Introduction

The National Biodiversity Data Centre is a national organisation for the collection, collation, management, analysis and dissemination of data on Ireland’s biological diversity. It was established by the Heritage Council in 2007 and is funded by the Heritage Council and the Department of Arts, Heritage and the Gaeltacht.

Management Structure

The Data Centre is governed by a Management Board, established by the Heritage Council. The Management Board is responsible for setting the strategic direction of the National Biodiversity Data Centre and reviewing progress with delivery of the work programme.

Composition of the Management Board:

Dr. Mary Kelly-Quinn Chair
Mr. Michael Starrett Chief Executive - The Heritage Council
Dr. Ciaran O’Keeffe Director – National Parks and Wildlife Service
Mr. Michéil O’Cinnéide Director – Environmental Protection Agency
Mr. Bill Callanan Senior Inspector – Department of Agriculture, Food and the Marine
Mr. Nigel Monaghan Keeper – National Museum of Ireland; Natural History Division
Ms. Rachel Kenny Senior Planner – Fingal County Council
Mr. Alan Lauder Chief Executive – BirdWatch Ireland
Mr. Mark Wright Northern Ireland Environment Agency
Dr. Matthew Jebb Director – National Botanic Gardens
Mr. Michael Keatinge Fisheries Development Manager, Bord Iascaigh Mhara
Dr. Peter McLoughlin Head of Department of Chemical and Life Sciences, Waterford Institute of Technology

Staffing

The National Biodiversity Data Centre has six full-time staff who are responsible for the delivery of a work programme to implement the Strategic Plan 2013-2017. The delivery of the work programme is by way of a 5-year Service Level agreement awarded to Compass Informatics by the Heritage Council for the running of the Data Centre. The full-time staff are supported by a team of developers, employed by Compass Informatics, who are responsible for development of the Data Centre’s core mapping system and on-line data portal.

The core staff are:

Dr. Liam Lysaght Centre Director
Dr. Una Fitzpatrick Ecologist
Dr. Eugene Regan Ecologist
Barry O’Neill Data and ICT Manager
Maria Walsh Office Manager
Colette O’Flynn Invasive Species Research Officer

Biodiversity Data Needs

Biodiversity data are a key requirement for understanding our natural surroundings, for tracking change in our environment and for gaining a greater insight on how we benefit from, and impact upon, the ecosystem goods and services provided by biological diversity; a national asset which contributes at least €2.8 billion (Government of Ireland, 2006) to the Irish economy each year.

The availability of high quality contemporary biodiversity data assists identification of conservation priorities and targeting in-situ conservation management actions. Biodiversity data are also needed to support delivery of different policy initiatives, and Directives for example:

- EU Habitats and Birds Directives,
- EU Strategic Environment Assessment Directive,
- National Biodiversity Plan
- Convention on Biological Diversity
- Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)
- Strategic Planning and Development Management
- Climate Change Adaptation Strategies
- National Invasive Species Initiatives

Strategic Plan 2013 – 2017

The Strategic Plan sets out the objectives and priority work areas of the National Biodiversity Data Centre over the period 2013 to 2017. The priority work areas have been identified through the review of the existing work of the Data Centre, engagement with partners, development of the National Biodiversity Plan and the strategic infrastructural and data needs of a variety of sectors, including heritage, resource management, planning, research and education.

These priority work areas provided the framework for the tendering of the running of the National Biodiversity Data Centre for a 5-year period by the Heritage Council, a contract won by Compass Informatics.

This Strategic Plan sets out the strategic direction of the Data Centre and the priority work areas over the period 2013 to 2017. These priorities comprise only some of the initiatives required to improve the provision of biodiversity data to meet national needs; additional work can be delivered by the Data Centre if opportunities arise for the securing of additional resources, for example the important role of coordinating data needs on invasive species to support national initiatives.

Mission and Strategic Objectives

The overarching mission of the National Biodiversity Data Centre is:

“...to provide national co-ordination and standards of biodiversity data and recording, assist the mainstreaming of biodiversity data and information into decision making, planning, conservation management and research, and encourage greater engagement by society in documenting and appreciating biodiversity”.

