

Ecological Impact Assessment for proposed solar farm at Picketston

Introduction

This report is an assessment of ecological impacts from the proposed development of ground based solar power at Picketston industrial estate, St Athans. It has been prepared taking into account the guidelines by the Chartered Institute for Ecology and Environmental Management (2018) for impact assessment but is not an Environmental Impact Assessment under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

Background

Cenin Renewables Ltd propose to construct a solar farm at Picketston Industrial Estate in St Athans (Figure 1). This would consist of two areas of ground mounted solar panels with a total area of approximately 1ha. Cenin have previously consulted the Vale of Glamorgan County Ecologist regarding the site and have requested this report to inform an application for planning permission.

Figure 1: Location Plan

PROPOSED GROUND MOUNTED SOLAR PV DEVELOPMENT
 REF:2019005DA
 JULY 2019
 Cenin Renewables, Parc Stormy, Bridgend, CF33 4RS



Methods

Field Survey

A site visit was undertaken on the 14th of October 2019 when both proposed panel locations were walked, and the habitat type recorded.

Desktop Study

Information was obtained from South East Wales Biodiversity Records Centre (SEWBRc) covering species, habitats and protected sites within 2km of the central grid reference of the site (ST0015069814).

Limitations

The field survey was undertaken at a time of year when the majority of plants would not be flowering, and a detailed botanical survey was not undertaken. Given the management of the area as part of the grounds of an active industrial estate and the small area concerned this is not thought to have affected the ecological valuation or impact assessment.

All ecological surveys are a snapshot of conditions and the ecology of a site can change over time for a wide range of reasons. For that reason, it is not recommended that this report be relied on more than two years after the survey date.

Results

Species

Within 2km of the site there are 495 records of protected and priority species, 128 records of other species of conservation concern and 59 records of species of local conservation concern. The nearest records to the site are of bats 130m to the southwest on the other side of a road bordering the industrial estate. These included common pipistrelles *Pipistrellus pipistrellus*, some pipistrelles that were not identified to species and lesser horseshoe bats *Rhinolophus hipposideros*. It can be assumed that all these species may forage over the site but there are no features within the development area capable of supporting roosts.

Great crested newts have been reported in the area by the County Ecologist, although the nearest records are slightly over 1km away. There are no ponds on site suitable for newts to breed but they may enter the area in their terrestrial phase, including for hibernation.

Habitats

Both proposed areas of solar panels are grassland within the Picketston Industrial Estate. The grassland has been managed and was a height of 15-30cm at the time of the visit. No flora other than grass were observed.

Area 1 is adjacent to the boundary of the industrial estate and is bordered by a wire mesh fence behind which runs a hedgerow containing hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and elder *Sambucus nigra*. The hedge runs along a road beyond which the wider landscape is agricultural.

Area 2 is isolated from other areas of grassland by roads within the industrial estate.

Records show that there are 10ha of ancient woodland within 2km of the site. Ancient woodland has been woodland for at least four hundred years and is of high value for both biodiversity and historical reasons. The areas of ancient woodland are located to the north of the site over 1.8km away.

Habitat records held by SEWBReC show that most of the area within 2km is improved grassland with low biodiversity interest, or arable farming. Other habitats include extensive areas of bare ground to the south, semi-natural and planted broadleaved woodland, planted coniferous woodland, dense scrub, standing water and small areas of semi-improved neutral grassland and marshy grassland.

Designated sites

There are no nationally or internationally important protected sites within 2km of the site. There are three locally important Sites of Importance for Nature Conservation (SINCs). These are shown in Table 1 below

SINC	Approximate distance from site	Reasons for designation
Coed y Gellast	1.8km	Ancient woodland
Coed yr Arglwydd	1.9km	Ancient woodland
East Flemingston	1.9km	Woodland

Table 1: Local SINCs

Conclusion

Ecological Valuation

The hedgerow to the east of area 1 is of ecological importance **in the local area** as a potential foraging route for bats, including lesser horseshoe bats, and hibernation site for amphibians, including great crested newts.

The possibility of newts within the lower value grassland cannot be discounted. Although it is suboptimal as terrestrial habitat due to the lack of cover great crested newts have been encountered hibernating underground in similar areas (personal observation). For this reason, the grassland is considered ecologically important, **within the zone of influence** only.

No impacts to habitats or sites outside the development area are anticipated as both construction access and connection of the solar panels to the grid will be done using existing infrastructure.

