
Appendix 4c European Protected Species and Bryophyte Surveys

A82 Pulpit Rock: Ecology European Protected Species & Bryophyte Surveys

Interim Report
October 2009



Prepared for
Internal Review

Revision Schedule

A82 Pulpit Rock: Ecology – European Protected Species & Bryophyte Surveys 6 – 7th October 2009

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1 Introduction

- 1.1.1 Informed by Stage 2 ecological surveys and as a means of informing the Stage 3 Environmental Impact Assessment and proposed ground investigation works, a series of European Protected Species & Bryophyte surveys were undertaken within the footprint of the Scheme on the A82 trunk road at Pulpit Rock. The survey area consisted of loch foreshore and woodland above the existing carriageway.
- 1.1.2 The European Protected Species [EPS] surveys related to both Otter (*Lutra lutra*) and Bats, as previous surveys undertaken in 2007 and June 2009 had recorded considerable levels of bat foraging activity. The objectives of the latest surveys were to identify refuge sites used by otters and potential bat roost sites within trees present along the foreshore and above the existing carriageway i.e. trees which may be lost as a consequence of the scheme and ground investigation works.
- 1.1.3 In-addition to the EPS surveys an assessment was made of the likely impacts to uncommon species of bryophyte and ferns, which had previously been recorded during a National Vegetation Classification survey in June 2007.
- 1.1.4 **Survey Methodologies**
- 1.1.5 Otter Survey [EN, CCW, EA, SEPA, SNH & SNIFFER]
- 1.1.6 Bat Roost Assessment [Bats and Trees, Bat Conservation Trust]

2 Legislation

2.1 Otters

2.1.1 In Scotland, otters are protected under the Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007. As a result of this legislation it is illegal to;

- Intentionally or deliberately kill, injure or capture an otter;
- Intentionally, deliberately or recklessly disturb an otter;
- Intentionally [or not], deliberately or recklessly damage, destroy or obstruct any places used for shelter or protection, i.e. otter holts (even if they are not currently occupied).

2.2 Bats

2.2.1 In Scotland, bats are protected under the Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2007. As a result of this legislation it is illegal to;

- Intentionally or deliberately kill, injure or capture bats;
- Intentionally, deliberately or recklessly disturb bats;
- Intentionally, deliberately or recklessly damage, destroy or obstruct any places used for shelter or protection, i.e. bat roosts (even if they are not currently occupied);
- Possess, sell or transport a bat, or anything derived from it.

3 Results

Table 1 contains details of the otter refuges and field signs recorded during this survey. Table 2 details trees with potential to support roosting bats and Table 3 provides details of bryophyte and fern locations. The locations of all features described are shown in Appendix One.

Table [1] Otter Refuges & Spraint Sites

Ref. No	Type	Notes	X	Y	Grid ref
R02A	Lie-up, potential	Potential lie-up	232885	713324	NN 32885 13324
R03A	Holt, older signs	Holt, 3 old spraints, Japanese Knotweed above	232870	713351	NN 32870 13351
R04A	Holt, older signs	Holt, otter scent inside	232811	713460	NN 32811 13460
R05A	Lie-up, potential	Potential lie-up, no field signs	232775	713498	NN 32775 13498
R06A	Holt, potential	Potential holt, no field signs	232736	713532	NN 32736 13532
R07A	Holt, potential	Potential holt	232720	713551	NN 32720 13551
R08A	Holt, with very recent field evidence	Holt, 3 recent & 2 older spraints nearby	232715	713558	NN 32715 13558
R09A	Holt, with very recent field evidence	Active holt in cave, many spraints, some new	232704	713577	NN 32704 13577
R10A	Holt, with very recent field evidence	Active holt, fresh tubular long spraint inside	232701	713598	NN 32701 13598
R11A	Holt, older signs	Holt, spraint at entrance	232694	713657	NN 32694 13657
R12A	Lie-up, potential	Potential lie-up, no field signs	232688	713678	NN 32688 13678
R13A	Lie-up, potential	Potential lie-up, no field signs	232607	713700	NN 32607 13700
SS01A	Spraint, fresh	3 spraints	232895	713315	NN 32895 13315
SS02A	Spraint, fresh	Spraint in culvert entrance	232880	713332	NN 32880 13332
SS03A	Spraint, fresh	Spraint side of large boulder in loch	232862	713379	NN 32862 13379
SS04A	Spraint, fresh	1 recent & 3 old spraints, on fallen ash tree	232831	713431	NN 32831 13431
SS06A	Spraint, fresh	2 recent spraints, 3 older	232652	713708	NN 32652 13708
SS07A	Spraint, recent	1 old spraint, 1 recent	232582	713709	NN 32582 13709

