national botanic gardens of Ireland

Ireland's National Strategy for Plant Conservation

Progress towards 2020

OPW
Oifig na nOibreacha Poibli
The Office of Public Works

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

Target 4
At least 15 per cent of each of Ireland's plant habitats effectively conserved.

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

Target 6
At least 30 per cent of production lands 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 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 agricultural plant varieties of crops, land races 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.

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 support local communities and their livelihoods in Ireland.

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.

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

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Target 1

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

Highlights

Census lists of Irish species

Census catalogues and preliminary checklists are available on the National Botanic Gardens website for lichens (2010), marine algae (2008), mosses (2008), liverworts (2008), hornworts (2008), seed plants (1987) & alien species (2002)

World Flora Online Consortium.

(*www.worldfloraonline.org*). The Director and Scientific Staff of the National Botanic Gardens are also affiliated with the project and the most recent World Flora Online Council Meeting took place at Trinity College Dublin and the National Botanic Gardens (3-7th December 2018)

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http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Irelands-Biodiversity-20101.pdf

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Target 2

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

Highlights

Ireland has recently updated its Flora Protection Order (2015)

- This gives legal protection to 68 vascular plant species and 65 species of bryophytes (25 liverworts and 40 mosses) **http://www.irishstatutebook.ie/eli/2015/si/356/made/en/print**

New Red lists for Irish species using IUCN guidelines for both vascular plants (2016) and bryophytes (2012)

- Of the 1,211 vascular plants assessed for Irelands Red data book in 2016, 106 (8.8%) , 20 (1.7%) are Critically Endangered, 25 (2.1%) are Endangered and 61 (5.0%) are Vulnerable
- Red list of Irish Vascular plants completed in 2016 (Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016). *Ireland Red list No. 10. Vascular Plants.* **https://www.npws.ie/content/publications/ireland-red-list-no10-vascular-plants**
- Red Data List of Bryophytes completed in 2012 and available (Lockhart, N., Hodgetts, N. & Holyoak, D. (2012) *Ireland Red List No. 8: Bryophytes*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.) **https://www.npws.ie/**

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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.

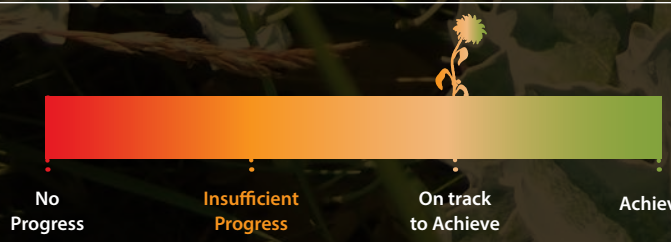
Highlights

Ireland's plant diversity is relatively well surveyed.
There is an updated Botanical Society of Britain and Ireland Atlas of the flora due in 2020. Which aims to provide maps for both native and introduced taxa, interactive maps to display frequency and distribution at various scales and an analysis of change summarising the state of the Irish flora in 2020. ***https://bsbi.org/atlas-2020***

The National Biodiversity data centre have a number of current initiatives providing information, on invasive species, vascular species, bryophytes, Irelands pollinator plan and national biodiversity indicators ***http://www.biodiversityireland.ie/***.

The National Botanic Gardens continue to work on a range of projects related to plant taxonomy, invasive species, plant conservation, sustainable use ***www.botanicgardens.ie/scienceandlearning/projects***

Target 3 National Level Progress



Achievable by 2020

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Target 4

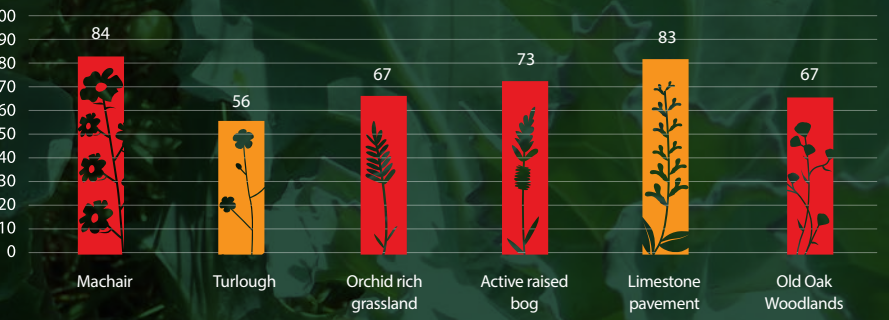
At least 15 per cent of each of Ireland's plant habitats effectively conserved.

