

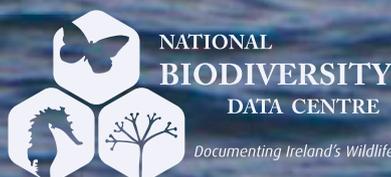
# Biodiversity

## IRELAND

Bulletin of the National Biodiversity Data Centre  
Issue 5 – Spring 2010

# a Big splash

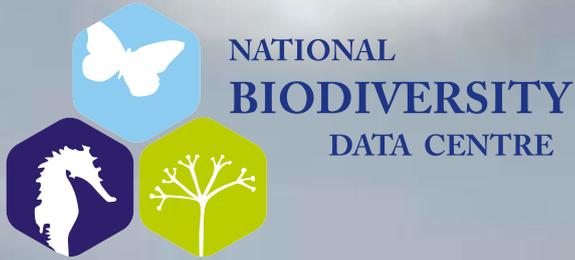
## for International Year of Biodiversity



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## Biodiversity Ireland Issue 5 Spring 2010

Biodiversity Ireland is published by the National Biodiversity Data Centre. Enquiries should be sent to the editor, Eugenie Regan, [eregan@biodiversityireland.ie](mailto:eregan@biodiversityireland.ie)



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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.

Design: **VITAMIN** [www.vitaminstudio.ie](http://www.vitaminstudio.ie)

Cover: Humpback Whale breaching off Hook Head, Co. Wexford (Padraig Whooley)

# Editorial

It's International Year of Biodiversity and, yes, you're hearing about it everywhere - but it's really important. The



one thing that we are failing at as wildlife enthusiasts, is communicating our message. I recently watched a talk by Sylvia Earle, an active scientist and marine conservationist. She spoke of a scuba diver needing to look after their life-support system. She mentioned that scuba divers and astronauts are similar in this regard and then showed an image of earth from space. "This is our life support system" she said. What a powerful message! This is actually International Year for Preservation of Our Life-Support System.

The international piece in this issue is from Arthur Chapman who is known for his insightful summary of the number of known species in the world. In his article he addresses the issue of identifying and conserving those species that have never been described. Fiona Kavanagh gives an insight into some obscure, intriguing creatures of the Ireland's deep seas while Jim Wilson writes about a project that is linking biodiversity, research, and community together very strongly.

Again, we have our biodiversity tales, research, and beginners and it's fascinating to read about what's going on around the country. We also have updates on some of the projects going on here at the Data Centre. Each issue excites me when I read about the different initiatives by very different groups focused on Ireland's biodiversity. And I believe that it's by working together that we can make a difference. Perhaps I'm an idealist but in this International Year of Biodiversity, let's give it a go!

As an aside, feel free to pick up on any of the stories in Biodiversity Ireland but please remember to acknowledge the authors.

*Eugenie Regan*

Eugenie Regan - Editor



# Director's Comment



## **2010 has been declared by the United Nations as International Year of Biodiversity.**

It is fitting therefore, that 2010 is also the year when the National Biodiversity Data Centre moves from its establishment to its full operational phase. Much of the work done during the first three years was putting in place the infrastructure and

systems needed to support a national biodiversity data management system. This is now in place.

The launch of International Year of Biodiversity in January was used as the occasion for the release of a new revamped website. Amongst the features of the site includes access to 1.07 million observations of Ireland's wildlife, provisional distribution maps of 8,569 Irish species, and an online data submission form to enable observers submit sightings of any Irish species to the National Biodiversity Database. This provides the common platform for the collation and display of biodiversity data so that we can begin to describe and understand the totality of Ireland's biological diversity. Not only does the system make data on the species found in Ireland available in a useful format, it also means that for the first time ever, we can examine spatial trends across different taxonomic groups to identify the most important biodiversity sites at the national and regional level.

Those who provide data to this system are contributing in a very real way to a greater understanding of Ireland biological diversity. This is a resource to be used by and to be of benefit to all. With the addition of more data, this will form a powerful tool to assist spatial planning, conservation management and biodiversity research. This can only assist the conservation of Ireland's biological diversity in the years ahead.

International Year of Biodiversity is meant to be a celebration of life on earth and the value of biodiversity for our lives. In the spirit of

celebration, the Data Centre is coordinating the first ever BioBlitz in Ireland. This is a national event where five of Ireland's magnificent state-owned properties go head to head to see which site can record the most species over a 24 hour period. It will be held on Biodiversity Day, 22nd May, at Glenveagh National Park, Connemara National Park, Coole Park, Wicklow Mountains National Park and Newbridge Demesne. It will be a fun day out with scientists, recorders, and those interested in wildlife joining forces to see what species can be found within each property, and to use the occasion to celebrate all that is good about Ireland's biodiversity.

Another novel feature of the work programme of the Centre in 2010 is the launch of 'Biodiversity Bingo', an online competition where people will be asked to submit records of six species on a fortnightly basis. This is intended to provide a fun introduction to biological recording and to encourage people to observe how species fluctuate with the changing seasons in their own locality.

## **International Year of Biodiversity is meant to be a celebration of life on earth**

Biodiversity can be fun, but it also needs to be recognised as a serious science built upon an extensive knowledge base. This year's stakeholders event *Biodiversity Knowledge Quest* – setting priorities for

2020 will be a showcase for the state of knowledge on Ireland's biodiversity as the Data Centre's contribution to International Year of Biodiversity. It will also serve as a benchmark for identification of priorities to fill some of the remaining knowledge gaps as we move beyond 2010 and look forward to 2020.

**Dr. Liam Lysaght – Centre Director**



# A big splash for International Year of Biodiversity

It's International Year of Biodiversity – so what's going on to celebrate it at the National Biodiversity Data Centre?

## BioBlitz

BioBlitz is a race against time with the aim to find as many species as possible within a park over a 24-hour period. Five of Ireland's magnificent state-owned properties will be pitted against one another on the 22nd of May (International Day for Biodiversity) to see which property can find the most species. This is a unique event where scientists, students and the general public can come together to discover the fabulous wealth of biodiversity that surrounds us.

It will be held at 1. Glenveagh National Park, Co. Donegal, 2. Connemara National Park, Co. Galway, 3. Coole Park, Co. Galway, 4. Wicklow Mountains National Park, Co. Wicklow, and 5. Newbridge Demesne, Co. Dublin. So get down to the site nearest you on Biodiversity Day and help with Ireland's first BioBlitz.

## Biodiversity BINGO

Biodiversity Bingo is a new fun competition being run by the National Biodiversity Data Centre to mark International Year of Biodiversity. To enter you need to get out and record 6 species selected by the Data Centre from a range of taxonomic groups. There will be a prize for the first correct entrant and a prize for the overall winner drawn from all valid entries.

The first 6 species to be spotted will be announced on 6th April 2010, with the winners and the next 6 species then announced on a fortnightly basis across the field season until the 13th September 2010.

Log onto the Biodiversity Bingo website to get all the information you need, including the online submission form where you can enter your records and submit to play. Every fortnight it's a chance to get out and search for interesting species, learn to identify some new ones, and have fun recording our biodiversity!

### TITLE

Ireland's Generous Nature - the uses of wild plants in Ireland

Irish Butterfly Monitoring Scheme (In conjunction with Burrenbeo)

Introduction to earthworm identification

Irish Butterfly Monitoring Scheme (In conjunction with Fota Wildlife Park)

Introduction to mayfly and stonefly nymph identification

Small mammal surveying

Introduction to centipede and millipede identification

Introduction to ladybirds

Introduction to mayfly and stonefly identification

Recording of priority invasive species (In Conjunction with Connemara National Park)

Threatened bumblebee study trip, The Burren, Co. Clare

Identification of grasses (In conjunction with Wexford Wildfowl Reserve)

Seasearch – recording marine organisms (In conjunction with Seasearch)

Introduction to *Sphagnum* identification (In conjunction with Irish Peatland Conservation Council)

## Biodiversity Knowledge Quest – setting priorities for 2020

### The 4th Annual Recorder's Event 26 & 27 August

This year's stakeholders event **Biodiversity Knowledge Quest – setting priorities for 2020** will be a showcase for the state of knowledge on Ireland's biodiversity as the Data Centre's contribution to International Year of Biodiversity. Key experts on different aspects of biodiversity will be invited to outline the knowledge base for their area of expertise and roundtable discussions will identify knowledge gaps that remain to be filled.

LEADER	DATE	VENUE	FEE
Dr Peter Wyse Jackson	17 April 2010	National Biodiversity Data Centre	€20
Dr Eugenie Regan	24 April 2010	Burrenbeo Centre Kinvara, Co. Galway	N/A
Dr Olaf Schmidt	8 May 2010	National Biodiversity Data Centre	€20
Dr Eugenie Regan	15 May 2010	Fota Wildlife Park	N/A
Dr Mary Kelly Quinn	29 May 2010	National Biodiversity Data Centre	€20
Dr Colin Lawton	12 June 2010	National Biodiversity Data Centre	€20
Tony Barber	19 June 2010	National Biodiversity Data Centre	€20
Dr Roy Anderson	3 July 2010	National Biodiversity Data Centre	€20
Craig MacAdam	10 July 2010	National Biodiversity Data Centre	€20
Colette O'Flynn	17 July 2010	Connemara National Park	€20
Dr Úna Fitzpatrick	23 to 25 July 2010	Carron Research Centre, Carron, Co. Clare	N/A
Paul Green	31 July 2010	Wexford Wildfowl Reserve	€20
Chris Woods	14 & 15 August 2010	Kilkee Dive Centre, Co. Clare/ Shannon Dolphin and Wildlife Centre	€50
Dr Catherine O'Connell	16 September 2010	IPCC, Lullymore, Co Kildare	€20

The output of the event will be a publication providing a detailed overview on what is known about Ireland's biological diversity in 2010, and will serve as a benchmark for identification of priorities to fill some of the remaining knowledge gaps as we move beyond 2010 and look forward to 2020.

Further details will be posted on the Centre's website at [www.biodiversityireland.ie](http://www.biodiversityireland.ie) in due course.



# Scratching the surface

**What is the World's biodiversity? How many species have been described and how many still remain to be discovered? Arthur Chapman of Australian Biodiversity Information Services has some of the answers.**

In order to tackle the task of identifying and documenting the World's Biodiversity, we first need to know the dimensions of the task. How many species are there? Where are they distributed geographically? In what environments and ecosystems do they occur? And how are they distributed through the various kingdoms? A recent study in Australia attempts to answer at least two of these questions globally and the third for Australia (Chapman 2009).

