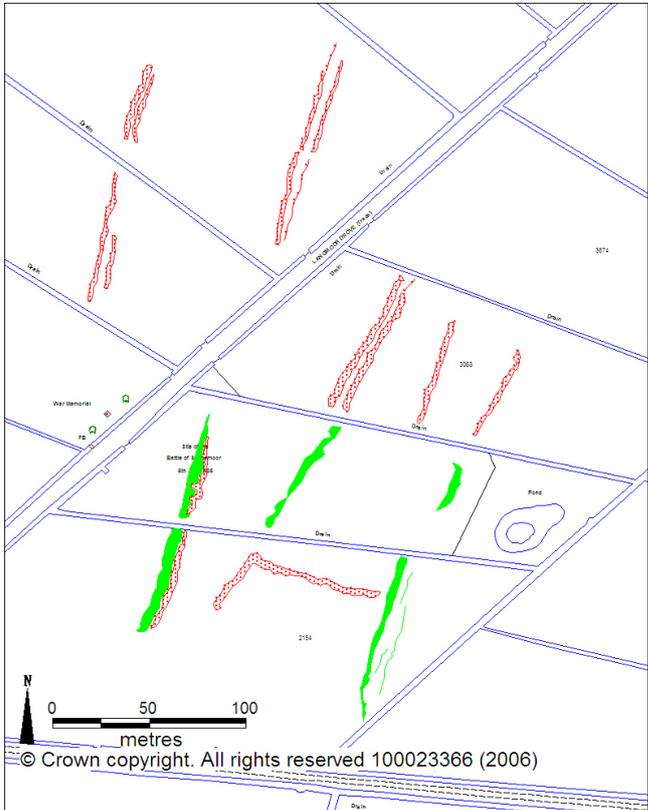


Figure 18: Trackways on Lang Moor, north of Westonzoyland

Discussion of the Medieval Results

Settlement patterns appear to have been confirmed by the post-Conquest period, although whether this pattern is Anglo-Saxon in origin is unclear. This pattern may have been set previous to this period as is suggested by the presence of the Iron Age/Romano-British settlement discovered during building works in Westonzoyland, which may indicate that more evidence that might confirm continuity of occupation is hidden beneath the current settlement centres.

Ownership of the land in this area by Glastonbury Abbey does not seem to have affected the position or layout of the main settlements.

However, where Glastonbury Abbey could have a substantial effect on the appearance of the medieval and later landscape in this area was by large-scale programmes of drainage and land reclamation and by encouraging their tenants to carry out reclamation work on a smaller scale. Ditching and embanking work is recorded as having taken place around island of Sowey in this period (Dunning 2004: 2).

The medieval period saw programmes of drainage and land reclamation on the Levels on a larger scale than in any earlier period. Land reclamation and drainage works around Sowey island appear to have been particularly significant as mention is made in documents from the 13th century of flooding problems caused on land owned by the Bishop of Bath and Wells by the dykes created in part of "Soweyland". A large area of land seems to have been reclaimed around Sowey as the cutting of the dykes in reparation caused arable fields, 300 acres of pasture and 50 acres of meadow to be flooded (ibid: 198).

The pattern of settlement in the area may have been affected by the works being carried out here. While the location of the main villages appears to have remained constant from, at least, the post Conquest period, a number of more or less successful inroads seem to have been made in the surrounding peat moor and later abandoned. The existence of the four deserted settlement sites may be explained the movement towards farming reclaimed land and the subsequent re-flooding of that land, either due to the actions of the Bishop or by the catastrophic flooding which hit the area in 1607 (ibid: 4).

There are, however, a number of reasons for the abandonment of farmsteads or settlements, of which re-flooding of the reclaimed moor land is only one explanation. The social and economic changes that took place at the end of the medieval period, including the changes in land organisation may also account for the desertions (Aston 1988: 80).

Records of Glastonbury Abbey show that large scale farming activity was taking place on their estates including the management of enormous sheep flocks and carefully planned use of arable lands (Bettey 1988: 63), which may be the explanation for the field systems and trackways observed in the survey area. A number of the drove roads or trackways observed in the survey area may date to this period as efficient movement of large herds of sheep between to summer pastures on the Levels (Dunning 2004: 4) would require a good infrastructure.