Highlights

A large percentage of our most important and distinctive Irish habitats are formally protected in Special Areas of Conservation

Percentage of Specialist EU Annexed Irish Habitats in Special Areas of Conservation
Article 17 Assessment in 2013 = BAD = POOR

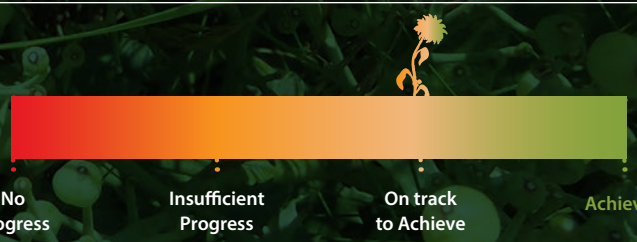
Source SDF Statistics June 2015 available from NPWS



More positive news on one of our most distinctive Irish habitat peatlands

- Despite a 26.7% loss in peatlands with 735 108 ha remaining. Of this 35.8% or 263 288 ha is currently in conservation worthy status. With State, ownership of 6% and 29.5% in private ownership. To meet the 15% set out in the National Plant Conservation Strategy this equates with 33,493 ha of conservation worthy peatlands being effectively managed. In light of the State owning in excess of that target, i.e. 45 015 ha, this is a most achievable target.

Target 4 National Level Progress



Achievable by 2020

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Target 5

Protection of the most important areas for plant diversity assured.

Highlights

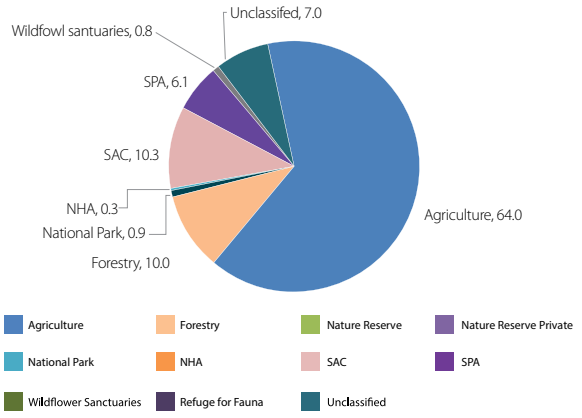
Important Bryophyte Areas for Ireland have been identified

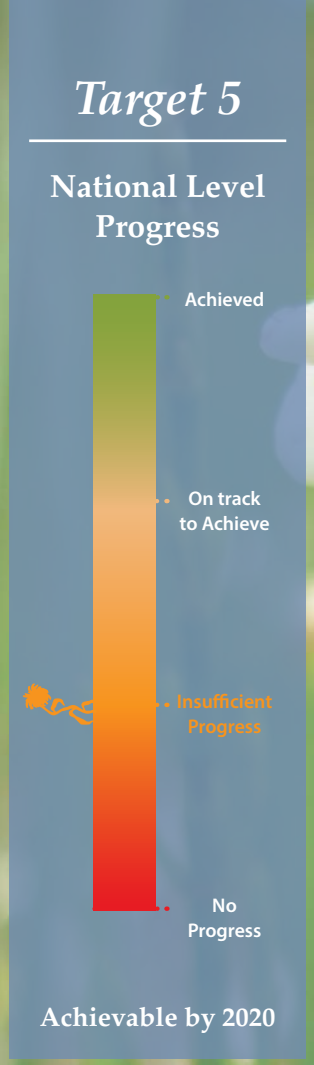
- Lockhart et al. (2012) used a combination of Plant Life, Stewart (2004) and Green & Fitzpatrick (2008) approaches to identify 47 important bryophytes area in Ireland.
- Most of the areas identifies were large and contained a mix of both protected and unprotected sites. With 19 Important Bryophyte areas or ~40 % of these fully protected sites.

