

**Draft Proposals and Targets for
A National Plant Conservation Strategy for Ireland
In response to the Global Strategy For Plant Conservation
DRAFT December 2005**

Changes since October in red

A set of proposed targets for Ireland to fulfil its obligations under the Global Strategy as part of its commitments to the Convention on Biological Diversity. The Targets are aligned to the Global Strategy in both content and numbering so as to allow ease of cross-reference. For each target a set of appropriate actions and a means of measuring their outcomes have been developed.

SUMMARY

A. Understanding and documenting plant diversity

Target 1: Widely accessible preliminary census lists of all wild plant species, and fungi, found in the Republic of Ireland.

Target 2: A preliminary assessment of the conservation status of all known plant species, in Ireland completed and made widely available.

Target 3: Comprehensive and documented suite of practical solutions based on new or tested models, case studies, research and other experiences available for plant conservation and sustainable use in Ireland.

B. Conserving plant diversity

Target 4: At least 10 per cent of each of Ireland's plant habitats effectively conserved

Target 5: Protection of the most important areas for plant diversity in Ireland assured.

Target 6: At least 30 per cent of production lands in Ireland managed consistent with the conservation of plant diversity

Target 7: Conservation of at least 60 per cent of Ireland's threatened plant species assured in situ.

Target 8: All threatened Irish plant species in accessible ex situ collections, and all Critically Endangered and Endangered category species included in effective conservation management programmes.

Target 9: Conserve the genetic diversity of all known indigenous traditional Irish varieties of crop plants, landraces and crop relatives as well as other socio-economically valuable plant species.

Target 10: Management plans in place for at least 10 major alien species that threaten plants, plant communities and associated habitats and ecosystems in Ireland

C. Using plant diversity sustainably

Target 11: No species of wild flora endangered by international trade

Target 12: All plant-based products derived from Irish wild plants harvested from sustainably managed sources.

Target 13: Safeguard the traditional practices based on plant resources, and their associated knowledge, that are sustainable, and that support local communities and their livelihoods in Ireland.

D. Promoting education and awareness about plant diversity

Target 14: Ensure that plant conservation and biodiversity issues are incorporated into the formal educational curricula at all levels in Ireland, and in informal education and national public awareness programmes.

E. Building capacity for the conservation of plant diversity

Target 15: The number of trained people working with appropriate facilities in plant conservation increased, as required, to achieve the targets of this Strategy.

Target 16: A broadly-based Irish network for plant conservation established to achieve the targets for this strategy.

KNOWING WHAT WE'VE GOT

Target 1: Widely accessible preliminary census lists of all wild plant species, and fungi, found in Ireland.

Many of the actions for this target need to be undertaken in collaboration with the appropriate bodies in Northern Ireland. It is envisaged that checklists would be provided, as a starting point, and as Census catalogues became available electronically they could be updated to the National GSPC website. This target will contribute to action 41 of the National Biodiversity Plan.

Current state of knowledge of Plant & Fungi species in Ireland

GROUP	Taxa	Checklist	Census Cat.
FUNGI	3,500	2005	?
FUNGI-Lichens	957		1984
FUNGI-Lichenicolous species	150		2002
ALGAE-Freshwater	1,000+		?
ALGAE-Marine	579	2005	?
BRYOPHYTES	815		2004
PTERIDOPHYTES	78		1987
SEED PLANTS - Native	815		1987
SEED PLANTS - Aliens	1,108		2002

Actions:

Gather, compile and facilitate access to publications and information relevant to Ireland's flora. Provide access to synonym lists for all plant (vascular, bryophytes by 2006; algae by 2008) and fungi species (by 2007).

Update the Census Catalogue of Vascular Plants by 2008; investigate GBIF protocols in respect of data holdings; develop an on-line Census Catalogue.

Update the Census Catalogue of Lichens by 2007

Produce Census Catalogue of Marine Algae by 2007

Develop a Checklist of Fungi by 2007

Develop a Census Catalogue of Fungi by 2009

Milestones & Indicators:

Census Catalogue of Bryophytes is complete (2004)

Preliminary Checklists of all plant and fungi species available on the website by 2006.

