



What is Biodiversity? 

Biodiversity is *the variety of all life forms on Earth*, from the tiniest micro-organisms in the soil, insects, birds and fish to the largest mammals on land or in the oceans, as well as the plants and habitats that sustain them.

Biodiversity is under threat and it is important that we take action to protect and conserve this essential resource for this and future generations.

Why is Biodiversity important to us?

Biodiversity is our life support system. All agriculture depends essentially on biodiversity, as do marine and freshwater food resources. Ecosystems breakdown wastes and recycle nutrients, filter and purify water, buffer against flooding, maintain soil fertility, purify air, and provide natural resources such as wood, textiles, and of course food.

Irish agriculture has many advantages over the production systems common in other countries in that **90%** of our agricultural land is grassland, which in itself is a good protector of soil and of soil biodiversity. The predominance of grassland makes Irish agriculture unique because that extensive, grassland based, agricultural production system offers a means of future, safe, sustainable, high quality food production.

The total land area in Ireland is 6.9 million hectares of which 4.3 million hectares is used for agriculture and 0.7 million hectares for forestry purposes. **With almost 75% of Ireland's land area devoted to agriculture and forestry, the sector has an enormous influence on biodiversity and can make a significant contribution to maintaining biological diversity and the healthy environment necessary to support it.**

The National Biodiversity Plan

The first National Biodiversity Plan (2002-2006), published by the Department of the Environment, Heritage and Local Government, identified over 90 actions deemed necessary to help halt the loss of Ireland's biodiversity. Thirty-nine of those actions fell within the remit of this Department under broad headings such as agriculture, forestry and conservation of genetic resources.

The mid-term review of the National Biodiversity Plan (2005) recognised the considerable progress made by the Department of Agriculture, Fisheries and Food in addressing the action points within its remit. Currently, this Department is involved in the preparation of the 2nd National Biodiversity Plan.

Some examples of the measures that promote biodiversity are given in the following sections, along with links to further information on the Schemes mentioned.

The principal areas by which this Department's measures enhance biodiversity include:

- The [Rural Environmental Protection Scheme](#) has been in operation since 1994 and rewards farmers for farming in an environmentally friendly and sustainable way. In addition to the basic management requirements, participants choose from a wide range of biodiversity options. REPS is now closed to new applications and will be replaced in 2010 by a new agri-environmental scheme.
- The new [Agri-Environment Options Scheme](#) launched in March 2010 includes a wide range of biodiversity options which will be familiar to farmers from REPS3 and REPS4. It differs from REPS however, in that it is not a whole farm undertaking.
- The [Organic Farming Scheme](#) (relaunched January 2010) supports organic production methods that are environmentally friendly and sustainable. Organic farming methods benefit biodiversity and respect the countryside;
- The [Forest Environment Protection Scheme \(FEPS\)](#) was introduced 2007 to target REPS farmers and was designed to encourage the establishment of high nature-value woodlands.
- All forest operations in Ireland are carried out in compliance with the principles of [Sustainable Forest Management \(SFM\)](#), which meets high environmental, social and economic standards. SFM is implemented through the Forest Service Inspectorate, a National Standard, a Code of Best Forest Practice and a suite of environmental and forestry practice guidelines which includes **Forest Biodiversity Guidelines**;
- Forest ecologists are employed by both Coillte and the Forest Service of the Department;
- The implementation by the Department of Agriculture, Fisheries and Food of a co-ordinated programme for the conservation and utilisation of Genetic Resources for food, forestry and agriculture is overseen by a [National Advisory Committee on Plant and Animal Genetic Resources](#);
- The completion of over 4000 **Commonage Framework Plans** in a joint DAFF/NPWS undertaking. The Plans are assessments of the environmental status of upland and other common lands and include prescriptions to permit the recovery of environmental damage, such as that caused by overgrazing;
- There are general obligations under the Single Payment Scheme to keep land in **Good Agricultural and Environmental Condition (GAEC)**, as well as very specific obligations to comply with the relevant legislation implementing EU Directives on birds, habitats, nitrates and groundwater.

➔ See below for detailed information of these measures.

[Click here for OTHER DEVELOPMENTS](#)



Rural Environment Protection Scheme (REPS)

The **Rural Environmental Protection Scheme** (REPS) rewards farmers for farming in an environmentally friendly and sustainable way. Under REPS4, farmers chose from a much wider range of farm management options designed to enhance biodiversity. These options were in addition to the basic environmental management requirements of the Scheme.

