



**Biodiversity Duty:
Vascular Plant Survey of National Slate Museum,
Llanberis**



Herb Robert on stacks of roofing slates

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Introduction

From 1 October 2006, all public authorities in England and Wales have a duty to have regard to the conservation of biodiversity in exercising their functions (Section 40 of the Natural Environment and Rural Communities Act 2006). As part of the Museum's response to this legislation, biodiversity audits are being carried out at a series of its sites. In this report, a vascular plant list is presented from a survey of the grounds of the National Slate Museum, Llanberis in 2009.

The National Slate Museum, Llanberis is composed of two parts, the museum buildings and the Vivian Incline. The museum buildings are set in Padarn Country Park and consist of a rectangular building with a central courtyard and an enclosed area to the east with a café, children's play area, quarrymen's cottages and the water wheel tower. The Vivian Incline is set close by in Coed Dinorwig, a semi-natural oak woodland.

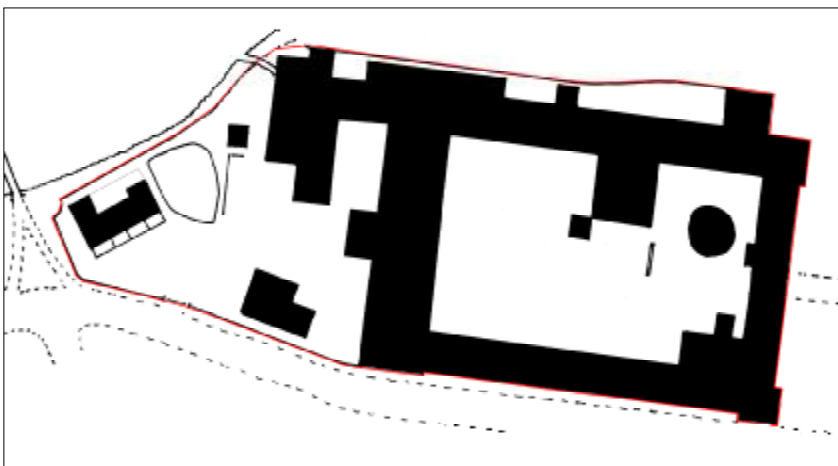
Methods

Surveys were carried out on 8-10 July 2009 by Alan Orange, and on 6 and 7 October 2009 by Tim Rich.

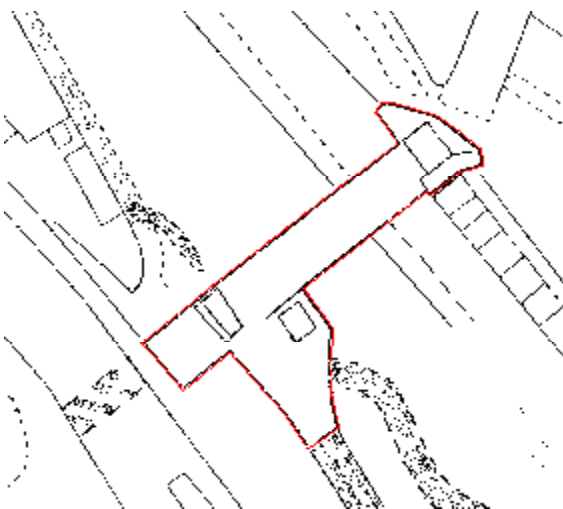
The areas surveyed are shown in Figure 1. Surveys were carried out by walking around the grounds. Deliberately cultivated plants, such as vegetables and ornamental species in the quarrymen's gardens, were mostly excluded from the survey. Nomenclature follows C.A. Stace (1997), *New Flora of the British Isles*, Cambridge University Press.

Figure 1. Areas surveyed. A, museum buildings. B, Vivian Incline. The site boundary is shown in solid red. Not to scale.

A. Museum buildings.



B. Vivian Incline



Results

The species recorded are listed in Table 1.

TABLE 1. VASCULAR PLANTS RECORDED AT LLANBERIS.
Alien species not native in the British Isles are marked with an asterisk *.