Impact Assessment

The proposed works carry a risk of disturbance, killing or injury of great crested newts in their terrestrial phase, particularly those sheltering underground. This would be an offence under the Conservation of Habitats and Species Regulations 2017. Due to the small area concerned and the low quality of the habitat no significant impact on local newt populations is anticipated. This impact is considered ecologically **significant within the zone of influence** only.

Several bat species have been recorded in the area and can be assumed to overfly the site. A review of ecological research (Taylor et al 2019) found that there is no clear evidence of impacts of solar farms on bats, although there is some evidence fewer bats are recorded over solar farms than elsewhere, for unknown reasons. Given the small area concerned (1ha) and the higher value bat habitat elsewhere in the local area this is considered **not significant**. The most significant habitat feature for bats in the immediate vicinity is the hedge to the east of area 1, which is likely to be used as a

commuting root between bat roosts and feeding areas. Given the presence of lesser horseshoe bats in the area impacts to this hedge may be significant at up to a **county level**. There are no proposals to directly affect the hedge, but indirect impacts may include damage to roots from construction machinery resulting in the loss of sections, and lighting of the hedge during either construction or operation of the solar farm.

Recommendations

Great Crested Newt Mitigation Protocol

The proposed works carry a risk of disturbance, killing or injury of great crested newts in their terrestrial phase and the following protocol will be followed in each area to address this.

- All work must take between April and October place with temperatures over five degrees Celsius to avoid disturbance to hibernating newts.
- Before any work starts an ecologist will walk over the area to confirm no great crested newts or other wildlife are visible.
- Grass will then be cut to a height of approximately 15cm with the ecologist present to rescue any animals disturbed during the cutting.
- The area will be left overnight. This will allow animals sheltering underground to emerge and disperse naturally to nearby undisturbed areas.
- Another inspection will be carried out by the ecologist followed immediately by cutting the grass as short as possible.
- Areas where excavation is required will be identified and turf will be removed to a depth of no more than 20cm under supervision by the ecologist.
- The ecologist will then identify whether any exposed features are suitable for sheltering great crested newts, e.g. buried rubble or wood and these will be excavated carefully under supervision.
- When the ecologist is satisfied no features that could contain newts are present, they may leave the site and work can proceed without further ecological supervision.
- All grass shall be maintained below 10cm for the duration of construction work.
- At the end of work turf will be reinstated.
- Should any reptiles or amphibians be found during work they will be relocated by the ecologist to the artificial refugium (see enhancements). All work will be suspended while this takes place.
- If more than one great crested newt is found on site all work will cease until an appropriate licence has been obtained from Natural Resources Wales.

Mitigation in relation to bats

- No tracked or wheeled machinery, digging or storage of materials may be allowed within 1m of the hedge to the east of area 1
- The construction of the solar farm must take place in daylight only without the use of lighting.
- Any lighting installed as part of the operation of the site must use directional light fittings to avoid illuminating the hedge.

Enhancement

Due to the location of the proposed panels within an active industrial estate and the relatively small area of 1ha opportunities for habitat enhancement are limited. However, the low level of current

biodiversity interest does provide scope for a net biodiversity gain in a proportionate manner as set out below.

Artificial refugium for amphibians and reptiles.

An artificial hibernation/refuge site (Figure 2) will be built on the east side of area 1 adjacent to the site boundary.

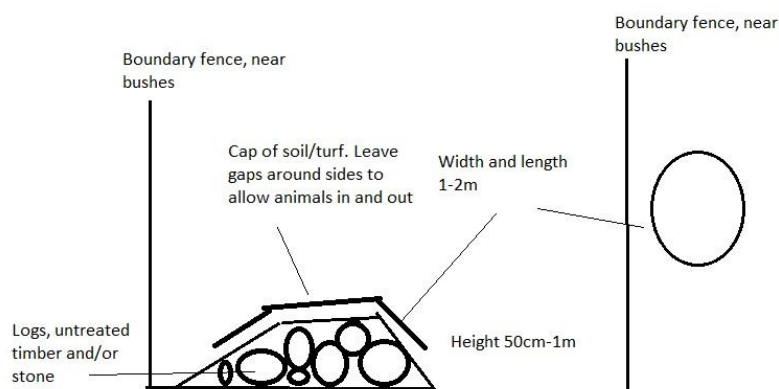


Figure 2: Artificial refuge site for reptiles and amphibians

Wildflower seeding

Areas around the panels will be over seeded with a mix of native wildflowers suitable for lowland grassland in south Wales.