There are around 11 million species in the World of which only about 1.9 million have been described taxonomically. This means that in the nearly 260 years of scientific endeavour since Linnaeus began to use binomials to name species, we have discovered and described just 17% of the total estimated species in the World. At that rate it will be another 750 years before we even get half way, and in that time – how many of those species will have become extinct?

We do know and have formally described approximately 82% of the higher animal species (Chordata) and 76% of the higher plants species (vascular plants). By contrast only about 20% of invertebrates and 7% of the fungi have been described. As far as the Protocista, Prokaryota and Chromista are concerned we don't even know what a species is, let alone how many there may be, and estimates vary widely.

How can we tackle the task of identifying and naming the species that exist? Do we need to encourage taxonomists working on the better known Kingdoms to move to the lesser known ones? Do we alter our university training to encourage more young scientists to take up careers in the less well-known groups?



Ruby Bonnet *Mycena viscidocruenta* (Arthur Chapman)

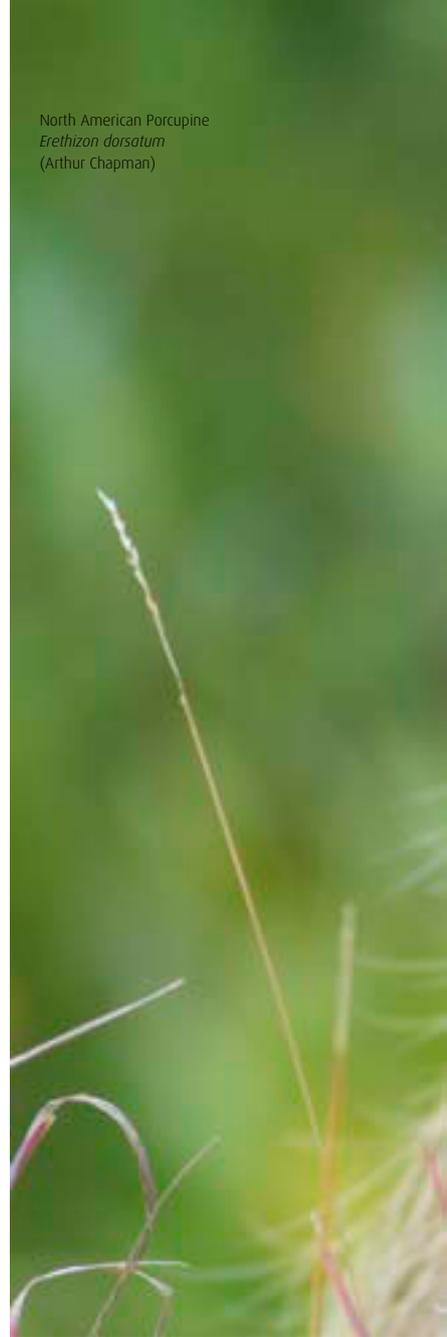
Or do we need to look at tackling our taxonomy in entirely different ways – for example abandoning the need to be so rigid in our nomenclature by providing more temporary handles to taxa we are not yet ready to formally describe?

I believe that we need some mix of all of these, and while not abandoning our formal more rigid approach to taxonomy and nomenclature, we can speed up the process by using others to do some of the less 'scientific' aspects of the task and freeing up taxonomists to spend a greater percentage of their time doing the actual work of taxonomy. In the mean time, we need to use consistent (standardised) handles by which we can give temporary names to undescribed taxa whereby we are able to link data and information and which can be synonymised later to the formal name when that name is available. These temporary names should not just be ignored in the taxonomic treatment, but be synonymised like other synonyms, so that the information linked to those temporary names is not lost.

In Australia, this process has already begun with many species listed as threatened under the Environment Protection and Biodiversity Conservation Act (1999) being listed using formula names. We cannot afford to wait until such time as a formal description has taken place before beginning its protection through listing on endangered species lists.

By adopting a formalised intermediary state within our nomenclature we can begin to link the vast information sources that may indeed help the taxonomists – information from amateur citizen scientists who are gathering information via images such as on the Flickr website, and observations such as the Australian Bird Atlas (Birds Australia). Citizen scientists are often willing to supply information to the taxonomists on request (see for example Australia's fungimap). Scientists, working and interacting with the amateurs can inform them of what aspects of a taxon may need to be photographed more closely in order to facilitate identification, and thus making the image of greater use to the taxonomist. Scientists and amateurs working together can lead to the development of robust on-line identification guides so that new taxa may be more readily identified and located using GPS technology.

North American Porcupine  
*Erethizon dorsatum*  
(Arthur Chapman)





“ We cannot afford to wait until such time as a formal description has taken place before beginning its protection through listing on endangered species lists. ”



Atlantic Ghost Crab  
*Ocypode quadrata*  
(Arthur Chapman)



Common Green Tree-Frog  
*Litoria caerulea*  
(Arthur Chapman)



Spotted Katydid  
*Ephippitytha triginiduoguttata*  
(Arthur Chapman)

More and more tools are becoming available which allow amateur naturalists to undertake a role as citizen scientists and which may help to speed up the more formalised aspects of our science. Also tools that speed up the more tedious and repetitive aspects of taxonomy – the searching for literature (e.g. Biodiversity Heritage Library), and the use of images in identifying key specimens that need to be examined as opposed to borrowing large numbers of specimens. There are many tools we could use, but as yet are not fully utilised – tools such as video using remotely controlled cameras over the internet that may allow researchers to identify quickly the few specimens that may need to be examined more closely (and possibly borrowed) without having to travel long distances to do so.

The ideas above are just a few of the many possibilities available to us, but our science needs to become more efficient and to look at new techniques if we are to in any way approach a reasonable percentage of described species in our lifetimes.

# Wading for Godwit

**Jim Wilson reports on how three schools from three different countries are aiding in the understanding of the globally-threatened black-tailed godwit**

The black-tailed godwit (*limosa islandica*) has a widespread and global population but its numbers have declined rapidly in parts of its range and scientists believe that these birds may have declined by 30% in the last 15 years. The aim of Operation Godwit is to unravel the mysteries of the life cycle of this elegant wading bird. The international team of scientists involved has been studying the Icelandic black-tailed godwit since the 1990s. They do this by putting unique combinations of colour rings on the birds' legs on their breeding grounds in Iceland and on their wintering grounds in Western Europe. They then plot and study the movements of the godwits by analysing the reports they receive from birdwatchers of the colour ringed birds. This has led to ground breaking findings on the life of these amazing birds and the wetlands where they live. The project relies on volunteer birdwatchers across Western Europe to report sightings of these animals and now schoolchildren have also got involved in this fascinating project.

## Schools Involvement

The aim of the International Schools Godwit Project is to broaden the minds of the pupils involved, make them more aware of their environment and to heighten awareness of biodiversity through involvement in the international study of this shorebird. Scoil Iosaef Naofa in Cobh, Grunnskóli Siglufjarðar in Siglufjörður, Northern Iceland and Topsham School, Devon in England are the

three schools currently involved but it is hoped that in future the project will expand to include schools from other parts of the godwits range – France, Netherlands, Portugal, Spain, Scotland and Wales.

Willie McSweeney's and Guðnir Bertsdóttir's class pupils have been taking part in the International Schools Godwit Project since October 2006 while Topsham School on the Exe Estuary in Devon, England recently joined the project. The classes became involved not only because of enthusiastic teachers but because the schools are in the middle of the breeding and wintering areas of the Icelandic black-tailed godwit.

The project has been a fantastic success with the pupils not only learning first hand about the godwits and their migrations but also about their local environment and each other's countries and culture. This has led to strong links between the schools. The teachers have been able to use the data they gather from Operation Godwit to teach other subjects on the class curriculum such as Science, Maths, Geography and Art in a very practical way.

## How do the schools take part?

The classes receive sighting information from birdwatchers of colour ringed black-tailed godwits seen in and around Cork Harbour, Siglufjörður and the Exe Estuary. They then send the information to two of the study organisers, Tómas Gunnarsson, in Iceland and Pete Potts in England. In return Tómas and Pete send them the bird's migration life history showing where and when the godwits were caught and colour ringed and where and when the birds were seen after that.

When the class gets godwit migration life histories each pupil "adopts" a bird and using the life history information draws lines on a map of Europe showing where it has been since it was colour ringed. The map is then put up on the wall of the class. A red dot is also placed on a big map of Iceland showing



Pupils at Grunnskóli Siglufjarðar School in Siglufjörður, northern Iceland making godwit sculptures (Guðnir Bertsdóttir)



Student drawing the map of the godwit migration (Jim Wilson)

Colour ringed black-tailed godwit - This black-tailed godwit was colour ringed by Þorlákur Sigurbjörnsson on his farm in northern Iceland and has been seen in Ireland, France and England and returns to his farm each year to nest. (Photo: Mark Carmody)

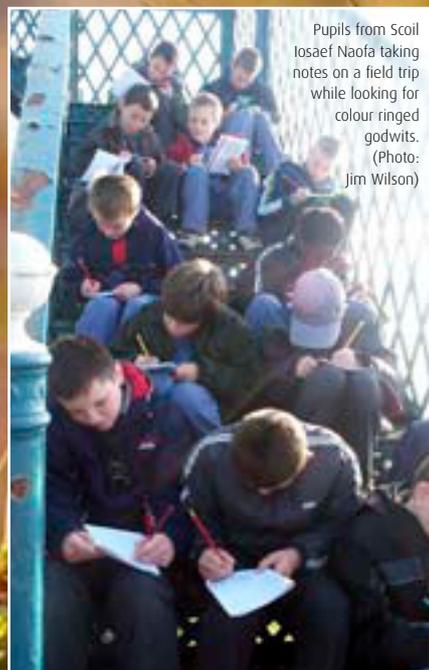


where the godwits were ringed and where the Sigluffjörður godwits spend the winter. Google Earth is also used to plot the movements of 'their' birds. The classes have over 50 life histories of godwits seen in Cork Harbour or ringed in Sigluffjörður and they hope to get even more.

By taking part in the project the pupils learn first hand the importance of global citizenship and how we are all linked by the natural world we live in.

### Field Trips

The pupils also go out looking for colour ringed godwits during the school year (September to May).