Latin Name	Vernacular Name	Museum Buildings	Vivian Incline
<i>Agrostis capillaris</i>	Common Bent	Rare	Frequent
<i>Agrostis stolonifera</i>	Creeping Bent	Front yard	Rare at base of incline
<i>Aira caryophyllea</i>	Silver Hair-grass	-	Rare
<i>Aira praecox</i>	Early Hair-grass	Locally frequent	Frequent
<i>Alchemilla mollis</i> *	Soft Lady's-mantle	-	Rare at base of incline
<i>Alliaria petiolata</i>	Garlic Mustard	Garden at Fron Haul	-
<i>Alnus glutinosa</i>	Alder	Saplings by cottages	-
<i>Anagallis arvensis</i>	Scarlet Pimpernel	Rare	-
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass	-	Rare
<i>Aphanes australis</i>	Slender Parsley Piert	Rare on south side	Abundant at base
<i>Arabidopsis thaliana</i>	Thale Cress	Garden at Fron Haul	-
<i>Arrhenatherum elatius</i>	False Oat-grass	-	Rare
<i>Asplenium ruta-muraria</i>	Wall-rue	Occasional	-
<i>Asplenium trichomanes</i>	Maidenhair Spleenwort	Frequent on walls	Occasional
<i>Athyrium filix-femina</i>	Lady Fern	Rare	Rare
<i>Betula pendula</i>	Silver Birch	-	1 tree at base of incline
<i>Betula pubescens</i>	Downy Birch	Seedlings frequent (trees present on adjacent riverbank)	-
<i>Brachypodium sylvaticum</i>	False Brome	1 young plant	Abundant at base
<i>Buddleja davidii</i> *	Butterfly Bush	Rare saplings	Several large bushes
<i>Calluna vulgaris</i>	Heather	-	Large patch at base of incline
<i>Cardamine flexuosa</i>	Wavy Bittercress	Frequent	Occasional
<i>Cardamine hirsuta</i>	Bittercress	Occasional	-
<i>Centaurea nigra</i>	Knapweed	Garden at Fron Haul	-
<i>Cerastium fontanum</i>	Mouse-ear	Rare	-
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	Rare	-
<i>Chamerion angustifolium</i>	Rosebay Willowherb	-	Rare
<i>Chenopodium album</i>	Fat hen	Garden at Fron Haul	-
<i>Circaea lutetiana</i>	Enchanter's Nightshade	Rare	Rare at base of incline
<i>Corylus avellana</i>	Hazel	-	1 cut sapling at base of incline
<i>Crataegus monogyna</i>	Hawthorn	-	1 tree at base of incline
<i>Cymbalaria muralis</i> *	Ivy-leaved toadflax	Occasional	-
<i>Cynosurus cristatus</i>	Crested Dog's-tail	Garden at Fron Haul	
<i>Deschampsia flexuosa</i>	Wavy hair-grass	-	Rare at base of incline
<i>Digitalis purpurea</i>	Foxglove	Rare	-
<i>Dryopteris filix-mas</i>	Male Fern	-	One at base of incline
<i>Epilobium brunnescens</i> *	New Zealand Willowherb	Common	Frequent
<i>Epilobium ciliatum</i> *	American Willowherb	Frequent	-
<i>Epilobium montanum</i>	Broad-leaved Willowherb	Occasional	Occasional
<i>Epilobium obscurum</i>	Short-fruited willowherb	-	Rare at base of incline
<i>Erica cinerea</i>	Bill Heather	-	Large patch at base of incline
<i>Erodium maritimum</i>	Sea Stork's-bill	Rare near entrance	Frequent at base
<i>Euphorbia peplus</i>	Petty Spurge	Garden at Fron Haul	-

