

## IUCN THREAT LISTING OF WELSH VASCULAR PLANTS

*The Vascular Plant Red Data List for Great Britain* (Cheffings & Farrell, 2005) represents a departure from the old Red Data Books and Scarce Plant analyses. Instead of rarity, measured by 10-km square thresholds, this exercise evaluates the threat to all well-recognised species, subspecies and – for the first time – hybrids in Britain, using the standardised IUCN guidelines (IUCN, 2001). In total, the new Red List identified a significant threat to 497 taxa of vascular plants in Britain, of which 201 taxa are recorded from Wales (see summary, Table 1):

Table 1	Britain	Wales
<b>Extinct</b>	10	4
<b>Extinct in Wild</b>	5	1
<b>Critically Endangered</b>	35	11
<b>Endangered</b>	90	32
<b>Vulnerable</b>	220	75
<b>Near Threatened</b>	98	63
<b>Data Deficient</b>	39	15
<b>Total</b>	<b>497</b>	<b>201</b>

A full list of all the threatened plants found in Wales is shown in Table 2 (extinct taxa in italics), together with a summary of the IUCN criteria, as applied in this case. This Welsh list offers considerable scope for comment – and revision. About 16% of threatened plants, for instance, or at least 23 taxa, come from arable habitats (including *Galeopsis segetum*, listed here as “Extinct”) and there is also a strong representation of plants associated with open woodland / woodland edge (22 or more taxa), grazing marshes (*c.*16 spp.) and seasonally parched, rocky soils (*c.*13 spp.). Other groups of threatened plants are found mainly in disturbed damp heaths, restricted coastal habitats (eg. sand / shingle interface) and certain kinds of wetland (eg. drainage ditches), etc. but there is probably just as much variety within the list as any underlying theme. Each of these taxa has a unique threat profile or reasons for its decline and there is an urgent need for more autecological data to reverse these worrying trends – starting, perhaps, with the most critically threatened plants.

Several other conservation priorities also emerge from this List. A number of taxonomic uncertainties and questionably native plants, for instance, are held in a separate annex to the full document, (not listed here but see [http://www.jncc.gov.uk/pdf/pub05\\_speciesstatusvpredlist3\\_web.pdf](http://www.jncc.gov.uk/pdf/pub05_speciesstatusvpredlist3_web.pdf)) together with some insufficiently well-mapped species and subspecies. This “Waiting List” includes several very interesting Welsh taxa such as ‘*Dactylorhiza incarnata* subsp. *pulchella*’, *Stachys alpina* and *Pilosella peleteriana* subsp. *subpeleteriana* and is, in effect, an important set of research priorities. The majority of the more critical taxa (eg. *Dryopteris affinis* subsp., *Hieracium* spp. and *Ranunculus auricomus* agg.) were also not assessed for this Red List, although a range of bramble species (*Rubus fruticosus* agg.) and dandelions (*Taraxacum* spp.) were judged rare enough to be threatened – although not by strict IUCN criteria. These include five Welsh brambles (*Rubus aquarum*, *R. dasycoccus*, *R. hirsutissimus*, *R. melanocladus* & *R. trelleckensis*) and one species of Welsh dandelion (*Taraxacum breconense*). The significantly high threat status of some other microspecies that were evaluated for the Red List (especially eyebrights, *Euphrasia* spp.) clearly demonstrates the need to apply this assessment to all taxonomically difficult groups.

Finally, the absence of several very rare plants from the list is largely due to their observed stability and the low risks associated with their habitats. So, for example, the few plants of Killarney Fern (*Trichomanes speciosum*) in very isolated ravines are less threatened than the

many populations of Corn Spurrey (*Spergula arvensis*). In principle, the new Red List will supplement, not supplant the existing Red Data Book and the mechanisms for conserving rarity (eg. SSSIs and NNRs) will coexist with those for threat (eg. BAP). This list does indicate, however, the considerable amount of work this could entail.

## References

Cheffings, C.M. & Farrell, L. (Eds), Dines, T.D., Jones, R.A., Leach, S.J., McKean, D.R., Pearman, D.A., Preston, C.D., Rumsey, F.J., Taylor, I. 2005. *The Vascular Plant Red Data List for Great Britain. Species Status 7*: 1-116. Joint Nature Conservation Committee, Peterborough.

IUCN, 2001. *IUCN Red List Categories and Criteria: Version 3.1*. IUCN, Gland, Switzerland and Cambridge, UK.