Pupils from Scoil Iosaef Naofa taking notes on a field trip while looking for colour ringed godwits. (Photo: Jim Wilson)

They try to make at least two trips to study the godwits each school year. One in the autumn or early winter when all the godwits have returned from Iceland and the second in March or April when the godwits are gathering before flying north to breed in Iceland.

The Cobh pupils take the 15 minute train ride from Cobh to Glounthaune. The station platform at Glounthaune is perfect for studying the godwits and other wetland birds. It overlooks one of the most important estuary areas for black-tailed godwits and other wetland birds in Cork Harbour. They record all the wildlife they see on the trip. The project encourages fieldwork and highlights in a simple way the value of record data.

The children always have a great time and always see godwits as well as other wetland birds such as redshanks, curlews, dunlin, oystercatchers and shelduck. On one trip in April 2008 the whole class was lucky enough to see a colour-ringed godwit really close through a telescope.

In Sigluffjörður the pupils of Grunnskóli Sigluffjarar keep in touch with Scoil Iosaef Naofa and Topsham School during the time the godwits are in Ireland and England (August - April) and then in late April and May they go out looking for the godwits as they arrive back to Sigluffjörður to breed. On one occasion they found a colour ringed godwit breeding near the school which had been seen at Glounthaune, Cork Harbour the previous winter. The finding of such a bird makes a lasting impression on the pupils in both countries. Their awareness of their environment is greatly enhanced as a result.

This project was devised and developed by Jim Wilson, Willie McSweeney, Gunnarbertsdróttir, Tomas Gunnarsson, and Pete Potts. For further information visit [www.scoiliosaefnaofa.com/Godwit.htm](http://www.scoiliosaefnaofa.com/Godwit.htm) or email [godwits@irishwildlife.net](mailto:godwits@irishwildlife.net).

# Creatures of the deep

## Fiona Kavanagh introduces the strange isopod crustaceans that live off the west coast of Ireland

The sea contains untold numbers of strange and bizarre creatures. It is said that we know more about our own solar system than we do about our own oceans. One group of these real-life sea monsters is the deep sea isopods and these have been the subject of recent research off the west coast of Ireland.

### What are isopods?

Isopods are relatively small representatives of the Crustacea, the most familiar of which are the woodlice you can spot in your back garden. They are an extremely successful group, with approximately 10,000 recorded species living in marine, freshwater and terrestrial environments. They have seven pairs of legs and can range in size from a tiny 0.3 mm to a whopping 50 cm in the case of the giant isopods which live in the deep waters of the Atlantic Ocean (Figure 1). Isopods typically have a flattened body shape, although many species deviate from this body plan, particularly the deep-sea species. These animals have a very diverse range of feeding habits. In general, primitive groups are herbivores or scavengers, while more derived groups are carnivores, predators and parasites. Reproduction occurs through the transfer of sperm from the male to the female genital duct, and in most species the female incubates the fertilised eggs in a brood pouch attached to the underneath of the body. Unlike other crustaceans which hatch as free-swimming larva, isopods hatch as juveniles similar in form to the adult.

### Deep-sea isopods

It is in the deep-sea that isopods have proven to be the most successful, with species found at all depths including the deepest ocean trench ( 10,000 m). They exhibit incredibly high species diversity despite having low abundances. The deep-sea isopods are dominated by the group Asellota. This group is also the largest

“As sunlight cannot penetrate below about 200 m, deep-sea isopods

live in a lightless world, and are generally blind”

isopod suborder with over 2,000 species recorded to date. However, many undescribed species also exist and most faunal samples taken from the deep-sea contain new species of isopod. These animals are quite small, usually only

a few millimetres in length and most live on or within the seabed. They have evolved an impressive range of morphological diversity. Body shape, for example, can range from being



Fig. 3 *olel cini t*  
(Fiona Kavanagh)

2 mm

elongated and stick-like (Figure 2) to broad and depressed. Some groups or taxa have bodies covered with lots of spines (Figure 3), and others have enlarged heads to accommodate crushing jaws.

As sunlight cannot penetrate below about 200 m, deep-sea isopods live in a lightless world, and are generally blind as an adaptation to living in this environment. The lack of sunlight also means that organisms rely heavily on detritus as an energy source. Detritus is material which falls from the upper layers of the sea and consists of dead animals and plants, faecal matter, soot and other inorganic dust. In recent years, deep-sea isopods have also been discovered to prey on simple organisms known as foraminifera. Due to the practical difficulties in studying tiny deep-sea animals, there is much that we have yet to learn about their behaviour. To date, most aspects of their behaviour have been inferred indirectly through, for example, analysis of gut contents or examination of morphological adaptations. However, with advances in technology, e.g. the use of remotely operated vehicles, direct observations are beginning to become a possibility.

## Ireland's isopods of the deep

Although the deep-sea is the largest ecosystem on the planet, comprising approximately 65 percent of the earth's surface, we know relatively little about the deep-sea compared with other ecosystems. The North Atlantic was the birth place of deep sea biology during the late 19th century when it was discovered that animal life existed down to depths of 1,188m. Prior to that, it was thought that the deep sea was a desert. Despite the numerous studies which have been carried out in the deep sea since, it was only in the 1960s that deep-sea faunas were discovered to be incredibly diverse in terms of species diversity even though there are low population densities.

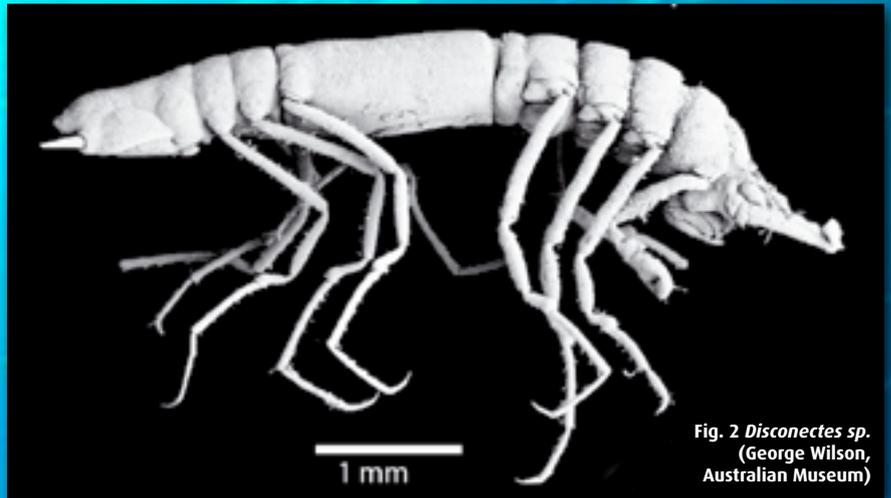


Fig. 2 *Disconectes* sp. (George Wilson, Australian Museum)

Fig. 3 *Disconectes* sp. (George Wilson, Australian Museum)

Fig. 1 *Bathynomus giganteus* (Wikipedia, GNU Licence)



Fig. 5 A box-corer sample arriving onboard (Alison McCarthy)

“most faunal samples taken from the deep-sea contain new species of isopod”

Since then, the Atlantic Ocean has been relatively well-researched in terms of isopods. However, the isopods off the west coast of Ireland have traditionally only been studied in shallow water. In 2003, the Irish government launched the first Irish deep-sea research vessel, the RV Celtic Explorer.

In conjunction with this, a multidisciplinary deep-sea research project was established at the National University of Ireland, Galway. The zoology aspect focused on examining the main deep-sea benthic groups; the polychaete worms, molluscs and crustaceans. Samples from the seabed were taken aboard the RV Celtic Explorer from 2003-2004 across the Porcupine bank and abyssal plain located off the west coast of Ireland (Figure 4). Specialised equipment, such as a box-corer (Figure 5), was used to take a “bite” from the seabed as well as deep-sea sled which works like a trawl on top of the seabed, collecting material as it is pulled along.

The results of this study were combined with information on Irish deep-sea isopods collected on other projects as well as historical records from published materials. From this, a checklist of deep-sea isopods known from the west coast of Ireland was produced.

In total, 74 species of deep-sea isopod have been recorded to date, including a total of 15 species new to science! These animals were collected from depths of 60m to an incredible 4,100m. The number of species recorded in the area is likely to be a large underestimate due to the vast swathes of the ocean floor yet to be examined. So although a good start has been made to understanding these critters in Irish waters, the research also highlights how much we have yet to learn about the animals that live in our own backyard.

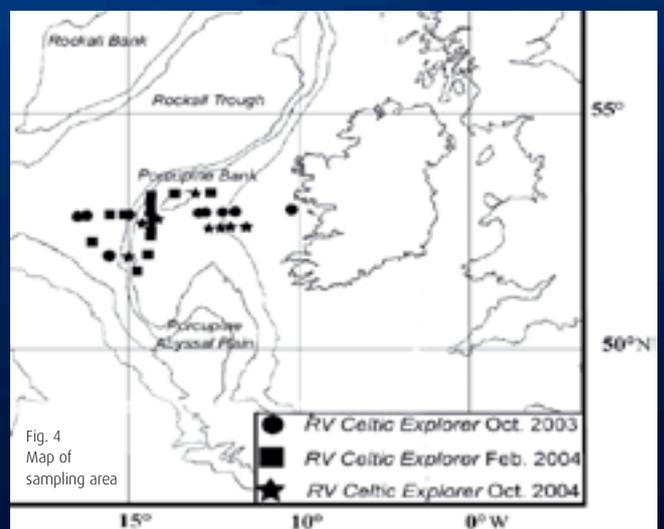


Fig. 4 Map of sampling area

# Biodiversity Tales

## Lichens



### Irish Lichen Field Club founded

Irish lichenologists are as elusive as lichens themselves. In an effort to promote an awareness of lichens in Ireland Paul Whelan, Terry Thorp and



Jenny Seawright have set up the Irish Lichen Field Club. They will run beginners field trips to give people of all ages some awareness of Ireland's lichen biodiversity. Ireland has a rich lichen flora with at least 1208 species recorded so far. Although a difficult group for the professional to work on there are plenty of species that amateur naturalists could become acquainted with. The club will post meetings on their web site [www.lichens.ie](http://www.lichens.ie). The website contains detailed descriptions of selected Irish lichens with a few new species added each month. You can also register there for their newsletter. Paul also asks any professional lichenologists hidden away in academia or otherwise to come and help on these meetings.