The quarry pits found in the north of Westonzoyland may be a sign of further exploitation of the resources by Glastonbury Abbey. Stone quarries were owned by religious houses in the Mendips during the medieval period (Bettey 1988: 64) so it would seem reasonable to assume that the Burtle Beds would have also been exploited by Glastonbury Abbey in the Somerset Levels.

6. POST MEDIEVAL – 1540 TO 1900

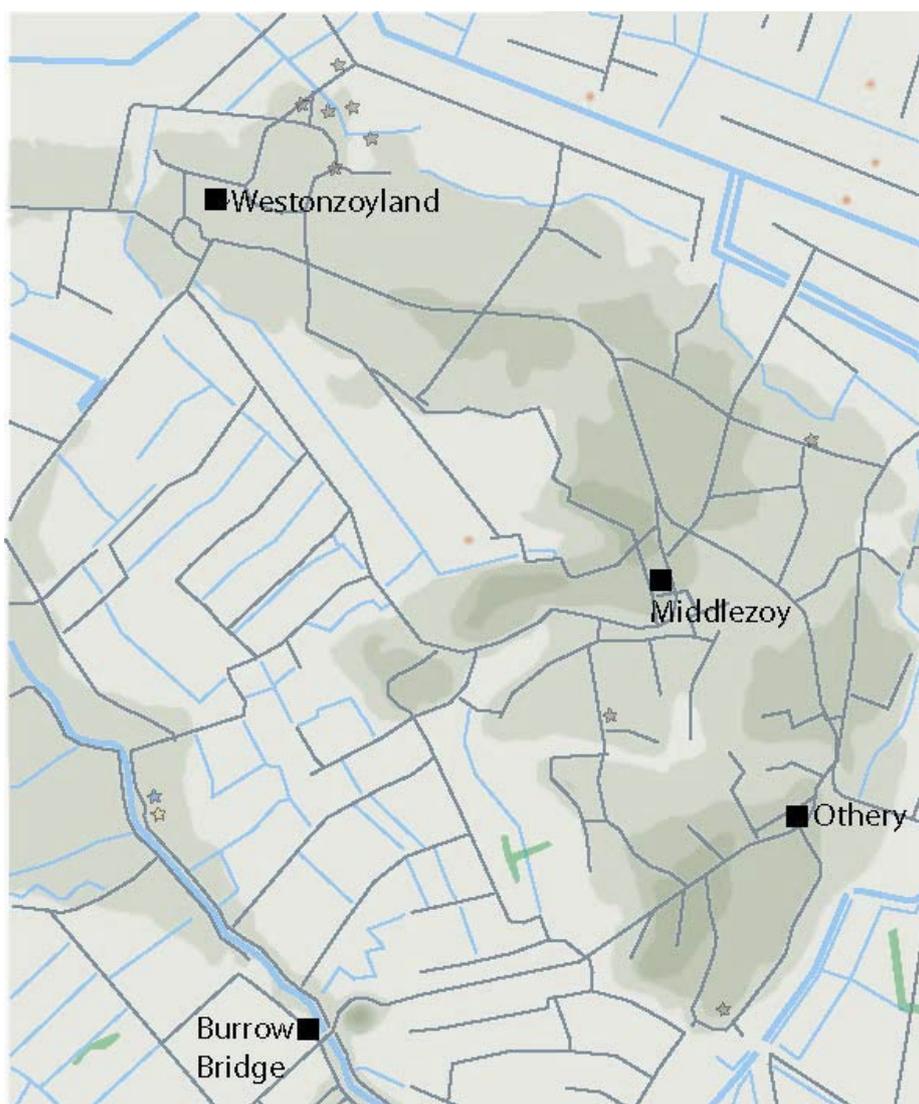


Figure 19: Post medieval sites

(Green shaded areas = stack stands; Stars: red = individual stack stands; grey = quarries; yellow = windmill mound; blue = shooting butt)

The appearance of the survey area changed considerably in the later post medieval period due to enclosure of the common land and the draining of Sedgemoor in the late 18th century (Dunning 2004: 1). The regular layout of fields and drains, seen in the present day, dates from this period. Settlement patterns appear to have remained nucleated and unchanged from the medieval period, apart from the dispersed element represented by the deserted hamlet and three farmsteads referred to above (chapter 5).