- **Traditional Hay Meadows:** allowing flowers and grasses to produce seed to benefit wildlife [Measure 2: Option 2A]
- **Increasing Watercourse Margin:** improves water quality by protecting river margin from livestock damage, protects vegetation and allows insect life to flourish creating a food source for fish [Measure 3: Option 3A]
- **Nature Corridors:** protection and enhancement of field margins, which are an important source of plant diversity and wildlife habitat [Measure 4: Option 4C]
- **Hedgerow Maintenance:** hedgerows retained and managed, cutting is prohibited during the bird nesting season (Mar 1st – Aug 31st) [Measure 5]
- **Traditional Irish Orchards:** creation of orchards with native Irish apple varieties protects this unique genetic resource [Measure 8: Option 8A]
- **Conservation of Rare Breeds:** Assisting farmers to rear animals of specific breeds native to Ireland, which are in danger of being lost to farming (Supplementary Measure 3)
- **LINNET Habitats** (Land Invested in Nature, Natural Eco-Tillage) planting small plots of cereals in grassland areas as a source of over wintering food for finches and other bird species [Supplementary Measure 5]

All participants in REPS must carry out their farming activities for a five-year period in line with an **agri-environment plan** prepared in accordance with the Scheme specifications. Participants in REPS4 are required to undertake 11 basic measures and, in addition, they must pick two Biodiversity options (*from a list of 24 options available*). The wide range of options ensures that suitable options are available to any farm holding throughout Ireland. Additional Supplementary Measures offer a top-up payment to farmers who agree to further environmental undertakings – e.g. where an endangered species such as the Corncrake is present.

Other REPS measures enhance and protect biodiversity generally and benefit bird populations particularly through preserving habitats and food supplies, e.g. measures dealing with hedgerows, habitats, field margins, and biodiversity options such as nature corridors, species-rich grassland, tree planting and environmental management of set-aside. ➔ **Further information on REPS can be found on the [home page](#)**

Agri-Environment Options Scheme (launched in 2010)

The new Agri-Environment Options Scheme consists of a wide range of biodiversity-enhancing actions from which farmers may choose to suit their own farming systems. Many of the 18 options available will be familiar to REPS' participants where they appear as biodiversity options or supplementary measures.

➔ **Further information on the Agri-Environment Options Scheme can be found on the [home page](#)**



Organic Farming Scheme (re-launched 2010)

Organic farming places a strong emphasis on environmentally friendly and sustainable farming practices, with particular concern for animal welfare. Organic farms rely on home-produced compost, manures and animal feeds and external inputs are kept to a minimum.

It encourages and protects animal and plant wildlife (crucial in developing balanced and productive soil conditions) by creating suitable habitats, and by minimising the use of chemical fertilisers and pesticides. Such wildlife plays a major role in warding off pests and diseases. In addition, the use of genetically modified organisms (GMOs) is not permitted in organic production.

➔ **Further information on the Organic Farming Scheme can be found on the [home page](#)**



Forest Biodiversity

Forests provide habitats for a wide variety of flora and fauna. Ireland's forest cover is 10.41% (2006) as opposed to the European average of 38%. Research funded by COFORD in the completed BIOFOREST research programme has shown that establishing new forests and management practices in existing forest areas contribute to biodiversity enhancement.

Biodiversity within Sustainable Forest Management (SFM)

Forces such as climate change, the energy agenda and biodiversity are increasingly impacting on forestry policies throughout the world. As forests are reservoirs of carbon, providers of habitats and sources of renewable fuel, the need for sustainable forest management has never been greater. In Ireland the maintenance and enhancement of biodiversity is being pursued within the context of SFM, of which biodiversity forms an essential component.

Forest Biodiversity Guidelines

The Forest Biodiversity Guidelines apply to all forest operations and focus on how best to conserve and enhance biodiversity in Irish forests, through appropriate planning, conservation and management. The Forest Biodiversity Guidelines require approx **15% of the forest area to be treated with particular regard to biodiversity**. With careful planning and appropriate management, open spaces and retained habitats will maximise the range of plant and animal communities present within the forest.

A set target of 30% annual broadleaf afforestation will remain in place under the Rural Development Programme 2007-2013.

