

Biodiversity

IRELAND

Bulletin of the National Biodiversity Data Centre
Issue 4 – Autumn 2009

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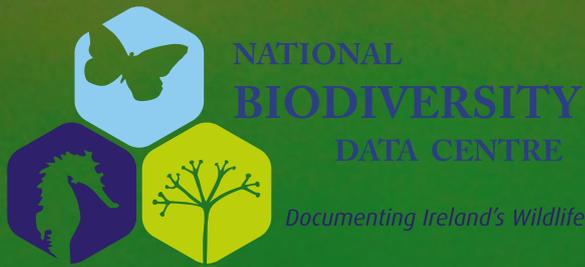
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Biodiversity Ireland Issue 4 Autumn 2009

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The National Biodiversity Data Centre,
Beechfield House, WIT West Campus,
Carriganore, Waterford.

Tel: +353 (0)51 306240

Email: info@biodiversityireland.ie

Web: www.biodiversityireland.ie

<http://maps.biodiversityireland.ie>

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Editorial

Welcome to the fourth, bumper issue of Biodiversity Ireland. We have four extra pages in this issue – there was just too much going on in the Irish biodiversity world to squeeze everything into 20 pages! We've been really busy here at the Data Centre and a number of projects have come to fruition, so we've dedicated some pages to updating you on these. Not least being our achievement of having over 1 million records available on the online mapping system. Thank you everybody for your collaboration with the Data Centre in making this happen.

At the core of the Data Centre's work is collaboration and the main articles in this issue highlight some of the partnerships that have been formed since the establishment of the Data Centre; The Encyclopedia of Life, The Rothamsted Insect Survey, and the National Vegetation Database. We have been very lucky to work with some of the world's foremost experts and we are building on these relationships to establish good quality information as a foundation for biodiversity conservation.

So what else has been going on? Well, there have been discoveries at the bottom of our sea, bat monitoring along our waterways, walrus and killer whales spotted off our coasts, aliens invading our lands, researchers buzzing, and books being written. And that's only the start of it. The hope is that this issue will give you a flavour of what's being going on nationally and internationally in the world of biodiversity. There is too much going on to be comprehensive but if you feel we've missed out on something, please get in contact with us. We would like to hear your views so that we can keep improving the format. Also, contributions on related topics are welcome.

Eugenie Regan

Eugenie Regan – Editor



Mushroom hunters at one of the Data Centre's workshops (Colette O'Flynn)

Director's Comment

1 million biodiversity records – mobilised and ready for action!

A significant milestone has just been reached where in excess of 1 million biodiversity records are now included in the National Biodiversity Database and made available through our online mapping system. This means that for these records, not only are they now secured for posterity, but the information gleaned from them can contribute in a tangible way to documenting Ireland's biodiversity resource.

A systemic weakness of biodiversity conservation has been the poorly developed mechanisms for the mobilisation of information. Not only has this meant that information on Ireland's biodiversity has been difficult to access for decision-making, but it has resulted in a patchy and fragmented knowledge base upon which to build an understanding of our natural environment.

This has all now changed with the development, by the Data Centre, of a national management system to rival any in other sectors of society. Datasets received by the Centre are stored in a database which serves as the national repository. Some of those data are made freely available online, through the state-of-the-art GIS mapping system. The availability of these data, in conjunction with other data sets, brings significant added value to individual data holdings, and provides a portal for direct access to the data providers if more detailed information or interpretation is required.

Below: Minister John Gormley launching the Data Centre's online mapping system. Also pictured (from left) Dr. Liam Lysaght (Director, National Biodiversity Data Centre), Prof. Liam Downey (Chair, National Biodiversity Data Centre), and Mr. Conor Newman (Chair, Heritage Council).

As the Data Centre does not own any data in its own right, but provides a service to coordinate data management, the achievement of this milestone of 1 million mobilised records, from almost 40 datasets, is the result of a significant collaborative effort. It is testament to the many individuals and organisations that share, with the Data Centre, the belief that the pooling of information and knowledge within an overall framework, will lead to immediate and direct improvement to the conservation of Ireland's biological diversity.



.....
“the pooling of information and knowledge will lead to immediate and direct improvement to the conservation of Ireland's biological diversity”
.....

And this pooling of resources is continuing apace. The national database is being added to on an ongoing basis, and we are already looking forward to reaching the next milestone of 2 million records. The Data Centre has also just completed the development work needed to feed data into the Global Biodiversity Information Facility (GBIF), so that future international and global maps will now also include Irish data. This will deliver in a real way on Ireland's existing commitment under the Convention on Biological Diversity. Linking with our other EU partners through GBIF will improve the availability of pan-European data thereby assisting the development of enhanced biodiversity policy within the European Union. This is going to be a key discussion area over the coming 12 months as we consider how best to move beyond the EU's target to halt biodiversity loss by 2010.

Dr. Liam Lysaght – Centre Director





Biodiversity at your fingertips

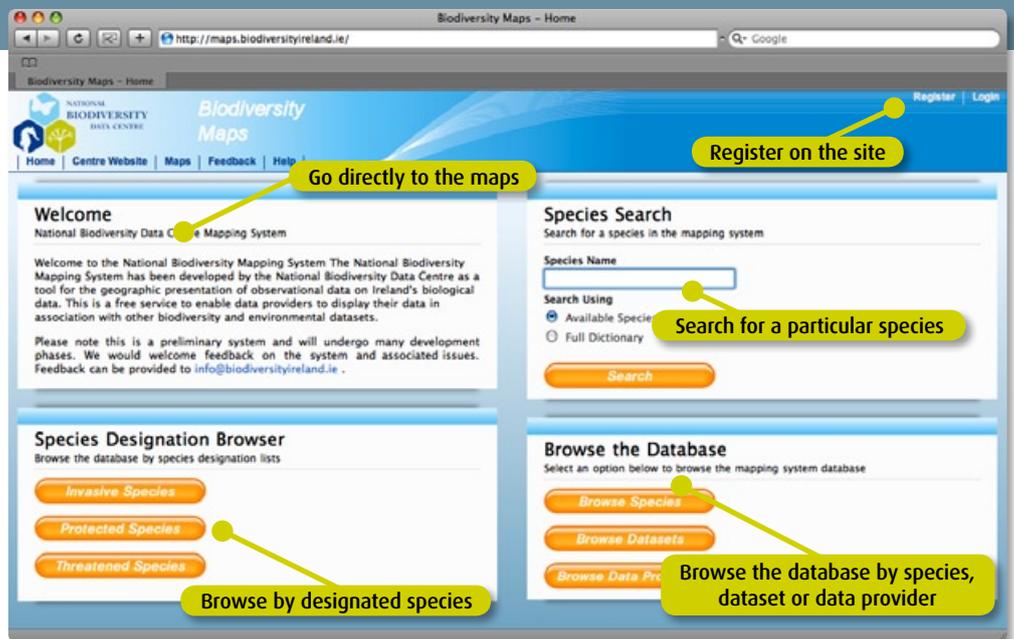
the National Biodiversity Data Centre's Mapping System

For the first time ever, over 1 million records of Ireland's plants and animals are freely available at the touch of a button. All you need is the internet and a computer!

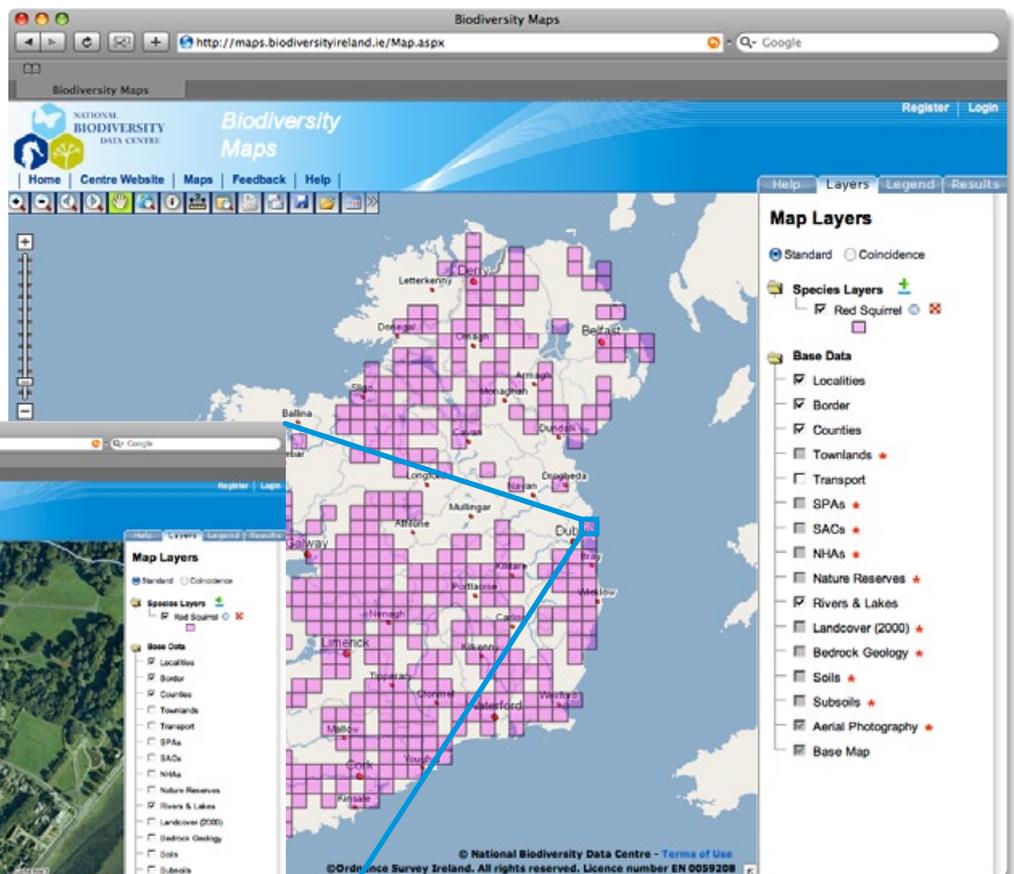
The staff at the National Biodiversity Data Centre has been working hard over the last couple of years to develop this groundbreaking, innovative system called Biodiversity Maps.

It was formally launched in May of this year and now has over 1 million records. Over the next few years, we will continue to improve the system, its functionality, and increase the data available. In the meanwhile, this is a brief introduction to the system and its applications.

Firstly, from the home page you have a number of options:



The home page of Biodiversity Maps - the Data Centre's online mapping system.



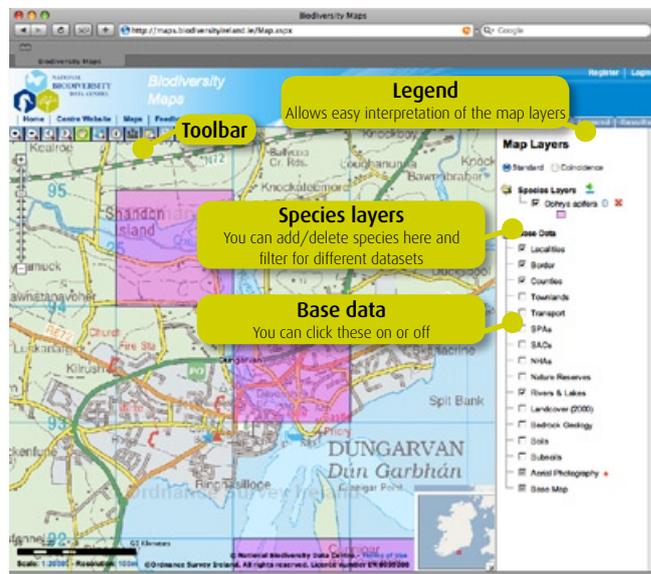
1. Go directly into the maps
2. Search for a particular species
3. Browse the database by species, datasets, or data providers
4. Browse by designated species
5. You can also choose to register on the website which allows you to store previous sessions, etc.