The most numerous class of post medieval monument mapped and recorded through the aerial survey was the stack stand. Stack stands were used in wetland areas to provide temporary, dry storage of harvested fodder or grain crops. They were usually formed of a platform with a surrounding drainage ditch. The stack stands in the survey area are located in a variety of areas in

the low-lying peat moorland that surrounds Sowy island. They are found either singly or in groups and are positioned either in the centre of a field or adjacent to a field boundary. The stack stands are all positioned next to drove roads probably for ease of movement of the stored crops. The groups, which range in number between 3 and 10, are found: on Lower Salt Moor (PRN 18891); on North Moor, Aller (PRN 18892); to the east of Broad Drove, Earlake Moor (PRN 18897); and to the east of Shride Farm, Othery (PRN 18899). Single stack stands are found: to the north of Thorngrove (PRN 18903); to the north of Westonzoyland airfield (PRN 18914); and three geographically separate examples to the south of Moorlinch (PRNs 18919, 18920 and 18921). The large number of stack stands, 26 in all, found around Sowy island may indicate that the low-lying land was being used for intensive arable agriculture, necessitating temporary storage before complete clearance of harvested crops could be effected.

The windmill sites referred to in the medieval results may have still been in use in this period (Somerset HER), particularly if there was an increase yield of arable crops. The enclosure around Weston windmill, dating from the post medieval period, has been identified on Westonzoyland airfield (PRN 12794) but could not be positively identified from aerial photographs.

Sand quarries are found on Lang Moor, to the north west of Westonzoyland (PRN 18909); to the south west of Middlezoy (PRN 18904) and to the south of Lake Wall farm (PRN 18906). A quarry to the north of Bussex Farm which was previously recorded as having one pit was reinterpreted though the aerial survey as three adjacent quarry pits (PRN 11317). The quarries are located on the sand deposits of the Burtle Beds indicating that exploitation of this resource, probably for local building or construction work, continued from the medieval period.

The only other new post medieval monument found through the aerial survey is a possible shooting butt located on the banks of the River Parrett to the north of Burrowbridge (PRN 18918). The monument is defined by a crescent-shaped bank with a short bank jutting out from the centre of the inside of the curve. The interpretation of this monument is unclear, but if it has correctly been identified as a shooting butt, it could have been positioned as cover from behind which to aim at wildfowl over the river.

The Sedgemoor battlefield, where the Duke of Monmouth's rebel army joined battle with the Royalists in 1685 is located in the northwest of the survey area (PRN 10926). No sign of the mass grave in which all the slain from the battle were reportedly buried (Somerset HER) is visible on aerial photographs. The original route of the Bussex rhyne, which played a role in the battle as a barrier to Monmouth's troops, may be identified from cropmarks on aerial photographs. However, these cropmarks have also been identified as prehistoric or later trackways or as part of a field system (PRN 12105)