Important Plant Areas

- 60-80% of locations of rare species of concern in Ireland occur within designated areas (Walsh et al. 2015).
- Plant species of conservation concern found outside designated areas are mainly found in pastures (49.3%) and land occupied by agriculture (5.6%). Many excellent agri-biodiversity schemes operate in Ireland e.g. BurrenLIFE project (*http://burrenprogramme*.com/), the AranLIFE *(https://www.aranlife.ie/)* and *RBAPS (https://rbaps.eu/)*.

Percentage of available areas for plant diversity in Ireland with some form of management for plant diversity





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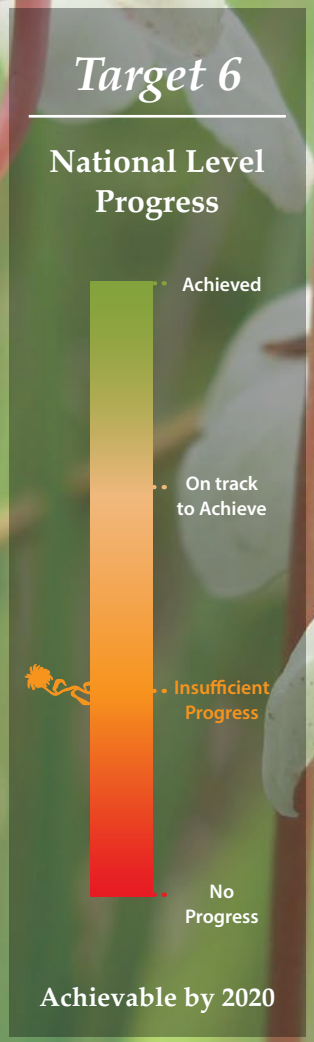
Target 6

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.



Highlights

- The Sustainable Use of Pesticides Directive (SUD) established to achieve the sustainable use of pesticides by setting minimum rules to reduce the risks to human health and the environment that are associated with pesticide use. It also promotes the use of integrated pest manage ment. *http://www.pcs.agriculture.gov.ie/sud/*
- GLAS (Green Low-Carbon Agri-Environment Scheme) scheme operates in Ireland where farmers apply for and farm under this scheme in order to receive payments. The scheme operates to ensure low C input and integrated pest management, and low fertiliser inputs into perma nent pasture. Numbers applying for schemes approximates 23% - From *https://www.agriculture.gov.ie/farmerschemespayments/glas/*
- GLAS is also part of Irelands Rural Development Programme 2014-2020 and ties in with the green vision for Irish agriculture as contained in Food Harvest 2020 and as promoted by Bord Bia in the Origin Green campaign. There are 1385 organic farms registered in Ireland (end 2010) which equates to approx 1.2% of total agricultural area in Ireland (Irish Geography 2012).
- The highly successful BurrenLIFE project has resulted in a target of 500 farmers enrolled in a results-based agri-en vironment scheme, the AranLIFE (*https://www.aranlife.ie/*) and RBAPS (*https://rbaps.eu/*) are also piloting re sults-based projects in other areas in Ireland, *http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=2661*
- A new project BRIDE project aims to design and imple ment a results-based approach to conserve, enhance and restore habitats in lowland intensive farmland in the River Bride catchment. *https://www.thebrideproject.ie/*.