Table [2] Trees with Potential Bat Roosts

Annotation	Species	Notes	X	Y	Grid ref
T01	Oak	Dead branches	232593	713680	NN 32593 13680
T02	Oak	Dead split branch	232599	713680	NN 32599 13680
T03	Oak	Dead wood near top, Wilson's Filmy Fern at base	232599	713674	NN 32599 13674
T04	Oak	Small dead branches with splits	232611	713681	NN 32611 13681
T05	Oak	Split broken limb at top	232632	713685	NN 32632 13685
T06	Oak	Small dead branches	232644	713679	NN 32644 13679
T07	Birch	Small rot hole, leaning on oak (may fall on road)	232662	713679	NN 32662 13679
T08	Birch	Few small rot holes	232641	713701	NN 32641 13701
T09	Birch	Large rot hole which goes up inside	232648	713700	NN 32648 13700
T10	Oak	Small rot holes, by traffic lights	232663	713696	NN 32663 13696
T11	Birch	Hollow crack in trunk	232679	713680	NN 32679 13680
T12	Birch	Small rot holes	232744	713524	NN 32744 13524
T13	Birch	Big rot hole, wall adjacent with cracks	232757	713513	NN 32757 13513

Table [3] Recorded Bryophyte & Fern Locations

Reference	Filmy-fern	Bryophytes	X	Y	Grid ref	Notes
P01	Wilson's + Tunbridge	Nationally scarce bryophytes	232414	713716	NN 32414 13716	On rocks and boulders in birch/alder woodland
P02		Uncommon bryophytes	232502	713658	NN 32502 13658	On Pulpit Rock itself shaded by trees
P03	Wilson's		232599	713675	NN 32599 13675	On north side of base of oak in wood near road
P04	Wilson's		232665	713700	NN 32665 13700	On north side of rocks near loch below oak
P05	Wilson's	Uncommon bryophytes	232598	713628	NN 32598 13628	On rock, banks and tree bases in oak/birch wood
P06	Wilson's	Uncommon bryophytes	232607	713642	NN 32607 13642	On rock, banks and tree bases in oak/birch wood
P07	Tunbridge		232631	713645	NN 32631 13645	On rock face and base of birch in birch/oak wood
P08		Uncommon bryophytes	232663	713582	NN 32663 13582	On base of birch trunk in woodland
P09		Uncommon bryophytes	232681	713572	NN 32681 13572	On rocky bank in woodland
P10		Uncommon bryophytes	232847	713347	NN 32847 13347	On rock in woodland
P11		Uncommon bryophytes	232900	713225	NN 32900 13225	On rock in woodland
P12	Tunbridge		232893	713182	NN 32893 13182	On NE-facing rock face in woodland
P13	Wilson's + Tunbridge	Nationally scarce bryophytes	232881	713147	NN 32881 13147	On boulders near road and steep gully in woodland

Please refer to the A82 Ecological Constraint drawings contained within Appendix one of this document.

4 Assessment

4.1 Otter Refuges and Spraint Sites

- 4.1.1 A total of twelve otter refuges were recorded within the confines of the survey area, ranging from transient lying up areas to active otter holts. In-addition to the refuges, eleven sprainting sites was observed within the same survey area, five of the sites were recorded within or immediately adjacent to a number of the otter refuges.
- 4.1.2 The high levels of field evidence, in the form of spraints, recorded at a number of the holts, suggest that a several of them, particularly sites R09A & R10A [Appendix One] may be classified as breeding / natal holts.
- 4.1.3 Given the size of the survey footprint, which equates to approximately 650 linear metres of the loch foreshore and the number of otter related observations, this area can be considered of high local importance to otters. This is due largely to the presence of natural rock formations and associated scree, which affords otters numerous opportunities in terms of potential holt locations, which may not be available elsewhere along the loch foreshore.

4.2 Trees indentified as possessing Bat Roost potential

- 4.2.1 A total of thirteen trees were recorded with bat roost potential, in the form of rot holes within the trunk / main branches and fractures within limbs etc.
- 4.2.2 Due to health and safety restrictions it was not possible to classify each tree individually in terms of risk; however, all trees identified in Table 2 above are considered to conform with the Bat Conservation Trust's Bat Survey protocol group 2 a & b, where trees recorded have a high to moderate potential for containing bat roosts.