You can see overview maps of species distributions or zoom right in to the species information shown against aerial photographs. Click on the 'i' button in the toolbar to access the detailed species record.

All routes will eventually take you to the data displayed against the GIS maps. For example, type 'red squirrel' into the species search and click on the name when it comes up. This will bring you to the species details page with an overview map showing the numbers of records for the red squirrel per 10km square on the mapping system. Click on the map and it will bring you to the interactive GIS mapping system which is the core of the system.

On the interactive mapping system, there is the main mapping view with your species data (in this case red squirrel), a toolbar and map layers window. The toolbar has tools such as zoom, date filter, distance measure, and information. The information tool is extremely useful as it allows you to access the detailed species record behind the square on the map. The map layers window comes into its own at higher resolutions when background layers of geology, soils, designated areas, etc. can be switched on and off.

There are too many functions of the online mapping system to describe here – our advice is to play around with it and have fun!



The main mapping view with species data (in this case, the fly orchid), a toolbar and map layers window.

Information leaflets

The Data Centre has launched a series of one-page information leaflets on the Centre and some of its projects. To date, they are:

- National Biodiversity Mapping System
- National Biodiversity Data Centre
- Flora of County Waterford
- Irish Butterfly Monitoring Scheme
- National Invasive Species Database
- National Vegetation Database

To receive a copy of any of these, please email info@biodiversityireland.ie.



The Encyclopedia of Life: a web page for every species



Jim Edwards (EOL executive director) and Justine Hausheer

The Encyclopedia of Life (www.eol.org) was established in 2007 with the goal of providing comprehensive information about all of the world's plants, animals, and microorganisms, for use by policymakers, managers, scientists, and anyone with curiosity about those fellow creatures that inhabit this planet with us.

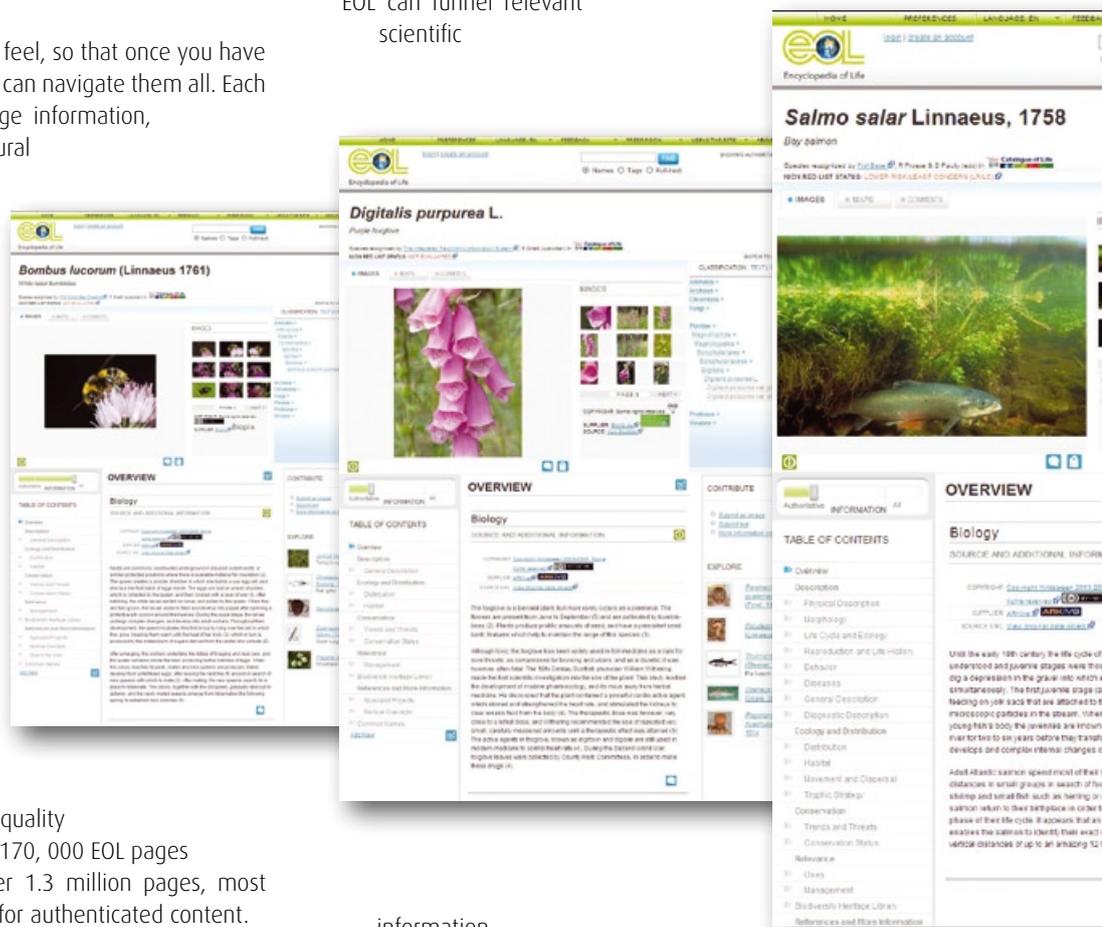
Each EOL page has a common look and feel, so that once you have learned how to navigate one page, you can navigate them all. Each species page will have a picture, range information, conservation status, description, natural history information, and other information including genetic and molecular materials. The information is gleaned from a wide array of content providers from around the world and is aggregated on the pages.

Unlike some other on-line resources, EOL is assembling curators who will authenticate the information on the species pages. Thus, anyone can provide photos or text to a species page, but that information is marked with a yellow background until an expert has authenticated it. Curators are often professional scientists, but may also be citizen naturalists who have demonstrated a commitment to quality science. As of August 2009, more than 170,000 EOL pages contained curated information; another 1.3 million pages, most with little or no content, were waiting for authenticated content.

EOL is the only current effort with the goal of covering all known species (as well as new species as they are described). This grand vision was conceived by Edward O. Wilson, two-time Pulitzer Prize winner and Professor Emeritus at Harvard University. In February 2007 Dr. Wilson was awarded a prestigious TED (Technology, Entertainment, Design) prize of \$100,000 USD (approx. €71,752). In his acceptance speech he asked the TED community to help him develop the EOL. In May of the same year, the project became a reality with the support of research institutions across the globe. To date, the MacArthur Foundation and Sloan Foundation have donated a combined \$25 million USD (€17.6 million) to the project. February of 2008 saw the launch of the EOL website, with the goal of completing the Encyclopedia within ten years.

Partnership

The speed and success of the project is ensured by the wide range of content partners EOL has assembled. The term "species name" is common to all digitised biological databases, and through the use of data aggregation technology, EOL can funnel relevant scientific



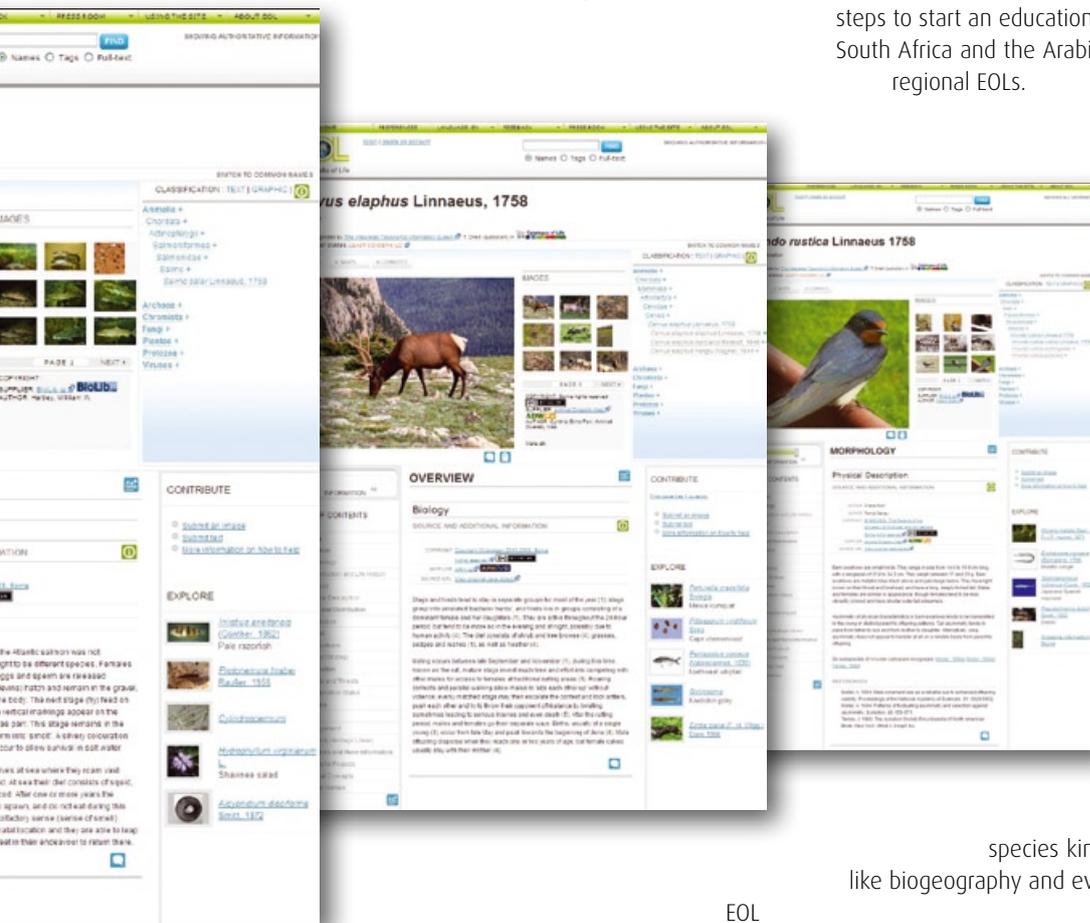
information from multiple database sources into a single website. EOL maintains a distinct advantage over similar information-gathering websites, because EOL has a standardised format and required fields. The wealth of information on each completed species page need not intimidate users, for a simple bar on each page allows users to modify the volume and specificity of information they view, rendering the website friendly to both young students and tenured scientists.

Organisationally, the EOL is composed of several cornerstone institutions across the United States. These include the Biodiversity Heritage Library Consortium, The Field Museum of Natural History, Museum of Comparative Zoology at Harvard University, the Marine Biological Laboratory, the Missouri Botanical Garden, and the Smithsonian Institution. EOL also works with organisations and



institutions around the world, including the Natural History Museum in London, the Museum National d'Histoire Naturelle in Paris, the South African National Biodiversity Institute, the Chinese Academy of Sciences, the Comision Nacional de Biodiversidad, Consortium of European Taxonomic Facilities, and the UNEP World Conservation Monitoring Centre.

in that region. The first two regional EOLs are the Atlas of Living Australia, and the Encyclopedia of Dutch Biodiversity. The Chinese Academy of Sciences has committed to creating a Chinese regional EOL to gather information about Chinese species, host an EOL mirror site for Asia, and translate the entire EOL into Chinese. Costa Rica's National Biodiversity Institute (INBio) is taking the initial steps to start an education based regional EOL for Central America. South Africa and the Arabic countries are also considering forming regional EOLs.



The final two functions within EOL are Learning and Education (L&E) and the Synthesis Group. L&E is devoted to involving students in producing and using species-pages information. Several college-level classes have had their students prepare draft pages on different species. These pages are checked by the students' teachers and by appropriate curators before appearing on the EOL. EOL is also working with bioblitzes, organised efforts to identify the species in a defined habitat over a 24-hour period. The most recent bioblitz involved ~5,000 people who found more than 1,700 species at the Indiana Dunes State Park in Illinois, USA.

