

Annex E

Terrestrial Ecology

E1 ***EVALUATION CRITERIA***

E1.1 ***GENERAL***

The significance of ecological effects is assessed according to the following criteria:

- The magnitude of the effect, as determined by its intensity and by its extent in space and time.
- The value, in nature conservation and ecological contexts, of affected receptors including species, populations, communities, habitats, landscapes and ecosystems.

Significance is determined by the interaction of these primary criteria, being high for large effects on receptors of high value, and lower for smaller effects on receptors of lower value.

In this assessment significant effects are additionally defined as those of sufficient importance to warrant consideration of whether mitigation is feasible in the context of the particular proposals.

E1.2 ***BIODIVERSITY***

Significance is deemed to attach to any effect that clearly results in more than local loss of biodiversity, or any effect that involves the loss of irreplaceable habitat, especially ancient countryside.

High importance attaches to sites and areas having designation by reason of their importance for the maintenance of biodiversity. None of the recognised categories and designations (such as Biosphere Reserves under the UNESCO Man and Biosphere Programme or Sites on the Natural List of the World Heritage Convention under the Convention Concerning the Protection of the World's Cultural and Natural Heritage 1972 *etc*) is relevant to this assessment.

E1.3 ***INDIVIDUAL SPECIES***

Effects on individual species are primarily assessed by combining the following considerations.

- The extent of likely changes in population sizes.
- The rarity of species.
- The background of environmental impact on species from sources other than those under consideration in this assessment, including recent

historical changes in population sizes, and the extent to which they are currently threatened.

High importance is attached to species that are the subject of statutory protection or non-statutory designation for rarity or vulnerability. Protection categories and designations relevant to this assessment include the following.

- Species protected under the *Conservation (Natural Habitats, etc) Regulations 1994* (SI No 2716) (or other instruments giving effect to the *EC Habitats and Species Directive (92/43/EEC)*).
- Species protected under the *Wildlife and Countryside Act 1981* and amendments.
- Species included by the World Conservation Union (IUCN) ⁽¹⁾ on the Red Data List for Great Britain.
- Species included in British Red Data Books and subsequent reviews (Wigginton (1999) and RSPB *et al* (1996)).
- Species native to Great Britain and considered by the World Conservation Monitoring Centre to be threatened at world level and for birds also at a European level (Tucker & Heath, 1994).
- Species considered by Joint Nature Conservation Committee (JNCC) to be endemic to Great Britain.
- Nationally Rare plant species defined by JNCC as those occurring in one to fifteen ten kilometre grid squares in a Nature Conservancy Council (NCC) region, and having no higher category of designation (Nature Conservancy Council, 1989).
- Species listed as Nationally Scarce by JNCC ('pink data species') ⁽³⁾. For birds Fuller, (1980) suggests nationally rare species are those with a British breeding population of between 1 and 1000 pairs. Batten *et al* (1990) define a rare breeding bird species as less than 300 pairs. For animals, national populations are detailed in various publications for example *Atlas of Mammals in Britain* (Arnold, 1993), *Checklist of Protected British Species* (Betts, 1998) and also national groups may provide information on population sizes eg The Mammal Society, North Wales Wildlife Trust *etc*.

Importance may also be attached to regionally and locally rare species, especially those in the following categories:

(1) The criteria used by the World Conservation Union (formerly the International Union for the Conservation of Nature and Natural Resources (IUCN) for assigning species to Red Data categories are widely used for the assessment of rare species in general; full details are given in The World Conservation Union (1994). Besides rarity, other important considerations relate to key species in ecological communities, economically important species, species that are perceived to be exceptionally attractive, and species having special cultural significance.

(2) Vascular plants occurring in sixteen to one hundred 10 kilometre grid squares (Stewart, Pearman & Preston (1994), NCC (1989)).

- County Rarities defined by JNCC as plant species occurring in three or fewer localities (not exceeding 1-km square) in a county or equivalent administrative unit.
- For birds, regional scarcity can be assessed using publications such as *The New Atlas of Breeding Birds in Britain and Ireland: 1988-1991* (Gibbons *et al*, 1993).
- At a regional level specific studies provide information for other animals for example, *Otter Survey of Wales 1991* (Andrews, Howell & Johnson 1993).
- At the county level, information is typically available from statutory agencies and local wildlife trusts and other conservation organisations (eg local bird clubs).

Increased importance may attach to local genetic varieties or unusually restricted populations of nationally common species. Greatly reduced significance attaches to alien species (including UK natives that are alien to the district), introduced species (eg garden escapes) and casual ruderals (as distinct from members of ruderal communities indigenous to the district).

Populations of individual species may be deemed important where they exceed certain threshold sizes (usually some percentage of the total world or European population). For example threshold levels for international and national importance for wintering waterfowl bird populations are given in Musgrove *et al* (2001). Trends in British European bird populations are provided in for example Marchant *et al* (1990); Gibbons *et al* (1993) and Tucker & Heath (1994).

E1.4 SCIENTIFIC AND GENERAL WILDLIFE INTEREST OF SITES

Sites are assessed according to very well established criteria developed by the Nature Conservancy Council, initially for the selection of a national series of nature reserves (Ratcliffe, 1977) and subsequently modified for Site of Special Scientific Interest (SSSI) selection (Nature Conservancy Council, 1989). These include habitat and population size, diversity, naturalness, rarity, fragility and typicalness as primary criteria, and position in an ecological/geographical unit, potential value, and intrinsic appeal as secondary criteria. Further details of these and related criteria are given in Usher (1986) and Nature Conservancy Council (1989) and more specifically for birds in Fuller (1980, 1982).

In addition the following considerations are specifically taken into account in assessing the scientific value of sites in the EA process:

- The presence of species assemblages, communities and habitat types requiring conservation in their own right, including those listed in *Annex I*

of the *EC Habitats and Species Directive (92/43/EEC)*, examples of rare National Vegetation Classification (NVC) communities and fine examples of other NVC communities having importance for reasons parallel to those discussed in connection with individual species.

- The extent to which habitats represented in the site may have declined (in extent or quality) in the countryside at large and the extent to which they continue to be threatened with such decline.

Very high importance is attached to sites that are the subject of statutory protection and high importance to non-statutory designation for their nature conservation importance. Protection categories and designations relevant to this ES include the following:

- Special Areas of Conservation (SACs or Natura 2000 sites) recommended to the European Commission by the British Government, and other possible candidate SACs identified to the Government by CCW through JNCC;
- Special Protection Areas (SPAs), designated under the *EC Wild Birds Directive (79/409/EEC)*;
- Ramsar Sites, designated under the *Convention on Wetlands of International Importance, 1971*;
- Sites of Special Scientific Interest (SSSIs) under the *Wildlife and Countryside Act 1981* and amendments;
- National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) designated under *The National Parks and Access to the Countryside Act, 1949*;
- non-statutory nature reserves run by North Wales Wildlife Trust and RSPB;
- sites designated for their nature conservation importance by local authorities and mentioned in Structure and Local Plans on that basis.