The framework of the Strategic Plan is based around the set of deliverables required under the 5-year Service Level agreement agreed between Compass Informatics and the Heritage Council for running of the Data Centre. The framework is underpinned by a process whereby the collection of biodiversity data increases the knowledge base on Ireland’s biodiversity, improves the quality of analysis and assessment that can be done using those data, provides evidence-based policy support and prioritises practical conservation management actions. The functioning of this process operates within the context of human, financial and data resources, strategic partnerships and application of information technologies.
The Data Centre’s role is to manage data and provide support to assist the efficient functioning of this operational model. The management and mobilisation of biodiversity data requires active engagement with the public and private sectors, and those working in both a professional and voluntary capacity.

The National Biodiversity Data Centre is a service provider to this diverse network bringing added value to all partners’ activities and delivering efficiencies through collaboration.

The service provided by the National Biodiversity Data Centre includes:

- Provision of data management infrastructure and services through use of state-of-the-art Information & Communication Technologies,
- Focussed national co-ordination of biological recording activities,
- Identification of priorities for filling key knowledge gaps,
- Support for the volunteer recording network of citizen scientists, and
- Development of shared services to facilitate the mobilisation and re-use of biodiversity data.

The Data Centre’s mission can be realised through the adoption of the following seven strategic objectives:

1. **Mobilising data:** Serve as a national hub for the storage, display and dissemination of biodiversity data through the online data portal Biodiversity Maps.
2. **Tracking change:** Identify the need for, and assist the production of, high quality, scientifically robust data to track changes in Ireland's species and habitats.
3. **Informing decision-making:** Facilitate and promote the use of biodiversity data to inform public policy and decision-making through data analysis, interpretation and reporting.
4. **Developing strategic partnerships:** Support and collaborate with Data Centre’s partners to assist efficient delivery of their objectives.
5. **International collaboration:** Facilitate the provision of Irish biodiversity data to international initiatives.
6. **Communicating:** Communicate the value of Ireland's biological diversity and raise awareness of how it is changing.
7. **Strengthening the recording base:** To support the recorder and citizen science network to increase the quantity and quality of biodiversity data generated in Ireland.

Under each of the seven strategic objectives a series of actions are identified to achieve the objective, and these are set out below.

An Annual Review will be undertaken by the Management Board to track progress with delivery of the identified actions.
The Data Centre maintains a large biodiversity database as a national repository for biodiversity data and an online data portal and GIS mapping system. Biodiversity Maps to provide access to these data. The collation of data, both historic and contemporary, on a single system creates a resource that builds the knowledge base on Ireland's biodiversity and ensures that those data are available for a multiplicity of uses for both the public and private sectors.

Biodiversity Maps and its associated data management systems promote the use of common data standards and tools to facilitate the sharing and re-use of biodiversity databases and inventories. It is a shared-service, availed of by nine Government Departments or State Bodies, the main data-holding biodiversity NGOs, and many of Ireland's leading national biodiversity experts.

As of January 2013, the system mobilised 2.3 million biodiversity records of more than 13,000 species from 92 separate databases. It is a key objective of the Data Centre to continue to build the national database and extend the functionality of the mapping system to serve as the national biodiversity data management system for Ireland.

The data management system is INSPIRE Directive compliant in relation to metadata, to facilitate its use as a shared-service by State Bodies.

1.1 Key Action: Maintain and expand the number and range of databases available through the data portal Biodiversity Maps.

1.2 Key Action: Promote the collection of data on Ireland's protected species and habitats to support reporting on the EU Habitats and Birds Directives, and on the status of Ireland's threatened species.

1.3 Key Action: Increase the range of habitat mapping information available through Biodiversity Maps.

1.4 Key Action: Maintain the inventory of sources of biodiversity data.

1.5 Key Action: Maintain and develop specific themed websites to enhance data presentation and interpretation, and encourage, in particular the presentation of associated autecological information.

1.6 Key Action: Assist with the development of a National Vegetation Classification system.

1.7 Key Action: Coordinate the development and maintenance of a non-native species checklist for Ireland.

Expected Benefit: A greatly expanded knowledge base on Ireland's biological diversity and increased availability of data for decision-making, planning, conservation management and research.

