



**WEXFORD COUNTY DEVELOPMENT
PLAN 2007 – 2013**



**STRATEGIC
ENVIRONMENTAL
ASSESSMENT**

**ENVIRONMENTAL REPORT
2007**

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Glossary of Terms

Goals are the broadest expressions of community's desires. Goals give direction to the plan as a whole. Goals are expressed with the long-term, and often describe ideal situations that would result if all plan purposes were fully realised. Since goals are value-based, their attainment is difficult to measure.

Policies are broad statements that set preferred courses of action. Policies are choices made to carry out the goals in the foreseeable future. Policies need to be specific enough to help determine whether a proposed project or program would advance community values

Objectives are specific statements that carry out a plan in the short terms. Objectives are measurable benchmarks that can be used to assess incremental progress in achieving the broader purposes expressed in policies and goals.

Strategic Environmental Objectives (SEO's) Methodological measure against which the environmental effects of the plan can be tested. SEA objectives are distinct from the plan objectives although will often overlap. SEA Objectives are developed from, national, international and regional policy as set out in Chapter 3.

External Objectives: Objectives to which the plan must have regard, inherited from higher level plans, policies or programmes to which the plan must have regard and which are external from the SEA process for various reasons.

Scoping The process of determining what issues are to be addressed and setting out a methodology in which to address them in a structured manner appropriate to the plan or programme. Scoping is carried out in consultation with the appropriate environmental authorities.

Significant Environmental Effects: Significance is a function of impact magnitude and the importance/sensitivity of the resources of the receptor.

Strategic Environmental Assessment: The formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to adopt the plan or programme.

Seveso: The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, 2000 (S.I. No. 476 of 2000), were signed into law by the Taoiseach and Minister for Enterprise, Trade and Employment on 21st December 2000 and came into effect from that date.

S.I. No.402 of 2003, European Communities (Control of Major Accident Hazards Involving Dangerous Substances) (Amendment) Regulations, 2003, give effect to European Directive 96/82/EC on the control of major accident hazards involving dangerous substances, also known as the Seveso II Directive. The regulations apply to companies where dangerous substances are present in quantities equal to or above specific thresholds.

Mitigate: To make or become less severe or harsh

Offset: Allowance made to counteract an effect.

NON TECHNICAL SUMMARY

Purpose of Environmental Report

Strategic Environmental Assessment is a process to ensure that significant environmental effects arising from policies, plans and programmes are identified, assessed, mitigated, communicated to decision-makers, and monitored. The purpose of the environmental report is to identify, evaluate and describe the likely significant effects on the environment of implementing the County Development Plan. The environmental report is the primary element in the SEA process and is recognised as a key mechanism in promoting sustainable development. The purpose of this Non-technical Summary is to ensure that the key issues and findings of the Environmental Report can be readily understood.

Methodology

The SEA process commenced in July 2005 and involved consulting the relevant statutory agencies. This was an important first step in the SEA process in order to scope the extent and type of information that should be contained in the environmental report. Following on from that the baseline data collection stage involved the collation of currently available and relevant environmental data in relation to biodiversity, flora & fauna, population, human health, soil, water, air, climate, material assets, cultural heritage and landscape. The environmental report also considers the relationship between the County Plan and other plans and policies and assesses the impact of its objectives and strategies. The County Plan is considered to be compliant with National and Regional guidance such as the National Spatial Strategy 2002-2016 and the Regional Planning Guidelines 2004 – 2016.

Baseline Data

In order to identify, describe and evaluate the likely significant environmental effects of implementing the County Development Plan, relevant aspects of the environmental baseline, the current state of the environment, were identified and evaluated. The SEA Environmental Report indicates that there is a reasonably good collection of baseline data for the county. This information has been devised from statutory agencies, internal departments in the Council, the internet, local and national publications and planning

applications. No additional studies were commissioned by the Council for the purposes of Strategic Environmental Assessment of the Plan.

Focus was given to certain environmental assets and constraints which were likely to be affected as a result of implementation of the County Development Plan. These constraints and assets were mapped alongside the development proposed by the Plan in order to evaluate the Plan's impacts. A brief summary is given on each characteristic below.

The County Development Plan

The County Development Plan sets out the spatial planning framework for the County of Wexford for the period of 2007-2013. The key strategic policies from the Plan are outlined below.

1. (Section 2) The settlement strategy is divided into a number of hierarchical layers that have been chosen to reinforce the policy objectives of the National Spatial Strategy. The hierarchy layers are shown in table 2.1

Table 2.1 County Wexford Settlement Hierarchy

Primary Growth Area	Wexford
Secondary Growth Area	New Ross, Enniscorthy, Gorey
Strategic Growth Areas	Bunclody, Ferns, Oilgate, Ballycullane Clonroche, Camolin, Bridgetown, Wellington Bridge, Campile, Rosslare Harbour
District Growth Areas	Fethard, Coolgreaney, Kilmuckridge, Kilmore Quay, Taghmon, Castlebridge, Carrick on Bannow, Courtown
Local Growth Areas	Craanford, Rosslare, Bree, Duncormick. Arhurstown, Duncannon, Curraclloe

2. (Section 2)SS1 - The Council shall implement the settlement strategy of the National Spatial Strategy and the Regional Planning Guidelines for the South East Region by concentrating development into designated settlements

3. (Section 2) SS2 - The Council shall encourage housing industry and other development in existing towns and villages that have the necessary social, community, physical and transport infrastructure.
4. (Section 2) SS3 - The Council shall promote the necessary physical and social infrastructure in the settlements identified in Table 2.1 and make them more attractive places to live.
5. (Section 3) T1 - To promote the development of public transport, cycling and walking as an alternative to private car traffic by facilitating and promoting the development of the necessary infrastructure.
6. (Section 3) T6 - Promote best practice in traffic management through sustainable development of towns and villages that minimise traffic intrusion and maximises the safety of vulnerable road users in towns while facilitating ease of access for servicing, retail and residential needs in the towns.
7. (Section 3) TP11 - The Council shall promote the growth and development of settlements on existing public transport routes.
8. (Section 4) ED4 - The Council shall encourage the sensitive utilisation of environmental and cultural assets as a basis for economic development including rural tourism, forestry, organic farming, biomass production, nurseries, agri-business
9. (Section 6) Inf 1 - To enhance and protect the built environment through the provision and maintenance of a range of high quality water, wastewater and storm water management systems.
10. (Section 6) Inf. 29 - All new building developments will meet the minimum low energy performance as a pre-requisite to receiving planning permission New developments will utilise renewable energy supply systems to meet at least 30% of the buildings space and heating requirements as calculated on the basis of an approved method carried out by a qualified or accredited expert.
11. (Section 7) C1 - To promote the development of sustainable communities on the basis of a high quality of life where people can live, work and enjoy access to a wide range of community cultural, health and educational facilities suitable for all ages and needs.
12. (Section 8) TRL1 - To protect and conserve those natural, built and cultural features that form the resources on which the County's tourist industry is based.

13. (Section 9) PS1 - The Council shall protect the County's Protected Structures by ensuring their proper preservation and maintenance.
14. (Section 9) AH1 - The Council shall protect and enhance archaeological monument and their settings including town walls, town embankments and ditches, town gates, bastions or ancillary fortifications.
15. (Section 9) NH1 - The Council shall support the conservation of the abundance and diversity of habitats characteristic of County Wexford and their dependent plant and animal communities and will facilitate and co-operate with national agencies, local and community groups in their protection.
16. (Section 9) Policy L1 - In assessing developments the Council will have regard to the guidance contained in the Landscape Character Assessment. Proposed developments should reflect the guidance contained in the Landscape Character Assessment and seek to minimise the visual impact, particularly in areas designated as Sensitive and Vulnerable Landscapes.

Consideration of Alternatives

The SEA Regulations require that different alternatives or scenarios to the County Development Plan be examined. The alternatives available to the Development Plan are limited by constraints of higher level strategic actions, such as the Regional Planning Guidelines, to which the Plan must comply.

The SEA of the Wexford County Development Plan compared 4 scenarios, (1) Current situation (do nothing approach), (2) Unplanned Growth, (3) Sprawl, (4) Planned Growth. The Scenario 'Planned Growth' summarises the general objectives that underlie the preferred option. This option incorporates relevant National & Regional Strategies while also providing a structures vision that will realistically accommodate continued urban growth as well as providing a viable future for growing rural communities. This scenario is generally believed to have the lowest environmental impacts, providing that the mitigation measures proposed are adopted.

Environmental Assessment

The environmental assessment of objectives of the County Plan is the central component of the Report. The methodology used in the Report comprised of a series of matrixes

which were used to refine and focus objectives used in the County Plan. In predicting likely significant impacts of the plan, existing data sources were used as baselines data.

Key Environmental Issues

Ground Water

Rural developments, which individually would not have necessarily have significant adverse effect on the groundwater, have had cumulative adverse effects as groundwater can be permanently polluted by, amongst other causes, a proliferation of inadequate waste water treatment systems. Groundwater quality could, therefore be affected as a result of implementation of the County Development Plan. The Draft Co. Wexford Groundwater Source/Resource protection Plan is a means by which groundwater protection is enhanced through appropriate land use planning.

Water Quality

The environmental baseline has identified wastewater disposal as significant constraint to development. The quality of water bodies in County Wexford are suffering damage from inadequacy in the capacity of both private and local authority systems and the assimilative capacity of receiving waters. Development is deemed to have significant effect where it affects the capacity for use of the environment by future generations therefore the identification of Polluted River Catchments, i.e. those which have exceeded their carrying capacity, helps to facilitate the evaluation of likely effects which the County Development Plan may have if implemented. Development control policies and standards have been tailored geographically to reflect the unique sensitivities of the various ground water resources.

Biodiversity

It has been identified in the description of the current environmental baseline that biodiversity is in decline in County Wexford as a result of certain developments. Greenfield developments have replaced semi natural and natural areas with artificial surfaces causing gradual loss of habitats and biodiversity. Other developments such as drainage of wetlands, the removal of banks of rivers, culverting of streams, and golf courses have resulted in habitat and biodiversity loss. Rather than concentrating solely on the designated sites which are protected under Irish and European law and which

represent a relatively small area of the County's habitats, this SEA has considered the following habitats , forested areas, wetlands, and inland waters, and maritime wetlands. Through the SEA it has been identified that a Local Biodiversity Action Plan should be drawn up during the course of the life of the plan, which should provide a basis for establishing adequate monitoring of the county's biodiversity and should also form an excellent baseline of information for any subsequent plan. Development control policies have been tailored geographically to reflect the unique sensitivities of the various habitats and flora and fauna.

Landscape & Seascapes

It has been identified in the description of the environmental baseline that infrastructural as well as other developments, including urban sprawl and commercial developments, rural housing and holiday homes, have had cumulative adverse effects on areas of high landscape sensitivity. Without appropriate mitigation measures Landscapes have the potential to be adversely impacted upon. This SEA has identified the most valuable landscapes through the Landscape Character Assessment in order to tailor policies and objectives geographically to reflect the unique sensitivities of the various landscape type and seascapes.

Mitigation

It should be noted that Strategic Environmental Assessment is an integral part of the development of the Plan and that its final iteration incorporates policies that have evolved to anticipate and avoid potentially adverse impacts on the environment. Remaining potentially adverse conflicts or impacts may be characterised as 'residual impacts'. These are unavoidable potential impacts that remain after all mitigation measures have been put in place. The majority of these are potential impacts which are likely to be capable of further mitigation through careful, detailed implementation of Local Area Plans and town plans.

Monitoring

Article 10 of the SEA Directive requires that monitoring be carried out in order to identify at an early stage any unforeseen adverse effects due to the implementation of the Plan, and to be able to take remedial action. Monitoring and review, are key elements of the effective implementation of the County Plan. It ensures that social, economic and physical objectives are fulfilled and that quality of life issues can be assessed.

The purpose of monitoring is to cross check significant effects, which may arise during the implementation stage of the development plan, against those predicted during the plan preparation stage. Monitoring is often based on indicators, which measure changes in the environment, especially changes which are critical in terms of environmental quality. Indicators aim at simplifying complex interrelationships and providing information on environmental issues, which are relatively easy to understand.

The statutory Managers Progress Report to be prepared 2 years after the adoption of the County Plan under Section 15(2) of the Planning and Development Act (as amended), 2002 - 2006. It is anticipated that the environmental indicators set out below will be used to monitor the predicted environmental impacts of implementing the Plan and will be presented in the context of the 2 year plan review. Where existing monitoring is being carried out i.e. in relation to water quality, air quality etc., these data sets will be collated in the review.

Monitoring Indicators

Demography

The Council proposes to monitor the emerging demographic of the county population in order to identify any additional facilities that may be required to cater for specific needs of the population as part of the plan process.

This information will allow the Council to;

- Monitor development in the county and to review whether the provision of social and economic facilities are adequate to serve the resident population.
- In partnership with the Department of Education, to continue to monitor the capacity of local Schools and their ability to cater for the local school-going population
- Monitor childcare provision in order to ensure that adequate choice and facilities continue to be provided for parents
- Revise its own population projections if necessary

Societal and Economic indicators

- Tourism data, numbers of visitors per annum
- Energy demand/consumption and economic growth

- Housing completions

Environmental Monitoring

The Council will liaise with the Environmental Protection Agency and other agencies to ensure that the environmental impacts of the Plan are monitored in accordance with the Department of Environment and Local Government Guidelines and/or Strategic Environmental Assessment (SEA) Guidelines.

Air Quality

- results from air quality monitoring stations
- amount of renewable energy generated

Ground & Surface Water Quality

- results from water quality monitoring

Biodiversity

- Biological & chemical water quality results from continuous monitoring within the county
- Results from preparation of a County Biodiversity Plan

Change in Landscape

- No. of planning permissions granted within rural area and within vulnerable and Sensitive Landscapes

Cultural Heritage

- Record known loss or damage or deterioration to protected sites/structures

Material Assets

- implementation and monitoring of capacity constraints study for Water Services and Sanitary Services

Chapter 1. Introduction

This is a Strategic Environmental Assessment (SEA) Environmental Report for the County Wexford Development Plan 2007 - 2013. This section discusses the legal requirements of SEA, its implications for the County Development Plan and its main findings to date.

Wexford County Council commenced the preparation of the new County Development Plan on the 8th June 2005. This plan must be completed within two years and it will set out the spatial planning framework and overall strategy for the proper planning and sustainable development of the county for the six year period 2007 – 2013.

In addition to the making of the County Development Plan, the Planning Authority is also obliged to carry out a Strategic Environmental Assessment (SEA) of the plan in parallel with its formulation.

1.1 Strategic Environmental Assessment

On the 5th June 2001, the European Council adopted the Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment ("the SEA Directive") (EU, 2001), which took effect in the member states on the 21st July 2004. The Strategic Environmental Assessment Directive was passed into Irish law on the 14th July 2004 by means of the Planning and Development (Strategic Environmental Assessment) Regulations (S.I.435 & S.I.436). The Directive requires all European Union member States to systematically evaluate the likely significant effects of implementing a plan or programme prior to its adoption.

SEA aims to provide for more sustainable development through the methodical appraisal of policy options, considering alternative means of developing an area, by raising awareness of the environmental impacts of plans and the inclusion of quantifiable targets and indicators.

SEA is an important instrument to help to achieve sustainable development in public planning and policy making. The importance of SEA is widely recognised. Particular benefits of SEA include:

- To support sustainable development;
- To improve the evidence base for strategic decisions;
- To facilitate and respond to consultation with stakeholders;
- To streamline other processes such as Environmental Impact Assessments of individual development projects.

The SEA process for land-use plans includes:

- Preparing an Environmental Report where the likely significant environmental effects are identified and evaluated
- Consulting the public, environmental authorities, and any EU Member State affected, on the environmental report and plan
- Taking account of the findings of the report and the outcome of these consultations in deciding whether to adopt or modify the plan
- Making known the decision on adoption of the plan and how SEA influenced the outcome.

In accordance with Article 2 of the Directive, this assessment process must result in an environmental report which must identify, describe and evaluate the likely significant effects on the environment of implementing the plan and reasonable alternatives. In particular, the report must contain:

- An outline of the contents and main objectives of the plan, and of its relationship with other relevant plans and programmes;
- Description of the relevant aspects of the current state of the environment and the likely evolution of the environment without the implementation of the plan;
- A list of the environmental protection objectives at international, EU and national level, which are relevant to the plan and describe how they have been taken into account of, in the formulation of the plan;
- Description of the likely significant effects on the environment (biodiversity, human health, cultural heritage, air, soil, water etc);
- Mitigation measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment caused by implementing the plan;
- An outline of the reasons for selecting the alternatives considered and a description of how the assessment was undertaken including any difficulties;

- Description of proposed monitoring measures
- A non-technical summary of the information provided under the above headings.

The purpose of the environmental report is to identify, evaluate and describe the likely significant effects on the environment of implementing the Wexford County Development Plan.

The SEA process requires that baseline data be collected using the indicators described in the SEA Directive. These topics are biodiversity, fauna, flora, population, human health, soil, water, air/climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above. The impacts to be considered include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative.

Before impacts on the environment can be predicted, it is necessary to achieve an understanding of the relevant existing conditions. No primary research was carried out in the collection of baseline data, apart from existing data sources were used. Such sources ranged from C.S.O. Census statistics, Environmental Protection Agency, Council data on water, air, noise and traffic and information from environmental impact statements submitted as part of planning applications.

1.2 County Development Plan and SEA Requirement

On the 8th June 2005 Wexford County Council commenced the preparation of the new County Development Plan for the period 2007-2013, with the public notice advertisement in the paper. This advertisement included the notification of a SEA also being carried out in conjunction with the plan. The Planning and Development (SEA) Regulations 2004 require that SEA be carried out in respect of County Development Plans.

In late April and early May 2006 a series of public meetings were held in 4 different locations around the county. The principal aim of the Pre-Plan Consultation was to gain an understanding of the issues that are of concern to those working, living and investing in the county.

Wexford County Council in meeting the requirements of the Directive by preparing an SEA in parallel with the County Development Plan making process. Initial scoping consultations took place in January 2006 with the prescribed environmental authorities, EPA, Department of the Environment, Heritage and Local Government and Department of Communication, Marine and Natural Resources. This Environmental Report relates to the consultative of the Wexford County Development Plan. Following consultation with the relevant agencies on both the Plan and this Environmental Report, these documents will be finalised.

Chapter 2. Methodology

2.1 Legislative Requirements

The methodology devised to carry out the SEA of the Wexford County Plan followed the requirements as set out in the SEA Directive and the Department of Environment, Heritage and Local Government SEA Guidelines 2004. Guidance provided by the Environmental Protection Agency was also instructive.

The production of the Environmental Report is an intrinsic component of the EU Directive. The Environmental Report must;

2.2 Scoping

Through the scoping exercise of the SEA, the following topics had been identified as key areas relevant to the County Development Plan.

1. Population Trends and Settlement Strategy
2. Housing
3. Community, Health & Education
4. Infrastructure, Energy, Waste & Utility Services
5. Transportation
6. Economic Development
7. Tourism, Recreation and Leisure
8. Heritage, Conservation & The Environment

However it was decided to conduct the baseline study based on the indicators as detailed in the Directive, as follows;

- biodiversity
- fauna, flora
- population
- human health
- soil
- water

- air quality
- climatic factors
- material assets
- cultural heritage including architectural and archaeological heritage
- landscape

2.3 Consultation with Environmental Authorities

The SEA Directive specifies in Article 6(3) that 'member states shall designate the authorities to be consulted'. The Environmental Protection Agency (EPA), Department of the Environment, Heritage and Local Government, and the Department of Communication, Marine and Natural Resources were all consulted in order to determine the scope of the SEA.

2.4 Baseline Study

Before impacts on the environment can be predicted, it is necessary to achieve an understanding of the relevant existing conditions no primary research was carried out in the collection of baseline data apart from existing data sources. Such sources ranged from C.S.O. Census statistics, Environmental Protection Agency, Council data on water, air, noise and traffic and information from environmental impact statements submitted as part of planning applications.

Baseline environmental data should allow the state of the environment to be identified in objective terms. Often this will mean quantitative measures of environmental conditions, but will also include qualitative descriptions of environmental features. The data should encompass the environment as it is now, as well as the environment as it would be expected to change in the absence of the Plan (i.e. the do nothing approach). as required under the EU Directive.

2.5 Considerations of Alternatives

As part of the County Plan process a range of alternatives were considered for the development of the County and are detailed in the Environmental Report. These are as follows;

- **Scenario 1- Current Situation** - The do nothing approach – it includes the development of the county as is previously planned for under the County Development Plan 2001. This represents the 'Current Situation' which shows existing growth in County Wexford under the current county Development Plan policies and objectives.
- **Scenario 2 – Unplanned Growth** - This option sets out to accommodate growth by dealing with planning applications on an ad hoc basis. This would be likely to result in increased growth around all existing urban areas in the County as well as increases in the number of one off housing in the countryside. Under this scenario development would not be directed towards properly serviced , robust receiving environments, rather development would be dealt with through the planning system as it occurs. An increased development in the countryside would result in significant cumulative adverse effects across the County on environmental components such as biodiversity, water quality and landscapes.
- **Scenario 3 – Sprawl** - Uncontrolled expansion of existing urban areas and settlements, high densities of uncontrolled urban generated rural housing. Increased sprawl would also result in significant effects on environmental components such as habitats, water quality and landscapes. Sprawl would also decrease the economic viability of providing services and infrastructure to the OCounty's population which would be spread out over wide areas.
- **Preferred development alternative – Planned Growth** - This option incorporates relevant National & Regional Strategies while also providing a structured vision that will realistically accommodate continued urban and pre-urban growth in the east of the county as well as providing a viable future to stabilise and revitalise rural areas in the west of the county. This Scenario is believed to have the lowest environmental impacts, providing that mitigation measures proposed are adopted.

2.6 Environmental Assessment

The environmental assessments of objectives of the County Plan are the central component of the Report. The methodology used in the Report comprised of a series of matrixes which were used to refine and focus objectives used in the County Plan. In predicting likely significant impacts of the plan, existing data sources were used as

baselines data. The Development Envisaged as arising as a result of the implementation of this County Development Plan is described using Alternative Scenarios in Chapter 17.

Chapter 3. Consistency with International/ National / Regional / Local Policy

The SEA Directive requires an analysis of the plan's "relationship with other relevant plans and programmes" (Annex 1a) and of the "environmental protection objectives . . . which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation" (Annex 1e). A list of the relevant policies, plans and environmental objectives was compiled and their requirements analysed.

3.1 Relationship with other plans and programmes

The County Development Plan is a higher level plan which sets out the development context at county level. All future Local Area Plans and Town Development Plans should be consistent with the County Development Plan 2007-2013.

The County Development Plan 2007-2013 must be consistent with national and regional spatial planning guidance in the form of the National Spatial Strategy and the South East Regional Planning Guidelines 2004. In addition, the Plan must also take account of national policies on sustainable development and heritage.

3.1.1 National Spatial Strategy 2002

The Strategy's focus is on people and places and where they live and work. The Strategy seeks to unleash the potential for progress, growth and development in a more balanced way across Ireland, supported by more effective planning. The Strategy is a 20-year framework for the 7 regions. The strategic location of County Wexford incorporating the Dublin/Rosslare Europort Corridor, Wexford/Carlow/Athlone Corridor, and the Wexford/NewRoss/Waterford Transport Corridor, which makes the county critical for balanced regional and national development. The designation of Wexford town as a Hub consolidates and develops these important transport corridors. The NSS has identified the following;

Wexford town – Hub (strategic urban centre, aim to grow to population of 30,000 persons or more in the years to 2020 and beyond)

Enniscorthy – Larger Town (recently experienced high levels of population growth – regulated continued expansion having regard to their existing character)

New Ross – larger Town (targeted for growth having regard to its strategic location 15 miles from Regional Gateway of Waterford)

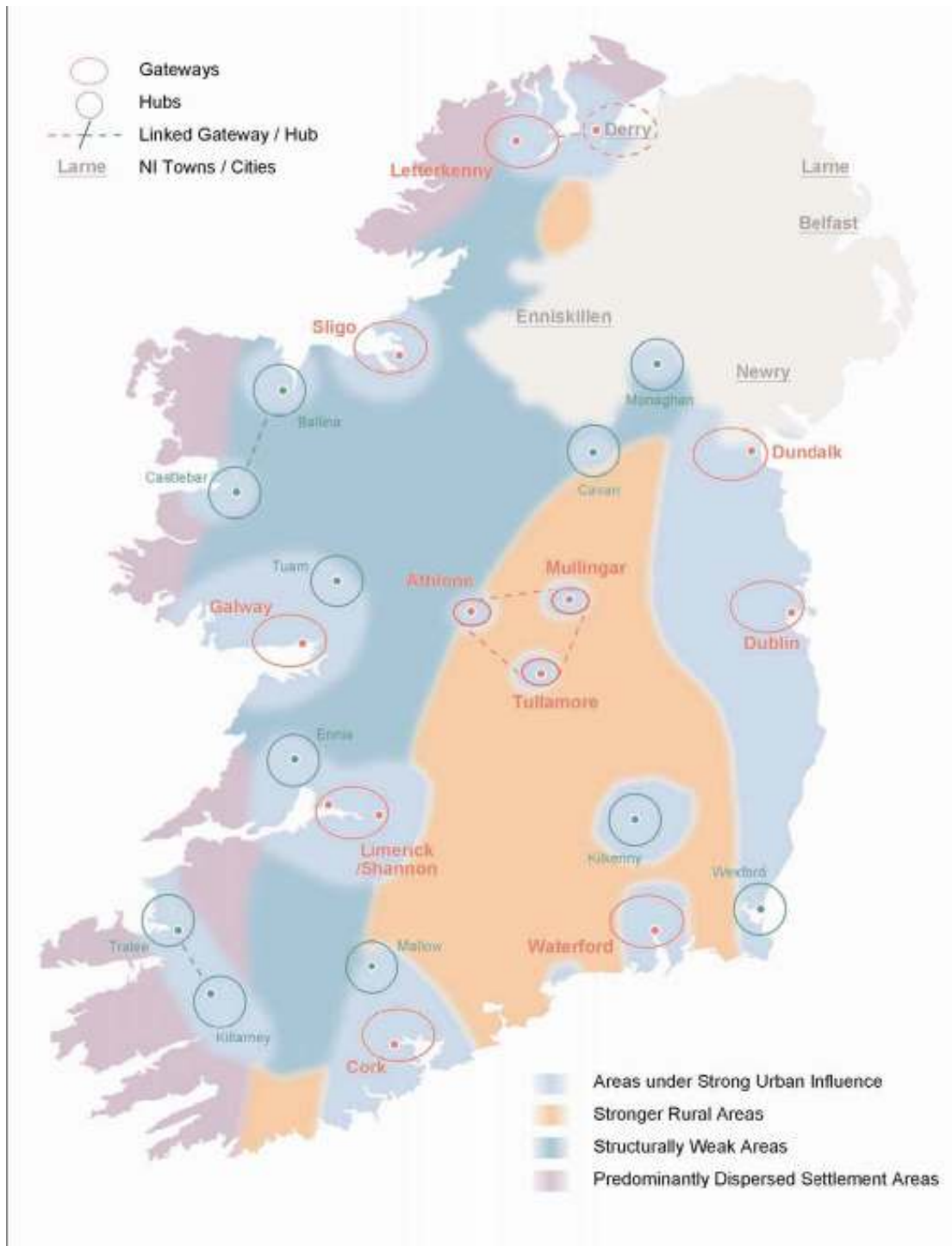
Gorey – 1000-1500 population which recently has experienced high levels of population growth which would bring it into the larger town category

Bunclody and Ferns are urban centres with circa 1,000 population

Rural areas – Village Strengthening and Rural Area Opportunities

3.1.2 Regional Planning Guidelines for the South-East Region, 2004

The Regional planning Guidelines for the South East will implement the Government's National Spatial Strategy (NSS). It provides a spatial framework at regional level which will recognise uniqueness of the Region and facilitate its development. The region is divided into 6 smaller sub-areas with Wexford covering 2 of these, sub-area A Waterford/Kilkenny/Wexford triangle and Sub-Area B North County Wexford. Sub The Guidelines envisage the development of critical mass of the Gateway (Waterford) and Hubs (Wexford, Kilkenny) as a priority. The Sub-Area B shows strong population growth as a result of the influence from the greater Dublin area, and focus is on controlling and monitoring urban sprawl.



3.1.3 National Development Plan 2000-2006 & 2007-2013

The National Development Plan was prepared to underpin the development of a dynamic competitive economy over the period 2000-2006. The NDP is the largest and

most ambitious investment plan ever drawn up for Ireland. It involves an investment of over EUR 52 billion of Public, Private and EU funds over the period 2000-2006. It included a number of strategic investment objectives for the southeast region including major road improvement schemes, childcare facilities, waste management etc. The County Plan is considered to be consistent with this plan.

3.1.4 National- Biodiversity Plan 2002

In response to the requirements set out in Article 6 of the UN Convention of Biological Diversity 1992, a Bio-diversity Plan was prepared by the Department of Arts, heritage, Gaeltacht and the Islands. The Plan seeks to ensure the full and effective integration of bio-diversity concerns into the development and implementation of other policies, legislation and programmes which is of critical importance if the conservation and sustainable use of bio-diversity is to be achieved. It outlines a series of measures that will enhance biodiversity. It considers the integration of the conservation of biodiversity into all relevant sectors. The plan covers the 3 levels of biodiversity, which are ecosystem diversity, species diversity and genetic diversity. The overall goal of the Plan is to secure the conservation, including where possible the enhancement, and sustainable use of biological diversity in Ireland and to contribute to conservation and sustainable use of bio-diversity globally".

3.1.5 National Climate Change Strategy 2000

The National Climate Change Strategy provides a framework for the achievement of reductions in greenhouse gas emission as an essential step in achieving the targets agreed under Kyoto Protocol. The Strategy states that the main sources of greenhouse gases in Ireland is carbon dioxide which mainly arises from the burning of fossil fuel. Other greenhouse gases include methane and nitrous oxide which are proportionally higher than other countries. The Strategy aims to reduce emissions through the use of economic instruments (including taxation and emission trading), a broad range of policies and measures tailored specifically to relevant sectors, a vigorous and appropriate pursuit of common and coordinated policies and measures implemented at EU and at a wider international forum and participation in international emissions trading. The policies of the NCC Strategy are inherent in the policies of the Wexford County Development Plan.

3.1.6 National Heritage Plan 2002

This Plan aims to set out a clear and coherent strategy and framework for the protection and enhancement of our heritage over the next 5 years. Every action in this plan is founded on the principle of sustainable development which states that the needs of the present generation

3.1.7 Childcare Facilities – Guidelines for Planning Authorities 2001

These Guidelines are intended to guide both local authorities in preparing development plans and assessing applications for planning permission, and developers and childcare providers in formulating development proposals. One of the requirements of these guidelines is that for every 75 dwellings proposed as part of a planning application; a childcare facility for 20 children would be required. The policies of the Childcare Guidelines are incorporated into the County Development Plan.

3.1.8 Residential Density Guidelines for Planning Authorities 1999

The Guidelines promote increased residential densities in order to ensure the most efficient use of zoned and serviced housing land, provide a more varied range of dwelling type and sizes , optimise the use of existing services, facilities and infrastructure, encourage more sustainable commuting patterns and facilitate improved public transport. It is considered that the settlement strategy contained in the County Plan reflects those in the Guidelines.

3.1.9 Retail Planning Guidelines for Planning Authorities 2005

These Guidelines update and replace the Retail Planning Guidelines published in January 2001. The Guidelines provide a retail hierarchy for the State and objectives in managing recent pressures in the retail market. The major change from the 2000 to the 2005 Guidelines is in relation to the retail warehouse cap. The revised Guidelines now outlines where the previous cap was 6,000sq.m. for a retail warehouse may be lifted within the functional areas of the four Dublin local authorities and in the other National Spatial Strategy Gateways, which are Athlone/Tullamore/Mullingar, Cork, Dublin,

Dundalk, Galway, Letterkenny, Limerick/Shannon, Sligo and Waterford. This means that the floor cap still exists for Wexford, New Ross, Enniscorthy & Gorey.

3.1.10 Sustainable Development: A Strategy for Ireland 1997

The national strategy for sustainable development provides a framework for the achievement of sustainability at the local level. It encourages planning authorities to take account of sustainable development considerations in the preparation of development plans. The principle of sustainable development is an intrinsic element of the County Plan.

3.1.11 Towards Sustainable Local Communities: Guidelines on Local Agenda 21 2001

Local Agenda 21 was the result of the Earth Summit in Rio in 1992. This document is an agreement for meeting the challenges of the environment and development into the next century. At a national level the government is, as a result of signing the document, committed to ensuring that the relationship between socio-economic growth and the environment is not negative. In effect, this implies that development should not exceed the carrying capacity of its local environment. Local Agenda 21 also encourages consultative processes which involve the whole community, its elected members and other community and representative groups through means of information awareness, public consultation and feedback, partnerships between authorities, businesses and communities, and a continuous monitoring of progress towards sustainability. The principles of Agenda 21 are being met through the process of Strategic Environmental Assessment.

3.1.12 Architectural Heritage Protection, Guidelines for Planning Authorities 2004

The Planning and Development Act 2000, required additional development objectives relating to the protection of structures which are deemed to be of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and to preserve the character of architectural conservation areas. In this context, these Guidelines aim to assist local authorities in the adoption of suitable policies for protecting

architectural heritage in their development plans and to ensure that they have practical effect through development control measures. The Guidelines also aim to assist planners and others in understanding the guiding principles of conservation and restoration. The County Plan is considered to be consistent with these Guidelines.