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Target 7

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

Highlights

- A recent analysis estimated that 60-80% of locations of rare species of conservation concern in Ireland occur within nationally designated areas. (Walsh et al. 2015)
- Baseline data, monitoring and repeat surveys are in place in place for 7 species of conservation concern (Killarney fern- *Trichomanes speciosum*, Marsh saxifrage – *Saxifraga hirculus*, Slender Naiad- *Najas flexilis*; Slender green feather moss- *Hamatocaulis vernicosus*, Petalwort-*Petalophyllum ralfsii*; Maerls - *Lithothamnion coralloides* and *Phymatolithon calcareum*; along with the three genus groups - *Sphagnum* genus, *Lycopodium* species group and *Cladonia* subgenus *Cladina*.; Article 17 report 2013. Volume 3 (Species) contain the detailed reports and relevant scientific information. ***https://www.npws.ie/article-17-reports-0***
- Rare & threatened bryophyte conservation and monitoring has been carried since 2008. The moss species under investigation included *Bryum uliginosum*, *Catoscopium nigritum*, *Ditrichum cornubicum*, *Hamatocaulis vernicosus* and *Paludella squarrosa*. The liverwort species include *Petalophyllum ralfsii*, *Cephaloziella nicholsonii*, *Cephaloziella massalongi*, *Leiocolea gillmanii* and *Leiocolea rutheana var. rutheana*. This was collaborative project between NPWS Research, Botany Department, Trinity College Dublin, and the National Botanic Gardens (OPW).
- A new rare plant-monitoring scheme was launched by the National Biodiversity Data Centre (NBDC) in 2017. In 2017, volunteers monitored 37 populations across 22 species. In 2018, volunteers monitored 108 populations across 53 species. Newsletters are available on the work completed in 2017 & 2018 (NBDC 2017 & 2018)

% Rare and threathened vascular plant species monitored *in situ* 2018

Data extracted from NBDC 2018 and surveys of *Achillea maritima*, *Equisetum x moorei* (NBG surveys 2018), *Lycopodiella inundata* & *Trichomonas speciosum* (EU Article 17 report).

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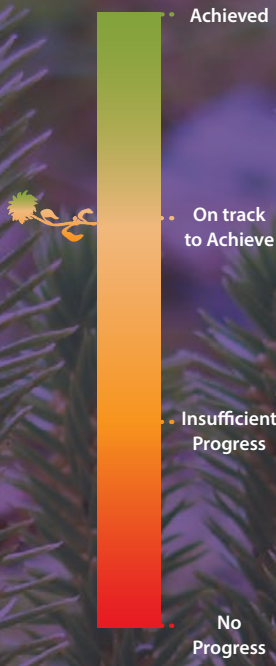
NBDC 2017 newsletter: Rare Plant Monitoring_Newsletter 2017

NBDC 2018 newsletter: Rare Plant Monitoring Newsletter 2018

Walsh, A., Finn, J., Jebb, M. Waldren, S. & Sullivan, C. (2015) *The distribution of vascular plant species of conservation concern in Ireland, and their coincidence with designated areas.* ***Journal of Nature Conservation*** 24: 56-62. This paper stresses the need for conservation measures outside of designated areas.

Targets 7 & 8

National Level Progress



Achievable by 2020

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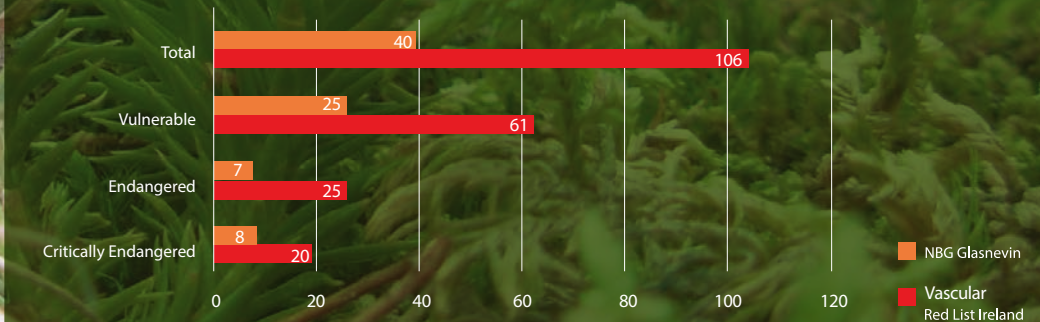
Target 8