E1.5

ANCIENT COUNTRYSIDE

Special importance attaches to ancient semi-natural habitats that owe their character to long-term freedom from major change and usually to the long continuance of traditional kinds of land management as well, *eg* coppice woodlands, water meadows, lowland heaths, chalk downlands. These habitats cannot be recreated quickly (if at all) or transplanted and neither can the special assemblages of plants and animals they support (including species not found elsewhere). Most habitats in this category have suffered large-scale reductions in the post-war period due mainly to agricultural intensification. They are discussed in Rackham (1986). There are no widely accepted rules for quantifying the significance of ancient countryside loss, but any such loss would be deemed significant in the context of this assessment.

E1.6

AMENITY

Consideration is given to the amenity value of sites for purposes connected with the observation and study of wildlife, and for the quiet enjoyment of the natural environment (as distinct from outdoor recreation. The criteria relate to many issues including the following:

- the intrinsic appeal and wildlife content of the site (common and attractive species may be as important as rare species in this context);
- the potential of the site for educational use, especially by schools (habitat robustness may be important in this context);
- whether the site has existing nature conservation use, or potential for such use (having regard to matters such as ownership, imperatives for conservation management, access, ease of movement within the site, and public safety);
- the local demand for amenity sites, having regard to the location of the site relative to areas of population and areas of ecological deficiency.

These criteria were largely developed by the urban wildlife movement, but the need for amenity sites in some rural areas is increasingly recognised. Further details of amenity considerations relevant to the assessment are given in Greater London Council (1985), Greater Manchester Council (1986), Usher (1986), Johnston (1990) and Goldsmith (1991).

E1.7

LANDSCAPE ECOLOGY

Consideration is given to effects involving the landscape ecology ⁽¹⁾ of potentially affected areas. The criteria relate to many issues including the following:

- the severance or other impoverishment of wildlife corridors in intensively farmed landscapes and urban areas;
- fragmentation of areas of natural or semi-natural habitat;
- reductions in the sizes of natural or semi-natural areas below estimated Minimum Critical Areas (MCAs);
- disruption or other alteration of patterns of habitat connectivity across landscape-scale habitat mosaics, especially where networks of linear habitats (*eg* hedges, road verges) are involved.

(1) The interaction between the structure and distribution of landscape elements and ecology.

- Andrews E, Howell P & Johnson K (1993) *The Otter Survey of Wales 1991* Vincent Wildlife Trust.
- Arnold H R (1993) *Atlas of Mammals in Britain*. ITE/JNCC HMSO.
- Batten L A, Bibby C J, Clement P, Elliott G D and Porter R F (1990) *Red Data Birds of Britain*, Nature Conservancy Council and Royal Society For The Protection of Birds, T & A D Poyser, London.
- Betts C J (1998) *Checklist of Protected British Species*. Christopher Betts Environmental Biology, Monkwood Green, Worcester, UK.
- Fuller R J (1980) A Method for Assessing Ornithological Importance of Sites for Nature Conservation, *Biological Conservation*, **17**, pp.229-239.
- Fuller R J (1982) *Bird Habitats in Britain* BTO/NCC T & A D Poyser.
- Gibbons D W, Reid J B & Chapman R A (1993) *The New Atlas of Breeding Birds in Britain and Ireland: 1988-91*, British Trust for Ornithology / Scottish Ornithologists' Club / Irish Wildbird Conservancy, T & A D Poyser.
- Goldsmith F B (1991) *The Selection of Protected Areas*, In: *The Scientific Management of Temperate Communities for Conservation*, edited by I F Spellerberg, F B Goldsmith & M G Morris, Blackwell, Oxford.
- Greater London Council (1985) *Nature Conservation Guidelines for London*, Ecology Handbook 3, Greater London Council.
- Greater Manchester Council (1986) *A Nature Conservation Strategy for Greater Manchester*, Greater Manchester Council.
- Johnston J (1990) *Nature Areas for City People*, London Ecology Unit, Camden.
- Marchant J H, Hudson R, Carter S P & Whittington P (1990) *Population Trends in British Breeding Birds*, British Trust for Ornithology.
- Nature Conservancy Council (1989) *Guidelines for Selection of Biological SSSIs*, Nature Conservancy Council, Peterborough. (Reprinted with minor amendments in 1995, revised edition 1998).
- Musgrove A, Pollit M, Hall C, Hearn R, Holloway S, Marshall P, Robinson J & Cranswick P (2001) *The Wetland Bird Survey 1999-2000 Wildfowl and Wader Counts*, British Trust for Ornithology, The Wildfowl & Wetlands Trust, Royal Society for the Protection of Birds and Joint Nature Conservation Committee.
- Rackham O (1986) *The History of the Countryside*, Dent, London.

Ratcliffe D A (1977) *A Nature Conservation Review*, Cambridge University Press, Cambridge.

RSPB/BirdLife International/WWT/Game Conservancy Trust/BTO/Hawk and Owl Trust/Wildlife Trusts/National Trust (1996) *Birds of Conservation Concern in the UK, Channel Islands and Isle of Man*, RSPB.

Stewart A, Pearman D A & Preston C D (1994) *Scarce Plants in Britain* JNCC, Peterborough.

The World Conservation Union (1994) *IUCN Red List Categories*, International Union for the Conservation of Nature.

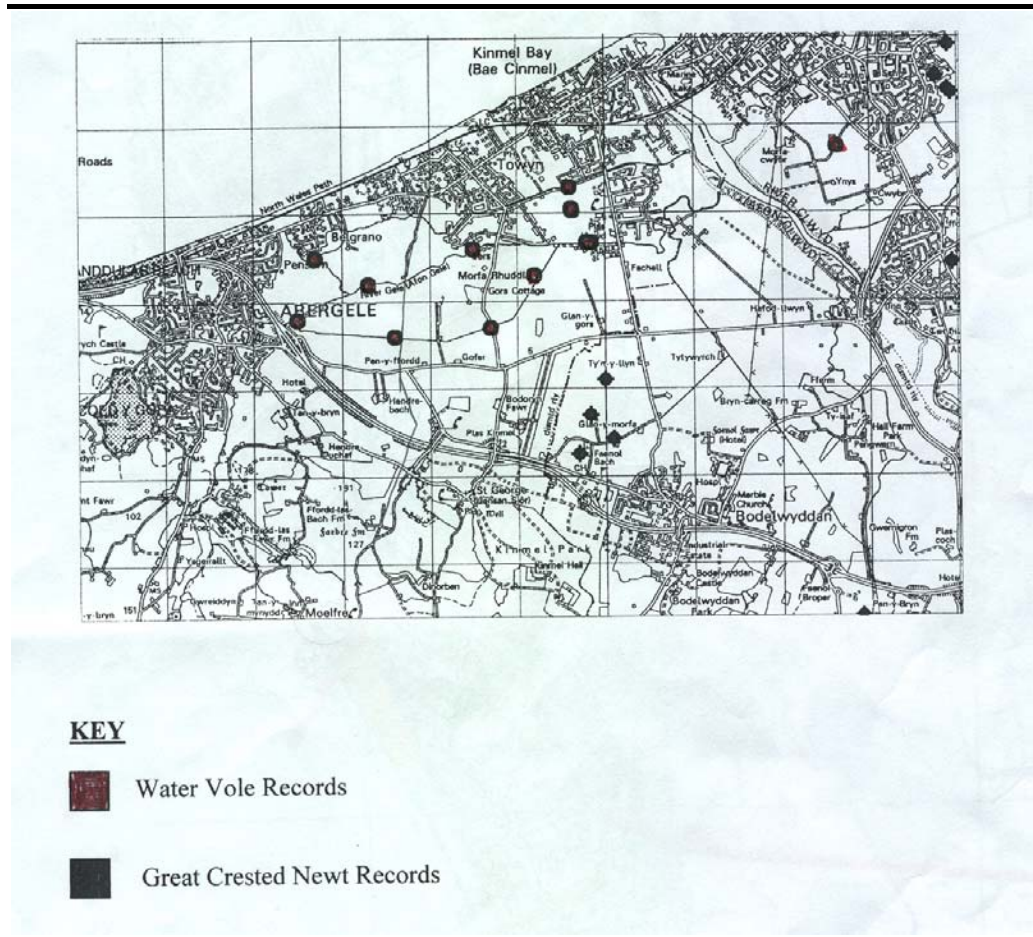
Tucker G M & Heath M F (1994) *Birds in Europe: Their Conservation Status*, *BirdLife Conservation Series No 3*, BirdLife International.

