

**CROWMARSH PARISH
NEIGHBOURHOOD PLAN
LANDSCAPE SURVEY AND
IMPACT ASSESSMENT –
CROWMARSH GIFFORD**



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Published by Crowmarsh Parish Council

Version 1: January 2018

INTRODUCTION AND BACKGROUND

A neighbourhood plan, for example, the Crowmarsh Parish Neighbourhood Plan, must meet certain Basic Conditions. A key condition is that the plan ‘does not breach, and is otherwise compatible with, EU obligations’. One of these obligations is Directive 2001/42/EC ‘on the assessment of the effects of certain plans and programmes on the environment’. This is often referred to as the Strategic Environmental Assessment (SEA) Directive. The SEA Directive ‘seeks to provide a high level of protection of the environment by integrating environmental considerations into the process of preparing plans and programmes’. The SEA Directive is transposed into UK law through the Environmental Assessment of Plans and Programmes Regulations (the ‘SEA Regulations’) and it is these regulations that the Crowmarsh Parish Neighbourhood Plan needs to be compatible with.

The Environmental Assessment of Plans and Programmes Regulations require the likely effects on the environment of implementing a development proposal to be identified, described and evaluated. The information to be given includes:

The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.

The structure of SEA starts with screening, to see if it is necessary, followed by scoping. The actual SEA comprises ‘Documentation of the state of the environment’ to provide a baseline on which to base judgements, and ‘Determination of the likely environmental impacts’ usually in terms of direction of change rather than firm figures. There follows consultation with the public and the application of the findings to influence decision taking and implementation of any monitoring that maybe required.

The current assessment provides a baseline description of the fauna and flora recorded at each site and the impact that development of that site could have on habitats and risk of flooding. It focusses on six aspects required by the Environmental Assessment of Plans and Programmes Regulations: biodiversity, fauna, flora, soil, water and cultural heritage and landscape. Because of the limited scale of the study area the other four factors, population, human health, climatic factors and material assets, have not been taken into consideration. The study comprises a preliminary SEA; fit-for-purpose given the scale of likely development. Any change in direction of availability of habitat due to development is irreversible, flood risk hazard may be mitigated by engineering.

Relative impact is ranked as low, moderate or high/severe as a measure of both environmental impact on habitat and flood risk hazard. Development of sites ranked as high/severe impact in either or both categories suggests that a site should not be a priority for development. Development of sites with moderate impact in either or both categories suggests that development is feasible provided that mitigation measures are put in place, while development of those sites ranked relatively low impact are better suited for development. The final choice of development sites depends on a matrix of other non-environmental factors; the results of this survey will feed into that matrix.

A number of potential sites have been considered for housing or industrial development by the Planning Department at the South Oxfordshire District Council (Figure 1, Table 1). These allocations, SHLAA and SHELAA, are presented in the Emerging Local Plan.

Table 1 Sites considered for development within the SHLAA and SHELAA exercises

Site	Area (ha)	Landscape capacity (No of dwellings)	Inside AONB or proximity to it	Flood Zone category
CRO1	0.93	15	Inside	1
CRO2	24.9	450	Adjacent	1, 2, 3
CRO3	9.9	105 or industrial units	Outside 790 m	1, 2, 3
CRO4	2.51	50	Outside 440 m	1, 2
CRO5	2.34	*	Inside	1
CRO6	2.52	65	Inside	1
CRO7	6.44	70	Inside	1
CRO8	3.32	80	Inside	1
CRO9	7.69	140	Inside	1
CRO10	8.19	*	Inside	1

*development not recommended (SODC Planning Department) – no capacity assessment made

Each of the ten sites was surveyed during winter 2017/2018 and their individual landscape character, the flora and fauna hosted within each site, flood risk and soil type were described, along with records of heritage and archaeology. The impact on the environment has been assessed on a rational and consistent basis to determine if site development would be relatively harmful at one end of the scale or would have little relative impact at the other. The likely flood risk hazard of developing each site is also assessed: surface water flooding from the Environment Agency flood risk hazard zonation and groundwater flooding from shallow depth to water table in prolonged wet periods and the likely impact of SUDS (sustainable urban drainage system).

