

## Appendix 4 – Phase 1 Habitat Survey

Target Notes which correspond to the Phase 1 habitat map (Figure 5.2)

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	<p><b>DAFOR Scale</b></p> <p>The DAFOR scale has been used to try and measure the frequency and cover of the different plant species as follows:</p> <p>Dominant (D) - &gt;75% cover</p> <p>Abundant (A) – 51-75% cover</p> <p>Frequent (F) – 26-50% cover</p> <p>Occasional (O) – 11-25% cover</p> <p>Rare (R) – 1-10% cover</p> <p>Locally Dominant/Frequent (LD/LF) is also used where the frequency and distribution is patchy</p>
1	A122 Coniferous plantation entirely composed of mature <i>Pinus sylvestica</i> . Natural ground flora of <i>Pteridium aquilinum</i> and <i>Deschampsia flexuosa</i> with frequent <i>Oxalis acetosella</i> , but mostly no understorey. This wood has <b>red squirrel</b> potential but no evidence was found. The steep bank dropping down from this plantation to the A96 has a mix of <i>P. aquilinum</i> , <i>Ulex europaeus</i> , <i>Cytisus scoparius</i> and rough grass.
2	A132 Open mixed woodland, at least some of which is planted, but some, especially the birch, may be of natural origin. Dominated by mature <i>Betula sp.</i> , <i>Larix sp.</i> and <i>P. sylvestris</i> . Scattered understorey of <i>U. europaeus</i> , <i>Sambucus nigra</i> , <i>C. scoparius</i> and <i>Sorbus aucuparia</i> over a ground flora dominated by <i>Holcus mollis</i> and <i>Agrostis capillaris</i> ; frequent herbs include <i>Senecio jacobaea</i> , <i>Veronica chamaedrys</i> and <i>Viola riviniana</i> . <b>Bats</b> were observed foraging in this area in the evening (pipistrelles).
3	B22 Semi-improved neutral grassland, appears to be a disused or little-used paddock. Composition similar to Target note 5 below but <i>Viola arvensis</i> and <i>Rumex acetosella</i> are a little more frequent. There is dense <i>C. scoparius</i> and <i>U. europaeus</i> by the A96; the former is encroaching onto the grassland.
4	B22 Semi-improved neutral grassland, appears to be a disused or little-used paddock. <i>Holcus lanatus/Festuca rubra</i> are dominant, with abundant moss ( <i>Rhytidiadelphus squarrosus</i> ). <i>V. arvensis</i> is occasional. Dense <i>U. europaeus</i> by A96.
5	A111 Semi-natural broadleaved woodland either side of minor road, with some A132 mixed plantation by A96. A111 is dominated by mature <i>Betula sp.</i> , with a natural ground flora dominated by <i>H. mollis</i> , <i>D. flexuosa</i> and <i>P. aquilinum</i> (the latter continuous under powerline). <i>Trientalis europaeus</i> is frequent, as well as <i>V. riviniana</i> and <i>O. acetosella</i> . By the A96 there are, in addition to <i>Betula</i> , several mature <i>P. sylvestica</i> and <i>Fagus sylvatica</i> .

6	B22 Semi-improved neutral grassland strip along either side of A96, usually only a couple of metres wide but wider at junction. Typical grasses are <i>F. rubra</i> and <i>A. capillaris</i> , with a variety of herbs typical of this roadside community including <i>Plantago lanceolata</i> , <i>Hypochaeris radicata</i> , <i>Luzula campestris</i> , <i>Achillea millefolium</i> , less commonly <i>Viola riviniana</i> , and rarely <i>Plantago coronopus</i> .