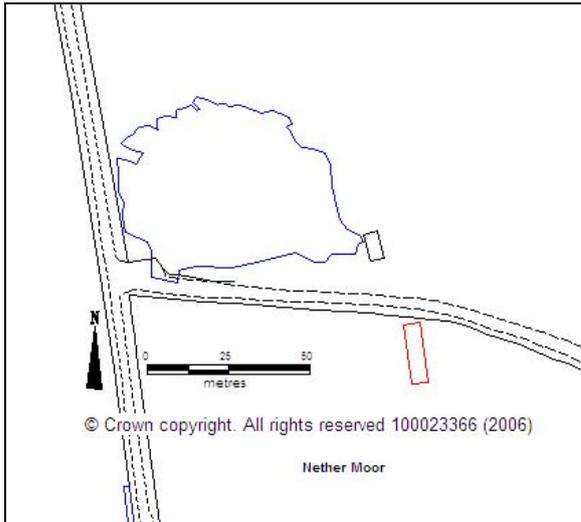


Figure 20: Sand quarry south west of Middlezoy

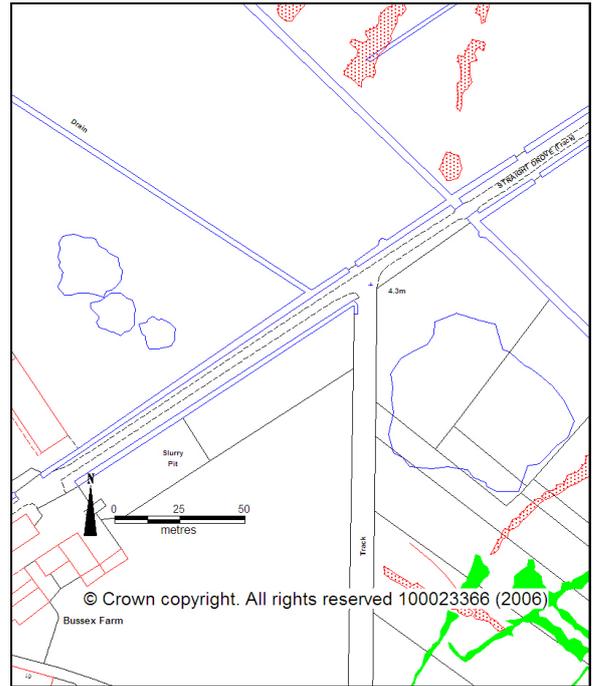


Figure 21: Sand quarries, north of Westonzoyland

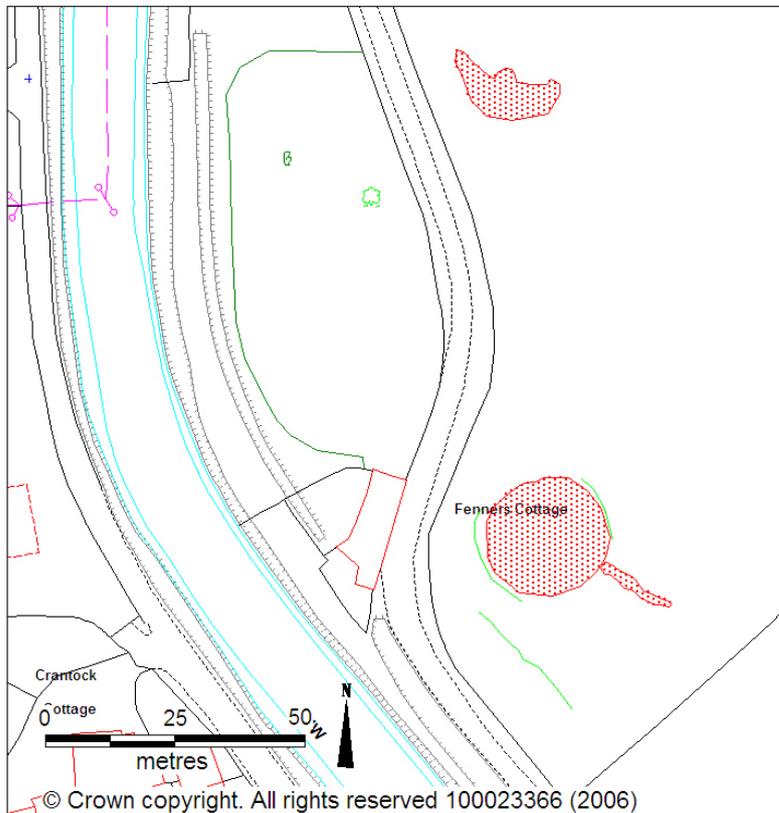


Figure 22: Possible windmill mound with shooting butt to the north, north of Burrowbridge

Discussion of the Post Medieval Results

The dissolution of Glastonbury Abbey in 1539 marked a period of great changes to the Somerset Levels. The former Abbey estates were divided between private landowners and the practice of co-operative agriculture involving mass movements of livestock and arable farming in open field systems came to an end (Dunning 2004: 4).

The Levels contained an abundance of rich grazing land previously exploited by the religious houses. The rich nature of the soils and potential of the area if it could be effectively drained contributed to the rapid enclosure of all the moorland in the Levels between 1777 and 1807 (ibid: 5). The late 18th and early 19th centuries were a period of agricultural improvement in Somerset motivated by rising population and the effect of the blockades of the Napoleonic wars which were keeping out imported foodstuffs. A drive was made to turn the former common grazing lands in the Levels, the Mendip hills and the western hills near Exmoor into productive farming land (Williams 1976: 105).

Sedgemoor, the area of the Levels to the south of the Polden hills, was enclosed by an Act of Parliament in 1795 (Dunning 2004: 4). As a result, a comprehensive programme of drainage was carried out through which the King's Sedgemoor Drain was created, which cuts across the north of the survey area diverting the River Cary along the western end of the Poldens (ibid: 5). The regular pattern of fields and drainage ditches was laid out during this period, giving the Levels their distinctive appearance today.