Census Catalogue of vascular plants available on-line by 2007

Preliminary Census Catalogue of Lichens & Fungi available on-line by 2007

Preliminary Census Catalogue of Marine & Freshwater algae available on-line by 2007

KNOWING WHAT'S UNDER THREAT

Target 2: A preliminary assessment of the conservation status of all known plant species in Ireland completed and made widely available.

Wildlife Service is currently sponsoring endangered Bryophyte surveys of a number of vice counties each year. A database of all threatened plants is currently being completed by Wildlife.

Actions:

Develop a working Red data list of vascular plants, to be put on-line for public consultation

Test Comparison of ca. 6 species of vascular plants to judge +/- overlap of data between BSBI VC recorders and NPWS dataset; A Gap-analysis Workshop to be undertaken in October 2006 to further refine red data list.

To encourage, and facilitate the publication of new records where action needs to be taken in protecting new sites for species of conservation concern

Establish a national database on rare and scarce plants by 2007

Preliminary assessment of the conservation status of algae by 2008

Preliminary assessment of the conservation status of lichens and fungi by 2009

Milestones & Indicators:

Provide the full text of the previous Red Data Book on the website (Done)

Publication of an updated Red Data List of bryophytes by 2010

Publication of Red Data List of vascular plants, by 2010

THE TOOLS FOR THE JOB

Target 3: Comprehensive and documented suite of practical solutions based on new or tested models, case studies, research and other experiences available for plant conservation and sustainable use in Ireland.

The intention under this target is to provide a clearing house of practical guidance on how to conduct plant conservation and sustainable use activities in particular settings in Ireland. Techniques, technologies, protocols, practices, models, experiences and other forms of case studies will be compiled so as to have a source of practical information. This is an important cross-cutting target and supports a number of actions of the National Biodiversity Plan, including actions 18, 29, 34, 35, 40, 43, 44, 66, 75, 80, 81, and 84.

Actions:

Develop a national plant research agenda through a consultative process and set priorities.

Locate all research publications from the past 25 years on threatened plant ecology, biology and other conservation studies. Road building, Golf-course construction, Hedge management and any EIA proposals for amelioration or mitigation and actual outcomes should be included.

Compile existing management advice from Environmental NGOs, Government bodies and other organisations, and place on website.

Undertake research to investigate the most effective range of techniques available for plant conservation, including seedbanks, translocations, habitat manipulation and management, genetic diversity studies, pollination biology etc., to be completed by 2006. This should include bryophyte and lichen conservation, in addition to vascular plants.

Milestones & Indicators:

Provide an on-line set of published guidelines, techniques, protocols searchable by taxon and habitat.

Provide an on-line set of (or links to) guidelines for suitable management practices and techniques for woodland, ponds, hedgerows etc.

Develop guidelines for the incorporation of plant conservation targets into local authority area development plans, local area Biodiversity Action Plans, Agri-environmental schemes, Site Management Plans.

Produce a manual for practical plant conservation in Ireland by 2007

Produce guidelines for county councils local authorities for restoration and rehabilitation of threatened species and associated habitats, Motorway and Trunk road verges rehabilitation.

B. Conserving plant diversity

CONSERVING NATIVE HABITATS

Target 4: At least 10 per cent of each of Ireland's plant habitats effectively conserved

This target supports actions 31 and 78 of the National Biodiversity Plan, and specifically looks at conserving habitats rather than species.

Actions:

Ireland's national resources and habitats fully mapped by 2009.

Assess the congruence of plant habitats and conservation areas already under legal protection.

Habitat Action Plans to be developed for those habitats for which Ireland has special responsibility (ca. 10-15 habitats, i.e. Charophytic lakes, Alpine heathland) by 2010.