References

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

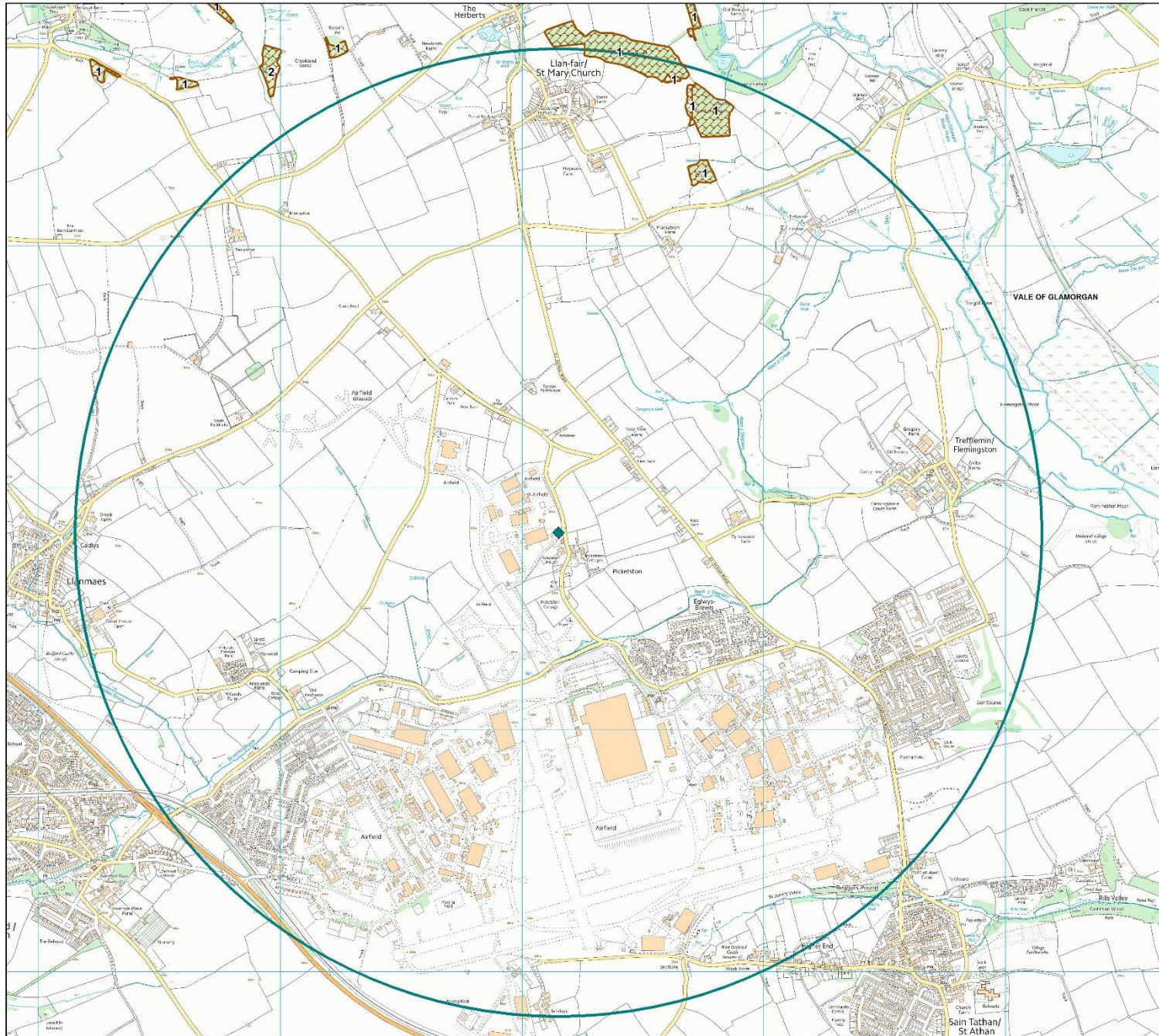
CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winches

Joint Nature Conservation Committee (2016) Handbook for Phase 1 habitat survey- a technique for environmental audit

Taylor, R., Conway, J., Gabb, O. & Gillespie, J. (2019). Potential ecological impacts of ground-mounted photovoltaic solar panels. [Online] Accessed: 24/10/19







Appendix 1: Copies of maps provided by SEWBREC (Not to scale in this report)