The stack stands identified through the aerial survey results may indicate that this process of land improvement was successful, if, as suggested above, their presence indicates the need for temporary storage due to the abundance of crops.

The sand quarries found on the Burtle Beds in the north of the survey area were visible as both earthworks and cropmarks on the aerial photographs. The quarries which were identified from cropmarks are presumably earlier in date than those with earthwork remains. The quarries are difficult to date from the aerial photographic evidence and all those visible as cropmarks, including the smaller sand pits referred to in the medieval results, may date from either the medieval or post medieval periods. The quarries recognised through their earthwork remains on the aerial photographs are similarly hard to date. They may have originated in the post medieval period and have still been in use in the modern period, post 1900, or they may be solely of modern origin. This industry, therefore, may have a history dating back to the Medieval period up to the mid-20th century.

7. MODERN – 1900 TO 1945

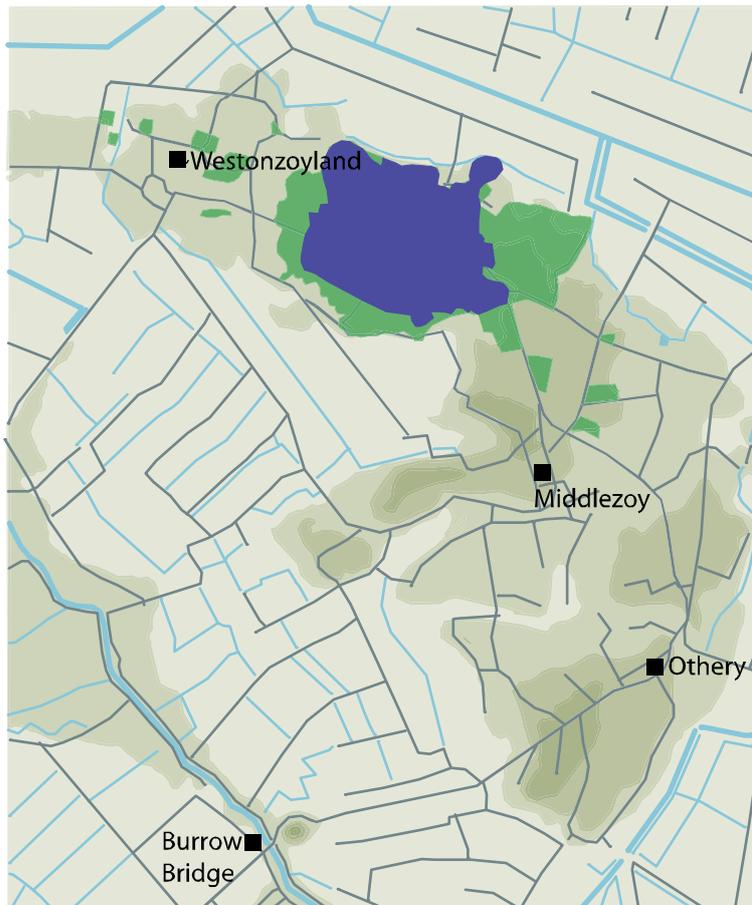


Figure 23: Modern sites

(Dark blue = pre-1943 airfield; green = post-1943 airfield and associated buildings)

The sequence of changes to the Westonzoyland airfield (PRN 11275) during the 1940s were mapped and recorded through the aerial survey. Two main phases were observed: the layout of the airfield in 1942 and its reconstruction after 1943. A good sequence of RAF photography was available to illustrate both phases and a number of additions were made to the Somerset HER entry.

The layout of Westonzoyland Airfield mapped and recorded from the 1942 aerial photographs was smaller in size than its post 1943 layout and had grass runways. Imitation field boundaries were painted over the centre of the airfield in order to camouflage it from the air. The technical buildings were in the north western corner arranged in a semi-circular arc in a layout typical of the expansion period for airfields from 1935 to 1939 (Brown et al 1996: 108). Hangars front onto the airfield, with only the control tower in front of them and other technical buildings are arrayed behind.