Usher M B (1986) *Wildlife Conservation Evaluation*, Chapman & Hall, London.

Wigginton M J (1999) *British Red Data Books 1 Vascular Plants*, JNCC, Peterborough.

E2.1 HISTORICAL WATER VOLE AND GREAT CRESTED NEWT RECORDS

Figure E2.1 Historical Records of Water Vole and Great Crested Newt (Source: Countryside Council for Wales, 1998)



**E2.2 FINDINGS OF THE WATER VOLE SURVEYS (DECEMBER 2001 AND FEBRUARY 2002)
– COUSINS ENVIRONMENTAL CONSULTANTS LTD/ CHESHIRE ECOLOGICAL SERVICES**

The following sections contain the findings of the water vole and great crested newt habitat appraisal (see also *Figures E2.2 – E2.5*)

E2.2.1 Water Vole Survey Findings (December 2001)

Western Option

D1. This ditch could not be located and it is thought that it may have been culverted.

D2. This drainage ditch is approximately 1000 metres long and runs generally north to south. A short section of the northern end of this ditch runs in an east-west direction alongside a lay-by on the A548 Towyn Road (P1). Water vole burrows (P2) and spoil heaps were observed on this east-west section up to the first footbridge. The ditch then runs from north to south alongside a track (P3), a large number of water vole burrows were observed on both banks of this section up to the confluence with D3. There were also a small amount of water vole footprints observed and some feeding remains. A number of burrows were identified as being excavated by brown rats (*Rattus norvegicus*).

Spoil and back-filled burrows were also observed along the next one hundred metres, south of the D4 main drain. At this point another ditch ran parallel to the west of D2, this ditch was numbered D2a. These two ditches ran on either side of what appeared to have been the remains of an old drovers road (P4). Four water vole burrows were observed where the ditch numbered D6 joins ditch D2a, two of these burrows were in the middle of the flooded drovers road.

Signs of wood mouse (*Apodemus sylvaticus*), common shrew (*Sorex araneus*), bank vole (*Clethrionomys glareolus*) and brown rat (*Rattus norvegicus*) were also observed along these ditch sections.

The ditch-side hedges and banks alongside D2, and D2a had recently been cut right back by a flail, with all the debris being left in-situ, and this activity had resulted in some damage to the banks and water voles signs being covered or destroyed.

D3. This ditch runs into ditch D2 from the east from behind the camping site (P5).

No water vole activity was observed, only bank vole burrows and gnawings.

D4. This main drainage ditch runs from west to east and is traversed by a footbridge (P5 & P6). Water vole burrows were observed in good numbers on both sides of the ditch (P7 & P8), some of which appeared to be new water vole burrows with a small amount of feeding remains observed close to the entrances of two of these burrows. Brown rat burrows were observed on the

north bank behind the Ty Mawr Holiday Park site (P9). Once again, severe dredging had recently taken place, which had served to mask signs of water vole activity.

D5. This ditch joined ditch D2 on the eastern side and is crossed by a public footpath (P10). No water vole signs were found and the banks of this ditch were poached by sheep.

D6. Water vole activity was observed at the junction of D6 & D2 (P11). Bank vole burrows and gnawings were also observed along this ditch.

D7, D8 & D9. No signs of water vole activity were found in these ditches (P12, P13 & P14).

D10 River Gele, Afon Gels. This small, canalised river runs from west to east across the route of the proposed power line easement. A small number of water vole burrows were found east and west of the easement (P15). The vegetation along both banks of the river had been almost entirely scraped off during dredging works, this has left water voles open to predation as well as significantly reducing the voles' food supply immediately prior to winter.

D11. No signs of water vole activity were observed along this section of ditch. Much of the ditch-banks had been intensively grazed and poached by sheep (P 16).

D12. No signs of water vole activity were observed along this section of ditch (P17). A small amount of bank vole activity was observed here.

D13. No signs of water vole activity were observed along this section of ditch (P18 & P19). Brown rat burrows were observed here, along with some wood mouse and common shrew activity.

Main drain. Water vole burrows were observed along this drain on both sides of the proposed power-line easement (P20). Once again, severe dredging practices had shaved much of the vegetation from the banks leaving the voles exposed to predation.

D13b. An old water vole burrow system was observed at the northern end of this ditch, signs of wood mouse activity were also found (P21). It was noted that the southern section of D13b, immediately before the road, is perfect habitat for water voles with a good mixture of vegetation and suitable banks for the water voles to burrow into (P22). No vole activity was observed here at the time of survey but the habitat may well tempt voles to colonise in the future.

D14. A mammal run was found within the rush and flote-grass on the northern side of this ditch, also some feeding remains were found, indicating some possible, but limited, water vole activity.