**Four new species to the Irish Lichen Flora** - On a recent survey of the Skellig Michael lichen flora undertaken for the Office of Public Works by John Douglass and myself, four species new to Ireland came to light. One of the four was the tiny *Lecania poeltii*, a species that was previously unknown in the UK and northern Europe. We were obviously very excited about the finds, especially the *Lecania poeltii* which is a real rarity. The identification was confirmed by Dr. Brian Coppins of the Royal Botanic Garden Edinburgh. The other three species, all new to Ireland, are *Bacidia sipmanii*, *Caloplaca arcis* and *Caloplaca sorediella*. The survey was carried out independent of the Lichen Ireland Survey which itself has turned up several previously unrecorded species. Irish botanists need to turn their attention to our lichen flora. There are very few lichenologists here and a government funded training scheme

needs to be implemented as soon as possible to catch new science graduates and increase awareness among the current generation of botanists. We recorded 128 different species of lichen on the island over four intensive days work. Descriptions of the new species will soon be available on the OPW web site. For further details on the field club and the survey, please contact: [paul@lichens.ie](mailto:paul@lichens.ie).

Paul Whelan



Steps and rocks covered in lichens on Skellig Michael (Paul Whelan)

## Vascular Plants

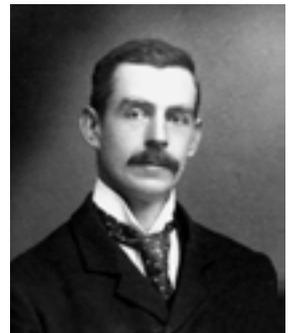


### Following in the footsteps of Praeger

One of the ways I enjoy botany is to try and find a rare plant at a site where it was found many years ago by a famous botanist. In a strange way I like to think I am walking on the same ground as they did.

On 30 January 2009 Megan Morris and I set ourselves the task of finding Irish spleenwort (*Asplenium onopteris*) that Robert Lloyd Praeger had found at Snowhill in Co. Kilkenny on 11 August 1899. The information with the specimen in the herbarium at the National Botanic Gardens, Dublin read: rocks on shore of River Barrow, Snowhill. It was not a hill as we had thought, but Snowhill was the ruins of a large house overlooking Cos Waterford and Wexford. We walked for some time along the tidal shore of the river. Eventually the river bank rose to become a steep rock face with oak woodland above and a ground flora of various shrubs, which extended down the rock face in places. This was identical to the habitat in which I had seen the fern in Portugal and Spain. It was not long before we found three clumps of it on the rock face. A good outcome considering it was 110 years since Praeger had visited the site. Seeing Irish spleenwort overseas made it easy to find this very rare fern at Snowhill.

Paul Green,  
Botanical Society of the British Isles



Robert Lloyd Praeger (reprinted with permission from the Royal Irish Academy)

## Land & Freshwater Invertebrates



**The mud snail *Omphiscola glabra*** is an unusual freshwater snail with a very high spired shell which lives in the shallow water of swamps and ditches, particularly those which dry out from time to time (hence the common name). Having adapted brilliantly to the hazard of drought it now faces a much graver threat. Farming intensification and drainage schemes have destroyed most of its swampy habitats in Ireland. It was only ever recorded from the south-east in counties Cork, Waterford and Wexford, but the last known colony, at Shelmaliere Commons, Wexford, was destroyed by farming operations in the 1980s.

The good news is that a new colony has been discovered in Co. Waterford. At first sight Carrickavrantry Reservoir doesn't seem the right kind of place for a swamp-dweller. But beyond the southern edge of the reservoir is an area of spring-fed swamp which ticks all the right boxes. A small colony was discovered here in July 2009 by Roy Anderson sweeping



*Amphiscola glabra* (Roy Anderson)

shallow water among bogbean and rushes. The site is quite isolated so hopefully this will ensure that the mud snail remains part of Ireland's fauna for a while yet. The mud snail is threatened in Britain as well as across most of Europe.

***Ochthebius nilssoni***. A tiny water beetle (1.6mm long) has been discovered in western Ireland which was previously known only from its type locality (the place where it was described new to science) in a northern province of Sweden. This extraordinary find was made by Prof. Garth Foster in samples collected by Eoin O'Callaghan at Lough Briskeen in south-east Galway. Two further sites have come to light, Cooloorta Lough and Lough Gealáin in the Burren, Co. Clare. The *Ochthebius* beetles (they have no common name) are not only tiny but have strange habits which make their discovery very difficult. Unlike most water beetles they don't float upwards or rise to the surface of the water when disturbed, but remain on the bottom in relatively deep water where they feed on a biofilm characteristic of very limy water bodies. How they got to this part of Ireland is a mystery but Ireland has several other high northern beetles which seem out of place. The bog whirrig *Gyrinus natator* and the ground beetle *Pelophila borealis* are examples. So Ireland now has a beetle which not only doesn't occur in Britain but is also unknown in the near-continent, providing a pretty puzzle for those people (biogeographers) who like to work out how animals came to be where they are.

Roy Anderson

## Sharks, Skates & Rays



Common skate (Hamish Currie)

**Purse Search Ireland** is a marine environmental outreach project that has been seeking input from the Irish public. The aim of the project is to encourage people to report their observations of mermaids' purses, the eggcases of sharks, skates and rays. These purses are laid by the adult female fish in a suitable habitat on the seafloor, with the young embryo developing within the eggcase for up to 15 months. The baby shark or skate then hatches out of the purse and swims away, leaving the discarded eggcase behind it. Eggcases can often be seen washed up on the seashore, frequently tangled up in seaweed along the upper shoreline. Observations of mermaids' purses on the seashore (and underwater) can provide valuable information on the location of nursery areas for Ireland's sharks and rays, some of which are endangered or rare.

The project has received an extremely enthusiastic response from the public since its launch in 2007, with many schools now including eggcase hunts in their annual nature programmes. As a result, a total of 2,767 eggcases from 10 species of shark, skate and ray have been reported from 157 beaches to date.

Confirmed sightings of eggcases from the critically endangered common skate (4 eggcases), critically endangered white skate (6 eggcases) and endangered undulate ray (17 eggcases) are of particular interest, especially since all three species were afforded protection by the EU last year due to their vulnerable conservation status. Indeed, results from the project to date suggest that Tralee Bay is likely to be a nursery area for the undulate ray and white skate. Eggcases from both species have been sighted at Fenit, Ballyheigue and Derrymore Island (including live undulate purses caught by fishermen), while undulate ray purses have also been reported from Ardferit and Castlegregory. The Tralee Bay area may also be important for common skate reproduction as there have been reports of eggcases on Castlegregory Beach (although unconfirmed as of yet). Confirmed sightings of common skate eggcases have been recorded at Inch and Waterville in Co Kerry and at Whitestrand and Horse Island in Co. Clare.



Common skate purse (Sarah Varian)

**Purse Search Ireland** is keen to hear from anybody who may have knowledge of skate or ray nursery areas. You can report a sighting at [www.marinedimensions.ie](http://www.marinedimensions.ie) or get in touch with a scientist at [admin@marinedimensions.ie](mailto:admin@marinedimensions.ie). Purse Search Ireland is funded by the Heritage Council, Bord Iascaigh Mhara, Discover Science and Engineering, Forfas, the National Parks and Wildlife Service and PADI Project Aware. Marine Dimensions is extremely grateful to all Purse Search volunteer recorders for their time and dedicated support.

Sarah Varian, *Marine Dimensions*

## Birds



As I write in the first few days of February the met stats for our Siberian January are a regular feature on news bulletins and the printed media.....coldest winter for over 40 years, most snow etc. and all that on top of terrible flooding in November. There had to be a fairly serious impact on movements, behaviour and survival of our wintering and resident birds and clearly people across the country soon became aware of 'strange', but beautiful, thrushes that started turning up in gardens. Observers were always adamant that they had NEVER seen them before. These birds, by and large, were redwings [see photo], regular winter visitors from Scandinavia;



Redwing (Dick Combes)

they are often accompanied by fieldfares. Redwings are the 'northern version' of song thrush, with bold creamy white eye-stripe and the flash of brick red on their flanks. Their ecological niche is much the same as our thrushes and blackbirds (hawthorn berries in hedges and worms/grubs taken from the ground).

Usually, in a normal winter they feed in flocks in short/permanent pasture alongside fieldfares but with ground frozen for about a month solid from mid December they were forced to search for alternative food in gardens. Fieldfares are particularly fond of apples and can be encouraged into a garden where the said fruit has been 'speared' onto the branch of a tree or shrub. Redwings would tend to root around snow-free areas under shrubs.

Please hit the Birdwatch Ireland (BWI) website [www.birdwatchireland.ie](http://www.birdwatchireland.ie) for an article on winter thrushes ('news' section) and while you are there sign up for our electronic magazine 'eWings'.

However, by the time you read this piece, 'our' winter thrushes will be thinking about heading home to the boreal forests of Scandinavia, though some redwings also breed in Iceland, and song and nesting activity of our resident birds will also be underway. The severe weather impact is hard to gauge at the moment though my feeling is that many garden birds survived quite well. Many of the tits (coal, blue and great) that use my upland Wicklow garden are individually colour ringed and I seemed to observe most of the same characters right through the Christmas/

New Year period; on the other hand goldcrests (our smallest birds, at 5g weight) do appear rather scarce now and I have not heard any of their 'sewing machine-like' song in recent weeks.

My real job in BirdWatch Ireland is to coordinate seabird surveys; over the autumn and winter months we have been running a "Save our Seabirds" campaign to raise awareness (and funds) to improve our national monitoring and conservation action for what is one of our best avian assets.