Ascertain the coverage of Ireland's habitat diversity. Estimate the national resource of ecological regions and habitats in areas protected under the European Communities (Natural Habitats) Regulations, 1997 (NATURA 2000 network) and the Wildlife (Amendment) Act, 2000, e.g. SACs, designated NHAs and National Nature Reserves by 2009, with a view to filling any gaps in coverage by 2010

Incorporate plant conservation issues in County Council Biodiversity Action Plans local authority area development plans, local area Biodiversity Action Plans, Agri-environmental schemes (e.g. REPs, CFPs, NPWSFPs).

Milestones & Indicators:

Publish an assessment of how well Ireland's habitats are legally protected.

New protected areas or extension of existing areas achieved where necessary.

CONSERVING IMPORTANT AREAS FOR PLANT SPECIES

Target 5: Protection of the most important areas for plant diversity assured.

An initial process will be to identify areas within Ireland that are significant in terms of the plant or fungal species or combinations of plants and fungi contained within them. Drafting and designation of these regions will be an important step in appreciating gaps in other legal approaches to the protection of our flora.

Actions:

Develop methodology and criteria for recognising Important Areas for Plant Diversity in the Republic of Ireland by July 2006.

Undertake 3 pilot studies which will identify Important Areas for Plant Diversity in Dublin (DNFC), Westmeath (Con Breen), and East Galway (GNFC) by October 2006.

Presentation of results of pilot studies at a meeting in September 2006, at which the methodology and criteria will also be refined.

Identification of important areas of vascular plant diversity by 2007.

Determine the extent to which important areas of plant diversity fall within protected areas, e.g. SACs, NHAs and National Nature Reserves, with a view to filling any gaps in coverage by 2010.

Milestones: & Indicators:

Disseminate information on the significance and conservation value of IAPDs in the form of a publication based on the three Pilot studies, and launch a National Initiative.

Evaluate the extent to which IAPDs fall within protected (designated) areas, and publish a report on the extent to which important areas of plant diversity fall within formally protected areas.

THE AGRICULTURAL LANDSCAPE

Target 6: At least 30 per cent of production lands managed consistent with the conservation of plant diversity

This target is subject to the changing activities of EU agricultural interventions such as REPs payments and other farming subsidies. In the forestry sector there has already been a major shift from timber production to woodland creation in such projects as the Peoples Millennium Forests Project and the Native Woodland Scheme. The achievements of Target 3 will provide a valuable resource for this target also. Actions 20, 21, 23, 32, 33, 66 and 67 of the National Biodiversity Plan address these issues also.

Actions:

Mechanism and funding in place to secure in situ conservation of Irish agricultural plant genetic resources and their associated weeds.

Provision of resources and guidelines for hedge management and marginal lands developed.

Make recommendations from hedgerow survey reports widely available

Improvement of REPS and development of appropriate NPWS farm plans

Milestones & Indicators:

No further declines in Irish agricultural weeds.

Assessment of the effectiveness of the Linnet Project for conserving vascular plant species associated with agriculture.

Compliance of farmers and successful implementation of REPS

Linkages into other agri-biodiversity schemes.

IN SITU CONSERVATION

Target 7: Conservation of at least 60 per cent of Ireland's threatened plant species assured in situ.

Protected areas provide the only current means of conservation. Public awareness and landowner co-operation are potentially valuable avenues to explore. Actions 21, 22, 23 & 24 of the National Biodiversity Plan cover monitoring and assessment of protected area legislation.

Actions:

Determine congruence of threatened plants and existing legally protected areas by 2008.

Develop species management plans for the most critically endangered species.

Implement a national research programme in the conservation biology of threatened plants.

Milestones & Indicators

Publish detailed distribution information on protected and threatened plants, where appropriate, to prevent inadvertent loss or destruction of species through ignorance.

Ensure that all threatened species of the Irish Flora occur in protected areas.

EX SITU CONSERVATION

Target 8: All threatened plant species in accessible ex situ collections, and all Critically Endangered and Endangered category species included in effective conservation management programmes.

A recent project launched by PlantNetwork: the Plant Collections Network of Britain and Ireland has prepared a set of eight sub-targets in order to develop three major goals: a complete database of cultivation and propagation protocols for all the threatened plant species of Britain and Ireland; formation of partnerships between ex situ and in situ conservation efforts, through developing

horticultural knowledge of these species; and lastly to increase the number of species in cultivation so as to provide material for experimental or public awareness programmes.