Figure E2.2 Water Vole Survey Findings: Northern Part of Survey Area (December 2001)

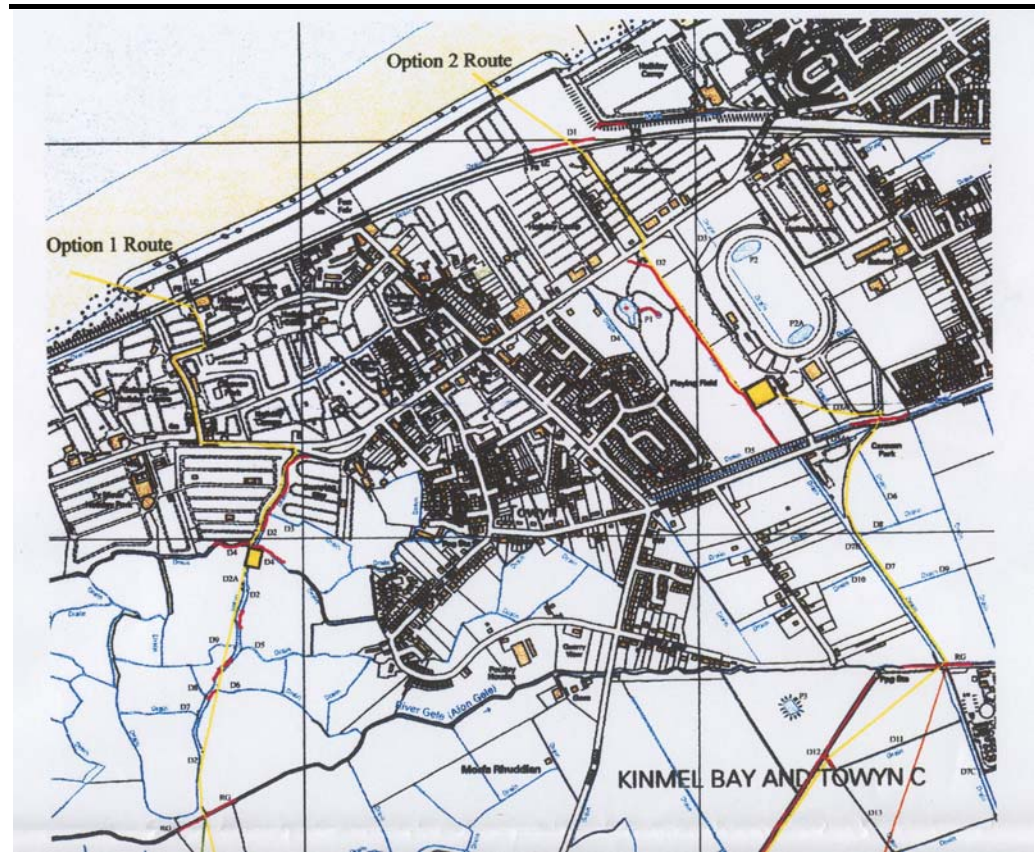
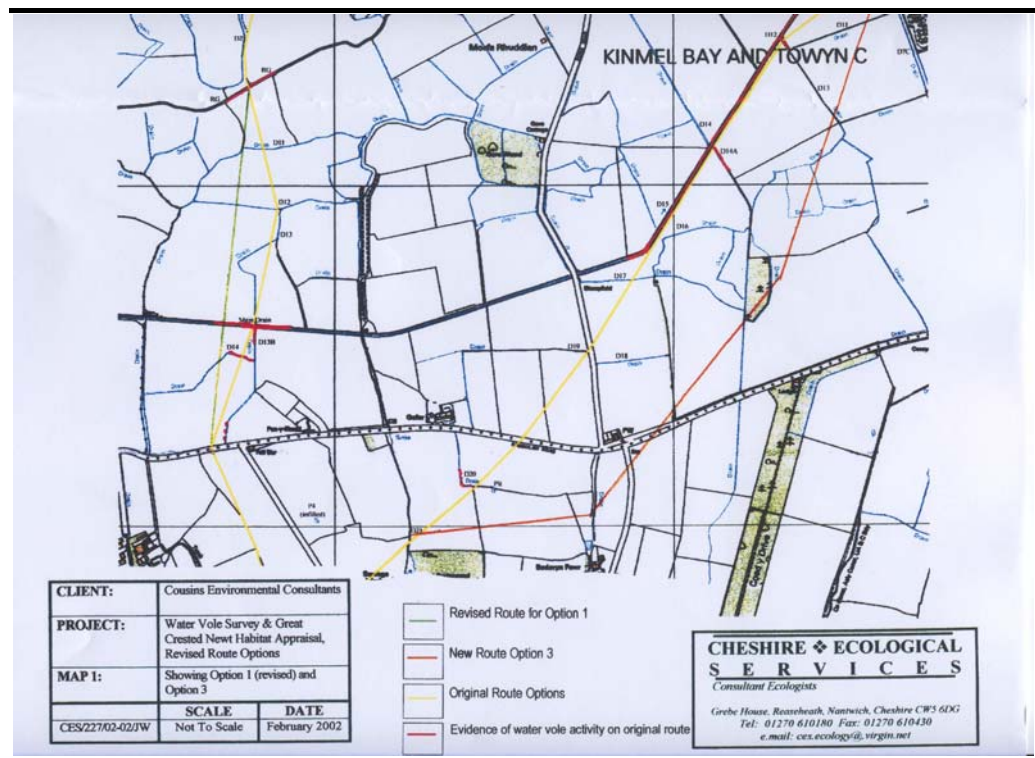


Figure E2.3 Water Vole Survey Findings: Southern Part of Survey Area (December 2001)



Revised Western Route Option

D13B. This ditch appeared to have undergone significant changes since the last survey conducted in December 2001. It was observed from the roadside verge that all previous signs of water vole activity from the previous survey appeared to have been destroyed, a result of the presence of a large flock of sheep, which have extensively poached the ditch banks.

D14. This ditch flows west to east. There were two water vole burrows and five bank vole burrows observed along this ditch. One of the bank vole burrows was found to have droppings in the entrance along with feeding remains.

Main Drain. This drain flows west to east. A small number of water vole burrows were observed in this drain, however, the water level in the drain at the time of the survey was very high, and it is therefore possible some mammal activity signs were obscured from sight.

D12. The ditch banks and field had been intensively grazed and poached by sheep. No signs of water vole activity were observed along the length of this ditch at the time of the survey.

D11. There were 5 water vole burrows observed in the ditch at the power line crossing point.

Figure E2.4 Water Vole Survey Findings: Northern Part of Survey Area (February 2002)