7	A122 Large plantation of tall mature <i>P. sylvatica</i> , with an understorey of widely scattered young <i>S. aucuparia</i> , <i>Betula sp.</i> and <i>Ilex aquifolium</i> . Ground flora typically grass-dominated with <i>H. mollis</i> / <i>A. capillaris</i> . Frequent associates include <i>Lonicera periclymenum</i> , <i>P. aquilinum</i> , <i>O. acetosella</i> and <i>V. riviniana</i> . <i>T. europaea</i> is locally frequent. Locally there are patches of vegetation dominated by <i>D. flexuosa</i> and <i>Erica cinerea</i> , with occasional <i>E. tetralix</i> . This plantation is excellent for <b>red squirrel</b> , and two dreys were seen at NJ29338.60980 (2 trees c. 50m apart) indicating probable current presence of this species, though as no red squirrels were visually surveyed on site, the possibility of these being grey squirrels dreys cannot be ruled out. During surveys undertaken in March 2007, a barn owl ( <i>Tyto alba</i> ) and a woodcock ( <i>Scolopax rusticola</i> ) were observed within this plantation woodland.
8	A122 Thin strip of mature/semi-mature coniferous plantation dominated by <i>P. sylvatica</i> and <i>Larix sp.</i> <i>U. europaeus</i> is frequent under, together with <i>P. aquilinum</i> , <i>D. flexuosa</i> , <i>Rubus fruticosus agg.</i> , <i>O. acetosella</i> and <i>V. riviniana</i> .
9	B22 Semi-improved neutral grassland on/around enclosed covered reservoir. Dominant grasses are <i>A. capillaris</i> , <i>F. rubra</i> and <i>Anthoxanthum odoratum</i> , with frequent <i>V. chamaedrys</i> , <i>L. campestris</i> , <i>Trifolium repens</i> and <i>P. lanceolata</i> .
10	F1 / A22 Peripheral swamp around Loch Oire here consists of <i>Carex rostrata</i> with frequent <i>Menyanthes trifoliata</i> ; towards terrestrial edge there is usually <i>Salix cinerea</i> scrub. Between this vegetation and the minor road there is a stand of dense semi-mature <i>Picea sp.</i> (A122).
11	A111 <i>Salix cinerea</i> / <i>Betula pubescens</i> carr by Loch Oire. Frequent dead wood. Common species beneath include <i>Galium palustre</i> , <i>Myosotis scorpioides</i> , <i>Rubus fruticosus agg.</i> , <i>Ranunculus repens</i> , <i>M. trifoliata</i> . Behind this carr is a long thin coniferous strip (A122) of tall dense <i>Picea sp.</i>
12	G2 / F2 / A22 Drain from Loch Oire on north side of A96. The stretch from the A96 to the farm track crossing has excellent <b>water vole</b> suitability but no evidence was found during Phase 1 surveying (although the time of year was not optimal). Water is clear, slow-moving and fairly shallow. There is some rubbish in the channel in places. Banks steep to gentle, and vegetated with a variable mix of neutral grasses, <i>Anthriscus sylvestris</i> , <i>Juncus effusus</i> , <i>Urtica dioica</i> , <i>U. europaeus</i> , <i>Rubus idaeus</i> , <i>Salix sp.</i> , occasional <i>Betula sp.</i> and, near the road, a mature <i>P. sylvestris</i> ( <b>bat potential</b> ). The latter tree houses a colony of bees. Aquatic and marginal vegetation includes <i>Lemna minor</i> , <i>Sparganium erectum</i> , <i>C. rostrata</i> , <i>M. scorpioides</i> and <i>Veronica beccabunga</i> . Upstream of the farm track crossing bankside vegetation becomes less diverse, and <i>U. europaeus</i> is much more frequent and often completely overhangs the water channel, thus much reducing water vole suitability.

13	A112 Small broadleaved plantation by A96 mainly of young <i>Acer pseudoplatanus</i> and <i>Prunus avium</i> , with a large mature <i>Quercus sp.</i> at the west end. <i>P. aquilinum</i> dominant under except where shading by <i>A. pseudoplatanus</i> is heaviest resulting in a sparse ground flora. <i>Erodium cicutarium</i> is frequent in the sandy soil of the arable field corner at the west end of this plantation.