3.1.13 Landscape and Landscape Assessment (Draft) 2000.

The National Draft Guidelines encourage a more proactive approach to landscape and to consider landscape in terms of its ability to accommodate development and to provide indicators as to which development might be suited, under what conditions and using particular design criteria. This method known as 'Landscape Character Assessment' should be applied in all aspects of physical planning to provide guidance to planners and others as to how landscape considerations should be dealt with and to indicate specific requirements for Development Plans and for development management. The County plan is considered to be consistent with the Draft Guidelines.

3.1.14 Quarries and Ancillary Activities – Guidelines for Planning Authorities 2004

These Guidelines encourage best practice in mitigating and controlling land use and environmental issues through the planning system with regard to the operation of quarries. They are intended to assist planning authorities in dealing with the varying environmental and land use issues associated with the operation of quarries. They are also intended to help with the implementation of Section 261 of the Planning & Development Act, 2000, which is commenced with effect from 28 April 2004.

3.1.15 Wind Energy Development Guidelines 2006

These National Guidelines are aimed at ensuring a consistency of approach in the identification of suitable locations for wind farm development and the treatment of planning applications for wind farm developments. The County plan is considered to be consistent with the Guidelines.

3.1.16 Development Plans Public Consultations Draft of Guidelines for Planning Authorities 2006

These Guidelines promote best practice in the making, amendment and variation of development plans. The process of making development plans must be open, transparent and, most crucially, inclusive. These guidelines set out in detail, how, within the legislative framework for plan, Ireland can develop a more dynamic, objective and inclusive planning system to structure future development that meets wider economic, social, environmental and heritage objectives.

3.1.17 Planning and Development (Strategic Infrastructure) Act 2006

The recent amendment to the Act is intended to provide a better service for all stakeholders, infrastructure providers, State bodies and the general public alike by providing for the introduction of a one step strategic consent procedure for certain types of major infrastructure. A new Division will be established within the Board to handle decisions on all major infrastructure projects - major local authority projects and motorways which are already the responsibility of the Board, strategic infrastructure consents, major electricity transmission lines and railway orders.

3.1.18 Relevant International Policy Documents

Strategic Action	Main Policy Direction for Plan
European Union (EU) Habitats Directive (92/43/EEC) 1992	Lists certain habitats and species that must be given protection
EU Water Framework Directive (2000/60/EC) 2000	Aims to prevent any deterioration in the status of any waters and to achieve at least "good status" in all waters by 2015
European Landscape Convention 2000	Encourages public authorities to adopt policies at local, national and international level to protect and manage landscapes
European Convention on the	Requires that appropriate consideration be

Protection of the Archaeological Heritage 1992	given to archaeological issues at all stages of the planning and development process
EU Birds Directive (79409/EEC) 1979	Designation of Special Protection Areas for birds
EU Urban Waste water treatment directive (91/271/EEC) 1991	Sets targets dates for the provision of specified waste water treatment infrastructure and service
Granada Convention for the Protection of the Architectural Heritage of Europe 1985	Established common principles and strategy, informed Part IV of the 2000 Planning and Development Act 2000-2004
EU Major Accident (Seveso) directive (96/82/EC) 1996	To avoid and minimise the effects of major accidents
UN Convention of Biological Diversity 1992	To retain and enhance biodiversity

Chapter 4. Summary of Key Strategic Policies of the Plan

This report accompanies the County Development Plan, the contents and objectives. The current Wexford County Development Plan was adopted on the 11th June 2001 and remains in force until the 10th June 2007, unless otherwise superseded by a revised County Development Plan.

4.1 The County Development Plan

The County Development Plan will set out the spatial planning framework for the County of Wexford for the period of 2007-2013. The County Development Plan includes a series of strategic goals, policies and objectives, which seek to develop the county in a balanced and sustainable manner, ensuring the protection of the county's heritage and environment. The Plan has been prepared having regard to unprecedented and unsustainable residential growth.

The key strategic policies from the Plan are outlined below:

1. (Section 2) The settlement strategy is divided into a number of hierarchical layers that have been chosen to reinforce the policy objectives of the National Spatial Strategy. The hierarchy layers are shown in table 2.1

4.1.1 County Wexford Settlement Hierarchy

Primary Growth Area	Wexford
Secondary Growth Area	New Ross, Enniscorthy, Gorey
Strategic Growth Areas	Bunclody, Ferns, Oilgate, Ballycullane Clonroche, Camolin, Bridgetown, Wellington Bridge, Campile, Rosslare Harbour
District Growth Areas	Fethard, Coolgreaney, Kilmuckridge, Kilmore Quay, Taghmon, Castlebridge, Carrick on Bannow, Courtown
	Craanford, Rosslare, Bree, Duncormick.

Local Growth Areas	Arthurstown, Duncannon, Curraclloe
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2. (Section 2)SS1 - The Council shall implement the settlement strategy of the National Spatial Strategy and the Regional Planning Guidelines for the South East Region by concentrating development into designated settlements
3. (Section 2) SS2 - The Council shall encourage housing industry and other development in existing towns and villages that have the necessary social, community, physical and transport infrastructure.
4. (Section 2) SS3 - The Council shall promote the necessary physical and social infrastructure in the settlements identified in Table 2.1 and make them more attractive places to live.
5. (Section 3) T1 - To promote the development of public transport, cycling and walking as an alternative to private car traffic by facilitating and promoting the development of the necessary infrastructure.
6. (Section 3) T6 - Promote best practice in traffic management through sustainable development of towns and villages that minimise traffic intrusion and maximises the safety of vulnerable road users in towns while facilitating ease of access for servicing, retail and residential needs in the towns.
7. (Section 3) TP11 - The Council shall promote the growth and development of settlements on existing public transport routes.
8. (Section 4) ED4 - The Council shall encourage the sensitive utilisation of environmental and cultural assets as a basis for economic development including rural tourism, forestry, organic farming, biomass production, nurseries, agri-business
9. (Section 6) Inf 1 - To enhance and protect the built environment through the provision and maintenance of a range of high quality water, wastewater and storm water management systems.
10. (Section 6) Inf. 29 - All new building developments will meet the minimum low energy performance as a pre-requisite to receiving planning permission New developments will utilise renewable energy supply systems to meet at least 30% of the buildings space and heating requirements as calculated on the basis of an approved method carried out by a qualified or accredited expert.
11. (Section 7) C1 - To promote the development of sustainable communities on the basis of a high quality of life where people can live, work and enjoy access to a

wide range of community cultural, health and educational facilities suitable for all ages and needs.

12. (Section 8) TRL1 - To protect and conserve those natural, built and cultural features that form the resources on which the County's tourist industry is based.
13. (Section 9) PS1 - The Council shall protect the County's Protected Structures by ensuring their proper preservation and maintenance.
14. (Section 9) AH1 - The Council shall protect and enhance archaeological monument and their settings including town walls, town embankments and ditches, town gates, bastions or ancillary fortifications.
15. (Section 9) NH1 - The Council shall support the conservation of the abundance and diversity of habitats characteristic of County Wexford and their dependent plant and animal communities and will facilitate and co-operate with national agencies, local and community groups in their protection.
16. (Section 9) Policy L1 - In assessing developments the Council will have regard to the guidance contained in the Landscape Character Assessment. Proposed developments should reflect the guidance contained in the Landscape Character Assessment and seek to minimise the visual impact, particularly in areas designated as Sensitive and Vulnerable Landscapes.

Chapter 5. Description of the Existing Environment

The SEA process requires that baseline data be collected using the indicators described in the SEA Directive. These topics are biodiversity, fauna, flora, population, human health, soil, water, air/climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above. The impacts to be considered include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative.

Before impacts on the environment can be predicted, it is necessary to achieve an understanding of the relevant existing conditions. No primary research was carried out in the collection of baseline data apart from existing data sources were used. Such sources ranged from C.S.O. Census statistics, Environmental Protection Agency, Council data on water, air, noise and traffic and information from environmental impact statements submitted as part of planning applications.

Baseline environmental data should allow the state of the environment to be identified in objective terms. Often this will mean quantitative measures of environmental conditions, but will also include qualitative descriptions of environmental features. The data should encompass the environment as it is now, as well as the environment as it would be expected to change in the absence of the Plan (i.e. the do nothing approach). as required under the EU Directive.

The baseline study was based on the indicators as detailed in the Directive, as follows;

- biodiversity
- fauna, flora
- population
- human health
- soil
- water
- air quality
- climatic factors
- material assets
- cultural heritage including architectural and archaeological heritage
- landscape

Chapter 6. Biodiversity

What is Biodiversity?

Biodiversity is defined as the variability among living organisms from all sources, including land based and aquatic ecosystems, and the ecosystems of which they are part. The UN Convention on Biodiversity noted that there was a lack of baseline data regarding biodiversity.

Why is biodiversity important?

Biodiversity is important and needs conservation for economic, ecological, moral, social and legal reasons. It is the basis for all life on earth, providing food for man, and healthy ecosystems that sustain this food supply. The loss of each piece of biodiversity, especially at the species level, reduces the options for (1) nature to adapt to the changing climate (e.g. for species to replace each other according to changes in climatic conditions such as temperature), (2) people to adapt their food sources to different environmental conditions (including climate change), and (3) people to discover and gain new benefits from biodiversity.

Economic

- It is essential for the assimilation and recycling of wastes derived from human activity
- It is the source of food for man and domestic animals
- It provides valuable recreational resources
- It contains biotechnological resources of increasing commercial and medical importance
- It produces non-living resources of commercial importance such as maerl, coral, coal, oil, gas

Ecological

- It supports economic resources through the food chain and interaction between species
- It maintains local to global ecosystem health through its interaction with the physical and chemical environment (e.g. atmospheric carbon dioxide, oxygenation) and can buffer the world against
- climate change

Social

- Aesthetic value aids relaxation, a source of inspiration for art, science and philosophy
- Educates people about how the living world evolved and its complexity
- Strong cultural and historical value for society including symbolism in religion and folklore
- Indicator of climatic change, within and between years
- Indicator of quality of abundance of natural resources

Legal

- The Convention on Biological Diversity and other laws now places a legal obligation on countries
- and their citizens to protect and sustainably use biodiversity

Ireland's natural heritage of species and habitats, while not as diverse as in other European countries, is deemed to be of such importance that 25 species and 60 habitats are recognised by the EU to be in need of special protection. The assessment of Ireland's biodiversity is inhibited by continuing lack of a biological records centre to provide the baseline and up-to-date information on the distribution and abundance of species.

County Wexford has a rich heritage of habitats of nature conservation value containing a wide range of plants and animals. The County of Wexford possesses a diverse character including existing built up areas, water bodies, forested areas, extensive pastureland, coastline and upland areas. To date however Wexford County Council has yet to undertake a County Biodiversity Plan, which has inhibited obtaining relevant data at the county level with most biodiversity data available at the national level only.

6.1 Conservation sites

The people of Ireland share the country with 28 species of land mammal, over 400 species of birds, more than 4,000 plant species, over 12,000 species of insect, and a huge range of other living creatures. If we want all of this to survive, we must ensure that there are enough areas in the countryside and urban areas where they can flourish.

In the recent past, economic success in Ireland has placed strains never seen before on the environment. At the same time, many farmers who own the land where wildlife occurs are facing a difficult future, and see themselves as threatened. As agriculture changes, conditions for wildlife change, sometimes for the worse.

Of course, many of the best wildlife areas in Ireland are "marginal" land, or not used for agriculture. Even here, technological advances make for new opportunities for exploitation. For example, windfarms provide great possibilities for green energy but if not correctly controlled could impact on isolated mountaineous areas.

Conserving nature requires a range of strategies to succeed. One of these is to ensure conservation of habitats where plants and animals live. And not only the rare and fragile: we have seen how species once common like the corncrake and the blue cornflower, can disappear if their habitat changes. To succeed, this strategy needs the support of landowners and people who use or visit the land.

Designation of conservation areas is required of us under European law and our own national laws. The Department of the Environment, Heritage and Local Government is responsible for the designation of conservation sites in Ireland. The Department works with farmers, other landowners and users and national and local authorities to achieve the best balance between farming and land-use on the one hand, and requirements for conserving nature in these selected areas, on the other. So far we have mentioned only the land. There is a great array of life in our seas, and coastal estuaines which few of us ever witness. This too is being affected in a variety of ways, as we seize opportunities for new activities in our coastal and offshore waters; and this too requires protection.

The three main types of designation are:

- 'Natural Heritage Area', or NHA.
- 'Special Area of Conservation', or SAC.
- 'Special Protection Area', or SPA.

Additional sites are designated as:

- Nature Reserves - An area of importance to wildlife, which is protected under Ministerial order.

- Refuge for Fauna or Flora - Under the Wildlife Acts, the Minister may designate Refuges for wild birds or wild animals or flora and impose protective measures to conserve both the species and their habitats. Seven such refuges already exist.
- Wildfowl Sanctuaries - These sanctuaries are areas that have been excluded from the 'Open Season Order' so that game birds can rest and feed undisturbed. There are 68 sanctuaries in the State. Shooting of game birds is not allowed in these sanctuaries.
- Management Agreements -The Wildlife Act, 1976, enables the Minister to enter into a voluntary management agreement with private landowners. Under these agreements landowners will manage their lands to ensure that desirable wildlife habitats are protected. The number and type of such agreements depends on the resources available to the Department at any time.

6.1.1 Ramsar Sites - Wetlands

The Convention on Wetlands came into force for Ireland on 15 March 1985. Ireland presently has 45 sites designated as Wetlands of International Importance, three being located in County Wexford with total area of 1741Ha covered by the 3 sites.

Ramsar Site No. 291: The Wexford Wildfowl Reserve

Designated on the 15th November 1984. The Wexford Wildfowl Reserve has a total area of 194 ha. The site also has the following designation; Special Protection Area EC Directive; & Nature Reserve. The site is described as a low-lying areas of empoldered farmland dissected by numerous drainage ditches created by draining an estuarine embayment. Water levels are controlled for irrigation and flood prevention. The site forms part of the world's most important wintering site for the vulnerable Greenland White fronted Goose (*Anser albifrons flavirostris*) (world population about 30,000), which nests in Greenland, stages in Iceland and winters in Ireland and the UK. The average count of *A. a. flavirostris* wintering at the site is 32% of the world population. Several other passage and wintering waterbirds use the site.

Ramsar Site No. 840 : Bannow Bay.

Designated on the 11th November 1996. The site with an area of 958Ha, is also a designated Special Protection Area EC Directive. The site is described as a sea bay with extensive mud and sand flats, saltmarsh, and sand dunes. The site supports an important range of wintering waterbird species, including Northern Pintail duck (*Anas acuta*), Red Knot (*Calidris canutus*), Grey Plover (*Pluvialis squatarola*). It is a habitat for internationally important numbers (938) of Brent geese (*Branta bernicla hrota*).

Ramsar Site No. 333 : The Raven.

Designated on the 31st July 1986. The site has a total area of 589 ha and also has the following designations; Special Protection Area EC Directive; Nature Reserve. The site is described as a sand-dune spit protecting Wexford Harbour from the sea. The tip is highly mobile, with constantly changing patterns of recurves, lagoons and sand bars. The unforested foredunes support a well-developed native vegetation, including various nationally rare species. The site provides important roosting sites for passage terns and supports a small nesting colony of the Little Tern (*Sterna albifrons*). Internationally important numbers of the globally vulnerable goose Greenland White fronted Goose (*Anser albifrons flavirostris*) winter at the site and large numbers of waders roost at high tide. The site is managed for timber.

6.1.2 Special Areas of Conservation (SAC'S)

SACs are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. Most SAC's are in the countryside, although a few sites reach into town or city landscapes, such as Dublin Bay and Cork Harbour.

The legal basis on which SAC's are selected and designated is the EU Habitats Directive(92/43/EEC), transposed into Irish law in the European Union (Natural Habitats) Regulations, 1997. The Directive lists (Annex I) certain habitats that must be protected within SAC's. Irish habitats include raised bogs, blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets'.

The following is a list of all candidate SAC's in Wexford and their site codes.¹

Ballyhack (000695)

Ballyteigue Burrow (000696) *

Bannow Bay (000697)

Cahore Polders & Dunes (000700)

Lady's Island Lake (000704)

Saltee Islands (000707)

Screen Hills (000708)*

Tacumshin Lake (000709)

Raven Point Nature Reserve (000710)

Hook Head (000764)*

Blackstairs Mountains (000770)*

Slaney River Valley (000781)

Kilmuckridge-Tinnaberna Sandhills (001741)

Kilpatrick Sandhills (001742)*

Long Bank (002161)*

River Barrow & River Nore (002162)*

Carnsore Point (002269).

**Denotes Management plans in place or gone for public consultation*

6.1.3 Special Protection Areas (SPAs)²

The EU Birds Directive(79/409/EEC) came into force in 1979 and it requires each member state to designate "Special Protection Areas" for birds. The Directive contains annexes which are lists of birds which require particular conservation measures (Annex I), and also species which may be hunted, and species which may be sold. Annex I species include Whooper Swan, Greenland White-fronted Goose, Peregrine Falcon, Corncrake and Terns. Member states are also required to protect sites which are important for migratory species such as ducks, geese and waders.

¹

<http://www.npws.ie/Conservationsites/SpecialAreasofConservationSACs/SiteSynopsis/Wexford/>

² <http://www.npws.ie/Conservationsites/SpecialProtectionAreasSPAs/>

The Directive seeks to establish "Natura 2000", a network of protected areas throughout the European Community. It is the responsibility of each member state to designate Special Areas of Conservation (SACs) to protect habitats and species, which, together with the Special Protection Areas (SPAs) designated under the EU Birds Directive(79/409/EEC), form Natura 2000.

The following is a list of all SPA's in Wexford and their site codes.³

Saltee Islands SPA (004002)

Lady's Island Lake SPA (004009)

Inish & Sgarbheen SPA (004010)

The Raven SPA (004019)

Ballyteigue Burrow SPA (004020)

Bannow Bay SPA (004033)

Tacumshin Lake SPA (004092)

Keeragh Islands SPA (004118)

Wexford Nature reserve SPA(004001)

Wexford Harbour (004076)

6.1.4 Proposed NHA's

The basic designation for wildlife is the Natural Heritage Area. In 1995, proposals for over 1,100 NHAs were published, but it was not until December 2000 that powers were introduced for the statutory process of their designation and protection. Many of these NHAs have overlapping designations of SAC and/or SPA, but there are currently 802 proposed NHAs which are not SAC/SPA. They cover an area of about 113,000 hectares. These will be reviewed, and other sites surveyed, during the course of the designation process.

Some of the proposed NHAs (pNHAs) are tiny, such as a roosting place for rare bats. Others are large - a blanket bog or a lake, for example.

3

<http://www.npws.ie/Conservationsites/SpecialProtectionAreasSPAs/SiteSynopsis/Wexford/>

There are currently no areas designated as NHA's in the County of Wexford. However there are 28 proposed NHA's.

Code	Area	status	Habitat	Interest
000698	Barrow River Estuary	pNHA		
000699	Boley Fen	pNHA		
000702	Leskinfere Church, Clogh	pNHA		
000703	Keeragh Islands	pNHA	Exposed Rock	Ecological
000706	Mountgarrett Riverbank	pNHA		
000711	Tintern Abbey	pNHA		
000712	Wexford Slob and Harbour	pNHA	Grassland	Ecological Mudflats
000741	Ballyconnigar Sandpits	pNHA		
000742	Ballyconnigar Upper	pNHA		
000744	Ballykelly Marsh	pNHA		
000745	Ballymoney Strand	pNHA		Ecological / Geological
000746	Ballynabarney Wood	pNHA	Heath/woodland	
000747	Ballyroe Fen and Lake	pNHA		
000750	Bunclody Slate Quarries	pNHA	Heath	Ecological
000754	Carrhill Wood	pNHA		
000755	Clone Fox Covert	pNHA		
000757	Courtown Dunes and Glen	pNHA	Sand dunes/woodland	Ecological
000761	Forth Mountain	pNHA	Heath	Ecological, Geomorphological
000765	Killoughrim Forest	pNHA	Woodland/Heath	Ecological
000774	Oaklands Wood	pNHA	Woodland	Ecological
000782	St Helen's Burrow	pNHA		Geological
000812	Pollmounty River Valley	pNHA	Woodland/ River Valley	Ecological
001733	Ardamine Woods	pNHA	Woodland	
001736	Cahore Point North Sandhills	pNHA		

001737	Donaghmore Sandhills	pNHA		
001738	Duncannon Sandhills	pNHA		Ecological
001834	Kilgorman River Marsh	pNHA		
001930	Ballyteige Marsh	pNHA		ecological

The following are pNHA's which are also SAC's.

000696 Ballyteigue Burrows
000697 Bannow Bay
000700 Cahore Polders and Dunes
000704 Lady's Island Lake
000707 Saltee Islands
000708 Screen Hills
000709 Tacumshin Lake
000710 Raven Point Nature Reserve
000764 Hook Head
000770 Blackstairs Mountains
000781 Slaney River Valley
001741 Kilmuckridge - Tinnaberna Sandhills
001742 Kilpatrick Sandhills
002162 River Barrow And River Nore

6.1.5 Co. Wexford Nature Reserves

Ballyteige Burrow: (227 ha.) is a 9 km long shingle spit running north west from the coastal village of Kilmore Quay in south Co. Wexford and adjoining foreshore. The flora of Ballyteige Burrow includes a number of rare plants such as *Asparagus officinalis* and is especially rich in dune plants and those which prosper in coastal habitats. Established on 28 September, 1987. State owned.

The Raven: comprising 589 ha., situated 8 km north-east of Wexford town is a large, well developed sand dune ecosystem, foreshore and seabed. The area supports a full range of duneland animals, several of which are of particular interest and has a rich flora including some rare species. It is one of the best-developed sand dune systems on the east coast. Important also as a roosting area for geese and waders. Established on 31 July, 1983. State owned.

The Wexford Wildfowl Reserve: 194 ha. situated on the sloblands north of Wexford Harbour. It is owned jointly by the National Parks & Wildlife Service and the Irish Wildbird Conservancy and it forms a wintering ground of international importance for a number of migratory waterfowl species including in particular the Greenland White-fronted

Goose. This reserve was extended by 84 ha. in 1989 to 194 ha. Established on 3 June, 1981.

6.2 Fens

Below is a list of known Fens in County Wexford⁴. Only one is known to be under the protection of a private individual(s), organisation or state agencies in Ireland, that being Boley Island, Co. Wexford which is 22ha in size.

NHA Code	Name	County	Grid Reference	Category of Fen
699	Boley	Wx	S 782 167	Valley
712	Curraclloe	Wx	T 110 270	Transition/Redbeds
781	Macmine Marshes	Wx	S 980 320	Flood Plain/Callows
708	Screen Hills/ Doo Lough Kettlholes	Wx	T 100 290	Basin
709	Tacumshin Lake	Wx	T 041 053	Transition/reedbeds
770	Urrin Headwater	Wx	S 860 480	Flush

6.1.8. Coastal Habitats in Wexford

Of Wexford's 264 km, 211 km of the county's coast is soft - consisting of long sandy beaches and "soft" cliffs. Wexford has numerous NHAs, SACs and SPAs - the latter being some of the most important SPAs in the country.

The main impacting activities in Wexford are associated with recreation and agriculture. It will be noted also that race horse exercising is significant in three NHAs (2 SACs and 2 SPAs) - parts of the dunes in north and south Wexford are given over to purpose made "rides" cutting a swathe through the dune vegetation. The severe erosion of the soft cliffs in north Wexford is weather related and therefore quite difficult to deal with. However, the County Council is addressing the erosion problem in the recreational areas.

⁴ <http://www.ipcc.ie/fen2000surveylist.html>

More than one third of the NHAs for which information was available are under threat from visitor pressure. Other significant threats include continued use of areas for race horse activities and water polluting activities. The latter includes agricultural pollution.

6.3 Hedgerows

Hedgerows, particularly those with a variety of plant and tree species are of particular importance for biological diversity in the countryside. The most species rich hedgerows are usually the oldest ones, and townland boundary and roadside hedgerows are particularly important for this reason. Species-rich hedgerows are important habitats in their own right, and they also act as wildlife corridors for many species, allowing dispersal and movement between other habitats. Hedgerows are not only important for biodiversity, but have farming, landscape, archaeology and cultural value.

Townland boundary loss has occurred but the rate of loss is not known. There has, however, been significant loss of species rich hedgerows, particularly in more intensively farmed areas and in periphery of urban centres. The ecological quality has probably deteriorated due to neglect, inappropriate management, lack of maintenance, use of herbicides and increased livestock densities, particularly of sheep, and removal for one off rural housing. Under the Wildlife (Amendment) Act, 2000, cutting of hedgerows, except for reasons of public safety, is prohibited from 1st March to 31st August. The future Biodiversity Plan for the county should identify the location and extent of ancient and species-rich hedgerows.

6.4 Gaps in data –

While carrying out the collection of baseline data on Biodiversity within the county it was difficult to obtain specific data such as habitat descriptions on the proposed NHA's. There was sufficient information on the description of SAC's and SPA's however. In the absence of a County Biodiversity plan it was difficult to obtain any quantifiable data at county level on hedgerow habitats within the county which in themselves are an important habitat. It proved difficult to obtain data on marine habitats, fisheries and aquaculture

Forecast forward – do nothing approach

IF the Plan were not to be implemented the current rate of development and change in land uses would be likely. It could be easily assumed that uncontrolled levels of development would result in a steady loss of bio-diversity within the county namely the listed sites for protection pNHA's, SAC's and SPA's, where habitat loss would show a marked decline in specific more sensitive species.

Conclusion –

A Local Biodiversity Action Plan should be drawn up during the course of the life of the plan, which should provide a basis for establishing adequate monitoring of the county's biodiversity and should also form an excellent baseline of information for any subsequent plan. Development control policies should be tailored geographically to reflect the unique sensitivities of the various habitats and flora and fauna.

Chapter 7. Flora & Fauna

Plant diversity in Ireland is lower than in areas of equivalent latitude in England and Wales, but broadly similar to Scotland. Many sea-coast plants have declined for example, the sand dune or purple spurge has become extinct in Britain and Ireland and while cottonweed is holding on in Ireland, sea stock has not been recorded here recently. They are part of what is known as the Mediterranean-Atlantic element of our flora and it could be that they are vulnerable to winter storm damage.

7.1 Flora

Cottonweed - Three of our rarest plants, with just two known areas of occurrence each, are the cottonweed, meadow saffron, and Kerry lily. Cottonweed is a perennial herb of sand dunes and stabilised shingle. The centre of distribution of this species is in the Mediterranean and it reaches its northern limit in Ireland. Cottonweed was first recorded here in 1845 at Dungarvan. It is now restricted as a native to just two sites in Co. Wexford, where populations appear to be stable. It was reintroduced into a suitable habitat at a third site in the county in 1997, where it still survives. As well as these sites, it was formerly recorded at two in Waterford and one each in Wicklow and Kerry. It is listed in the Flora Protection Order 1999. Recently plants at Lady's Island have increased their range towards the lake.

Sarcocornia perennis Perennial Glasswort Lus gloine buan (*Arthrocnemum perenne*) This fleshy, slightly woody perennial grows up to 30 cms tall and often extends to form tussocks up to 1 metre in diameter. It occurs in salt-pans in salt marshes and on tidal muds. In Ireland its distribution is restricted to the south-east coast where it is found in salt-pans. It has been recorded from a total of three sites, all in Co. Wexford surrounding Bannow Bay, in only one of which is it known to be extant. It is possibly extinct in at least one of the other two sites due to the aggressive spread of *Spartina x townsendii*.

Callitriche truncata Guss. CALLITRICHACEAE - Short-leaved Water-starwort Réiltín scoite This small aquatic herb is confined in Ireland to 1 site near Enniscorthy in Co. Wexford where it was first recorded in 1897. It was last seen there in 1973 at which time the population was apparently stable. This critical taxon is not easily separable from

C. hermaphroditica L. and may prove to be more widespread in Ireland as it becomes increasingly recognised.

7.2 Fauna

A number of Irish habitats and species have been identified as being of fundamental European importance and ear-marked for special conservation.

The Red List includes the following 18 species, along with their matching criteria of

Declining breeders (D),

Historically declining (H) and

Global conservation concern (G):

Black-Necked Grebe	(H)	Red-Necked Phalarope	(H)
Common Scoter	(D), (H)	Roseate Tern	(D), (H)
Hen Harrier	(D)	Barn Owl	(D)
Red Grouse	(D)	Nightjar	(D), (H)
Grey Partridge	(D), (H)	Ring Ouzel	(H)
Quail	(H)	Chough	(D)
Corncrake	(D), (H), (G)	Twite	(D), (H)
Lapwing	(D)	Yellowhammer	(D)
Curlew	(D)	Corn Bunting	(D), (H)

The Amber List includes the following 77 species, along with their matching criteria of:

Breeding species (B) , with moderate decline, rare/sporadic breeding and/or international important or localised.

Wintering/Passage species (W) which are internationally important or recognised

European conservation concern (E)

Red-throated Diver	(B), (E)	Knot	(W), (E)
Black-throated Diver	(E)	Dunlin	(W), (E)

Great Crested Grebe	(B), (W)	Jack Snipe	(E)
Cory's Shearwater	(W), (E)	Snipe	(B)
Great Shearwater	(W)	Woodcock	(B), (E)
Sooty Shearwater	(W)	Black-tailed Godwit	(B), (W), (E)
Manx Shearwater	(B), (E)	Bar-tailed Godwit	(W), (E)
Storm Petrel	(B), (E)	Redshank	(B), (W), (E)
Leach's Petrel	(B), (E)	Little Gull	(W), (E)
Gannet	(B), (E)	Mediterranean Gull	(B)
Cormorant	(B)	Black-headed Gull	(B)
Little Egret	(B)	Common Gull	(E)
Bewick's Swan	(W), (E)	Sandwich Tern	(B), (E)
Whooper Swan	(B), (E)	Common Tern	(B)
Greenland White-fronted Geese	(W)	Arctic Tern	(B)
Greylag Goose	(W)	Little Tern	(B), (E)
Barnacle Goose	(W)	Guillemot	(E)
Brent Goose	(W)	Razorbill	(B)
Skelduck	(W)	Black Guillemot	(E)
Wigeon	(B)	Puffin	(B), (E)
Gadwall	(E)	Stock Dove	(B)
Teal	(B)	Cuckoo	(B)
Pintail	(B), (W), (E)	Short-eared Owl	(B), (E)
Garganey	(B), (E)	Kingfisher	(B), (E)
Pochard	(B), (W)	Skylark	(B), (E)
Tufted Duck	(W)	Sand Martin	(E)
Scaup	(B), (W), (E)	Swallow	(E)
Elder	(W)	Yellow Wagtail	(B)
Goldeneye	(W)	Redstart	(B), (E)
Red-breasted Merganser	(W)	Whinchat	(B)
Goosander	(B)	Stonechat	(E)
Goshawk	(B)	Grasshopper Warbler	(B)
Merlin	(B)	Reed Warbler	(B)
Peregrine	(E)	Lesser Whitethroat	(B)

Water Rail	(B)	Wood Warbler	(B)
Spotted Crake	(B)	Spotted Flycatcher	(B), (E)
Coot	(B), (W)	Pied Flycatcher	(B)
Golden Plover	(B)	Redpoll	(B)
Grey Plover	(W)		

7.3 Fisheries and Aquaculture

A number of native inland fish stocks (e.g. salmon, trout and arctic char) are affected by habitat degradation caused by eutrophication ; factors such as drainage, acidification of headwaters and fishing pressures also impact on these stocks. The important aquaculture areas in Wexford are Wexford Harbour for mussels, Kilmore Quay for scallops, Ballyteige Bay and Bannow bay for oysters. Water quality will be a major factor in protecting these important resources.

Freshwater Pearl Mussel - found in River Slaney

- *Margaritifera margaritifera*
- *Margaritifera durrovensis* (now believed to be a form of *M. margaritifera*)

Unlike many other molluscs this mussel requires clean, cool, well-oxygenated water free from mud and suspended matter. Also unusual for a mollusc, it is found chiefly in soft water. It is a declining species throughout Europe and has become extinct in some places in Ireland. The causes are various and include destruction by pearl fishers, physical changes to the habitat and pollution. The species is particularly vulnerable because of its longevity (one hundred years or more) and slow reproduction. In rivers where it is present, there may be no juveniles. It lives on gravel in high quality, low nutrient streams and rivers.

Fish

Annex II of the EU Habitats Directive lists the three species of lamprey and the two species of shad found in Ireland. Following recent surveys, NPWS has proposed stretches of the few rivers where twaite shad have been known to breed which include 3 rivers in County Wexford the Slaney, Barrow and Suir as candidate SAC's. Ireland appears to

have a larger diversity of trout than was previously believed, however croneen have been shown to be one of the most distinct forms of trout in Irish waters.

Amphibians

Three species of amphibians are found in Ireland; the smooth newt, the common frog, and the natterjack toad. A survey of the common frog was undertaken by the IPCC in 2003. The species is considered to be widespread and common in Ireland but vulnerable in the rest of Europe.

Reptiles

The Irish reptile fauna includes two land species, the common lizard and the slow-worm as well as marine turtles. The lizard is most commonly confined to coastal counties with heathland, bogland, rural gardens, sand dunes, stone walls and hedgerows being the main habitats. The loss of suitable coastal habitats to recreational and holiday development must have removed large tracts of lizard habitat.

Four of the seven species of marine turtle have been recorded in Irish waters. Globally all marine turtle species are under threat due to exploitation for their meat and tortoiseshell, egg collection, tourist development on nesting beaches, drowning in fishing gear etc. All sea turtles are protected by National, European and international law.