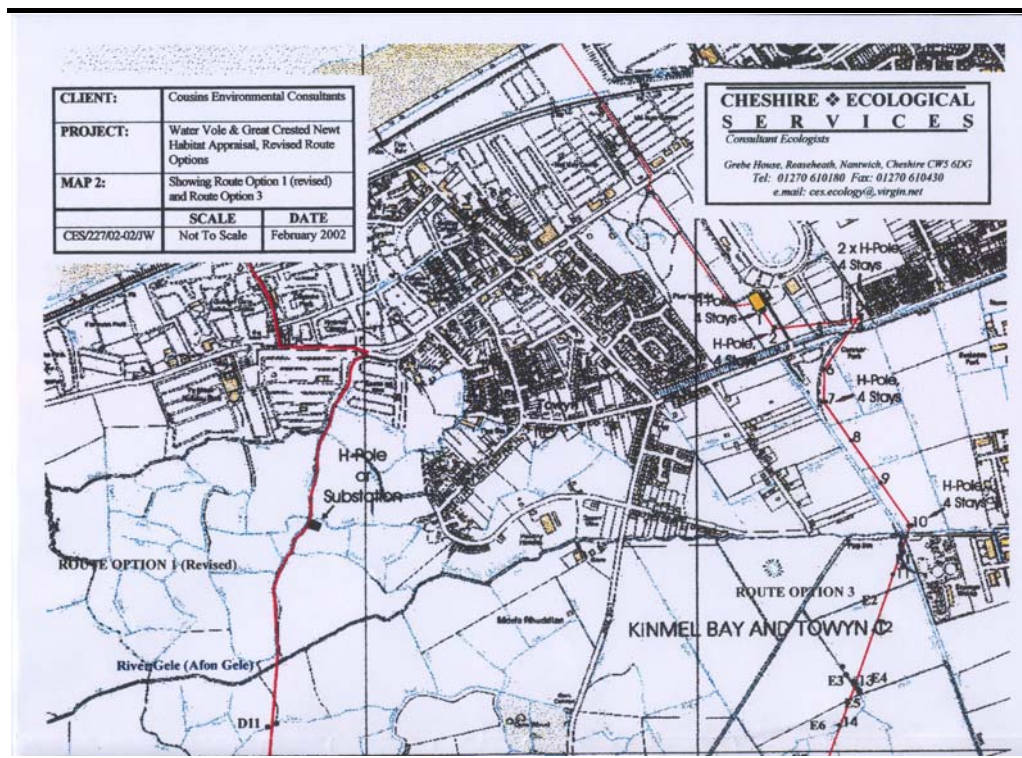


Figure E2.5 Water Vole Survey Findings: Southern Part of Survey Area (February 2002)

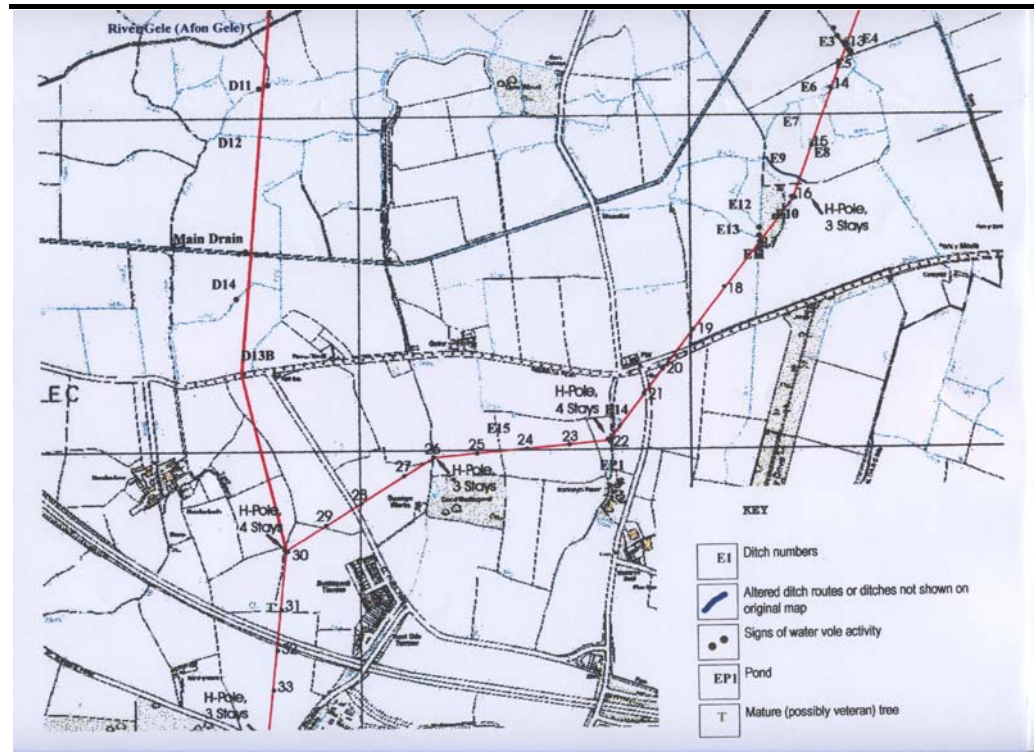


Table E3.1 *Clwyd Estuary Waterfowl Populations: Mean Annual Peak Over the Five Winters 1995/96 -1999/2000.*

<i>Species</i>	<i>Five-year mean peak count</i>	<i>Threshold for GB importance</i>	<i>Threshold for International importance</i>	<i>Importance</i>
Cormorant	132	130	1200	National
Shelduck	104	750	3000	Regional
Wigeon	368	2800	12500	Regional
Mallard	294	5000	20000	Regional
Scaup	54	110	3100	Regional
Common Scoter	1401	275	16000	National
Red-breasted Merganser	15	100	1250	Regional
Oystercatcher	330	3600	9000	Regional
Ringed Plover	55	290	500	Regional
Lapwing	1576	20000	20000	Regional
Sanderling	37	230	1000	Regional
Curlew	235	1200	3500	Regional
Redshank	219	1100	1500	Regional

Table E3.2 *Colwyn Bay Waterfowl Populations: Mean Annual Peak Over the Five Winters 1995/96 -1999/2000.*

<i>Species</i>	<i>Five-year mean peak count</i>	<i>% in sectors within 2km</i>	<i>Threshold for GB importance</i>	<i>Threshold for International importance</i>	<i>Importance</i>
Cormorant	32	25%	130	1200	Regional
Common Scoter	1395	24%	275	16000	National
Oystercatcher	628	15%	3600	9000	Regional
Redshank	114	33%	1100	1500	Regional
Turnstone	132	12%	640	700	Regional

Table E3.3 Breeding Bird Species Found in 10 x 10 km Squares along the Cable/Overhead Line Route(Source: Gibbons et al, 1993).

	Species
1	Grey heron
2	Mute swan
3	Canada goose
4	Shelduck
5	Mallard
6	Tufted duck
7	Sparrowhawk
8	Buzzard
9	Kestrel
10	Peregrine
11	Grey partridge
12	Quail
13	Pheasant
14	Water rail
15	Moorhen
16	Coot
17	Oystercatcher
18	Ringed plover
19	Lapwing
20	Woodcock
21	Curlew
22	Redshank
23	Common sandpiper
24	Feral pigeon
25	Stock dove
26	Wood pigeon
27	Collared dove
28	Turtle dove
29	Cuckoo
30	Barn owl
31	Little owl
32	Tawny owl
33	Swift
34	Nightjar
35	Kingfisher
36	Green woodpecker
37	Great spotted woodpecker
38	Lesser spotted woodpecker
39	Skylark
40	Sand martin
41	Swallow
42	House martin
43	Tree pipit
44	Meadow pipit
45	Yellow wagtail
46	Pied wagtail
47	Grey wagtail
48	Dipper
49	Wren
50	Dunnock
51	Robin

52	Redstart
53	Whinchat
54	Stonechat
55	Wheatear
56	Blackbird
57	Song thrush
58	Mistle thrush
59	Grasshopper warbler
60	Sedge warbler
61	Whitethroat
62	Garden warbler
63	Blackcap
64	Wood warbler
65	Chiffchaf
66	Willow warbler
67	Goldcrest
68	Spotted flycatcher
69	Pied flycatcher
70	Long tailed tit
71	Marsh tit
72	Coal tit
73	Blue tit
74	Great tit
75	Nuthatch
76	Tree creeper
77	Jay
78	Magpie
79	Jackdaw
80	Rook
81	Carrion crow
82	Raven
83	Starling
84	House sparrow
85	Tree sparrow
86	Chaffinch
87	Greenfinch
88	Goldfinch
89	Linnet
90	Redpoll
91	Bullfinch
92	Yellowhammer
93	Reed bunting