Forest Environment Protection Scheme (FEPS)

The Forest Environment Protection Scheme was introduced under the Rural Development Plan 2007-2013. The Scheme's main objective is to encourage the establishment of high nature value forestry on farms which participate in REPS. Farmers planting under FEPS must adhere to enhanced environmental objectives, which focus on biodiversity, habitats, species mix, environmental impact and visual considerations.

The **Native Woodland Scheme (NWS)** is aimed at encouraging the proactive protection and expansion of Ireland's native woodland resource and associated biodiversity using appropriate close to nature silviculture. There are two separate elements to the NWS, namely Element 1 Native Woodland Conservation and Element 2 Native Woodland Establishment. A Native Woodland Scheme Manual was developed which sets out the procedures and standards specific to the NWS.

Native Riparian Woodlands – A Guide to Identification, Design, Establishment and Management

The Forest Service and Woodlands of Ireland are developing a series of information notes to address key issues relating to native woodland ecology and management and complement the Native Woodland Scheme. Information Note No. 4 provides guidance on the identification, design, establishment and management of native riparian woodlands. Topics covered include the ecological and protective functions of riparian woodlands, the different native woodland types and practical issues covering the management of existing native riparian woodlands, the restoration of riparian woodlands and the establishment of new woodlands. An information note on the establishment, design and stocking densities of new native woodlands (Information Note No. 5) was published in 2009. **Copies of the information notes are available from Woodlands of Ireland, Seismograph House, Rathfarnham Castle, Dublin 14. Tel: 087-6685823 E-mail: woodsofireland@iol.ie**

The importance of our native woodlands is also recognised in the **Native Woodland Survey** (completed 2008), funded by the Forest Service and National Parks and Wildlife Service (NPWS) and in the Coillte Life project "**Restoring Priority Woodland Habitats in Ireland**" (LIFE05/NAT/IRL/000182) (www.woodlandrestoration.ie).

Forestry and Freshwater Pearl Mussel Requirements

Ireland supports 46% of the EU Freshwater Pearl Mussel (FPM), *Margaritifera margaritifera* individuals. The species lives in rivers and streams and requires water of the highest quality. It is currently in serious decline throughout the island of Ireland and the rest of Europe and is regarded as possibly Ireland's most endangered animal species. Ireland also has the only known population of *Margaritifera durrovensis*, which is in serious decline. Both sedimentation and nutrient enrichment from a variety of land uses and other activities have contributed significantly to the decline of both species.

To further develop its commitment to environmental protection, the Forest Service, together with NPWS and Coillte Teo, has developed the *Forestry and Freshwater Pearl Mussel Requirements - Site Assessment and Mitigation Measures*, in order to assist in the protection and conservation of the freshwater pearl mussel and its habitat. The *Requirements* apply to all forest activities within identified portions of the catchments of Freshwater Pearl Mussel populations in rivers designated candidate Special Areas of Conservation (cSACs) for the species.



Native Forest Mammals

Work supported by Forest Service and COFORD is examining ways to conserve two native mammal species, the red squirrel and pine marten in forest habitats in Ireland.

Pine Marten in Forest Habitats

Pine martens are dependent on semi natural woodland, managed forest and/or scrub habitat. The most extensive potential habitat for the species in Ireland is managed commercial forests. However, the extent to which such commercial forests are capable of sustaining breeding populations is uncertain and the impacts of forest operations are not understood. In order to answer some of these questions the Forest Service funded the "National Pine marten Survey of Ireland – Socio-spatial Ecology and Habitat Selection of Pine Marten in Upland Coniferous Forests". This was the first large-scale investigation of pine marten spatial ecology and habitat selection in Ireland. The results suggest that pine martens are habitat generalists, utilising the habitats that are available. However, the results also indicate that micro-scale features and/or the structural attributes of the forest influenced pine marten breeding and resting sites. Resting sites were largely associated with areas that were structurally diverse and patchily distributed throughout the conifer plantations.

Red Squirrel Conservation - CRISIS Project (*Combined Research and Investigation of Squirrels in Irish Silviculture*):



The CRISIS Project, funded by the Forest Service from 2005 continues to follow-up on key recommendations in the report that was published as part of the initial work programme. Actions include:

- Ongoing promotion of public awareness on the threats posed by the grey squirrel to the broadleaved estate and the related issue of the conservation of the native red squirrel population;
- Management of a pilot trap loan scheme in a number of areas across the

country in order to contain the spread of grey squirrels.