4.3 Bryophytes & Ferns

- 4.3.1 A total of twelve sites were recorded on rock faces and tree trunks within the survey area, containing species which had been identified during the 2007 National Vegetation Classification survey, as being nationally scarce or uncommon due largely to their habitat requirements and geographic distribution.

5 Constraints and Recommendations GI works

5.1 Otter

5.1.1 **Holt locations** - The ecological constraints map [Appendix One] shows the locations of the recorded otter refuges and spraints sites in relation to the proposed viaduct and associated piers. As detailed seven otter refuges occur within close proximity of the pier locations, three holts in particular R08A, R09A and R10A recorded high and recent levels of otter activity.

5.1.2 **Constraints** - All works which may impact upon otters and their refuges can only be carried out under an EPS licence; therefore, as a means of informing a licence application it is important that we are able to classify the type of holts present i.e. breeding / natal or transitory. The recorded levels of sprainting, particularly at sites R09A & R10A suggest that they maybe being used for breeding purposes.

5.1.3 Breeding / natal holts would require specific mitigation to be employed, which may have significant implications for the planned GI works.

5.1.4 **Recommendations** - Normally manual inspections of holts are undertaken in-order to establish the classification of a refuge, this is carried out under the guise of a Conservation Licence issued by Scottish Natural Heritage. Due to specific safety considerations involving the above otter holts, such as confined space and unstable rock formations, a manual internal inspection is not considered feasible. Therefore it is recommended as an alternative means of establishing the status and for the purpose of informing an EPS Disturbance licence application. It is recommended that remote monitoring is undertaken at the earliest practical opportunity, on at least two of the otter refuges [A09A & R10A], utilising trail cameras.

5.1.5 Trail cameras are designed to operate in remote locations and utilising infra-red technology is able to take still photographs or video of target species, such as otters over a given period of time. Evidence collated using such technology will allow us to monitor on a daily basis activities associated with the use of each refuge, including the number animals in residence and the presence of cubs etc. Such information will allow us to determine the status of the holt, which will greatly assist in the consultation process with Scottish Natural Heritage, as part of the application process for an EPS Disturbance licence. Additionally, such data would also allow for an accurate assessment of the required mitigation to be made and the level of impact upon the proposed GI works.

5.2 Bat Roost Assessments

5.2.1 **Potential Roost Trees** -The ecological constraints map shows the locations of the trees assessed as having the potential to contain bat roosts within the foot print of the proposed viaduct, associated earthworks and GI works.

5.2.2 **Constraints** - All works which may impact upon bats and their roosts can only be carried out under an EPS licence, specific mitigation will also be required including the provision of alternative roosting sites, note if hibernating bats are recorded, disturbance / removal will not be permitted until the bats have completed their hibernation cycle [March / April].

5.2.3 As a means of informing a licence application, it is important that we are able to undertake an accurate assessment of each trees potential to contain roosting bats, as previous bat activity

surveys in 2007 and June 2009 recorded substantial levels of bat foraging activity within the foot print area.

5.2.4 **Recommendations** - Only general assessments of bat roost potential can be made at ground level; therefore, it is recommended that an internal inspection of all likely roost sites within identified trees, is undertaken by a suitably qualified arboriculturist, or supervised by a bat ecologist.

5.2.5 Tree[s] confirmed as containing bat roosts, which will be affected by any of the planned works will be the subject of an EPS licence, for either the disturbance or destruction of a bat roost.

5.3 Bryophytes & Ferns

5.3.1 **Plant Locations** -The ecological constraints map shows the locations of the bryophytes & ferns that occur within the foot print of the proposed viaduct, associated earthworks and GI works.

5.3.2 **Constraints** - Although none of the species indentified during the assessment enjoy statutory protection, as a means of employing good practice every effort should be made to minimise any impacts.

6 References

Averis, B [2007] NVC and Bryophyte Survey of Woodland at Pulpit Rock. Unpublished report commission for Scott Wilson Ltd.

Bat Conservation Trust [1997] Bats and Trees. Bat Conservation Trust. London

Chanin, P [2003] Ecology of the European Otter. English Nature. Peterborough.