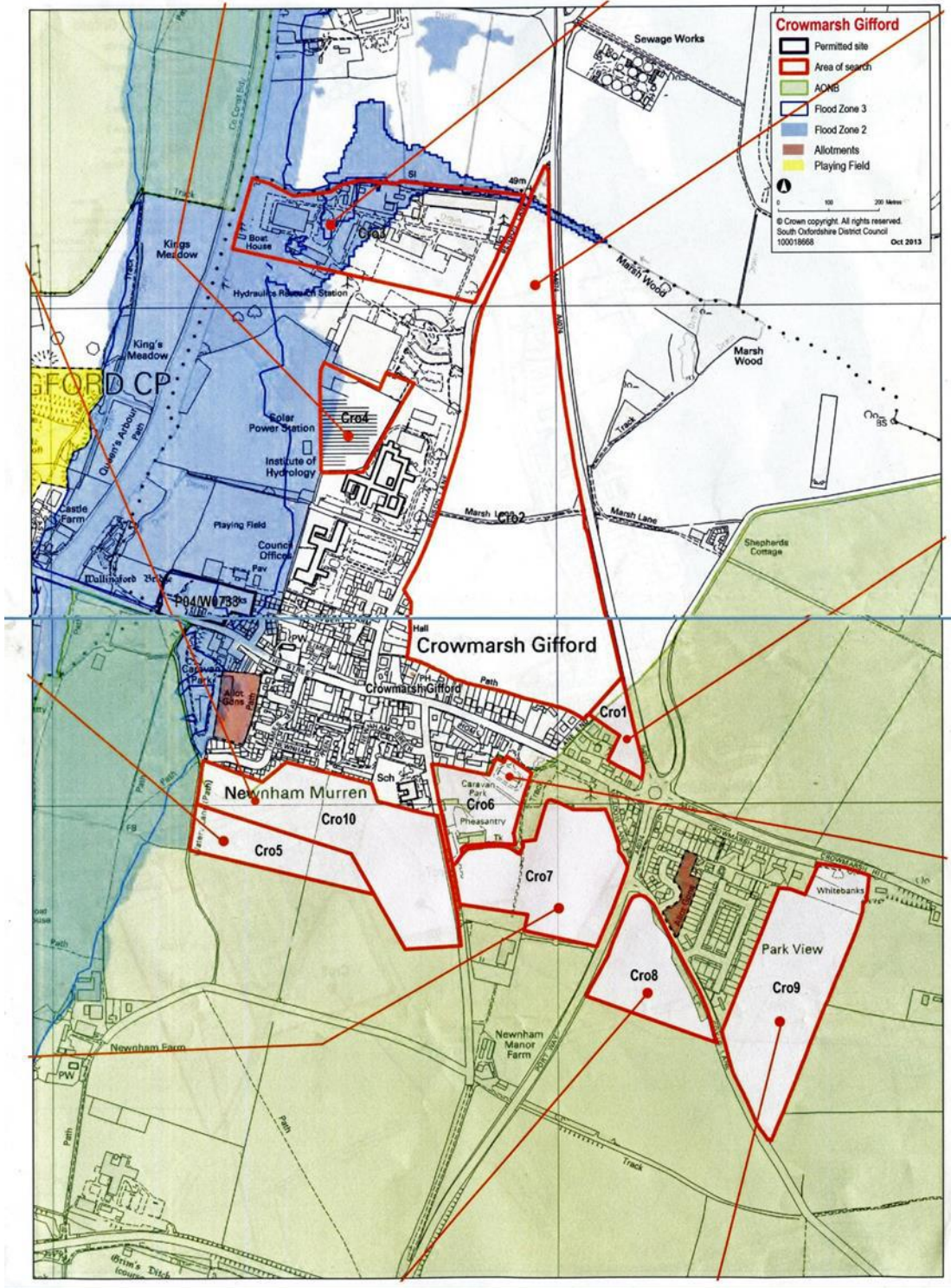


Figure 1 Sites CRO1 to CRO10 previously considered for housing or industrial development

Surface water flooding in Crowmarsh Parish is almost entirely due to the River Thames, and its various feeder streams, flooding overbank in prolonged wet periods characteristic of the winter.

Groundwater flooding occurs when the groundwater level, the water table, rises to an elevation above that of the ground surface. Crowmarsh Parish lies at the foot of the Chalk scarp which is the western edge to the Chiltern Hills. Groundwater discharges underground from the basal permeable chalk deposits into the overlying Thames gravel sequences. There are also springs discharging to surface at Marsh Wood Spring, Mongewell and North Stoke (The Springs Hotel). An ephemeral spring also occurs in prolonged wet weather in the upper part of The Street in Crowmarsh Gifford. Normally, the underground discharges from the Chalk aquifer into the gravels promote throughflow of groundwater westwards to discharge into the River Thames. If the Thames is overbank, however, there is nowhere for this groundwater flow to go and so it backs up under the gravel until the water table rises above the ground level as a groundwater flood. Typically this is seen in the field (CRO10) behind houses in Newnham Mead where that road bends to the west.

New development sites are encouraged to incorporate a SUDS approach for hard standing and roof top drainage. This system passes runoff water directly to underground soakaways or surface pond features to slowly dissipate into the groundwater system. However, if the groundwater level is only a few tens of centimetres below ground level in the first instance, the consequent groundwater mounds around the soakaways and SUDS features will promote localised groundwater flooding. Such flooding may not only affect the development site but also surrounding land and properties. It is this kind of flooding that is likely at sites CRO2 and the conjoined sites CRO5 and CRO10.

CR01 and CR02

This is a large triangular site, apex to the north, contained between The Street, Benson Lane and the A4074. It is divided into two parts by the east west oriented Marsh Lane By Way.