Saltee, Skelligs and the Cliffs of Moher are truly internationally important for their assemblages of breeding seabirds. They are special and spectacular places and are easy to visit. Two of our 24 breeding seabird species, fulmars and shags, are not doing so well at east coast colonies: we urgently need to find out if the same holds true for the south and west coasts. Fulmars occur widely along our clifly coasts: if you regularly walk a section of cliffs, own a pair of binoculars and are keen to help, I can advise on a simple monitoring protocol over the summer months. Please contact me at: [snewton@birdwatchireland.ie](mailto:snewton@birdwatchireland.ie)

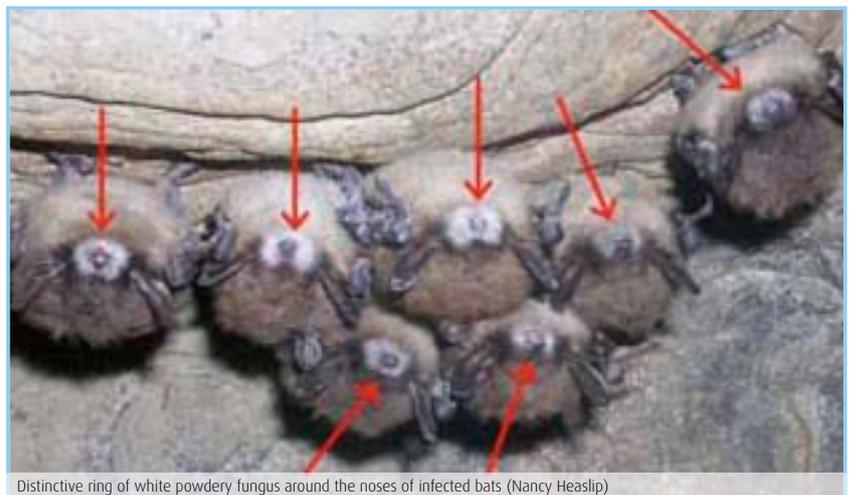
Steve Newton, BirdWatch Ireland

## Bats



### White-nose Syndrome – a new threat to bat populations

There is widespread concern for bats in United States due to the deaths of over one million bats in hibernation sites since 2006. White-nose Syndrome (WNS) is now known to be responsible for the deaths. A cold-loving fungus, *Geomyces destructans*, has been identified to



Distinctive ring of white powdery fungus around the noses of infected bats (Nancy Heaslip)

be associated with WNS. To date, this fungus was restricted to the north-eastern United States, however, a bat (*Myotis myotis*) found in a cave in France on the 12th March 2009 was confirmed to have the fungus. In addition, bats in Germany and The Netherlands have also been observed with fungal growths, but to date WNS has not been confirmed.

The disease is associated with hibernating, cave-roosting insectivorous bats. Infected bats have conspicuous white powdery deposits on their muzzle (hence the name White-nose Syndrome), ears and wings.

Further analysis has shown that the fungus actually penetrates deep into the membranes and tissues of the bats and cause swellings on the wings. Bats that exhibit the syndrome have little or no fat reserves reducing the likelihood of surviving the winter. WNS was first observed in a cave in Albany, New York during the winter of 2006. Since then, populations of cave-hibernating bats have been drastically declining in a total of seven States.

Affected species includes little brown bats, northern bats, tricolored bats, Indiana bats, small-footed myotis and big brown bats. Mortality rates as high as 100 percent have been observed.

A team of researchers in UCD in collaboration with their French colleagues confirmed the presence of this fungus in a bat in France and review the possible implications for bat conservation in Puechmaille *et al.* (2010). They emphasise "the need to understand, monitor and control the progression of WNS" since bats constitute more than 25% of the world's mammalian populations and play major roles in insect control and ecosystem functions. Scientists are reasonably certain that WNS is transmitted from bat-to-bat. However the fungus may also be transported by people from cave to cave and, as a result, caving activity in WNS-affected states and adjacent states in the US has been curtailed. In addition, cave users are asked to avoid entering caves and other underground sites during hibernation and also to disinfect clothing and gear between site visits. While WNS has not been found in Irish caves, many of our bat species are known to hibernate in caves. Therefore it is important that cave users are aware of WNS and take precautionary action.

Bat Conservation Ireland is currently compiling a fact sheet on WNS and this will be distributed widely. If you wish to receive further information, please email: [info@batconservationireland.org](mailto:info@batconservationireland.org).

Tina Aughney, Bat Conservation Ireland



Humpback whale breaching off Hook Head, Co. Wexford (Pádraig Whooley)

## Whales & Dolphins



The six month reporting period August to February incorporates what whale observers believe to be the most interesting time for cetacean sightings. During this period IWDG received and validated 783 sightings, of which 701 were categorized to species. Surprisingly, September was the busiest month with 223 sighting reports, reflecting the Indian summer, which followed yet another extremely poor summer.

As always the harbour porpoise was the most frequently reported species with 254 sighting events (32.4%), followed by common dolphin 128 (16.3%), bottlenose dolphin 97 (12.4%), minke whale 73 (9.3%), fin whale 60 (7.7%), humpback whale 29 (3.7%), killer whale 4 (0.5%) sei whale 4 (0.5%), long-finned pilot whale 2 (0.3%), Risso's dolphin 2 (0.3%), and northern bottlenose whale 1 (0.1%).

During this period, which is well outside the peak period for basking sharks, 47 sightings of our largest fish species were received, with the last sightings in late October.

One of the year's highlights was the first validated inshore sighting of a sei whale in Irish waters since 2006. Between the 11th and 23rd September IWDG received four sightings of this large rorqual whale.

The animal was feeding between Erris Head, Co. Mayo and Inisboffin, Co. Galway and images from both areas confirm these sightings were of the same animal. You have to go back to 1914 to find the next previous record of this rarely sighted species in Irish waters.

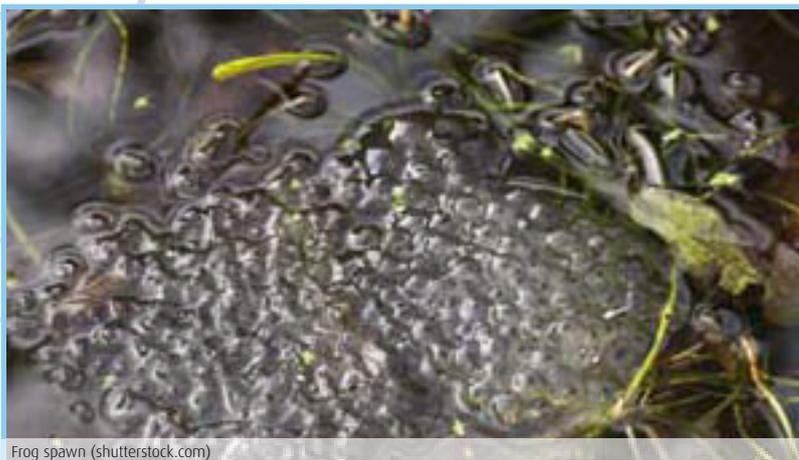
The reliable large whale activity between October and December in West Cork never really materialised. However, the peak abundance coincided with the worst weather in 50 years in November. It is possible that the whales were present and we just had no opportunities to monitor them. But these whales never fail to disappoint and it was only a matter of time before they re-appeared further east along the Irish South coast. Over the New Year period observers started picking up consistent large whale activity off Waterford.

There can be little coincidence in the whales turning up at this location and at this time as the waters around Dunmore East are the traditional winter herring spawning grounds. Luckily for both humpback and fin whales, they timed their arrival to perfection, as the herring fishery had just reached its quota and had just closed. Happy days indeed for the whales!

Between the 17th January and the 17th February, a humpback whale enthralled researchers and whale watchers alike, as it remained in waters between Hook Head and Baginbun feeding on herring. This highly publicised animal was at the centre of a media feeding frenzy, when IWDG secured images and high definition footage of it breaching over a 45 minute period off Hook Head. A new addition to the Irish humpback whale catalogue, it has been numbered #HBIRL11 and is also a previously un-recorded animal for the North Atlantic Catalogue. This prolonged period of large whale activity which also included upwards of 6-7 fin whales provided a significant tourism boost to the local economy, as whale watchers and wildlife enthusiasts flocked to the southeast to witness this world class whale watching. All validated cetacean sightings can be interrogated and mapped on [www.iwdg.ie](http://www.iwdg.ie).

Pádraig Whooley, Irish Whale and Dolphin Group

## Phenology



Frog spawn (shutterstock.com)

This year Nature's Calendar Ireland has been extracted from Biology.ie and now has its own web site at [www.naturescalendaireireland.com](http://www.naturescalendaireireland.com). Each year it's interesting to see which species start appearing on the maps first and invariably it's the horse chestnut and frog spawn. After such a severe January with below freezing point temperatures most nights it was not expected that the frog spawn would appear this January (the earliest every record was Jan 10th, 2008). But sure enough, as temperatures crept up, the spawn appeared. This year's first sighting was recorded in West Cork on January 22nd. It now appears that January is the frog spawning month and always after temperatures reach about 10 Celsius for approximately a week. This pattern is too strong to ignore and more serious scientific investigation should be carried out. In the 1960s frog spawn never appeared until March, but over the years spawning times have slowly moved back, particularly in the last ten years with our milder winters. It's beginning to look as though spawning now occurs after a cold spell in January. Nature's Calendar Ireland has updated



its species list this year to keep in line with other phenology (the scientific term for Nature's Calendar) groups across Europe with birds and butterflies

featuring significantly as animal representatives and trees dominating the plants section. Every observation of the listed species is important; even one accurate recording per year is important. Phenology is one area of science where the public can make a valuable contribution. So watch the local pond for frogs or that horse chestnut tree for first leaves. Schools are particularly encouraged to take part with a wall chart of selected species available for download on the home page. Observations are not above Ireland's scientific community either!