Serve as a national hub for the storage, display and dissemination of biodiversity data through the online data portal Biodiversity Maps.

Mobilising Data
Public policy on biodiversity, environment and sustainable development requires empirical evidence of how Ireland is changing. The Data Centre has collated a large body of data on Ireland’s biodiversity, some of which is of value in identifying historic trends.

There is a need, however, for improved information and indicators on biodiversity and protected areas and species to facilitate evidence-based decision-making at national and local level as identified in Ireland’s Environment 2012 (Environmental Protection Agency, 2012).

The Data Centre will work with its partners to prioritise data collection and data analysis to ensure that the maximum use can be made of the data for increasing our understanding of how Ireland’s biological diversity is changing.

2.1 **Key Action**: Propose a suite of national biodiversity indicators and identify sources of data for tracking trends.

2.2 **Key Action**: Develop national biodiversity data standards and guidelines to assist interoperability of data management systems.

2.3 **Key Action**: Promote the development and use of Irish taxonomic checklists.

2.4 **Key Action**: Maintain and expand the role of the Data Centre in provision of data on Invasive Species in Ireland.

2.5 **Key Action**: Manage the Irish Butterfly Monitoring Scheme

2.6 **Key Action**: Manage the Irish Bumblebee Monitoring Scheme

2.7 **Key Action**: Promote the development of appropriate invasive species monitoring programmes to enable the spread of invasive species to be tracked.

2.8 **Key Action**: Address the key national knowledge gaps as identified in Ireland’s Biodiversity in 2010 – Key Knowledge Gaps.

**Strategic Objective 2**

**Tracking Change**

Identify the need for, and assist the production of, high quality, scientifically robust data to track changes in Ireland’s species and habitats.

**Expected Benefit:** An increased understanding of how Ireland’s biological diversity is changing.
The first objective of Ireland’s National Biodiversity Plan is to mainstream biodiversity in the decision making process across all sectors (Department of Arts, Heritage and the Gaeltacht, 2011). This will be achieved by relevant Government Department and State Agencies producing Biodiversity Action Plans, placing a biodiversity duty on all public bodies to address the conservation of biological diversity, continued implementation of EU Nature and Environmental Directives, and better planning at the national, regional and local levels.

Underpinning many of these measures will be the requirement to have improved understanding of the biodiversity resources of a given area and how these resources are changing, mechanisms to identify priorities for conservation action and means of tracking progress towards the conservation of biological diversity.

The Data Centre, working with its partners, will prioritise the collection, analysis and interpretation of biodiversity data to optimise its use in public policy development, implementation and reporting. It will focus in particular in providing support to the relevant Government Departments and State Bodies for successful implementation of the Birds and Habitats Directives, the Strategic Environmental Directive and the Environmental Liabilities Directive.

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Many of Ireland’s extensive semi-natural habitats are afforded protection under the EU Habitats Directive and require development of appropriate policies and plans to ensure their conservation.

3.1 **Key Action**: Increase the availability of information on Ireland’s threatened and protected species and habitats

3.2 **Key Action**: Assist the production of conservation assessments (Red Lists) for appropriate taxonomic groups to target more efficiently efforts to stop the decline in Ireland’s biological diversity.

3.3 **Key Action**: Provide information to government departments, state agencies and EU in support of policy development and implementation.

3.4 **Key Action**: Assist the identification and mapping of Important Biodiversity Areas.

3.5 **Key Action**: Assist the development of Habitat Assessment Tools using empirical biodiversity data.

3.6 **Key Action**: Facilitate the provision and management of biodiversity data to assist strategic planning, development management and Local Area Planning.

3.7 **Key Action**: Continue the development of on-line mapping and data presentation functionality of Biodiversity Maps to ensure it is fit-for-purpose for decision-making.

3.8 **Key Action**: Collect data and information to assist Ecosystem Services mapping, particularly of pollination services and genetic resources.

3.9 **Key Action**: Promote the establishment of an Early Warning System for invasive species.

3.10 **Key Action**: Collate, analyse and present information to enable reporting on trends in introduction of invasive species.

