



## Biodiversity Action on Industrial Sites BAIS

*Integrating environmental  
excellence into corporate  
strategy through good science.*



*A collaboration between the University of Ulster,  
Conservation Management System Partnership,  
European Union Life-Environment Programme and*

DuPont (UK) Ltd  
Derry City Council  
Llechwedd Slate Mines  
Texaco Ltd  
ESB Tarbert Generating Station

DuPont (Iberica) SL  
Lagan Group  
Gwynedd Council  
Freudenberg Nonwovens LP

## *Summary Report*

to

European Commission DG ENV D.1

**Project LIFE98 ENV/UK/00583 Biodiversity Action on Industrial Sites**

by

Alan Cooper & Graham Nevin

School of Biological & Environmental Sciences, University of Ulster,  
Northern Ireland, UK.



October 2003



## Table of contents

What is the Bais Project?	3
How was the project done?	4
The industrial partners	4
Field work	5
Writing management plans	5
What were the results	6
Habitats and species found	6
Benefits to industry	6
Difficulties encountered by industry	8
Biodiversity management best practice	9
Where to find more information	9

References

## What is the BAIS Project?

The European Community LIFE (Financial Instrument for the Environment) scheme provides funds to support the development and implementation of Community environmental policy. LIFE-Environment demonstration projects are designed to promote sustainable development in industrial activities.

*Biodiversity Action on Industrial Sites* is a LIFE-Environment project designed to demonstrate how industrial sites can contribute to wildlife conservation (European Community 1998).

### **“Biodiversity describes the variety of life on earth”**

The project used a computer-mediated *industrial Conservation Management System (iCMS)* to generate biodiversity management plans, record actions and monitor their effectiveness. This summary report describes the project and demonstrates that biodiversity management benefits wildlife and industry.

**“Wildlife habitats found on industrial land are important because they support a wide range of plant and animal species. To maintain site biodiversity, the habitats need to be managed otherwise loss can occur through poor land use or abandonment.”**

## How was the project was done?

### The industrial partners

The project was carried out on nine industrial sites, located in Eire, England, Northern Ireland, Spain and Wales.

Project partners were:

**DuPont (UK) Ltd:** a synthetic fibre plant at Maydown, County Londonderry, Northern Ireland, situated on the River Faughan estuary.

**DuPont (Iberica) SL:** a chemical plant at Vale de Tamon, in rural countryside near Asturias, Spain.

**Derry City Council:** a landfill site at Culmore near Londonderry, Northern Ireland.

**Lagan Holdings Ltd:** a working quarry and landfill facility at Black Mountain, fringing the Antrim hills above urban West Belfast.

**Gwynedd County Council:** the Parc Menai Business Park with light industry set in parkland near Bangor, North Wales.

**Cynefin Environmental Consultants:** a mine complex at the Llechwedd Slate Mines, Blaenau Ffestiniog, North Wales.

**Texaco (UK) Ltd:** an oil refinery, Milford Haven, South Wales. Part of the site is designated as a statutory Site of Special Scientific Interest.

**Electricity Supply Board (ESB):** a heavy fuel oil powered electricity generating station at Tarbert, County Limerick, Eire on the river Shannon estuary.

**Freudenberg Nonwovens LP:** a rural Yorkshire Dale site on the fringe of the Pennine hills at Greetland in England.



## Field work

Initially, the project field team visited each site to identify the key biodiversity features, discuss industrial issues with senior managers and to establish safety and access procedures. The initial visit was also to identify members of the local community and organisations who could be involved in an biodiversity site advisory group.



### **The DuPont Maydown site**

Field survey was carried out to map wildlife habitats (NCC 1990, EEA 2002). Records of key species and environment attributes were also made. All the information was held in an *iCMS* database along with industrial and business constraints such as safety corridors, exclusion zones and sites for future development.

## Writing management plans

*Biodiversity Management Plans* were written for each site, based on the iCMS database and its management plan guidelines.

**“A *Biodiversity Management Plan* is the framework within which conservation management of a site is planned and carried out.”**

To summarise the main features of the plans, *Conservation Strategy Documents* and *Industrial Biodiversity Action Plans* were produced.

**“A *Conservation Strategy Document* is a statement of industrial conservation policy for the site, agreed by the senior industrial manager.”**

**“An *Industrial Biodiversity Action Plan* lists the key projects proposed. It is aimed at senior industrial managers, employees, regulatory bodies, local authorities or community groups.”**

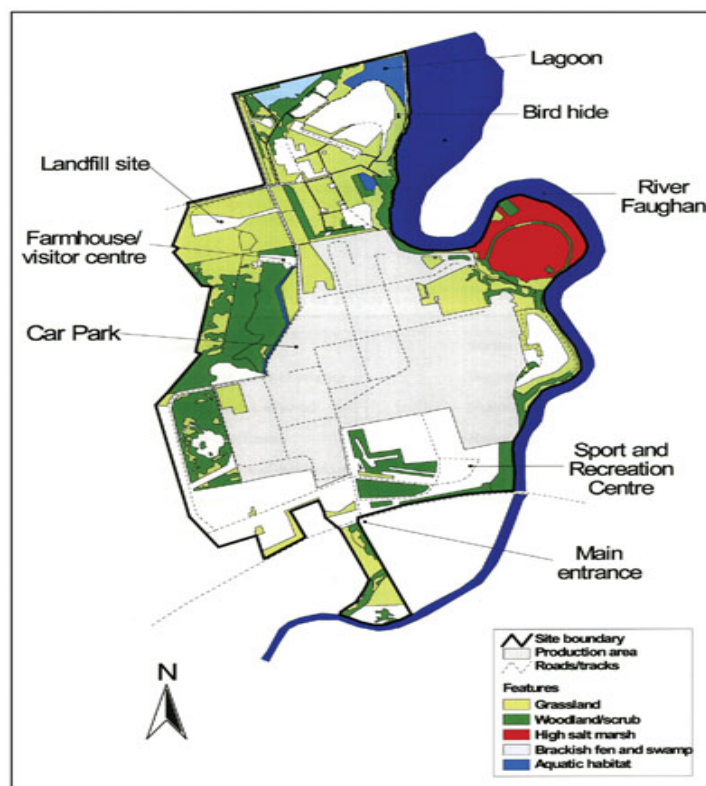
## What were our results?