Additional species with no suitable habitat on grid connection route:

1	Fulmar
2	Goldeneye
3	Goosander
4	Goshawk
5	Merlin

Table E3.4 Breeding Bird Species of Conservation Importance in the Overhead line Corridor

<i>Species</i>	<i>Main habitat</i>	<i>Schedule 1 (1981 W&C Act)</i>	<i>Annex 1 (EU Birds Directive)</i>	<i>UK BAP Priority Species</i>	<i>BoCC listed species</i>	<i>Sensitivity</i>
Shelduck	S				Amber	Low
Kestrel	F				Amber	Low
Peregrine	Q	✓	✓		Amber	Medium
Quail	F	✓			Red	Medium
Water rail	Wt				Amber	Low
Oystercatcher	S, F				Amber	Low
Ringed plover	S				Amber	Low
Lapwing	F				Amber	Low
Woodcock	W				Amber	Low
Curlew	F				Amber	Low
Redshank	F				Amber	Low
Stock dove	W				Amber	Low
Turtle dove	W			✓	Red	Medium
Barn owl	F	✓			Amber	Medium
Kingfisher	Wt	✓	✓		Amber	Medium
Green woodpecker	W				Amber	Low
Skylark	F			✓	Red	Medium
Sand martin	F				Amber	Low
Swallow	F				Amber	Low
Dunnock	W				Amber	Low
Redstart	W				Amber	Low
Stonechat	F				Amber	Low
Blackbird	W, F				Amber	Low
Song thrush	W			✓	Red	Medium
Spotted flycatcher	W			✓	Red	Medium
Marsh tit	W				Amber	Low
Starling	F, U				Amber	Low
Tree sparrow	F			✓	Red	Medium
Goldfinch	F				Amber	Low
Linnet	F			✓	Red	Medium
Bullfinch	W			✓	Red	Medium
Reed bunting	Wt, F			✓	Red	Medium





















Habitat codes: S=shore, W=woodland, F=farmland, Wt=wetland, U=urban

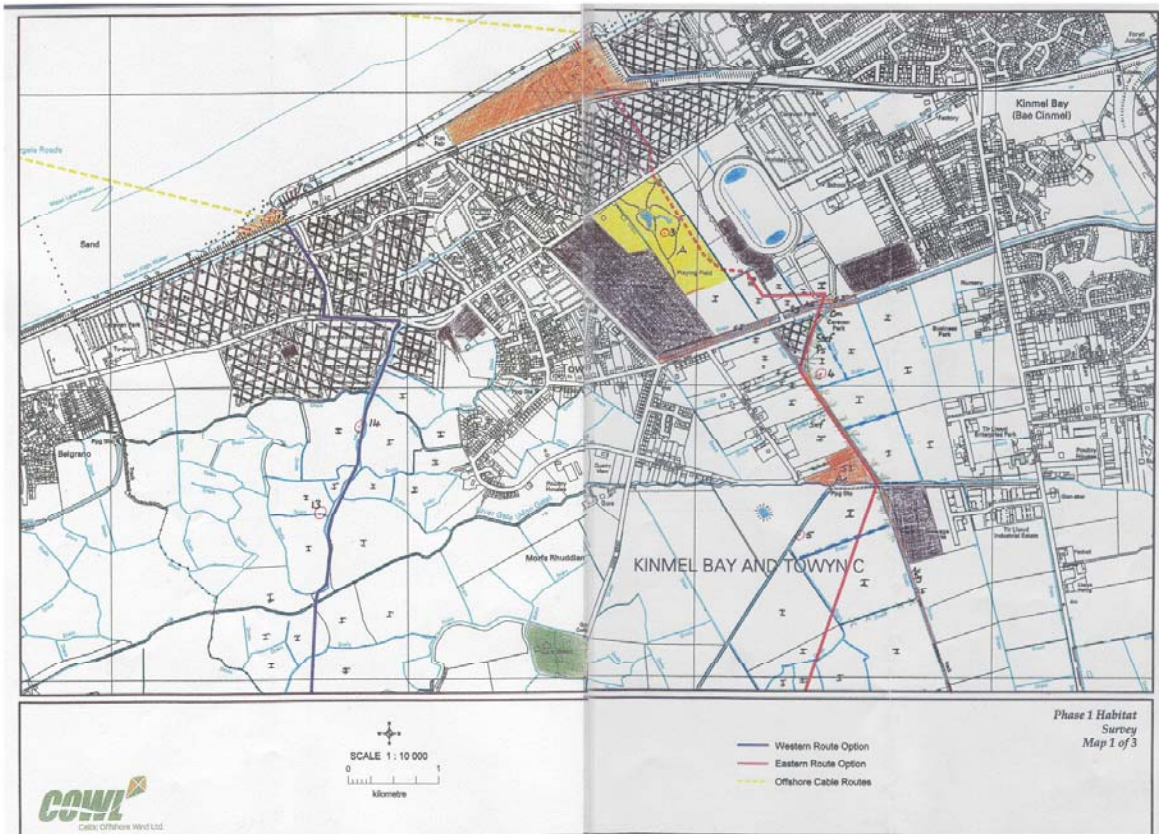
E4 PHASE 1 SURVEY (MAPS AND TARGET NOTES)