3.11 **Key Action**: Support the national land cover and habitat mapping initiative.

**Informing Decision Making**

Facilitate and promote the use of biodiversity data to inform public policy and decision-making through data analysis, interpretation and reporting.

**Expected Benefit:** Improved evidence-based policy development to assist the conservation of Ireland’s biological diversity.
The Data Centre has been established as a service provider to its partners to facilitate the availability of data to build the knowledge base on Ireland’s biodiversity, to track changes and to inform decision making.

To achieve this objective the Data Centre has developed an extensive range of skill-sets and expertise in data management and mapping, backed by the proven track record of Compass Informatics in applying state of the art Information and Communication Technologies to data management.

The Data Centre is committed to offering these services, subject to resource availability, to assist its partners in meeting their biodiversity responsibilities, and to promote the more efficient delivery of public services as they relate to use of biodiversity data.

4.1 Key Action: Actively engage with key state-bodies to identify how the work of the Data Centre could assist delivery of their own objectives.

4.2 Key Action: Promote the introduction of shared-services for biodiversity data provision within the public sector to facilitate data exchange and re-use of data.

4.3 Key Action: Continue and expand the range of data management services provided by the Data Centre to facilitate collaborative projects and optimise the mobilisation of existing biodiversity data.

4.4 Key Action: Work in collaboration with local authorities, state agencies and international organisations to mitigate the threat of invasive species.

4.5 Key Action: Provide support to national experts and organisations to improve the quality and quantity of available biodiversity data.

4.6 Key Action: Collaborate with key partners on capacity building within the biodiversity sector.

4.7 Key Action: Promote academic collaboration to build capacity and participate in relevant research calls.

Develop Strategic Partnerships

Support and collaborate with Data Centre’s partners to assist efficient delivery of their objectives.

Expected Benefit: Greater efficiencies in project delivery and programme implementation through collaborative effort and the use of shared-services.

4.1 Key Action: Actively engage with key state-bodies to identify how the work of the Data Centre could assist delivery of their own objectives.

The Pine Marten was once confined to few isolated populations in the west of Ireland, but is currently expanding its range throughout the country.
Ireland is one of 193 countries who are parties to the 1992 Rio Convention on Biological Diversity, an agreement aimed at reducing the rate of biodiversity loss at the global, regional and national level. To assist delivery of the objectives of the Convention, initiatives have been established at different international levels some of which require the collaborative sharing of biodiversity data and information at a regional, European and global level.

Also, the historically close association between Ireland, Northern Ireland and Britain on biological recording initiatives places a special requirement to co-ordinate data and information flows across the island of Ireland, but also at the Irish and UK level.

In the delivery of its work programme the Data Centre will endeavour to manage its work and information in such a way as to ensure it can contribute to appropriate regional and international initiatives, so that Ireland’s biodiversity can be viewed in a regional and international context.

**Expected Benefit:** Having Irish data contribute to regional and global biodiversity initiatives to inform decision making at an international level.

**Key Actions:**

5.1 **Key Action:** Serve as Ireland’s national node for the Global Biodiversity Information Facility.

5.2 **Key Action:** Work in collaboration with partners in Northern Ireland & Britain to rationalise and facilitate the presentation of spatial data at a regional level.

5.3 **Key Action:** Work at European and at Ireland/UK level to develop an Invasive Species Early Warning & Rapid Response System.

5.4 **Key Action:** Provide information on Invasive Species to regional and European information networks such as NOBANIS and the European Commission’s EASIN.

5.5 **Key Action:** Contribute Irish vegetation data to wider European initiatives such as SynBioSis Europe.

5.6 **Key Action:** Contribute Irish Crop Wild Relative data to the Crop Wild Relative Global Portal.

**Strategic Objective 5**

Effective action to tackle the threat posed by invasive species can only be achieved through international collaboration.

**Facilitate the provision of Irish biodiversity data to international initiatives.**
Awareness of biodiversity and biodiversity conservation amongst the general public in Ireland is below the EU average, with only two in ten citizens well informed about loss of biodiversity (The Heritage Council, 2010).