CR02 looking north east towards Marsh Lane

Topography and drainage: The site is slightly undulating, rising slightly to the east. The land is self-draining to the underlying fluvial gravels but there is Flood Zone 2 potential at the northern apex in the vicinity of Marsh Wood Stream. The water table becomes very shallow in winter as groundwater discharges into the gravels from the basal permeable chalk which locally overlies weakly permeable basal marls. If the river is overbank then the groundwater cannot discharge from the gravel and backs up under the site. The water table can be as shallow as 20 cm, recorded in an observation borehole at the village hall and seen standing in the drainage culvert along Benson Lane to the south of Marsh Lane.

Soil: Rich clayey soil over fluvial gravel and clay.

Use: The two fields are subject to intense arable cultivation, currently (January 2018) white mustard as a winter nitrogen fixer. Previous crops include wheat in 2017, beans in 2016, rape seed in 2015 and barley in 2014. The field margins are up to 3 m wide and are neither ploughed nor sprayed; the margins provide a haven for wildlife. Marsh Lane is a tree-lined medieval highway. Trees include a variety of deciduous species. There are numerous shrubs including elder. At the eastern end of Marsh Lane is a small copse of deciduous trees and shrubs. Soil here is thin with chalk showing in rabbit diggings. The northern apex of the site is traversed by Marsh Wood Stream which is straddled by a wet area with scrub and trees.

Public access: There are three well used public rights of way. Marsh Lane By Way traverses the site and provides access from Benson Lane across the A4074 to Clacks Lane and into the Chiltern Hills. This is a popular route for walkers and cyclists. There are two footpaths, one along the southern margin of the site behind houses in The Street connecting Benson Lane with Lane End. The other passes from the mid-point of that footpath and crosses the field to a point east of centre of Marsh Lane. These are popular with dog walkers and are used by children for access between houses without contact with roadways. Public access to the site provides a valuable educational resource.

Hedgerows: The boundary of the site comprises an ancient hedge of deciduous trees and shrubs along Benson Lane and a field maple hedge, including blackthorn and buckthorn, along the A4074. Both provide good cover and security for a large and diverse range of wildlife. Marsh Lane is bordered by numerous shrubs as well as trees. The shrubs include spindle, hawthorn and other indigenous species and in places there is a widespread cover of ivy providing security for wildlife.

Trees: Some of the trees are elderly and in need of attention. However, the dead elders, some overrun with ivy, provide valuable habitat for numerous species. The trees are otherwise in good order and provide a valuable habitat for birds and other wildlife. They comprise a group of mixed deciduous vegetation including beech, oak, field maple, sycamore, lime, hazel and several other species including crab apple. They are present along the edge of Benson Lane, as an avenue to Marsh Lane, in the wet northern apex of the sites and in a small coppice at the eastern end of Marsh Lane in a depressed area that was once a pond before the drainage to the new A4074 was installed.

Wildlife: The fields are home to a diverse range of wildlife. Protected species include barn owls which tend to focus on Marsh Lane, adders which are mainly clustered in the northern part of the site but have also been seen in gardens in Benson Lane, bats and stag beetles which abound in the summer months throughout the perimeter of the site and in adjacent gardens. Summer evenings allow the numerous colonies of bats to show off their aerobatic ability in catching flies. Recent and active badger activity is apparent in Marsh Lane and the coppice at the end of Marsh Lane (January 2018) and the fields are regularly visited by muntjac deer and by foxes. Bird life includes the now common red kite, kestrel, sparrow hawk, common pheasant, lapwing as well as great tits, blue tits, chaffinch, pied wagtail, green woodpecker and pied woodpecker, while summer visitors include cuckoo, chiffchaff, and swallow. There are also the ubiquitous sparrow, blackbird, crow, rook, magpie, jackdaw, jay, ring dove and wood pigeon. Many other species are seen from time to time.



Stag beetle at the southern margin of CRO2 [Theo Stevenson]

Heritage: Two likely Bronze Age barrows area contained within CRO2 along with a linear structural feature so far identified with geophysics (Oxfordshire County Council Strategic Comments report, January 2017). Marsh Lane By Way is of medieval origin.

Overseen: Although the site is partly screened by perimeter hedging, it is overseen from the adjacent AONB from Clacks Lane and adjacent land and from pathways higher into the Chiltern Hills and parts of the Ridgeway National Trail. As such it provides an important buffer between the countryside, the AONB and the existing village of Crowmarsh Gifford. The site is also overseen by the village from a number of vantages, notably from the Village Hall, The Bell Public House and Lane End, as well as from numerous residential gardens.



Badger activity in Marsh Lane CRO2

Other: Site CRO1 (within the AONB) and CRO2 (adjacent to the AONB) provide a valuable amenity for the village and public access to this site is much appreciated by the community. The site provides a valuable nature learning resource for children (and adults), and is instructive also in modern day arable farming procedure. This land, east of Benson Lane, is a resource that needs to be safeguarded from development for the benefit of the villagers and their children, while the farmer enjoys the harvests from his best quality productive land.