14	A112 / A122 / A132 Broadleaved plantation of tall mature well-spaced <i>Fagus sylvatica</i> . Almost no understorey (rare <i>I. aquifolium</i> and <i>Betula sp.</i> ). Moss and <i>D. flexuosa</i> dominant in the ground flora, with occasional <i>V. riviniana</i> and <i>O. acetosella</i> . Along the west edge there are mature <i>Quercus sp.</i> with occasional <i>E. cinerea</i> under. Between this wood and the A96 is a mixed tree nursery (A132) composed of various very young trees over a rough neutral grassland. Between the <i>Fagus</i> plantation and the railway is a semi-mature stand of <i>P. sylvatica</i> / <i>Larix sp.</i> , with a poor impoverished ground flora.
15	A122 Coniferous plantation dominated by very dense <i>Picea sp.</i> Very poor sparse ground flora. Burn from Loch Oire passes through plantation after passing under minor road, also with a negligible flora; the culvert under the A96 is clogged with debris.
16	B22 Semi-improved neutral grassland dominated by <i>Dactylis glomerata</i> , with frequent <i>Anthriscus sylvestris</i> , <i>C. scoparius</i> and <i>Cirsium spp.</i> Central area is ruderal (C31) dominated by <i>Urtica dioica</i> .
17	A122 Very dense semi-mature broadleaved plantation of <i>A. pseudoplatanus</i> , with impoverished ground flora.
18	A132 Plantation continuous with coniferous plantation of Target note 19 below, but distinguished from it by the presence of some broadleaves in addition to <i>P. sylvestris</i> (mature <i>Quercus sp.</i> , <i>F. sylvatica</i> and <i>Betula sp.</i> ).
19	A122 Coniferous plantation of tall mature <i>P. sylvatica</i> (but mixed with <i>Larix sp.</i> in north-west corner). Normally sparse understorey of scattered young <i>Betula sp.</i> and <i>S. aucuparia</i> , rarely <i>Rhododendron</i> . Ground flora dominated by <i>D. flexuosa</i> and moss (mainly <i>Rhytidiadelphus triquetris</i> but also <i>Hylocomium splendens</i> and rarely <i>Sphagnum sp.</i> ), with occasional <i>Calluna vulgaris</i> and <i>E. cinerea</i> , and locally dominant <i>P. aquilinum</i> . Occasional species include <i>O. acetosella</i> and <i>T. europaea</i> , whilst <i>Blechnum spicant</i> is rare.
20	A111 Semi-natural broadleaved woodland dominated by mature <i>Betula pubescens</i> . <i>D. flexuosa</i> and moss ( <i>Rhytidiadelphus triquetris</i> ) dominant underneath with frequent to abundant <i>P. aquilinum</i> and occasional to frequent <i>O. acetosella</i> and <i>Trientalis europaea</i> . <i>B. spicant</i> rare but very locally abundant. Frequent fungi at time of survey.
21	A122 / A132 Coniferous plantation of tall mature <i>P. sylvatica</i> , becoming mixed by Loch Oire. Coniferous plantation differs from that of target note 19 on the other side of the railway in that there is much more young <i>Betula sp.</i> in the understorey. By Loch Oire it is mixed with other conifers, principally <i>Picea sp.</i> , and <i>Betula pubescens</i> , with <i>P. aquilinum</i> and <i>Rhododendron</i> frequent underneath. The dilapidated boat house at the edge of Loch Oire was found to contain several fresh <b>otter spraints</b> .

22	A111 / A21 / A22 / B11 / C1 / C31 / C32 Vegetation along the railway cutting is variable and includes dense stands of <i>Dryopteris filix-mas</i> (C32), <i>P. aquilinum</i> (C1), dense and scattered <i>C. scoparius</i> / <i>U. europaeus</i> (A21/A22), tall ruderal (C31) dominated by <i>Chamerion angustifolium</i> , and, on the south bank below the plantation of target note 19, unimproved acid grassland (B11) backed by a thin strip of semi-natural <i>Betula sp.</i> woodland. The acid grass is an extension of the <i>Betula</i> woodland ground flora and is dominated by <i>D. flexuosa</i> , <i>H. mollis</i> and <i>A. capillaris</i> with frequent <i>V. riviniana</i> , <i>Rhytidiadelphus triquetrus</i> and <i>D. filix-mas</i> .