A key role of the Data Centre is engagement with its large network of professional and volunteer recorders on specific projects and initiatives, and communicating using different media the results of this work to all partners and the wider general public. Effective communication of these initiatives can improve awareness of the changes to Ireland’s biological diversity and the need for action to assist conservation.

The Data Centre will utilise print, electronic and social media to target its message to different audiences with the objective of raising awareness of biodiversity and the ecosystem services biodiversity provides to Irish society.

6.1 Key Action: Produce regular news items to communicate key developments in biological recording and to disseminate the results of work of the Data Centre to stakeholders and the general public. This will include electronic newsletters, targeted mailing lists and the utilisation of social media, particularly Facebook and Twitter.

6.2 Key Action: Produce project-specific promotional material to raise awareness of ongoing initiatives targeting key audiences.

6.3 Key Action: Articulate and communicate to stakeholders the benefits of data sharing for biodiversity conservation through talks, workshops, seminars and other means.

6.4 Key Action: Disseminate the results of the work of the Data Centre through peer reviewed papers, grey literature, reports and other forms of print media.

Communicating

Communicate the value of Ireland’s biological diversity and raise awareness of how it is changing.

Expected Benefit: An increased awareness amongst the Data Centre’s stakeholders and wider public of the importance of conserving Ireland’s biological diversity.

Strategic Objective 6

More than 11,000 insect species occur in Ireland yet only one, the Marsh Fritillary, is afforded legal protection.
An extensive knowledge base on Ireland’s biological diversity has been established through the work of both the professional and voluntary sector in Ireland (Ireland’s Biodiversity in 2010 – State of Knowledge).

Nevertheless, key gaps still remain to be filled and there is need for capacity building across the sector particularly to strengthen the citizen science network (Ireland’s Biodiversity in 2010 – Knowledge Gaps).

The Data Centre is strongly committed to providing support to the network of recorders through the provision of training and networking opportunities and the development of aids to facilitate the generation and digitisation of high quality biodiversity data.

<table>
<thead>
<tr>
<th>Key Action</th>
<th>Description</th>
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<tbody>
<tr>
<td>7.1</td>
<td>Provide national co-ordination for biodiversity recording initiatives.</td>
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<td>7.2</td>
<td>Provide training opportunities for recorders to assist capacity building throughout the sector. This will include organisation of an annual training workshop programme, field meetings and the provision of networking opportunities.</td>
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<tr>
<td>7.3</td>
<td>Provide co-ordination and training opportunities to strengthen the citizen science network across Ireland.</td>
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<td>7.4</td>
<td>Maintain and expand the Invasive Species Recording Initiative.</td>
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<td>7.5</td>
<td>Promote and provide support for biodiversity recording initiatives to increase the quality and quantity of data generated.</td>
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<td>7.6</td>
<td>Maintain and expand Ireland’s BioBlitz event.</td>
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<td>7.7</td>
<td>Assist development of on-line data capture systems. Expand the range of on-line data submission forms available to facilitate data capture. Develop novel applications and systems to assist data capture in the field.</td>
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<td>7.8</td>
<td>Expand the range of identification guides to Ireland’s biological diversity.</td>
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<td>7.9</td>
<td>Develop a suite of Irish Invasive Species identification sheets.</td>
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<td>7.10</td>
<td>Prioritise and deliver new online identification keys.</td>
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<tr>
<td>7.11</td>
<td>Provide training and education experiences with the Data Centre to third-level students.</td>
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</table>

**Strategic Objective 7**

A large amount of biodiversity data is generated by recorders working in a voluntary capacity, in the expectation that their sightings will contribute to the conservation of biodiversity in Ireland.