Actions:

Establish a national database of ex situ collections of threatened plants, by 2008.

Initiate Species Action Plans for all Red Data Book Species in Ireland by 2008.

Where required, all critically endangered vascular plant taxa included in species recovery programmes.

All internationally threatened vascular plants, including all those of EU concern, to be the subject of active and on-going monitoring programmes by 2008, with recovery programmes for any that are deemed necessary to be initiated by 2010.

Ensure 60% of accessions in the Irish Threatened Plant Genebank have the minimum requirements for active base collections, by 2010.

Extend the coverage of the Irish Threatened Plant Genebank to contain 3-5 accessions (where possible) of all threatened and scarce Irish native plants.

An integrated project to cultivate all the threatened species of vascular plant in Ireland at botanical collections, and to collate, and synthesise appropriate cultivation and propagation protocols for all these species.

Determine effective methods for bryophyte conservation by 2010, and begin the implementation of monitoring and recovery plans for 10% of threatened Irish bryophytes by 2010.

Milestones & Indicators:

Species management plans in place for all CR, EN and EW category plant species in Ireland.

All threatened vascular plants, where appropriate and possible, accessioned in the Irish Threatened Plant Genebank, with a minimum of 3 accessions each.

Complete inventory of cultivation and propagation protocols for all Ireland's threatened vascular plants, as a complementary measure to the seed bank.

Species management and monitoring programmes in place for all internationally threatened native vascular plants, particularly those of EU concern.

CROP PLANT CONSERVATION

Target 9: Conserve the genetic diversity of all known indigenous traditional Irish agricultural plant varieties of crops, land races and crop relatives as well as other socio-economically valuable plant species.

Many agricultural crops being bred in Ireland today supply a rather small and specialist market including malting Barleys and sugar beet. By targeting heritage crops and vegetables there will be some ability to document and secure these varieties. The genetic integrity of these agriculturally important species have also been addressed under action 35 of the National Biodiversity Plan.

Actions:

Develop a checklist of all traditional Irish-bred agricultural plant varieties and circulate to holders of ex situ collections for comments, additions and to mark materials held.

Further collate all existing knowledge on traditional Irish use of plant genetic resources and ensure that this material is effectively archived.

Ensure continued survival of Irish agricultural plant genetic resources in one or more genebanks within the State by 2007.

Establish a National Heritage Grain Crops programme to promote the growing of a number of Irish bred grain varieties on farms for use in novel or traditional crops (Biomass, Thatching).

Promote the continued use of crop varieties and landraces in traditional Irish agricultural systems by developing new incentive mechanisms for farmers by 2011.

Develop an Irish Cultivars school projects for Primary (Vegetable) and Secondary (Grain crops) School level. Establish a pilot project in schools to raise awareness of indigenous agricultural biodiversity.

Encourage each Local Authority to incorporate a Community Orchard of traditional Irish bred apple, pear, plum and damson varieties in their Local Biodiversity Action Plans. Each Community Orchard should be at least 500m² and comprise a minimum of 20 trees of 10 or more varieties.

Develop and write leaflets for gardening clubs and farming organisations promoting the growing of heritage grain and vegetable varieties by 2008.

Milestones & Indicators:

Database of all known Irish-bred agricultural plant varieties, and their location in living or other collections published and widely available.

Five Heritage Grain Crops established in an incentivised scheme by 2011.

Sixteen Local Authorities to have incorporated a Community Orchard in their Local Biodiversity Plan.

Establish a pilot project in schools to raise awareness of indigenous agricultural biodiversity.