Paul Whelan

# Book Review

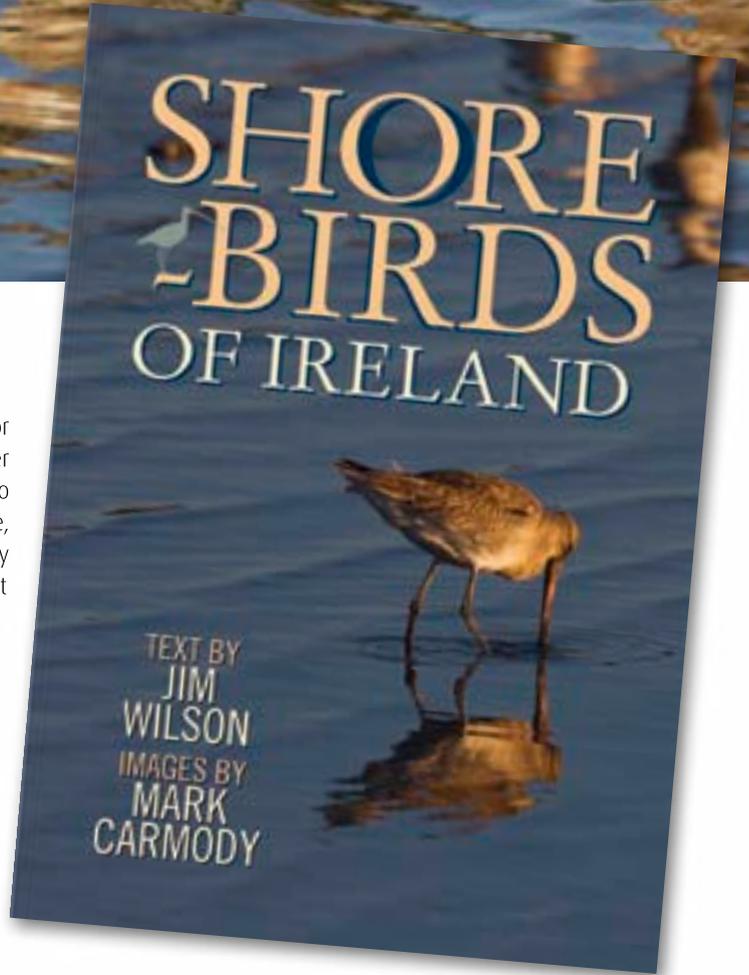
## Sleeping with one eye open

Imagine sleeping with one eye open, constantly on the lookout for predators. Imagine flying all the way from Arctic Canada to winter in Ireland. Arriving famished, you quickly find a part of the shore to hunt for shellfish. Not only must you be mindful of your salt intake, you must also be careful your hard-earned meal isn't snapped by some voracious bully. You eye a shrimp. You ready yourself. Just as you're about to pounce a nervous call of a redshank rings out, sending you, and thousands of others, into the sky. Panic abounds, you scan as best you can for a peregrine falcon all the time having to duck and dodge a huge flock of sanderling. Finally calm is restored. It was a false alarm. You return to your hunting ground but that shrimp has long gone. Your search begins all over again. The life of a purple sandpiper isn't easy.

'Shore Birds of Ireland' is a recent publication from The Collins Press and is an excellent read. Jim Wilson's text is informative, accessible and is complemented by Mark Carmody's exquisite photography. The book is divided into two parts. Part one includes chapters on the history of human activity on the shore, a case-study on Ireland and the life of shore birds including the unusual visitors to our shores. Part two is a guide to the individual shore birds with an extensive piece on each species which includes their range in Ireland.

The book is peppered with engaging insights like egrets and greenshanks are known to co-operate when hunting. The knot is unable to differentiate between stones and shellfish and must therefore be very careful where it forages for food. The advent of artificial light on intertidal areas is having a direct change on the behaviour of the dunlin who can now feed at night.

I fall into a category of birdwatcher who is guilty of being dismissive of birds that are easy to spot, where's the challenge in that?



After reading Jim Wilson's book my eyes have been opened to the fascinating world of shore birds. It deserves to find a place on the bookshelves of not only ornithologists but anyone with an interest in Ireland's shore. The next time I see a shelduck I will wonder has it been to Heligoland in Northern Germany for its moult migration yet?

Richie Conroy, [www.frantheseries.com](http://www.frantheseries.com)

### Shore Birds of Ireland

by Jim Wilson and Mark Carmody

The Collins Press

€22.95 (including p&p)

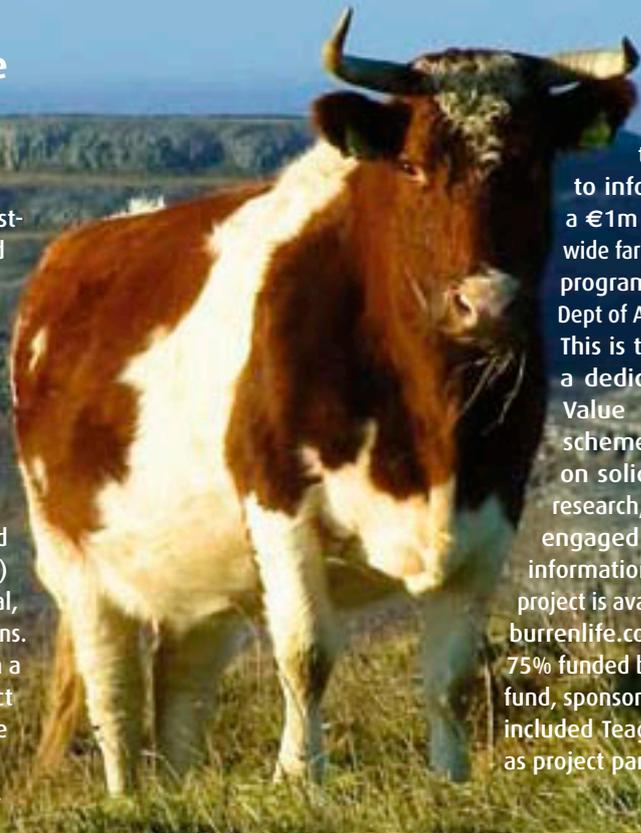
# Farming for conservation

## Brendan Dunford summarises the outcomes of the 5-year research project, BurrenLIFE

The Burren is one of the most important and best-known landscapes in Europe due to the wealth and diversity of its natural and cultural heritage. Most of what is valued in the Burren has been shaped by the elements and by thousands of years of farming activity. Thus, to protect the Burren, the best way is to continue farming. Modern farming, however, is not always good for the Burren and traditional farming is no longer sustainable.

In order to address this issue, BurrenLIFE implemented a range of conservation actions on 20 farms (3,000ha) across the Burren and monitored the environmental, agricultural and socio-economic impacts of these actions. Farm-based management actions were detailed in a farm plan compiled by the farmer and the project team. The conservation work was carried out by the farmers themselves or by other Burren farmers, generating an important source of employment, income and ownership within the community.

Although BurrenLIFE has now ended, the findings of the project are set to inform the roll-out of a €1m per annum Burren-wide farming for conservation programme funded by the Dept of Agriculture and NPWS. This is the first example of a dedicated High Nature Value (HNV) farming scheme in Ireland, based on solid, locally-targeted research, practical ideas and engaged partnership. More information on the BurrenLIFE project is available now on [www.burrenlife.com](http://www.burrenlife.com). BurrenLIFE was 75% funded by the EU LIFE Nature fund, sponsored by the NPWS and included Teagasc and Burren IFA as project partners.



Some of the outputs of the project included:

- the development of a farming for conservation ‘blueprint’ for the Burren.
- the development of a new GM-free, Irish sourced, concentrate-based feeding system.
- the provision of a range of ‘conservation infrastructures’ on 20 project farms including water supplies, access paths and restored walls to enable better grassland management.
- the removal of scrub from approximately 100ha of priority grassland habitat and the opening of 55km of pathways using a variety of techniques.
- the development of a system of ‘grazing days’ for Burren winterages which identify sustainable grazing levels, avoiding over- or under-grazing.
- the delivery of a four year Heritage Education Programme targeted at schools and the local community.
- the development of an excellent working relationship between farmers, conservationists and farm advisory bodies in the Burren.



Farmer on The Burren (BurrenLIFE)



Farmers removing scrub (BurrenLIFE)



Other notable outputs of the project included the establishment of a local Beef and Lamb Producers Group, the development of a Nutrient Export Model for the Burren and a study on the socio-economic value of farming for conservation in the Burren.

# Tracking the ancient giant of the Irish Sea

Through collaboration with existing conservation bodies the project hoped to tackle the long unanswered question of whether leatherbacks are merely oceanic wanderers that find themselves in our waters or whether they form an important part of our natural heritage. The project ended in 2006 and its key findings were:

## Tom Doyle provides an overview of the INTERREG project researching the ecology and distribution of the leatherback turtle

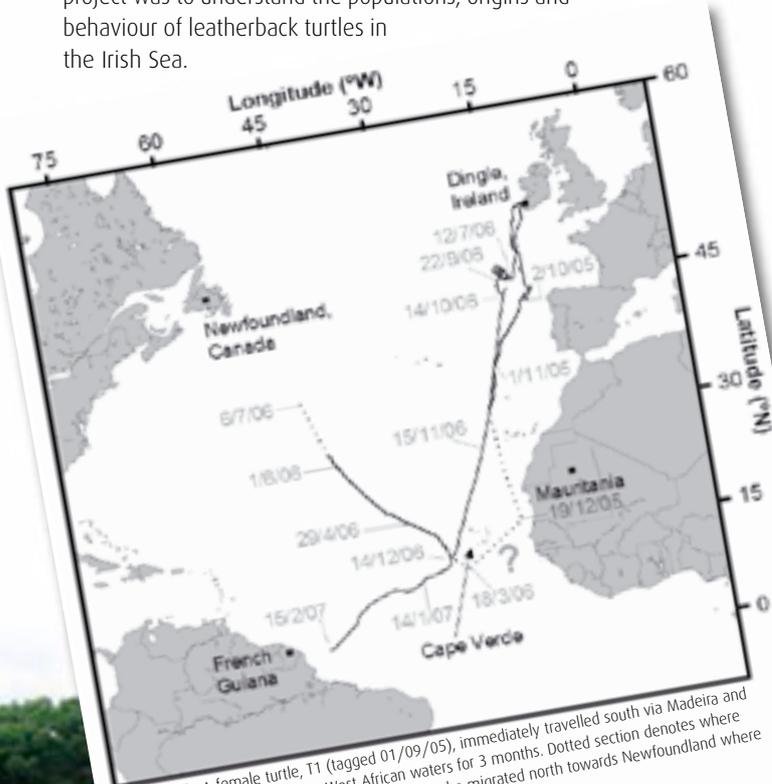
It was a little known fact that leatherback turtles are found in the waters around Wales and Ireland and our knowledge of this elusive animal remained limited to anecdotal sightings and stranding events along the coast – that is until the Irish Sea Leatherback Turtle Project which began in April 2003. A joint venture between the University of Wales Swansea and the University College Cork, the aim of this project was to understand the populations, origins and behaviour of leatherback turtles in the Irish Sea.

**Satellite tracking of two leatherback sea turtles:** This was a first for Europe and was only possible with the strong support of local salmon fisherman, Pádraig Frank O’Súilleabháin. These animals were tracked for almost 1 year, documenting the migratory movements of leatherbacks from one of the remotest foraging grounds in the North Atlantic.

**Shoreline jellyfish surveys:** Over 10,000 beach surveys were conducted during this period (most by trained volunteers). Analysis of these jellyfish strandings provided novel insights into their distribution and abundance in the Irish and Celtic Seas. The data suggests that jellyfish distributions broadly reflect the major hydrographic regimes (e.g. stratified high salinity, mixed low salinity, fronts) of the study area.