Finally, EOL's Synthesis Group takes a step back to ask cross-species kinds of large-scale questions about topics like biogeography and evolutionary trees.

EOL has experienced several new project enhancements. Public participation is encouraged through the EOL Flickr group and text-adding on the pages. EOL also hosts LifeDesks, which are collaborative web environments for groups who wish to develop an online presence for their favorite group of organisms or geographic region. EOL has also established a fellows program. The programme funds postdoctoral students and graduate students who will contribute content from their own research and catalyse contributions from others in their scientific community.

Global outreach

EOL is actively engaged in global outreach, for the nature of the project makes it a world-wide effort. A major vehicle for this effort is Regional EOLs, which serve species pages about the flora and fauna from a specific geographic area, in the language(s) used

The key to conserving is understanding

Organisations like the National Biodiversity Data Centre and EOL can play an important role in conservation of biodiversity.

In order to conserve a species, we need to understand it. The wealth of the world's biodiversity cannot be preserved if it is undiscovered or unstudied. Some newly discovered species are simply found too late – they are either ecologically extinct or on the brink of extinction itself. The Encyclopedia of Life aims to contribute to the awareness and preservation of biodiversity. Time, personnel, and adequate funding are all useless without the scientific information to put them to good use. By functioning as an all-inclusive knowledge database, EOL provides the most critical component to biodiversity preservation efforts – knowledge.

Like moths to a flame: The Rothamsted Light-trap Network

Monitoring long-term changes in our common moths. Philip Gould & Ian Woiwod

Introduction

Special conservation attention is now being given to many of Britain's rarer moths but we still know little about the current status of the more widespread and common species. Thanks to the foresight of entomologists at Rothamsted Experimental Station over the last 70 years and the dedication of their volunteers, the British Isles are one of the few areas in the world to have any quantitative information on this important topic.

Rothamsted Research is the oldest agricultural research station in the world. It is located in Hertfordshire in England and is internationally renowned for its long term "Classical" fertiliser experiments, but it also has a long history of entomological studies. In the 1930s and 40s C.B. Williams ran a trap on the Rothamsted Farm from which all moths were counted every day. This was continued in the 1950s by Roy (L.R.) Taylor. To provide both research data and a moth monitoring scheme, the Rothamsted Insect Survey (RIS) National Light-trap Network was started during the early 1960s. In all, over 460 sites have been sampled and 54 of these have operated for 15 or more years. Currently 93 traps are in operation.

The Rothamsted Light Trap

The structure of the trap is such that it only takes small, consistent, low level samples from the immediate vicinity and is ideal for scientific, long-term quantitative monitoring of moth populations. This is particularly important when considering that samples have to be killed for later identification, often away from where traps operate. In an increasingly conservation-conscious world the necessity for taking dead samples has been questioned, but there is no practical live-sampling method that would provide us with daily data that would stand up to rigorous analysis. The time and commitment required from volunteer operators would be just too great.

There are also conservation issues with regular live trapping using MV-type traps, as moths often settle on surrounding vegetation and it doesn't take long for birds and bats to discover this convenient food source. Standing 1.2m above the ground, Rothamsted traps are benign in this respect, as moths are either caught or fly into dark zones above or below the trap and continue on their way without settling.

Concern regarding the collection of dead samples is not new and the ethics of insect collecting were addressed by C.B. Williams in the 1950s and all of his points are still valid today. We firmly believe that insects should never be killed casually or thoughtlessly, nor should sampling have any detrimental effects on populations. We are therefore careful to ensure no vulnerable or very localised populations are sampled. What should be clear is that this cautious approach is fully justified by the results of conservation importance emerging from the unique datasets.

Changes in common and widespread species

Over 600 publications have utilised RIS data, many addressing fundamental questions in ecological science. Recently we determined population trends using the full dataset, analysing records from the period 1968 – 2002; from this population changes were estimated for 337 species of common macro-moths. The results should worry not just those interested in moths but also anyone concerned with the conservation of British wildlife biodiversity, because both moth adults and larvae are vital sources of food for birds, mammals and other invertebrates.

Over the 35 year period, total macro-moth abundance declined by almost a third. However, this is not uniform across Britain – the strongest decline is seen in the south (particularly the south-east), whereas the north has remained fairly stable, with species in decline balanced by those increasing.

At species level there is even greater cause for concern. Of the 337 species, 71 (just over 20%) are declining at rates regarded as cause for serious conservation concern. These are species generally considered as common and widespread, and until recently none had given cause for concern or been thought to warrant conservation priority. Thankfully much of this has changed since the publication of our results, and particularly since the joint publication with Butterfly Conservation in 2006 of *The State of Britain's Larger Moths*.

What has caused these changes?

These are NOT the cause:

- Overtrapping of local moth populations. Patterns of decline do not fit as the same species show different changes in different regions. For example, the Scalloped Hazel (*Odontopera bidentata*) declined in the south-east, remained stable in the south-west and increased in the north.
- Changes in trap distribution. Analyses were repeated using only longer-running sites (10, 15 or 20 years) and our conclusions remain the same.
- Diminishing effectiveness of the bulbs. These are replaced several times each year.



- Increased background light pollution. Using satellite data, no differences in moth trends were found between sites with no change (or decreases) in background illumination and those with increasing levels of emission, confirming our data to be robust in this respect.

So what has caused such large declines in our common moths? The honest answer is that we don't know for sure. Further work is required to fully understand what is happening, particularly if we are to successfully influence conservation efforts. Some relationships between the results and the life histories of species have been found. For example, many lichen feeders have increased in number, probably due to lichen populations improving thanks to cleaner air. In contrast, species overwintering as eggs have done badly but those flying throughout the winter have increased.

These may well be signs related to recent changes in the British climate.

There are almost certainly other factors at work too, including: agricultural intensification, land-use change, urbanisation, and eutrophication from nitrates in air pollution. Light pollution is also likely to be disrupting the normal breeding behaviour of many species. Determining the relative importance of each of these is vital but will not be easy because many are closely interrelated.

You could help

Long-term monitoring of any species-rich group is never easy but hopefully the above account proves the importance of the Light-trap Network. We are always happy to welcome new volunteers – only five minutes per day is required for trap operation, all equipment is provided and running costs can be reimbursed. The commitment comes from keeping traps operating consistently (although samples can be accumulated if necessary) and wanting to make a truly valuable research contribution to our future knowledge of moth populations.

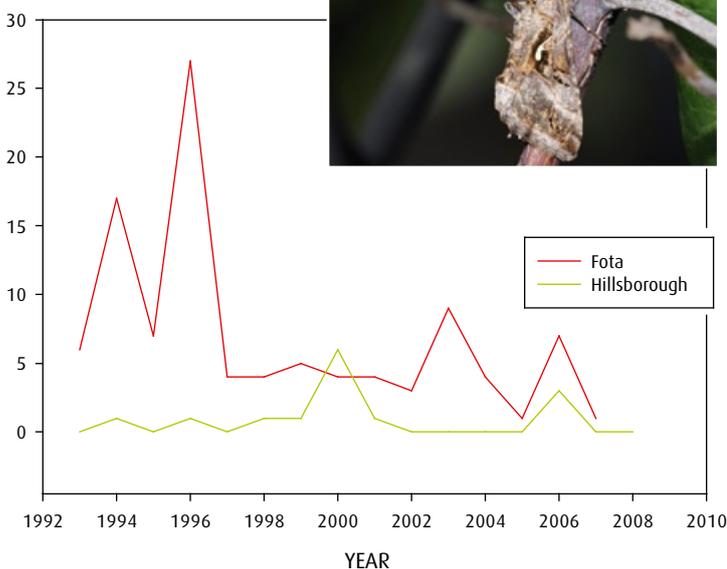
For further information, please contact Phil Gould at: phil.gould@bbsrc.ac.uk or Eugenie Regan at: eregan@biodiversityireland.ie



The Rothamsted light trap. The trap's opaque roof protects the sample from bad weather and improves the consistency of catches by only taking small, low level samples from the immediate vicinity. The 200W clear, Tungsten filament bulbs, ensure continuity with historic data and provide small, representative samples that are practical to deal with, without harming moth populations.

The National Biodiversity Data Centre is working closely with Rothamsted to establish a network of moth traps across Ireland. Alongside, the network in existence, Connemara National Park is in the process of setting up a trap and there are ongoing discussions with other national parks. These traps will provide important standardised long-term data on Ireland's moth fauna as well as valuable information on the effects of climate change on Ireland's biodiversity.

Silver Y in Ireland



Irish Rothamsted Traps

Trap name	Operated by	Date started
Fota	Fota Wildlife Park	1993
Hillsborough	Agricultural Research Institute	1993
Belfast Zoo	Belfast Zoo	2006
Crossgar	Ulster Wildlife Trust	2007
Wexford	Wexford Wildfowl Reserve	2008
Dublin Zoo	Dublin Zoo	2008

Developing a common language – the UK's National Vegetation Classification

Professor John Rodwell describes the importance of a National Vegetation Classification standard and how it was developed for the UK.

The UK National Vegetation Classification (NVC) was set up to provide a complete and systematic coverage of all the plant communities in Britain – not just the rare and threatened but all the vegetation types of the natural, semi-natural and artificial habitats we had. Without such knowledge, nature conservation can have only a partial understanding of a country's resources and comparisons between sites of interest are unfair.

The methodology

The survey methods we used were simple and pragmatic and followed the European approach that has been used for decades to catalogue the composition of plant communities, to record the plants they contain and give a name to different kinds of heath, grassland, weed vegetation and so on (<http://www.jncc.gov.uk/page-3724>).

This was what the survey team did, recording quadrat data from representative stands of the vegetation types. In each sample, all the vascular plants, bryophytes and macrolichens were listed and their abundance measured, together with a note of the environmental characteristics of the location - altitude, slope, aspect, geology and soils and any impacts of management or influence of other biota.

A team of five full-time staff working over three years, supplemented by university and institute researchers and a few competent amateurs, accumulated 33,000 such quadrat samples of consistent quality. Initial training and co-ordinated teamwork, with regular meetings to assess progress and rectify deficiencies, ensured that the coverage and data quality were as good as we could make them. To provide overall supervision, there was a team of professional ecologists and conservationists and it was my task, as coordinator, to provide day to day project management. Analysis of such large amounts of data demanded efficient software but we were determined from the start that our primary interest was in delivering the goods, rather than in the minutiae of statistics. Interpretation of the results also

needed to be skilled but sensible, keeping in mind that the purpose of the project was to produce a working tool – clear accounts of all the different plant communities, with details of their composition and structure, their habitat relationships, the successional processes of which they were a part, their distribution within the UK and wider affinities in Europe. All of this had to be in a form that could be understood and used by a wide variety of organisations.

Widening the ownership

From the start we devoted much effort to widening the ownership of the project, through extensive personal contact, regular progress reports (including to recipients abroad), occasional articles, and conference updates. This was in the days before email and the internet but, without doubt, those would have been enlisted too.

It was also important that early in the project we recognised the need for training. We organised short-courses, workshops and seminars for users to familiarise with the approach along the way, trial the early results of the work, and understand its capacities and limitations. This was enormously helpful in creating a partnership of users, developing a sense of anticipation of the completion of the work and, a wider market for the published books.

A launch of the first of five volumes of British Plant Communities with a sense of celebration - much welcomed, not least by me, after 16 years of work - also generated valuable publicity outside the

immediate world of users, thus helping a wider public to see the need for sound science to underwrite the sustainable management of the landscape and its diversity of habitats and wildlife. A thoughtful dissemination of review volumes, well beyond the UK, also pricked up the ears of workers abroad who had been waiting for the results to appear.