### Habitats and species found

Important habitats recorded were:

- broadleaf woodland and scrub
- saltmarsh, inter-tidal mud-flats, reedbeds and shingle beach
- fen carr, swamp and open water
- species-rich grassland
- lowland heath
- raised bog and blanket bog
- cliff ledge and scree vegetation

Endangered bird species such as ringed plover, lapwing, redshank, heron, and peregrine falcon were recorded, along with rare bat species.



A simplified habitat map of the Maydown site



## Benefits to industry

Biodiversity projects carried out on some of the sites before the BAIS programme began were largely costly and often failed. This was because they were usually uncoordinated and initiated without sufficient field ecological assessment. A professional approach to field survey is integral to the iCMS approach.

Projects developed from the structured management plans of the iCMS-mediated BAIS programme resulted in successful biodiversity conservation and had direct economic gains and other indirect gains. The greatest cost savings were most easily demonstrated at the planning stage of new industrial development or site remediation projects.

### Successful projects included:

- **The frequency of industrial grass-cutting operations was modified to encourage birds and insects.**
- **Native tree planting and natural regeneration were introduced to diversify scrub habitats and to save on the cost of screening industrial structures.**
- **Water levels in bog and marsh habitats were stabilised to restore them and to provide a safety buffer against materials spills.**
- **Plant pest species such as Japanese knot-weed and Eucalyptus were targeted for eradication to prevent spread and to reduce future fire hazards.**
- **Industrial spoil tip remediation was carried out to create lime-rich lagoons as marsh and bird habitat. This reduced the costs of spoil engineering and earth-moving.**
- **Herbicide use around pipelines and industrial roads was protect habitats and save on maintenance costs.**
- **Tenant farmers were asked to carry out agri-environment measures to encourage wildlife.**

The most successful partnerships were those where the BAIS programme helped to meet existing company environment objectives. Environmental projects with high public relations value or local community benefit were accepted more readily by industrial managers.

**Companies whose environmental objectives were enhanced by BAIS included:**

- **DuPont. The iCMS plans made a significant contribution towards achieving Wildlife Habitat Council accreditation.**
- **Lagan Group. At the Black Mountain quarry, the biodiversity management plan helped to meet local criticism over environmental impact.**

The iCMS-derived management plans gave opportunities for remediating past environmental damage, contributed to site safety and reduced the environmental impact of industrial development. Other gains were from demonstrating sustainable biodiversity to planning authorities. There was also increased employee satisfaction and morale.

## **Difficulties encountered by industry**

Industry was keen to set land aside solely for wildlife but not if it would constrain business. Unlike nature reserves, company priorities are for industrial success and a corporate environment policy focussed on compliance with legislation. Priorities for site management are safety, security, access, maintaining infrastructure and preserving future development potential.

For industrial biodiversity management to succeed, it is crucial to gain the confidence of the senior industrial management team by demonstrating the industrial benefits. A major strength of iCMS is that its structured approach to planning and management optimises the biodiversity and industrial gains.

## “The *i*CMS model emphasises the need for practical site management based on sound science.”

Because industrial involvement in wildlife habitat management is voluntary, there is no guarantee of continuity for the biodiversity they contain. Linking biodiversity management plans to industrial environmental policy is therefore important. It makes plan implementation less vulnerable to staff changes and the loss of key individuals. The commitment of senior management also reduced the likelihood of changed industrial priorities affecting wildlife management projects.

### Biodiversity best practice

The Industrial *Biodiversity Management Plans* produced for the nine industrial sites are considered to be examples of *i*CMS best practice. The *industrial Biodiversity Action Plans* and *Conservation Strategy Documents* derived from the management plans are examples of how to communicate biodiversity objectives and projects to industry.

Unless there is legislation or grant-aid, the industrial case for wildlife habitat management rests on economic savings and indirect gains. Funding industrial biodiversity action through grant-aid or subsidies similar to environmentally friendly farming schemes, linked to *i*CMS-mediated management plans would facilitate progress. Establishing a European Community industrial biodiversity accreditation scheme would contribute to maintaining accepted standards.

## Where to find more information

Biodiversity Action on Industrial Sites

<http://www.ulst.ac.uk/faculty/science/nrru/bais.html>

Business and Biodiversity Resouce Centre

<http://www.businessandbiodiversity.org/>

Conservation Management System Partnership <http://www.cmssp.co.uk/>

UK Biodiversity Partnership <http://www.ukbap.org.uk/>

Wildlife habitat Council <http://www.wildlifehc.org/>

## References

Cooper, A. & Nevin, G.H.N. (2003). **Biodiversity Action on Industrial Sites.**

European Union LIFE Environment, Project LIFE98 ENV/UK/00583.

Technical Report. University of Ulster, Coleraine.

European Community (1998). **Biodiversity action on Industrial Sites: integrating industrial and environmental management systems.**

LIFE-Environment Programme, LIFE98 RNV/UK/00583.

NCC (1990). **Handbook for Phase 1 Habitat Survey - a technique for environmental audit.** Nature Conservancy Council. Peterborough.

EEA (2002). **EUNIS Habitat classification.** European Environment Agency

<http://mrw.wallonie.be/dgrne/sibw/EUNIS/home.html>