Environmental impact of development: The impact of development or partial development of these sites with housing is relatively severe and would be harmful to a sensitive area of valued landscape and ecology. Existing habitats in Marsh Lane, the northern apex of the land and wild field edges are not replicated in much of the surrounding agricultural area. Development would also impact the adjacent AONB as housing could not be screened from Clacks Lane and adjacent areas, the site currently providing a rural buffer to the existing village curtilage. Sensitivity of these sites includes the presence of protected species: adder, barn owl, stag beetle and bat. The seasonal shallow water table creates a serious risk of groundwater flooding to the site and to adjacent properties through development if a SUDS approach to drainage were to be adopted. (See Groundwater and Crowmarsh Gifford.) Flood risk from surface water, other than along the Marsh Wood Stream Flood Zones 2 and 3 area, is minimal. Development would sterilize likely Bronze Age artefacts.

CR03

This is the northern part of Howbery Park, a partly built up industrial area including extensive car parking and some buildings on the northern perimeter in need of renovation.



CR03 Industrial development area, Benson Lane and part of CR02 in left foreground [Howbery Park]

Topography and drainage: The site is essentially flat with a short steep slope down to the River Thames on the western perimeter and to Marsh Wood Stream on the northern perimeter. The western half of the site lies within Flood Zone 2. The site is drained to soakaways in the fluvial gravel floodplain of the Thames.

Soil: Made ground over development area, no virgin soil. Elsewhere good clayey soil over fluvial deposits.

Use: Howbery Park research establishments and Business Park.

Public access: The site is accessible to the wider public who are invited to share the staff catering facilities that are available at Howbery Manor. The restaurant overlooks attractive gardens in a rural setting.

Hedgerows: Beech hedge along Benson Lane.

Trees: The tree density increases toward the river and Marsh Wood stream. It comprises a good range of mixed deciduous and evergreen conifers with numerous willows near the river and some also along Marsh Wood Stream. There are also a variety of shrubs along the river and the stream including elder, holly and other indigenous varieties. Numerous specimen trees have also been planted in the park area.

Wildlife: Roe deer have been seen in Howbery Park and foxes prowl at night for scraps. Squirrels also forage for left overs. The bird life includes the common garden birds found in the area as well as pied wagtail, small owl, a protected species, wood pigeon, ring dove, crow and various riverside birds including heron and kingfisher. Protected species include bats, with adders likely along the Marsh Wood Stream area to the north.

Heritage: Howbery Park is an historical site first developed in the seventeenth century. There is a need to preserve the character of this history.

Overseen: The site is partly screened by trees and the roadside hedge along Benson Lane and from the south also by office buildings.

Other: This is a detached site from the residential area of the village and unlikely to be sanctioned for residential use. It is, however, an area that has been identified for additional industrial development.

Environmental impact of development: Development impact is small provided that new industrial units allow retention of trees and some green spaces to accommodate existing wildlife.

CR04

This is a small site behind the Centre for Ecology and Hydrology campus that is largely occupied by an unsightly solar panel array. However, it is screened from Benson Lane by the CEH buildings and cannot easily be seen from the river to the west.



CR04, with rows of solar panels and minerals dump, mid-right, CR03 to the upper left and the northern part of CR02, the triangular freshly-sewn field, top right [Howbery Park]

Topography and drainage: This is an essentially flat site with the third terrace of the Thames situated along its western perimeter such that the extreme west of the site is in Flood Zone 2. It is otherwise self-draining to the fluvial gravels that underlie the site.

Soil: Good clayey soil over fluvial deposits.

Use: Solar panel farm and mineral dump for HR Wallingford. Bulk mineral material is periodically dumped on the northern part of the site, sorted and recycled for further use.

Public access: Private land, strictly no access to public.

Hedgerows: None.

Trees: Some mixed deciduous trees on adjacent land to the north.

Hedgerows: Young mixed hedge along eastern boundary.

Wildlife: The site and the grassland field to the west leading to the Thames have been used by nesting ospreys. However, since the solar panels were installed the ospreys have been displaced from the site. Foxes continue to frequent the area along with roe deer. The birdlife includes a variety of rural, urban and river loving species.