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

Highlights

- Work on cultivating all threatened species of vascular plants is ongoing on a species-by-species basis at the National Botanic Gardens Glasnevin (OPW) and Trinity College Botanic Gardens have a number of threatened Irish species in their collections.
- The living collections catalogue at the National Botanic Gardens (OPW) contains a database of the living and seed collections within the garden. The NBG database has 120 accessions of legally protected Flora Protection Order (FPO) species. Out of 68 species of vascular plants in the FPO, the NBG currently has 22 species (32%) in the native pot collection.
- Of the 106 Irish red listed plant species, the National Botanic Gardens (OPW) hold 40 species (38%). The National Botanic Gardens currently holds 40% of the critically endangered species, 28% of the endangered and 41% of the vulnerable species.

Number of theathened species conserved *ex situ* at National Botanic Gardens (OPW)



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.

Highlights

- Ireland has a full list of all traditional Irish-bred agricultural plant varieties and this list is freely available on the European Search Catalogue for Plant Genetic Resources, EURISCO website which, provides information about 1.8 million crop plant accessions preserved by almost 400 institutes in Europe EURISCO is accessible at http://eurisco.ecpgr.org. for Ireland contact the NBDC (unafitzpatrick@biodiversityireland.ie).
- There is increasing interest in heritage varieties of grain crops for craft brewing. There are increasing requests for accessions of malting barley varieties from the national genebank.
- Teagasc, Oakpark maintain the forage genebank with heritage varieties of grasses and clovers. The National Botanic Gardens (OPW) have been working on genetic characterisation of Heritage Oats, Barley, Wheat and other Crop Wild Relatives.
- The Irish Seed Savers Association (ISSA) in Capparoe is a charity set up to preserve the agricultural bio-diversity of Ireland
- Teagasc Backweston holds the national gene bank for food crops.

Target 9 National Level Progress

Achievable by 2020

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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.

Highlights

New Invasive species Legislation

- The new EU Regulation on IAS (1143/2014) has a list of 23 invasive plant species that are of 'Union concern', nine of which are in Ireland and must now be managed 6 of these are in active control projects.
- Control and management progects were implemented for Hottentot fig (*Carpobrotus edulis*) and Giant Rhubarb (*Gunnera tinctoria*) by the National Botanic Gardens (OPW), Mayo & Fingal Co. Council (Smyth 2013 a & b) and other Co Councils, such as Longford have begun to step up actions on invasive species.
- A recent EPA/UCD plant invasions workshop was held in the National Botanic Gardens (29 Nov 2018) with presentations by Mayo County Council, NBDC, AECOM and the Property Care Assoc.

References

Smyth, N. (2013a) Control of Hottentot Fig (*Carpobrotus edulis*) on Howth Head, Dublin. in van Ham, C., Genovesi, P., Scalera, R. (2013). Invasive alien species: the urban dimension, Case studies on strengthening local action in Europe. Brussels, Belgium: IUCN European Union Representative Office p. 57, and Smyth, N., Armstrong, C., Jebb M. and Booth, A. (2013b) *Implementing target 10 of the Global Strategy for Plant Conservation at the National Botanic Gardens of Ireland: Managing two invasive non-native species for plant diversity in Ireland.* Sibbaldia 11: 125-141).

Target 10

National Level Progress

Achievable by 2020

Back to Targets 9-16

Target 11

No species of wild flora endangered by international trade.