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Table 2

<p>Extinct taxa in italics.</p> <p><b><u>EXTINCT (EX)</u></b>: no reasonable doubt that the last individual has died, after exhaustive surveys in known and/or expected habitat at appropriate times throughout its historic range.</p> <p><b><u>EXTINCT IN THE WILD (EW)</u></b>: known to survive only in cultivation after exhaustive surveys (as above).</p> <p><b><u>CRITICALLY ENDANGERED (CR)</u></b>: the best available evidence indicates that it is facing an extremely high risk of extinction in the wild, based on observations of less than 50 mature individuals; a declining population of less than 250 mature individuals or at just one site; and/or an observed or estimated decline in its Area of Occupancy* and/or Extent of Occurrence* of <math>\geq 80\%</math> between the two Atlas observation periods (1930-60 and 1987-99).</p> <p><b><u>ENDANGERED (EN)</u></b>: the best available evidence indicates that it facing a very high risk of extinction in the wild, based on observations of less than 250 mature individuals; a declining population of less than 2,500 mature individuals or its presence in 5 or fewer sites; and/or an observed or estimated decline in its Area of Occupancy and/or Extent of Occurrence of <math>\geq 50\%</math> between the two Atlas observation periods (1930-60 and 1987-99).</p> <p><b><u>VULNERABLE (VU)</u></b>: the best available evidence indicates that it is facing a high risk of extinction in the wild, based on observations of less than 1,000 mature individuals; a declining population of less than 10,000 mature individuals or its presence in 10 or less sites; and/or an observed or estimated decline in its Area of Occupancy and/or Extent of Occurrence of <math>\geq 30\%</math> between the two Atlas observation periods (1930-60 and 1987-99).</p> <p><b><u>NEAR THREATENED (NT)</u></b>: the best available evidence indicates that it is close to qualifying for a threatened category in the near future, based on</p>
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observations of less than 10,000 individuals; a declining population in 30 or fewer sites and/or an observed or estimated decline in its Area of Occupancy and/or Extent of Occurrence of  $\geq 20\%$  between the two Atlas observation periods (1930-60 and 1987-99).

**DATA DEFICIENT (DD)**: insufficient distribution / abundance data to assess the risk of extinction but some evidence to indicate that a threatened classification may be appropriate.

\* See Cheffings & Farrell, 2005 pp. 13-22 for a more detailed explanation of these terms and their application to British vascular plants and <http://www.iucn.org/themes/ssc/red-lists.htm> for a full version of the Criteria.

Cotoneaster integerrimus	CR
<i>Eryngium campestre</i>	CR
Galeopsis angustifolia	CR
<i>Galium tricornutum</i>	CR
Juniperus communis subsp.	
hemisphaerica	CR
Lolium temulentum	CR
Ranunculus arvensis	CR
Scandix pecten-veneris	CR
Scleranthus perennis subsp	
perennis	CR
Sorbus domestica	CR
Sorbus leyana	CR

Anthemis arvensis	EN
Asparagus prostratus	EN
Campanula patula	EN
<i>Carex depauperata</i>	EN
Centaurium scilloides	EN
Dianthus armeria	EN
Euphrasia anglica	EN
Euphrasia pseudokernerii	EN
Liparis loeselii	EN
Lithospermum arvense	EN
Lycopodiella inundata	EN
Lythrum hyssopifolium	EN
<i>Melampyrum sylvaticum</i>	EN
Mentha pulegium	EN
Minuartia hybrida	EN

Monotropa hypopitys		Fallopia dumetorum	VU
subsp. hypophegea	EN	Gagea bohemica	VU
subsp. hypopitys	EN	<i>Galium parisiense</i>	VU
Neotinea ustulata	EN	Galeopsis speciosa	VU
<i>Orobanche artemisiae-campestris</i>	EN	Gentianella campestris	VU
Potamogeton compressus	EN	Gentianella uliginosa	VU
Potentilla rupestris	EN	<i>Groenlandia densa</i>	VU
Ranunculus tripartitus	EN	<i>Herminium monorchis</i>	VU
Rumex rupestris	EN	Hordeum marinum	VU
Saxifraga cespitosa	EN	Hydrocharis morsus-ranae	VU
Scleranthus annuus		Hyoscyamus niger	VU
subsp. annuus	EN	Hypochaeris glabra	VU
Silene gallica	EN	Juncus capitatus	VU
Sorbus eminens	EN	Lloydia serotina	VU
Sorbus leptophylla	EN	Matthiola sinuata	VU
<i>Torilis arvensis</i>	EN	Melittis melissophyllum	VU
Valerianella dentata	EN	Misopates orontium	VU
Valerianella rimosa	EN	Myosurus minimus	VU
Woodsia ilvensis	EN	Myriophyllum verticillatum	VU
		Oenanthe fistulosa	VU
Allium oleraceum	VU	Ophrys insectifera	VU
Anthemis cotula	VU	Orobanche purpurea	VU
Arabis petraea	VU	Papaver argemone	VU
Artemisia campestris	VU	Persicaria minor	VU
Blysmus compressus	VU	<i>Persicaria mitis</i>	VU
Bromus secalinus	VU	Petrorhagia nanteuillii	VU
Bupleurum tenuissimum	VU	Platanthera bifolia	VU
Carex acuta x aquatilis	VU	Poa glauca	VU
Carex curta x paniculata		Polystichum lonchitis	VU
(C. x ludibunda)	VU	Potamogeton alpinus x crispus	
Carex dioica x echinata		(P. x olivaceus)	VU
(C. x gaudiniana)	VU	<i>Potamogeton crispus x praelongus</i>	
Carex divisa	VU	(P. x undulatus)	VU
Cephalanthera longifolia	VU	Potamogeton natans x polygonifolius	
Cerastium alpinum	VU	(P. x gessnacensis)	VU
Chamaemelum nobile	VU	Pseudorchis albida	VU
Chenopodium bonus-henricus	VU	<i>Puccinellia fasciculata</i>	VU
Chenopodium murale	VU	Salsola kali subsp. kali	VU
Chrysanthemum segetum	VU	Saxifraga hypnoides	VU
Cicendia filiformis	VU	Scorzonera humilis	VU
Clinopodium acinos	VU	Silene conica	VU
Cuscuta epithymum	VU	Silene noctiflora	VU
Dactylorhiza viridis	VU	Sorbus minima	VU
Daphne mezereum	VU	Spergula arvensis	VU
Equisetum arvense x telmateia		Stellaria palustris	VU
(E. x robertsii)	VU	Tephrosieris integrifolia	
Euphrasia cambrica	VU	subsp. maritima	VU
Euphrasia rivularis	VU	Trifolium strictum	VU
Euphrasia rostkoviana		Vicia bithynica	VU
subsp. montana	VU	Viola lactea	VU
Euphrasia rostkoviana		Wolffia arrhiza	VU
subsp. rostkoviana	VU	Zostera noltei	VU