Heritage: None

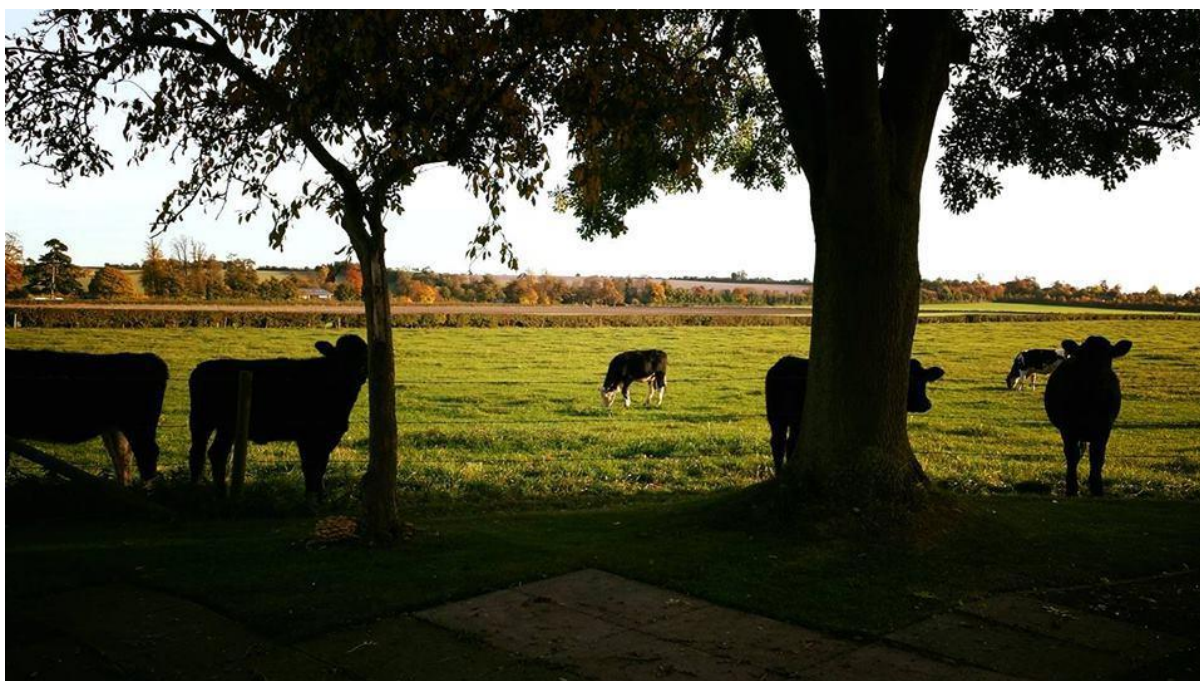
Overseen: The site is not publically overseen other than from the river and a pathway open only during normal working hours.

Other: None.

Environmental impact of development: The site is not suitable for residential development due to its isolation from the village. It could be used for industrial development. As such the environmental impact would be minimal.

CR05 and CR010

These two adjacent sites comprise grassland pasture and arable land to the south of Newnham Murren between the Old Reading Road and Watery Lane leading to Newnham Farm. There is a north-south midway fence so that in 2017 grassland was maintained to the west of the divide and barley was grown to the east.



CR05 mid-picture and CR010 foreground, looking from Newnham Murren to the south east [Jan Curley]

Topography and drainage: The land is slightly undulating falling to the top of the third Thames terrace at the western boundary. The groundwater table is shallow with water draining from the feather edge of the chalk aquifer into the overlying gravel with seasonal groundwater flooding in the northern part of the site behind houses in Thames Mead where that road bends to the west. The groundwater table near the school also reaches the surface in wet periods.

Soil: Good clayey soil over fluvial deposits.

Use: Part grassland pasture, cut for silage in the late spring and used as grazing land for a herd of dry cattle and heifers, and part arable.

Public access: These sites are not accessible to the public but can be seen from Watery Lane in the west and the Old Reading Road in the east or from housing and pathways at Newnham Murren (see photo).

Hedgerows: Perimeter hedgerows to the east along the Old Reading Road and dividing the two fields are hawthorn hedges but they are overgrown by ivy particularly along much of the Old Reading Road. The tree and shrub hedge along Watery Lane to the west of the sites includes a variety of shrubs including blackthorn, buckthorn, spindle and other species. However, the hedgerow density provides only limited cover for wildlife.

Trees: There are a few mature deciduous trees along Watery Lane on the eastern perimeter of the sites. Sycamore is dominant, along with beech, and there are some crab apple and damson trees. Trees are partly overgrown with ivy. There are two large beech trees at the northern end of the dividing hedge at Newnham Green.

Wildlife: Foxes occasionally visit the sites and roe deer and muntjac deer have also been seen. The fields are popular hunting ground for rooks and jackdaws. The hedgerows provide limited cover for a variety of smaller birds. The sites are a haven for geese and ducks during periods when the river is overbank.

Heritage: Numerous Roman and older artefacts have been found in the area, Grim's Ditch is situated 1 km to the south so it is likely that artefacts also occur in these sites.

Overseen: The sites are overseen from the Newnham Murren area of Crowmarsh Gifford village which borders the northern perimeter of the sites. It can be seen from Watery Lane, from the school and Old Reading Road as well as the 'Concrete Road' from Newnham Manor farm to Newnham Farm. As such it provides a valuable green lung for the southern part of the village and the school.

Other: The sites lie within the Chilterns AONB and the Thames flood plain corridor.