A common language

What the NVC provides, first and foremost, is a common language with which to describe, understand, and sustain the fabric of greenery that is essential for the quality of life. It is used by all the major players in the UK – statutory agencies for the environment, agriculture, and forestry, businesses, wildlife NGOs, local government, and consultancies. For all these, **it enables inventories and maps of sites of interest to be prepared in a standardised fashion.** This ensures that the state and quality of individual places can be evaluated on a common base and different places compared fairly. This is as crucial for describing sites whose value is clear to all (or most!) as for environmental impact assessment of situations where there is much dispute about the importance of semi-natural habitats and wildlife, as opposed to development of one sort or another.

This makes for an informed and lively (sometimes contentious) conversation among a wide and varied community of users. What's more, since our methods were already familiar to workers in Europe and beyond, using the NVC provides an international language and gives access to a rich and fascinating bigger world we must try and sustain together. Not least for interpreting the Habitats Directive and acquitting ourselves of our responsibilities within the European Union, this is an enormous advantage.

At home in the UK, widening access of the NVC has also made for a diversity of second generation tools, not just for describing vegetation types, but for management and monitoring, for checking delivery of particular environmental policies such as agri-environment schemes and for landscape-scale prediction and design. The impact of the project has been much wider than its original champions and funders conceived.

And after...

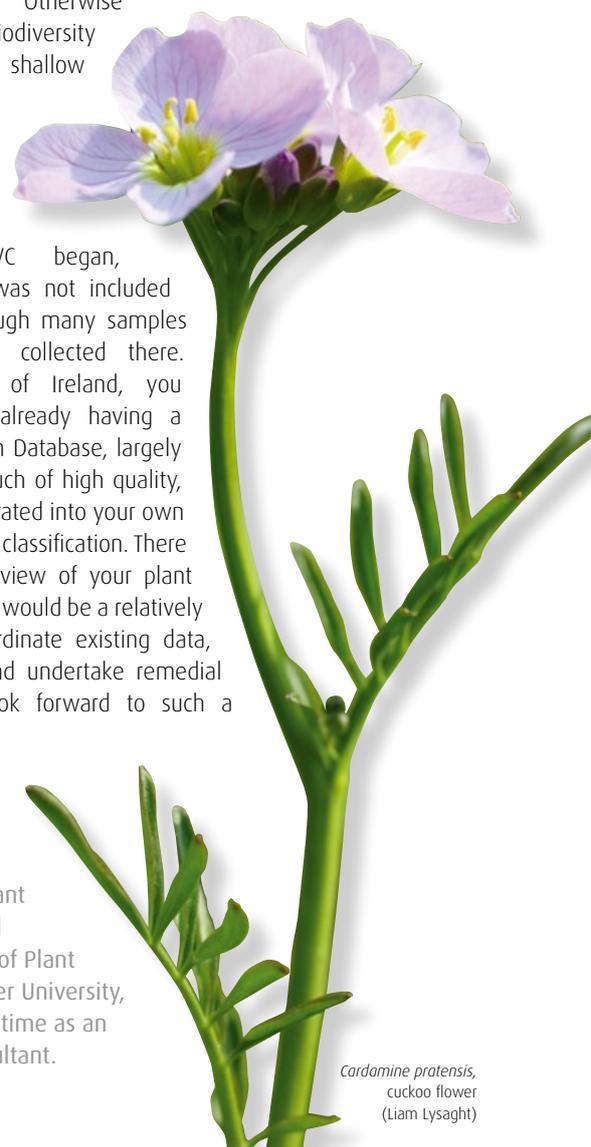
However, the afterlife of the NVC has not been entirely without its problems.

- Firstly, there needs to be stewardship of the NVC data with continuous updates complemented by an up-to-date bibliography of any new NVC surveys.
- Second, an integrated information system should be developed along the lines of the Dutch SynBioSys software. This could provide user-friendly interactive access to the accounts of the plant communities and the possibility of integrating other data, such as a national flora database, on a single platform.
- Third, a community forum needs to be established with continued exchange of news, data, ideas, and experience – so as to provide a sound basis for the eventual update of the NVC. We know that coverage of vegetation types was uneven and an initial overview has highlighted deficiencies (<http://www.jncc.gov.uk/page-2312>) but knowledge of these and the capacity to remedy them is not widely owned.

These gaps are part of a wider shift away from science within the UK wildlife and environment agencies towards conservation for the customer. Senior management champions are needed to ensure that there is a continuing commitment to sound understanding of our environment. Otherwise delivery of biodiversity targets becomes a shallow achievement, measured by generalised standards.

When the NVC began, Northern Ireland was not included in the survey, though many samples have since been collected there. In the Republic of Ireland, you are fortunate in already having a National Vegetation Database, largely compatible and much of high quality, that could be integrated into your own national vegetation classification. There is already an overview of your plant communities and it would be a relatively easy task to co-ordinate existing data, scope the gaps and undertake remedial survey. We all look forward to such a commitment.

John Rodwell was coordinator of the UK NVC and editor of *British Plant Communities*. Until recently Professor of Plant Ecology at Lancaster University, he now works full-time as an independent consultant.



Cardamine pratensis,
cuckoo flower
(Liam Lysaght)

The National Vegetation Database – paving the way for an Irish Vegetation Classification System

The National Vegetation Database was established in 2007 by the National Biodiversity Data Centre, in conjunction with the National Parks and Wildlife Service. It aims to collate all of the vegetation data that has been collected over the years in Ireland onto a single database. It currently contains 14,000 relevés, and when completed in 2010 it will provide the framework for the future development of a national vegetation classification in Ireland.

The data is held digitally using software called Turboveg and will contribute a core building block towards a future integrated information system for the management of plant species, vegetation and habitat data in Ireland.

More information on the National Vegetation Database can be found at <http://nationalvegetationdatabase.biodiversityireland.ie>



Biodiversity Tales

Marine Invertebrates

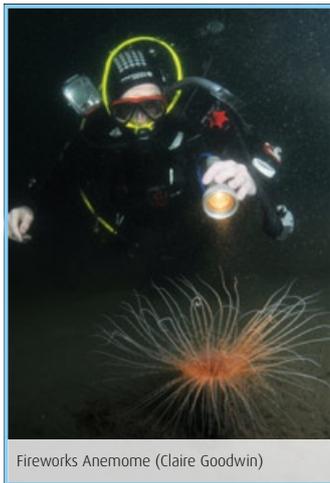


The fireworks anemone

Pachycerianthus multiplicatus is an amazing sight. Its common name derives from its large size and the spectacular way it waves its long, white or striped tentacles around its central disk. When startled the anemone retracts its tentacles, coiling them into tight springs. It is much larger than its much commoner relative the **burrowing anemone**, *Cerianthus lloydii*. Its tentacles can span up to 30cm and the tube in which it lives can be up to 1m long (the **common burrowing anemone** reaches only 70mm in diameter and has only 70 tentacles). It inhabits sheltered muddy sediment and has previously been recorded from only two localities in Ireland: Kilkieran Bay in County Galway and the Kenmare River in County Kerry. In Britain it also occurs in some Scottish sea lochs.



Fireworks Anemone.
David McCormack



Fireworks Anemone (Claire Goodwin)

A new record of this species was recently made by eagle-eyed scuba diver David McCormack whilst diving on Brandon Reef near Mutton Island in County Clare. The anemone was tucked away in soft mud sediment in the bottom of a bedrock recess 8-10m long. The depth was 25m. David caught the anemone in his torch beam and was attracted by the way the anemone seemed to luminesce in the beam. He was able to take some photos and identification was confirmed

from these by Bernard Picton of National Museums Northern Ireland and Chris Wood of Seasearch. This species may be present in other sheltered, muddy locations so divers should keep a look out for it. Divers sighting any unusual marine invertebrates can report their findings to Seasearch – contact Claire Goodwin (claire.goodwin@gmail.com) in Northern Ireland or Adrienne Mockler (seasearch@cft.ie) in the Republic of Ireland for further information.

Claire Goodwin, Ulster Museum

Bats



Searching our waterways for the 'water bat'

The **Daubenton's bat** is one of ten species of bat resident in Ireland. This species belongs to the Family Vespertilionidae and has a widespread distribution along a narrow band across Europe and Asia. It is a medium-sized bat with a mass of 7-15g, a wingspan of 240-275mm and a forearm length of 33-42mm. In general, it has brown dorsal fur with pale buff ventral fur. The ears are relatively small with a short blunt tragus. Characteristic features include a long calcar (the cartilage projection from the foot to the tail along the edge of the tail membrane) and large feet.

Daubenton's bat is often called the water bat due to its preference for hunting close to water. As a consequence this species rarely roosts far from waterbodies. They are known to form maternity colonies in hollow trees, bridges and stone buildings with the most frequently-used roosting sites being in stonework of bridges over water. A survey of 165 stone masonry bridges in counties Sligo and Leitrim resulted in 98 being considered suitable for roosting bats. Of these, 66 bridges had roosting bats and, of the 252 bats identified, 72% were **Daubenton's bats**.

Daubenton's bat is easy to see when foraging because it opportunistically feeds close to water especially over smooth water surface. It can be found foraging over rivers, streams, canals, pools and lakes. It forages very close to the water, typically within 30cm of the surface. Here it either trawls for insects from the surface of the water by gaffing them with its large feet or the tail membrane or takes them directly out of the air (aerial hawking).



Photo: Daubenton's bat in flight (Frank Greenaway)

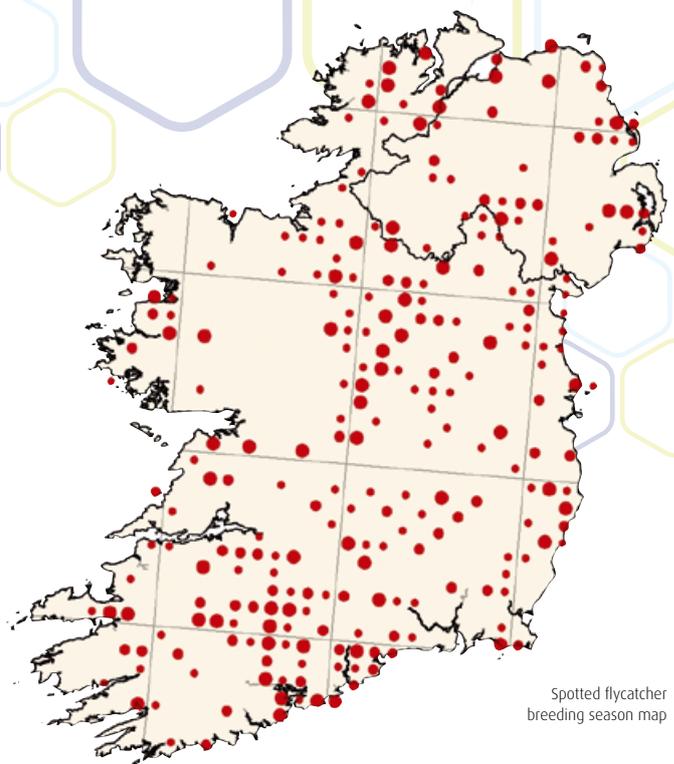
Exploitation of insect prey populations and orientation during the darkened hours means that bats rely on vocalisation or echolocation when commuting and foraging. Echolocation calls are related to the foraging habitat, the shape of the wings, and time of emergence. Manoeuvrable bats, such as **Daubenton's bats**, have broad wings and tend to emerge late in the evening. **Daubenton's bats** echolocation call on a heterodyne bat detector can be described as a rapid series of clicks, often likened to the sound of a machine gun. The pulse repetition rate is very fast and very regular.