A **Red Squirrel Education Pack** was produced as part of the educational and awareness aspects of the CRISIS project and is jointly funded by the Forest Service, Department of Agriculture, Fisheries and Food and the National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government. This pack was circulated to all secondary and primary schools in early 2009. Further work on the programme is expected in 2010.

Annex IV species and forestry:

Both the **Kerry slug** and **otters** are listed in Annex IV of the Habitats Directive and require strict protection as detailed in Article 12 and 13 of the Habitats Directive. This makes it an offence to deliberately disturb the species or damage or destroy its breeding or resting place wherever it occurs. Forestry has been identified as an activity with the potential to impact on these Annex IV species. Consequently the Forest Service produced two new guidelines in 2009, namely Forestry and Kerry Slug Guidelines and Forestry and Otter Guidelines. These Guidelines were developed by the Forest Service in consultation with National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government.

The Guidelines describe the species' ecology, the potential impacts of forestry, and the procedures and methods to protect the species during all Forest Service grant aided, approved or licensed activities.

These guidelines are available on the Home Page:

<http://www.agriculture.gov.ie/forests-service/forests-service-general-information/kerryslugandotterguidelines/>

The Forest Service in conjunction with National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, published a leaflet on Bats and Forestry. This leaflet gives some general information on bats, their protection in Ireland, their relationship with forestry and good practice guidance for bat-friendly forestry in Ireland. These guidelines are available on the Home Page:

<http://www.agriculture.gov.ie/media/migration/forestry/publications/BatsAnd%20ForestryLeaflet040210.pdf>

The National Forest Inventory (NFI)

In 2007, the Forest Service published the results of Ireland's first National Forest Inventory (NFI) which highlights the ecological importance of the forest estate, which now covers 10% of Ireland's land area. The purpose of the NFI was to record and assess the current extent, state and composition of Ireland's forest resource, both public and private, in a timely, accurate and reproducible manner. During 2010 remeasurement is due to begin. Changes in the NFI plots between first and second assessments will facilitate the monitoring of sustainable forest management in particular it will provide information, in relation to: deadwood, species composition, plant diversity and forest structure, vegetation and lichens, forest health and vitality.

➡ *Further information on FEPS and other Forest Service actions can be found on the [home page](#).*

The European Forest Genetic Resources (EUFORGEN) Programme

The European Forest Genetic Resources Programme is a collaborative initiative among European countries to promote conservation and sustainable use of forest genetic resources as well as protect and promote forest biodiversity. It was established in October 1994 to implement the Strasbourg Resolution S2 on the conservation of forest genetic resources of the first Ministerial Conference on the Protection of Forest in Europe (MCPFE), held in France in 1990.

EUFORGEN is financed by the participating countries, of which there are currently 32 and is coordinated by the International Plant Genetic Resources Institute (IPGRI) in collaboration with FAO. The EUFORGEN Steering Committee is composed of National Coordinators nominated by the participating countries and has the overall responsibility of the programme. Ireland has been a member of EUFORGEN since 1998 and the Forest Service supports membership financially, while the programme is serviced by COFORD (*Council for Forest Research and Development*) in cooperation with the Forest Service.

In 2003, the fourth Ministerial Conference again highlighted the importance of forest genetic resources as part of Vienna Resolution V4 on conserving and enhancing forest biological diversity in Europe. Based on this resolution and on the new MCPFE Work Programme, the EUFORGEN Steering Committee endorsed a third phase of the programme to promote the conservation of forest genetic resources as an integral part of sustainable forest management from 2005 to 2009 and continue the pan-European collaboration in this area.

During Phase III, EUFORGEN will initiate new activities to implement Resolution V4 while at the same time continue to implement Resolution S2. The EUFORGEN Steering Committee has identified the following objectives for Phase III as follows:

- Promote practical implementation of gene conservation and appropriate use of genetic resources as an integral part of sustainable forest management;
- Facilitate further development of methods to conserve genetic diversity of European forests;
- Collate and disseminate reliable information on forest genetic resources in Europe

EUFORGEN plans to intensify its collaboration with national level initiatives such as national forest programmes, to meet these new objectives during Phase III. It will continue to operate through Networks, which bring together policy makers, managers and scientists to exchange information, discuss needs and develop practical ways to integrate gene conservation into sustainable forest management. Since January 2005, EUFORGEN has launched a new thematic Network on Forest Management and the species-orientated work will continue through three networks namely: (1) The Conifers Network; (2) The Scattered Broadleaves Network and (3) The Stand-forming Broadleaves Network. In addition, a new Information Working Group will be established to support all EUFORGEN Networks in their effort to collate and disseminate reliable information on forest genetic resources in Europe.