7.4 Birds

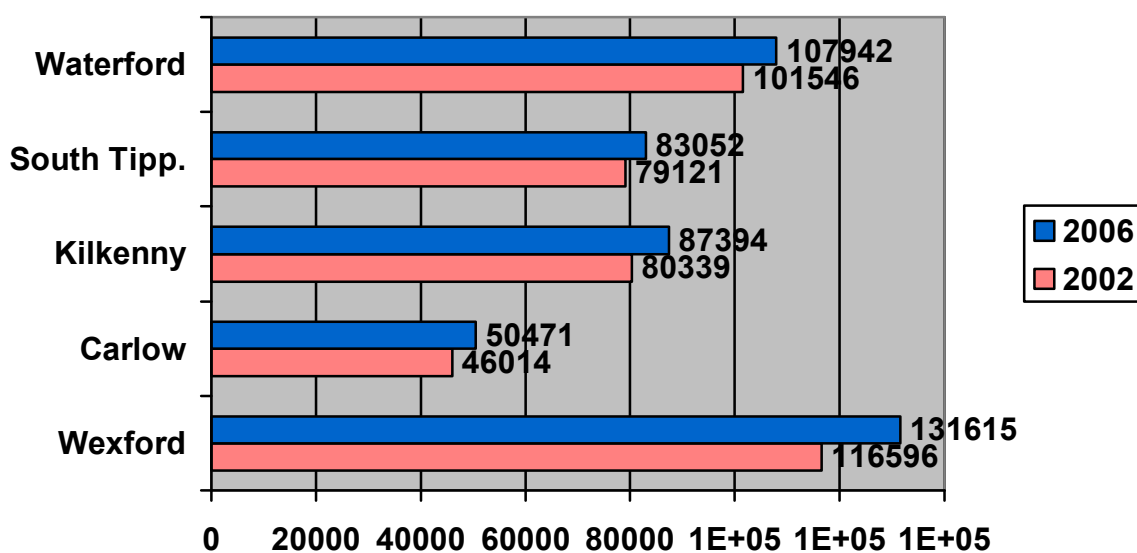
Many species of seed eating farmland birds have undergone severe declines in range and/or abundance in Europe over the past 30 years. Most birds are found along the south and south-east coast, which explains the 8 number SPA's located in county Wexford.

Wexford is home to a wealth of breeding birds including the superb tern colonies of Lady's Island Lake. Lady's Island is also home to the rare and exquisite Roseate Tern. Wexford is also the home of warblers, ducks and rails which can be found in the extensive reed-beds of Tacumshin Lake. The seabird colonies off the Wexford coast are also renowned, with Razorbills, Guillemots, Gannets, as well as, Puffins and Manx Shearwaters can be easily spotted as they commute to and from the Saltee Islands

Chapter 8. Population

8.1 Key Demographic and Socio - Economic Trends

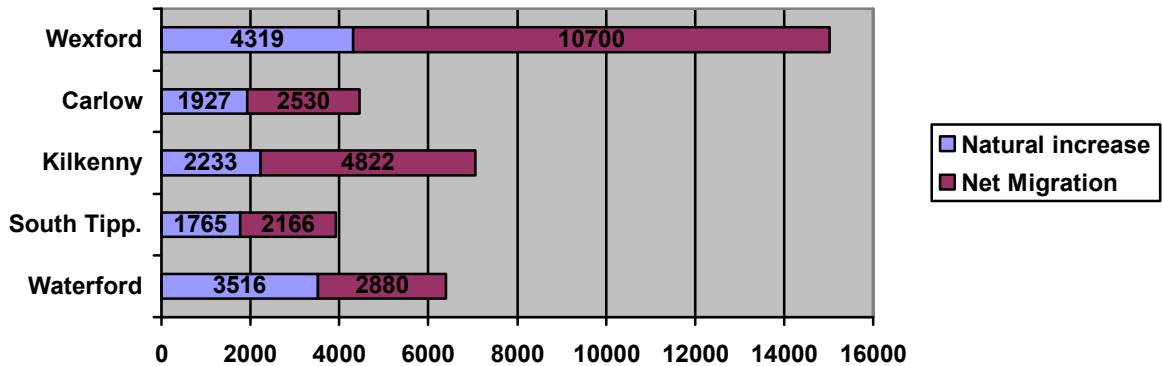
Preliminary data from the Census 2006 has shown that the population of the South East region has grown by 8.7% to 460,474. Within the region, Co. Wexford has grown to 131,615 persons, equivalent to a 28.5% share of the region's population, Wexford also recorded the highest growth rate of 12.9%.



Population Change Across the South East Region

8.2 South East Region- Components of Population change

Co. Wexford itself has grown in population by 15,019 persons since 2002. Figure 2 demonstrates the components of population change within each of the counties in the region. 10,700 (71%) of the increase in Wexford is due to inward migration, considered high in comparison to the other counties within the South East.



Components of Population Change in the South East Region

This increase is due to a number of factors including Wexford's proximity to the Dublin Metropolitan Area and the employment opportunities that arise therein and more recently the designation of Wexford town as a growth 'hub' under the National Spatial Strategy 2005 and New Ross and Enniscorthy as having 'Urban Strengthening Opportunities'. New Ross is also strategically located in close proximity (c. 17 miles) from the Bellview Port outside of Waterford which was designated as a 'Gateway Town'.

8.3 Population at 2006 in County Wexford⁵.

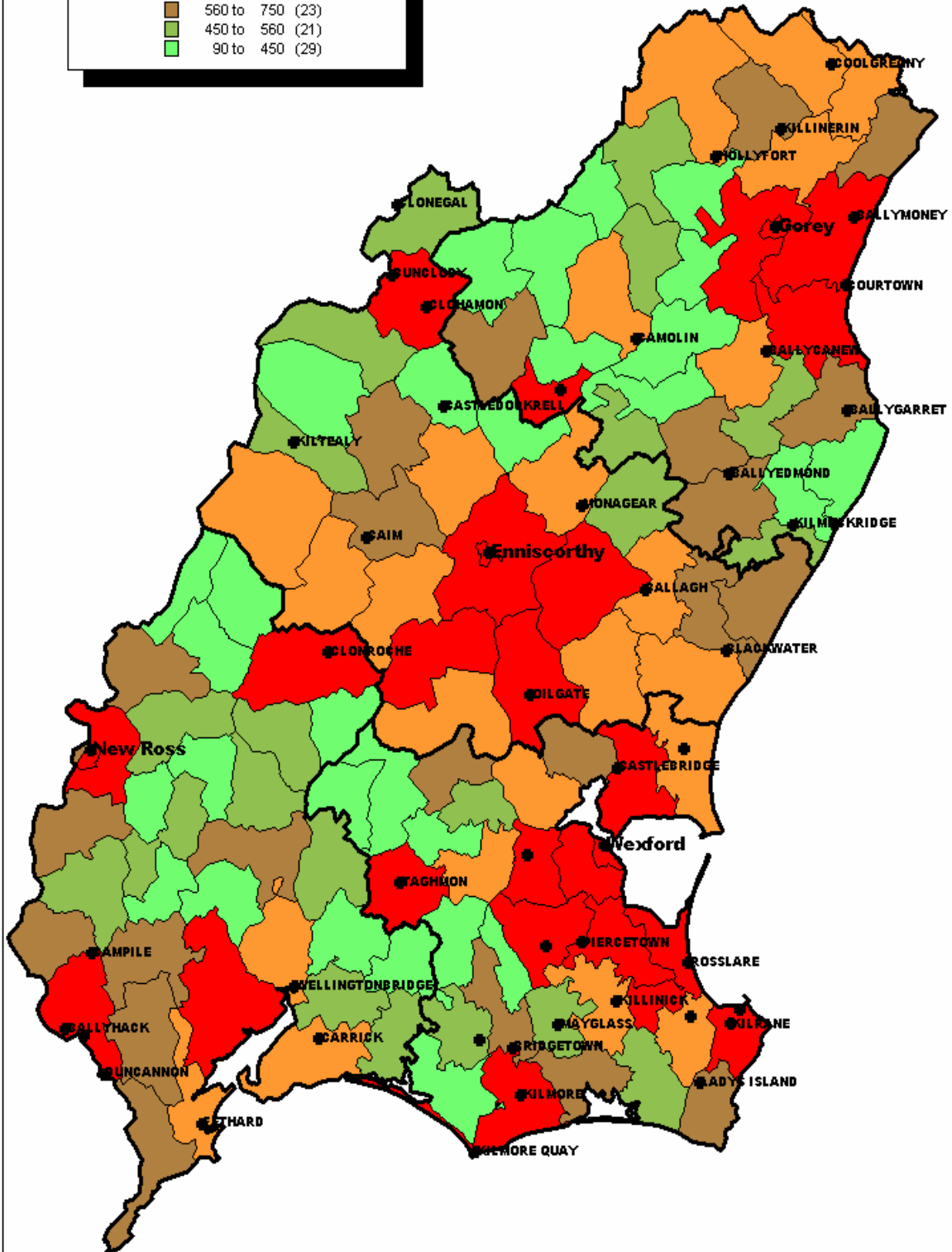
The following map illustrates the proportional (%) population increases in the County apparent from Census 2002 to 2006. The Gorey area has continued to grow with most Electoral Divisions increasing in population, many by over 20% since 2002, a 4 year period. There have been population increases across the Enniscorthy area, mostly between 5% and 15%. The New Ross and Wexford Areas have also grown steadily, although some Electoral Divisions have shown a decrease in population in the Census period to 2006.

⁵ Preliminary Population report, Census 2006, CSO.

Preliminary Population 2006

Source: CSO 2006

- 1,090 to 9,660 (26)
- 750 to 1,090 (23)
- 560 to 750 (23)
- 450 to 560 (21)
- 90 to 450 (29)



8.4 Future Projections

The Census 2006, along with analysis of previous Census and the Quarterly National Household Survey, has provided some insights into the population shifts in recent years. Evidence of an overspill effect is particularly apparent from Dublin to the South East regions. The numbers of planning applications received by Wexford County Council point towards a continuing increase in population for the County.

Wexford Town's designation as a hub under the National Spatial Strategy will mean the population will continue to increase in the future. Increased capital investment along with the 'critical mass' required to sustain the strategic 'growth triangle' will require a population of 40,000 in the years to 2020.

The following table projects the population increases from 2006 to 2016, using various assumptions of migration, as it has been shown to being the critical factor in population increases, particularly in County Wexford in recent years⁶.

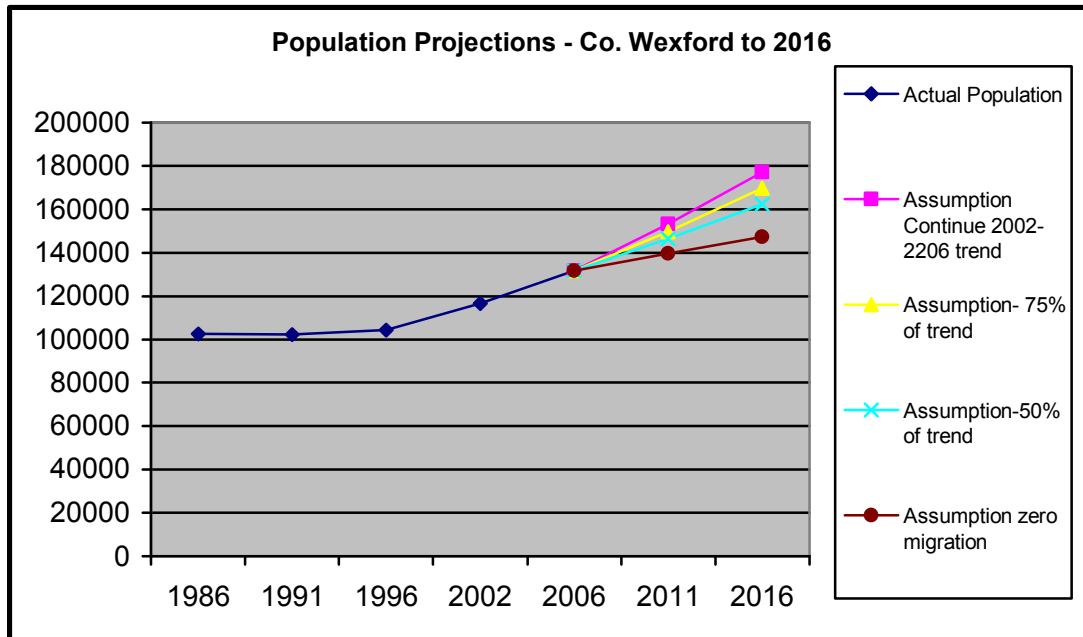
Migration Assumption	Population 2011	Population 2016
Continue Migration at 13,375 per 5 year period	153,090	177,110
75% of 2002-2006 Migration trend	149,750	169,680
50% of 2002-2006 Migration trend	146,410	162,240
Zero Migration	139,720	147,380

The table above projects the population of County Wexford using assumptions that migration would continue at its existing level and also presents the projected population for 75%, 50% of current trends together with an assumption of zero migration to the County. The chart below demonstrates the various assumptions.

If migration continues at its current rate, the population will increase to 153,090 in 5 years and 177,110 in 10 years to 2016, a further increase of 45,000 in population.

⁶ UCD Econometric Population Model, UCD, 2006.

At the other end of the scale at zero migration, the population will increase to 147,880 based solely on natural increase, an increase of 15,755 in the decade.



Projected Population of Co. Wexford -2016
UCD Econometric Modelling (2006)⁷

⁷ 2006 Preliminary Population Results

Chapter 9. Human Health

Human Health protection is a fundamental aspect of environmental protection. Public health protection in this country is relatively high, especially since the threat from infectious diseases has largely diminished due to successful immunisation programmes and improved diet, housing and general living conditions. Considerable investment has been made in successfully improving drinking water quality, especially in the larger supply schemes, although high microbiological levels are continually being found in many smaller private rural schemes.

The environmental impact of increased development and enhanced prosperity is not without some cost in terms of increased commuting times, time shortages, noise, air quality and encroachment of urban areas into the countryside. All of these factors can impact on human health.

9.1 Health Issues

As expected, with population increase, Acute Hospital Activity within the SouthEastern Health Board area increased in all categories of care in the years from 1999 – 2002. The increase in the number of outpatients is especially noticeable. This increase continued into 2002.

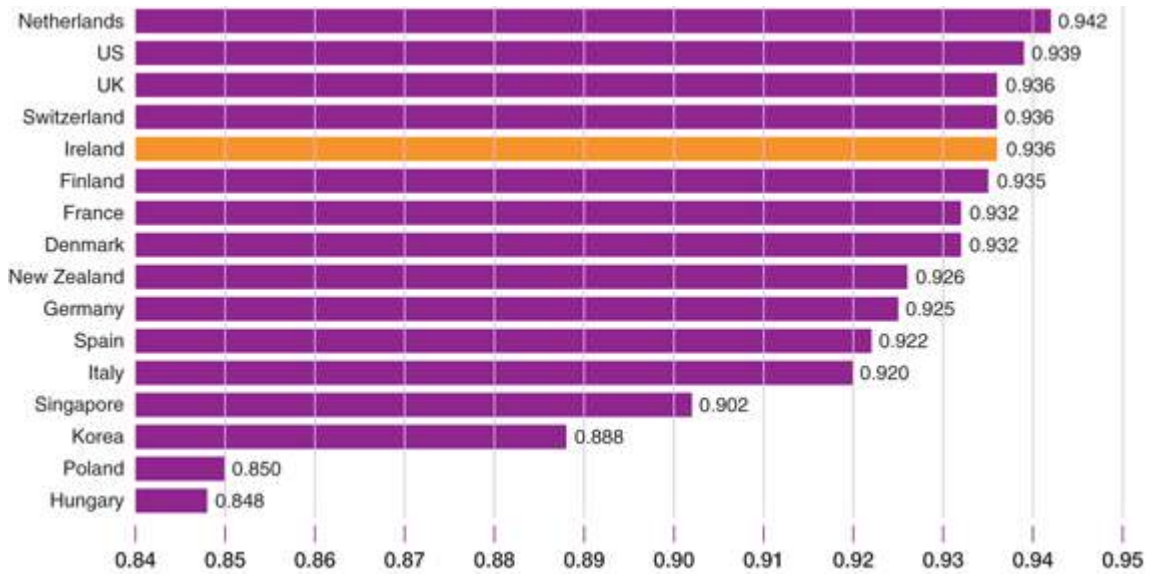
- 23% increase in the number of A&E patients from 1999-2002
- 26% increase in the number of Daycases

Quality of Life indicators~ National Figures based mainly on economic growth only

Figure 9.1.: Human Development Index, 2002⁸

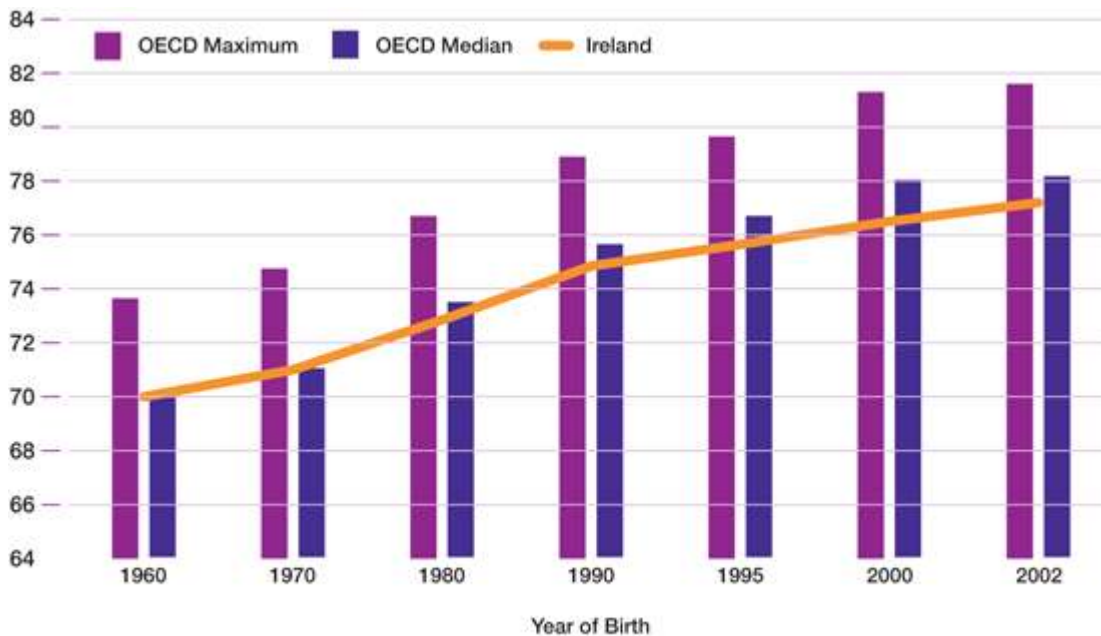
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http://www.forfas.ie/ncc/reports/ncc_annual_05/ch02/ch02_02.html#change_all_tables



UN Human Development Report , 2004

The Human Development Index is a composite index which combines measures of life expectancy, school enrolment, literacy and income. A high score is an indicator of enhanced quality of life. The results of the UN Human Development Index are closely correlated with GDP per capita measure. **Figure 9.2: Life Expectancy in OECD Countries⁹**



9

http://www.forfas.ie/ncc/reports/ncc_annual_05/ch02/ch02_02.html#change_all_tables

An important indicator of a nation's health is average life expectancy. Life expectancy in Ireland has been increasing steadily, from 70 years in 1960 to 77.8 in 2002, yet it remained below the OECD median as of 2002.

The analysis is part of an annual **World-wide Quality of Living Survey**¹⁰, covering more than 350 cities, to help governments and multinational companies place employees on international assignments. Each city is based on an evaluation of 39 criteria, including political, social, economic and environmental factors, personal safety and health, education, transport, and other public services. Cities are ranked against New York as the base city, which has an index score of 100.

London is the UK's highest ranking city and is stable at position 39 (score 101.2). The two other UK cities covered in the survey are Birmingham and Glasgow, which both score 98.3 and climb one place to joint 55th position.

Dublin has dropped two places to 24th position, scoring 103.8, mainly due to increased traffic congestion.

9.2 Open Space & Community Facilities

Facility	Standards	Recommended by
Outdoor recreational 'playing space'	2.4ha / 1,000 population	National Playing Fields Association (UK)
Golf Courses	1 nine hole / 1,000 population	Sports Council (UK)
Local Parks	2 ha within 0.25mile of population	Greater London Development Plan
Indoor Sports Centre	1 / 40,000 – 90,000	Regional Sports Council (UK)
Indoor Pool	1 25m pool + 1 learner pool / 40,000 – 45,000 population	Regional Sports Council (UK)

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There are currently no existing or proposed Irish Government Standards as above which would be an indication of best practice.

¹⁰ <http://www.finfacts.com/qualityoflife.htm>

¹¹

<http://www.westmeathcoco.ie/developmentPlan/documents/Open%20Space%20and%20Recreation.pdf>

9.3 Lead Poisoning - Sources of Human Exposure

The level of lead in the earth's crust is about 20 mg/kg. Lead in the environment may derive from either natural or anthropogenic sources. Natural sources of atmospheric lead include geological weathering and volcanic emissions and have been estimated at 19000 tonnes/year, compared to an estimate of 126000 tonnes/year emitted to the air from the mining, smelting, and consumption of over 3 million tonnes of lead per year. Atmospheric lead concentrations of 50 $\mu\text{g}/\text{m}^3$ have been found in remote areas. Background levels of lead in soil range between 10 and 70 mg/kg and a mean level near roadways of 138 mg/kg have been reported. Present levels of lead in water rarely exceed a few micrograms/litre; the natural concentration of lead in surface water has been estimated to be 0.02 mg/litre.

Lead and its compounds may enter the environment at any point during mining, smelting, processing, use, recycling or disposal. Major uses are in batteries, cables, pigments, petrol (gasoline) additives, solder and steel products. Lead and lead compounds are also used in solder applied to water distribution pipes and to seams of cans used to store foods, in some traditional remedies, in bottle closures for alcoholic beverages and in ceramic glazes and crystal tableware. In countries where leaded petrol is still used, the major air emission is from mobile and stationary sources of petrol combustion (urban centres). Areas in the vicinity of lead mines and smelters are subject to high levels of air emissions. Airborne lead can be deposited on soil and water, thus reaching humans through the food chain and in drinking water. Atmospheric lead is also a major source of lead in household dust.

9.3.1 Environmental Transport, Distribution and Transformation

The transport and distribution of lead from fixed, mobile and natural sources are primarily via air. Most lead emissions are deposited near the source, although some particulate matter ($< 2 \mu\text{m}$ in diameter) is transported over long distances and results in the contamination of remote sites such as arctic glaciers. Airborne lead can contribute to human exposures by the contamination of food, water and dust, as well as through direct inhalation. The removal of airborne lead is influenced by atmospheric conditions and particulate size. Large amounts of lead may be discharged to soil and water. However, such material tends to remain localized because of the poor solubility of lead compounds in water.

Lead deposited in water, whether from air or through run-off from soils, partitions rapidly between sediment and aqueous phase, depending upon pH, salt content, and the presence of organic chelating agents. Above pH 5.4, hard water may contain about 30 m g lead/litre and soft water about 500 m g lead/litre. Very little lead deposited on soil is transported to surface or ground water except through erosion or geochemical weathering; it is normally quite tightly bound (chelated) to organic matter. Airborne lead can be transferred to biota directly or through uptake from soil. Animals can be exposed to lead directly through grazing and soil ingestion or by inhalation. There is little biomagnification of inorganic lead through the food chain.

9.3.2 Environmental Levels and Human Exposure

In the general non-smoking adult population, the major exposure pathway is from food and water. Airborne lead may contribute significantly to exposure, depending upon such factors as use of tobacco, occupation, proximity to motorways, lead smelters, etc., and leisure activities (e.g., arts and crafts, firearm target practice). Food, air, water and dust/soil are the major potential exposure pathways for infants and young children. For infants up to 4 or 5 months of age, air, milk, formulae and water are the significant sources of lead exposure.

Levels of lead found in air, food, water and soil/dust vary widely throughout the world and depend upon the degree of industrial development, urbanization and lifestyle factors. Ambient air levels over 10 m g/m³ have been reported in urban areas near a smelter, whereas lead levels below 0.2 m g/m³ have been found in cities where leaded petrol is no longer used. Lead intake from air can, therefore, vary from less than 4 m g/day to more than 200 m g/day.

Levels of lead in drinking water sampled at the source are usually below 5 m g/litre. However, water taken from taps: (faucets) in homes where lead is present in the plumbing can contain levels in excess of 100 m g/litre, particularly after the water has been standing in the pipes for some hours.

The level of dietary exposure to lead depends upon many lifestyle factors, including foodstuffs consumed, processing technology, use of lead solder, lead levels in water, and use of lead-glazed ceramics. For infants and children, lead in dust and soil often constitutes a major exposure pathway. Lead levels in dust depend upon such factors as the age and condition of housing, the use of lead-based paints, lead in petrol and urban

density. The intake of lead will be influenced by the age and behavioral characteristics of the child and bioavailability of lead in the source material. Inhalation is the dominant pathway for Lead exposure of workers in industries producing, refining, using or disposing of lead and lead compounds. During an 8 -h shift, workers can absorb as much as 400 m g lead, in addition to the 20-30 m g/day absorbed from food, water and ambient air, significant intake may occur from ingestion of large inhaled particulate material.

Chapter 10. Soil

Soil is a biologically active mixture of weathered minerals, organic matter, organisms, air and water which provides the foundation of life in terrestrial ecosystems. Soil can be considered a non-renewable natural resource because it develops over very long timescales. During the last glaciation an ice sheet moving in from the Irish Sea deposited a blanket of till and fluvioglacial materials over the solid rocks in south Wexford. These now constitute the soil parent materials in most of the area.

The characteristic till deposits consist of marine clays, clay loams and loams; fluvioglacial deposits are composed of sands and gravels. In places the depositional pattern is complex and intricate areas of alternating sands and loams may occur.

County Wexford contains a range of soils which support various habitats and land uses and provide valuable mineral resource potential. These soils can be impacted upon by water quality. Soils derived from the underlying rock are mainly found on Forth Mountain and in a few other areas where the bedrock comes close to the surface. Mud flats at Kilmore and in the Wexford Harbour have been converted into productive soils following reclamation during the last century. Sand dunes occur along many parts of the coast.

10.1 Hydrogeology

The hydrogeology characteristics of the strata of the South Wexford area are very variable. The water table is generally within 10m of the surface. Aquifer strata can be developed to provide reasonably large water supplies. South Wexford covers one of the driest parts of Ireland and potential recharge to the aquifers ranges from 400-600mm/yr. The bulk of recharge normally occurs between late October and early March. The volcanic rocks of the Duncannon Group are considered to be a major aquifer. This aquifer has been developed to provide part of the regional water supply in County Wexford and around Waterford city.

10.2 Aggregates

Aggregates is the term used to describe rock chippings of various sizes which are mostly used in the construction industry. It includes sand and gravel, which are naturally occurring aggregates, and rock which is quarried and then crushed.

Igneous Rock

The major aggregate quarry in the county is located 2.5km south of Enniscorthy. The quarry is diorite and produces a full range of aggregates and concrete products. There are several other quarries in acid and basic igneous rocks but they are all small in comparison and some disused.

Shale, slate and quartzite

Shale and slate are quarried at several locations for use as aggregate. A quarry near Forth Mountain which produced quartzite aggregate is now closed.

Sand and Gravel

Sand and gravel extraction is concentrated in Screen Hills area immediately north of Wexford town. This is a complex of kame and kettle moraine belonging to the late Midlandian glacial stage. 5 Sand and gravel pits are located in this area.

Clays

County Wexford has a history of pottery manufacture going back to the early 18th century. Enamelled tiles were manufactured in Wexford town and there were potteries in and around Enniscorthy and Oilgate. In addition to pottery manufacture bricks were widely made throughout the area until 1950's. The pottery industry is still thriving around Enniscorthy.

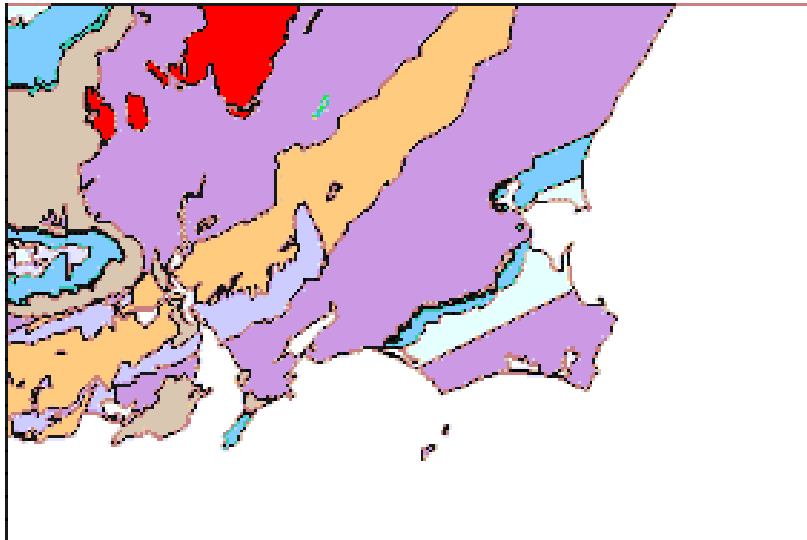
10.3 Sites of Geological and Geomorphological interest in Co. Wexford

Geology is now recognised as an intrinsic component of natural heritage in three separate pieces of legislation or regulations, which empower and require various branches of Government, and statutory agencies, to consult and take due regard for conservation of geological heritage features: Planning and Development Act 2000 [e.g. Sections 212 (1)f; Part IV, 6; Fifth Schedule Condition 21], Planning and Development Regulations 2001, The Heritage Act 1995, and the Wildlife (Amendment) Act, 2000. The

Heritage Act, and the Planning Regulations in particular, place responsibility upon Local Authorities to ensure that geological heritage is adequately addressed within Heritage Plans, as well as integrated into revised County Development Plans.

Minerals.-Copper ore is found at Kerloge, a little south of the town of Wexford; and lead ore at Caim, north-west of Enniscorthy. Silver was in former times raised at Clonmines, at the head of Bannow Bay, and the ancient mines are still to be seen.

10.3.1 Co. Wexford Geological Map



Chapter 11. Water Quality

11.1 Bathing Water Quality

County Wexford has a coastline of around 264km in length of which 211km is made of sandy beach. Indeed Wexford can boast of some of the finest stretches of strand in Ireland e.g. Curracloe and Rosslare. These beaches are very popular with locals and visitors alike during fine summer days.

Under the European Union Directive on Bathing Water Quality (76/160/EEC) Local Authorities in Ireland may designate bathing areas which then must be subject to Bathing Water Quality Monitoring during the bathing season from mid May to the end of August each year. Samples must be taken every two weeks with a minimum number of seven during the bathing season.

Each sample obtained must be analysed for the following microbiological and physico-chemical parameters:

- Total coliforms
- Faecal coliforms
- Mineral oils
- Surface active substances
- Phenols
- Transparency
- Colour
- Tarry residues.

Over the bathing season, water quality at each area must comply with the mandatory standards specified in the above Directive for certain parameters. In addition guide values have also been specified, which are more stringent than mandatory values. These guide values can be regarded as quality objectives, which all bathing sites should endeavour to achieve. Under Irish Law additional national standards have also been established for a number of parameters.

The various standards are set out as follows:

	Total Coliforms/100ml	Faecal Coliforms/100ml	Faecal Streps/100ml
EU Guideline Values	500	100	100
EU Mandatory Values	10,000	2,000	0
National Values	5,000	1,000	300

Wexford County Council has designated bathing areas at Ballymoney, Courtown North Beach, Curracloe (including Ballinesker), Duncannon, Morriscastle and Rosslare Strand. All of the beaches enjoy excellent water quality meeting all of the above standards including the stricter guideline standard. Courtown, Curracloe, Duncannon and Rosslare Beaches have all achieved the Blue Flag Award for beaches almost every year since the award was introduced to Ireland in the early 1990s.