Environmental impact of development: The environment impact of developing these sites for houses would be moderate, any disturbed species would be able to take refuge on adjacent land. However, the sites provide a valuable rural outlook for the southern part of the village of Crowmarsh Gifford which would be sorely missed. The shallow seasonal water table beneath these sites means that development adopting a SUDS drainage approach would generate an increased groundwater flooding potential on the sites, adjacent land and properties. Risk of flooding from surface water, however, is minimal.

CR06

This is an area of largely brownfield land bordered by housing to the north, the Old Reading Road to the west, a former gravel pit to the south and the garden of Newnham Manor to the west.

Topography and drainage: This is essentially flat-lying land that is well-drained to the underlying fluvial gravel deposits.

Soil: Good clayey soil over fluvial deposits.

Use: The area includes a residential caravan site, a disused pheasantry and waste dumping areas.

Public access: None, other than to caravan site.

Hedgerows: Remnant hedgerows exist along the western boundary with small areas of scrub along the western and southern edges and a tall cypress hedge along much of the eastern perimeter. Dominant species are hawthorn, blackthorn and spindle but ivy is common. Part of the site is scrub with low bushes providing some cover for wildlife.

Trees: There are a variety of deciduous trees on the site, many in poor condition and overgrown with ivy. These include sycamore, horse chestnut, beech and oak. The site also includes some specimen evergreen trees including pines and small cedars.

Wildlife: The site is a haven for scavenging foxes and squirrels. Wood pigeons, crows and magpies are abundant as well as the normal variety of semi-urban birds found in the village. There are bats within the area that are evident in summer evenings.

Heritage: Numerous Roman and older artefacts have been found in the area, Grim's Ditch is situated 1 km to the south so it is not unlikely that ancient artefacts also occur in this site. No evidence of any settlement activity was found during a recent archaeological survey (Land at Newnham Manor, Crowmarsh Gifford, Oxon, Archaeological Investigation, Cotswold Archaeology 2016).

Overseen: The site is not overseen and is screened from the village and the A4074 main road by trees and by Newnham Manor and its well-vegetated garden area.

Other: This site lies within the Chilterns AONB but is degraded and unsightly and lends itself to a change of land use.

Environmental impact of development: The environment impact of developing this site for houses would be small, any disturbed species able to take refuge on adjacent land. There is no risk of flooding.



Caravan site CR06



CR06 with a pit infilled with rubbish

CR07

This is a grassland and part brownfield site bordered by the Old Reading Road to the west, Newnham Manor grounds to the north, the A4074 to the east and Lister Wilder industrial area to the south.

Topography and drainage: This is a largely flat site that is self-draining to the underlying gravels. The eastern third of the site contains an abandoned gravel pit and waste spoil dumps.

Soil: Good clayey soil over fluvial deposits.



Abandoned gravel pit and waste dump in the eastern part of CR07

Use: The western two thirds of the site is an isolated patch of grassland between an industrial site to the south and the village area to the north. The western part of the site is abandoned scrubland centred on an old gravel pit and waste dumps. New shrubs, including hawthorn and holly, have been planted around the gravel pit and along the lane between the Lister Wilder industrial site and the A4074.

Hedgerows: There is a tall cypress hedgerow in the north west of the site. The hedging to the west of the site along the Old Reading Road is largely hawthorn, blackthorn and other indigenous species, but is largely overgrown by ivy.

Public access: None

Trees: A variety of elderly deciduous trees exist along the western perimeter of the site including sycamore, beech and horse chestnut. There are a number of specimen evergreen trees in the small area of land between CRO7 and CRO6 to the west.

Wildlife: The abandoned sand pit is home to a variety of small wildlife including rats, and foxes prowl the area in search of food. The birds include the indigenous hedge loving rural species, but there is a dominance of crows and magpies with some jackdaws also present.

Heritage: Numerous Roman and older artefacts have been found in the area, Grim's Ditch is situated 1 km to the south so it is not unlikely that ancient artefacts also occur in this site. No evidence of any settlement activity found during the recent archaeological survey (Land at Newnham Manor, Crowmarsh Gifford, Oxon, Archaeological Investigation, Cotswold Archaeology 2016).

Overseen: The site is overseen by the A4074 but is otherwise well screened from view.



Eastern part of CRO7 looking north west from Lister Wilder driveway entrance – gravel pit and dumps are to the left

Other: The site lies within the Chilterns AONB but is part brownfield awaiting reclamation and development and part grassland isolated from the rest of the countryside by the Lister Wilder industrial site.

Environmental impact of development: Minimal, the wildlife frequenting this site would displace to adjacent land. There is no other likely environmental impact.

CR08

This is a gently inclined corner field site bordered to the north east by Cox's Lane and the west by the A4074 Port Way. Gradient increases slightly to the east.



CR08 looking along the Cox's Lane boundary on the right, beech tree clump to left, towards the A4074 in distance

Topography and drainage: The field is situated at the bottom of the chalk scarp slope and is well drained. It is inclined (1 in ~50) towards the west.