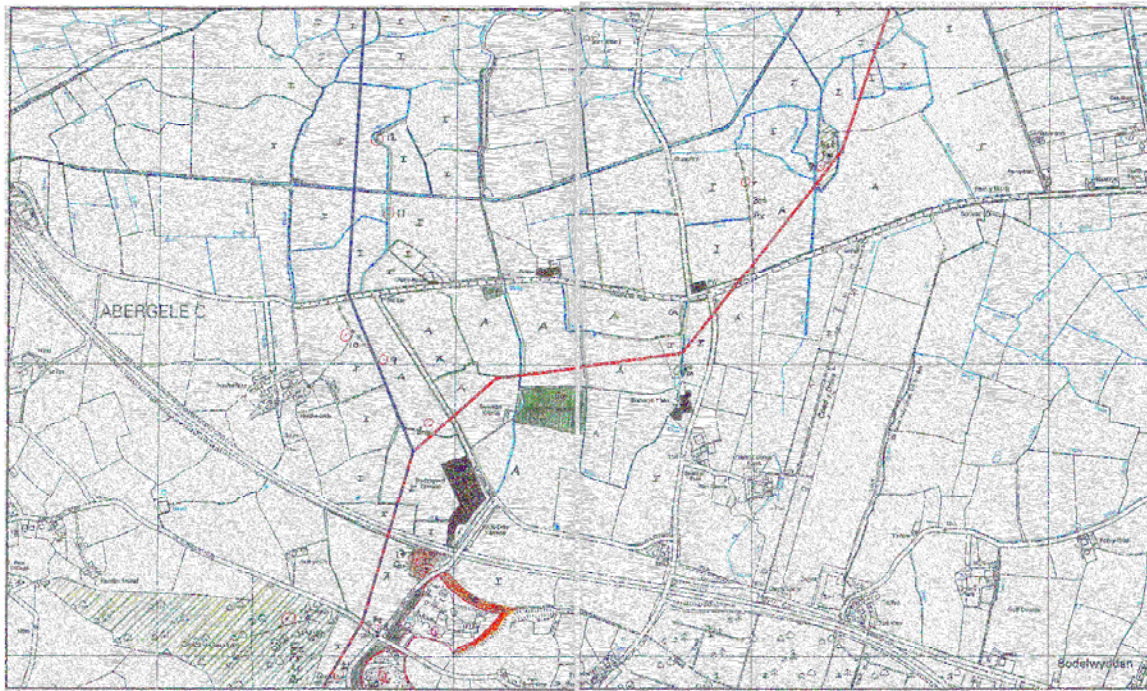
E4.1 PHASE 1 HABITAT SURVEY MAPS

The habitat types recorded along the route corridor are shown in *Figures 4.1* and *4.2* respectively. Where relevant target notes have been made for particular habitat types or to record species records. Their locations are shown on the figures and the notes are contained in *Section 4.2* below.

PHASE I HABITAT MAP – HABITAT MAPPING CODES


	Running/standing water		Dry ditch
	Broadleaved semi-natural woodland		Mixed plantation
	Coniferous plantation		Scattered scrub
	Intact hedge – species-poor		Defunct hedge
	Hedge & trees – native species rich		Marshy grassland
	Improved grassland		Dune grassland
	Neutral grassland – semi-improved		Arable
	Amenity grassland		Caravan site
	Sea wall (artificial material)		Buildings
	Quarry		Target note






 SCALE 1:10 000

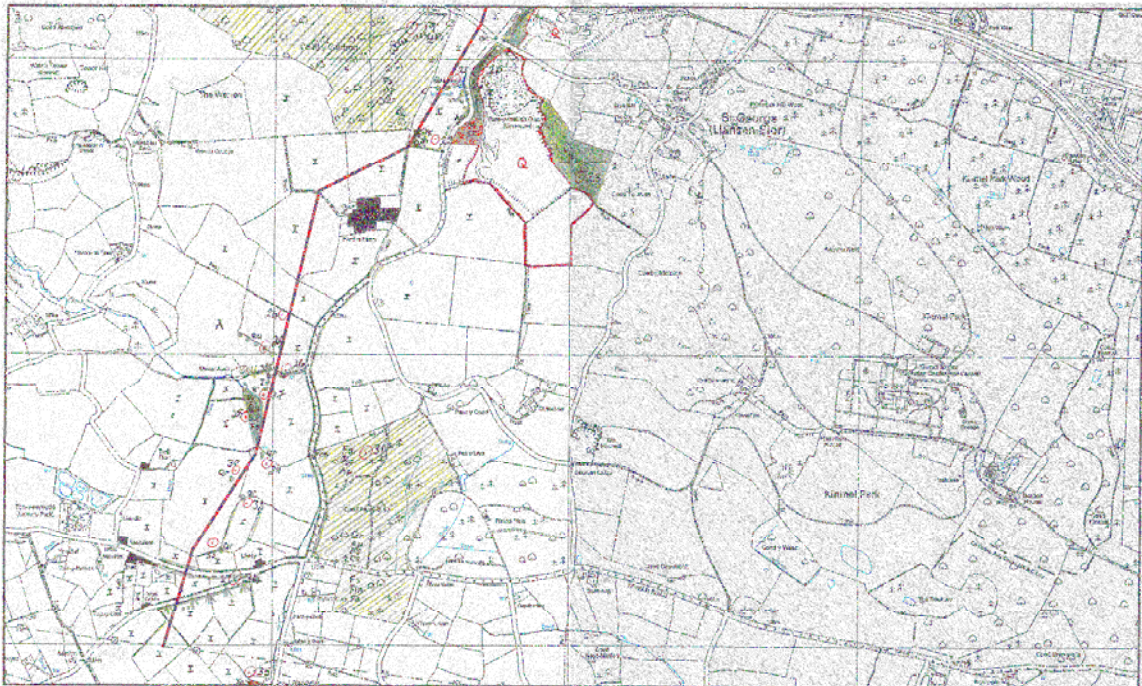
 KILOMETRES

 Western Route Option
 Eastern Route Option

Phase 1 Habitat
 Survey
 Map 2 of 3



Map 2 of 3 was generated from the data provided to the client by the client. The client is responsible for the accuracy of the data. © 2015 GOML Ltd. All rights reserved.



COWI
Cable Offshore Wind Ltd.

SCALE 1:10 000

Kilometre

— Washin Road Option
— Eastern Freeway Option

Phase 1 Habitat
Survey
Map 3 of 3

© 2020 Cable Offshore Wind Ltd. All rights reserved. This document is the property of Cable Offshore Wind Ltd. and is confidential. It is not to be distributed, copied, or used in any way without the prior written consent of Cable Offshore Wind Ltd.

Target note no.	Grid reference	Description
1	SH 975 802	Artificial breakwater with a dense and reasonably diverse community of <i>Enteromorpha</i> sp., <i>Fucus</i> sp., <i>Porphyra</i> sp, mussels (<i>Mytilus</i> sp.), barnacles (<i>Actinia equina</i>), sponges and various littorinids.
2	SH 975 801	Diverse, rabbit grazed grassland dominated by <i>Cirsium</i> sp. (thistles), <i>Ranunculus</i> sp. (buttercup), <i>Vicia cracca</i> (tufted vetch), <i>Vicia sativa</i> (common vetch), <i>Daucus carota</i> (wild carrot), <i>Geranium</i> sp. (crane's bill), <i>Centaurea nigra</i> (black knapweed), <i>Lotus corniculatus</i> (birds foot trefoil), <i>Rumex</i> sp. (docks), <i>Trifolium pratense</i> (red clover), <i>Trifolium repens</i> (white clover), <i>Trifolium campestre</i> (hop trefoil), <i>Potentilla</i> sp. (cinquefoil), <i>Petasites</i> sp. (butterbur) and <i>Phragmites australis</i> (common reed), with a small amount of <i>Rubus fruticosus</i> agg. (bramble). The dominant grass species are <i>Festuca</i> spp. (fine-leaved fescues). This area may have been used during construction of the sea wall but appears to be recovering.
3	SH 978 795	Amenity grassland with water in the centre and drainage channels down the sides supporting <i>Phragmites australis</i> (common reed) and other wetland species. Patches of amenity planting of species such as <i>Salix</i> sp. (willow), <i>Rosa rugosa</i> (rose), <i>Ulex</i> (holly), <i>Populus</i> sp. (poplar) and <i>Fraxinus excelsior</i> (ash) has been undertaken.
4	SH 984 790	Hedgerow on either side of a footpath comprising <i>Crataegus monogyna</i> (hawthorn) with <i>Prunus spinosa</i> (blackthorn) and <i>Salix fragilis</i> (crack-willow).
5	SH 984 787 – SH 979 778	Water-filled drainage channel running adjacent to the proposed power line. <i>Phragmites australis</i> (common reed) are dominant. Duck and moorhen were observed. Occasional holes close to the water level were noted; these are possibly water vole.
6	SH 979 778 – SH 980 774	Strip of trees planted as a shelterbelt, dominated by conifers with some <i>Betula</i> sp. (birch), <i>Juncus effusus</i> (soft rush) and other wetland grasses, including <i>Glyceria fluitans</i> (floating sweet- grass) were associated with the un-grazed strip. A moorhen was observed and the area is suitable as shelter and roost sites for birds.
7	SH 982 777	Planted shelterbelt comprising <i>Pinus</i> sp. (pine) and <i>Betula</i> sp. (birch).
8	SH 969 767	Mature <i>Quercus</i> sp. (oak) specimen.
9	SH 967 770	Mature <i>Quercus</i> sp. (oak) specimen.
10	SH 966 771	Mature <i>Quercus</i> sp. (oak) specimen.
11	SH 968 775	Drains with <i>Phragmites australis</i> (common reed), <i>Iris pseudacorus</i> (yellow flag), <i>Salix</i> spp. (willow) and a tall (approximately 5metres) hedge of <i>Crataegus monogyna</i> (hawthorn), <i>Prunus spinosa</i> (blackthorn) and <i>Salix</i> spp (willow).
12	SH 968 778	Tall <i>Crataegus monogyna</i> (hawthorn) hedge.