11.2 Urban Waste Water Treatment

Discharge Locations and Level of Treatment in 2003 in County Wexford

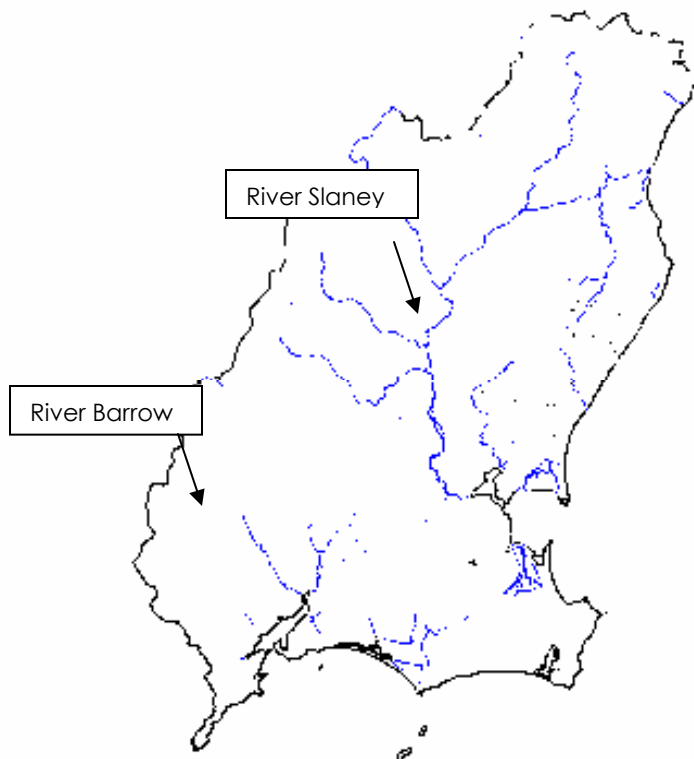
Agglomeration	PE	Discharge to	Sensitive	Present Treatment
Adamstown	535	Freshwater (River)	No	Primary treatment only
Blackwater	1200	Freshwater (River)	no	Secondary treatment only
Bridgetown	500	Freshwater (River)	yes	Secondary treatment only
Bunclody	1800	Freshwater (River)	yes	Primary treatment only
Campile	500	Estuarine	No	Primary treatment only
Castlebridge	1000	Estuarine	Yes	Secondary treatment only
Clonroche	1000	Freshwater (river)	No	Secondary treatment only
Courtown/Riverchapel	1000	Coastal water	No	Secondary treatment only
Duncannon	600	Estuarine	No	none
Enniscorthy	8500	Estuarine	yes	Secondary treatment only

Ferns	1200	Freshwater (river)	yes	Secondary treatment only
Fethard-on-Sea	1000	Estuarine	no	Primary treatment only
Gorey	6500	Freshwater (river)	No	Secondary treatment only
Kilmore Quay	2000	Coastal water	No	none
Kilmuckridge	1000	Freshwater (river)	No	Secondary treatment only
New Ross	10000	Estuarine	no	none
Piercetown	600	Freshwater (river)	yes	Secondary with nutrient reduction
Rosslare Harbour	3000	Coastal water	no	Preliminary treatment only
Rosslare Strand	4000	Coastal water	no	Preliminary treatment only
Taghmon	1000	Freshwater (river)	no	Secondary with nutrient reduction
Wexford Town	17000	Estuarine	no	Secondary with nutrient reduction

*** The outflow discharges to a sensitive area or the catchment of a sensitive area**

EPA, Urban Waste Water Discharges in Ireland:
A Report for the Years 2002 and 2003

11.3 Surface Water Streams and Rivers



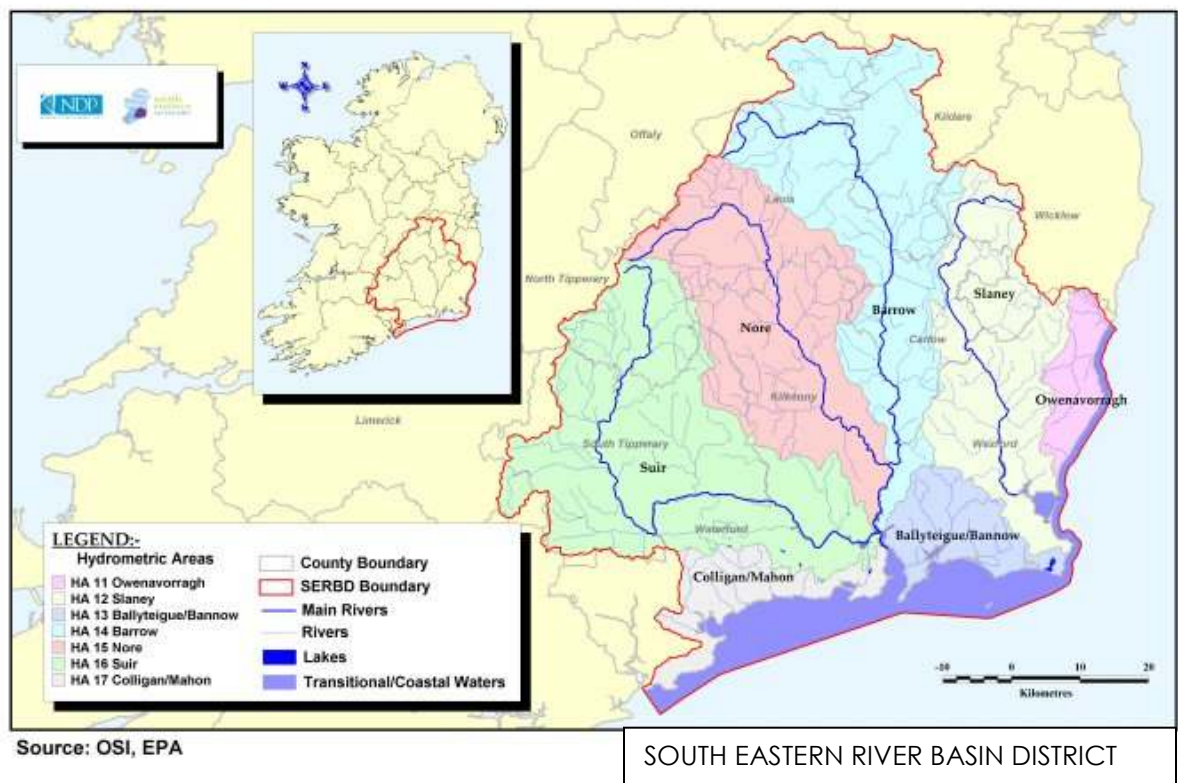
11.4 Rivers

The Barrow first touches Wexford at the mouth of the Pollmounty River; and the western boundary is formed first by this river and afterward by the united waters of the Barrow, the Suir, and the Nore; the whole distance from the mouth of the Pollmounty River to Hook Head is about 31 miles. The following are the Wexford tributaries of the Barrow and the Suir. One of the head streams of the Mountain River (which joins the Barrow near Borris, in Carlow) rises in Wexford, and runs into Carlow through Scullogue Gap (where it is called the Aughnabrisky). A little farther south the Drummin River rises in Wexford, but soon enters Carlow. The Pollmounty River joins the Barrow 5 miles in a straight line above New Ross, forming for the last mile of its course the boundary between Wexford and Carlow. - - The Slaney, from the point where it first touches Wexford to Newtownbarry, a distance of 3 miles, separates Carlow from Wexford; it enters Wexford at Newtownbarry, and flows through this county for the rest of its course to Wexford Harbor. The following are the tributaries of the Slaney belonging wholly or partly to Wexford: On the right or western bank - the Clody rises in Mount Leinster, and joins the Slaney at Newtownbarry. South of this is the Glasha, flowing from Black Rock Mountain. The Urrin rises on the south slopes of Black Rock, flows south-east, and joins half a mile below Enniscorthy. the Boro rises in Blackstairs Mountain, and falls into the Slaney 2 1/2 miles below Enniscorthy; it has for tributaries the Milltown Stream on the left bank, and the Aughnaglaur on the right bank. On the right bank the Slaney is joined by the Derry River, which, coming from Wicklow, forms the boundary between Wexford and Wicklow for the last 3 miles of its course, and joins 2 miles in a straight line above Newtownbarry. The Bann rises in the southern slopes of Crohan Kinsella, flows south-south-west, and joins 4 miles above Enniscorthy; about the middle of its course it is itself joined on the right bank by the Lask. The Sow rises near Ballaghkeen, and falls into Wexford Harbor. The following rivers fall into the sea: In the north the Clonough River. The Owenavorrhagh rises near Oulart, flows northward, and then turning east, enters the sea east of Gorey. The Owenduff and the Corock run southward in the head of Bannow Bay.

11.5 Hydrogeology

The hydrogeology characteristics of the strat of the South Wexford area are very variable. The water table is generally within 10m of the surface. Aquifer strata can be

developed to provide reasonably large water supplies. South Wexford covers one of the driest parts of Ireland and potential recharge to the aquifers ranges from 400-600mm/yr. The bulk of recharge is normally occurs between late October and early March. The volcanic rocks of the Duncannon Group are considered to be a major aquifer. This aquifer has been developed to provide part of te regional water supply in County Wexford and around Waterfor city.



SOUTH EASTERN RIVER BASIN DISTRICT

Chapter 12. Air quality

Emissions from road traffic are now the primary threat to the quality of air in Ireland. The pollutants of most concern in this regard are nitrogen dioxide (NO₂) and fine particulate matter, expressed as PM₁₀. Results of monitoring indicate that compliance with the stringent new PM₁₀ and NO₂ standards may present problems in some urban areas subject to heavy traffic.

The EPA is implementing a new monitoring programme that will supply more up-to-date information on ambient air quality, including real-time data, to the public.

The Wexford town site was located in the yard of County Hall on Spawell Road. Monitoring began on 10 March 2005 and finished on the 31st of March 2006. The Wexford rural site is located to one side of the EPA headquarters in the grounds of Johnstown Castle outside Wexford town, where current air quality is ranked as 'Good'.

Monitoring is done using a continuous monitor for ozone.

Monitoring was done by a mobile unit containing continuous monitors for sulphur dioxide, nitrogen oxides, carbon monoxide, PM₁₀ and benzene. Continuous samples were taken for metals.

An air quality index is used to express complex air quality information in simple terms. Five bands are used in the Irish index; **very good, good, fair, poor and very poor**.

The index is based on a maximum of four parameters; the 1 hour average of SO₂ (sulphur dioxide), NO₂ (nitrogen dioxide) and O₃ (ozone), combined with the rolling 24 hour average of PM₁₀ (particulate matter with diameter less than ten microns). All figures are rounded to the nearest whole number.

The index for each of the four parameters is derived each hour.

Table of Air Quality Index

	SO₂ / ppb (1 hour avg.)	NO₂ / ppb (1 hour avg.)	O₃ / ppb (1 hour avg.)	PM₁₀ / ug m⁻³ (24 hour avg.)
Very Good	0 – 19	0 - 19	0 – 19	0 – 19
Good	20 – 49	20 – 49	20 – 59	20 – 49
Fair	50 – 79	50 – 74	60 - 89	50 - 74
Poor	80 – 129	75 - 104	90 – 119	75 – 99
Very Poor	≥ 130	≥ 105	≥ 120	≥ 100

12.1 Air Quality Monitoring

Wexford County Council has air quality monitoring carried out on an agency basis by the South Eastern Health Board. It is conducted once monthly at the station in St. Aidan's Shopping Centre, Wexford Town. Air Quality is currently marked as Good for the county.

12.2 Wind Energy

Ireland imports between 85% and 90% of the energy it uses, mostly in the form of fossil fuels. The European Union has set a target of producing 15% of its energy from renewable resources by 2010. As part of the Development Plan a Wind Energy Strategy has been drawn up. Because there is a strong correlation between areas suitable for wind energy generation and vulnerable, sensitive coastal and upland landscapes the strategy seeks to strike a balance between the benefits of renewable energy developments and negative impacts on our rich environment. The strategy was devised using the Wind Atlas

for Ireland wind speeds, overlaid with sensitive landscape maps and protected sites (pNHA's, SAC's, SPA's), thirdly the main ESB power lines in the county were overlaid, resulting in selection of preferred areas.

Chapter 13. Climatic Factors

Ireland ratified the UN Framework Convention on Climate Change in 1994 and the Kyoto Protocol in 1997. Under the Kyoto Protocol, Ireland agreed to limit the net growth of greenhouse gases (GHG) to 13% above the 1990 level by the period 2008-2012. However meeting these targets is already acknowledged to be a problem. According to the EPA 'State of the Environment' report, rapid economic development during the 1990's created a level of emissions in 2002 which were 29% higher than the 1990 levels.

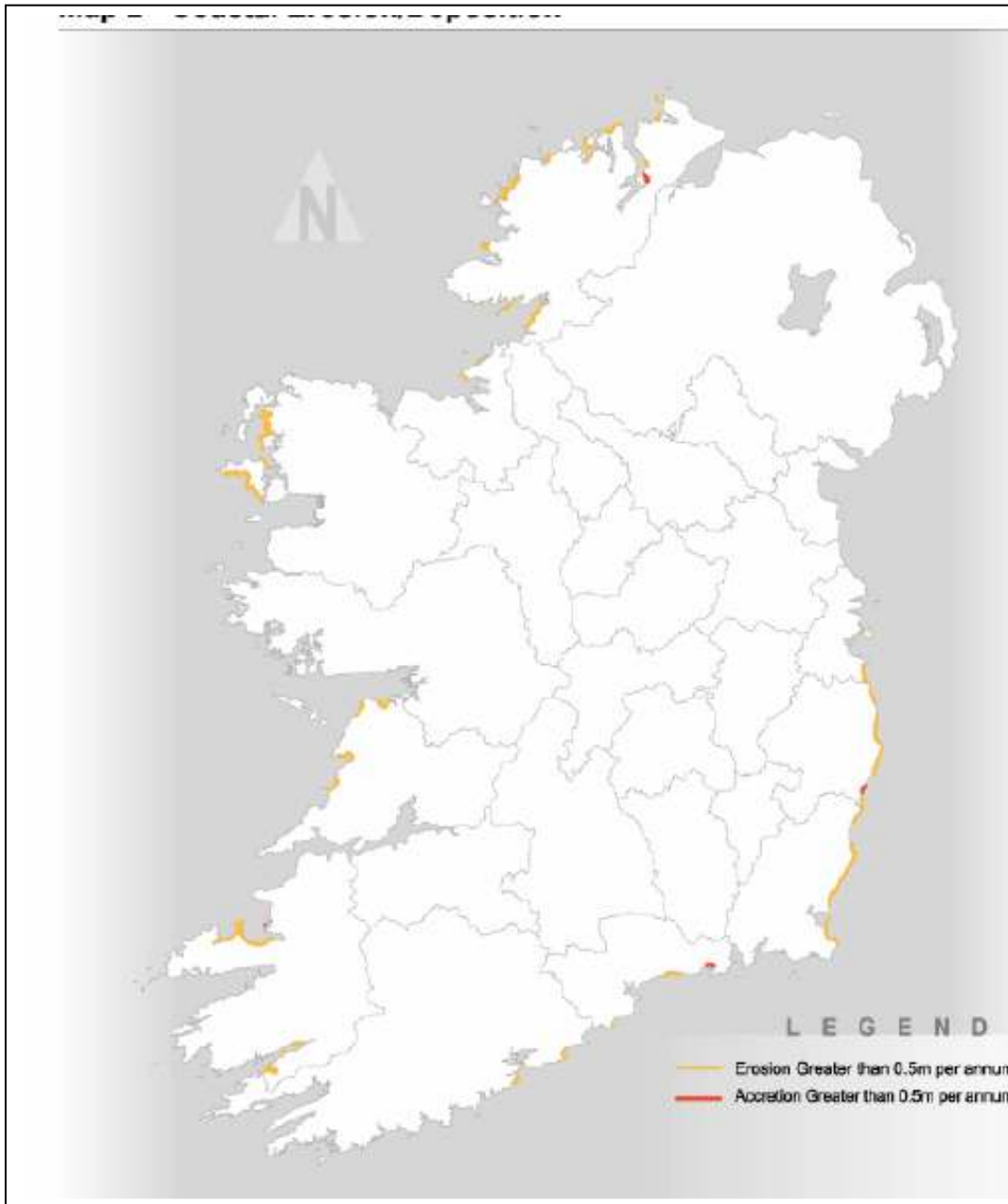
13.1 Sea Level Change

Sea level change around the coast of Ireland is estimated at 17-31 cm. over the next 30 years. The difficulty in predicting such change means a wider range of anywhere between 5cm and 46 cm is possible. The mean annual rise in sea level is likely to be of the order of 0.2mm with an overall rise between 1990 and 2030 of 0.3m. The rise in sea level would have serious effects on the coastline, increased erosion, flooding, breaching of coastal defences and loss of habitat and amenity. The country would not be affected uniformly; sea-level changes will impact on the south and southeast first then spreading northwards. The greatest impact of flooding would be felt in the urbanised east coast and in the 3 major cities located on the coast, Dublin, Cork and Galway. On the west coast counties from Cork to Donegal and the Shannon Estuary, the likelihood is that some 150,000 Ha of land is vulnerable to loss by sea-level rise. In addition to loss of land through gradual inundation, the increased storminess and severity of storms expected as the climate changes will exacerbate the potential for coastal damage. The 100- year return period for incidences of extreme levels of water can be expected to be reduced to 5 years. Overall some 176,000 Ha of coastal land is at risk from sea-level change. the change in sea levels will continue leading to an expected global sea-level rise of between 0.1 and 0.9 metres by 2100.

13.2 Coastal Zone

Of the County's 264km of coastline 211km is soft consisting of long sandy beaches and 'soft' cliffs, which are severely affected by erosion losing an average of one metre per year. There is increasing concern that the process will be accelerated due to rising sea levels and increased storm frequency and intensity caused by global warming.

13.2.1 Coastal Erosion/Deposition



13.3 Flooding

Floods are a natural and frequent part of life in County Wexford, particularly in towns of New Ross, Enniscorthy & Wexford. They are usually caused by a combination of events including overflowing river banks, heavy rains, coastal storms or blocked or overloaded drainage systems and increase in development. Numerous severe floods have occurred throughout the county in the last decade causing millions worth of damage to and loss of property. Since the impacts of flooding can be so devastating it is important that people whose properties are at risk take appropriate action to resist flooding. The Office of Public Works in consultation with the Department of the Environment Heritage & Local Government and other relevant stakeholders are in the process of preparing comprehensive guidelines to enable Planners to contribute substantially to the management of flooding related issues

It is anticipated that changes in rainfall patterns and rises in sea levels resulting from climate change may make such flooding incidents more frequent and much more severe in the future. While we cannot prevent the climatic causes of flooding, we can take measures to prepare for it and reduce the resulting damage and personal hardship. As well as the risk to life and the damage caused to property, flooding has many other, less tangible, impacts on people's lives. These include the loss of sentimental belongings, the nuisance of cleaning up after the flood, the inconvenience of having to live in temporary accommodation while this clean up takes place and the constant worry of future flooding.

The underlying causes of flooding, heavy rain and high sea levels, are, essentially, uncontrollable. However, the factors affecting the extent and severity of the flood can be addressed. The most influential of these factors is development, in particular development in flood plains i.e. areas adjacent to rivers that tend to become flooded following periods of heavy rain. Historic records will help to indicate which areas might be prone to flooding, although it is always possible that areas not known to have flooded in the past or for which no records of flooding are available, might flood in the future due to changes in upstream or downstream conditions or the occurrence of a more extreme rainfall event.



Recent Flooding in Enniscorthy Town

13.4 Impact of possible climate change & flooding

Current predictions of climate change in Ireland indicate that winters will become wetter and the rainfall distribution 'stormier', and that sea levels will rise. This would mean that areas not currently prone to flooding may be at risk from flooding in the future.

The EU Water Framework Directive signaled a new approach to water management based on River Basin Management. River Basin Management will formulate integrated and coherent policies based on associated factors including land-use. These policies will help to facilitate sustainable development through the reduction of future flood damage, and hence reduce the potential economic and social costs outlined above. Development Plans (and subsequent Planning decisions) are the key to this approach. It is recommended therefore that a Policy Statement and Guidelines in relation to flood risk / development on the lines of those in the attached document should be incorporated into Development Plans.

Chapter 14. Material Assets

Wexford County is a strategically important gateway between the south east region of Ireland and continental Europe, the county contains two ports of significance at international, national and regional at Rosslare Harbour and New Ross. There are also a number of smaller harbours / ports that are of great importance in terms of the socio-economic development.

In general the county processes a well developed road infrastructure. This will be further enhanced with the completion of the Gorey bypass in 2008. This bypass will form part of the designated Euro Route 1 Dublin / Rosslare route.

Significant investment in the last few years has resulted in a major improvement in the quality of the county road network. However increasing levels of car ownership and demands for more housing in rural areas are increasing the pressure on the regional and county road network.

The modal split in the county is primarily towards the car and to a lesser extent the bus. Rail infrastructure is very much under developed.

Infrastructure provision (water and sewerage, roads, waste management and utility services) is a core activity of Wexford County Council. The council is committed to protecting the infrastructural resources of the county and ensuring that they are put to the most efficient use. The advance provision of a satisfactory level of infrastructure is an essential prerequisite for the future prosperity and proper planning and development of the county.

Due to the dramatic changes in population and economic activity in the county over the past ten years, there has being an increased pressure on all forms of infrastructure – including energy consumption, water, wastewater treatment, communications and roads

While there has been substantial investment in the provision of infrastructure facilities in the county over the last five years, there remain deficiencies particularly in the area of wastewater treatment within individual settlements throughout the county.

The review of the infrastructural policies will focus on the need to target the towns and villages where major deficiencies exist in order to facilitate the proper planning and sustainable development of the county settlement strategy. In addition, policies and mechanisms which are required to address and meet anticipated demands will also be considered.

14.1 Telecommunications

Broadband access currently stands at 155Mbit/s and covers five-mile radii around the towns of Gorey, Enniscorthy, Wexford, Kilmore Quay, and Wellington Bridge. Commercial use of these capabilities is nascent though based on the present capacity future developments will include Network Operations Centres, Billing and Transaction Processing, Mirror sites to speed up server quality, on line data services, electronic publishing, e-commerce, multimedia, support services and digital distribution centres.¹²

14.2 Gas

County Wexford is currently not serviced by a connection to the national natural gas network. Bord Gais is currently reviewing its policy not to service County Wexford and has forwarded a proposal for connection of new towns to the Commission for Energy Regulation.

14.3 Roads

The four major towns are linked to Rosslare Europort by an excellent road network. The N11 from the Dublin – Belfast corridor links the towns of Gorey, Enniscorthy and Wexford in a north-south axis. The villages of Camolin, and Oilgate are also located along this route. The N25 links New Ross and

¹² <http://www.wexfordcdb.ie/Market/telecoms.htm>

Wexford to Rosslare. These major roads are designated as 'Euroroute 1' and 'Euroroute 2' respectively.

Wexford is expected to become a large beneficiary from the initiatives in the National Development Plan over the next six years. In practice these developments will be infrastructural making Wexford an increasingly attractive location for economic investment.

There are several small harbours dotted around this coastline and a major seaport located at Rosslare Europort. Rosslare Europort is the third largest port on the island in terms of capacity and usage. Rosslare has been identified as having the potential for a larger share of future development than Dublin and Belfast, which currently have problems with traffic congestion.

14.4 Rail

There is a long established rail network covering the county and including the 4 major towns. The Rosslare – Dublin line carries passengers to and from Rosslare Europort on 3 inward and 3 outward journeys per day and stops in Rosslare Strand, . The Rosslare- Limerick train serves Wexford and New Ross, including stops at rural villages Bridgetown, Wellington Bridge, Ballycullane and Campile with 2 inward and 2 outward journeys per day. The is an important rail network specifically as it links the peripheral rural area of south Wexford to the Gateway Waterford city each morning and evening.

Rail transport is also socially and economically important to the county with 0.5 million passengers a year using the Wexford-Dublin line. The condition of parts of the line, combined with signalling difficulties, imposes speed restrictions however, thereby reducing both the effectiveness and the attractiveness of the rail system. Planned improvements should remedy some of these problems.¹³ It is envisaged that an assessment of need in the near future will be required to investigate new rail and new routes by 2020.

¹³ <http://www.wexfordcdb.ie> Report: As We Are Now.

14.5 National Road Improvements

The National Roads Authority (NRA) are currently undertaking two construction projects in County Wexford. These being the N11 Arklow/Gorey Bypass and the N30 Enniscorthy/Clonroche (Moneytucker) realignment. There are no schemes scheduled to commence in Wexford in 2006. The proposed bypass of New Ross & Enniscorthy are at advanced planning stage.

1. Over 20% of Wexford's working population travel over 15 miles to work, the second highest in the South East. Wexford people are travelling further distances to work than in 1996. 23.5% of Carlow people travel over 15 miles to work.
2. 64% of Wexford's working population use a motor car to get to work. 88% of these are motor car drivers (56.3% of the total). Wexford has the highest proportion of working population using a lorry or van as their means of transport to get to work with 10.5% of the working population using this means of transport. Wexford has one of the lowest train usage rates in the South east.
3. Motor car usage has increased from 53.6% of the population who used this means to get to work in 1996 to 64% who use it in 2002.
4. Almost 30% of the population of New Ross travel over 15 miles to work. Over 17% of Gorey's population travel over 30 miles to work and 26% of Gorey's population travel over 15 miles.
5. Modes of transport to school for 5-12 year olds has changed considerably since 1996 away from Bus, bicycle and 'on foot' modes towards motor car use which has increased from 40% to almost 55% of that age group.
6. Wexford students over 19 years are travelling further distances than other students in the region with over 26% of students traveling over 15 miles to school or college.

Chapter 15. Cultural Heritage including Architectural & Archaeological

The existing Record of Protected Structures (RPS) is contained as an Addendum to the County Development Plan. Section 10(2)f of the Planning and Development Act, 2000 as amended makes the protection of architectural heritage mandatory. The proposed final RPS will be made up of existing RPS and also contains proposed additions and deletions to the RPS.

15.1 Buildings and Structures for Protection in Rural areas

(Total number of structures) full list contained in County Development Plan

Towns and Villages – 53

Catholic Churches – 26

Church of Ireland Churches – 13

Country Houses – 69

Vernacular Houses – 62

Seventeenth Century Houses and Castles – 17

Bridges and Miscellaneous Items – 26

National Monuments – 16

15.2 Urban Protected Structures

Wexford Town and Environs – 145

Enniscorthy Town and Environs – 111

New Ross Town and Environs – 177

Gorey Town and Environs - 67

The National Monuments Acts 1930- 2004 provide for the protection of the archaeological heritage. The Record of Monuments and Places (RMP) was established under Section 12 of the National Monuments (Amendment) Act 1994 as structures, features, objects or sites listed in this Record are known as Recorded Monuments. Areas of Archaeological Potential are designated under this legislation.

15.3 National Monuments Subject of Preservation Orders

Baginbun Earthworks, Ramstown

Rectilinear, Courtballyedmond

Barrow, Loftushall

Old Ross Motte, Springpark

Ringfort, Muchrath, Killinick

15.4 Buildings at Risk in County Wexford

New Ross Town - 5 Structures

Enniscorthy Town – 2 Structures

Rural – 4 Structures

Wexford Town – 2 Structures

15.5 Areas of Archaeological Potential

Bannow

Clonmines

Courtown

Edermine

Enniscorthy

Ferns

Ferrycarrig

Fethard-on-sea

Great Island

Gorey

Mayglass

New Ross

Old Ross

Taghmon

Wexford

Chapter 16. Landscape

The landscapes we view today have been shaped by the sum of many changes, some of them very recent. Perhaps the most striking example of recent change is the afforestation of many hilltops, changing the skyline and concealing both solid rocks and superficial sediments.

In the less recent past, glacial ice sculpted the Blackstairs Mountains and deposited the blanket of boulder clay, sand and gravel along the east coast. Structures formed by repeated surface thawing of deeply frozen ground, such as ice-wedge polygons and pingos, are preserved in South Wexford.

The landscape is an important element of the environmental resource base. It contributes to the identity of the County, provides the context for the day to day activities of the rural community and plays a role in economic development by underpinning and attracting tourism. In a period of rapid economic growth, declining agriculture and development pressure it is necessary to ensure that the essential character giving elements of the landscape resource are conserved.

16.1 Mountain and Hills

Between Wexford and Carlow run the ranges of Mount Leinster (2,610) and Blackstairs (2,409), separated by Scullogue Gap, which have been described in Carlow. Black Rock Mountain (1,972), 2 miles east of Mount Leinster, lies wholly in Wexford. In the north, the conspicuous Croghan Kinsella (1,987) lies on the boundary with Wicklow. South-west of this is Annagh Hill (1,498); and still farther south-west Slieveboy (1,385)-5 miles north of Ferns-is the terminating spur of these hills. Tara Hill (826), which stands quite detached near the coast 3 miles north-east of Gorey, is very conspicuous, and commands a fine view. Forth Mountain (776), a long ridgy hill beginning 2 miles from Wexford, and extending about 4 miles toward the south-west, is a sort of barrier separating the two level baronies of Forth and Bargo from the rest of the county.

16.2 Coastal Zone

The Coastal Zone is of intrinsic natural and special amenity value. It contains an integrated series of fragile habitats many of which are of international and national importance protected by conservation and recreational development. In particular it is a popular location for residential development.

Of the County's 264km of coastline 211km is soft consisting of long sandy beaches and 'soft' cliffs, which are severely affected by erosion losing an average of one metre per year. There is increasing concern that the process will be accelerated due to rising sea levels and increased storm frequency and intensity caused by global warming.

The Landscape Character Assessment (LCA) prepared as part of the current County Development Plan (CDP) review process, reviews, updates and elaborates on the previous LCA carried out for the 2001 CDP. However the key areas of sensitivity and importance remain as per 2001 CDP.

16.3 Headlands

Kilmichael Point in the north-only slightly projecting-marks the beginning of the Wexford coast. Roney Point, Glascarrig Point, and Cahore Point can hardly be called headlands. The Raven Point and Rosslare Point, which stand at opposite sides of the entrance to Wexford Harbor, are at the extremities of two long sandy peninsulas. Greenore Point is at the southern extremity of the open Bay of Wexford; and Carnsore Point marks the sudden and final turn of the coast to the west. West of this is Crossfarnoge or Forlorn Point. Clammers Point, scarped and rocky, but low, and Baginbun Head, are at the opposite sides of the entrance of Bannow Bay. Hook Head is the end of the long, rock-fringed peninsula of Hook, which defines Waterford harbor on the east; at the point is the ancient Tower of Hook, now converted into a lighthouse.

16.4 Islands

In Lady's Island Bay, near Carnsore Point, are two little islets, Inish and Lady's Island, the latter containing the ruins of a castle built by one of the Anglo-Norman adventurers. In Tacumshin inlet, west of this, is the low sandy islet of Sigginstown. Immediately south of Crossfarnoge Point are the Saltee Islands, consisting of Great Saltee, a little more than a mile in length, and the Little Saltee, three-quarters of a mile. In Ballyteige Bay are the Keeragh Islands, a rocky reef, low and dangerous. Bannow Island, a mile in length, lies

just inside the entrance of Bannow Bay; on the mainland shore opposite it is the old buried town of Bannow, which has been quite covered up by the sand within the last 200 years. Five miles east-south-east of Greenore Point is the Tuskar Rock, a well-known dangerous reef, the scene of many shipwrecks, now marked by a lighthouse.

16.5 Bays and Harbors

Wexford Harbor, at the mouth of the Slaney, is large and sheltered, but shallow and sandy. Outside this, between Rosslare Point and Greenore Point, is Wexford Bay. The remaining inlets are all on the south coast. Lady's Island Lake and Tacumshin Lake lie near Carnsore Point. Ballyteige Bay is broad and open. Bannow Bay, east of the peninsula of Hook, is long, narrow, and sandy. Waterford Harbor separates Wexford from Waterford

16.6 Landscape Characterisation

Under the County Development Plan 2001 various categories of landscapes were identified which had differing abilities to absorb development. The Landscape Character Assessment (LCA) prepared as part of the current County Development Plan review process reviews, updates and elaborates on the above.

Chapter 17. Consideration of Alternatives

Article 5 of the SEA Directive requires the Environmental Report to consider 'reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme' and the significant environmental effects of the alternatives selected. Alternatives must be realistic and capable of implementation, and should represent a range of different approaches within the statutory and operational requirements of the County Development Plan.

Section 3.14, of the SEA Guidelines indicate that certain strategic issues in the County Development Plans may have already been determined at national or regional level. Further more, lower tier plans such as Local Area Plans, will be framed in a policy context set by levels above them, such as the National Spatial Strategy, Regional Planning Guidelines and by the County Development Plan itself. The preparation of Development Plans must have regard to national and regional policy and guidelines and demonstrate consistency with same. As a result, the strategic options available to the preparation of the Draft County Development Plan are limited.

It is a mandatory objective of a Development Plan, that sufficient lands are zoned for particular purposes, where and to such extent as the proper planning and sustainable development of the area, in the opinion of the Planning Authority, requires the uses to be indicated. In relation to the location of new residential development, this is largely determined by higher level plans such as the RPG's and the Housing Strategy. Alternative issues to be considered in this regard include targets for housing units to be provided from brownfield sites, identification of Greenfield sites that can be serviced, prioritisation of those which are closest to public transport, consideration of densities appropriate for different locations, as well as identification of areas to be avoided due to flooding and/or impact on heritage or protected sites.

17.1 Alternatives considered

The SEA of the Wexford County Development Plan examines 4 development scenarios, Current Situation, Unplanned Growth, Sprawl, & Planned Growth

Scenario 1 - Current Situation

The do nothing approach – it includes the development of the county as is previously planned for under the County Development Plan 2001. This represent the 'Current Situation' which shows existing growth in County Wexford under the current county Development Plan policies and objectives.

Scenario 2 – Unplanned Growth

This option sets out to accommodate growth by dealing with planning applications on an ad hoc basis. This would be likely to result in increased growth around all existinf urban areas in the County as well as increases in the number of one off housing in the countryside. Under this scenario development would not be directed towards properly serviced , robust receiving environments, rather development would be dealt with through the planning system as it occurs. An increased development in the countryside would result in significant cumulative adverse effects across the County on environmental components such as biodiversity, water quality and landscapes.

Scenario 3 - Sprawl

Uncontrolled expansion of existing urban areas and settlements, high densities of uncontrolled urban generated rural housing. Increased sprawl would also result in significant effects on environmental components such as habitats, water quality and landscapes. Sprawl would also decrease the economic viability of providing services and infrastructure to the OCunty's population which would be spread out over wide areas.

17.2 Prefered development alternative – Planned Growth

This option incorporates relevant National & Regional Strategies while also providing a structured vision that will realistically accommodate continued urban and pre-urban growth in the east of the county as well as providing a viable future to stabilise and revitalise rural areas in the west of the county. This Scenario is believed to have the lowest environmental impacts, providing that mitigation measures proposed are adopted.