INVASIVE ALIEN PLANTS

Target 10: Management plans in place for at least 10 major alien species that threaten plants, plant communities and associated habitats and ecosystems in Ireland

Alien plants have had a relatively small impact in Ireland, but globally they represent a serious threat to biodiversity. At present rhododendron is one of the few plants for which serious efforts are being made to control its population, but eradication is seen as impossible. The Global Invasive Species Programme (GISP) and Invasive Species Specialist Group (ISSG) have formulated guidelines for developing national management plans. The only serious action to an invasive alien is total eradication, this may still be achievable with some, but is probably impossible with others. Introduction of foreign genepool material in 'Wild Flower' seed mixes is another cause for concern.

Actions:

Draft new lists of prohibited weeds in consultation with Northern authorities to ban the sale, introduction, release or movement, especially of aquatics. Maintain vigilance on emerging threats.

Review of national phytosanitary legislation to be harmonized with international and regional provisions by 2006

Develop priority list of 10-12 species; Implement efficient management programmes and Species Action Plans for at least 10 established invasive plant species by 2008.

Develop and implement mechanisms for early detection and rapid action against potentially new invasive species including a manual of procedures for border control by 2007. Prepare documents for horticulturists to enable guidelines to be developed to prevent the establishment of new invasive aliens in the country.

Evaluate existing all-Ireland Species Action Plans for Alien species, and modify as appropriate, by 2009.

Assess and monitor the risk of genetic pollution of native plant species and populations from introductions of foreign 'Wild Flower seed' by 2009.

Milestones & Indicators:

Develop an efficient target-10 webpage, as part of the GSPC page, which will co-ordinate actions and organisations in highlighting or controlling problem species.

Leaflets warning of the dangers of alien plants especially aquatics such as *Crassula helmsii*.

Noxious Weeds act extended to cover an increased number of prohibited species.

Hydrocotyle ranunculoides exterminated in its two localities.

C. Using plant diversity sustainably

INTERNATIONAL FLORA

Target 11: No species of wild flora endangered by international trade

The National Biodiversity Plan has a single action to increase training and capacity (action 27) for border control, and its impact on international trade. Action 53 of the National Biodiversity Plan specifically allocates € 6 million to overseas initiatives.

Actions:

Initiate a research programme to determine the extent of trade in wild flora into and out of Ireland to be completed by 2008.

Develop a policy and enact legislation for access and benefit sharing by 2007.

Develop resources to highlight the economic impact of horticulture, herbal medicine, floristry etc. on international plant conservation issues.

Milestones & Indicators:

ABS legislation enacted to support plant conservation initiatives internationally.

Overseas Development Agency spends €5 million on plant conservation and sustainable usage of plant-resources as part of its programme.

30 per cent of plant-based products arriving from outside Ireland derived from sources that are sustainably managed, and whose environmental impacts are minimised.

100 per cent of Public procurement of plant based products arriving from outside Ireland derived from sustainably managed sources.

SUSTAINABLE USE

Target 12: All plant-based products derived from Irish wild plants harvested from sustainably managed sources.

Actions:

Initiate a research programme to determine the usage of plant-based products arising from within and outside of Ireland, to be completed by 2008.

Guidelines developed for smallholder turf cutting.

Milestones & Indicators:

90% of plant-based products, other than peat, produced within Ireland, derived from sources that are sustainably managed.

Target 13: Safeguard the traditional practices based on plant resources, and their associated knowledge, that support local communities and their livelihoods in Ireland.

Actions:

Develop a checklist of archived materials and ethnographic records covering traditional practices with reference to plant materials.

Develop links with existing groups, including the Irish basket-makers association, the Hedge-Laying Society of Ireland, the Coppice Association of Ireland, the Thatchers guild, etc. to determine the degree to which these practices are surviving.

Develop a school project to encourage Transition Year students to collect information from informants on agricultural or rural practices and traditions in the first half of the 20th Century or earlier. A teacher's pack and background literature would be prepared and distributed.

Discuss with the Heritage Council the possibility of publishing a call for proposals for local projects on plant folklore etc.

Milestones & Indicators:

Web-based checklist of archive material made available, perhaps as a bibliography

D: Promoting education & awareness about plant diversity

EDUCATION

Target 14: Ensure that plant conservation and biodiversity issues are incorporated into the formal educational curricula at all levels, and in informal education and national public awareness programmes.