A number of anti-aircraft installations were located around the airfield surrounded by barbed wire. A compound is situated in the north eastern corner contained two pillboxes in front of a low mound surrounded by barbed wire. This mound has a building on it, which may be the airfield Battle

Headquarters building, used to co-ordinate the airfield's defence if under attack (ibid: 124). Other defensive installations observed around the airfield are: a searchlight battery located on an amorphous mound, surrounded by barbed wire in the southeast corner of the airfield and possible anti-aircraft defences located inside barbed wire enclosures on the western side of the airfield, the nature of which is unclear. Barbed wire entanglements were themselves set up around airfields of this period as a defensive measure (ibid: 124).

A second technical area, with a hangar fronting onto the airfield and other buildings arrayed behind, is situated in the south western corner of the airfield.

Aircraft are visible on the aerial photographs dispersed around the perimeter of the airfield for safety, possibly Lysanders, although Masters, Martinets and Mustangs were also used here up to 1942 (Ashworth 1990: 209).



Figure 24: The pre-1943 airfield with camouflage pattern of fields

© English Heritage (RAF FNO 5009)

The airfield was enlarged and improved in 1943 and concrete runways were constructed and these improvements are visible on aerial photographs of the 1940s. The new airfield layout was centred at ST 3663 3442.

Main and subsidiary runways replaced the grass ones runway and hard standings where aircraft could be parked are located around the perimeter of the airfield. These hard standings are of both the loop and frying pan types (Freeman 1978: 10).