Anacamptis morio	NT	Rosa agrestis	NT
Anagallis minima	NT	Ruppia cirrhosa	NT
Arum italicum subsp. neglectum	NT	Salvia pratensis	NT
Asplenium obovatum	NT	Senecio cambrensis	NT
Asplenium septentrionale	NT	Silene nutans	NT
Asplenium trichomanes		Sorbus anglica	NT
subsp. pachyrachis	NT	Spiranthes spiralis	NT
Baldellia ranunculoides		Stachys arvensis	NT
subsp. ranunculoides	NT	Teesdalia nudicaulis	NT
Cardamine impatiens	NT	Tuberaria guttata	NT
Carex diandra	NT	Tuberaria guttata	NT
Carex muricata subsp. muricata	NT	Veronica serpyllifolia	
Cerastium arcticum	NT	subsp. humifusa	NT
Cerastium pumilum	NT	Vicia orobus	NT
Cirsium tuberosum	NT	Viola canina	NT
Colchicum autumnale	NT	Viola tricolor	NT
Cynoglossum officinale	NT	Viola tricolor subsp. tricolor	NT
Cyperus longus	NT	Wahlenbergia hederacea	NT
		Woodsia alpina	NT
Cytisus scoparius		Zostera marina	NT
subsp. maritimus	NT		
Dianthus deltoides	NT	Baldellia ranunculoides	
Draba aizoides	NT	subsp. repens	DD
Drosera anglica	NT	<i>Dactylorhiza incarnata</i>	
Eriophorum gracile	NT	subsp. ochroleuca	DD
Euphorbia exigua	NT	Dactylorhiza purpurella	
Filago vulgaris	NT	subsp. cambrensis	DD
Frankenia laevis	NT	Epipactis dunensis	DD
Genista anglica	NT	Euphrasia arctica	
Genista pilosa	NT	subsp. borealis	DD
Hymenophyllum wilsonii	NT	Euphrasia confusa	DD
Hypericum linariifolium	NT	Euphrasia micrantha	DD
Hypericum montanum	NT	Euphrasia ostenfeldii	DD
Hypochaeris maculata	NT	Euphrasia tetraquetra	DD
Juncus compressus	NT	Gymnadenia densiflora	DD
Lathyrus palustris	NT	Mentha suaveolens	DD
Lychnis viscaria	NT	<i>Rumex acetosa</i> subsp. <i>hibernicus</i>	DD
<i>Mertensia maritima</i>	NT	Salicornia nitens	DD
Meum athamanticum	NT	Stellaria nemorum	
Minuartia verna	NT	subsp. montana	DD
Neottia nidus-avis	NT	Utricularia intermedia sens.str.	DD
Orobanche rapum-genistae	NT		
Pilosella peleteriana	NT	<i>Saxifraga rosacea</i>	
Pilularia globulifera	NT	subsp. <i>rosacea</i>	EW
Platanthera chlorantha	NT		
Potamogeton friesii	NT	<i>Caucalis platycarpos</i>	EX
Potamogeton praelongus	NT	<i>Euphorbia peplis</i>	EX
Potentilla argentea	NT	<i>Galeopsis segetum</i>	EX
Radiola linoides	NT	<i>Otanthus maritimus</i>	EX