**BIODIVERSITY INFORMATION
SEARCH (SPECIES AND
DESIGNATED SITES):**

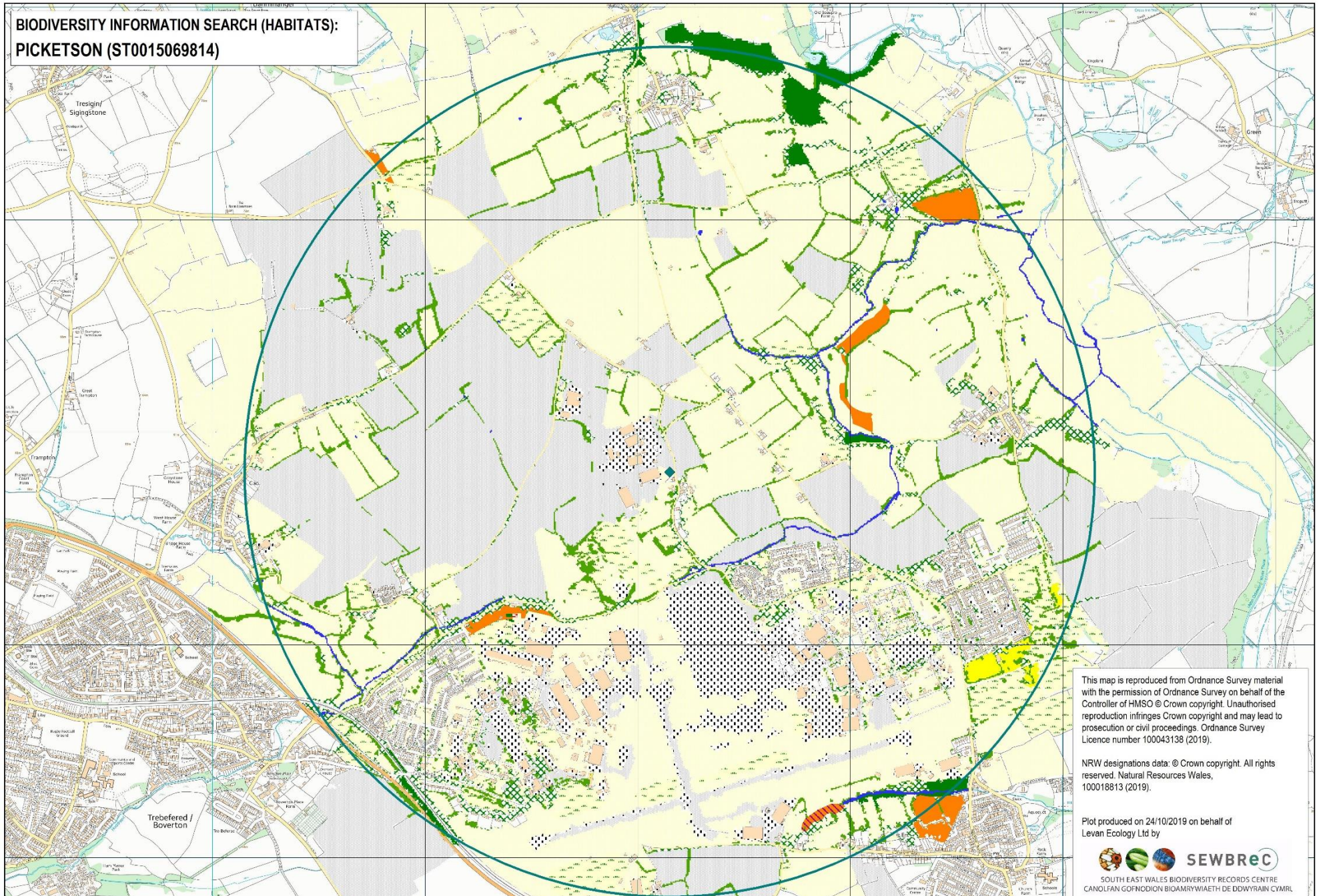
**PICKETSON
ST0015069814**

-  Centre of Search Area
-  2km Search Buffer
-  Ancient Woodland
1: ASNW; 2: RAWs; 3: PAWS; 4: AWSU
See report for full descriptions
-  Unitary Authority Boundary