A major goal for this target is to have an efficient Clearing House Mechanism to act as the focal point for the Global Strategy for Plant Conservation (see www.botanicgardens.ie/herb/census/ resource). Much of the materials for this website already exist, different levels for engaging the public will be vital, and could be used as a teaching resource for Primary and secondary level pupils. To identify where plant conservation issues arise in national curricula, and if not why not; if they do, then flag these up and make them more prominent.

Actions:

Regular programmes and articles produced in the national media to highlight the importance of native plants in local ecosystems.

Presentations and/or workshops about plant conservation to be held regularly, including information on native plants, plant genetic resources, invasive species and control measures

Ensure that plant conservation and biodiversity issues are incorporated within the formal education curricula and informal education, including extra-curricular activities by 2010.

Develop resources for primary school teachers to provide interactive and captivating materials.

Native plant ecology incorporated in secondary & post secondary curricula

Develop resources to promote Irish plant diversity, the ecosystem value and goods provided, by 2008.

Milestones & Indicators:

20% of schools visited by an education officer by 2010, and regularly thereafter.

Every secondary school student should visit the National Botanic Gardens at least once by 2010.

Publish and distribute Leaflets for Gardening clubs and Farming organisations promoting the growing of heritage grain and vegetable varieties by 2008.

A series of leaflets on themes, such as carnivorous plants, crop relatives etc. by 2008. Teagasc would be amenable to disseminating these and incorporating their logo.

Publish and distribute resources for primary school teachers for local plant identification and basic botany.

Training opportunities in plant ecology and conservation provided for the general public through vocational training

Publish and distribute widely resources to promote Irish plant diversity, to the Irish public and to tourists visiting Ireland by 2008

Establish a Clearing House website to provide access to information on Targets 1 to 13 of this strategy, by 2007.

E. Building capacity for the conservation of plant diversity

PEOPLE

Target 15: The number of trained people working with appropriate facilities in plant conservation increased, as required, to achieve the targets of this Strategy.

Actions:

The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy.

Complete a study on the financial needs for the achievement of the National Plant Conservation Strategy by 2005.

Implementation of the National Biodiversity Plan, promotion of the aims of this plan, and the Global Strategy for Plant Conservation at political level.

Improve capacity amongst government, the NGO, university, industry, voluntary and private sectors, to implement the National Plant Conservation Strategy and achieve its targets, by 2010.

Improve communication between plant recorders and decision makers in the interests of plant conservation.

Promote careers in Plant Sciences

At least double the existing or available funds for plant conservation from government and private sectors.

Conduct a review of Taxonomic needs in the country.

Improve the facilities and increase the capacity of the Irish Threatened Plant Genebank, Irish Seedsavers, and Genetic Heritage Ireland to include difficult species groups and regular viability testing, by 2008.

Milestones & Indicators:

Ensure that a proportion of national biodiversity research funding to be implemented under action 44 of the National Biodiversity Plan and currently being promoted by the NPBR be used to train postgraduate students in plant conservation biology.

Increased capacity for third level institutions to undertake plant conservation research in partnership with relevant state agencies.

Establish lectureships/chairs in 3rd level institutions to undertake plant conservation biology research and teaching.

Increase the number of research staff at NPWS dealing with plant conservation.

NETWORKING

Target 16: Broadly based Irish network for plant conservation established to achieve the targets for this strategy.

Actions:

Establish a grouping to draft codes of conduct for promoting best practice in Irish Horticulture.

Co-ordinate and oversee plant conservation activities within Ireland.

Establish representation from Ireland in European and International networks, and disseminate information to the wider Plant Sciences community.

Milestones & Indicators:

Establish a webpage (www.botanicgardens.ie/gspc.htm) giving up to date progress on the targets in this strategy, as well as news and current activities in Plant conservation in Ireland generally.

Network set up and holding regular meetings, and with an agreed programme of work, by 2007

2006 meeting of Network to look at Important Areas for Plant Diversity pilot studies, a preliminary Red Data List, and review other targets.