**Expected Benefit:** A larger and sustained network of individuals, groups and agencies interested in, and observant of, Ireland’s biological diversity, and contributing to its documentation and conservation.
### Appendix 1: Outline Work Programme 2013 – 2017

#### Centre Administration
- Centre Management
- Staff Management
- Work programme planning & review
- Financial management & reporting
- Management Board Reporting

#### ICT Infrastructure
- Hardware & ICT infrastructure management
- Website System Development
- Expand the mapping functionality of Biodiversity maps

### Strategic Objective 1
1.1 Maintain and expand databases on Biodiversity Maps
1.2 Collect data on Ireland’s threatened & protected species and habitats
1.3 Extend habitat mapping
1.4 Inventory of Biodiversity Sources
1.5 Additional subsites development
1.6 National Vegetation Classification System
1.7 Non-native Species Checklists

### Strategic Objective 2
2.1 Biodiversity Indicators
2.2 National Standards & guidelines
2.3 Management of Irish Taxonomic Checklists
2.4 Provision of invasive species data
2.5 Managing Irish Butterfly Monitoring Scheme
2.6 Bumblebee Monitoring Scheme
2.7 Promote invasive Species Monitoring Programme
2.8 Filling Knowledge Gaps

### Strategic Objective 3
3.1 Threatened habitats & species portal development
3.2 Red List Programme
3.3 Provide information in support of policy development
3.4 Mapping of Important Biodiversity Areas
3.5 Habitat Assessment tools
3.6 Strategic Planning links
3.7 On-Line Interpretation & presentation of data
3.8 Ecosystem services mapping

### Strategic Objective 4
4.1 Strategic partnerships with state agencies
4.2 Development of shared services
4.3 Expand range of data management services
4.4 Work with state agencies on invasive species issues
4.5 Support to national experts & groups
4.6 Partnerships for capacity building
4.7 Research & Academic collaboration

### Strategic Objective 5
5.1 Serve as GBIF National Node
5.2 Promote joint British & Irish Recording Initiatives
5.3 Promote European Early Warning System and Rapid Response
5.4 Feed invasive species data to regional and European initiatives (NOBANIS & EASIN)
5.5 Contribute Irish vegetation data to European initiatives
5.6 Contribute Crop Wild Relative data to European initiatives

### Strategic Objective 6
6.1 Communicate Key Development
6.2 Production of project specific material
6.3 Promote benefits of data sharing
6.4 Disseminate the results of the work of the Centre

### Strategic Objective 7
7.1 Provide national coordination of recording initiatives
7.2 Provide field identification training programmes
7.3 Strengthen citizen science network
7.4 Invasive Species Recording Scheme
7.5 Promote and provide support for recording initiatives
7.6 RealLive
7.7 On-line recording forms & novel apps
7.8 Production of identification switches
7.9 Develop a suite of Irish invasive species identification sheets
7.10 Development of on-line keys
7.11 Provide educational experiences for third-level students

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<tr>
<th>Significant effort or key deliverable</th>
<th>Ongoing work</th>
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<tr>
<td>3.6 Promote Invasive Species Early Warning System</td>
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<td>3.10 Produce invasive species trends report</td>
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<td>3.11 Support to national land cover and mapping initiative</td>
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<td>4.4 Work with state agencies on invasive species issues</td>
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<td>4.7 Research &amp; Academic collaboration</td>
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<td>5.2 Promote joint British &amp; Irish Recording Initiatives</td>
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<tr>
<td>5.3 Promote European Early Warning System and Rapid Response</td>
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<td>5.6 Contribute Crop Wild Relative data to European initiatives</td>
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<td>6.1 Communicate Key Development</td>
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<tr>
<td>6.3 Promote benefits of data sharing</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>6.4 Disseminate the results of the work of the Centre</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</table>

<table>
<thead>
<tr>
<th>Strategic Objective 7</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Provide national coordination of recording initiatives</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>7.2 Provide field identification training programmes</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>7.3 Strengthen citizen science network</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>7.4 Invasive Species Recording Scheme</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>7.5 Promote and provide support for recording initiatives</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</tr>
<tr>
<td>7.6 RealLive</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>7.7 On-line recording forms &amp; novel apps</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</tr>
<tr>
<td>7.8 Production of identification switches</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>7.9 Develop a suite of Irish invasive species identification sheets</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>7.10 Development of on-line keys</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</tr>
<tr>
<td>7.11 Provide educational experiences for third-level students</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</tbody>
</table>
### Appendix 2: Linkages to Actions contained in the National Biodiversity Plan