Sampling the activity of **Daubenton's bats** along waterways using a bat detector is relatively straight forward. The echolocation call is loudest when the detector is tuned to 45kHz. However to distinguish from foraging **pipistrelle bats** it is recommended to tune the detector to 35kHz. At this frequency, the **pipistrelle bat** echolocation calls lose much of its tonal qualities but the dry 'clicks' characteristic of **Daubenton's bats** are still clearly audible.

The characteristic foraging style of **Daubenton's bats** makes it relatively easy to identify the species in the field and thus a suitable candidate for large scale volunteer-based surveys. This is where the All Ireland Daubenton's Bat Waterway Survey comes into play. Funded by the NPWS and NIEA, Northern Ireland, it has been running since 2006 and will continue to 2011. The scheme has finished one 3-year cycle where over 500 people surveyed 286km of waterways on the island. If you are interested in helping our surveys, please contact Tina at info@batconservationireland.org. Recruiting will begin for the 2010 season in the coming spring.

Tina Aughney, Bat Conservation Ireland

It is only with your support through the submission of your bird records as 'Roving Records' that we will be able to accurately establish the full picture for the **spotted flycatcher** and all our other breeding and wintering bird species in Ireland. So now is your chance to do your piece to help conserve Ireland's birdlife by submitting your bird sightings to the Atlas. Make your birdwatching count!



Birds



Calling all birdwatchers

We have now reached the end of the second breeding season of Bird Atlas survey work and the mid point of this four year survey. This is a crucial period for the survey so more than ever, we now need your help to ensure that we get Ireland covered for the Atlas. Thanks to the efforts of birdwatchers across the country the atlas maps are starting to take shape, but many gaps remain where your bird records are urgently needed.

The provisional map below plots the distribution of the **spotted flycatcher** in Ireland, based on the first two years of breeding season fieldwork. When compared to the previous Atlas maps (<http://www.bto.org/birdatlas/previous/index.htm>) a severe decline of this charismatic summer migrant is highlighted. So if you have been lucky enough to have a **spotted flycatcher** nesting in your garden this summer or encountered one while you were out and about then make sure you submit this valuable record to www.birdatlas.net.



Photo: Spotted flycatcher (Peter Cairns)

To find your 10km square, view the species maps or species lists for your 10km square please go to www.birdatlas.net. All records or 'Roving Records' as they are called can be submitted online. Alternatively, you can simply contact the Atlas Coordinator to have any of the paper forms or details above posted or e-mailed to you (bcaffrey@birdwatchireland.ie or 05791 51676).

Steve Newton, BirdWatch Ireland

Whales and Dolphins



Despite the reporting period February-July widely being acknowledged as "low season" for all things cetacea in Irish waters, IWDG received and validated 759 sightings of which 683 (90%) were identified to one of 11 species, (including basking sharks). The remaining 67 (9%) of sightings were allocated to eight "downgrade" categories. These figures represent a 5% decline in sighting reports for the same period the previous year, which was predictable given the poor weather during July.

As always the **harbour porpoise** was the most frequently reported species with 225 sighting events (29.5%), followed by **basking shark** 160 (21.2%), **bottlenose dolphin** 139 (18.3%), **minke whale** 63 (8.4%), **common dolphin** 54 (7.3%), **Risso's dolphin** 19 (2.5%), **killer whale** 9 (1.2%) and **fin whale** 8 (1%).

Vascular Plants



Threatened Plants Project

In 2008, the Botanical Society of the British Isles (BSBI) launched a new project called the "Threatened Plants Project" (TPP). Each year, ten species that are declining across Britain and Ireland are chosen to be surveyed. **Copse-bindweed, crested cow-wheat, frog orchid, heath cudweed, maiden pink, narrow-leaved helleborine, opposite-leave pondweed, rare spring-sedge, tubular water-dropwort and wood bitter-vetch** are the species being surveyed in 2009. The first two on the list and the **rare spring-sedge** do not grow in Ireland.

One of my success stories I had in Wexford was searching for **heath cudweed**, a species I had not seen in Ireland before. It was found new to the county in 1989 by Rosemary FitzGerald, on the Blackstairs Mountains near Killealy, where she counted over 600 plants along a sandy forest track. I could only find 35 plants, very disappointing, this could be because the site is becoming over grown as the track is no longer in use and some fly tipping had taken place. But on a good note, seeing the long narrow silvery leaves, I realised that I had seen these before, at Barnariderry, last year. Revisiting this site, on the opposite side of the county, I found 12 plants along a sandy forest track, exactly the same habitat as in the Blackstairs Mountains.

The TPP is a very good way of keeping the data updated on our rare plants across the country - often finding that some sites have not been visited for many years and have very little recent information. Besides counting the population the associated species are listed too, a sketch map of the site is made and any threats and damages are recorded. See www.bsbi.org.uk for further details.

Paul Green, Botanical Society of the British Isles



Narrow-leaved helleborine (Paul Green)



Spotted killer whales off Mayo coast (Alan O'Regan, Naval Service)

Although strictly speaking not part of the IWDG remit, **basking sharks** continue to figure highly in these statistics, and 2009 so far looks like another record year for the planet's second largest fish, with a 6% increase in basking shark sightings.

Among the highlights were a pod of eight **bottlenose dolphins** whose movements were monitored from the mouth of Carlingford Lough, Co. Down on 14th June to their last known position south of Wicklow Head the following evening. As well as some **minke whale** activity in inshore waters off Co. Dublin in June, Dublin also remarkably produced the first confirmed **fin whale** of 2009 with a sighting on 17th June, just 9.4 miles east of Dublin, and tantalisingly within scoping range of Howth Head.

But perhaps the most unusual sighting was of a possible **walrus** on 23rd June near Magheramore, Co. Wicklow. Two days later we had a second unconfirmed sighting from the Rosslare ferry just an hour outside the harbour. On 23rd July a third "probable" **walrus** sighting was reported from the Stena ferry by an experienced observer, who this time noted two large white appendages in front of its face, presumably tusks. The timing and locations of these three sightings add some veracity to these isolated reports of this Arctic pinniped vagrant.

Killer whales have also had a good year so far, and on 5th July there were multiple sightings of this apex predator from both Galway Bay and Erris Head, Co. Mayo. Photo ID images taken by the Irish Naval service confirm both groups to comprise individuals known to Scottish researchers as being from the "West Coast" group who have been more frequently seen off the Hebrides over the past 30 years.

For the very latest validated cetacean and basking shark sightings and strandings please visit www.iwdg.ie. IWDG would like to thank recorders and public for their continued support of the IWDG recording schemes.

Pádraig Whooley, Irish Whale and Dolphin Group

Seaweeds



Out damned Smut!

Sargassum muticum is an experienced world traveller. It started its epic journey in Japan, from where it was first described from Takashima (Hokkaido) 1907, as *Sargassum kjellmanianum forma muticum*. After a detailed study in the 1950s it was raised to species status, and then began its odyssey.

Appearing in British Columbia in the early 1940s - probably arriving with imports of Japanese shellfish - it spread sporadically southwards, reaching California in the 1960s but not necessarily always colonising the intervening coasts of Washington and Oregon. It has now spread south to Baja California in Mexico.

Arriving in Britain in the early 1970s, it quickly spread along the south coast and concerted efforts to eradicate it proved futile. Known initially as "Japweed", alleged protests by the Embassy of Japan led to the superior name of "Wireweed", referring to its wiry nature, but to its discoverer in Britain, Bill Farnham, it was always known as "**smut**", if only for ease of annotation of herbarium specimens!



3m long fronds of smut in Co. Clare (Michael Guiry)

Nobody really knows if smut first arrived in northern France or southern Britain, but it does not matter much, as shellfish and boating movements resulted in rapid spread from both areas, and it is now known from Norway south to Portugal, in the western Mediterranean and in the Adriatic.

In Venice, where it has been since 1992, **smut** has spectacularly colonised the ex-colonists, and smut is choking the island complex with drift plants everywhere in the canal systems, along with another Japanese invader, *Undaria pinnatifida* (Wakame) which has a particular penchant for the *vaporetto* stops.

Smut first arrived in Ireland in the early 1990s when it was found near a shellfish farm in Strangford Lough by Pat Boaden. It then began to appear sporadically at centres in Wexford, west Cork, Galway, and Kerry. As with its spread in the Pacific, it has not generally colonised intervening coasts, and again its peregrinations may have been assisted by shellfish growers and the bilges of small boats.

Smut is now well established in Cos Galway and Clare. The biological



Smut in Venice (Michael Guiry)

voyeur can see plants at Dog's Bay, Roundstone, Co. Galway; at the Coral Strand at *Trá an Dóilin, An Cheathrú Rua, Co. na Gaillimhe*; and at Carraigadda, near Seamus Heaney's celebrated Flaggy Shore in Co. Clare. Here plants (see figure 1) were over 3 m long in July 2009. Plants in Brittany have been reported to attain a spectacular 12 m.

Smut is an amazing reproductive machine: its receptacles are dotted with reproductive conceptacles (see figure 2). Eggs are released onto the receptacles' surfaces where they are fertilized in place. Little sporelings grow in situ and fall off both stationary and drifting plants, effecting the very efficient marginal dispersal typical of so many invasive species.



What harm does **smut** do? Well, it's really hard to tell, although it does seem to compete with *Zostera* (eelgrass) and a similar brown alga, *Cystoseira*, of which 4 species occur in Ireland.

What can be done? Nothing much now, I'm afraid, but we need to guard against future such invaders by introducing stringent quarantine regulations of the quality of those of Australia and New Zealand. An unfortunate consequence of our membership of the EU is that we are no longer free to do so unilaterally, and how many **zebra mussels, curly-leaved waterweeds** and **smuts** will we have to endure before we can get something done?

More information

http://www.algaebase.org/search/species/detail/?species_id=90
http://www.nobanis.org/files/factsheets/Sargassum_muticum.pdf
<http://www.seaweed.ie/sargassum>

Michael Guiry, National University of Ireland, Galway.



Biodiversity Research

Above: *Bombus muscorum* (John Breen)

Conserving Irish bees

Mark Brown summarises the work that created a buzz about Irish bees

Bees provide the essential service of pollination. They are crucial for the functioning of natural ecosystems and for productivity in agricultural systems. While honey bees are important pollinators, considerable time and money has been spent on their study world-wide. In contrast, bumble bees and solitary bees are remarkably unstudied, although they probably provide the majority of natural pollination services and are dominant pollinators for a number of important crops.

Consequently, the Higher Education Authority funded “Conservation genetics of bees in Ireland – a whole island perspective” in 2003. The project combined researchers from Trinity College Dublin and Queen’s University Belfast (Mark Brown, Úna Fitzpatrick, Tomás Murray, and Robert J Paxton) in the first large-scale and coordinated analysis of the conservation needs of Ireland’s bee species.

The project found that the key factor underlying the decline of Irish bees is habitat destruction, particularly of florally-rich grasslands and coastal dune systems. Special Areas of Conservation can therefore play a key role in protecting Irish bees, despite the lack of specific legal protection for these animals.

The main achievements of the project were:

- Surveys of Irish bees were carried out across Special Areas of Conservation and sites with historical records in Ireland and Northern Ireland
- A list of Irish bee species was compiled and their distribution data mapped
- A workshop with Irish and international experts was conducted, resulting in the first Regional IUCN Red List for any group of organisms in Ireland (<http://www.npws.ie/enPublicationsLiterature/RedLists/>)
- Over one third of the Irish bee fauna was shown to be under threat of extinction
- A methodology for prioritising bee conservation research was developed and accepted by the NPWS
- Rare bumble bees have been lost from the eastern half of Ireland, with substantial populations only remaining in the west
- Genetic work demonstrated the existence of a new bumble bee species, and showed that it was widespread in Ireland
- A public outreach website was produced (<http://www.tcd.ie/Zoology/research/Bees>) with identification and predictive tools for Irish bees

Similarly, the provision of bee friendly gardens and habitats by individual citizens across the island of Ireland could play a crucial role in supporting our remaining bee populations.