Target note no.	Grid reference	Description
13	SH 967 786	Ephemeral damp area with ducks. Sparse <i>Crataegus monogyna</i> (hawthorn).
14	SH 969 789	Drain with <i>Phragmites australis</i> (common reed) and a <i>Crataegus monogyna</i> (hawthorn) hedge.
15	SH 965 796	Shingle/pebble/sparse dune grassland. Species include <i>Tripleurospermum maritimum</i> (scentless mayweed), <i>Glaucium flavum</i> (yellow horned-poppy), <i>Plantago coronopus</i> (buck's-horn plantain), <i>Rumex crispus</i> (curled dock), <i>Beta vulgaris</i> (sea beet) with sparse clumps of <i>Ammophila arenaria</i> (marram grass).
16	SH 966 797	Artificial break water community of large calcareous boulders. The dominant species are <i>Enteromorpha sp.</i> with a low density of <i>Fucus sp.</i> , barnacles (<i>Porphyra</i>), rough periwinkle (<i>Littorina saxatilis</i>) and small periwinkle (<i>Littorina neritoides</i>).
17	SH 968 763	Tall hedges approximately 3 metres in height surrounding a semi-improved field. The hedges contain a number of mature trees, including a specimen of <i>Quercus sp.</i> (oak) along the western boundary. The eastern boundary of the field is a strip of mixed semi-mature woodland. The field is rank and supports <i>Holcus lanata</i> (Yorkshire Fog), <i>Cirsium sp.</i> (thistles) and <i>Ranunculus repens</i> (creeping buttercup).
18	SH 966 761	<i>Fraxinus excelsior</i> (ash) specimen in hedgerow bordering St Georges Road.
19	SH 964 762	Coed y Geufron - mixed mature woodland dominated by <i>Fagus sylvatica</i> (beech), <i>Quercus robur</i> (pedunculate oak), <i>Fraxinus excelsior</i> (ash) and <i>Acer pseudoplatanus</i> (sycamore) with some conifers. Appears to provide a good habitat for fauna.
20	SH 968 759	Parc-y-meirch quarry - belt of mature/semi-mature trees around the perimeter. Dominant species include <i>Betula sp.</i> (birch), <i>Sorbus aucuparia</i> (rowan) and <i>Quercus sp.</i> (oak).
21	SH 966 759	Two mature <i>Quercus sp.</i> (oak) on a field boundary that runs westwards from Coed y Geufron.
22	SH 975 757	Stand of <i>Quercus sp.</i> (oak), <i>Fraxinus excelsior</i> (ash) and <i>Acer pseudoplatanus</i> (sycamore) trees close to the corner of Coed Y Geufron. This links with a <i>Crataegus monogyna</i> (hawthorn) hedge running south from the woodland corner.
23	SH 971 757	Coed Parc-y-Meirch - broad-leaved semi-natural woodland dominated by <i>Quercus robur</i> (pedunculate oak) and <i>Fraxinus excelsior</i> (ash). This wood and the contiguous Coed y Meibion are considered as a potential Wildlife Site by Conwy County Borough Council.
24	SH 960 751	<i>Fraxinus excelsior</i> (ash) with <i>Sambucus nigra</i> (elder) and <i>Rubus fruticosus</i> agg. (bramble).
25	SH 960 750	Line of five mature <i>Quercus sp.</i> (oak) trees running in north-west/south-east direction.
26	SH 960 749	Species rich hedge with semi-mature and mature trees, including

Target note no.	Grid reference	Description
		<i>Quercus sp.</i> (oak) and <i>Fraxinus excelsior</i> (ash). There are some wet areas with <i>Juncus effusus</i> (soft rush).
27	SH 960 749	A line of mature <i>Quercus sp.</i> (oak) trees likely to be a relict field boundary that runs northwards from a woodland (<i>Target Note 28</i>).
28	SH 960 748	Parcel of woodland on a slope adjacent to a stream - approximately 330m in length (along the stream) and 80m in width. Dry woodland occurs upslope with a wetter community towards the slope base. Species include <i>Quercus sp.</i> (oak), <i>Salix sp.</i> (willow), <i>Fraxinus excelsior</i> (ash) and <i>Prunus spinosa</i> (blackthorn). A stream runs along the northern and western boundary.
29	SH 960 747	Mature <i>Quercus sp.</i> (oak) specimen.
30	SH 958 746	Mature <i>Quercus sp.</i> (oak) specimen.
31	SH 963 747	Coed Pen-y-Bryn - mixed woodland supporting <i>Quercus sp.</i> (oak), <i>Fraxinus excelsior</i> (ash), <i>Fagus sylvatica</i> (beech), <i>Acer pseudoplatanus</i> (sycamore) and conifers. The woodland to the south of the minor road (Roman Road) at SH 963 741 is also mixed with <i>Fagus sylvatica</i> (beech), <i>Fraxinus excelsior</i> (ash) and <i>Pinus sp.</i> (pine).
32	SH 959 745	Mature <i>Quercus sp.</i> (oak) specimen.
33	SH 958 743	Mature <i>Quercus sp.</i> (oak) specimen.
34	SH 958 743	Well-maintained hedgerows dominated by hawthorn either side of the two roads (B5381 and a minor road). On the southern side of the minor (southern) road there are a number of semi-mature trees and shrubs; species include <i>Fraxinus excelsior</i> (ash), <i>Acer campestre</i> (field maple) and <i>Prunus spinosa</i> (blackthorn).
35	SH 959 738	Marshy grassland dominated by <i>Juncus effusus</i> (soft rush) taking up part of two fields. The area contains springs, standing water/ephemeral pond and a stream.