<table>
<thead>
<tr>
<th>Relevant actions contained in the National Biodiversity Plan</th>
<th>Centre’s Actions that will contribute significantly to delivery of a corresponding action in the National Biodiversity Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1. Enhance research and progress assessments on status, trends and distribution of all habitats and species of Community Interest and of additional habitats and species of national and regional importance</td>
<td>3.6. Based on these standards and procedures, develop a shared information system for biodiversity which makes data freely available to all interested users, streamlines reporting and supports policy evaluation and development at national, regional and global levels by 2015</td>
</tr>
<tr>
<td>3.2. Continue to update the National Vegetation Database and use it to develop a refined Vegetation Classification System for Ireland.</td>
<td>4.1. Key Action: Maintain and expand the number and range of databases available through the data portal Biodiversity Maps</td>
</tr>
<tr>
<td>3.3. Establish a working group by 2011 to progress the development of a national terrestrial and marine habitat map by 2015.</td>
<td>4.2. Key Action: Promote the development and use of Irish taxonomic checklists</td>
</tr>
<tr>
<td>3.4. Adopt and apply a set of headline biodiversity indicators by 2012.</td>
<td>4.3. Key Action: Continue and expand the range of data management services provided by the Data Centre to facilitate collaborative projects and optimise the mobilisation of existing biodiversity data</td>
</tr>
<tr>
<td>3.5. Establish and continue to promote common data standards and quality assurance procedures in line with the INSPIRE Directive and other data standards to enable interoperability of key biodiversity databases and inventories by 2015.</td>
<td>4.6. Key Action: Collaborate with key partners on capacity building within the biodiversity sector</td>
</tr>
<tr>
<td>3.6. Based on these standards and procedures, develop a shared information system for biodiversity which makes data freely available to all interested users, streamlines reporting and supports policy evaluation and development at national, regional and global levels by 2015.</td>
<td>5.2. Key Action: Provide training opportunities for recorders to assist capacity building throughout the sector. This will include organisation of an annual training workshop programme, field meetings and the provision of networking opportunities</td>
</tr>
<tr>
<td>3.7. Support and encourage the volunteer network that carries out biological recording.</td>
<td>5.3. Key Action: Provide co-ordination and training opportunities to strengthen the citizen science network across Ireland</td>
</tr>
<tr>
<td>3.8. Prioritise and deliver new online identification keys.</td>
<td>5.4. Key Action: Maintain and expand the Invasive Species Recording Initiative</td>
</tr>
<tr>
<td>3.9. Develop national biodiversity data standards and guidelines to assist interoperability of data management systems.</td>
<td>5.5. Key Action: Promote and provide support for biodiversity recording initiatives to increase the quality and quantity of data generated</td>
</tr>
<tr>
<td>3.10. Articulate and communicate to stakeholders the benefits of data-sharing for biodiversity conservation through talks, workshops, seminars and other means.</td>
<td>5.6. Key Action: Assist development of on-line data capture systems</td>
</tr>
<tr>
<td>3.11. Key Action: Assist with the development of a National Vegetation Classification system.</td>
<td>5.8. Key Action: Expand the range of identification guides to Ireland’s biological diversity</td>
</tr>
<tr>
<td>3.12. Key Action: Promote the collection of data on Ireland’s protected species and habitats to support reporting on the EU Habitats and Birds Directives, and on the status of Ireland’s threatened species.</td>
<td>5.9. Key Action: Develop a suite of Irish Invasive Species identification sheets</td>
</tr>
<tr>
<td>3.13. Key Action: Increase the range of habitat mapping information available through Biodiversity Maps.</td>
<td>6.10. Key Action: Prioritise and deliver new online identification keys</td>
</tr>
<tr>
<td>3.14. Key Action: Increase the availability of information on Ireland’s threatened and protected species and habitat.</td>
<td>7.1. Key Action: Promote the development and use of Irish taxonomic checklists</td>
</tr>
<tr>
<td>3.15. Key Action: Assist the production of conservation assessments (Red Lists) for appropriate taxonomic groups to target more efficiently efforts to stop the decline in Ireland’s Biological diversity.</td>
<td>7.2. Key Action: Maintain and expand the number and range of databases available through the data portal Biodiversity Maps</td>
</tr>
<tr>
<td>3.16. Key Action: Assist with the development of a National Vegetation Classification system.</td>
<td>7.3. Key Action: Promote the development and use of Irish taxonomic checklists</td>
</tr>
<tr>
<td>3.17. Key Action: Increase the range of habitat mapping information available through Biodiversity Maps.</td>
<td>7.4. Key Action: Continue and expand the range of data management services provided by the Data Centre to facilitate collaborative projects and optimise the mobilisation of existing biodiversity data</td>
</tr>
<tr>
<td>3.18. Key Action: Increase the availability of information on Ireland’s threatened and protected species and habitat.</td>
<td>7.5. Key Action: Promote and provide support for biodiversity recording initiatives to increase the quality and quantity of data generated</td>
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<tr>
<td>3.19. Key Action: Assist the production of conservation assessments (Red Lists) for appropriate taxonomic groups to target more efficiently efforts to stop the decline in Ireland’s Biological diversity.</td>
<td>7.6. Key Action: Assist development of on-line data capture systems</td>
</tr>
<tr>
<td>3.20. Key Action: Propose a suite of national biodiversity indicators and identify sources of data for tracking trends.</td>
<td>7.7. Key Action: Expand the range of data management services provided by the Data Centre to facilitate collaborative projects and optimise the mobilisation of existing biodiversity data</td>
</tr>
<tr>
<td>3.21. Key Action: Propose a suite of national biodiversity indicators and identify sources of data for tracking trends.</td>
<td>7.8. Key Action: Expand the range of data management services provided by the Data Centre to facilitate collaborative projects and optimise the mobilisation of existing biodiversity data</td>
</tr>
<tr>
<td>3.22. Key Action: Develop national biodiversity data standards and guidelines to assist interoperability of data management systems.</td>
<td>7.9. Key Action: Develop a suite of Irish Invasive Species identification sheets</td>
</tr>
<tr>
<td>3.23. Key Action: Articulate and communicate to stakeholders the benefits of data-sharing for biodiversity conservation through talks, workshops, seminars and other means.</td>
<td>7.10. Key Action: Prioritise and deliver new online identification keys</td>
</tr>
</tbody>
</table>
### Relevant actions contained in the National Biodiversity Plan