Soil: Stiff clay soil calcareous in part to the east.

Use: The field is devoted to arable cultivation, typically barley although sown on a four year rotation cycle. There is a narrow coppice along part of the Cox's Lane field boundary. Winter barley or wheat in 2018.

Public access: None

Hedgerows: There is a well-maintained hawthorn hedge along some of the boundary with the A4074. The perimeter of the site adjacent to Cox's Lane is bordered by up to 10 m width of part degraded scrubland containing fallen branches and some domestic waste material. It contains some hawthorn bushes and other indigenous species although there is also a widespread cover of ivy.

Trees: There is a group of three mature horse chestnut trees within the arable area of the site some 20 m in from the Cox's Lane boundary. The scrubland along Cox's Lane contains some mature trees, mainly sycamore, beech and horse chestnut and some younger trees of the same species.

Wildlife: This northern apex of a large arable field is home to a number of birds including lapwing and kestrel, and is frequented by red kite, common pheasant and other species. Wood pigeon, ring dove and woodpecker are common. The hedgerows also provide homes for a number of other bird species including tits as well as crows and jackdaws. Muntjac deer and foxes prowl the field for food and rabbits live in the field perimeter. However, the field edges are partly sterilised by cultivation to within 0.5 m of the perimeter hedges and fences, leaving little scope for wildlife in the field perimeter.

Overseen: Only from the A4074 and well screened from Cox's Lane.

Other: The site lies within the Chilterns AONB and is classed as Grade 3 Agricultural Land.

Environmental impact of development: Minimal, the limited variety of wildlife frequenting this site would easily displace to adjacent land; there are no protected species known to live here. There is no other likely environmental impact.

CR09

This is a gently inclined field bordered to the north by the A4130 Crowmarsh Hill, to the west by Park View, to the south west by Cox's Lane and to the east by a field boundary.



CR09 looking along the back of Park View towards the A4130

Topography and drainage: The field is situated at the bottom of the chalk scarp slope and is well drained. It is inclined (1 in ~50 and less) towards the west, the gradient increasing to the east.

Soil: Calcareous clay soil over chalk head deposit.

Use: The field is devoted to arable cultivation, typically barley although sown on a four year rotation cycle. There is a scrubland coppice along the A4130 field boundary. Winter barley or wheat in 2018.

Public access: None

Hedgerows: There is a hawthorn and buckthorn hedge along the eastern field boundary. The perimeter of the site adjacent to Cox's Lane is bordered by up to 10 m width of part degraded scrubland dominated by ivy. It contains some hawthorn and buckthorn bushes and other indigenous species.

Trees: The scrubland along Cox's lane contains some mature trees, mainly sycamore and horse chestnut. There are also a few maple trees along the verge of Cox's Lane. The scrubland to the north of the site has a number of mature trees including sycamore, beech and horse chestnut. Many of the trees struggle under mature strands of ivy.



CRO9 scrubland in north of site adjacent to A4130

Wildlife: The field is home to a number of birds including lapwing and kestrel, and is frequented by red kite, common pheasant and other species such as wood pigeon and ring dove. The hedgerows provide homes for a number of other bird species including tits as well as crows and jackdaws. Cox's Lane follows a well vegetated incised dry valley which is home to a number of woodland birds including little owl, a protected species, and in summer also by cuckoo. Muntjac deer and foxes prowl the field for food and rabbits live in the field perimeter. There is no evidence of recent or old badger activity. However, the field edges are sterilised by cultivation to within 0.5 m of the perimeter hedges and fences, leaving little scope for wildlife in the field perimeter.

Heritage: Numerous Roman and older artefacts have been found in the area, Grim's Ditch is situated 1 km to the south so it is not unlikely that ancient artefacts also occur in this site.

Overseen: Well screened from Cox's Lane and A4130.

Other: The site lies within the Chilterns AONB and is classed as Grade 3 Agricultural Land.

Environmental impact of development: The wildlife frequenting this site would easily displace to adjacent land. Species resident in the scrubland at the north of the site could move to adjacent land in the former quarry to the east of Whitebanks. Woodland species living along Cox's Lane, including protected species little owl, would be less easily displaced to other land although there is plenty of woodland at higher levels in the Chiltern Hills to the east and in the old quarry east of Whitebanks. There is no other likely environmental impact.

CRO10, see CRO5

CONCLUDING STATEMENTS

Two sites, CRO1 and adjacent site CRO2 are considered to be a relatively sensitive area of valued landscape and ecology and home to four protected species. The environmental impact of development on these sites or part of these sites is likely to be severe (Table 2). CRO2 also has important archaeological significance and contains two suspected Bronze Age barrows. Moderate environmental impact would occur at sites CRO5 and CRO10, the south of Newnham Murren, and at CRO9, behind Park View, adjacent to a tree-lined dry valley which is home to little owl, a protected species. The relative environmental impact of development at the remaining sites, CRO3, CRO4, CRO6, CRO7 and CRO8 is low.