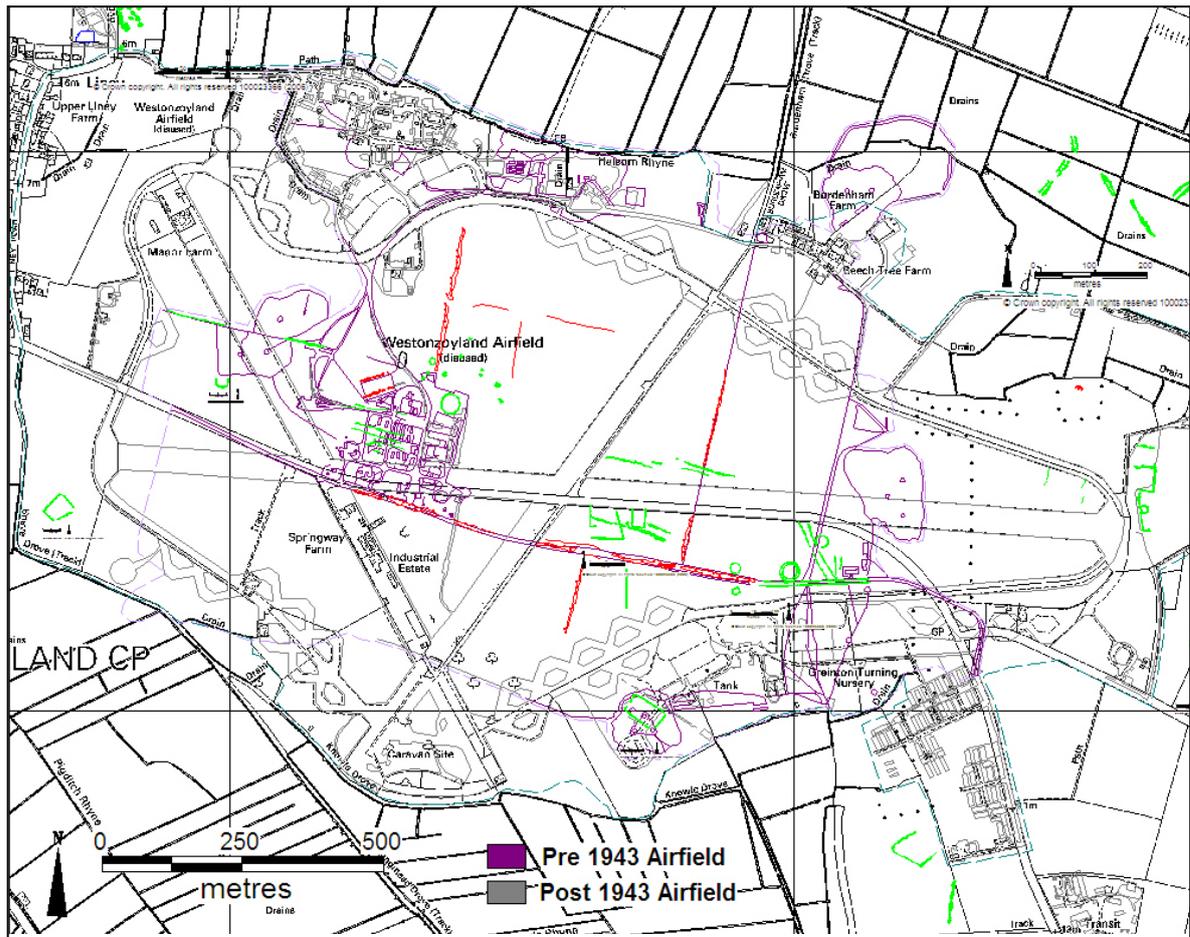


Figure 25: Westonzoyland Airfield

The technical buildings are still situated in the northwest corner of the airfield following the same layout but the southern array of buildings has now been moved to the southeast corner. An incendiary bomb store is situated in the extreme northeast corner of the airfield, with a possible ammunition store immediately to its west. Three possible fuel stores are located in the southeast corner, on the north western side and on the southern side of the airfield.

Domestic sites for airfield staff accommodation are dispersed around the airfield (PRNs 12584, 12858, 12586, 12587) within Westonzoyland and to the south of the airfield. Details of the buildings making up these sites including accommodation huts, perimeter walls and air raid shelters were mapped and recorded. The airfield also had a number of support sites associated with it. The RAF Transmitting Station (PRN 11615), sewage works (PRN 16512) were situated to the west of Westonzoyland and a compound containing the HF/DF Station, the range and height finding equipment for the airfield (PRN 16509) was located to the east of the airfield, north of Middlezoy.

Elements of the pre-1943 airfield layout can be seen as cropmarks on aerial photographs of the 1950s, 1970s and 1980s. The camouflage pattern of painted field boundaries and many of the roads and trackways are visible as cropmarks, the buried structures or paint having caused the

grass to be parched on the surface. Two dotted lines of cropmarks centred on ST 3626 3458 indicate that the base of the hangar in the pre-1943 southern technical area has been broken up with the rubble left in piles.

Discussion of the Modern Results

Westonzoyland airfield first used in 1926 in conjunction with the anti aircraft gunnery range at Doniford. This continued until 1936 with the airfield opened each May for the Anti-Aircraft Cooperation Unit each summer with tented accommodation (www.controltowers.co.uk...). During WW2 the airfield was expanded but continued to act as a training base for the ranges at Lilstock and Steart. A general improvement of the airfield was started in the spring of 1943 including the provision of tarmac runways. The airfield was used by RAF Transport Command Warwicks until February 1944, then by USAAF 303rd, 304th, 30th and 306th Troop Carrier Squadrons with C-47s. The USAAF arrived in 1944 for glider and parachute training in preparation for D-Day. After the war the site was briefly reactivated during the Korean War and again in connection with the Atomic Strike Force in 1955 and there appear to be no new installations connected with this period. The site was finally closed in 1958.

New information has been added to the Somerset HER for Westonzoyland airfield and many of its associated sites through the aerial survey. The information from the 1942 aerial photographs in particular has added a great deal to the record for the airfield, with details of the location of buildings and general layout clarified. The gradual dereliction of airfield buildings can also be monitored through the historic aerial photographs. The information on the position of roads and the camouflage markings have also meant that cropmarks previously of unclear origin seen on later photographs can now be explained.

8. CONCLUSIONS

The Somerset Levels have been the subject of a great deal of archaeological interest prior to this survey, carried out as part of *The Aggregate Landscape of Somerset: Predicting the Archaeological Resource*, for example, the work of the Somerset Levels Project from 1973. A previous aerial survey of the whole region, the SCPD Claylands AP survey, has also been carried out. The new records created for the Somerset HER as a result of the current survey demonstrates that, despite previous work, there is still more to learn about the archaeology of the Levels.

The aerial survey looked at a geographical area in which the two main contrasting landscape types found in the Levels could be evaluated: the low-lying peat moorland and the higher land of the islands formed by marine sand deposits. The number of records amended as a result of the aerial survey demonstrates the fact that a large number of archaeological sites in this area have previously been identified on the island of Sowey and its surrounding peat moorland, predominantly from cropmarks. The fact that the majority of new records added come from the low-lying areas indicates that the archaeology here may be more difficult to recognise, or that these areas were not as focussed on as the island.