<table>
<thead>
<tr>
<th>Key Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Enhance training, communication, co-operation and concerted action between relevant sectors to support conservation of biodiversity</td>
</tr>
<tr>
<td>5.9</td>
<td>Strengthen measures to ensure conservation, and availability for use, of genetic diversity of crop varieties, livestock breeds and races, and of commercial tree species and promote in particular their in situ conservation</td>
</tr>
<tr>
<td>8.3</td>
<td>Examine options for rapid response when new invasive alien species are discovered</td>
</tr>
<tr>
<td>12.1</td>
<td>Use, and as necessary develop, monitoring tools, approaches and frameworks in order to establish and co-ordinate adequate harmonised data flows for the biodiversity indicators to reveal key trends</td>
</tr>
</tbody>
</table>

### Centre's Actions that will contribute significantly to delivery of a corresponding action in the National Biodiversity Plan

<table>
<thead>
<tr>
<th>Key Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.6</td>
<td>Key Action: Maintain and expand Ireland’s BioBlitz event.</td>
</tr>
<tr>
<td>5.6</td>
<td>Key Action: Contribute Irish Crop Wild Relative data to the Crop Wild Relative Global Portal.</td>
</tr>
<tr>
<td>3.9</td>
<td>Key Action: Promote the establishment of an Early Warning System for invasive species.</td>
</tr>
<tr>
<td>2.1</td>
<td>Key Action: Propose a suite of national biodiversity indicators and identify sources of data for tracking trends</td>
</tr>
<tr>
<td>2.3</td>
<td>Key Action: Manage the Irish Butterfly Monitoring Scheme</td>
</tr>
<tr>
<td>2.6</td>
<td>Key Action: Manage the Irish Bumblebee Monitoring Scheme</td>
</tr>
<tr>
<td>2.7</td>
<td>Key Action: Promote the development of appropriate invasive species monitoring programmes to enable the spread of invasive species to be tracked</td>
</tr>
</tbody>
</table>

### Sources cited