17.3 Assessment of Selected Option

As discussed above the 'Planned Growth' option was selected on the basis of compatibility with environmental objectives. In drafting the plan, sustainable spatial planning principles were identified at the outset and included principles that promoted the development of compact urban forms that would maximise the efficient use of land, particularly in close proximity to public transport nodes, promoting a mix of uses to make best use of proximity to transport and services, promoting the protection and enhancement of the natural and cultural heritage, and promoting development that takes into account the environmental carrying capacity of the county as a whole. Taking account of the above together with information compiled as part of this environmental report and the knowledge gained from public consultation process a spatial strategy was drafted. The resulting settlement strategy identifies a collection of villages and settlements which would maximise the sustainable development of the county.

17.3.1 Settlement Hierarchy

Primary Growth Area	Wexford
Secondary Growth Area	New Ross, Enniscorthy, Gorey
Strategic Growth Areas	Bunclody, Ferns, Oilgate, Ballycullane Clonroche, Camolin, Bridgetown, Wellington Bridge, Campile, Rosslare Harbour
District Growth Areas	Fethard, Coolgreaney, Kilmuckridge, Kilmore Quay, Taghmon, Castlebridge, Carrick on Bannow, Courtown
Local Growth Areas	Craanford, Rosslare, Bree, Duncormick. Arthurstown, Duncannon, Curracloe

Chapter 18. Mitigation Measures

The SEA Directive requires information to be given on mitigation measures, the measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse effects on the environment of implementing the plan or programme. Mitigation involves ameliorating significant negative effects and enhancing positive ones. The EPA Guidelines on SEA (2003) state that mitigation 'may involve preventing impacts altogether, reducing their magnitude as much as possible and/or probability of occurrence, or putting in place measures to remedy effects after they have occurred, or to compensate for them by providing environmental benefits elsewhere'. The Irish Regulations (S.I. No. 435 of 2004) state that significant effects should include secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary, positive and negative effects.

It should be noted that Strategic Environmental Assessment is an integral part of the development of the Plan and that its final iteration incorporates policies that have evolved to anticipate and avoid potentially adverse impacts on the environment. Remaining potentially adverse conflicts or impacts may be characterised as 'residual impacts'. These are unavoidable potential impacts that remain after all mitigation measures have been put in place. The majority of these are potential impacts which are likely to be capable of further mitigation through careful, detailed implementation of Local Area Plans and town plans.

18.1 Settlement Strategy

In drawing up a settlement strategy for the county a hierarchy of settlements from towns to villages to settlement nodes were assessed. The finalized settlement strategy was decided on the basis of the National Spatial Strategy and the Regional Planning Guidelines and also in line with availability of public transport, environmental considerations, capacity of sewer and public water, availability of services and community facilities etc.

18.1.1 Settlement Hierarchy

Primary Growth Area	Wexford
Secondary Growth Area	New Ross, Enniscorthy, Gorey
Strategic Growth Areas	Bunclody, Ferns, Oilgate, Ballycullane Clonroche, Camolin, Bridgetown, Wellington Bridge, Campile, Rosslare Harbour
District Growth Areas	Fethard, Coolgreaney, Kilmuckridge, Kilmore Quay, Taghmon, Castlebridge, Carrick on Bannow, Courtown
Local Growth Areas	Craanford, Rosslare, Bree, Duncormick. Arthurstown, Duncannon, Curracloe

18.2 Other Mitigation Measures

Arising from an analysis of the likely interactions between mapping of the Settlement Strategy and a mapping of the environmental issues in the County it is proposed to prepare a series of Local Area Plans for the villages listed below. Consideration will also be given to producing village design statements as a means of mitigating any potential inappropriate developments.

Bunclody	Coolgreaney	Camolin	Oilgate
Bridgetown	Courtown	Ferns	Taghmon
Castlebridge	Clonroche	Kilmore Quay	Wellingtonbridge
Carrick on Barrow		Kilmuckridge	

Other mitigation measures have included the rewording of a number of the County Development Plan policies in order to take account of environmental considerations.

Wexford's growing population and its location along the east Dublin Rosslare corridor will mean that major infrastructure projects, such as power, rail, water, waste and road – will continue to be sited within the county. To minimize the potential for conflict A Spatial Strategy for infrastructure should be drawn up to identify and protect corridors for major critical infrastructure within the County. Various policies within the plan specify capital investment in accordance with the overall spatial development strategy and land-use zoning objectives of town and village plans.

Chapter 21 Assessment of Objectives is a working paper containing systematic appraisal of all policies and Objectives proposed by the Plan.

Chapter 19. Monitoring

Article 10 of the SEA Directive requires that monitoring be carried out in order to identify at an early stage any unforeseen adverse effects due to the implementation of the Plan, and to be able to take remedial action. Monitoring and review, are key elements of the effective implementation of the County Plan. It ensures that social, economic and physical objectives are fulfilled and that quality of life issues can be assessed.

The purpose of monitoring is to cross check significant effects, which arise during the implementation stage of the development plan, against those predicted during the plan preparation stage. Monitoring is often based on indicators, which measure changes in the environment, especially changes which are critical in terms of environmental quality. Indicators aim at simplifying complex interrelationships and providing information on environmental issues, which are relatively easy to understand.

The statutory Managers Progress Report to be prepared 2 years after the adoption of the County Plan under Section 15(2) of the Planning and Development Act (as amended), 2002. It is anticipated that the environmental indicators set out below will be used to monitor the predicted environmental impacts of implementing the Plan and will be presented in the context of the 2 year plan review. Where existing monitoring is being carried out i.e. in relation to water quality, air quality etc., these data sets will be collated in the review.

Several kinds of indicators may be used to fulfil particular functions and measure the quality/quantity of environmental resources:

- State of the environment indicators reflect environmental quality, or quantity of physical and biological or chemical phenomenon.
- Stress indicators reflect development effects
- Performance indicators may be used to evaluate long-term achievements in environmental management and protection; and
- Sustainable development indicators introduce a new dimension to the provision of information in that they seek to describe and measure key relationships between economic, social and environmental factors.

In all cases, indicators should both quantify and simplify information, thereby making it more accessible to policy-makers and the public.

The following list of indicators is indicative only and is for discussion purposes only. The list may be amended following on from discussions with the Environmental Authorities, the availability of resources and relevance of the indicators to monitor the environmental baseline.

19.1 Monitoring Indicators

19.1.1 Demography

The Council proposes to monitor the emerging demographic of the county population in order to identify any additional facilities that may be required to cater for specific needs of the population as part of the plan process.

This information will allow the Council to;

- Monitor development in the county and to review whether the provision of social and economic facilities are adequate to serve the resident population.
- In partnership with the Department of Education, to continue to monitor the capacity of local Schools and their ability to cater for the local school-going population
- Monitor childcare provision in order to ensure that adequate choice and facilities continue to be provided for parents
- Revise its own population projections if necessary

19.1.2 Societal and Economic indicators

- Tourism data, numbers of visitors per annum
- Energy demand/consumption and economic growth
- Housing completions

19.1.3 Environmental Monitoring

The Council will liaise with the Environmental Protection Agency and other agencies to ensure that the environmental impacts of the Plan are monitored in accordance with the Department of Environment and Local Government Guidelines and/or Strategic Environmental Assessment (SEA) Guidelines.

19.1.4 Air Quality

- results from air quality monitoring stations
- amount of renewable energy generated

19.1.5 Ground & Surface Water Quality

- results from water quality monitoring

19.1.6 Biodiversity

- Biological & chemical water quality results from continuous monitoring within the county
- Results from preparation of a County Biodiversity Plan

19.1.7 Change in Landscape

- No. of planning permissions granted within rural area and within vulnerable and Sensitive Landscapes

19.1.8 Cultural Heritage

- Record known loss or damage or deterioration to protected sites/structures

19.1.9 Material Assets

- implementation and monitoring of capacity constraints study for Water Services and Sanitary Services

19.2 Summary of Monitoring

It is intended that a monitoring report on the implementation of the County Development Plan would be prepared every 2 years. Section 19 of the Planning and Development Act (Amended) 2006, requires that the County Development Plan be reviewed/amended every 6 years. The Council will ensure that the above-mentioned surveys and analysis are undertaken in time for the Plan review.

It is recommended that a dedicated multi-disciplinary in-house team be identified to drive the monitoring process forward to ensure its implementation. Indicators may be reduced or added to depending on availability of resources and relevance and quality of indicators to monitor the environmental baseline.

Chapter 20. Summary

The SEA Report indicates that there is a reasonably good collection of baselines data for the County. This information has been collated from statutory agencies, internal departments in the Council, the internet, local publications and planning applications. No primary research was carried out in the collection of baselines data apart from the commissioning of Landscape Character Assessment and Retail Strategy review.

Having assessed four options against sustainability criteria which were devised during the initial SEA exercise, the 'Planned Growth' Option was selected, as it presented the most sustainable strategy for the development of the County over the Plan period 2007-2013.

The strategies, policies and objectives devised under the County Plan were thereafter subject to further assessment in Chapter 21, which contains a systematic appraisal of every Strategy, Objective and Policy proposed.

As part of the County Development Plan process it is proposed to monitor the emerging demographic of the county population in order to identify any additional facilities that may be required to cater for specific needs of the population. Other measures include the monitoring of capacity of schools, childcare provision, environmental monitoring, water quality results, recorded known loss or deterioration of protected sites/structures, and monitoring of capacity constraints for sewerage and water treatment facilities.

The application of the Strategic Environmental Assessment to the County Development Plan has ensured that the Plan will provide the optimal strategic framework for the future development of the County.

Chapter 21. Assessment of Policies & Objectives

This chapter is composed of a Working Paper which contains a systematic appraisal of every Strategy, Objective and Policy proposed by the Plan presented to the elected members. However as has already been noted, the Development Plan will develop in response to comments received during the course of consultation. This updating of the Development Plan will be accompanied by a review of relevant parts of this environmental report.

1. Likely to **improve** status of environment 2. Likely to **conflict** status of environment 3. **Uncertain** interactions with environment 4. **Neutral** interaction with status of environment 5. **No Likely** interactions environment

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely	
2.0 – SS1	The Council shall implement the settlement strategy of the National Spatial Strategy and the Regional Planning Guidelines for the South East Region by concentrating development into designated settlements.		√				
2.0 – SS2	The Council shall encourage housing industry and other development in existing towns and villages that have the necessary social, community, physical and transport infrastructure.		√				
2.0 – SS3	The Council shall promote the necessary physical and social infrastructure in the settlements identified in Table 2.1 and make them more attractive places to live.			√			
2.0 – SS4	The Council shall ensure that Primary and Secondary Growth Areas, will in as far as practical, be self sufficient, incorporating employment activities, retail services, social and community facilities			√			
2.0 – SG1	It is an objective of the County Council to prepare Local Area Plans for the following areas: Table 2.2 District Growth Towns			√			
	Bunclouduy	Coolgreaney	Camolin				Oilgate
	Bridgetown	Courtown	Ferns				Taghmon
	Castlebridge	Clonroche	Kilmore Quay				Wellingtonbridge
	Carrick on Bannow		Kilmuckridge				
2.0 SG2	It is an objective of the County Council to prepare Village Design Statements in order to encourage sympathetic design of new buildings into existing villages for the following areas:			√			

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely																
	Table 2.3 Local Growth Towns																					
	<table border="1"> <tr> <td>Ballycanew</td> <td>Authorstown,</td> <td>Killinerin</td> <td>Craanford</td> </tr> <tr> <td>Bree</td> <td>Duncannon</td> <td>Ladys Island</td> <td></td> </tr> <tr> <td>Castledockrel,</td> <td>Duncormick</td> <td>Piercetown</td> <td></td> </tr> <tr> <td>Curraclloe</td> <td>Kilmore</td> <td>Rosslare</td> <td></td> </tr> </table>	Ballycanew	Authorstown,	Killinerin	Craanford	Bree	Duncannon	Ladys Island		Castledockrel,	Duncormick	Piercetown		Curraclloe	Kilmore	Rosslare						
Ballycanew	Authorstown,	Killinerin	Craanford																			
Bree	Duncannon	Ladys Island																				
Castledockrel,	Duncormick	Piercetown																				
Curraclloe	Kilmore	Rosslare																				
2.0 SG3	The Council, having regard to the proper planning and sustainable development of the area, will consider the development of new rural settlements. Such schemes would be subject to the preparation of a Local Area Plan by the County Council.			√																		
2.0 RSS1	The Council shall cater for the housing needs of members of the rural community who have a requirement to live in the area.				√																	
2.0 RSS2	Urban generated housing development shall be directed into designated settlements.	√																				
2.0 RSS 3	The Council shall give priority to the development in settlements with adequate wastewater and water supply infrastructure and those settlements targeted for infrastructural investment (see table 2.2 and 2.3)			√																		
2.0 RSS 4	The demand for permanent residential development in Structurally Weak Rural Areas should be accommodated as it arises, subject to proper planning and sustainable development of the area			√																		
2.0 RSS 5	The Council shall attach an occupancy condition to all individual one off rural dwellings on un-zoned land in areas defined as Under Strong Urban Pressure and Stronger Rural Areas, pursuant to Section 47 of the Planning and Development Act 2000, restricting the use of the dwelling to the applicant and their immediate family, as a place of permanent residence. The period of occupancy will be limited to a period of seven years from the date of first occupation.			√																		
3.0 T1	To promote the development of public transport, cycling and walking as an alternative to private car traffic by facilitating and promoting the	√																				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	development of the necessary infrastructure.					
3.0 TP1	The Council will require Transportation Design Briefs to be prepared for large residential or mixed use developments	√				
3.0 T2	Promote walking and cycling as sustainable transport modes and healthy recreation activities throughout the County	√				
3.0 T3	Promote cycling and pedestrian friendly development layouts, provide facilities at public transport nodes, towns and villages, plan for and make provision for the integration of cyclist and pedestrian needs when considering new proposed development proposals	√				
3.0 T4	Promote cycling and walking facilities as integral and part of the provision of vehicular traffic facilities.	√				
3.0 T5	To provide drop kerbs at all junctions and central island refuges to facilitate ease of access for wheelchair users, the elderly and mobility restricted members of society.				√	
3.0 T6	Promote best practice in traffic management through sustainable development of towns and villages that minimise traffic intrusion and maximises the safety of vulnerable road users in towns while facilitating ease of access for servicing, retail and residential needs in the towns.	√				
3.0 T7	Promote the use of Road Safety Audits for all new traffic management and road developments on and adjacent to the National Road network			√		
3.0 T8	It will be the objective of the council to reduce the impact of Heavy Goods Vehicles on the environment of major towns of the county.	√				
3.0T9	Promote the development of inner relief routes for traffic in the towns of Gorey, Wexford, New Ross and Enniscorthy			√		
3.0 T10	To facilitate and enable the development of major National Road		√			

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	proposals within the lifetime of the Plan.					
3.0 TP2	The Council shall presume against development within road reservation corridors, identified for National Road developments			√		
3.0 TP3	The Council shall seek to prevent incompatible land uses on lands adjacent to existing road junctions on the National Road Network in order to facilitate the upgrading of these junctions.			√		
3.0 TP4	The Council shall require any development proposal in the immediate proximity of the National Road Network to show that the proposed development complies with the National Roads Authority policies				√	
3.0 T11	To bring National Roads up to appropriate standards in association with the National Roads Authority as resources become available			√		
3.0 TP 5	It will be the policy of the County Council to restrict new developments requiring direct access to the following Class I Regional Roads: <ul style="list-style-type: none"> - R733 from Wexford to Arthurstown to Ballyhack. - R739 from N25 junction to Kilmore Quay - R741 from Wexford to Gorey 			√		
3.0 TP 6	The Council shall restrict accesses onto the Class II Regional Roads to those applicants that can demonstrate a need of access from such roads.			√		
3.0 TP 7	The Council shall manage regional roadways in an economical and sustainable manner with a particular emphasis on safety.	√				
3.0 TP 8	The Council shall manage Regional Roads in such a manner that takes appropriate account of the Settlement Strategy.	√				
3.0 T12	The Council shall seek to have the important Regional Road, R700 between New Ross and Kilkenny upgraded			√		
3.0 obj T13	To continue improvement works on County roads so as to develop a safe and comprehensive road system for the County			√		

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
3.0 T13	The Council shall support the provision of a local commuter rail services on the existing mainline Rosslare – Waterford railway line in accordance with the settlement strategy of the County.			√		
3.0 T14	Encourage the use and further development of the Mainline Rosslare to Dublin Rail corridor			√		
3.0 TP11	The Council shall promote the growth and development of settlements on existing public transport routes	√				
3.0 Obj T114	To seek the ongoing upgrading of the Rosslare – Waterford rail service for passengers and freight			√		
3.0 T15	To support Iarnrod Eireann's policy of protecting, and where possible, expanding existing rail corridors			√		
3.0 T16	The Council will seek to promote the development of rail lines and commuter services including the development of the New Ross Waterford and Wexford/Waterford Commuter services.			√		
3.0 T17	The Council will seek to develop integrated transportation by the provision of car parking, cycle parking, bus stops and taxi ranks next to existing and proposed railway stations.	√				
3.0 T18	The Council will prevent development on all existing disused rail lines				√	
3.0 TP12	The Council shall support the provision of public transport services by reserving land in suitable locations for public transport infrastructure and ancillary facilities, such as parking, taxi ranks and bus lanes.	√				
3.0 TP 13	The Council will support local and, community transport services by co-operating with various public and private agencies who are transport providers within the County in the co-ordination and provision of new services and improvement of existing services and associated transport related infrastructure in the interest of reducing social isolation.	√				
3.0 T19	To facilitate the development of public transport schemes, which improve quality of life and encourage sustainable transport modes, including the provision of bus stops and shelters in rural settlements, the Council will actively support the Rural Transport Initiative of the National Development Plan 2007 – 2012 as a community based approach to tackling social	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	exclusion caused by lack of access to transport.					
3.0T20	The Council will explore the provision of park & ride and park and walk facilities for the main urban areas.				√	
3.0 TP 15	The Council shall maximise the potential of existing port facilities and promote the development of associated port related employers			√		
3.0 TP 16	The Council shall promote and support the role of harbours, ports, piers and slipways in facilitating and developing sustainable fishing, marine activities, recreation and other related activities			√		
3.0 T15	To promote and support the development of Waterford Regional Airport as a means of increasing the economic returns to County Wexford by securing ease of access to the County from both national and international travellers/ business people.			√		
4.0 ED 1	The Council shall seek to optimise the use of existing industrial lands and factory space in towns and villages in conjunction with the IDA and other development organisations	√				
4.0 ED 2	The Council will ensure that sufficient serviced land is available for enterprise and employment related development. The Council will ensure that suitable industrial lands are protected from inappropriate development that could compromise the economic potential of these lands.	√				
4.0 ED 3	The Council shall support the development of micro enterprise in rural communities provided that such uses do not unduly interfere with the amenities of the area	√				
4.0 ED 4	The Council shall encourage the sensitive utilisation of environmental and cultural assets as a basis for economic development including rural tourism, forestry, organic farming, biomass production, nurseries, agri-business	√				
4.0 ED 5	The Council shall support the development and expansion of resource based rural activities including timber and aggregates industry, providing that such activities are not unduly damaging to the environment, amenities and heritage of the area	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
4.0 ED 6	The Council will facilitate development in industrial or business development in rural areas where the proposed use has locational requirements that are best accommodated in rural areas and this requirement has been demonstrated to the satisfaction of the Planning Authority provided the resultant development is of a size and scale which is appropriate to the area and such activities are not unduly damaging to the environment, amenities and heritage	√				
4.0 ED 7	The Council shall promote environmentally friendly systems of agricultural production and processing through the continuation of control of farmyard pollution and REPS	√				
4.0 ED 8	The Council shall encourage the development of sustainable alternative agricultural enterprises and non agricultural enterprises as a means of supporting a viable rural community subject to the retention of the holding's primarily agricultural use and the proper planning and sustainable development of the area	√				
4.0 ED 9	The Council shall take a positive approach to development proposals which are necessary to achieve compliance with new environment, hygiene or animal welfare legislation	√				
4.0 ED 10	The Council shall encourage forestry in a manner that is sustainable and in harmony with the surrounding landscape, ensuring that no undue injury is caused to natural waters, wildlife habitats or conservation areas	√				
4.0 ED 11	The Council shall encourage a diversity of species in afforestation proposals and in particular shall require a proportion of all new forestry development to consist of native hardwood species in order to extend the range of potential end uses and to reduce the potential for adverse impact on the landscape and biodiversity resulting from monoculture.	√				
4.0 ED 12	The Council shall encourage the establishment of primary, secondary and tertiary forest based processing industries			√		
4.0 ED 13	The Council shall encourage the further development of the aquaculture industry at appropriate locations, having regard to existing and proposed designations for environmental and habitat protection	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
4.0 ED 14	The Council shall support the development of inland fisheries as an important recreational and tourism activity in the rural economy.			√		
4.0 ED 15	Where important mineral resources have being identified and are suitable for extraction, the Council will seek to prevent incompatible land uses in the vicinity of these resources which could limit their future exploitation	√				
4.0 ED 16	The Council shall minimise environmental and other impacts of mineral extraction through rigorous application of licensing, development management and enforcement requirements for quarry and other ancillary developments	√				
4.0 ED 17	The Council shall have particular regard to visual impacts, methods of extraction, noise levels, dust prevention, protection of rivers, lakes and other water sources, impacts on residential and other amenities, impacts on the road network (particularly with regard to making good damage to roads) road safety, phasing, re-instatement and landscaping of worked sites.	√				
4.0 Obj ED 1	The Council will prepare an Action Area Plan to facilitate sand extraction while protecting the environment and residential amenities of the area.	√				
4.0 ObjRD 1	To sustain and improve the retail profile and competitiveness of County Wexford within the retail economy of the South East Region and beyond			√		
4.0 ObjRD 2	To confirm a retail hierarchy which assists in defining the County's settlement strategy and objectives and provides clear guidance on where new retail floorspace is acceptable			√		
4.0 RD 1	The Council shall ensure that all Retail Development is in accordance with the Retail Planning Guidelines 2000 as amended and the Wexford County Retail Strategy			√		
4.0 RD 2	The Council shall facilitate the vitality and viability of existing retail centres and encourage the provision of appropriate retail uses and services in the County	√				
4.0 RD 3	The Council will encourage and facilitate the enhancement and environmental improvement of the County's main town and village centres and through the Local Area Plan process	√				
4.0 RD 4	Proposals for the development or extension of village and other shops	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	designed to meet the day to day need of the local population will generally be permitted subject to the proper planning and sustainable development of the area					
5.0 HS1	The Council shall require that 20% of land zoned for residential development or for mix of residential and other uses, shall be made available for the provision of social and affordable housing. This figure may be modified in line with any revision to the Housing Strategy carried out during the period of the County Development Plan.				√	
5.0 HS 2	In a case where the Housing Authority consider the preferred Policy HS1 is not appropriate, the Council shall require that developers comply with Part V of the Planning and Development Act though the following; Options available to satisfy the requirements of the Housing Strategy are: a). The direct provision of the required number of housing units on completion as determined in accordance with the Strategy, integrated as part of the overall development of a site; b). The transfer of a portion of the site which is the subject of the planning application to the Council which will enable the Council to provide the appropriate number of units thereon in satisfaction of the requirements of the Strategy; c). The disposal of a number of fully or partially serviced sites within the site to the Council which will enable the Council to provide the appropriate number of units thereon in satisfaction of the requirements of the Strategy. d). A financial contribution that is specified in agreement with the Planning Authority e). A combination of a), b) c) or d) of the above options.				√	
6.0 Inf 1	To enhance and protect the built environment through the provision and maintenance of a range of high quality water, wastewater and storm	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	water management systems					
6.0 WS 1	To provide the County with an adequate and reliable public water supply system from which to accommodate an increase in domestic, commercial and industrial needs and to improve the quality and reliability of rural water supply schemes.	√				
6.0 WSI 2	To continue to implement, monitor and refine the Aquifer Protection Guidelines and prohibit development which would contravene these guidelines. See Table 1 – Aquifer Protection Zones and Map No.4	√				
6.0 WSI 3	To prepare and implement a comprehensive Groundwater Protection Policy with the overall aim of preserving the quality of groundwater particularly for abstraction purposes	√				
6.0 WSI 4	To improve the quality of wastewater effluent discharges to meet appropriate wastewater treatment standards including the requirements of European Union Directives	√				
6.0 WSI 5	To safeguard potable water sources by controlling afforestation, agricultural, commercial, industrial and domestic development within the identified source protection areas	√				
6.0 WTI 1	To implement a capital investment programme for the provision of wastewater treatment in accordance with the overall spatial development strategy as listed in the settlement strategy section of this plan and the land use zoning objectives of town and village plans	√				
6.0 WTI 2	The Planning Authority will give consideration to granting planning permission for private wastewater schemes where appropriate. Such schemes shall be purpose-designed, appropriate in scale, specification and capacity to the needs of users and shall be subject to legally-binding maintenance and bonding arrangements agreed with the County Council.			√		
6.0 WTI 3	Facilitate the development of towns and villages as identified in the settlement strategy of the plan by improving and extending Wastewater infrastructure subject to the availability of funding	√				
6.0 WTI 4	Provide the servicing of development land through the Serviced Land Initiative programme			√		
6.0 WTI 5	Ensure compliance with the EU Urban Wastewater Treatment Directive with regard to effluent standards	√				
6.0 WTI 6	To maintain the quality of coastal waters through the continued	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	improvement of sewerage infrastructure and wastewater treatment systems serving coastal settlements					
6.0 WTI 7	To ensure that arrangements for the treatment and disposal of effluent from all new developments meet required wastewater treatment standards	√				
6.0 WTI 8	To have regard to the Precautionary and Polluter Pays Principles	√				
6.0 WTI 9	Strictly control the siting of septic tanks and proprietary effluent treatment systems and promote public awareness on the issue of correct installation, monitoring and maintenance in the interest of the protection of the environment and public health	√				
6.0 WTI 9	The discharge of surface water run-off and rainwater into foul water sewer drainage systems is strictly prohibited.	√				
6.0 WTI 10	1) Surface water storage shall be provided to temporarily store the surface water in excess of the permissible discharge arising from a one in thirty year return period rainfall event. 2) Excess surface water arising from a rainfall event of between a one in thirty year and a one in fifty year return period shall be retained within the boundaries of the site. 3) The route of excess surface water run off in excess of the one in fifty year return period rainfall event shall be clearly identified.	√				
6.0 WTI 11	To require developments to be kept at an appropriate distance from watercourses to protect them from contamination, allow for natural drainage and facilitate channel clearing maintenance.	√				
6.0 WTI 12	To protect wetland areas and floodplains from development except where such development does not reduce the floodplain area or otherwise restrict flow across floodplains – e.g. parks, sports pitches	√				
6.0 F1	Within the variety of water courses that the council considers to be susceptible to flooding, developers may be required to submit a Flood Impact Assessment in support of their planning application. In such cases developers must show that they will minimise flood risk, including attenuation in situ.	√				
6.0 24	To update the County Wexford Sludge Management Plan as required to address issues as they arise and at intervals of not longer than 5 years			√		
6.0 Inf 25	Wexford County Council will implement the provisions of the River basin	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	Management Plans (Eastern & South Eastern River Basin Management Plans) in order to protect the environment, public health and the recreational potentials of these water bodies					
6.0 Inf 25	In order to protect the ambient air quality of the County, the Council will control industrial and other emissions by strictly enforcing the provisions of the 1987 Air Pollution Act.	√				
6.0 Inf 26	To have regard to "Telecommunications Antennae and Support Structures – Guidelines for Planning Authorities" Department of the Environment, 1996 or updated documents when published, when assessing an application for telecommunication mast			√		
6.0 Inf 27	To maximise the use of existing masts and sites, so as to limit the impact of development on the landscape, giving priority to the protection of visually vulnerable or sensitive landscapes and areas of nature conservation value	√				
6.0 Inf 28	To adopt a presumption against the erection of antennae in proximity to residential areas, schools or community facilities, structures of historical or architectural interest and areas and sites of archaeological importance	√				
6.0 Inf 29	All new building developments will meet the minimum low energy performance as a pre-requisite to receiving planning permission (a calculation report is to be submitted with the planning application). Each buildings energy performance calculation will be demonstrated on the basis of a simple approved method (eg. EN832) carried out by a qualified or accredited expert. New developments will utilise renewable energy supply systems to meet at least 30% of the buildings space and heating requirements as calculated on the basis of an approved method carried out by a qualified or accredited expert	√				
6.0 Inf 30	Wexford County Council will facilitate the development of both individual domestic wind turbines and commercial wind farm developments in accordance with the County Wexford Wind Strategy which forms part of this plan.			√		
6.0 Inf 31	The Council will promote the use of solar technologies in all new and existing dwellings, offices, commercial or industrial buildings	√				
6.0 Inf 32	The Council will encourage the development of small scale hydroelectric projects where they do not interfere with aquatic wildlife, heritage, rights of way, access tracks and third party properties	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
6.0 Inf 33	To encourage the use of biomass and pellet boilers in all new developments	√				
6.0 Inf 34	To facilitate the development of Bio-fuel facilities in appropriate locations subject to satisfying all appropriate planning, amenity, engineering and safety criteria	√				
6.0 Inf 35	To encourage the development of Anaerobic Digesters subject to satisfying all appropriate planning, amenity, engineering and safety criteria	√				
6.0 Inf 36	To promote the use of geothermal energy products in new development	√				
6.0 Obj Inf2	To engage in consultation with Bord Gais and other agencies regarding the potential for connecting the main settlements in County Wexford to the National Gas Network			√		
6.0 Inf 37	To implement the provisions of the Joint Waste Management Plan for the South East Region, 2006	√				
6.0 Inf 38	To encourage waste minimisation strategies for domestic, industrial and commercial wastes by the provision of recycling facilities	√				
6.0 Inf 39	The council will encourage the reuse and recycling of waste by expanding its bring bank network for glass, cans, paper etc, by opening more civic amenities sites and by introducing a pilot brown bin project to segregate organic waste from the residual and refuse bin for composting. The range of materials available for collection in the dry recycling collection will be examined to increase this if possible.	√				
6.0 Inf 40	In order to protect amenities and prevent noise pollution in the County, the Council will have regard to the EPA Act, 1992 and the EPA Noise Regulations, 1994.	√				
6.0 Inf 41	To implement the Litter Management Plan for County Wexford	√				
7.0 ObjC1	To promote the development of sustainable communities on the basis of a high quality of life where people can live, work and enjoy access	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	to a wide range of community cultural, health and educational facilities suitable for all ages and needs					
7.0 C1	The Council shall facilitate the provision of adequate community facilities in accordance with the County Development Board strategy as outlined in the document "Remodelling the Model County 2002 – 2012" in relation to the provision of childcare, play, sports and the arts				√	
7.0 C2	Where new community facilities are required as a result of new development, the developer will be expected to contribute to the cost of the provision of these facilities				√	
7.0 C3	The Council recognises the need to maintain and, where possible, improve the provision of community facilities in the County. The Council will seek to facilitate appropriate development by voluntary bodies.				√	
7.0 Obj C2	To develop within the lifetime of the Plan, a process of 'Social Audit' to identify the areas where social/community facilities are lacking, and to ascertain what local communities require in conjunction with the County Development Board.				√	
7.0 C4	The Council shall facilitate the provision of community centres, schools, etc by zoning suitable lands in Development Plans and Local Area Plans			√		
7.0 C5	The Council shall encourage and assist the formation, development, direction and co-ordination of community organisations, local interests and self help groups, with an emphasis on areas of Special Need within the County				√	
7.0 Obj C3	To undertake appropriate consultation and community participation mechanisms in preparation of local area plans indicated in the County Development Plan				√	
7.0 Obj C4	To support the provision of community facilities where necessary, and to continue to sponsor community projects where appropriate				√	
7.0 C6	The Council shall recognise the need for people with special needs to enjoy a decent living environment in the County, and to support local communities, the health authorities and other bodies involved in the provision of facilities for people with special needs.				√	
7.0 C7	The Council shall have regard to the needs of ethnic groups in its local				√	

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	and community planning policies.					
7.0 C8	To ensure that all new developments within the County facilitate access by special needs groups including women, children and young people				√	
7.0 C9	The Council shall secure the implementation of a Traveller Accommodation Programme for County Wexford within the life of the Plan.				√	
7.0 C10	The Council shall investigate and facilitate the needs of the travelling community, culture and economy having regard to the proper planning and sustainable development of the area				√	
7.0 C11	The Council shall seek to ensure that 20% of all new residential development of 10 or more dwelling units are adaptable to provide accommodation for people with disabilities.				√	
7.0 C12	The Council shall cater for older people by the providing the mechanisms to continue providing appropriate housing, including sheltered housing in accordance with the Housing Strategy of the Council.				√	
7.0 C13	The Council shall ensure appropriately designed and barrier-free built environments, which are easily negotiated by older people.				√	
7.0 C14	To encourage nursing and residential care in settlements and appropriate rural locations	√				
7.0 C15	Childcare facilities will be required in all new housing developments at a rate of one childcare facility providing for a minimum 20 childcare places for each 75 residential units and in accordance with the DOELG Planning Guidelines for Childcare Facilities 2001, the Childcare (Pre-School Services) Regulations 1996 and Guidelines for Best Practice in the Design of Childcare Facilities. In appropriate cases the Council will support the provision of these spaces off site provided they serve the inhabitants of the development.				√	
7.0 Obj C5	That an countywide Assessment of Childcare Need be conducted in association with relevant healthcare and voluntary bodies so that childcare provision within the County can be continually monitored				√	
7.0 C16	The Council shall facilitate the development of childcare facilities in			√		