23	F1 swamp dominated by <i>Sphagnum spp.</i> (including <i>S. squarrosum</i> ) and <i>Carex rostrata</i> , with frequent <i>M. trifoliata</i> , <i>Equisetum palustris</i> and <i>Potentilla palustris</i> . <i>Typha latifolia</i> locally dominant and <i>Hydrocotyle vulgaris</i> . Frequent scattered young <i>P. sylvatica</i> , becoming more frequent towards (drier) coniferous plantation.
24	A21 Willow carr dominated by <i>Salix cinerea</i> with frequent to abundant <i>Betula pubescens</i> , and occasional <i>P. sylvatica</i> . Pleurocarpous mosses (including <i>Rhytidiadelphus triquetrus</i> and <i>Calliergon cuspidatum</i> ) and sedges dominant in the ground flora. Sedges include <i>Carex nigra</i> , <i>C. flacca</i> , <i>C. rostrata</i> and rarely <i>C. paniculata</i> . Herbs occasional to frequent including <i>M. trifoliata</i> , <i>Potentilla palustris</i> , <i>Ranunculus flammula</i> , <i>Galium palustre</i> , <i>Cirsium palustre</i> and <i>Juncus acutifolius</i> .
25	A132 / A112 Mixed mature plantation dominated by <i>Betula sp.</i> and <i>P. sylvatica</i> , becoming broadleaved plantation at north end with mix of <i>Betula sp.</i> , <i>Quercus sp.</i> , <i>Fagus sylvatica</i> . <i>P. aquilinum</i> and <i>R. fruticosus agg.</i> common beneath. At southern end <i>E. cinerea</i> and <i>C. vulgaris</i> are abundant. Bank down to Loch Oire generally very steep with no significant marginal vegetation except at southern end where blends with swamp.
26	B22 (A111) Semi-improved neutral grassland in apparently disused field, species-poor and overwhelmingly dominated by <i>H. mollis</i> , with frequent <i>V. chamaedrys</i> and <i>Ranunculus repens</i> but little else. Mossy closer to loch with peripheral <i>P. sylvatica</i> , <i>Betula sp.</i> and <i>P. aquilinum</i> . At eastern edge there are mature <i>Betula sp.</i> which are sufficiently close to form a canopy and are thus mapped as semi-natural broadleaved woodland.
27	A111 Small patch of semi-natural <i>Betula pubescens</i> woodland within the main coniferous plantation. Damp with ground flora dominated by <i>D. flexuosa</i> , <i>Rhytidiadelphus triquetrus</i> and <i>Polytrichum commune</i> . There is an adjacent roofless narrow rectangular concrete structure, disused and of unknown purpose, with abundant <i>O. acetosella</i> inside.
28	A122 Coniferous plantation mainly of mature <i>P. sylvatica</i> , but with a stand of very shady dense mature <i>Picea sp.</i> on western edge with negligible ground flora. The main extensive <i>Pinus</i> plantation is generally dominated in the ground flora by <i>D. flexuosa</i> and <i>Rhytidiadelphus triquetrus</i> , but <i>P. aquilinum</i> often also dominant, and <i>Calluna vulgaris</i> abundant on topographically higher parts with occasional <i>Trientalis europaea</i> . Near minor road <i>Rubus idaeus</i> and <i>H. mollis</i> are often frequent.
29	A122 Coniferous plantation, mature <i>P. sylvatica</i> , a continuation of target note 28 on the other side of the minor road, but here <i>R. idaeus</i> and <i>H. mollis</i> are much more common in the ground flora.