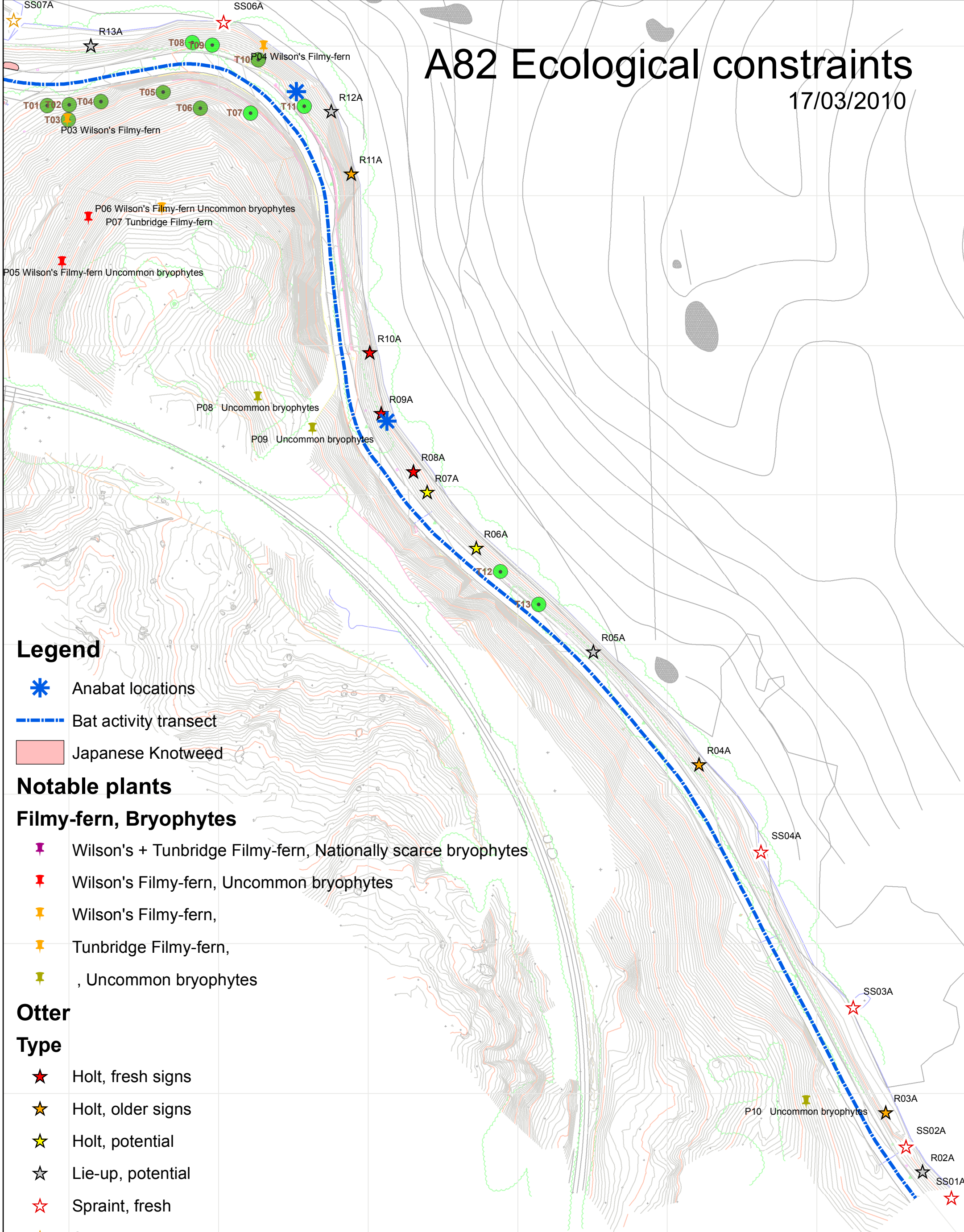
EN, CCW, EA, SEPA, SNH & SNIFFER [2003] Otter Survey

Appendix One

A82 Ecological Constraint drawings

A82 Ecological constraints

17/03/2010



Legend

- Anabat locations
- Bat activity transect
- Japanese Knotweed

Notable plants

Filmy-fern, Bryophytes

- Wilson's + Tunbridge Filmy-fern, Nationally scarce bryophytes
- Wilson's Filmy-fern, Uncommon bryophytes
- Wilson's Filmy-fern,
- Tunbridge Filmy-fern,
- , Uncommon bryophytes

Otter

Type

- Holt, fresh signs
- Holt, older signs
- Holt, potential
- Lie-up, potential
- Spraint, fresh
- Spraint, recent