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	urban and rural areas subject to satisfying applicable planning and engineering criteria.					
7.0 C17	The Council shall promote artistic excellence and innovation, support the work of artists, art organisations and traditional Wexford based arts					√
7.0 C18	The Council shall continue to promote the Wexford Festival Opera and the bringing of International Arts to the County. The Council will also promote international audiences for Wexford based artists and arts projects, and support multi-cultural initiatives.					√
7.0 C19	The Council will encourage and facilitate the development, creation and display of works of art in public areas					√
7.0 C20	The Council will encourage major new commercial and private residential developments in the County to incorporate works of public art into the overall scheme in order to enhance the amenities of the local environment.					√
7.0 LB1	The Council shall support the development and expansion of Library Services. Such development and expansion shall be carried out to the highest internationally recognised standard.			√		
7.0 Obj C6	To work towards integrated development where the economy, environment, cultural life etc. are all considered together, and where artistic and cultural activity is accepted as a vital part of everyday life	√				
7.0 Obj C7	To safeguard the cultural heritage of the County	√				
7.0 Obj C6	Support the provision of the infrastructure, physical and human, that is needed for libraries, museums, archives and for all forms of contemporary and traditional arts			√		
7.0 ED1	The Council will facilitate the provision of schools by zoning suitable lands in the Local Area Plan				√	
7.0 ED2	The Council shall consult with the Department of Education regarding the location and provision of adequate educational facilities				√	
7.0 ED3	The Council shall restrict new developments adjacent to existing schools			√		

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	where such development may have the potential to restrict the expansion of that school.					
7.0 ED4	The Council shall restrict new developments in urban areas where necessary social infrastructure including but not limited to schools, community facilities etc. are not available			√		
7.0 ED5	The Council shall encourage and facilitate the development and expansion of the Waterford Institute of Technology & Institute of Technology Carlow campuses				√	
7.0 ED6	The Council will support the campaign for the upgrading of the Waterford Institute Technology to University status.				√	
8.0 Obj TRL 1	To protect and conserve those natural, built and cultural feature that form the resources on which the county's tourist industry is based.	√				
8.0 TR 1	The Council shall encourage and assist in the provision of adequate recreational and tourism infrastructure and to further develop tourist orientated facilities in the county.				√	
8.0 TR2	The council shall assist development and tourist bodies in the development of tourist facilities in the county.				√	
8.0 TR3	The Council shall facilitate tourism development in towns and villages which also benefits rural development through creation of value added enterprises and sustainable employment which attract and direct tourists to surrounding rural areas	√				
8.0 TR4	The council shall promote rural tourism in an environmentally sustainable manner in order to benefit the employment and the environment of rural areas.	√				
8.0 TR5	The council shall encourage the reuse and refurbishment of agricultural building for tourist facilities and accommodation. To facilitate the development of agri-tourism, consideration will be given to units of holiday accommodation on agricultural holdings which will remain an		TRL 1			

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	integral part of the land holding. These units shall be sited within or adjacent to the existing farm complex.					
8.0 TR6	The council shall encourage the development of green tourism based on the sensitive use of resources in association where possible with national and local agencies and organisations.	√				
8.0 TR7	Individual units should be designed and sited so as not to have an adverse impact on the character or setting of settlements or the amenity of existing residents. Suburban style housing estate layouts will not be acceptable.	√				
8.0 TR8	Proposals to reinstate, conserve and/or renovate existing, vacant, derelict or disused buildings for holiday accommodation will be given favourable consideration subject to normal planning, environmental and engineering criteria.	√				
8.0 TR9	The Council shall promote and facilitate the development of holiday homes on existing caravan parks			√		
8.0 TR10	The Council will shall facilitate the development of 'Camper Van' halting facilities at appropriate locations subject to the proper planning and sustainable development of the area.			√		
8.0 TR11	The Council shall encourage the development of 'Destination Tourism Facilities' and appropriate associated residential development in suitable locations subject to satisfying applicable planning, environmental and engineering criteria.			√		
8.0 RL 1	The Council shall implement the Recreational, Sports and Amenity Development Strategy for the County during the life of the development plan				√	
8.0 RL 2	The Council shall promote the development of sports facilities through out the County by providing appropriate infrastructure and support	√				
8.0 RL 3	The Council shall ensure that adequate high quality play and recreation facilities are incorporated into new housing development. Play facilities may also include basket ball courts, tennis courts and hurling walls, etc.	√				
8.0 RL 4	To support local sport and community groups in the development of	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
	facilities through the reservation of suitable land and the provision of funding where available and appropriate					
8.0 Obj RL1	<ul style="list-style-type: none"> • Safeguard sports facilities and amenities of value to the community; • Continue to enhance and expand existing facilities including the development of marine leisure, swimming pools, walking routes, etc.; • Encourage a wider participation in the sports sector to order to promote a healthier society and encourage the participation of all age groups in the sports sector. 				√	
8.0 WR 1	The Council shall establish the location of all walking routes within the County and preserve, protect and add additional walking routes within the life time of the plan	√				
8.0 WR2	The Council shall achieve a network of well-marked, maintained rights-of-way and walking routes in mountainous, lowland and coastal areas to allow for short looped walks and to reach open ground	√				
8.0 WR3	To engage and co-operate with representative bodies, local groups and landowners in order to support in a sustainable manner the development of walking routes as a tourist based economic resource	√				
8.0 CP1	The Council shall promote the development and use of the coastal path as a tourist and recreational facility	√				
8.0 CP2	The provision and maintenance of new/improved coastal access points, rights of way and the improvement and upgrading of the Coastal Path.			√		
8.0 B1	The Council shall maintain and improve beaches within the County in order to achieve Blue Flag and Green Coast status where beaches do not have these awards and strive to retain Blue Flag and Green Coast Status on beaches where they have currently being awarded.	√				
8.0 B2	The Council shall identify beaches within the County which can best service the needs of disabled members of the community and to develop these beaches in association with disability representative groups .				√	

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
9.0 PS1	The Council shall protect the County's Protected Structures by ensuring their proper preservation and maintenance	√				
9.0 PS2	The Council will prohibit the demolition of any Protected Structure, unless it is demonstrated that exceptional circumstances exist. In cases where demolition or partial demolition of such a structure is permitted, or where permission is given for the removal of feature(s), the proper recording of the building will be required before any changes are made. In all such cases, the opinion of the DOEHLG and other relevant bodies shall be sought where possible	√				
9.0 CPS1	The Council shall encourage the reuse of Protected Structures that are currently vacant			√		
9.0 CPS2	The Council shall require sufficient qualitative information to be submitted in order to facilitate a full consideration of the potential impacts of any proposed change of use of a Protected Structures prior to permitting any such change of use.				√	
9.0 CPS3	The Council shall only consider the change of use of Protected Structures, if it can be shown that the structure, character, appearance and setting will not be adversely affected by the change of use proposed	√				
9.0 RPS4	Restrict where appropriate the installation of satellite television dishes or other antennae, signs or other attachments, UPVC or aluminium doors and windows on a protected structure where they would adversely affect its architectural or historic interest or its character ensure that proposals to extend, alter or refurbish a protected structure are sympathetic to the character of the building	√				
9.0 RPS5	Promote and encourage the use of Conservation Guidelines published by the Department of the Environment, Heritage and Local Government, promote and encourage the take up of funding available under the Conservation Grants Scheme				√	
9.0 RPS6	Encourage the retention and development of the County's traditional skill base, including building and thatching methods and use of building materials traditional to County Wexford and compile a list of craftsmen with traditional building skills, and, provide conservation literature, advice and guidance to the public, prospective developers, voluntary bodies and community groups				√	
9.0	The Council shall where appropriate through Town Development Plans	√				

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
ACA1	and Local Area Plans designate areas as Architectural Conservation Areas as deemed necessary.					
9.0 AH1	The Council shall protect and enhance archaeological monument and their settings including town walls, town embankments and ditches, town gates, bastions or ancillary fortifications. The Council shall also facilitate appropriate guidance in relation to the protection of the archaeological heritage in the area covered in the Plan	√				
9.0 AH2	The Council shall protect the special attributes of the historic landscape including battlefield, and facilitate public access to the National Monuments in State care and Local Authority ownership in the County	√				
9.0 ObjAH1	To secure the preservation (i.e: preservation in-situ or, as a minimum, preservation by record) of all archaeological monuments included in the record of Monuments as established under Section 12 of the National Monuments (Amendment) Act 1994, and of sites, features and objects of archaeological interest generally.	√				
9.0 ObjAH2	That any development either above or below ground, within the vicinity of a site of archaeological interest shall not be detrimental to the character of the archaeological site or its setting, and shall be sited and designed with care for the character of the site or the setting	√				
9.0 ObjAH3	Within the lifetime of this Plan, to seek to designate archaeological landscapes in consultation with The Department of the Environment Heritage and Local Government, as part of an ongoing landscape appraisal of the County.				√	
9.0 ObjAH4	To retain the existing street layout, historic building lines and traditional plot widths where these derive from medieval or earlier origins	√				
9.0 ObjAH5	To impose planning conditions in appropriate circumstances requiring: <ul style="list-style-type: none"> - professional archaeological supervision of excavations - funding by the applicant of archaeological assessment, monitoring, testing or excavation of the site and submissions of a report thereon - preservation of all or part of any archaeological remains on site 	√				
9.0 ObjAH6	To seek to include 'archaeological landscapes' as part of an ongoing Landscape Character Assessment of the County				√	

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
9.0 UA 1	When assessing a planning application, consideration shall be given to any development and/or constructional impacts on riverine, lacustrine, intertidal and sub-tidal environments as a result of that development, in consultation with the appropriate bodies	√				
9.0 UA 2	The findings of the National Shipwreck Inventory shall be included within the Development Plan upon completion and adoption by the Minister of the Environment				√	
9.0 NH1	The Council shall support the conservation of the abundance and diversity of habitats characteristic of County Wexford and their dependent plant and animal communities and will facilitate and co-operate with national agencies, local and community groups in their protection.	√				
9.0 Obj NH1	Prohibit development which would damage or threaten the integrity of sites of international or national importance, designated for their habitat/wildlife or geological/geomorphological importance including the proposed Natural Heritage Areas, candidate Special Areas of Conservation, Special Protection Areas and Statutory Nature Reserves	√				
9.0 Obj NH2	To encourage and assist individuals, environmental organisations and community groups in the conservation of nature	√				
9.0 L1	In assessing developments the Council will have regard to the guidance contained in the Landscape Character Assessment. Proposed developments should reflect the guidance contained in the Landscape Character Assessment and seek to minimise the visual impact, particularly in areas designated as Sensitive and Vulnerable Landscapes.	√				
9.0 NH1	The Council shall encourage the conservation and maintenance of features important to local landscapes including trees, hedgerows, stone walls, woodlands, ponds, streams and wetlands.	√				
9.0 NH2	The Council shall protect trees and woodlands of particular amenity and nature conservation value and make Tree Preservation Orders where appropriate	√				
9.0 NH3	The Council shall encourage woodland management and participating in tree and hedgerow planting schemes by community groups and others			√		

Policy Code	STRATEGIC OBJECTIVE	improve	conflict	Uncertain	Neutral	No Likely
9.0 NH6	The Council shall resist development proposals which would result in the loss of trees which make a valuable contribution to the character of the landscape, a settlement or its setting	√				
9.0 CZ 1	The Council shall protect and retain remaining undeveloped coastal areas and areas which are vulnerable and sensitive to inappropriate development from intensive, haphazard, unnecessary housing, tourism and recreation development.	√				
9.0 CZ 3	The Council shall undertake environmentally sensitive coastal protection works and ensure that new development does not exacerbate existing problems of coastal protection or result in altered patterns of erosion, deposition or flooding elsewhere along the coast to the detriment of important habitats or coastal features	√				
9.0 CZ 4	Prohibit any new building or development including caravans and temporary dwellings within 100m of soft shorelines	√				
9.0 CZ 5	Ensure that no new habitable structures are permitted below 3 metres (O.D. Malin) in the interests of public safety, the protection of property and residential amenity.	√				
9.0 CZ 1	Prohibit the removal of beach material, sand and gravel	√				
9.0 CZ 2	Restrict the reclamation of wetlands and marshlands which would damage coastal habitats.	√				
9.0 CZ 1	Protect sea views from coast roads and restrict development on the seaward sides of roads where it would be injurious to amenities	√				
9.0 CZ 4	Provide improved facilities including information and interpretative facilities.				√	
9.0 CP1	The Council shall co-operate with the Department of the Marine and Natural Resources in undertaking coastal defence works at the following locations where need is greatest subject to the availability of necessary finance.	√				
9.0 CDP 1	The Council shall cater for the housing needs of the immediate family of the landowner's who have a genuine housing need in the coastal area			√		
9.0 CDP 2	The Council shall direct urban generated housing development into adjoining settlements	√				

Chapter 22. APPENDIX

1. Special Areas of Conservation (SAC's)
2. Special Protection Areas (SPA's)
3. Natural Heritage Areas (NHA's)
4. Irish habitats and species of European importance

22.1 SPECIAL AREAS OF CONSERVATION (SAC's)

Ballyhack (000695)

SITE NAME: Ballyhack

SITE CODE: 000695

Ballyhack is situated at the mouth of the River Suir, 1km west of Arhurstown in Co.Wexford. Old Red Sandstone underlies this hillside site and a number of interesting plant communities grow among the rock outcrops.

A small area of dry heath, a habitat listed on Annex I of the EU Habitats Directive, which is dominated by Gorse (*Ulex europaeus*), occurs on the site. Patches of lowland dry grassland are also present, these support a number of Clover species including the legally protected Clustered Clover (*Trifolium glomeratum*) - a species known from only one other site in Ireland. This grassland community is especially well developed on the west side of the mud-capped walls by the road. On the east of the cliffs a group of rock-dwelling species occur, i.e. English Stonecrop (*Sedum anglicum*), Sheep's-bit (*Jasione montana*) and Wild Madder (*Rubia peregrina*). These rocks also support good lichen and moss assemblages with *Ramalina subfarinacea* and *Hedwigia ciliata*. Furthermore, the bedrock shore is of geological interest and is used by geologists for teaching.

Ballyhack encompasses, in a small area, a variety of habitats which are not frequent in south-east Ireland. The site is also rich in species and contains one of only two stations known for the Clustered Clover in the country.

Ballyteigue Burrow (000696)

SITE NAME: Ballyteigue Burrow

SITE CODE: 000696

This coastal site extends eastwards and northwards from the village of Kilmore Quay in County Wexford. A long, narrow spit of coarse sand and gravel with an impressive sand dune system (Ballyteigue Burrow) forms most of the seaward boundary of this site. Behind the spit lies a shallow, tidal sea inlet and estuary of the Duncormick River (The Cull). The eastern portion of this inter-tidal system was reclaimed in the 19th century by construction of the Cull Bank and is now polderland, most of which is intensively farmed grassland and arable land. The western portion of The Cull retains semi-natural habitat including mudflats which are exposed at low tide, and saltmarsh. The site contains several coastal habitats listed on Annex I of the E.U. Habitats Directive, including three priority habitats: fixed dune, dune heath and lagoon. Most of the site is designated a Nature Reserve.

A dominating feature of this site is its large dune system, many of the dunes reaching over 20m high. Embryonic shifting dunes and Marram dunes occur along the seaward side with more stable fixed dunes and dune heath inland, though blow-outs occur throughout. Typically, plants such as Marram (*Ammophila arenaria*), Portland Spurge (*Euphorbia portlandica*), Sea-holly (*Eryngium maritimum*), Sea Stork's-bill (*Erodium cicutarium*) and Carline Thistle (*Carlina vulgaris*) are common on the seaward dunes.

The fixed dunes occupy the central ridge of the Burrow. These are well developed and species-rich. The vegetation is predominantly low-growing and contains species such as Common Restharrow (*Ononis repens*), Wild Pansy (*Viola tricolor* subsp. *curtisii*), Sea Stork's-bill, Common Centaury (*Centaurium erythraea*), Wild Thyme (*Thymus praecox*) and Red Fescue (*Festuca rubra*). Cattle have not grazed the eastern end of the site since 1987 and, as a result, there is an increase in dune scrub encroachment and a decrease in species diversity. The dominant species here are Red Fescue and Burnet Rose (*Rosa pimpinellifolia*), while Bracken (*Pteridium aquilinum*) is common.

One of the most notable features at Ballyteige is the presence of developing acid heath within the (calcareous) fixed grey dune area. This is very unusual in Irish dune systems. The vegetation here is dominated by Bracken, with some Gorse (*Ulex europaeus*) and low-growing herbs. In addition, along with the classical foredune/fixed grey dune sequence, there are some unusual incipient slack/blowout complexes. These are eroded down in places to the shingle base on which the dunes rest.

Saltmarsh vegetation fringes The Cull, featuring Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*), Sea Lavender (*Limonium humile*) and Hard-grass (*Parapholis strigosa*), with well-developed mats of Glasswort (*Salicornia* sp.) and patches of Cord-grass (*Spartina* sp.). Salt meadows with Sea Rush (*Juncus maritimus*) have formed behind the dyke at the eastern end of the site. Part of the saltmarsh complex contains halophilous scrub vegetation. This is a very rare habitat in Ireland, with only two known extant locations - Ballyteige and Bannow Bay. This habitat is characterised by the rare Perennial Glasswort (*Arthrocnemum perenne*).

A series of drainage channels and a small pond, which are largely artificial in origin, now have a flora and fauna characteristic of lagoons. The channels have a maximum depth of 3 m. Seawater enters mainly by percolation through the dunes along the southern shore and apparently by leakage of the sluice on the Cull at high tide. While the aquatic vegetation in much of the site is poor, two lagoonal specialists, Tassel-weed (*Ruppia maritima*) and the green alga *Chaetomorpha linum*, occur. An additional lagoonal specialist, the Red Data Book charophyte *Chara canescens*, was recorded here as recently as 1991. The fauna of the lagoonal habitat is rich, diverse and typically lagoonal. A total of 60 taxa were recorded in a survey in 1998, in addition to several further taxa recorded previously. Eleven of these are considered as lagoonal specialists in Britain or Ireland (*Lekanesphaera hookeri*, *Palaemonetes varians*, *Sigara stagnalis*, *Sigara concinna*, *Agabus conspersus*, *Enochrus bicolor*, *Hydrobia ventrosa*, *Conopeum seurati*, *Neomysis integer*, *Notonecta viridis*, *Plea leachi*). While the habitat is particularly degraded, restoration is considered easy and long-term prospects are good.

This site is host to a range of rare plant species. Wild Asparagus (*Asparagus officinalis*) is frequent among dune vegetation, while Lesser Centaury (*Centaurium pulchellum*) is associated with damp dune slacks. Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Perennial Glasswort (*Arthrocnemum perenne*) occur on the saltmarsh. There is also a recent record for Sea Pea (*Lathyrus japonicus*). All five species are protected under the Flora (Protection) Order 1999. Henbane (*Hyoscyamus niger*), a species which is considered as threatened in Ireland, also occurs at Ballyteige. The dunes here also have an interesting lichen flora: the scarce species *Usnea articulata* occurs here, and this is the only known site in Ireland for another lichen, *Fulgensia fulgens*.

The Cull and adjacent reclaimed land provide important habitat for wintering waterfowl

and Brent Goose occur here in internationally important numbers (average maximum count of 219 individuals over the winters 1994/95 - 1997-98). Nationally important numbers of Lapwing (2737) and Black-tailed Godwit (161) occur. Two species listed on Annex I of the Birds Directive occur regularly in winter, Golden Plover (2441) and Bar-tailed Godwit (79), while another species, Little Tern, breeds at Callenstown strand.

The invertebrate fauna of the site includes a number of scarce species, examples being the bumble bees *Bombus distinguendus* and *B. sylvarum*, the jewel wasp *Hedychridium ardens* and the ant *Tetramorium caespitum*.

The dune system is used for cattle grazing. The appropriate grazing level is a critical factor in maintaining the diversity of dune systems. Coastal systems in general are threatened by disturbance of the substrate, removal of sand/shingle, etc.

This coastal site is of major ecological value for its range of good quality coastal habitats, including three habitats given priority status on Annex I of the EU Habitats Directive - fixed dune, dune heath and lagoon. The dune system is of excellent quality, physically well-developed and with a rich flora which includes five protected species. The importance of the site for wintering waterfowl further enhances its value

Bannow Bay (000697)

SITE NAME: Bannow Bay

SITE CODE: 000697

Bannow Bay is a relatively large estuarine site, approximately 14 km long, on the south coast of Co. Wexford. Small rivers and streams to the north and south-west flow into the bay and their sub-estuaries from part of the site. The bay contains large areas of mud and sand and the underlying geology is mainly of Ordovician slates with the exception of the areas to the east of Bannow Island which are underlain by Cambrian slates.

Eleven coastal habitats listed on Annex I of the E.U. Habitats Directive occur within the site. The estuary, including the saltmarshes, makes up approximately 83% of the site. At low tide up to 75% of the substrate is exposed. There are mud flats in the narrow northern part and also in the south-west and south-east. The sediments of the inner estuary associated with the Corock and Owenduff Rivers are generally black anoxic mud with some fine sand and broken shell. Mats of green algae (*Enteromorpha* spp.) are present and seaweeds (*Fucus* spp.) have colonised stony substrates, particularly further south.

Salt marshes of exceptional species diversity and rarity are found above the sand and mudflats, particularly at the south of the site. Habitats associated with *Spartina* sp. and *Salicornia* spp. occur in the salt marsh and on its fringes. A diverse range of *Salicornia* spp. has been recorded including *Salicornia pusilla*, *S. ramosissima*, *S. europaea*, *S. fragilis* and *S. dolichostachya*. Narrow shingle beaches up to 30 m wide occur in places along the edge of the estuary. The fringing reed communities are mainly confined to the tributaries and are relatively small in extent. They support Sea Club-rush (*Scirpus maritimus*), Grey Club-rush (*S. tabernaemontani*), Hemlock Water-dropwort (*Oenanthe crocata*) and abundant Common Reed (*Phragmites australis*).

The main areas of saltmarsh are on the islands at Clonmines; at the mouth of the tributary at Clonmines; at the mouth of the tributary at Taulaght; close to Saint Kieran's House; at the north-west of Big Burrow; at the south-east of Bannow Island and at the west of

Rabbit Burrow in Fethard Bay. Very small fragmented linear strips of saltmarsh occur in the upper estuary as far north as the confluence of the Corock and Owenduff Rivers and along the other tributaries. The dominant type of saltmarsh present is Atlantic salt meadow although the Mediterranean type is also present; both of these habitats are listed on Annex I of the E.U. Habitats Directive. Typical species of the former include Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Sea Thrift (*Armeria maritima*), Sea Plantain (*Plantago maritima*), Red Fescue (*Festuca rubra*), Creeping Bent (*Agrostis stolonifera*), Saltmarsh Rush (*Juncus gerardii*), Sea Arrow-grass (*Triglochin maritima*) and Sea Beet (*Beta maritima*). An abundance of Sea Purslane (*Halimione portulacoides*) is found in the Fethard and in part of the Taulaght saltmarshes. In the larger areas of saltmarsh Sea Rush (*Juncus maritimus*), a species more typical of Mediterranean salt meadows, is found. Other plants recorded are Lax-flowered Sea-lavender (*Limonium humile*) and Common Scurvy-grass (*Cochlearia officinalis*).

Halophilous scrub, another Annex I habitat, occurs in four of the larger saltmarsh areas. It is characterised by the presence of the legally protected plant Perennial Glasswort (*Arthrocnemum perenne*) which occurs in only a few sites in the country.

A mosaic of sand dune habitats which are listed on Annex I of the E.U. Habitats Directive occur in three areas at the edge of the estuary. Embryonic shifting dunes and White dunes are characterised by the presence of Lyme Grass (*Leymus arenarius*), Marram grass (*Ammophila arenaria*), Sea Spurge (*Euphorbia paralias*) and Sea Holly (*Eryngium maritimum*) in both Big Burrow and to the south east of Bannow Island.

The priority habitat fixed grey dunes is also present. Typical species here include Bird-foot Trefoil (*Lotus corniculatus*), Kidney Vetch (*Anthyllis vulneraria*), Wild Thyme (*Thymus praecox*), Stork-bill (*Erodium* spp.), Ribwort Plantain (*Plantago lanceolata*), Common Restharrow (*Ononis repens*), Mouse-ear Hawkweed (*Hieracium pilosella*), Field Wood-rush (*Luzula campestris*) and Wild Carrot (*Daucus carota*). Some areas of this dune type contain a carpet of the moss *Tortula ruraliformis* and lichens (*Cladonia* sp.). There is some Gorse (*Ulex* sp.) present beside the mossy area at the south-east of the site. Bee Orchid (*Ophrys apifera*) and Pyramidal Orchid (*Anacamptis pyramidalis*) have also been recorded. Sharp Rush (*Juncus acutus*) occurs in a dune slack associated with the grey dunes at Big Burrow. At the west of the system east of Bannow Island the dunes are quite high, reaching almost c. 15m. Non-native plant species, including Tree Mallow (*Lavatera arborea*) occur in several parts of the site.

Some freshwater habitats occur at the northern end of the site. These consist mainly of a mosaic of marsh, reedbed and Willow (*Salix* spp.). Species present include Common Reed, with young willows scattered throughout and Hemlock Water-dropwort abundant in the ground layer. In other areas the wetland vegetation consists of a mosaic of Phragmites reed bed, patches of Hard Rush (*Juncus inflexus*), Meadowsweet (*Filipendula ulmaria*), Creeping Buttercup (*Ranunculus repens*), Marsh Bedstraw (*Galium palustre*), Greater Tussock-sedge (*Carex paniculata*), Marsh Marigold (*Caltha palustris*) and occasional Bulrush (*Typha latifolia*) along some old drains. The wetland areas generally merge into a narrow band of dense scrub dominated by Blackthorn (*Prunus spinosa*) and Whitethorn (*Crataegus monogyna*) with some Ash (*Fraxinus excelsior*), Willow and Gorse.

Most of the estuary has been designated a Special Protection Area (SPA) under the E.U. Birds Directive, because of its significant bird interest, particularly during the winter. Parts of this area have also been designated a Wildfowl Sanctuary. There are large numbers of wintering wildfowl and waders who feed on the mudflats and sandflats and use the

fringing vegetation of reedbed and saltmarsh for roosting and feeding. Populations present include internationally important numbers of Light-bellied Brent Goose (819), and nationally important numbers of Shelduck (475), Pintail (85), Golden Plover (3144), a species listed on Annex I of the E.U. Birds Directive, Lapwing (2,000), Knot (508), Dunlin (3,850), Black-tailed Godwit (697), Bar-tailed Godwit (334) and Redshank (377) (all figures mean peaks 1994/95 to 1997/98).

Important breeding populations found within the site include two species listed on Annex I of the E.U. Birds Directive (Little Tern and Kingfisher), a colony of Sand Martins in the cliffs at the west of the site and a heronry with approximately 15 breeding pairs. The rare Reed Warbler may also breed in the area. Otter and Common Seal occur within the site.

Landuse at the site consists mainly of shellfish farming; approximately 20 ha of the intertidal area is under cultivation. Current annual production of Oysters is approximately 100 tonnes, concentrated mainly on three farms. There are other farms, but these are only in the initial stages of cultivation and current production is negligible. There is evidence of poor farm management in some locations. There are numerous abandoned trestles in the intertidal zone and along the top of the shore. Grading equipment is permanently left on the shore and some areas of saltmarsh are being used as a grading area for Oysters. In some areas damage is caused to the shingle vegetation and to the substrate by tractors accessing the aquaculture farms. Any further increase in aquaculture poses a threat.

Other landuses include shooting, bird watching, conservation management, grazing in some of the dune areas, horse-riding on the beach and Big Burrow sand dunes, picnicing, swimming, sailboarding, jet-skiing, line fishing and bait digging. The removal of sand and beach material also occurs at the site.

The site is of considerable conservation significance for the large number of E.U. Habitats Directive Annex I habitats that it contains, including the priority habitat fixed grey dune. The legally protected Red Data Book plant species Perennial Glasswort also occurs. The site is also an SPA because of the important numbers of wintering wildfowl it supports, including an internationally important population of Light-bellied Brent Goose.

Cahore Polders & Dunes (000700)

SITE NAME: Cahore Polders & Dunes

SITE CODE: 000700

This site is located just south of Cahore Point, 10 km south of Courtown, Co. Wexford. The site comprises a sand dune system that extends along the coast for over 4 km, backed by areas of polder grassland, wetland and drainage channels. It is underlain by rocks of Cambrian age.

The site is a candidate SAC selected for fixed dunes, Marram dunes, embryonic shifting dunes and drift lines, all habitats that are listed on Annex I of the E.U. Habitats Directive.

A sand dune ridge and sandy beach forms the eastern boundary of the site. These dunes are highest in the north (up to 18 m high) and gradually becoming lower towards the south. The dunes display a well-developed zonation of fixed dunes grading eastwards to Marram (*Ammophila arenaria*)-dominated dunes, embryo dunes and, at the top of the beach, driftline vegetation. At the northern end of the site the dunes support mature

fixed dune vegetation, including such species as False Oat-grass (*Arrhenatherum elatius*), Lesser Meadow-rue (*Thalictrum minus*), Red Fescue (*Festuca rubra*), Burnet Rose (*Rosa pimpinellifolia*), Marram, Barren Strawberry (*Fragaria vesca*), Carlina Thistle (*Carlina vulgaris*), Wild Asparagus (*Asparagus officinalis* subsp. *prostratus*), Pyramidal Orchid (*Anacamptis pyramidalis*), Lady's Bedstraw (*Galium verum*), Cowslip (*Primula vulgaris*), Cat's-ear (*Hypochoeris radicata*), Devil's-bit Scabious (*Succisa pratensis*), Wood Sage (*Teucrium scorodonia*), Sheep's-bit (*Jasione montana*), Germander Speedwell (*Veronica chamaedrys*). Several of these species are indicative of the fact that these dunes are old and somewhat decalcified through leaching. Undergrazing in this area has allowed the spread of Bracken (*Pteridium aquilinum*), Bramble (*Rubus fruticosus*), Gorse (*Ulex europaeus*) and Sea-buckthorn (*Hippophae rhamnoides*), which occur in dense patches. Over the years there has been loss of dune habitat in this area to houses, caravan parks and erosion by the sea. Fixed dune vegetation at the southern end of the site is younger and undisturbed, and supports a rich variety of species, including Marram, Burnet Rose, Wild Carrot (*Daucus carota*), Portland Spurge (*Euphorbia portlandica*), Sea Spurge (*Euphorbia paralias*), Moore's Horsetail (*Equisetum x moorei*), Common Centaury (*Centaureum erythraea*), Sea Holly (*Eryngium maritimum*), Kidney Vetch (*Anthyllis vulneraria*), Common Restharrow (*Ononis repens*), Dewberry (*Rubus caesius*), Pignut (*Conopodium majus*), Fairy Flax (*Linum catharticum*), Thyme-leaved Sandwort (*Arenaria serpyllifolia*), Biting Stonecrop (*Sedum acre*), Sand Pansy (*Viola tricolor* subsp. *curtisii*), Heath Dog-violet (*Viola canina*), Sand Cat's-tail (*Phleum arenarium*), Common Milkwort (*Polygala vulgaris*), Creeping Willow (*Salix repens*), Red Fescue, Lady's Bedstraw, Yellowwort (*Blackstonia perfoliata*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Sand Sedge (*Carex arenaria*), Rayless Ragwort (*Senecio jacobaea* var. *flosculosus*), Umbellate Hawkweed (*Hieracium umbellatum*), amongst others. These dunes also support a good range of bryophyte and lichen species. Most of these species are also to be found in the less overgrown areas of fixed dunes at the northern end of the site.

Marram dunes are found as a band c. 30 m wide on the seaward side of the fixed dunes, particularly in the southern half of the site, and are dominated almost exclusively by Marram. A narrow band of embryonic shifting dunes (5-8 m wide) with Sand Couch (*Elymus farctus*), Marram, Sea Holly and Curled Dock (*Rumex crispus*) is found on the seaward edge of these dunes. Below the embryo dunes at the top of the beach is a narrow band (4-5 m wide) of drift line vegetation with such species as Sea Rocket (*Cakile maritima*), Frosted Orache (*Atriplex laciniata*) and Prickly Saltwort (*Salsola kali*).

The dunes grade westwards to polder grassland. This area was formerly a wetland, which has been drained and reclaimed to provide improved grassland for grazing animals. These grasslands are relatively species-poor but are important feeding areas for large numbers of wintering waterfowl. Numerous drainage channels traverse the polders; these are lagoonal in character and have been colonised by brackish water species. The presence of brackish water in these channels is the result of inefficiencies in flap valves which have allowed seawater to enter; however, with recent improvements to these valves it remains to be seen if the brackish water plant and animal communities present in the channels are maintained. A variety of aquatic and emergent plant species occur in the channels, including Soft Hornwort, (*Ceratophyllum submersum*), Water Milfoil (*Myriophyllum* sp.), Water Crowfoot (*Ranunculus* sp.), Common Reed (*Phragmites australis*), Grey Club-rush (*Scirpus lacustris* subsp. *tabernaemontani*) and, recorded in 2002, Water Fern (*Azolla filiculoides*). Several artificial, more or less freshwater ponds occur near the southern end of the site and support a variety of aquatic and emergent plant species, including Water-plantain (*Alisma plantago-aquatica*), Branched Bur-reed (*Sparganium erectum*), Common Duckweed (*Lemna minor*), Ivy-leaved Duckweed

(*Lemna trisulca*), Water Horsetail (*Equisetum fluviatile*), Amphibious Bistort (*Polygonum amphibium*), Water-cress (*Nasturtium officinale*), Soft Hornwort, Bulrush (*Typha latifolia*), Common Spike-rush (*Eleocharis palustris*), Water mint (*Mentha aquatica*), Broad-leaved Pondweed (*Potamogeton natans*), amongst others.