**Links between barrel jellyfish and leatherback turtles:** Previously unknown, consistent aggregations of the barrel jellyfish (*Rhizostoma octopus*) extending over 10s of km<sup>2</sup> were identified in distinct coastal ‘hotspots’ during consecutive years (2003-2005). Examination of retrospective sightings data suggested that leatherback distribution could be explained by these ‘hotspots’. These coastal features may be sufficiently consistent in space and time to drive long-term foraging associations.

This project was funded by the European Regional Development Fund’s (ERDF) INTERREG IIIA initiative. The final report is available at [www.jellyfish.ie/turtle](http://www.jellyfish.ie/turtle).



**Black track:** A female turtle, T1 (tagged 01/09/05), immediately travelled south via Madeira and the Canaries, before residing in West African waters for 3 months. Dotted section denotes where locations were intermittently received. In spring, she migrated north towards Newfoundland where transmissions ceased.

**Red track:** A male turtle, T2 (tagged 29/06/06), travelled south and spent 66 days west of the Bay of Biscay, a high-use area for leatherbacks. This corresponded with an eddy (evident from satellite imagery), with the implication that this turtle had found a rich feeding site. He headed south in October and performed the deepest-ever dive recorded by a reptile (1,280 m) southwest of Cape Verde. Unlike T1, T2 swam southwest towards Brazil before approaching the major nesting beaches of French Guiana and Surinam.

Leatherback nesting in French Guiana (Tom Doyle)



# Biodiversity Beginners

## Jellyfish in our coastal seas by Tom Doyle

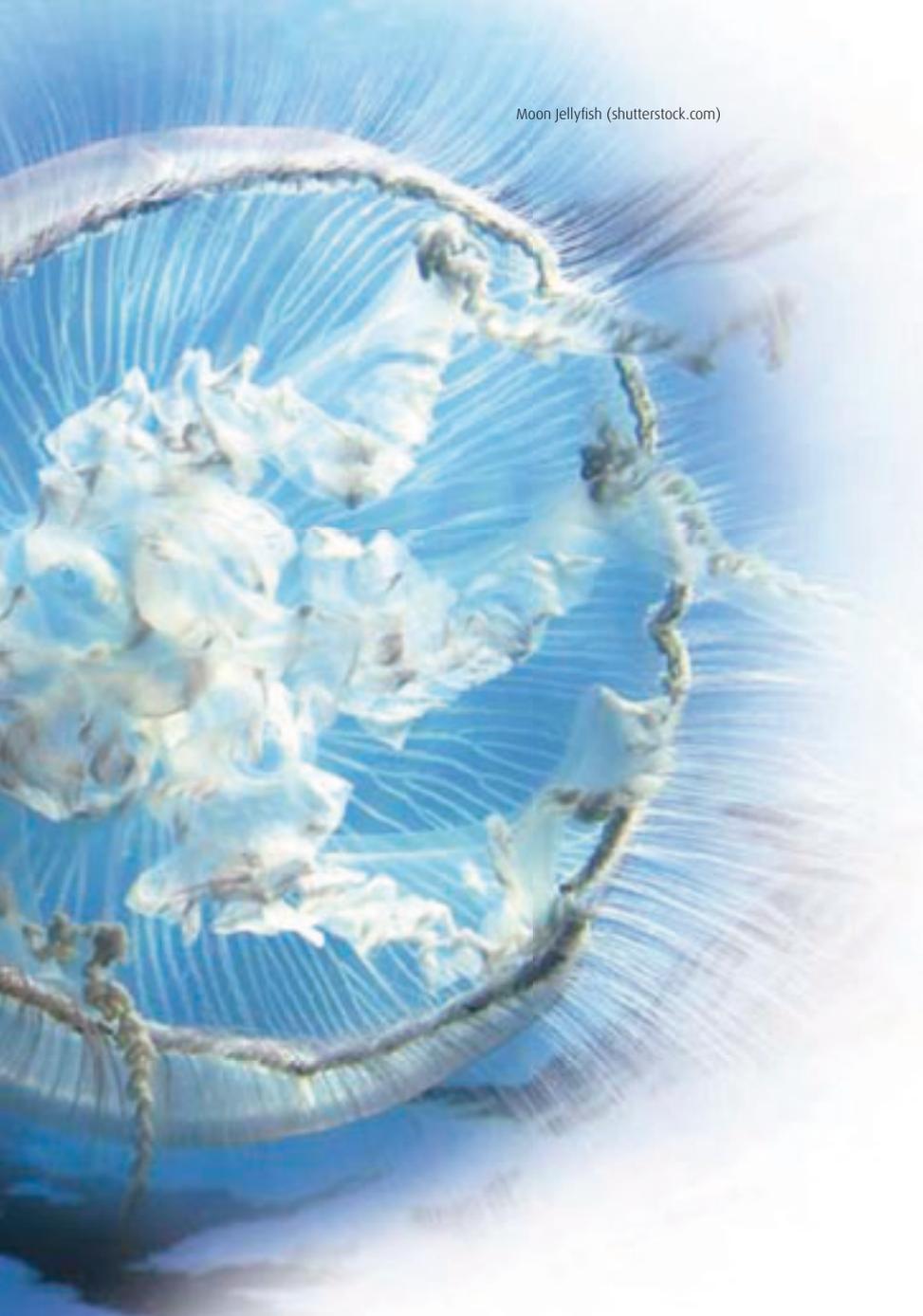
**Don't be alarmed, but there are more than 30 species of jellyfish in Irish coastal waters! Most of these go unnoticed as they are very small, transparent and rarely cause any trouble. In contrast, the larger species (of which there are 9) are some of the most familiar, abundant and easily recognisable organisms that we have in our coastal seas. For example, the moon jellyfish is found in all Irish coastal and estuarine waters, and can form massive aggregations (or 'blooms') that can interfere with fishing activities. Another jellyfish – the barrel jellyfish – can weigh as much as 35 kg and have a diameter of 80 cm or more. However, despite being so abundant and visible, most people know very little about jellyfish except that they sting.**

So what exactly are jellyfish? Jellyfish belong to a group of animals called 'cnidarians', which also includes the sea anemones and corals.

The defining characteristic that unites these seemingly disparate organisms is that they are all capable of producing 'nematocysts' or stinging capsules. A stinging capsule is like a tiny balloon with a miniature harpoon coiled up inside it. When the balloon bursts upon contact with an object, the harpoon is fired and injects a venom into the unsuspecting animal or person. These stinging capsules are one of the most complicated cellular structures in the animal world, yet very few of us appreciate this marvel of evolution when stung! Jellyfish are composed almost entirely of water (up to 98%) and use the muscles of their body wall to push against their jelly matrix to create a pulsating swimming movement. The adult jellyfish is called the medusa and is typically bell or domed shaped, very large and short lived (months rather than years). However, jellyfish are also present all year round in the form of a polyp that more or less resembles a tiny sea anemone. Polyps normally attach themselves to rocky substrates or shells in shallow coastal waters, and can live for many years. At certain times of the year, individual polyps bud off miniature jellyfish (~1 mm diameter) which eventually grow in size to become the adults that we are familiar with.

Jellyfish are found in all coastal waters, but strange as it may sound, different jellyfish like different coastal waters in much the same way as you find different birds in different habitats. For example, our most venomous jellyfish the lion's mane jellyfish (*Cyanea capillata*) prefers the cooler waters of the northern half of the Irish Sea and the waters around the top of Ireland. One of the best places to see the lion's mane is at Dublin's famous Forty Foot, Dun Laoghaire. It was so abundant there in 2005 that all the surrounding beaches were closed. The giant barrel jellyfish is only found regularly in Wexford Bay, between Rosslare Harbour and Curraclloe Beach. It sometimes appears in Dublin coastal waters and in Waterford Harbour. The compass jellyfish (*Chrysaora hysoscella*), which is probably our most striking jellyfish with its brown v-shaped markings and long trailing oral arms (see 'jellyfish bits') and tentacles, prefers the south and west coasts of Ireland. A good place to find them is on the beaches or in the shallow waters around the Dingle peninsula. Unlike the above jellyfish which have very specific habitats, the moon jellyfish can pretty much be found everywhere e.g. in harbours and estuaries and right across the Irish Sea. The mauve jellyfish (*Pelagia noctiluca*) is somewhat like the moon jellyfish but most commonly occurs on the west and northwest coasts of Ireland. It normally occurs in September/October when you don't expect to see jellyfish. This jellyfish is no bigger than a closed fist and has 8 tentacles (unlike the moon jellyfish which has hundreds). It can have a golden brown colour when very small, and a striking mauve/purple colour when adult. If you are lucky enough you may encounter large numbers of them emitting light (phosphorescent) as they crash onto our beaches with incoming waves.

Two jellyfish only arrive in our coastal waters and beaches after a prolonged period of strong south-westerlies or southerly gales. Both are very noteworthy and striking in appearance. The by-the-wind-sailor (*Velevella velella*) has a bluish oval disk about 8 cm in length (max) that is equipped with a 'sail' that projects above the surface of the water to catch the wind and aid its dispersal.



The moon jellyfish (Ailish Murphy)



Measuring a compass jellyfish (Ailish Murphy)



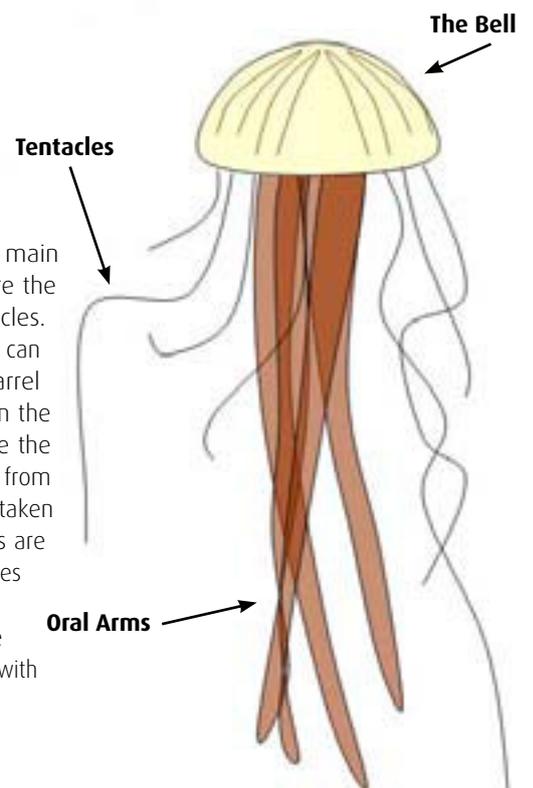
The by-the-wind-sailor (Tom Doyle)

The Portuguese man-o-war (*Physalia physalis*) looks like a purple balloon shaped like a Cornish pasty! This balloon or float can be up to 30cm long & 10cm wide and has lots of long trailing tentacles dangling underneath. This jellyfish is highly venomous.