The majority of the new records added to the Somerset HER date to the post medieval period, for example, the stack stands located in the low-lying areas. These features may be associated with the intensification in agriculture in the late 18th century. As such, may add significantly to our understanding of the Levels as it appears today but not as it functions today. The peat moorland is predominantly under pasture in the present day but it appears that it was used more for arable cultivation in the past.

It has also been possible through the aerial survey to complete the picture of development of Westonzoyland airfield. Access to the 1942 photographs in particular helped to clarify the nature of cropmark sites on an area that has previously been looked at in some detail (Aston in Somerset HER).

The aerial survey has provided a clearer depiction and better understanding of the cropmark sites identified in previous surveys in this area. The case of the airfield and the stack stands demonstrate the potential of finding new results in previously examined sites through aerial survey using the NMP methodology, even in an area with a history of previous archaeological work as venerable as in the Somerset Levels.

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- http://www.controltowers.co.uk/W-Z/Weston_Zoyland.htm

APPENDIX 1 - NMP METHODOLOGY

1.1 Introduction

The aim of NMP is to enhance the understanding of past human settlement, by providing primary information and synthesis for all archaeological sites and landscapes from the Neolithic period to the twentieth century.

NMP aims to do this to a consistent standard by interpretation, mapping, classification and description of all archaeological sites and landscapes in England which are visible on aerial photographs. This comprehensive synthesis of the information available on aerial photographs is intended to assist planning, protection and research of the historic environment.

The specific aims of NMP are:

1. To produce a georeferenced digital transcription of the form and extent of all archaeological features visible on aerial photographs for the whole of England.
2. To record the location, indexed classification, archaeological description and analysis, and main sources of all archaeological sites visible on aerial photographs. Additional morphological recording for those sites for which meaningful morphological comparisons can be made.
3. To provide a synthesis of the archaeology in each project area in the form of a report on the character, diversity, association and distribution of archaeological sites and landscapes.

1.2 Sources

Aerial Photographs

1. National Monuments Record

Enquiry & Research Services

National Monuments Record

English Heritage

Kemble Drive

Swindon SN2 2GZ

Tel: 01793 414 600

2. Cambridge University Unit for Landscape Modelling (formerly CUCAP)

University of Cambridge

Unit for Landscape Modelling

Sir William Hardy Building

Tennis Court Road
Cambridge CB2 1QB
Tel: 01223 764377

3. Somerset County Council HER
Historic Environment Service
County Hall
Taunton TA1 4DY
Tel: 01823 355426

Documentary Sources

Local Historic Environment Record monument records: The relevant Monument and Event records from the HER have been used as an aid to interpretation.

National Monuments Record (NMR): The relevant Monument and Event (including Excavation Index) records from AMIE have been used as an aid to interpretation.

Historic maps: These included Ordnance Survey first and second edition 25" maps from the late 19th and early 20th centuries. The 1955/6 edition Ordnance Survey Archaeology Division 1:10,560 field sheets (the precursors to the current NMR record maps) have also been consulted and have proved valuable in identifying removed field boundaries and structures.

1.3 Digital Transcription/mapping

Archaeological maps are produced by tracing archaeological information from georeferenced aerial photographs onto a suitable digital map base.

Rectification of aerial photographs

Rectified and georeferenced digital images are produced by transforming oblique and vertical photographs using AERIAL5. Where no digital image is available the relevant photograph(s) is/are scanned of each archaeological site to be mapped.

Control information is taken from digital copies of OS 1:10,000 scale maps and the relevant scanned photograph(s) are normally be rectified to an average level of accuracy of + <2m to the map. This gives an overall accuracy of plotted features, to true ground position, within +5-15m.

A digital terrain model function is used to compensate for steep or undulating terrain.

Mapping of archaeological features

Archaeology is traced off the georeferenced and rectified photographs using MapInfo. Archaeological features are depicted on different layers mainly on the basis of form (e.g. bank, ditch etc) irrespective of preservation as this is recorded in the database.

Although NMP has a standard set of colours for different layers they have been set up, on the basis of form (e.g. bank, ditch) so that they can be viewed in any colour or in a GIS environment where colours and symbols may relate to interpretation e.g. period, type etc. Symbols and fancy line types are avoided to facilitate transfer between GISD packages. Exceptions to this are ridge and furrow which is drawn in a semi-conventional manner because it would be too time consuming to map every rig and furrow. Therefore blocks are outlined and the direction of groups of rigs are shown with an arrow.