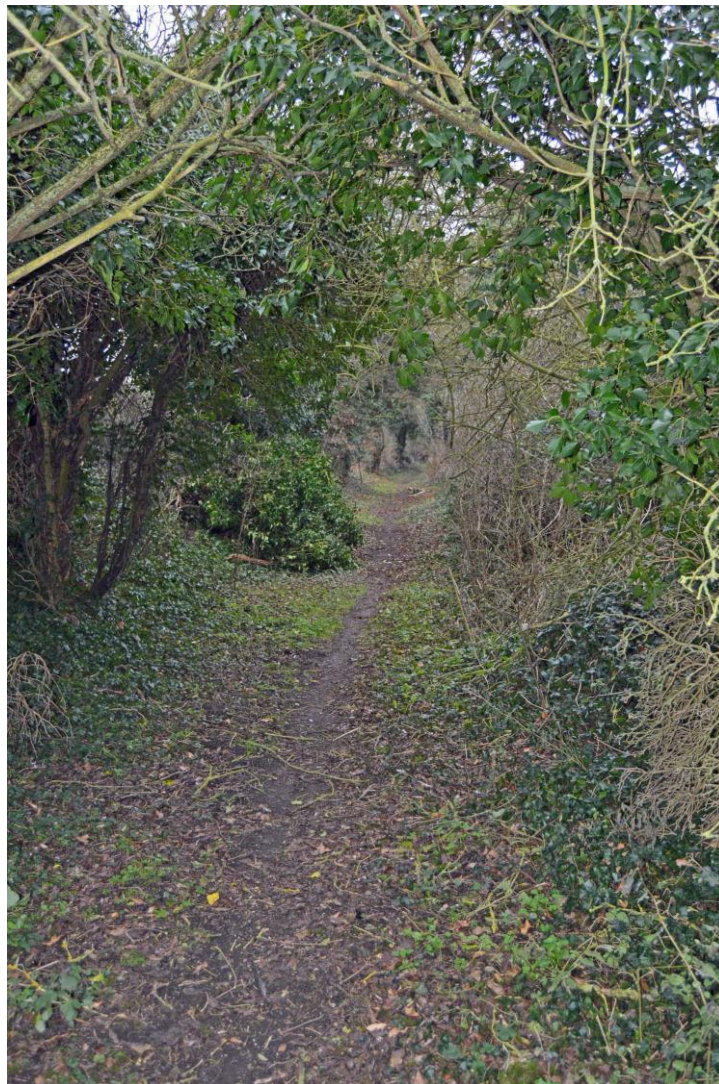
Relative groundwater flood risk hazard caused by development is likely to be serious at sites CRO1 and CRO2, land east of Benson Lane, and moderate at sites CRO5 and CRO10, to the south of Newnham Murren. The groundwater flood risk hazard from development on the remaining sites CRO3, CRO4, CRO6, CRO7, CRO8 and CRO9 is low.

Table 2 Likely environmental impact and flood risk hazard due to site development

Site	Environmental impact from development			Flood risk from development		
	Low	moderate	High/severe	low	moderate	High/severe
CRO1						
CRO2*						
CRO3						
CRO4						
CRO5						
CRO6						
CRO7						
CRO8						
CRO9						
CRO10						

*CRO2 contains two suspected Bronze Age barrows and a linear feature likely of similar age

The environmental impact and flood risk hazard assessments of the ten sites, CRO1 to CRO10, considered at some time by SODC for housing or industrial development (SHLAA and SHELAA), indicate that two sites, the adjoining land at CRO1 and CRO2, land east of Benson Lane, would have both a relatively severe or harmful environmental impact and a relatively serious and harmful groundwater flood risk hazard due to SUDS. Development of these sites should not be a priority. The environmental impact and groundwater flood risk hazard assessment are both moderate at sites CRO5 and CRO10, south of Newnham Murren, and at CRO9, behind Park View, they are moderate and low respectively. Development of these sites would require mitigation. At the remaining sites CRO3, CRO4, CRO6, CRO7 and CRO8, the environmental impact and flood risk hazard are both relatively low.



Marsh Lane (CRO2) in winter

SUPPORTING REFERENCES

Land at Newnham Manor, Crowmarsh Gifford, Oxon, Archaeological Investigation, Cotswold Archaeology, 2016.

<http://reports.cotswoldarchaeology.co.uk/content/uploads/2017/04/Land-at-Newnham-Manor-Crowmarsh-Gifford-archaeological-evaluation-report-final-141116.pdf>

Groundwater and Crowmarsh Gifford. Report to Crowmarsh Parish Council 2011, British Geological Survey/Queen's University Belfast.

Oxfordshire County Council Strategic Comments report, January 2017, site East of Benson Lane, SODC Planning Application No. P16/S3608/O