The site is notable for the presence of a number of rare and scarce plants. Wild Asparagus has been recorded from the north end of the dune ridge; this taxon is listed on the Flora (Protection) Order, 1999. Moore's Horsetail, the hybrid between Rough Horsetail (*E. hyemale*) and Branched Horsetail (*E. ramosissimum*), occurs commonly on the sand dunes. This hybrid is particularly notable for the fact that it does not grow with either parent, one of which, *E. ramosissimum*, has not even been recorded from Ireland. It is confined to the coastline of Wexford and Wicklow and is listed on the Flora (Protection) Order, 1999. Drainage ditches in the polders support Soft Hornwort. This is a very rare and only relatively recently recorded species in Ireland, and in the Republic is otherwise known only from similar situations in south Co. Wexford. Water Fern, an introduced species that floats on water was recently recorded from drainage ditches in the site. Umbellate Hawkweed has its only known Co. Wexford site on the Cahore dunes. The relatively scarce Sharp Rush (*Juncus acutus*), Hound's-tongue (*Cynoglossum vulgare*) and Marsh Helleborine (*Epipactis palustris*) have also been recorded from the site.

Cahore Dunes and Polders is of major ornithological importance as a site for wintering waterfowl. The improved grassland provides a feeding site for a sub-flock of the Wexford Harbour Greenland White-fronted Goose population. Numbers are of national importance, with a mean of 286 for the five winters 1996/97 to 2000/01. Both Whooper and Bewick's Swans also occur, though in relatively low numbers with means of 28 and 9 respectively. The site supports nationally important populations of a further four species - Wigeon (1,568), Golden Plover (3,787), Shoveler (54) and Lapwing (2,054) (all quoted figures are means for the five winters 1996/97 to 2000/01). Other species which occur in significant numbers are Teal (470), Mallard (179) and Curlew (536).

The Gatekeeper butterfly has been recorded from dunes in the site.

Cahore Polders and Dunes is a site of considerable conservation, including as it does, good examples of fixed dune, Marram dune, embryonic shifting dune and drift line habitat; all of these habitats are listed on Annex I of the E.U. Habitats Directive, and fixed dunes with priority status. The presence of a number of species that are listed on the Flora (Protection) Order, 1999 and of other rare species is notable. It is also of high conservation value as a site for wintering waterfowl, in particular Greenland White-fronted Goose, Golden Plover, Lapwing and Wigeon.

Lady's Island Lake (000704)

SITE NAME: Lady's Island Lake

SITE CODE: 000704

This site, situated in the extreme south-east of Ireland, is comprised of a shallow, brackish coastal lagoon separated from the sea by a sand and shingle barrier. The site includes the intertidal reef of Carnsore Point, and the area of reef to the west of the point.

The littoral reef at Carnsore is strewn with boulders, cobbles and patches of sand. It is exposed to prevailing wind and swells from the west. Tidal streams tend to be moderate but are strong in some areas. The bedrock is igneous granite, felsite and other intrusive

rocks rich in silica. There is an extensive lichen zone at the top of the shore that is a good example of the wide bands of the lichens *Ramalina* spp, *Verrucaria* sp. mixed. with encrusting orange lichens, followed by a wide band of the black lichen *Verrucaria* sp. In the upper shore there is a very extensive zone of barnacles (*Semibalanus balanoides*), gastropod snails (*Littorina neritoides*) and limpets (*Patella vulgata*). This is followed by a narrow zone of *Fucus serratus* and *Mastocarpus stellatus*. At the bottom of the shore, the sublittoral fringe is characterised by the kelp *Laminaria digitata*, with serrated wrack *Fucus serratus* and thong weed *Himantalia elongata* frequent and *Alaria esculenta* occasional. An understory of red algae is present. The communities are representative of this type of shore.

The lagoon habitat within the site is an excellent example of a sedimentary lagoon with a sand/shingle barrier. It is by far the largest and best example of this type of lagoon in the country and is in a relatively natural condition, despite regular breaching of the gravel barrier. The flora is typically brackish with two species of Tasselweed (*Ruppia maritima* and *R. cirrhosa*) and the Red Data Book charophyte species *Lamprothamnion papulosum* and *Chara canescens* (both lagoonal specialists). The fauna of the lagoon is rich with 44 taxa recorded in a short period in 1996. At least 13 lagoonal specialist species have been recorded which is the highest number for any lagoonal habitat in the country and at least 4 species appear to be rare. Three coleopteran indicator species were recorded in 1996, indicating an ecologically well developed site, and two of these are very rare species (*Atheta gyllenhalli*, *A. liliputana*).

The barrier system which stretches along the entire seaward part of this site from Carnsore Point westwards towards Tacumshin comprises the best example in Ireland of a landward moving (transgressive) system of gravel-based barrier. The sequence of back barrier washover and seepage structures are among the best in Europe, and, indeed, Lady's Island remains the last "intact" example in Europe. The substrate is predominantly sandy. The barrier is overlain for the most part by sand dunes, principally embryonic shifting dunes and marram dunes but also some more fixed areas. The vegetation is very typical of shingle or stony bank habitat. Species present include Marram Grass (*Ammophila arenaria*), Sea Rocket (*Cakile maritima*), Sea Samphire (*Crithmum maritimum*), Sea Holly (*Eryngium maritimum*), Yellow-horned Poppy (*Glaucium flavum*) Sea Sandwort (*Honkenya peploides*) and Mayweed (*Tripleurospermum maritimum*). Of particular note is the occurrence of Cottonweed (*Othanthus maritimum*), an extremely rare plant which has its main Irish population here.

A rich swamp and freshwater marsh vegetation occurs at Ring Marsh. Elsewhere, the lagoon is fringed by marsh or wet grassland.

In addition to Cottonweed and the two charophyte species, three other Red Data Book species occur within the site: Lesser Centaury (*Centaurium pulchellum*), Penny Royal (*Mentha pulegium*) and Golden Dock (*Rumex maritimus*).

The lagoon has an internationally important tern colony, with four species breeding regularly - Sandwich (c.1,100 pairs), Roseate (107 pairs), Common (c.500 pairs) and Arctic (c.215 pairs) (figures are for 1999). These breed mostly on Inish island (which is outside of site), with only Arctic breeding on the smaller Sgarbheen island in recent years. An excellent diversity of duck species breed, including rare or scarce species such as Gadwall, Garganey, Shoveler and possibly Wigeon. Oystercatcher, Redshank and Lapwing breed on the islands. The site formerly supported internationally important numbers of wintering waterfowl, but in recent years numbers have declined drastically,

possibly due to a decline in the abundance of their main food source, *Ruppia* spp.. Nowadays numbers are only of regional or local importance. Over the four winters 1994/95 to 1997/98 the main species were: Wigeon (652), Teal (200), Pochard (258), Tufted Duck (93), Scaup (46), Lapwing (1080) and Curlew (221).

This site is of high conservation importance, having three habitats which are listed on Annex I of the EU Habitats Directive and one of these (lagoons) with priority status. The site also has important ornithological interests.

Saltee Islands (000707)

SITE NAME: Saltee Islands

SITE CODE: 000707

This site comprises the Saltees Islands and a large area of the surrounding seas. There are two islands (Great Saltee and Little Saltee) and a constellation of islets and rocks. The islands are situated between 4 and 5 km off the south Wexford coast. As a group, they constitute a broken reef that protrudes from a seabed of sand and shell. The reef has a north-east/south-west orientation and is typically strewn with boulders, cobbles and patches of sand and gravel. Bedrock is metamorphic schist and gneiss. The site is of high conservation importance for marine habitats, with reefs, sea caves, large shallow bays, and intertidal sediments well represented.

The subtidal reefs range from being rugged bedrock with steep sided gullies to large boulders mixed with sand or cobbles and pebbles and are exposed to moderately exposed to wave action. The communities present are excellent examples of those typical of tideswept areas and many have fauna and flora that are tolerant of sand scour. The area is notable for the range of colonial sea squirts present. With the exception of a few examples the communities are very species rich, ranging from 78 to 117 species. No other area surveyed during the BioMar Survey had so many species rich communities. In shallow water the reefs support a forest of mixed kelp species with scour tolerant fauna on tideswept bedrock or a kelp forest of *Laminaria hyperborea* with a faunal cushion and foliose red algae. With increasing depth the kelp thins to a kelp park. The kelp understory ranges from a turf of hydroids, bryozoans and sponges and numerous colonial sea squirts to a community characterised by the bryozoan *Flustra foliacea* or an understory foliose red algae. On the sides of boulders a community with deadman's fingers *Alcyonium digitatum*, the keel worm *Pomatoceros triqueter*, and algal and bryozoan crusts is found.

In deeper water (15-30 metres) animal dominated reef communities occur. The most notable of these is a community dominated by the sea squirt *Stolonica socialis* and the bryozoan *Flustra foliacea*. This community is rich in colonial seasquirts in which *Archidistoma aggregatum*, *Sidnyum elegans* and *Distomus variolosus* and the solitary *Pyura squammata* occur.

Stolonica socialis in Ireland is only known from the south-east and north-west, while *Sidnyum elegans* has not previously been recorded in Ireland. *Distomus variolosus* in Ireland is only known from between Galway and Tralee Bay on the west coast and the east and south-east coasts. *Pyura squammata* appears to have a widespread but local distribution in Ireland. The sea anemone *Cataphellia brodricii* occurs in this community and in shallow water both around the Saltee Islands and other areas in the south-east. The only other records for this species are from Roaringwater Bay, Co. Cork. Where the

bedrock is steep or large boulders are present the community present may be cushion sponges, branching sponges, *Nemartesia* sp. of hydroids and the 'rose coral' *Pentapora foliacea* or one of *Alcyonium digitatum* with massive sponges and *Nemartesia* species. Beds of the brittlestars *Ophiothrix fragilis* and *Ophiocomina nigra* are also found in the area and on very steep to vertical reefs the plumose anemone *Metridium senile* may be found.

Species not mentioned above but that are found in the area with limited distribution in Britain and Ireland and considered to be worthy of conservation are the sponges *Tethyspira spinosa* and *Plocamilla coriacea*, the hydroids *Aglaophenia acacia* and *Tamarisca tamarisca*, *Halecium muricatum* and *Sertularella gaudichaudi*, seaslugs *Okenia aspersa* and the bryozoan *Schizomavella sarniensis* and burrowing brittlestar *Amphiura securigera*. The majority of these species occur in the ascidian dominated communities and the *Stolonica socialis* community in particular. *Tethyspira spinosa* is only known from the Saltees and Roaringwater Bay in Ireland. *Plocamilla coriacea* is a recently described species only recorded from the Saltees, Carnsore Point and Tuscar Rock, Co. Wexford and Kilkieran Bay, Co. Galway. *Aglaophenia acacia* is a southern species and occurs at several sites around the Saltees with only one previous record in Ireland. Prior to the BioMar survey the only 20th century records for *Halecium muricatum* in Britain and Ireland were from the Isle of Man. This species is now known to occur at the Saltees and in Co. Donegal. The records for *Sertularella gaudichaudi* from this area are the only Irish records. The sea slug *Okenia aspersa* occurs at two sites in the area and these are the only recent records for Ireland. *Schizomavella sarniensis* is a recently described species of bryozoan and to date in Ireland has only been recorded from around the Saltees. The current known distribution of the burrowing brittlestar *Amphiura securigera* in Ireland appears to be the south-east of the country and Kenmare River, Co. Cork..

The littoral sediments of the Saltee Islands area are moderately exposed to wave action. Talitrid amphipods live under drift algae on the strand line. The midshore is characterized by polychaete worms (*Hediste diversicolor*, *Malacoceros fuliginosus*, *Spio filicornis* and *Arenicola marina*), crustaceans (*Crangon crangon*) and crabs (*Carcinus maenas*). The low shore is characterized by the polychaete worms *Spio filicornis* and *Lanice conchilega*, the burrowing crustacean *Atylus swammerdamei*, crabs and bivalve molluscs *Fabulina fabula* and occasional *Cerastoderma edule*. The sublittoral sediment around the Saltees is composed of exposed, tideswept shelly gravel characterised by the burrowing sea cucumber *Neopendactyla mixta* with hydroids and bryozoans attached to cobbles.

Both islands have exposed rocky cliffs on the south and east sides. On Great Saltee these are mostly c.30 m high, and about half this on Little Saltee. The cliffs have a typical sea-cliff flora, with Thrift (*Armeria maritima*), Sea Campion (*Silene maritima*), Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Scurvy Grass (*Cochlearia officinalis*), Rock Spurrey (*Spergularia rupicola*), Scentless Mayweed (*Matricaria maritima*), Red Fescue (*Festuca rubra*), Sea Spleenwort (*Asplenium marinum*) and Sea Samphire (*Crithmum maritimum*). Sea Stork's-bill (*Erodium maritimum*) also occurs and Golden-samphire (*Inula crithmoides*) has been recorded in the past. Excellent displays of lichens (*Ramalina* and *Xanthoria* spp.) are shown. The northern and western sides of both islands are fringed with shingle and boulder shores, with small areas of intertidal sandflats. Sea caves occur at the base of the cliffs on Great Saltee. Some of these are sub-littoral and some have boulder beaches at the back.

Since the abandonment of farming on the islands (apart from sheep grazing on Little Saltee), Bracken (*Pteridium aquifolium*) has become dominant over much of the terrestrial areas and often occurs in association with Bluebells (*Hyacinthoides non-scripta*). Brambles (*Rubus fruticosus*) are also frequent. Dry grassland still occurs in some of the old fields, with species such as Yorkshire Fog (*Holcus lanatus*), Ground Ivy (*Glechoma hederacea*), Ragwort (*Senecio jacobaea*), Nettles (*Urtica dioica*) and Thistles (*Cirsium* spp.).

Several springs and seepage areas provide habitat diversity. Species present include Water Cress (*Nasturtium officinale*), Jointed Rush (*Juncus articulatus*), Bog Stitchwort (*Stellaria alsine*), Marsh Pennywort (*Hydrocotyle vulgaris*) and, in at least one location, Early Marsh Orchid (*Dactylorhiza incarnata*).

The Saltee Islands are internationally important for their colonies of breeding seabirds. Notable are the Gannets on Great Saltee (2,050 pairs in 2000), Cormorants on Little Saltee (273 pairs in 2000), Shags on both islands (265 pairs), Fulmars, (525 pairs 1998-2000), Kittiwakes (2,125 pairs in 1999), and the auks - Guillemots (21,436 individuals), Razorbills (c.4,000 individuals) and Puffins (1,822 individuals). There is also a small Manx Shearwater colony (c.150-175 pairs) on Great Saltee. The breeding populations of large gulls have declined dramatically in recent years. The Lesser Black-backed Gull colony is still important (245 pairs), but numbers of Herring Gull (c.50 pairs) and Great Black-backed Gull (c.90) are now very low.

Peregrine Falcon breeds (1-2 pairs) and Chough (1 pair) occurs at the eastern edge of its Irish range. Both of these species are listed on Annex I of the EU Birds Directive. Great Saltee is a major site for spring and autumn landbird migration. Very large numbers of pipits, Swallows and martins, thrushes, warblers and finches occur, while smaller numbers of a great variety of other species (some very rare in Ireland) are also recorded. The island is also a good site for migrant Lepidoptera, especially Red Admirals, Painted Ladies, Clouded Yellows, Silver Y moths and Humming-bird Hawk Moths.

Great Saltee has a breeding population of Grey Seals, one of the very few in eastern Ireland. Up to 120 animals are present in autumn and up to 20 pups are produced annually.

This site is of high conservation importance for the occurrence of several habitats which are listed on Annex I of the EU Habitats Directive, of which reefs are of exceptional quality and diversity. The site is of international importance for breeding seabirds and also has two species which are listed on Annex I of the EU Birds Directive. In addition, the site has a breeding population of Grey Seal, an Annex II species on the EU Habitats Directive.

Screen Hills (000708)

SITE NAME: Screen Hills

SITE CODE: 000708

The Screen Hills are located in the south-east of Ireland just north of the Wexford Slob. The site is characterised by the glacial landscape known as 'kettle and kame'. This term refers to kettlehole lakes in hollows between hills.

The site contains two habitats listed on Annex I of the EU Habitats Directive: oligotrophic

lakes and dry heath formations. The many lake basins mark the positions of former ice blocks in an acidic, sandy moraine. The lakes in the site are of two types: those which are more low-lying and in contact with groundwater are influenced by what is occurring over a wide area. Other lakes are suspended at a height above the regional water-table and are influenced by the area immediately surrounding them. These lakes can usually be considered oligotrophic although nutrient input from the adjacent land may change this. The lakes vary in size, most being pond-sized, and have widely different plant and animal communities. These include bog formation in all stages, from open sandy shores with only a narrow band of emergent vegetation, to wide rafts of floating fen type vegetation, to small Sphagnum bogs with Royal Fern (*Osmunda regalis*), to consolidated Heather/ Willow/ Birch (*Calluna/Salix/Betula*). Many plant species which are rare in south-east Ireland are currently found in these lakes. They include Fen Sedge (*Cladium mariscus*), White Water-lily (*Nymphaea alba*), Shoreweed (*Littorella uniflora*) and Lesser Bladderwort (*Utricularia minor*). Species of good quality boggy habitats are widespread, such as Lesser Tussock-sedge (*Carex diandra*), Marsh Cinquefoil (*Potentilla palustris*), Marsh St. John's-wort (*Hypericum elodes*), Lesser Water-plantain (*Baldellia ranunculoides*) and Water Dock (*Rumex hydrolapathum*). Lake edges in grazed fields have species typical of exposed mud such as Water-purslane (*Lythrum portula*), Nodding Bur-marigold (*Bidens cernua*), Trifid Bur-marigold (*B. tripartita*) and Lesser Marshwort (*Apium inundatum*). Six-stamened Waterwort (*Elatine hexandra*) has been recorded but not recently re-found.

Dry heath at the site is extensive and species-rich. The heath vegetation at the site differs from most heaths elsewhere in the virtual absence of Heather, and in the presence of a diverse range of annual species. Substantial populations of the following Red Data Book species have been found at this very important and complex site and in other localities on and adjoining the moraine: Slender Cudweed (*Logfia minima*), Heath Cudweed (*Omalotheca sylvatica*), Hairy Bird's-foot-trefoil (*Lotus subbiflorus*) and Bird's-foot (*Ornithopus perpusillus*). Musk Thistle (*Carduus nutans*), another Red Data Book species, is also present in large numbers. It may have been introduced with cattle feed, but is thoroughly established. Other typical plant species of the heath at this site include Common Bent (*Agrostis capillaris*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Sorrel (*Rumex acetosella*), Tormentil (*Potentilla erecta*), Violets (*Viola* spp.), Common Cudweed (*Filago vulgaris*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Bracken (*Pteridium aquilinum*) Gorse (*Ulex europaeus*) and the uncommon Knotted Clover (*Trifolium striatum*), Lesser Trefoil (*T. dubium*) and Annual Knawel (*Scleranthus annuus*).

The site is under threat because of reclamation for intensive agriculture. Some fields have been re-seeded with Perennial Rye-grass (*Lolium perenne*), while others have been brought into crop production. This process of agricultural improvement eventually leads to the loss of rare plant habitat and also increases the risk of pollution to the lakes.

The Screen Hills contain important examples of two habitats listed on Annex I of the EU Habitats Directive. The presence of several Red Data Book plant species adds further importance to this site.

Tacumshin Lake (000709)

SITE NAME: Tacumshin Lake

SITE CODE: 000709

Tacumshin Lake is a shallow coastal lagoon situated on the south Co. Wexford coast

about half way between Kilmore Quay and Carnsore Point and 15 km south of Wexford town. The lagoon was formerly a shallow sea bay which over time has been separated from the sea by a gravel/sand spit that has extended across the mouth of the bay from east to west, due to long-shore drift.

At times in the past this spit completely land-locked the lagoon, and at the end of the 19th century when this situation prevailed for some time the lake was drained by means of a large bore pipe set through the gravel/sand bar. Some of the drained lake bed was used by growing cereal crops. In the mid-1970s the spit again closed off the lagoon from the sea. The water level rose after exceptionally heavy rainfall and flooded several hundred hectares of low lying surrounding farmland. To relieve flooding the farmers reactivated the old drainage pipe and installed a second pipe at a lower level. The capacity of these two pipes is insufficient to prevent the lagoon filling up in winter when inflow from streams is greater than the outflow through the pipes. Thus, from about November to May the water level normally reaches the HWM as shown on the 6" O.S. maps, while from May to November the water level approximates to that of LWM as shown on the 6" O.S. maps. To speed the drainage from the lagoon two main drains were excavated leading to the landward end of the pipes.

The spit separating the lagoon from the sea has been built up by tide-borne gravels and wind-blown sand. The patches were formed from water and wind-borne silts and sands, consolidated by salt marsh vegetation. The lake bed is composed of silt and sand deposited by incoming tides and feeder streams. The surrounding lands are composed of glacial till.

The lagoon bed sediments support extensive areas of Glasswort (*Salicornia* spp.) where conditions remain brackish in summer. Other areas support Lesser Sea-spurrey (*Spergularia marina*). The permanent water bodies (including the excavated channels) and the marshy areas associated with stream inlets are colonised by Common Reed (*Phragmites australis*), Sea Club-rush (*Scirpus maritimus*) and Common Club-rush (*Scirpus lacustris*). Tasselweed (*Ruppia maritima*) forms dense stands in the permanent brackish water in the centre of the lagoon bed. Other typical lagoonal plants present include Horned Pondweed (*Zanichellia palustris*) and the rare charophyte (*Chara canescens*). The patches have dense Fescue (*Festuca* sp.) swards and patches of Sea Purslane (*Halimione portulacoides*) and Sea Rush (*Juncus maritimus*).

The gravel/sand barrier is in two parts, the eastern one being a mature dune system with low-growing herbs and grasses, such as Lady's Bedstraw (*Galium verum*) and Kidney Vetch (*Anthyllis vulneraria*); the western one has a developing dune vegetation with the pioneering Sea Couch (*Elymus farctus*) dominating. Marram (*Ammophila arenaria*) is found throughout. Lyme Grass (*Leymus arenarius*) is found here at the western edge of its range, while the endangered and legally protected Cottonweed (*Otanthus maritimus*) has been recorded.

The waterfowl population of the lagoon is exceptionally diverse and the area supports large numbers of birds through the whole year, which is unusual among Irish wetlands. In summer the restricted area of water remaining in the lagoon supports a moulting flock of 300-400 Mute Swans, one of the largest concentrations in Ireland. The area is also an important summering site for non-breeding Black-tailed Godwits. During spring and autumn migration large numbers of waders use the lagoon as a resting and feeding area before continuing on to breeding or wintering grounds. Large numbers of Lesser Black-backed Gulls (up to 1,000) gather at the lagoon for some weeks prior to their autumn

migration to Iberia. The lagoon is particularly attractive to vagrant North American and Eurasian waterfowl, especially in the autumn.

As water levels gradually rise in early winter large numbers of waterfowl - Mallard (104), Teal (663), Gadwall (51), Wigeon (3608), Pintail (278), Shoveler (118), Tufted Duck (122), Pochard (86), Coot (690), Brent Goose (45), Lapwing (5043), Black-tailed Godwit (131) and Curlew (268) congregate at the lagoon to feed on its rich food resources. The lagoon was formerly used by a large colony of Herring Gull and in 1975 90 pairs of the rare Roseate Tern attempted to nest on the Little Patch. In autumn the abundant insect life of the dry lake bed and Sea-spurrey (*Spergularia*) stands provide food for large numbers of migrating Swallows and Martins which also use the reed beds as a night roosting area, with up to 10,000 individuals being recorded in recent years.

The site is of particular conservation significance for its lagoon, which is an excellent example of a sedimentary lagoon with a gravel/sand barrier, that supports a wide variety of plants and animals, including many lagoonal specialist species. It is one of the largest examples of a lagoon in the country. This habitat, which is both threatened and declining throughout Europe, is listed on Annex I of the E.U. Habitats Directive with priority status. Good examples of four other habitats that are listed on Annex I of this directive occur within the site, i.e. drift lines, perennial vegetation of stony banks, embryonic shifting dunes and Marram dunes. Tacumshin Lake is also an important ornithological site and has been designated a Special Protection Area under the E.U. Birds Directive. It is nationally important for nine bird species, especially Gadwall and Pintail. The presence of a number of rare or scarce plant species adds additional interest to the site.

Raven Point Nature Reserve (000710)

SITE NAME: Raven Point Nature Reserve

SITE CODE: 000710

The Raven is situated on the north side of Wexford Harbour, incorporating the dynamic sand system of Raven Point and the coast running north to Curracloe House. The site is designated as a National Nature Reserve.

The site incorporates a large sand dune system comprising a suite of coastal habitats listed on Annex I of the EU Habitats Directive. The dynamic nature of the system is best seen at the southern end of the site where sand flats, lagoons, driftlines and small dune slacks develop and are being continuously transformed by the activity of the sea and the wind. There has been heavy erosion along the eastern side of the site in recent years, but the sand dune system on the south-western end of the Raven is accreting, building towards the west along the wall which is the southern boundary of the Wexford Slob, at about 3m per year.

The site was planted with commercial conifer forest in the 1930s and 1950s, partly as a coast defence measure to stabilise the dunes and protect the slob behind. Species planted include Sitka Spruce (*Picea sitchensis*), Monkey Puzzle (*Araucaria araucana*), Contorta Pine (*Pinus contorta*), Corsican Pine (*P. nigra*), Monterey Pine (*P. radiata*) and Scot's Pine (*P. sylvestris*). Under these conifers two communities can be recognised: a Bracken (*Pteridium aquilinum*) / Bramble (*Rubus fruticosus*) / Ivy (*Hedera helix*) community with Bluebell (*Hyacinthoides non-scripta*) and a mixed grass and sedge community with Common Bent (*Agrostis capillaris*), Sweet Vernal-grass (*Anthoxanthum odoratum*) and Sand Sedge (*Carex arenaria*). In some wetter parts of the commercial

forest, the understorey vegetation is dominated by Creeping Willow (*Salix repens*).

The unplanted areas of fixed dunes are fairly typical of the habitat, with a low open sward of grasses, herbs, bryophytes and lichens occurring amongst areas of Marram (*Ammophila arenaria*). Species present include Red Fescue (*Festuca rubra*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Lady's Bedstraw (*Galium verum*), Sea Pansy (*Viola tricolor* subsp. *curtisii*), Biting Stonecrop (*Sedum acre*), Field Wood-rush (*Luzula campestris*), Rest Harrow (*Ononis repens*), Kidney Vetch (*Anthyllis vulneraria*) and Early Hair-grass (*Aira praecox*). The moss and lichen component includes *Hypnum cupressiforme*, *Tortula ruraliformis*, *Rhytidiadelphus triquetris*, *Peltigera* spp. and *Cladonia* spp. Towards the southern end of the system Burnet Rose (*Rosa pimpinellifolia*) and Brambles (*Rubus fruticosus* agg.) become more frequent in fixed areas. A feature of the site is the presence of dune slacks. Some of the current slack communities are associated with artificial ponds that were originally created as forest fire control reservoirs. Where the slacks maintain moist conditions, characteristic species include Creeping Willow, Common Sedge (*Carex nigra*), Bog Pimpernel (*Anagallis tenella*), Heath Grass (*Danthonia decumbens*) and the mosses *Pseudoscleropodium purum*, *Rhytidiadelphus triquetris* and *Calliergon cuspidatum*. The Sea Rush (*Juncus acutus*), which displays a disjunct distribution in Ireland, is recorded from these slacks. Other interesting species include Broad-leaved Helleborine (*Epipactis helleborine*) and the rare Round-leaved Wintergreen (*Pyrola rotundifolia* subsp. *maritima*). Many of these slacks have dried up due to the afforestation though Creeping Willow and some of the other character species remain common.

Dune ridges with Marram Grass (*Ammophila arenaria*) occur in a band along the eastern and south-eastern sides of the site. Other species present include Sea Spurge (*Euphorbia paralias*), Portland Spurge (*E. portlandica*) and Sea Holly (*Eryngium maritimum*). These dunes are not particularly high, generally reaching heights of not more than 5 m. Good examples of embryonic dunes occur on the seaward side of the marram dunes. Species present include Sea Rocket (*Cakile maritima*), Sea Couch (*Elymus farctus*) and Prickly Saltwort (*Salsola kali*). Associated with the embryonic dunes and the upper beach area is a band of annual driftline vegetation.

A number of rare and protected plants have also been recorded from this dune system including Round-leaved Wintergreen (*Pyrola rotundifolia* subsp. *maritima*), Lesser Centaury (*Centaureum pulchellum*) and Wild Asparagus (*Asparagus officinalis* subsp. *prostratus*).

Apart from the planted areas, the site supports a wide range of vegetation communities, the main ones of which may be simply grouped into mobile dune, fixed dune, dune slack and salt marsh communities. The site is particularly important for six dune and drift line habitats that are listed on Annex I of the EU Habitats Directive, i.e. embryonic shifting dunes, Marram dunes, fixed dunes, dune slack, dunes with Creeping Willow and drift lines. A small, though good example of Atlantic salt meadow occurs below the fixed dunes at the more sheltered western side of the point. Typical species are present including Thrift (*Armeria maritima*) and Common Saltmarsh-grass (*Puccinellia maritima*).

A number of ponds were created as water reservoirs for forest-fire control, but more have been created as part of the introduction to the site of the Natterjack Toad (*Bufo calamita*), a rare, legally protected Red Data Book species. The toads are breeding successfully and appear to have established themselves in the site.

The Raven has important bird interests, being part of the Wexford Slobs and Harbour complex. Of critical significance is that it forms the principal night roost for the internationally important Wexford Harbour population of Greenland White-fronted Geese. In the four winters 1994/95 to 1997/98, seven species occurred in nationally important numbers as follows (numbers are average maxima over the 4 winters): Cormorant (216), Red-breasted Merganser (38), Grey Plover (732), Knot (288), Sanderling (149), Dunlin (1,510) and Black-tailed Godwit (167). Golden Plover (570) and Bar-tailed Godwit (113) also occur, these species being of especial conservation interest as they are listed on Annex I of the EU Birds Directive. The Raven has been an important breeding site for Little Tern (e.g. 26 pairs in 1984) but in recent years conditions have been less suitable due to the spread of marram grass and the terns have bred elsewhere in Wexford Harbour.

The dunes support a diverse invertebrate fauna with significant species in the fore dunes, Ammophila dunes and fixed dune grassland. Notable species include two rare carabid beetles (Coleoptera) *Nebria complanata* and *Pristonychus terricola*, the robber fly *Epitryptus cowini* (Diptera), the snail-killing fly *Pherbellia knutsoni* (Diptera) and the weevil *Ceuthorrhynchus hirtulus* (Coleoptera). A rare woodlouse *Armadillidium album* (Isopoda) has also been recorded from the dunes. The invertebrates of the marine and intertidal habitats have also been described at this site: the sheltered intertidal shore to the west of Raven Point supports communities of bivalves and worms (e.g. *Cerastoderma edule*, *Arenicola marina*). The steeper shore to the north-east of the Point, which are predominantly sandy sediment, supports a sparser fauna, but with one notable species *Pseudorchestoidea brito* - a sandhopper which is known from only one other location in Ireland.

Curracloe is a popular summer resort and parts of the Raven receive high recreational pressure. In particular, pony trekking has caused erosion of the embryonic dunes in some places. It is planned to gradually remove all the conifers from the sand dune system. Some selected areas will be clearfelled, others will be left as scrub pine. After harvesting the conifers, certain areas behind the dunes will be planted with hardwoods, including Alder (*Alnus glutinosa*) and Sessile Oak (*Quercus petraea*). Other areas, in particular the more low-lying areas of former dune slack, will be left to regenerate naturally.

The Raven Point Nature Reserve is an excellent example of a dynamic dune system, that contains a suite of coastal habitats listed on Annex I of the EU Habitats Directive including five dune types and drift lines. It also provides a roosting site for an internationally important flock of Greenland White-fronted Geese, a species listed on Annex I of the EU Birds Directive.

Hook Head (000764)

SITE NAME: Hook Head

SITE CODE: 000764

The site of conservation interest at Hook Head comprises an area of marine subtidal reefs to the south and east of the Hook Head Peninsula and includes the sea cliffs from Hook Head to Baginbun and Ingard Point. The peninsula forms the eastern side of Waterford Harbour, while to the east it adjoins the estuary mouth of Bannow Bay. Hook Head itself is composed of Carboniferous limestone overlain by Devonian Old Red Sandstone and is palaeontologically of international importance. The site contains three habitats listed under the EU Habitats Directive, i.e. large shallow inlets and bays, reefs and sea cliffs.

Subtidally the reefs are aligned in a north-east/south-west orientation and are typically strewn with boulders, cobbles and patches of sand and gravel. They are exposed to prevailing winds and swells from the west and tidal streams tend to be moderate but are strong in some areas. There are also a number of isolated reefs that project from a sand plain. The reefs around Hook Head have excellent examples of tideswept communities and species richness is high in both the shallow and deep-water communities. The latter is characterised by cushion sponges, with branching sponges and the rose 'coral' *Pentapora foliacea*. In addition the sponge *Stryphnus ponderosa*, the sea squirts *Sidnyum elegans*, *Distomus variolosus* and *Stolonica socialis* and the brittlestar *Amphiura securigera* are present. These species have a limited distribution in Ireland. The rare red algae *Schizymenia dubyi* also occurs.