<i>Festuca ovina</i>	Sheep's Fescue	-	Rare
<i>Festuca rubra</i>	Red Fescue	Rare	-
<i>Fragaria vesca</i>	Strawberry	Rare near Café	Frequent at base
<i>Fraxinus excelsior</i>	Ash	Frequent seedlings	Rare seedlings
<i>Galium aparine</i>	Goosegrass	Rare	-
<i>Galium verum</i>	Lady's Bedstraw	Garden at Fron Haul	-
<i>Geranium lucidum</i>	Shining Crane's-bill	Rare near Café	-
<i>Geranium molle</i>	Soft Crane's-bill	Rare near Café	-
<i>Geranium robertianum</i>	Herb Robert	Occasional	Frequent
<i>Geum urbanum</i>	Herb Bennett	-	Rare at base of incline
<i>Hedera hibernica</i>	Atlantic Ivy	Wall by river	Frequent
<i>Hieracium</i> sp.	Hawkweed	Out of reach inside waterwheel tower	-
<i>Holcus lanatus</i>	Yorkshire Fog	Rare, rear yards and Garden at Fron Haul	Rare at base of incline
<i>Hypericum androsaemum</i>	Tutsan	1 seedling on wall	Rare
<i>Hypericum maculatum</i>	Square-stemmed St John's-wort	Rare on water wheel tower	Rare at base
<i>Hypochaeris radicata</i>	Cat's-ear	Rare, 1 seedling	-
<i>Juncus bufonius</i>	Toad Rush	Garden of Cottages	-
<i>Juncus effusus</i>	Soft Rush	Garden of Cottages	Rare
<i>Juncus tenuis</i> *	Slender Rush	Rear yard	Rare
<i>Linaria purpurea</i> *	Purple Toadflax	Front yard, rare	-
<i>Lolium perenne</i>	Rye Grass	Garden at Fron Haul	-
<i>Montia fontana</i>	Blinks	Rare near café	-
<i>Mycelis muralis</i>	Wall Lettuce	Rare on one wall	-
<i>Myosotis arvensis</i>	Forget-me-not	Rare	-
<i>Persicaria maculosa</i>	Redshank	Rare in Cottage gardens	-
<i>Plantago lanceolata</i>	Ribwort Plantain	Rare	-
<i>Plantago major</i>	Greater Plantain	Occasional	Occasional
<i>Poa annua</i>	Annual Meadow-grass	Frequent	Occasional
<i>Poa nemoralis</i>	Wood Meadow-grass	Wall of Waterwheel tower	-
<i>Polygonum arenastrum</i>	Equal-leaved Knotgrass	Rare	-
<i>Polypodium</i> sp.	Polypody	1 juvenile plant on wall by entrance	Rare
<i>Potentilla anserina</i>	Silver weed	-	Rare at base of incline
<i>Potentilla reptans</i>	Creeping Cinquefoil	Rare	-
<i>Prunella vulgaris</i>	Self-heal	Lawn of Cottages	rare
<i>Quercus robur</i>	Pedunculate Oak	Two planted trees and one sapling	Rare at base
<i>Ranunculus repens</i>	Creeping Buttercup	Rare in Cottage gardens	-
<i>Rosa</i> sp.	Rose	-	Rare, young plant
<i>Rubus fruticosus</i>	Bramble	Rare saplings	Frequent
<i>Rumex obtusifolius</i>	Broad-leaved Dock	Garden at Fron Haul	-
<i>Rumex sanguineus</i>	Wood Dock	-	Rare at base of incline
<i>Sagina apetala</i>	Annual Pearlwort	Wall of Cottages	-
<i>Sagina procumbens</i>	Pearlwort	Frequent	Rare
<i>Salix cinerea</i>	Grey willow	Seedlings and saplings frequent	Rare
<i>Sambucus nigra</i>	Elder	Seed ling in front yard	-
<i>Scrophularia nodosa</i>	Figwort	-	On incline
<i>Sedum anglicum</i>	English Stonecrop	-	Frequent on incline
<i>Senecio jacobaea</i>	Ragwort	Rare seedlings	Rare
<i>Senecio viscosus</i>	Sticky Groundsel	Rare on rail tracks	-

<i>Senecio vulgaris</i>	Groundsel	Rare near Café	-
<i>Sonchus asper</i>	Prickly Sowthistle	One plant by café	-
<i>Stellaria media</i>	Chickweed	Occasional	-
<i>Taraxacum</i> sp.	Dandelion	Occasional	-
<i>Teucrium scorodonia</i>	Wood Sage	Rear yard	Rare at base of incline
<i>Trifolium dubium</i>	Hop-trefoil	Rare near café	Rare
<i>Trifolium pratense</i>	Red Clover	Lawn of Cottages	
<i>Trifolium repens</i>	White Clover	Lawn of Cottages	-
<i>Ulex gallii</i>	Western Gorse	-	Rare at top of incline
<i>Umbilicus rupestris</i>	Navelwort	Rare near café	-
<i>Urtica dioica</i>	Nettle	Rare	-
<i>Valerianella locusta</i>	Corn Salad	Rare	-
<i>Veronica arvensis</i>	Field Speedwell	Occasional	-
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	Occasional	Occasional at base
<i>Vicia sepium</i>	Bush Vetch	-	One at top of incline
<i>Vulpia bromoides</i>	Squirreltail Fescue	-	Rare

Discussion

A total of 102 vascular plant species were found, 82 within the museum confines and 57 at the incline. Seven species (7%) are not native to Wales. There are no species of significance for nature conservation.

The Slate Museum has well maintained grounds, and the flora is largely of ephemeral weeds of no significance for nature conservation. Vascular plants occurred occasionally in crevices on boundary walls and walls of building, but only a few are species normally at home in this habitat, including the small ferns Wall Rue and Maidenhair Spleenwort, and the flowering plants Ivy-leaved Toadflax and Navelwort. The stony ground of the Slate Museum is heavily trampled, with vascular plants which are species often found on stony ground, including Hair-grasses, New Zealand Willowherb and Herb Robert. Most species present represent casual occurrences of common widespread plants, or seedlings derived from nearby trees.

The Vivian Incline is also well maintained, the main area of diversity being the scrubby/grassy area at the base of the incline with the picnic table. It has a mixture of species typical of various habitats, including heathland (Heather and Bell Heather), woodland (False Brome, Bramble) and dry open habitats (Hair-grasses, Slender Parsley-piert).

The Sea Stork's-bill *Erodium maritimum* which occurred at both the buildings and the incline was a surprise to find as it is normally a plant of sea cliffs and bare stony areas near the sea. It was also relatively widespread around the car park (Figure 2).



Figure 2. *Erodium maritimum* at the Vivian Incline.