There are many other types of jellyfish and indeed many other jellyfish like animals in our coastal waters. One of the more common types is the sea gooseberry (*Pleurobrachia pileus*) which belongs to a group of animals called ctenophores. These don't have any stinging capsules so don't sting. For more information about the different types of jellyfish please visit the EcoJel website ([www.jellyfish.ie](http://www.jellyfish.ie)) and download the freely available Jellyfish ID Card. EcoJel is a recently funded EU Project established to investigate the detrimental impacts and possibilities of jellyfish in our coastal seas. EcoJel welcomes any sightings of jellyfish in Irish coastal waters via its online jellyfish sighting form: [www.jellyfish.ie](http://www.jellyfish.ie)

## Jellyfish bits

A typical jellyfish has three main components or bits. These are the bell, oral arms and the tentacles. The bell is the main body and can be domed shaped as in a barrel jellyfish or very flattened as in the lion's mane. The oral arms are the feeding structures. They hang from the bell and can often be mistaken for the tentacles. The tentacles are generally fine hair like structures that hang from the margin of the bell. Both the tentacles and the oral arms have batteries of cells with stinging capsules.



# News from the Centre

## Growing the National Vegetation Database

Work continues on digitising vegetation data kindly given to the Centre by botanists and ecologists around the country. To date,



Slender cotton grass – *Eriophorum gracile* (John Conaghan)

over 16,000 relevés have been digitised into the National Vegetation Database including data from peatland, grassland, heath, woodland and freshwater. The most recently added include surveys of bog and dune vegetation. The bog data contains records of the rare bog cotton *Eriophyllum gracile* found in Sheheree bog Co. Kerry. The dune surveys were from locations around the west coast of Ireland. The National Vegetation Database will be an invaluable source

of information for people to access when complete. The data will provide valuable information for a future national habitat map, aid in the monitoring of habitats such as dune systems and the distribution of rare plants such as *Eriophyllum gracile* and will be a vital source of information for those making decisions on conservation issues.

## Alien Update

Submission of records for invasive species in Ireland is continuing and there are now 20,691 records for 88 species available through the National Invasive Species Database website: <http://invasivespecies.biodiversityireland.ie>.

A summary of the Invasive Species Survey to end of 2009 is now available on the website and includes a breakdown of the records received, distribution maps, targets for 2010 and a list of current Data Providers. This survey is ongoing and to get involved just visit the website. Recent Species Alerts issued on the website include:



**Water primrose** (*Ludwigia grandiflora*) officially identified in 2009 from a series of ponds in the south-west coast of Ireland. Please beware of what you purchase and introduce into your garden and do not dispose any unwanted aquatic plants into other watercourses.

A second invader has been identified from the River Dodder. Two



Common snapper in the River Dodder (Fintan Ryan)

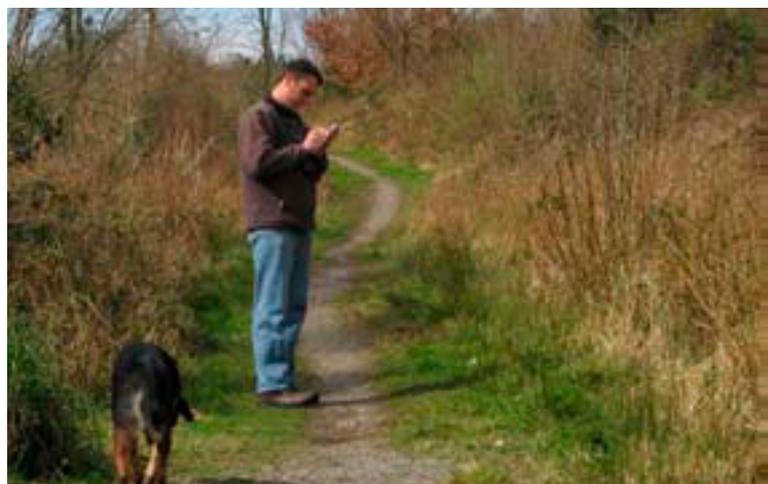
individuals of **common snapper** (*Chelydra serpentina*) were pictured in July 2008. The pictures sent to the Data Centre in late 2009 were officially identified by Prof. J. Davenport in UCC.

**Wild boar** (*Sus scrofa*) have been recorded and subsequently removed from many locations in the south-east. They are breeding and a litter of nine piglets was recorded

from one site. Although wild boar became extinct in Ireland in prehistoric times the environment has greatly changed since and they would now be considered an invasive/pest species and it is illegal to release them to the 'wild'.

**Muntjac deer** now mapped! 20 verified records have just been added to the database. There are currently a further 9 unconfirmed sightings being investigated.

If you see any of these species or others on the invasive species list please submit a record.



Rob Wheeldon walking his transect in county Leitrim (Fiona Farrell)



## Monitoring Irish Butterflies

**New volunteers needed!** 2009 was an interesting year for butterflies. Firstly, we had the painted lady migration which made national news and gave the butterfly monitoring volunteers an exciting start to the season. Then the weather deteriorated and it was difficult for most people to get out to record. Despite the weather, over 60 volunteers recorded throughout the monitoring period and the results have been very interesting.

The holly blue butterfly is known to fluctuate widely in numbers from year to year as a result of a parasitoid wasp and in 2009 the numbers recorded were extremely low compared with 2008. The wasp obviously had the upper hand last year! We're now heading into a new season of recording and we're excited to report that the Irish data is now contributing at a European level. This throws down the gauntlet for 2010 and we're hoping again to increase the number of transects. If you're interested in getting involved, please see our website for details of the scheme and upcoming workshops – [irishbutterflymonitoringscheme.biodiversityireland.ie](http://irishbutterflymonitoringscheme.biodiversityireland.ie).



Brown-lipped snail (*Cepaea nemoralis*) (Liam Lysaght)

## Ireland's snails threatened with extinction

One third of Ireland's snail, slug and bivalve fauna is under threat of extinction according to the recent Irish Red List by the National Biodiversity Data Centre in conjunction with the National Parks and Wildlife Service, the Northern Ireland Environment Agency, and the Conchological Society of Britain and Ireland. Ireland's non-marine mollusc fauna is of international importance.

There are 150 species in Ireland, ten of which have most of their global populations in Ireland. Important factors affecting the decline of these animals include deterioration of water quality and habitat loss across a spectrum of habitats. This Red List is an important document in assessing the conservation status of our fauna and providing a guideline for future conservation work. For the full publication, see [www.npws.ie](http://www.npws.ie).

## Databases recently uploaded to Biodiversity Maps:

- **Quantitative phytoplankton from Irish lakes (EPA)** – 3,275 records of 92 species
- **Millipedes of Ireland** – 4,834 records of 43 species
- **Microlepidoptera** (National Museum of Ireland) – 6,829 records of 547 species
- **Irish records from the Fungal Records Database of Britain and Ireland** – 14,321 records of 2,259 species
- **Ephemeroptera of Ireland** – 6,000 records of 34 species
- **Centipedes of Ireland** – 1,229 records of 26 species
- **Bryophyte data for Ireland from the British Bryological Society** – 118,826 records of 958 species



# Biodiversity connections

## Irish Climate Change Websites

**Encyclopedia of Life** – [www.eol.org](http://www.eol.org)

**Nature Watch** – <http://phenology.biodiversityireland.ie/>

**Nature's Calendar Ireland** – [www.naturescalendarireland.com](http://www.naturescalendarireland.com)

**Nature's Calendar Ireland** – <http://star.arm.ac.uk/nci/>

**Greenwave** – [www.greenwave.ie](http://www.greenwave.ie)

**EPA Climate Change** – <http://www.epa.ie/whatwedo/climate/>

**Phenology** – <http://www.tcd.ie/Botany/phenology/2010/>

**Department of Environment, Heritage and Local Government** – see <http://www.environ.ie/en/Environment/Atmosphere/ClimateChange/NationalClimateChangeStrategy/>

## 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](http://www.jellyfish.ie)
- **Seasearch Ireland** – [seasearchireland@gmail.com](mailto:seasearchireland@gmail.com)
- **Purse Search Ireland** – [www.marinedimensions.ie](http://www.marinedimensions.ie)
- **Irish Basking Shark Project** – [www.baskingshark.ie](http://www.baskingshark.ie)
- **ISCOPE** – (Irish Whale & Dolphin Group) [www.iwdg.ie](http://www.iwdg.ie)
- **Orchid Ireland** – [www.habitas.org.uk/orchidireland/](http://www.habitas.org.uk/orchidireland/)
- **Bird Atlas 2007-11** – [www.birdwatchireland.ie](http://www.birdwatchireland.ie)
- **Batlas 2010** – [www.batconservationireland.org](http://www.batconservationireland.org)
- **Butterfly Ireland** – [www.butterflyireland.com](http://www.butterflyireland.com)
- **Moths Ireland** – [www.mothsireland.com](http://www.mothsireland.com)
- **Lichen Ireland** – [www.habitas.org.uk/lichenireland](http://www.habitas.org.uk/lichenireland)

## Upcoming national events

<b>26-28 March</b>	Seabirds: Life on the Edge, BirdWatch Ireland,
<b>29 March – 1 April</b>	Postgrad ecology forum, University of Ulster, Derry.
<b>14 April</b>	'The changing flora of Ireland's bogs and eskers', National Botanic Gardens lecture
<b>16 May</b>	National Dawn Chorus Day
<b>22 May</b>	International Year for Biodiversity Day
<b>22 May</b>	BioBlitz, National Biodiversity Data Centre/National Parks and Wildlife Service/ Fingal County Council
<b>22 August</b>	Whale Watch Ireland 2010
<b>26-27 August</b>	4th Annual Recorder's Event 'Biodiversity Knowledge Quest – setting priorities for 2010', National Biodiversity Data Centre

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.