30	A111 Crescent of semi-natural mature/semi-mature <i>Betula</i> sp. woodland; typical ground flora includes <i>D. flexuosa</i> , <i>H. mollis</i> , <i>P. aquilinum</i> and <i>R. idaeus</i> . Peripheral mature <i>Quercus</i> sp. and <i>Castanea sativa</i> .
31	B22 Small strip of semi-improved neutral grassland, of a disturbed and varied nature, with species such as <i>Arrhenatherum elatius</i> , <i>H. lanatus</i> , <i>F. rubra</i> , <i>Rumex obtusifolius</i> , <i>Anthoxanthum odoratum</i> plus scattered scrub, becoming dense by road with trees as well, including <i>C. scoparius</i> , <i>U. europaeus</i> , <i>R. idaeus</i> and <i>A. pseudoplatanus</i> .
32	A111 / A112 / A132 Small broadleaved woodland (A111) consists of a mix of mature <i>Quercus</i> sp., <i>S. aucuparia</i> and <i>Betula pubescens</i> . Under the <i>Betula</i> ground flora damp with <i>Sphagnum/Juncus effusus</i> dominant; elsewhere typical species include <i>A. capillaris</i> , <i>H. lanatus</i> , <i>O. acetosella</i> , <i>Trientalis europaeus</i> and <i>V. riviniana</i> . There is a strip of dense semi-mature <i>Picea</i> sp. by the adjacent improved field, whilst to the west there is a rather poor quality (in terms of flora) small <i>P. sylvestris</i> plantation, which is mixed adjacent to the broadleaved woodland with mature <i>Quercus</i> sp.
33	Open water of Loch Oire has abundant <i>Potamogeton natans</i> . <b>Bats</b> (both soprano pipistrelles <i>Pipistrellus pygmaeus</i> and Daubenton's bats <i>Myotis daubentonii</i> ) were observed (visually and by bat detector) feeding in large numbers over the loch in the evening.
34	Small island in centre of Loch Oire was not accessible, but is dominated by <i>Salix cinerea</i> scrub, with narrow peripheral strips of <i>Carex rostrata</i> .
35	Fenceline with <i>U. europeaus</i> , <i>S. nigra</i> , <i>Cytisus</i> sp. and <i>A. elatius</i> along most of its length.
36	2-3m wide band of <i>U. europeaus</i> , Himalayan balsam ( <i>Impatiens glandulifera</i> ), <i>Cytisus</i> sp., <i>S. nigra</i> with ground flora of <i>A. capillaris</i> (F), <i>F. rubra</i> (F), <i>P. vulgaris</i> (O) and <i>D. glomerata</i> (O).
38	Mixed mature plantation woodland with <i>S. aucuparia</i> , <i>Betula</i> , <i>P. sylvestris</i> and ground flora of <i>Oxalis acetosella</i> (A), <i>F. rubra</i> (F), <i>H. mollis</i> (F), <i>P. aquilinum</i> (LD), <i>A. odoratum</i> (O) and <i>U. dioica</i> (LD).
39	Coniferous plantation (long-established on SNH woodland inventory), with c. 95% <i>P. sylvestris</i> and 5% mix of <i>Betula</i> sp., <i>F. sylvatica</i> and <i>S. aucuparia</i> . The understorey is dominated by <i>P. aquilinum</i> , with occasional <i>D. cespitosa</i> , <i>F. rubra</i> (F), <i>J. effusus</i> (O), <i>H. lanatus</i> (O), <i>S. media</i> (O), <i>E. cinerea</i> (LD), regenerating <i>Betula</i> (F) and <i>C. vulgaris</i> (LF). The woodland provides excellent habitat for red squirrels.
40	Dis-used and derelict boat-house at the western edge of Loch Oire within mixed plantation. <b>Otter spraints</b> were found within the boat-house, deposited upon wooden floor beams, which looked relatively fresh (possibly deposited within recent months).