Highlights

- Ireland's target of ensuring that "no species of wild flora is endangered by international trade" is met primarily by our implementation of the CITES Convention (*www.cites.org*) and the EU Wildlife Trade Regulations (***http://ec.europa.eu/environment/cites/legislation_en.htm***). Ireland became a Party to CITES in 2002. NBG act as the CITES scientific authority for Ireland.
- Ireland submits annual reports to the EU and national reports on a biennial basis to the CITES Secretariat (these are available on the CITES website at ***https://cites.org/eng/cms/index.php/component/cp/country/IE/national-reports***).
- Ireland attend CITES Scientific Review Group, and Expert group meetings which focus on sustainable trade in rare plant species in the EU.
- For the non-CITES listed species, EU timber regulation managed by the Department of Agriculture, food and the Marine (***http://ec.europa.eu/environment/forests/timber_regulation.htm***), which forms part of the EU's FLEGT (Forest Law Enforcement, Governance and Trade) Action Plan (http://www.euflegt.efi.int/home).

Target 12

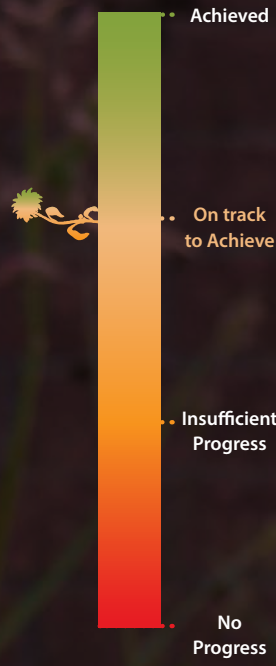
All plant-based products derived from Irish wild plants harvested from sustainably managed sources.

Highlights

- Foraging for wild food is becoming very popular in Ireland. One key area for Ireland with regard to this target is the harvest of seaweeds, prior to the issuing of a licence to harvest seaweed; consultation occurs with the Marine Institute and other statutory consultees to ensure the environmental sustainability of the harvest.

Targets 11, 12 & 13

National Level Progress



Achievable by 2020

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Target 13

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

Highlights

- There was a need for information on indigenous and local knowledge and practices associated with Irish plant re sources. This gap has been met through the publication of a new book called "Ireland's Generous Nature: The Past and Present Uses of Wild Plants in Ireland" (2014) by Dr. Peter Wyse Jackson, former Director of the National Botanic Gardens (OPW) current President of Missouri Botanic Gardens, USA.
- Groups exist which focus on certain plant species and aspects of Irish culture including the Irish basket-makers association, the Hedge-Laying Society of Ireland, the Coppice Association of Ireland, the Thatcher's guild.

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.

Highlights

- The National Botanic Gardens, Glasnevin (OPW) act as the focal point for the Global Strategy for Plant Conservation and act as the National Plant Conservation Strategy coordinators. *www.botanicgardens.ie*
- National Botanic Gardens, Glasnevin (OPW) visitor numbers remain at over half a million people per annum, in 2018 the number of visitors reached a record high of 655,606 which approximates to 17% the total Irish population between the ages of 5-65.
- National Botanic Gardens, Glasnevin (OPW) http://botanicgardens.ie/science-and-learning/) manage an extensive education programme highlighting plants and plant diversity to a wide range of audiences.
- 25,469 people attended specific lectures, tours and workshops and 51% (13,088) of these were children
- Ireland has various networks to communicate the importance of plant diversity with many national radio, TV and newspaper columns dedicated to biodiversity e.g. a daily radio show Mooney goes wild, ***https://www.rte.ie/radio1/mooney/*** and Michael Viney's regular weekly column in the Irish Times which often covers plants and ecosystems.
- At the schools level for primary school level 'Environmental Awareness and Care' and 'Living Things' exists in the curriculum. Native plant ecology is incorporated in secondary & post-secondary curricula. National Biodiversity Data Centre run an active pulic engagement program annually.

Active native plant networks

- BSBI ***https://bsbi.org/*** - with over 200 members, the BSBI run field meetings, training events and surveys throughout the year.
- Dublin Naturalist Field Club ***www.dnfc.net***
- British Bryological Society Irish regional group ***www.britishbryologicalsociety.org.uk***

General horticultural plant societies, which often feature, plant conservation issues to their members.