Much work remains to be done to consolidate and improve the status of bees in Ireland. However, this project provided essential baseline data for monitoring our native bee populations and recommended further research required to enhance the prospects of these essential pollinators. Research is ongoing through a number of projects into the **rare mining bee**, *Colletes floralis*, and numerous bumble bee species, as well as training workshops in identification run by the National Biodiversity Data Centre.



Can cows and biodiversity mix?

Gordon Purvis and the 'Ag-Biota' team have found that the answers are positive but complex

The Irish farmed landscape has undergone dramatic changes over the second half of the last century.

The "Ag-Biota" Project (2001-2006) was funded by the Environmental Protection Agency to develop capacity and expertise in Irish biodiversity research to understand and manage the consequences of these changes.

A major aim of the project was to identify appropriate indicators that might be used to monitor and track the wider impacts of changing farm practice on biodiversity. The project identified four biological indicator groups that are reflective of farm management effects at different scales:

- **Parasitoid wasps:** At the level of individual grassland fields, parasitoid wasps were strongly indicative of the wider biodiversity of grassland arthropod populations.
- **Bumblebees:** At the farm level, bumblebees have undergone very significant decline on typical Irish farms since the 1970s and early 1980s. In particular, the parasitic 'cuckoo' bumblebees are now extremely rare on farmland even in areas of relatively un-intensive farming.
- **Breeding birds:** At the farm level, breeding bird populations reflect the management and ecological quality of their main breeding habitat in field boundaries, the wider diversity of farmland habitats and the intensity of grassland husbandry practice.
- **Aquatic invertebrates:** At the landscape level, aquatic invertebrates in the rivers and streams draining farmland catchments were a good indicator of the intensity of farm management and its wider impact on water quality and aquatic community composition.

Utilising much of the knowledge gained by Ag-Biota, the 'Agri-Baseline' project is currently undertaking a larger scale monitoring of the major farm management drivers of biodiversity and is funded by Department of Agriculture, Fisheries and Food under the Research Stimulus Programme (2006).

The project also identified a fifth (management-based) indicator that might be used to monitor the effects of farming on biodiversity within the wider landscape; namely, the structural composition of habitats quantified at the individual farm level.

Interestingly, the study identified that a dichotomy between dairy and non-dairy farms was the major farm management driver and determinant of habitat structure and composition at farm level. Yet contrary to expectations not all aspects of intensive dairy farming were found to be detrimental to biodiversity. Whilst the diversity of grassland arthropods was significantly less on dairy compared with non-dairy farms, the total abundance was actually greater, suggesting that greater nutrient input levels benefit total arthropod numbers. Also, the ecological quality of field boundaries was found to be significantly greater on dairy, compared with non-dairy farms.



The Ag-Biota Project was funded by the National Development Plan and administered by the EPA. The final reports are available on the EPA's website (www.epa.ie).



Photos:
 1 Parasitoid Wasp (Gordon Purvis)
 2 *Bombus lucorum* (Una Fitzpatrick)
 3 Whitethroat (Billy Clarke)
 4 Capsid bug (Gordon Purvis)
 5 Domestic Cow (Shutterstock.com)

Biodiversity Beginners – Invasive Species

Are you looking to start biological recording but not sure what your *forte* is? Well fear not, with invasive species there is something for everyone! Taxonomically you can record plants, mammals, birds, invertebrates, or worms. While this is fortunate for the Biodiversity Beginner, the availability of invasive species is not so fortunate for our native biodiversity.

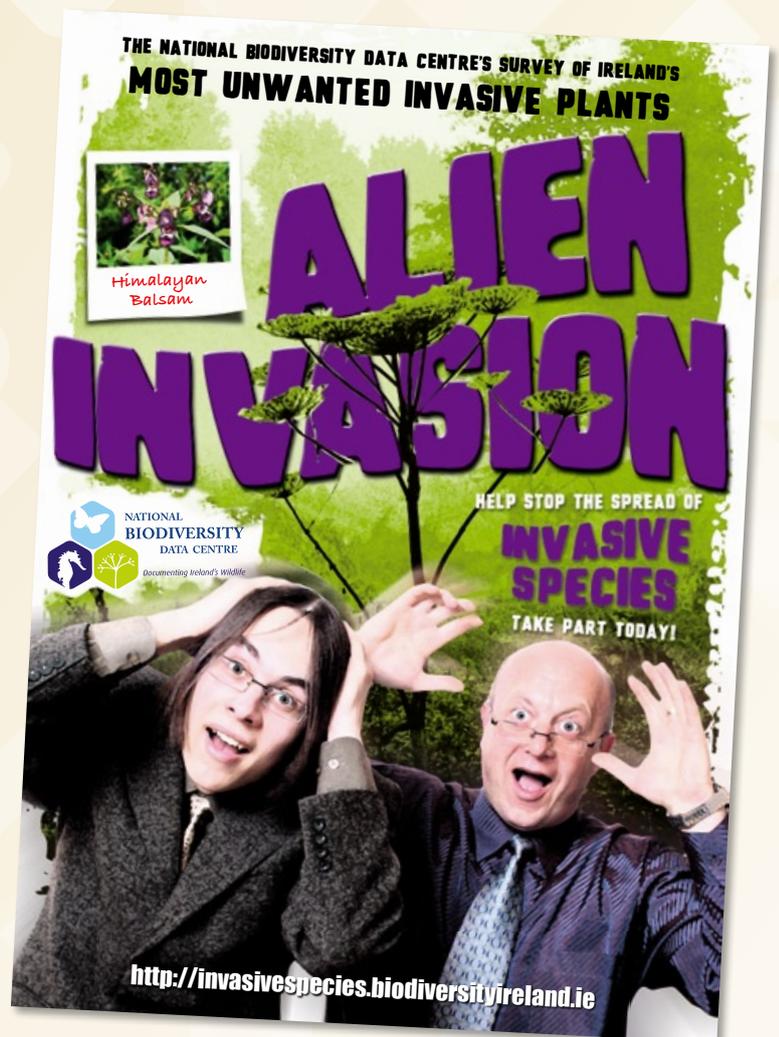
Colette O'Flynn

Invasive species - the threat

Invasive species can be found in almost any part of Ireland and where they are found they threaten our native biodiversity by doing what they do best 'invade and take over'. Invasive species can do this through a variety of mechanisms such as: competition, predation, dilution of native gene pools, introduction of pathogens and parasites or by change of ecosystem structure and function. In short, invasive species are creating a McDonaldisation of our natural world - a limited menu with the same items everywhere! Invasive species also have a social and economic impact, for example on health, fisheries and tourism. A crude (and considered underestimate) of the monetary impact of alien species in Europe is close to €10 billion annually. There is no such overall figure for Ireland but there are many case studies highlighting the cost such as the invasion of *Lagarosiphon major* in Lough Corrib, which costs the Western Regional Fisheries Board about €600,000 annually on a cutting programme. Shockingly, the equivalent of 2,640 truckloads of *Lagarosiphon major* was removed from just 10 infested sites last winter!

How is Ireland combating this threat?

Ireland is obliged under many international and European instruments such as the EC Habitats Directive to protect our native biodiversity. In Ireland, practical management of invasive species is difficult because of the cross-border implications of controlling introductions and spread. The Invasive Species in Ireland report (2006) paved the way for invasive species action in Ireland. From the recommendations, the cross border initiative Invasive Species Ireland was established. The National Biodiversity Data Centre also saw the need for a centralised National Invasive Species Database which would provide up-to-date distributional information on invasive species in Ireland.



Unfortunately however, new introductions of potential high impact invaders are continually arriving to Ireland. **the bloody red shrimp** (*Hemimysis anomola*), **Chinese mitten crab** (*Eriocheir sinensis*) and **muntjac deer** (*Muntjac reevesi*) are some of the most recent additions to the National Invasive Species Database. The soon expected legislation banning the sale of certain non-native species will hopefully curb the number of species being introduced to Ireland.

What role can a biodiversity beginner play?

Once introduced, control, management and eradication of invasive species can be very difficult and costly; therefore early detection is vital. A Biodiversity Beginner can play a crucial role in early detection by becoming familiar with the list of priority invasive species (list available from <http://invasivespecies.biodiversityireland.ie>) and the identification features of whichever species you are comfortable recording. If you are a fisherman you may find it particularly easy to identify fish and could confidently record any **dace** (*Leuciscus leuciscus*) or **chub** (*Leuciscus cephalus*) you come across. Plants may not be your specialty but the identification features of **Japanese knotweed** (*Fallopia japonica*) or **Himalayan balsam** (*Impatiens glandulifera*) can be quickly learned and recorded en route to a fishing site. Overall, once you are aware of what species are invasive and how to identify them, then the next time you see one just record it and submit that valuable information to the National Invasive Species Database.

Have you seen them? - Ireland's most unwanted invasive plants.

As a call to action, the Data Centre has rolled-out an all-island INVASIVE SPECIES SURVEY looking for records on eight of Ireland's most unwanted invasive plant species.

Step-by-step guide:

1. Look at the species list and become familiar with their identification features
2. Download the recording card
3. When you see one of these species, complete the record card
4. Send the record cards to the Data Centre or enter the information into the online submission form

Quality assurance

To ensure that the records submitted are useful they need to be accurate so please take great care when identifying these species and entering the grid reference. Photos of the identifying features of a species can be submitted with your records.

What will happen to your records?

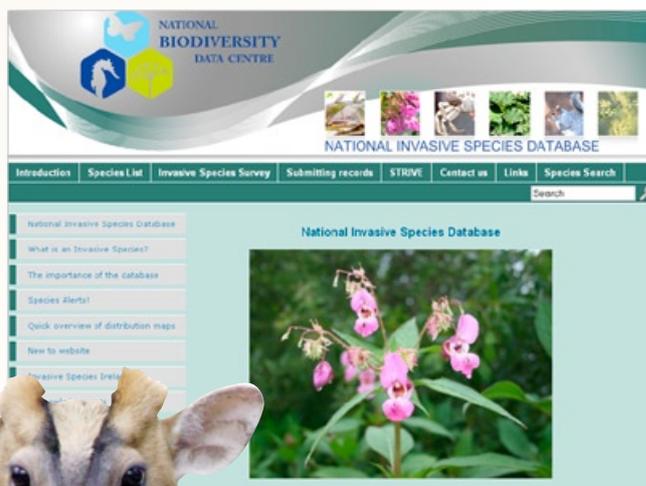
Once your records are received they will be stored in a holding database. Records will be periodically reviewed and all validated records will be added to the National Database. A regular update on the progress of the survey will be available from the website. Please try to ensure that the information provided is accurate. If you have any queries please contact Colette O' Flynn by e-mail:

coflynn@biodiversityireland.ie or by phone:

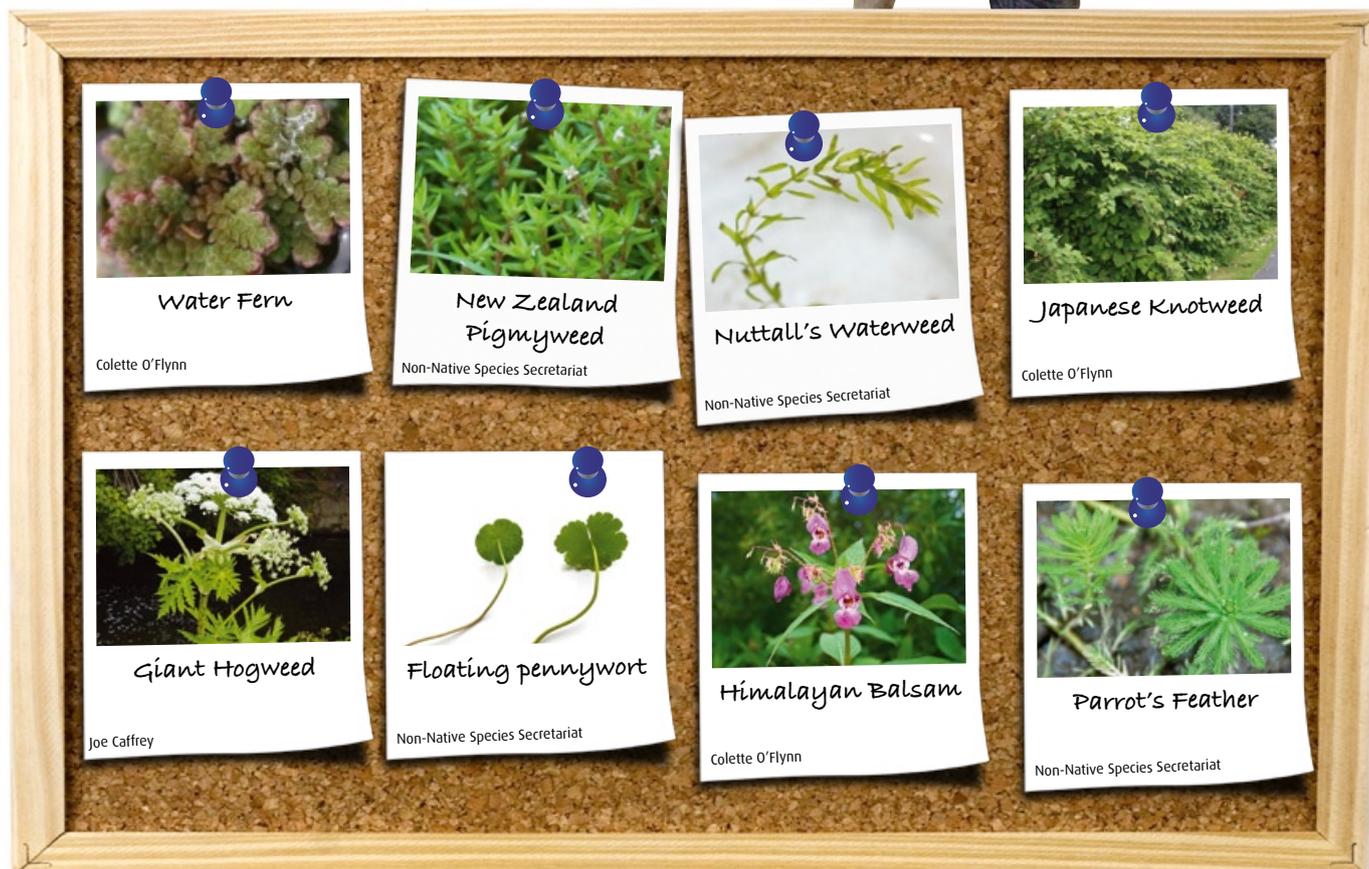
+ 353 (0) 51 306240.

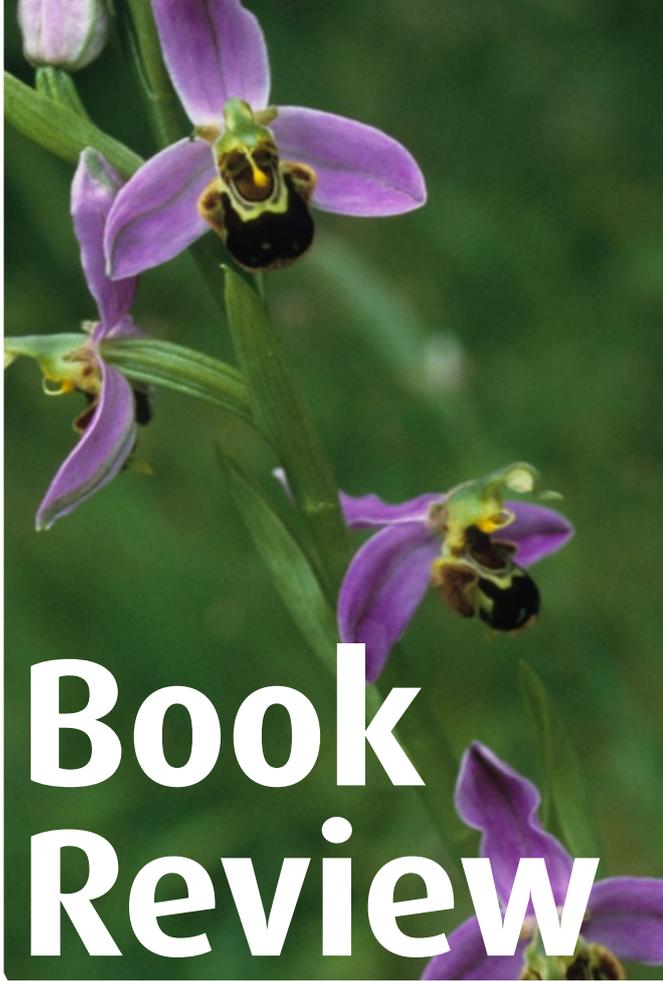
For more information on this survey please visit the National Invasive Species Database website:

<http://invasivespecies.biodiversityireland.ie>



Muntjack deer
(Shutterstock.com)

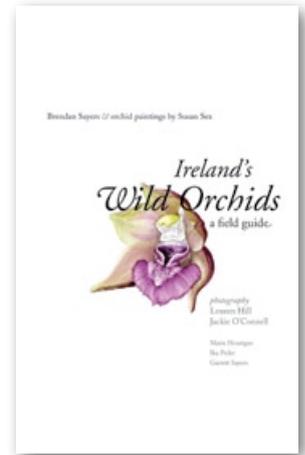




Ireland's Wild Orchids – a field guide

Brendan Sayers and Susan Sex
Privately published
(see: www.orchidireland.ie)

€35 (including p&p)
for the field guide edition
€175 (including p&p)
for the library edition



The Orchids of Ireland

Tom Curtis and
Robert Thompson
Published by National
Museums Northern Ireland

Sterling£20



These two books have appeared more or less simultaneously, with the inevitable result that they might seem to be in direct competition with each other. This is a pity, as they are very different, each with their strong points and both worthy of purchase by anyone interested in learning more about this fascinating group of plants and improving their identification skills. However, it is very frustrating that each has taken a different approach to the taxonomy of Irish orchids, to the extent that one lists 26 species as occurring on the island, and the other lists 30.

The Sayers and Sex book is available in two versions: the “standard” copy, with 109 pages, is designed to fit in the pocket, be shower-proof and open flat and is, therefore, truly a “field-guide”. It has an inside pocket with measuring rule and plastic magnifier, space for field notes and photographs and an elastic strip for holding the book closed when required. The “library” copy is printed on fine paper and hand-bound in quarter goatskin leather by Antiquarian Bookcrafts at Marley Park, is limited to 850 copies and includes an additional 16 pages of sketches and paintings created in the preparation of the book. For any collector or lover of fine books, this version is a must. It is also worth noting that the “additional” illustrations in this version are very useful in showing such things as variation in some species and seed heads of a few. More of this would have been most valuable!

Throughout, the paintings by Susan are of the expected extremely high standard, there are text notes, new distinguishing “keys” to the species from Brendan and photographs. The keys include a guide to the variation in flower colours – an aspect less well covered in the Curtis & Thompson book where, for example, the two photographs of *D. incarnata* var. *pulchella* do not help the inexperienced observer to appreciate the range and extent of colour variation in this marsh orchid. There are also useful introductory sections on conservation and morphology, as well as

an illustrated key to the different genera. Overall, the book exudes quality and careful consideration to the need for a practical guide for beginners and those with some botanical knowledge.

The Curtis and Thompson book has 160 pages and is in a slightly larger format, a little too big for most coat pockets, making it less practical as a field guide. The quality of production is extremely high, with the usual top class photography of Robert Thompson and artwork by Richard Lewington. The informative text, with sections on morphology, pollination, vegetative parts, habitats and conservation, is more comprehensive than the Sayers & Sex book and will cater well for the needs of anyone wishing to develop their knowledge and understanding of Irish orchids. There is a brief outline of the taxonomy, but this unfortunately omits mention of the controversial issues that have clearly resulted in the two books taking such different approaches in this respect.

One very positive aspect is the inclusion of a series of relatively simple keys to the genera and to species where necessary. For the most part, these prove to be very useful in the field, although there are some terms used which are neither explained nor included in the glossary, making them open to considerable variation in interpretation (as was experienced during a field workshop with a variety of observers coming to widely different conclusions about colours [e.g. flesh?] and shapes [e.g. sack-like]).

Both books include “distribution” maps which illustrate which counties each species has been recorded in. However, in the Sayers & Sex book the maps, which show occurrence in a county with a single dot, do not always correspond to the text. In the Curtis and Thompson book, the shading of the whole county if the species has been recorded therein gives a rather misleading impression of wide distribution in many cases where this is patently not the case. For example, the map for **narrow-leaved helleborine**

Distinguished Recorder Award 2009

The Distinguished Recorder Award is an annual award of the National Biodiversity Data Centre to individuals or organisations that have made an outstanding contribution to the recording of Ireland's biodiversity.

The National Biodiversity Data Centre is pleased to announce that the recipient of the Distinguished Recorder Award 2009 is Paul R. Green, New Ross, Co. Wexford based botanist.

Paul Green has made a significant contribution to Botany. He published an award winning *Flora of Somerset* in 1997 and followed this up a decade later with the *Flora of County Waterford*, published by the National Botanic Gardens in 2008. He worked with the Data Centre to develop a web version of this flora, bringing the work to wider audiences. Since launching at the Recorders Event in 2008 the web flora has received over 180,000 hits, and is now averaging 35 visitors a day.

Between 1997 and 2007 Paul personally collected over 168,000 plant records for County Waterford. An indication of his remarkable skill is that he collected an average of 456 records for each day of recording in the county. In 2007 Paul generously submitted a database on Waterford's plants to the National Biodiversity Data Centre, making this important information publically available.



Paul with Professor Liam Downey, Chair of the Data Centre (vitaminstudio.ie)

Since then Paul has worked tirelessly with the Data Centre to use the data in a number of conservation driven initiatives. In 2008 he established a local botany group to teach and encourage other people within the Waterford/Cork area.

Paul is a remarkable botanist who generously shares his knowledge and time. He has made an enormous contribution to our knowledge of Ireland's plants.

suggests occurrence in over half the country, and yet it is described in the text as being "extremely rare in Ireland with only seven extant sites".