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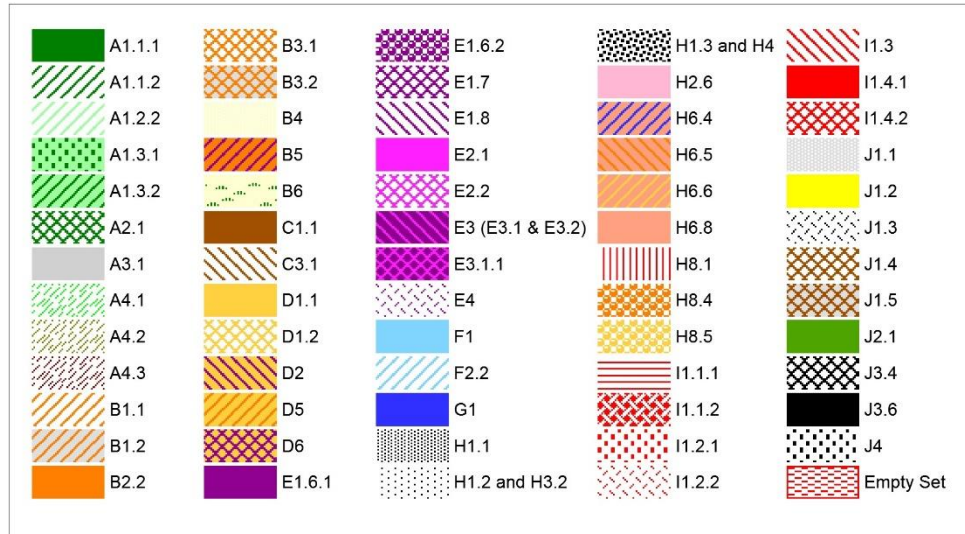


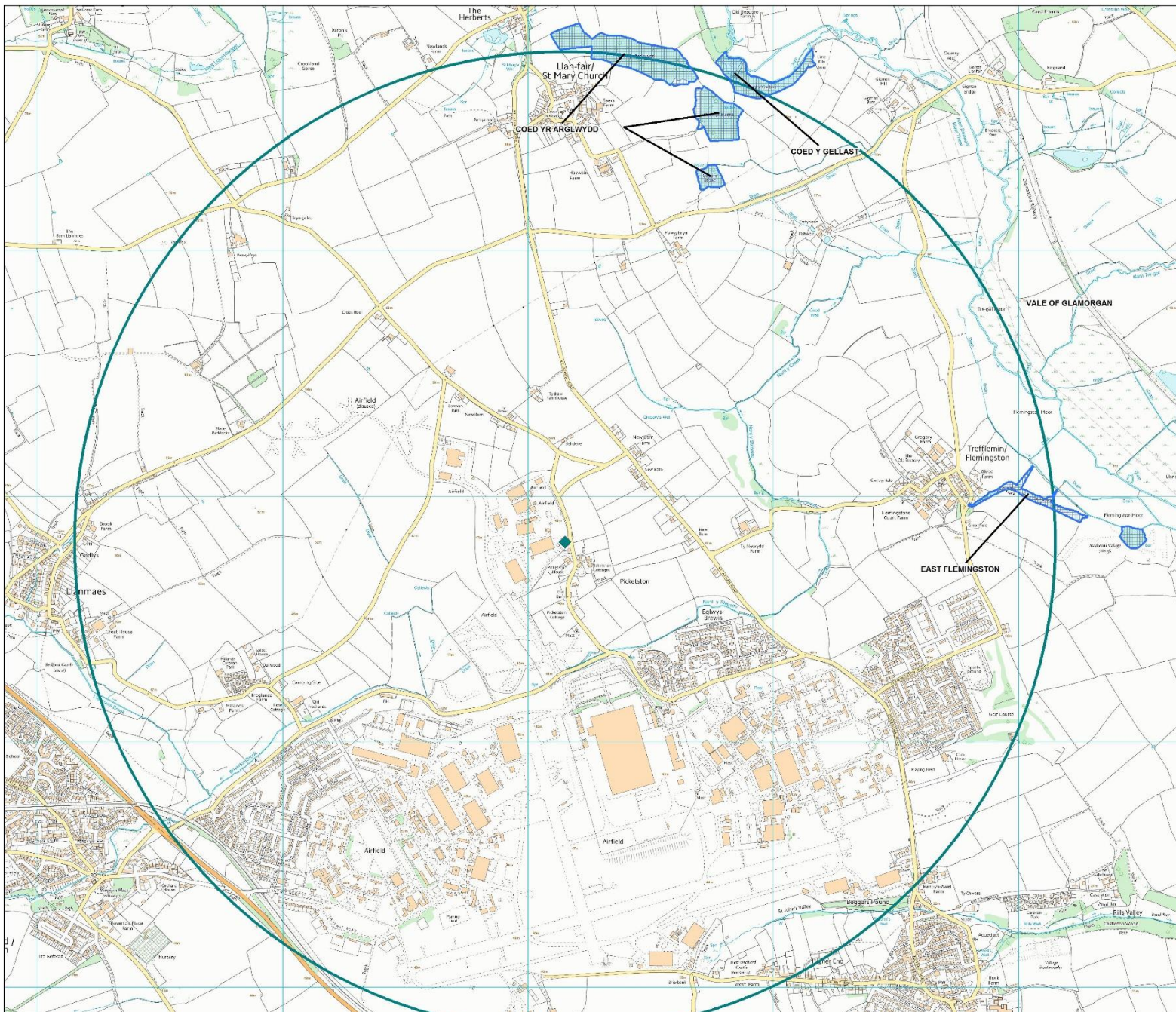
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Key for Remote Sensed Phase I Habitat Plots:





**BIODIVERSITY INFORMATION
SEARCH (SPECIES AND
DESIGNATED SITES):**

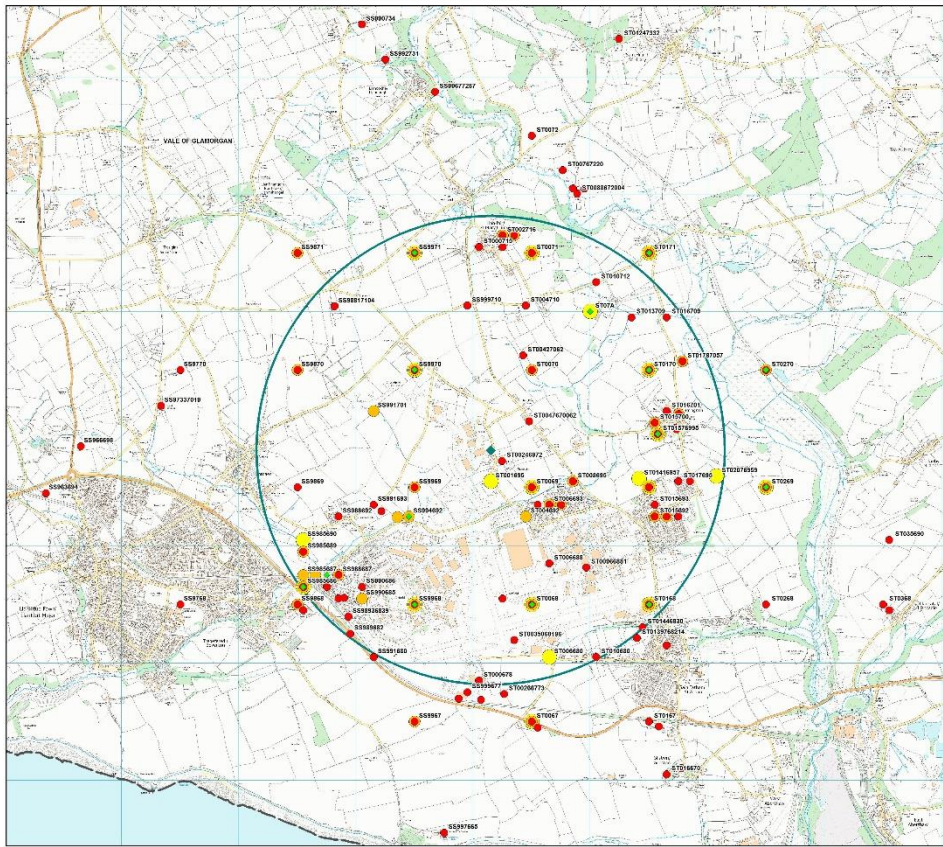
**PICKETSON
ST0015069814**

-  Centre of Search Area
-  2km Search Buffer
-  Site of Importance for Nature Conservation
-  Unitary Authority Boundary

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BIODIVERSITY INFORMATION SEARCH (SPECIES AND DESIGNATED SITES):

**PICKETSON
ST0015069814**

- Centre of Search Area
- 2km Search Buffer
- Priority and Protected Species
- Other Species of Conservation Concern
- Species of Local Conservation Concern
- Invasive Non-Natives
- Unitary Authority Boundary

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