- Irish Garden Plant Society ***http://irishgardenplantsociety.com/***
- Alpine Garden Plant Society – Dublin Branch ***https://www.alpinegardensociety.net/***
- Cacti & Succulent Society ***http://www.irelandcactus.com/2018.htm***
- Irish Orchid Society ***http://www.irishorchidsociety.org/***
- Royal Horticultural Society of Ireland ***https://www.rhsi.ie/***

Local Groups

e.g. Cork Nature Network – promote nature conservation by offering public events and are involved in the education and increasing awareness of the need for conservation as well as information on invasive species.

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Target 14 National Level Progress

Achievable by 2020

Target 15

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

Highlights

- Universities that offer plant ecology and conservation courses include TCD, UCD, NUI Galway, and other various Institutes of technology around the country.
- Waterford IT runs an Irish Wildlife Conservation course 10 wk, part-time covering sustainable practices and restoration & conservation projects in Ireland.
- Tralee IT offer a degree program in wildlife management.
- Trinity College Dublin run a specific Biodiversity and Conservation Masters course.
- National Botanic Gardens (OPW) regularly provide a course on Irish Botany ***www.botanicgardens.ie***
- National Botanic Gardens (Teagasc) incorporate biodiversity and ecology into horticulture training ***https://www.teagasc.ie/education/teagasc-colleges/botanic-gardens/***
- Botanical society of Britain & Ireland offer training courses in all aspects of plant identification h***ttps://bsbi.org/***

Target 15 National Level Progress

Achievable by 2020

Target 16

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

Highlights

- **All our national plant conservation organisations and institutions manage and coordinate on nation al biodiversity projects** e.g. National Parks and Wildlife Service NPWS ***https://www.npws.ie/*** - ,National Biodiversity Data Centre ***http://www.biodiversityireland.ie/*** - (NBDC), National Botanic Gardens ***www.botanicgardens.ie*** , Trinity College Botanic Garden, Teagasc.DAFM Etc.
- Some excellent plant conservation research at Irish Universities and Institutes e.g. TCD, UCD, NUI Galway, and the various Institutes of technology around the country.

Target 16

National Level Progress

Achievable by 2020

Acknowledgements

Acknowledgements: ***National Parks and Wildlife Service*** – Ciaran O Keefe, Neil Lockhart, Mike Wyse Jackson, Rebecca Jeffrey, Paul Duffy; ***CITES management Authority*** – Rosanna Kearns; ***National Biodiversity Data Centre*** – Úna FitzPatrick, Colette O Flynn; ***Department of Agriculture Food & the Marine*** – Cara MacAodhain. Niall Ryan; ***Bord Na Móna*** – Mark McCorry; ***Irish Peatland Conservation Council*** – Catherine O'Connell; ***Birdwatch Ireland*** – Stephen Newton; ***Transport Infrastructure Ireland***; ***Teagasc*** – John Finn; ***IT Sligo*** – Caroline Sullivan; ***Researcher*** – Aidan Walsh; ***Trinity College Dublin*** – Steve Waldren, ***Inland Fisheries Ireland & Joe Caffrey***; ***Forestry Service*** – Gerard Cahalane, ***The Irish Basketmakers Association***; ***The Irish Guild of Weavers, Spinners, and Dyers***. ***Department of Education***. ***National Botanic Gardens Learning and Education*** – Felicity Gaffney. ***Botanical Society of Britain & Ireland*** – Maria Long. ***Ecological Consultant*** – Emer Ní Dhúill.

Project sponsors: National Parks and Wildlife Service & National Botanic Gardens (OPW)

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Opening hours

SUMMER (MARCH – OCTOBER)
Monday – Friday 9.00–5.00pm
Saturday/Sunday 10.00–6.00pm

WINTER (OCTOBER – MARCH)
Monday – Friday 9.00–4.30pm
Saturday/Sunday 10.00–4.30pm

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