Over the past ten years, EUFORGEN has actively facilitated pan-European collaboration on forest genetic resources and has also contributed to several initiatives in this area. This collaboration has resulted in a number of positive outcomes as follows:

- Development of long-term gene conservation strategies in European forests.
- Establishment of technical guidelines for genetic conservation of forest trees
- Revised distribution maps of forest tree species
- Development of descriptor and databases
- Facilitated exchange of genetic material
- Helped the dissemination of relevant information
- Supported the publication of information and public awareness material
- Led to the standardisation of approaches to gene conservation strategies in European forests.

Furthermore, the work of EUFORGEN has helped many European countries to strengthen their national efforts on forest genetic resources and has created a useful platform for pan-European collaboration. EUFORGEN has also contributed to the development of new programmes and policies at the European Union level as well as bilateral projects on forest genetic resources in Europe and other parts of the world.

Forest Research: BIOFOREST - new ways of assessing and managing forest biodiversity

In order to promote forest biodiversity and Sustainable Forest Management (SFM) it is necessary to know what organisms are associated with forest plantations, and what conditions the manager should try to attain.

Against this background the EPA and COFORD (Council for Forest Research and Development) co-funded the **BIOFOREST Research Programme** which ran from 2001 to 2006. The aims were to provide basic information on biodiversity in Irish plantation forests, illustrate the effects of different aspects of management on biodiversity within forests with the overall objective to update forest policy and practice in relation to biodiversity issues.

The BIOFOREST research team was comprised of the Department of Zoology, Ecology and Plant Sciences UCC, the Department of Botany TCD and Coillte. The study included three main species: spiders, hoverflies, birds and plants. The individual projects concluded in general that forest plantations can make a significant positive contribution to biodiversity in the landscape if properly planned and managed, and can have a negative effect if not. Fifty-seven recommendations were made as a result of the project, addressing different aspects of forestry, from strategic planning to localised planning and practice. The recommendations are being considered by the Forest Service in the formulation of forestry measures under the new Rural Development Programme 2007-2013.

While the BIOFOREST Programme provided much needed basic information on the biodiversity of Irish forest ecosystems a number of important subjects were outside the scope of that programme. These included the study of biodiversity of reforested and intimately mixed plantations, of native Irish woodlands and more generally, of forest canopies. The new PLANFORBIO Programme 2007-23 aims to address these fundamental gaps in our knowledge and also to conduct specific studies on Hen Harrier conservation, the control of *Rhododendron ponticum* as well as determining the diversity of soil decomposers and predatory and parasitic arthropods in Irish forests.

Plant and Animal Genetic Resources

A number of stakeholders including State, Universities, Research Stations and Non Government Organisations avail of the Department of Agriculture, Fisheries and Food's annual grant aid scheme to promote the conservation and sustainable use of plant and animal genetic resources for food and agriculture. In 2010, €150,000 is available to fund qualifying projects through this grant aid scheme.

➔ Details on this scheme are available at

<http://www.agriculture.gov.ie/ruralenvironment/geneticresources/conservationofgeneticresourcesforfoodandagriculture/>



Plant Genetic Resources

Projects funded through the aforementioned grant aid scheme to various national stakeholders in 2009 ranged from field programmes to characterise native Irish cereal collections to 3 different countrywide projects to collect native Irish Cherry, Willow and Cereal Crop thatching landraces for long term conservation. Other projects supported included a laboratory based project to assess the genetic diversity of native Irish brassica species using complex genotype DNA profiling methods, and a separate initiative supported was the compilation of a priority list of crop wild relatives for conservation in Ireland.

Outside of the grant aid scheme DAFF has also supported small projects put forward by environmental NGO's in specific areas of plant genetic resources (see section below). In addition DAFF maintains important reference collections of important Irish cereal and potato varieties in its field stations in Backweston, Kildare and Raphoe Donegal respectively.