Trees with bat potential

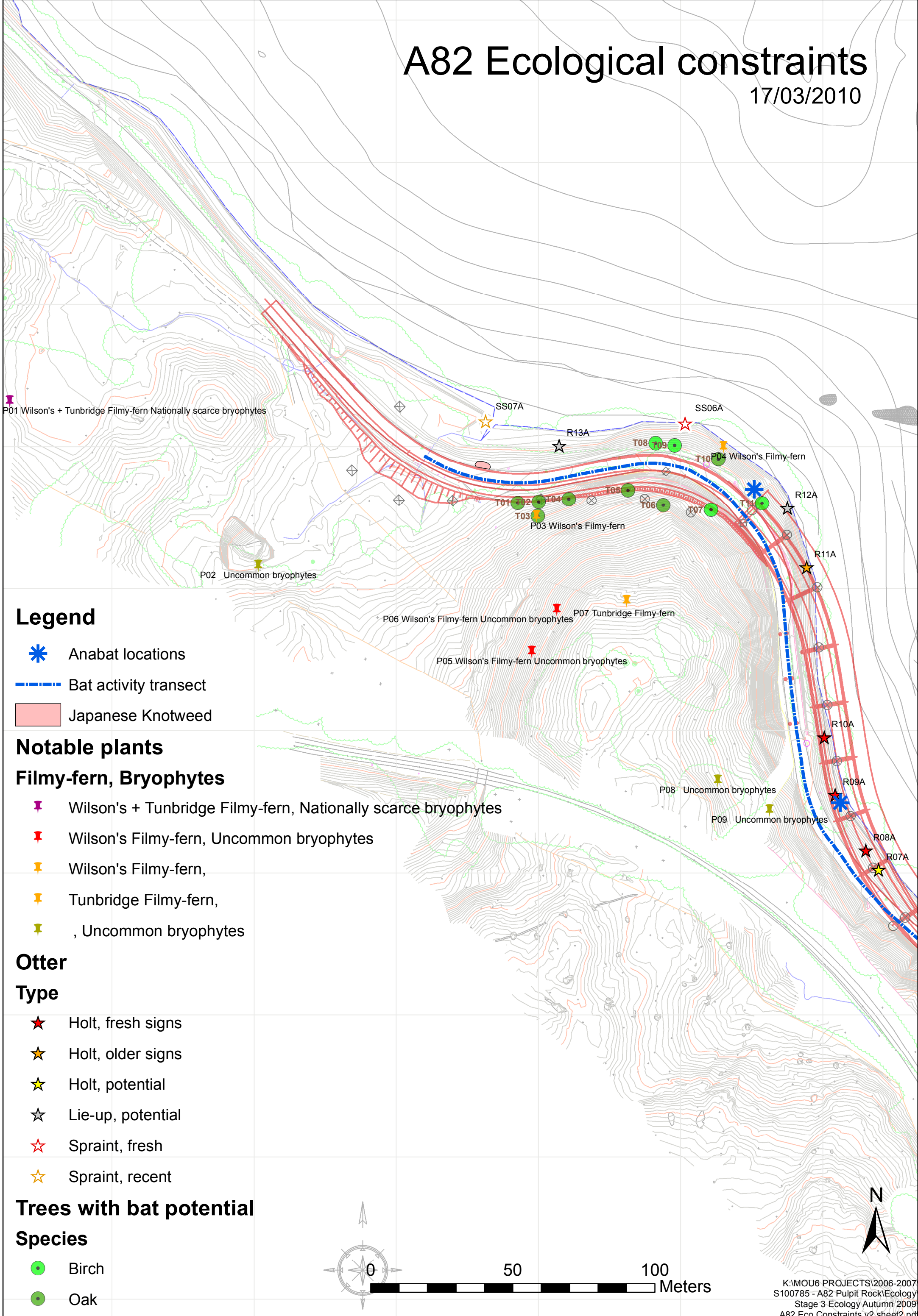
Species

- Birch
- Oak



A82 Ecological constraints

17/03/2010



Legend

- ✱ Anabat locations
- Bat activity transect
- Japanese Knotweed

Notable plants

Filmy-fern, Bryophytes

- ✱ Wilson's + Tunbridge Filmy-fern, Nationally scarce bryophytes
- ✱ Wilson's Filmy-fern, Uncommon bryophytes
- ✱ Wilson's Filmy-fern,
- ✱ Tunbridge Filmy-fern,
- ✱ , Uncommon bryophytes

Otter

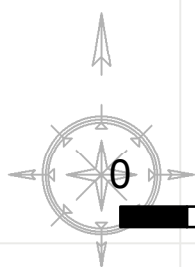
Type

- ★ Holt, fresh signs
- ★ Holt, older signs
- ★ Holt, potential
- ★ Lie-up, potential
- ★ Spraint, fresh
- ★ Spraint, recent

Trees with bat potential

Species

- Birch
- Oak



50

100

Meters