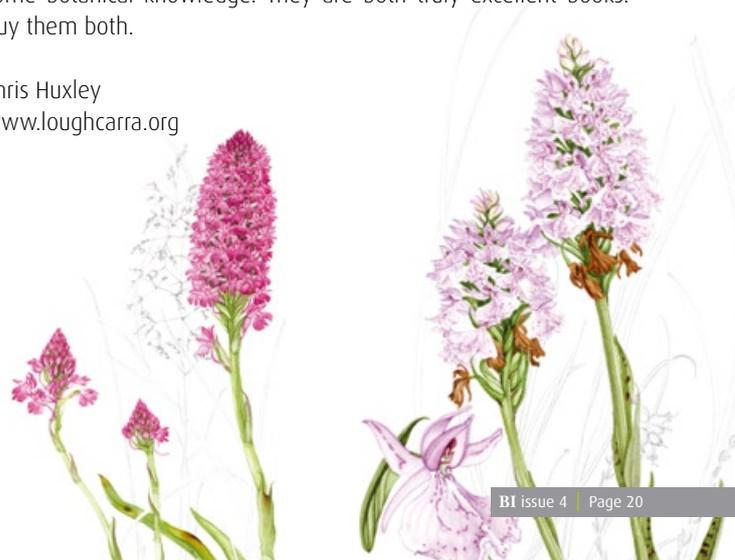
Both books split the **fragrant orchid** into three types. Sayers & Sex give each type specific status, whereas Curtis & Thompson accord them sub-specific status. Having examined several thousand **fragrant orchids** in County Mayo, I am still not convinced and have been unable, despite taking detailed measurements and making careful examinations, to conclude that, at least in my part of the country, there is anything other than an enormous range of variation from one extreme to the other within local populations. Using the Curtis & Thompson key, for example, very few specimens fall into either of the first two couplet options. This is made even more confusing with a description of one sub-species as having a "long spur up to 14 mm long" and another sub-species where "The spur is short, up to 14 mm in length". If there are indeed three species or subspecies, neither book (in my opinion) provides adequate or definitive identification characteristics.

I cannot present a review of these books without mention of the *Dactylorhiza* orchids. It is in this group, and specifically the marsh orchids, that the taxonomic disagreements come to the fore and threaten to confuse the non-specialist (and some specialists too, I suspect!). This is not the place, and anyway I am not qualified, to argue the rights and wrongs of the different approaches. What must be said, however, is that it is a great pity that two such excellent books, aimed at more or less the same audience, should differ so profoundly in their marsh orchid classification and, even worse, differ from other recent publications such as the excellent 2005 "Orchids of Britain and Ireland – a Field and Site Guide" by Anne and Simon Harrap which many people will have been using for identification. This problem is particularly difficult when

looked at in the context of the role of the National Biodiversity Data Centre where records using the different classifications will have to be integrated in some way. For example, I have over 5,000 records of marsh orchids around Lough Carra, for which I have used the "Harrap" taxonomy, whereas the OrchidIreland Project (not to be confused with the Sayers & Sex website) uses the Curtis & Thompson version into which my records do not fit and others may use the Sayers & Sex classification which is different again. Perhaps this is an area where the National Biodiversity Data Centre needs to specify which system it wishes to adopt?

So, which book should you buy if you want to be able to identify Ireland's wild orchids? The Sayers & Sex version is more practical for field work, has text by an expert, has Susan Sex's wonderful artwork and is, perhaps, the "simpler" of the two for those who have an interest but no botanical training. The Curtis & Thompson book has text by an expert, Robert Thompson's wonderful photographs and a wealth of technical detail for those who have some botanical knowledge. They are both truly excellent books. Buy them both.

Chris Huxley
www.loughcarra.org



News from the National Biodiversity Data Centre

Identifying and Recording Ireland's Biodiversity 2009

The National Biodiversity Data Centre hosted a programme of workshops this summer to improve identification and field skills of biological groups and raise standards of data collection and management. There were eight workshops in total: identifying bumblebees in the field, an introduction to Irish spiders, solitary bee identification, butterfly identification and recording, recording of priority invasive species, micromoth pinning and identification, beginners guide to slugs and snails, and field identification of fungi. We had a lot of fun as well as learning something along the way! We hope to continue this programme next year so if you have any suggestions for workshops or would like information on them for next year, please don't hesitate to contact us at info@biodiversityireland.ie.



Myles Nolan demonstrating spider collecting techniques at the workshop in May (Eugenie Regan)

The Irish Butterfly Monitoring Scheme

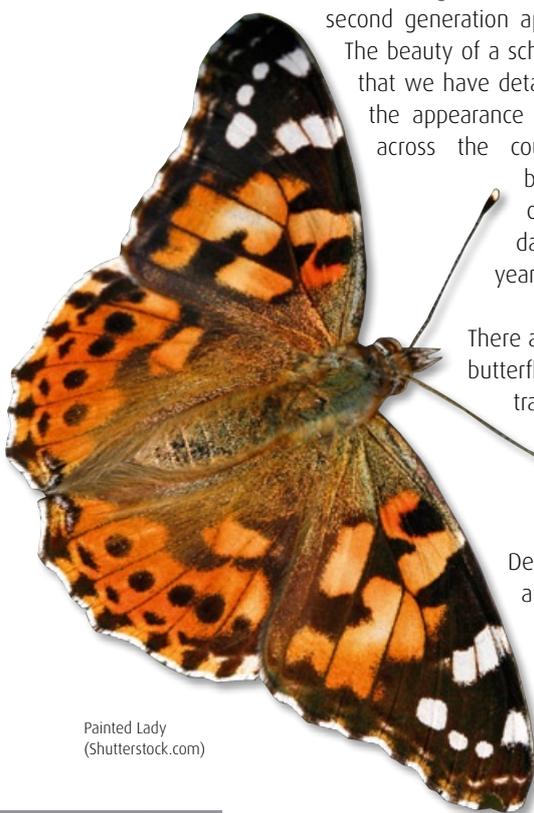
The definite highlight of this year's monitoring was the mass migration of **painted lady** butterflies over the June bank holiday weekend. Over that weekend, volunteers were recording **painted lady** butterflies in the hundreds. These charismatic butterflies were recorded throughout the summer with the second generation appearing in August.

The beauty of a scheme such as this is that we have detailed information on the appearance of these butterflies across the country and it will be interesting to compare this year's data with previous years.

There are now over 80 butterfly monitoring transects monitored by almost 100 volunteers across 22 counties.

Details for each site are on the website

<http://>



Painted Lady (Shutterstock.com)

irishbutterflymonitoringscheme.biodiversityireland.ie. The scheme is organised by the National Biodiversity Data Centre in Waterford with support from regional co-ordinators in counties Cork, Donegal, Dublin (Dun Laoghaire/Rathdown), Galway, Kilkenny, Tipperary, and Wexford. If you'd like to get involved next year, please contact Eugenie at the Data Centre or your regional co-ordinator.

National Invasive Species Database



Bloody red shrimp in Lough Ree 2009 (Marcin Penk)

There are currently 17,054 records for 65 invasive species available in Biodiversity Maps. 2008/2009 has been a busy period for potential invaders being recorded in Ireland. Potential invaders are non-native species that were previously identified as having the potential to be invasive if they were introduced and became established in Ireland. The latest species alerts are for:

Bloody red shrimp (*Hemimysis anomala*): The native range of this mysid shrimp is from the freshwater and brackish areas surrounding the Black and Caspian Seas. It was recorded in Ireland from Lough Derg in 2008 and Lough Ree in 2009.



The **harlequin ladybird** (*Harmonia axyridis*) hails from Asia and was recorded in Northern Ireland in 2007 and again in September this year.

The **yellow-bellied slider** (*Trachemys scripta scripta*) was photographed basking on the bank of the River Dodder in Dublin in July 2009. The native range of this species is from south-eastern Virginia to northern Florida in the US but it is commonly sold in the pet-trade in Europe.

Muntjact deer (*Muntiacus reevesi*): this small deer is native to China but was recorded in Ireland in 2009.

Please become familiar with the identification features of these species and if you see one please immediately report a sighting of it. Also never release an un-wanted pet as it may be detrimental to the animal itself and our native biodiversity.

3rd Annual Recorders' Event Ireland's Freshwater Habitats – priorities for biodiversity data



Prof. Liam Downey, Mr. Paul Green and Dr. Liam Lysaght at the 3rd Annual Recorders' Event (VitaminStudio.ie).

The Data Centre held its 3rd Annual Recorder's Event on the 20th and 21st of August in collaboration with the Environmental Protection Agency. The key objective was to identify and agree national priorities for freshwater biodiversity data over the coming five years or so.

The following priorities were identified from the discussions:

1. Expanding the knowledge base on freshwater biodiversity

- Reinstatement of annual meeting of freshwater biologists.
- Investigate a programme of training for amateur recorders.
- Promote networking among taxonomists and researchers on the more difficult groups (for example, sponges).
- Establish volunteer opportunities for graduates.
- Develop web-based keys.
- Other suggestions included: a simplified mechanism for amateur recording, some maps to be produced at different taxonomic levels (i.e. genus and family), to submit a document to funding bodies highlighting the knowledge gaps relevant to their biodiversity funding.

2. Information needs for legislation and conservation management

- Develop data sharing protocols between the Environmental Data Exchange Network (EDEN) and the National Biodiversity Data Centre.
- Provide mechanisms for the valuable incidental records that are collected by individuals or NGOs to supplement monitoring data collected by state agencies for reporting under the EU Directives.
- Seek to have included as a condition of research grants that data be provided to the National Biodiversity Data Centre.
- Develop a Red List programme for freshwater biodiversity.
- Provide up-to-date distributional information on Ireland's freshwater species, in particular conservation priority species and invasive species. Make information on these species available in appropriate formats both nationally and at the local authority level.
- The absence of a national habitat map was recognised as a knowledge gap.
- Investigate the necessity for a broad overview 'state of knowledge' publication on Ireland's biodiversity.

Young Nature Detective

The Data Centre hosted a training course in the collection, identification and documentation of Ireland's freshwater mini-beasts. Eleven young wildlife enthusiasts learned the skills and methods needed to survey Irish freshwater mini-beasts at Fenor bog in Co. Waterford. The course was taught by entomologist, Stephen McCormack and was held alongside the 3rd Annual Recorders' Event.

Young Nature Detectives, August 2009. From left to right: Cian Flaherty, Pauli Lysaght, Evan Duggan, Bella Lysaght, Cian Upton, Stephen McCormack, Sarah Mooney, Ross Upton, Zac Keating, Beibhinn Breathnach, Cian Mooney, and Ross Flaherty (Liam Lysaght).



Biodiversity connections

Useful resources – worldwide databases

Encyclopedia of Life – www.eol.org

Biodiversity Heritage Library – www.biodiversitylibrary.org

World Biodiversity Database – <http://nlbif.eti.uva.nl/bis/index.php>

World Taxonomist Database <http://www.eti.uva.nl/tools/wtd.php>

Catalogue of Life – www.catalogueoflife.org

ARKive – www.arkive.org

GBIF – www.gbif.org

Some current Irish recording projects

- **Irish Butterfly Monitoring Scheme**
<http://irishbutterflymonitoringscheme.biodiversityireland.ie>
- **National Invasive Species Database**
<http://invasivespecies.biodiversityireland.ie>
- **EcoJel** – report all jellyfish sightings at www.jellyfish.ie
- **Irish Basking Shark Project** www.baskingshark.ie
- **ISCOPE** (Irish Scheme for Cetacean Observation and Public Education)
www.iwdg.ie
- **Orchid Ireland** – www.habitas.org.uk/orchidireland/
- **Bird Atlas 2007-11** – www.birdwatchireland.ie
- **Batlas 2010** – www.batconservationireland.org

Upcoming national events

6-7 October Restoring Priority Woodland Habitats in Ireland Coillte, Claremorris. www.woodlandrestoration.ie

13-16 October Irish Landscape Conference – looking around, looking ahead. Heritage Council, Tullamore. www.heritagecouncil.ie

30-31 October National Irish Basking Shark Seminar. Inishowen, Co. Donegal. www.baskingshark.ie

6-8 November 1st All-Ireland Mammal Symposium. Waterford Institute of Technology, Waterford. www.allirelandmammalsymposium.org



17-19 February Environ 2010. Limerick Institute of Technology. www.esaiweb.org

The National Biodiversity Data Centre is an initiative of the Heritage Council and is operated under a service level agreement by Compass Informatics. The Centre is funded by the Department of the Environment, Heritage and Local Government.