Animal Genetic Resources Projects

A wide range of projects that support Animal Genetic Resources has been funded by DAFF through the **Advisory Committee on Genetic Resources** for Food and Agriculture in recent years, including the following projects:

- *Breed society websites for the Kerry Cattle Society, Kerry Bog Pony Society and Galway Sheep Breeders Society;*
- *Characterisation of the Dexter, Irish Draught and Connemara breeds.*
- *Collection and storage of genetic material from Kerry and Irish Moiled cattle, Irish Draught horses and Galway Sheep;*
- *Molecular characterisation of native Irish goat populations..*
- *Conservation work on Irish Strains of honeybees*
- *Seminar on breeding and conservation of the Galway Sheep*

Ireland now has a national database for farm animal genetic resources at www.efabis.ie. This online database operates as a communication and information tool that provides the user with a searchable database of breed related information, management tools and a library for references, links and contacts. It provides Ireland with a secure means to control the entry, updating and accessing of its national breed data.

Protecting Irish Crop Diversity - Global Seed Vault, Norway



The **Svalbard Global Seed Vault**, located in Norway, was established to preserve a wide variety of plant seeds from locations worldwide. It holds duplicate samples of seeds held in global genebanks, as well as a refuge for seeds in the case of large scale regional or global crises.

As part of Ireland's international commitment to maintain a broad plant genetic resource base for future needs, Minister of State, Mr. Trevor Sargent T.D. launched an official deposit of Irish agriculture seeds to the Global Seed Vault in February 2009. This deposit consists of some of the most important Irish seeds in the reference collections of Teagasc and DAFF. Almost two-thirds of a million seeds (e.g. Ireland's forage grasses, potatoes, wheat, oats and barley collections) will be deposited at Svalbard's, Global Seed Vault which is a major asset to the world seed community in their collective efforts to protect global agricultural crop diversity. The Global Crop Diversity Trust funds the operation and management of the Seed Vault. The Irish Government has committed to assisting initiatives such as this by the Global Crop Diversity Trust through a regular annual contribution of €1 million to the Trust from Irish Aid over the past 3 years.

Biodiversity/Conservation Projects supported by DAFF



High Nature Value (HNV) Farmland

High Nature Value (HNV) farming is low intensity farming that supports a high diversity of habitats or species or species of conservation concern. In 2009, DAFF assisted the Heritage Council in a case study on HNV farming in the Aran Islands and parts of Connemara. This may lead to further follow-up studies.



Wild Turnip (*Brassica Rapa*) Project

From 2008, DAFF assisted NUI Maynooth in a project to provide valuable information on the genetic diversity of *Brassica Rapa*, the native wild varieties of cultivated oilseed rape. This will contribute to an understanding of how different crop management regimes (conventional, organic and GM) might co-exist. Given the growth in commercial oilseed rape cultivation in Ireland in recent years (currently c. 3000 ha) and the possible threat this poses to the biodiversity of wild rape species, this is a timely project to provide valuable information on the species' current genetic diversity.



Irish Plant Genetic Resources Project

DAFF is currently assisting Genetic Heritage Ireland in a project to create a database of Ireland's agriculturally important plant genetic resources. The database will provide up-to-date information on rare and/or endangered species. The project also aims to identify information gaps to help in prioritising future conservation efforts.



Barn Owl Research Programme

The Barn Owl has undergone a significant decline in numbers in recent times. They are a Red-listed *Bird of Conservation Concern In Ireland* due to a decline of over 50% in their population during the past 25 years. Since 2005, DAFF together with the National Parks and Wildlife Service and the Heritage Council have assisted BirdWatch Ireland in an on-going Barn Owls Study. This study seeks to identify the main causes for its decline. Factors that have been implicated in their decline are a general loss of suitable habitat and nest sites, increased use of harmful rodenticides, expansion of major road networks and a number of severe winters.

See www.birdwatchireland.ie for further information.

Secondary Schools Initiative – “Science and Technology in Action”

“Science and Technology in Action” is published as a teaching aid for second level science teachers. STA lesson plans cover science-related topics and are professionally designed to encourage interest in science subjects and provide examples of the practical application of science in industry or other organisations. In recent years, DAFF has sponsored the development of *Science and Technology in Action* lesson plans on the topics of biodiversity and plant/animal genetic resources, with emphasis on the contribution that agriculture, and especially organic farming, can make to its conservation.

See www.sciencetechnologyaction.com for further information.



Projects funded by DAFF under the Research Stimulus Fund Programme



The Department of Agriculture, Fisheries and Food's Research Stimulus Fund (RSF) is funded under the National Development Plan 2007-2013. Funding is provided on a competitive basis to Irish research institutes for 'public good' agricultural production related research. The main aims of the programme are to facilitate research that fills gaps in the mainstream programme and to support sustainable and competitive agricultural production practices and policies.

Funding in excess of €43m has been provided in 2005, 2006 and 2007 in respect of 85 projects in a range of areas which included Biodiversity research. *(A full list of RSI Programme Awards can be found on the home page under the "Research" link).*

INSTITUTION INVOLVED	PROJECT
<i>2006</i>	
Teagasc RERC, Teagasc Johnstown, NUIG	Exploring the effect of policy reform on the economic, social and environmental sustainability of Irish Farms
UCD, DAFF Johnstown, UL	Agri-Baseline: This agri-environmental research project will run from 2006 to 2010. Its objective is to create an agri-environmental baseline that will provide a range of data against which changing Irish agri-environmental conditions can be evaluated. Agri-Baseline will assess a range of agri-environmental indicators; including habitat quality, biodiversity, nutrient inputs and agronomic indicators measured at farm, field and landscape scales. The study will focus on predominantly grassland/livestock farming of varying intensity and participation in REPS (Rural Environmental Protection Scheme).
Teagasc Johnstown Castle, UCC, UCD	An evaluation of existing and potential measures to sustain an increased biodiversity and water quality on Irish farms
Teagasc Oakpark & Kinsealy, IT Carlow	Managing bumblebee imports to maintain pollinator diversity and increase efficiency in horticultural production
<i>2007</i>	
NUIG	An ecological economic analysis of agrobiodiversity in the Irish uplands
Teagasc, UCD, TCD	Precision pasture management: impacts on weed control and implications for biodiversity
Teagasc, NUIG	A review of evidence for agri-environmental measures to create and enhance farmland habitats

DAFF Biodiversity Unit – Johnstown Castle Estate, Co. Wexford

The DAFF Biodiversity Unit was set up in 2004, in line with recommendations in the first National Biodiversity Plan (NBP) published by the Department of Arts, Heritage, Gaeltacht and the Islands. The role of the Unit is to act as a contact and coordination point for biodiversity policy issues within the Department and to help ensure the integration of biodiversity into the Department's policies and activities.



Johnstown Castle Joint DAFF/NGO Biodiversity Project

In 2006, DAFF commenced a joint project with a number of Environmental NGOs to enhance the biodiversity value of the site of the DAFF buildings at Johnstown Castle. Based on the recommendations of the ENGO representatives, a number of measures have been undertaken, such as changes to management practices, planting of native species and the creation of species-rich meadow and pond habitat areas.



For further information contact:

Biodiversity Unit
Department of Agriculture, Fisheries & Food, Johnstown Castle Estate, Wexford
Tel: 053 9163416 / 9163466

Ireland's Public Awareness Campaign for Biodiversity – "Notice Nature"

In 2007, the then Minister for the **Department of Environment, Heritage and Local Government**, Mr. Dick Roche, TD, launched Ireland's first public awareness campaign for biodiversity, in order to promote greater awareness of the importance of our natural environment and to promote action to ensure its future health.



Biodiversity and Climate Change

Most climate change models make predictions on European or Global scales and it is more difficult to predict how specific trends may impact on Ireland. Indications are that Ireland may experience an increase in the average temperature across the country during both the summer and winter. Small changes in temperature could cause huge impacts on many of our native species and habitats. Warmer weather or altered rainfall patterns may cause the loss of certain species over time and possibly the increased spread of unwanted species e.g. invasive alien species. We may also see changes in the life cycles of plants, mammals, insects, and birds. Evidence of changing life cycles has already been seen in some insects and in the international migratory patterns of birds. Ongoing work to refine regional climate models will give a clearer picture of the likely impacts on the Irish climate and will provide better information on parameters that are likely to affect biodiversity.

For further information on biodiversity and climate change, check out the websites, www.change.ie and the Notice Nature website, www.noticenature.ie