The sublittoral sediments within this area consist of exposed, tideswept patches of duned gravel and moderately exposed silty sand with only weak tidal streams. The duned gravel is characterised by the burrowing sea cucumber *Neopendactyla mixta* and the burrowing brittlestar *Amphiura securigera* whilst the silty sand is relatively barren. *Amphiura securigera* in Ireland, has only been recorded from the south east, the Kenmare River and in Northern Ireland where it is considered rare.

The sea cliffs, which extend for a distance of c. 15 km, are mostly low, usually not more than 10 m though they extend up to 30 m near Baginbun Head. Both clay and rock cliffs are represented. The vegetation of the cliffs, as well as the underlying rocky shoreline, is characterised by species such as Thrift (*Armeria maritima*), Rock Samphire (*Crithmum maritimum*), Rock Sea-lavender (*Limonium binervosum*), Sea Plantain (*Plantago maritima*), Buck's Horn Plantain (*Plantago coronopus*), Rock Sea-spurrey (*Spergularia rupicola*) and Sea Mayweed (*Matricaria maritima*). The cliffs are also of ornithological interest for breeding Choughs (*Pyrhocorax pyrrhocorax*), Ravens (*Corvus corax*) and Peregrines (*Falco peregrinus*), and there is a small seabird colony, mainly of Guillemots, near Baginbun. The headland is a noted landfall point for migrants.

In summary, this site is of conservation importance for its subtidal reef and shallow bay communities, and their diversity of species, as well as for the vegetated sea cliffs. These habitats are listed under the EU Habitats Directive. The rocky coastline is also important for breeding Ravens, Choughs and Peregrines. The latter two are listed on Annex I of the EU Birds Directive.

Blackstairs Mountains (000770)

SITE NAME: Blackstairs Mountains

SITE CODE: 000770

The Blackstairs Mountains are located along the border of the counties Wexford and Carlow, forming a mountain chain that runs in a north-east/south-west direction for approximately 22 km and including six peaks over 520 m. The range has a core of granite, and on the Carlow side, erosion has cut deeply into the dome exposing successive layers of granite, giving a steeply stepped slope. On the east side some overlying Ordovician slates and sandstones are evident.

The site is important for extensive areas of dry heath - a habitat listed under Annex I of the E.U. Habitats Directive. The higher, steeper slopes are covered with a dense, tall carpet dominated by Heather (*Calluna vulgaris*) and Bilberry (*Vaccinium myrtillus*) with

small amounts of Crowberry (*Empetrum nigrum*), Bell Heather (*Erica cinerea*) and Cross-leaved Heath (*E. tetralix*). Occasionally Common Bent-grass (*Agrostis capillaris*) and Mat Grass (*Nardus stricta*) are also found. Abundant moss cover is present, particularly in those areas which have escaped burning - *Racomitrium lanuginosum*, *Hypnum cupressiforme*, *Polytrichum commune*, *Hylocomnium splendens* and *Rhytidiadelphus squarrosus*. Stiff Sedge (*Carex bigelowii*) occurs on the stony ground on the west side of the range.

Lower down the slopes the heath is dominated by Gorse (*Ulex europaeus*), with some of the species listed above, and Heath Bedstraw (*Galium saxatile*) and Tormentil (*Potentilla erecta*). Bracken (*Pteridium aquilinum*) is also abundant on the lower slopes, particularly on the western flanks. Upland grassland is found on those slopes which have been heavily grazed. Grassland species include Mat Grass and Common Bent-grass. Heath Bedstraw and the mosses *Hylocomnium splendens* and *Rhytidiadelphus squarrosus* are also found.

Wet heath occurs in mosaic with dry heath towards the base of some of the steeper slopes and is also found outside the western edge of the commonage. Typical species include Purple Moor-grass (*Molinia caerulea*), bog mosses such as *Sphagnum capillifolium* and *S. palustre* and sometimes Bog Asphodel (*Narthecium ossifragum*). There are relatively extensive tracts of a peat/heath mosaic on the gentle slopes at the east of the southern section of the site and within the commonage. Bog Cotton (*Eriophorum* spp.) is dominant here with small amounts of Purple Moor-grass and over 90% cover of bog mosses. Some very wet patches with Soft Rush (*Juncus effusus*) occur.

A series of lowland bogs north of Mount Leinster and around Black Rock Mountain have recently been identified which have considerable local importance. These occur around Ballycrystal, south-west of Black Rock Mountain, where the highest feeders of the Urrin River rise, and around Crann on the north of the Black Rock ridge, where feeders of the Clody River rise just south of the Wexford/Carlow border. In these bogs considerable populations of Cranberry (*Vaccinium oxycoccos*) have been found in 1990. The Crann bogs also have abundant Bog-myrtle (*Myrica gale*), uncommon in the county. Other species of interest that occur in the Urrin and Clody bogs include Marsh St. John's-wort (*Hypericum elodes*), Pale Butterwort (*Pinguicula lusitanica*) and Lesser Skullcap (*Scutellaria minor*). The Crann bogs include quite extensive stands of Purple Moor-grass, and Water Horsetail (*Equisetum fluviatile*) is widespread. The bogs are reduced to fragments bordering improved grassland or forestry.

Mount Leinster is the highest mountain of the range (795 m). On the east side of the summit a few plants with arctic or alpine affinities occur such as the scarce Starry Saxifrage (*Saxifraga stellaris*) and the Stag's-horn Clubmoss (*Lycopodium clavatum*).

The headwaters of the Urrin River are included within the site. Habitats along it include patches of deciduous woodland dominated by Birch (*Betula pubescens*). Further south the woodland becomes more dense and consists of Alder (*Alnus glutinosa*), Willows (*Salix* spp.), Hazel (*Corylus avellana*) and Holly (*Ilex aquifolium*). The woodland in the south of the area is comprised of Oak (*Quercus petraea*). There are also patches of peaty marsh with species similar to those listed for the lowland bog. The scarce Ivy-leaved Bellflower (*Wahlenbergia hederacea*) and Mountain Fern (*Thelypteris limbosperma*) occur along the Urrin River, while Cowberry (*Vaccinium vitis-idaea*), also a scarce species, is found in heath in a number areas of the site. Small Cudweed (*Logfia minima*), a Red Data Book species that is protected under the Flora (Protection) Order (1999), has been recorded in

heathy grassland on the site. The rare, Red Data Book species Bird's Foot (*Ornithopus perpusillus*) is found in dry, sandy places at Knockroe in Co. Carlow. Small numbers of Red Grouse use the site - their numbers have declined here in recent years.

Landuse within the site is centred on grazing. Overall sheep numbers are low, though there are some pockets where high numbers are found. In these areas there are patches of bare ground, an abundance of Mat Grass and in others upland grassland replaces the heath. Burning of the Heather is carried out on what appears to be a rotational basis. Heather is regenerating in the burnt areas. From a distance the age structure is evident in the different hues of brown to be seen. Cattle are out-wintered on the slopes just inside the boundary of the commonage. Severe poaching is associated with this, especially where supplementary feeding is carried out. Coniferous forestry is present over much of the slopes of the mountain (overside of the site), extending to a height of 640 m north of Mount Leinster.

The Blackstairs Mountains pcSAC is the only example of moorland above 300 m in counties Wexford and Carlow. It includes good examples of dry heath, a habitat that is listed on Annex I of the E.U. Habitats Directive. The plant and animal communities are typical of the uplands and the growth of Heather is particularly profuse, rivalling some of the larger areas of Heather cover in Co. Wicklow.

Slaney River Valley (000781)

SITE NAME: Slaney River Valley

SITE CODE: 000781

This site comprises the freshwater stretches of the Slaney as far as the Wicklow Mountains; a number of tributaries the larger of which include the Bann, Glasha, Clody, Derry, Derreen, Douglas and Carrigower Rivers; the estuary at Ferrycarrig and Wexford Harbour. The site flows through the counties of Wicklow, Wexford and Carlow. Towns along the site but not in it are Baltinglass, Hacketstown, Tinahely, Tullow, Bunclody, Camolin, Enniscorthy and Wexford. The river is up to 100 m wide in places and is tidal at the southern end from Edermine Bridge below Enniscorthy. In the upper and central regions almost as far as the confluence with the Derry River the geology consists of granite. Above Kilcarrig Bridge, the Slaney has cut a gorge into the granite plain. The Derry and Bann Rivers are bounded by a narrow line of uplands which corresponds to schist outcrops. Where these tributaries cut through this belt of hard rocks they have carved deep gorges, more than two miles long at Tinahely and Shillelagh. South of Kildavin the Slaney flows through an area of Ordovician slates and grits.

The site is a candidate SAC selected for alluvial wet woodlands, a priority habitat on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for floating river vegetation, estuaries, tidal mudflats and old oak woodlands, all habitats listed on Annex I of the E.U. Habitats Directive. The site is further selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Twaitte Shad, Atlantic Salmon and Otter. Floating river vegetation is found along much of the freshwater stretches within the site. Species present here include Pond Water-crowfoot (*Ranunculus peltatus*), Water-crowfoot (*Ranunculus* spp.), Canadian Pondweed (*Elodea canadensis*), Broad-leaved Pondweed (*Potamogeton natans*), Water Milfoil (*Myriophyllum* spp.), Common Club-rush (*Scirpus lacustris*), Water-starwort (*Callitriche* spp.), Hemlock Water-dropwort, Fine-leaved Water-dropwort (*Oenanthe aquatica*), Common Duckweed (*Lemna minor*), Yellow

Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica*. Two rare aquatic plant species have been recorded in this site: Short-leaved Water-starwort (*Callitriche truncata*), a very rare, small aquatic herb found nowhere else in Ireland; and Opposite-leaved Pondweed (*Groenlandia densa*), a species that is legally protected under the Flora Protection Order, 1999.

Good examples of wet woodland are found associated with Macmine marshes, along banks of the Slaney and its tributaries and within reed swamps. Grey Willow (*Salix cinerea*) scrub and pockets of wet woodland dominated by Alder (*Alnus glutinosa*) have become established in places. Ash (*Fraxinus excelsior*) and Birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*). These woodlands have been described as two types: one is quite eutrophic, is dominated by Willow and is subject to a tidal influence. The other is flushed or spring-fed subject to waterlogging but not to flooding and is dominated by Alder and Ash.

Old oak woodlands are best represented at Tomnafinnoge though patches are present throughout the site. At Tomnafinnoge the wood is dominated by mature, widely spaced Sessile Oak (*Quercus petraea*), which were planted around 1700, with some further planting in 1810. There is now a varied age structure with overmature, mature and young trees; the open canopy permits light to reach the forest floor and encourages natural regeneration of Oak. As well as Oak, the wood includes the occasional Beech (*Fagus sylvatica*), Birch (*Betula* sp.), Rowan (*Sorbus aucuparia*) and Scots Pine (*Pinus sylvestris*).

The shrub layer is well-developed with Hazel (*Corylus avellana*) and Holly (*Ilex aquifolium*) occurring. The ground layer consists of Great Wood-rush (*Luzula sylvatica*) and Bilberry (*Vaccinium myrtillus*), with some Bracken (*Pteridium aquilinum*) and Brambles (*Rubus fruticosus* agg.). Herbaceous species in the ground layer include Primrose (*Primula vulgaris*), Wood-sorrel (*Oxalis acetosella*), Common Cow-wheat (*Melampyrum pratense*) and Bluebell (*Hyacinthoides non-scripta*). Many of the trees carry an epiphytic flora of mosses, Polypody Fern (*Polypodium vulgare*), and lichens such as *Usnea comosa*, *Evernia prunastri*, *Ramalina* spp. and *Parmelia* spp.

Tomnafinnoge Wood is a remnant of the ancient Shillelagh Oak woods, and it appears that woodland has always been present on the site. In the past, the wood was managed as a Hazel coppice with Oak standards, a common form of woodland management in England but not widely practised in Ireland. The importance of the woodland lies in the size of the trees, their capacity to regenerate, their genetic continuity with ancient woodland and their historic interest. The nearest comparable stands are at Abbeyleix, Co. Laois and Portlaw, Co. Waterford.

Below Enniscorthy there are several areas of woodland with a mixed canopy of Oak, Beech, Sycamore (*Acer pseudoplatanus*), Ash and generally a good diverse ground flora. Near the mouth of the river at Ferrycarrig is a steep south facing slope covered with Oak woodland. Holly and Hazel are the main species in the shrub layer and a species-rich ground flora typical of this type of Oak woodland has abundant ferns - *Dryopteris filix-mas*, *Polystichum setiferum*, *Phyllitis scolopendrium* - and mosses - *Thuidium tamariscinum*, *Mnium hornum*, *Eurynchium praelongum*.

North of Bunclody, the river valley still has a number of dry woodlands though these have mostly been managed by the estates with the introduction of Beech and occasional

conifers. The steeper sides are covered in a thick scrub from which taller trees protrude. At the southern end of the site, the Red Data Book species Yellow Archangel (*Lamiastrum galeobdolon*) occurs. Three more Red Data Book species have also been recorded from the site: Basil Thyme (*Acinos arvensis*), Blue Fleabane (*Erigeron acer*) and Small Cudweed (*Filago minima*). A nationally rare species Summer Snowflake (*Leucojum aestivum*) is also found within the site.

Mixed woodlands occur at Carrickduff and Coolaphuca in Bunclody. Oak trees, which make up the greater part of the canopy, were originally planted and at the present time are not regenerating actively. In time, if permitted, the woodland will probably go to Beech. A fair number of Yew (*Taxus baccata*) trees have also reached a large size and these, together with Holly give to the site the aspect of a south-western Oak wood.

The site is considered to contain a very good example of the extreme upper reaches of an estuary. Tidal reedbeds with wet woodland are present in places. The fringing reed communities support Sea Club-rush (*Scirpus maritimus*), Grey Club-rush (*S. tabernaemontani*) and abundant Common Reed (*Phragmites australis*). Other species occurring are Bulrush (*Typha latifolia*), Reed Canary-grass (*Phalaris arundinacea*) and Branched Bur-reed (*Sparganium erectum*). The reed-swamp is extensive around Macmine, where the river widens and there are islands with swamp and marsh vegetation.

Further south of Macmine are expanses of intertidal mudflats and sandflats and shingly shore often fringed with a narrow band of salt marsh and brackish vegetation. Narrow shingle beaches up to 10 m wide occur in places along the river banks and are exposed at low tide. Upslope the shingle is sometimes colonised by Saltmarsh Rush (*Juncus gerardi*), Townsend's Cord-grass (*Spartina townsendii*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Hemlock Water-dropwort (*Oenanthe crocata*) and Himalayan Balsam (*Impatiens glandulifera*).

Wexford Harbour is an extensive, shallow estuary which dries out considerably at low tide exposing large expanses of mudflats and sandflats. The harbour is largely sheltered by the Raven Point to the north and Rosslare Point in the south.

Other habitats present within the site include species-rich marsh in which sedges such as *Carex disticha*, *Carex riparia* and *Carex vesicaria* are common. Among the other species found in this habitat are Yellow Iris (*Iris pseudacorus*), Water Mint (*Mentha aquatica*), Purple Loosestrife (*Lythrum salicaria*) and Soft Rush (*Juncus effusus*). Extensive marshes occur to the west of Castlebridge associated with the tidal areas of the River Sow.

The site supports populations of several species listed on Annex II of the EU Habitats Directive including the three Lampreys - Sea Lamprey (*Petromyzon marinus*), River Lamprey (*Lampetra fluviatilis*) and Brook Lamprey (*Lampetra planeri*), Otter (*Lutra lutra*), Salmon (*Salmo salar*), small numbers of Freshwater Pearl Mussel (*Margaritifera margaritifera*) and in the tidal stretches, Twaite Shad (*Alosa fallax fallax*). A survey of the Derreen River in 1995 estimated the population of Freshwater Pearl Mussel at about 3,000 individuals. This is a significant population, especially in the context of eastern Ireland. The Slaney is primarily a spring salmon fishery and is regarded as one of the top rivers in Ireland for early spring fishing. The upper Slaney and tributary headwaters are very important for spawning.

The site supports important numbers of birds in winter. Little Egret are found annually

along the river. This bird is only now beginning to gain a foothold in Ireland and the south-east appears to be its stronghold. Nationally important numbers of Black-tailed Godwit, Teal, Tufted Duck, Mute Swan, Little Grebe and Black-headed Gull are found along the estuarine stretch of the river. The mean of the maximum counts over four winters (1994/98) along the stretch between Enniscorthy and Ferrycarrig is: Little Egret (6), Golden Plover (6), Wigeon (139), Teal (429), Mallard (265), Tufted Duck (171), Lapwing (603), Shelduck (16), Black-tailed Godwit (93), Curlew (81), Red-breasted Merganser (11), Black-headed Gull (3030), Goldeneye (45), Oystercatcher (19), Redshank (65), Lesser Black-backed Gull (727), Herring Gull (179), Common Gull (67), Grey Heron (39), Mute Swan (259) and Little Grebe (17). Wexford Harbour provides extensive feeding grounds for wading birds and Little Terns, which are listed on Annex I of the E.U. Birds Directive have bred here in the past.

The Reed Warbler, which is a scarce breeding species in Ireland, is regularly found in Macmine Marshes but it is not known whether or not it breeds in the site. The Dipper also occurs on the river. This is a declining species nationally.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger, Irish Hare and Daubenton's Bat. Common Frog (*Rana temporaria*), another Red Data Book species, also occurs within the site.

Agriculture is the main landuse. Arable crops are important. Improved grassland and silage account for much of the remainder. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of Annex II animal species within it. Run-off is undoubtedly occurring, as some of the fields slope steeply directly to the river bank. In addition, cattle have access to the site in places. Fishing is a main tourist attraction along stretches of the Slaney and its tributaries and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place. There are some gravel pits along the river below Bunclody and many of these are active. There is a large landfill site adjacent to the river close to Hacketstown and at Killurin. Boating, bait-digging and fishing occur in parts of Wexford Harbour.

Waste water outflows, runoff from intensive agricultural enterprises, a meat factory at Clohamon and a landfill site adjacent to the river and further industrial development upstream in Enniscorthy and in other towns could all have potential adverse impacts on the water quality unless they are carefully managed. The spread of exotic species is reducing the quality of the woodlands.

The site supports populations of several species listed on Annex II of the EU Habitats Directive, and habitats listed on Annex I of this directive, as well as important numbers of wintering wildfowl including some species listed on Annex I of the EU Birds Directive. The presence of wet and broad-leaved woodlands increases the overall habitat diversity and the occurrence of a number of Red Data Book plant and animal species adds further importance to the Slaney River site.

Kilmuckridge-Tinnaberna Sandhills (001741)

SITE NAME: Kilmuckridge-Tinnaberna Sandhills

SITE CODE: 001741

This narrow coastal site extends for almost 4 km along the Wexford coastline, from 3 km east of Kilmuckridge in the north to Ballynamona in the south.

The site is comprised of a fine-grained sandy beach up to 50 m wide, backed by steep clay cliffs at the southern end and sand dunes at the northern end. The cliffs are up to 15 m high, and are eroding in places. They support a patchy vegetation that includes Wild Carrot (*Daucus carota*), Common Bird's-foot-trefoil (*Lotus corniculatus*) and Yarrow (*Achillea millefolium*).

North of Tinnaberna, the cliffs are replaced by gently undulating sand dunes. These are up to 150 m wide and have a species-rich flora typical of fixed dunes. Marram (*Ammophila arenaria*) is abundant, particularly on the fore dunes. Other species found on the dunes include Sheep's-bit (*Jasione montana*), Wild Pansy (*Viola tricolor*), Sand Sedge (*Carex arenaria*), Pyramidal Orchid (*Anacamptis pyramidalis*), Common Bird's-foot-trefoil, Common Restharrow (*Ononis repens*) and Yellow-wort (*Blackstonia perfoliata*).

Further inland the low sand ridges have a luxuriant growth of mosses and lichens, most notably, Dog Lichen (*Peltigera canina*), and the fern, *Polypodium vulgare*, is common in the area. A dense scrub of Sea Buckthorn (*Hippophae rhamnoides*) has encroached onto the fixed dune area - the spread of this invasive, introduced species will require to be monitored and controlled. Northwards, the sand dunes are relatively undisturbed and free of Sea Buckthorn, but lack the diversity of higher plant species and abundance of lower plants found on the dunes in the south.

Two streams meander across the site at the northern end and flow into the sea. They are fringed by small areas of wet woodland, with Alder (*Alnus glutinosa*) and Grey Willow (*Salix cinerea*) being the main tree species. The ground flora includes Wild Angelica (*Angelica sylvestris*), Greater Tussock-sedge (*Carex paniculata*), Hemlock Water-dropwort (*Oenanthe crocata*), Common Nettle (*Urtica dioica*) and Yellow Iris (*Iris pseudacorus*).

The scarce, Night-flowering Catchfly (*Silene noctiflora*), which is mainly found in the south-east, occurs on cliffs in the site. Moore's Horsetail (*Equisetum x moorei*), a rare hybrid which is confined to the coasts of Wicklow and Wexford, is also found. There is an old record from the site for the Red Data Book species, Sea Stock (*Matthiola sinuata*); this species has not, however, been seen recently at this or any other site in Ireland and is thought to be extinct.

The site contains a good diversity of coastal habitats and plant species and, apart from the presence of Sea Buckthorn, it is presently relatively undisturbed. It is of particular conservation significance for its Marram dunes and fixed dunes, both habitats listed on Annex I of the EU Habitats Directive. The presence of several scarce plants adds to the importance of the site.

Kilpatrick Sandhills (001742)

SITE NAME: Kilpatrick Sandhills

SITE CODE: 001742

Kilpatrick Sandhills are located about 8km south of Arklow town, and just south of the

Wicklow/Wexford county border. The site is comprised of a mosaic of coastal habitats but primarily a mature sand dune system which extends along 2 km of coastline.

Various stages of sand dune formation can be seen, from small fore-dunes which are stabilized by Marram Grass (*Ammophila arenaria*) to mature fixed dunes colonised by a species-rich sward of grasses and herbaceous plants. Red Fescue (*Festuca rubra*) is the dominant grass among fixed dune vegetation. Other species present include Lady's Bedstraw (*Galium verum*), Kidney Vetch (*Anthyllis vulneraria*), Wild Thyme (*Thymus praecox*) and Sheep's-bit (*Jasione montana*). On the older dunes, there is an abundance of legumes (Leguminosae) including Bird's-foot Trefoil (*Lotus corniculatus*), White Clover (*Trifolium repens*), Hop Trefoil (*Trifolium campestre*) and Lesser Trefoil (*Trifolium dubium*). Further inland, on the more mature grey dunes, Burnet Rose (*Rosa pimpinellifolia*) is common. The scarce species, Lesser Meadow-rue (*Thalictrum minus*), occurs among the vegetation of the more mobile dunes.

On the landward side of the dunes, in the middle of the site, there is a low-lying marsh which is dominated by Bulrush (*Typha latifolia*), with Branched Bur-reed (*Sparganium erectum*), Yellow Iris (*Iris pseudacorus*), Tubular Water-dropwort (*Oenanthe fistulosa*), Wild Angelica (*Angelica sylvestris*) and Sedges (*Carex* spp.). To the west of the marsh is an area of wet scrub woodland. The canopy is formed of Alder (*Alnus glutinosa*) and Willow (*Salix* spp.), with Bramble (*Rubus fruticosus* agg.), Honeysuckle (*Lonicera periclymenum*), Great Horsetail (*Equisetum telmateia*), Wood Dock (*Rumex sanguineus*) and Narrow Buckler-fern (*Dryopteris carthusiana*) among the ground flora.

The sandhills give way on the south-western side to a heathy scrub dominated by Gorse (*Ulex europaeus*), Blackthorn (*Prunus spinosa*) and Bramble. At the northern end of the site is a rocky headland, Kilmichael Point, which affords fine views along the coastline. Rock outcrops occur where the overlying clay drift has eroded, exposing cliffs which rise in steps to about 10m. The headland supports a species-rich coastal grassland and cliff vegetation, including the scarce species, Rock Sea-lavender (*Limonium binervosum*).

The Red Data Book species, Sea Stock (*Matthiola sinuata*), has been observed among rocky crevices here in the past, but has not been recorded recently. The species is now regarded as extinct in Ireland.

At the southern end of the site, the sand dunes and beach are used by visitors for amenity purposes. Parts of the site are also used for grazing cattle. Grazing is a critical factor in coastal systems: the correct grazing pressure maintains species-rich open swards and curtails scrub encroachment. Over-exposure to grazing and amenity usage can cause damage to dune vegetation and exacerbate dune erosion.

The site is ecologically important as a good example of a mature and fairly intact sand dune system which shows the developmental stages of dunes from fore dunes to mature grey dunes. A good diversity of habitats and species are present. Fixed dunes and dune heath are priority habitats under Annex I of the European Habitats Directive.

Long Bank (002161)

SITE NAME: Long Bank

SITE CODE: 002161

Long Bank and Holdens Bed are situated several kilometres to the east of Rosslare and

Wexford Harbour on the East coast. They are at the southern end of a series of offshore sand banks that run from Arklow to the south of Rosslare. Long Bank is approximately 12 km in length and, at its widest, is approximately 1.4 km in width, while Holdens Bed is approximately 3.7 km in length and 1.4 km wide. The two banks are separated by a channel and are separated from the Lucifer Bank to the east by an area of deeper water.

Offshore sand banks are generally constructed of sediment that ranges from cobbles to coarse sand and the sand is duned in large waves at least a meter in height and several meters in width. Where the current is strong the surface fauna is typically very sparsely scattered, with, e.g. an occasional starfish, crabs or hermit crabs. These banks, however, frequently have a distinctive meiofauna living within them and can be important feeding grounds for birds.

The site is of conservation importance for its submerged sandbanks, a habitat that is listed on Annex I of the EU Habitats Directive.

River Barrow & River Nore (002162)

SITE NAME: River Barrow & River Nore

SITE CODE: 002162

This site consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The site passes through eight counties - Offaly, Kildare, Laois, Carlow, Kilkenny, Tipperary, Wexford and Waterford. Major towns along the edge of the site include Mountmellick, Portarlinton, Monasterevin, Stradbally, Athy, Carlow, Leighlinbridge, Graiguenamanagh, New Ross, Inistioge, Thomastown, Callan, Bennettsbridge, Kilkenny and Durrrow. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow and the Delour, Dinin, Erkina, Owveg, Munster, Arrigle and King's Rivers on the Nore. Both rivers rise in the Old Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The Nore, for a large part of its course, traverses limestone plains and then Old Red Sandstone for a short stretch below Thomastown. Before joining the Barrow it runs over intrusive rocks poor in silica. The upper reaches of the Barrow also runs through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, like the Nore runs over intrusive rocks poor in silica. Waterford Harbour is a deep valley excavated by glacial floodwaters when the sea level was lower than today. The coast shelves quite rapidly along much of the shore.

The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for old oak woodlands, floating river vegetation, estuary, tidal mudflats, Salicornia mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl Mussel, Nore Freshwater Pearl Mussel, Crayfish, Twaite Shad, Atlantic Salmon, Otter, *Vertigo moulinsiana* and the plant Killarney Fern.

Good examples of Alluvial Forest are seen at Rathsnagadan, Murphy's of the River, in Abbeyleix estate and along other shorter stretches of both the tidal and freshwater elements of the site. Typical species seen include Almond Willow (*Salix triandra*), White Willow (*S. alba*), Grey Willow (*S. cinerea*), Crack Willow (*S. fragilis*), Osier (*S. viminalis*), with Iris (*Iris pseudacorus*), Hemlock Water-dropwort (*Oenanthe crocata*), Angelica (*Angelica sylvestris*), Thin-spiked Wood-sedge (*Carex strigosa*), Pendulous Sedge (*C. pendula*), Meadowsweet (*Filipendula ulmaria*), Valerian (*Valeriana officinalis*) and the Red Data Book species Nettle-leaved Bellflower (*Campanula trachelium*). Three rare invertebrates have been recorded in this habitat at Murphy's of the River. These are: *Neoascia obliqua* (Diptera: Syrphidae), *Tetanocera freyi* (Diptera: Sciomyzidae) and *Dictya umbrarum* (Diptera: Sciomyzidae).

A good example of petrifying springs with tufa formations occurs at Dysart Wood along the Nore. This is a rare habitat in Ireland and one listed with priority status on Annex I of the EU Habitats Directive. These hard water springs are characterised by lime encrustations, often associated with small waterfalls. A rich bryophyte flora is typical of the habitat and two diagnostic species, *Cratoneuron commutatum* var. *commutatum* and *Eucladium verticillatum*, have been recorded.

The best examples of old Oak woodlands are seen in the ancient Park Hill woodland in the estate at Abbeyleix; at Kyleadahir, on the Delour, Forest Wood House, Kylecorragh and Brownstown Woods on the Nore; and at Cloghristic Wood, Drummond Wood and Borris Demesne on the Barrow, though other patches occur throughout the site. Abbeyleix Woods is a large tract of mixed deciduous woodland which is one of the only remaining true ancient woodlands in Ireland. Historical records show that Park Hill has been continuously wooded since the sixteenth century and has the most complete written record of any woodland in the country. It supports a variety of woodland habitats and an exceptional diversity of species including 22 native trees, 44 bryophytes and 92 lichens. It also contains eight indicator species of ancient woodlands. Park Hill is also the site of two rare plants, Nettle-leaved Bellflower and the moss *Leucodon sciuroides*. It has a typical bird fauna including Jay, Long-eared Owl and Raven. A rare invertebrate, *Mitostoma chrysomelas*, occurs in Abbeyleix and only two other sites in the country. Two flies *Chrysogaster virescens* and *Hybomitra muhlfeldi* also occur. The rare Myxomycete fungus, *Licea minima* has been recorded from woodland at Abbeyleix.

Oak woodland covers parts of the valley side south of Woodstock and is well developed at Brownsford where the Nore takes several sharp bends. The steep valley side is covered by Oak (*Quercus* spp.), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*) and Birch (*Betula pubescens*) with some Beech (*Fagus sylvatica*) and Ash (*Fraxinus excelsior*). All the trees are regenerating through a cover of Bramble (*Rubus fruticosus* agg.), Foxglove (*Digitalis purpurea*) Wood Rush (*Luzula sylvatica*) and Broad Buckler-fern (*Dryopteris dilatata*).

On the steeply sloping banks of the River Nore about 5 km west of New Ross, in County Kilkenny, Kylecorragh Woods form a prominent feature in the landscape. This is an excellent example of a relatively undisturbed, relict Oak woodland with a very good tree canopy. The wood is quite damp and there is a rich and varied ground flora. At Brownstown a small, mature Oak-dominant woodland occurs on a steep slope. There is younger woodland to the north and east of it. Regeneration throughout is evident. The understorey is similar to the woods at Brownsford. The ground flora of this woodland is developed on acidic, brown earth type soil and comprises a thick carpet of Bilberry

(*Vaccinium myrtillus*), Heather (*Calluna vulgaris*), Hard Fern (*Blechnum spicant*), Cow-wheat (*Melampyrum* spp.) and Bracken (*Pteridium aquilinum*).

Borris Demesne contains a very good example of a semi-natural broad-leaved woodland in very good condition. There is quite a high degree of natural re-generation of Oak and Ash through the woodland. At the northern end of the estate Oak species predominate. Drummond Wood, also on the Barrow, consists of three blocks of deciduous woods situated on steep slopes above the river. The deciduous trees are mostly Oak species. The woods have a well established understorey of Holly (*Ilex aquifolium*), and the herb layer is varied, with Brambles abundant. Whitebeam (*Sorbus devoniensis*) has also been recorded.

Eutrophic tall herb vegetation occurs in association with the various areas of alluvial forest and elsewhere where the flood-plain of the river is intact. Characteristic species of the habitat include Meadowsweet (*Filipendula ulmaria*), Purple Loosestrife (*Lythrum salicaria*), Marsh Ragwort (*Senecio aquaticus*), Ground Ivy (*Glechoma hederacea*) and Hedge Bindweed (*Calystegia sepium*). Indian Balsam (*Impatiens glandulifera*), an introduced and invasive species, is abundant in places.

Floating River Vegetation is well represented in the Barrow and in the many tributaries of the site. In the Barrow the species found include Water Starworts (*Callitriche* spp.), Canadian Pondweed (*Elodea canadensis*), Bulbous Rush (*Juncus bulbosus*), Milfoil (*Myriophyllum* spp.), Potamogeton x nitens, Broad-leaved Pondweed (*P. natans*), Fennel Pondweed (*P. pectinatus*), Perfoliated Pondweed (*P. perfoliatus*) and Crowfoots (*Ranunculus* spp.). The water quality of the Barrow has improved since the vegetation survey was carried out (EPA, 1996). Dry Heath at the site occurs in pockets along the steep valley sides of the rivers especially in the Barrow Valley and along the Barrow tributaries where they occur in the foothills of the Blackstairs Mountains. The dry heath vegetation along the slopes of the river bank consists of Bracken (*Pteridium aquilinum*) and Gorse (*Ulex europaeus*) species with patches of acidic grassland vegetation. Additional typical species include Heath Bedstraw (*Galium saxatile*), Foxglove (*Digitalis purpurea*), Common Sorrel (*Rumex acetosa*) and Bent Grass (*Agrostis stolonifera*). On the steep slopes above New Ross the Red Data Book species Greater Broomrape (*Orobanche rapum-genistae*) has been recorded. Where rocky outcrops are shown on the maps Bilberry (*Vaccinium myrtillus*) and Wood Rush (*Luzula sylvatica*) are present. At Ballyhack a small area of dry heath is interspersed with patches of lowland dry grassland. These support a number of Clover species including the legally protected Clustered Clover (*Trifolium glomeratum*) - a species known from only one other site in Ireland. This grassland community is especially well developed on the west side of the mud-capped walls by the road. On the east of the cliffs a group of rock-dwelling species occur, i.e. English Stonecrop (*Sedum anglicum*), Sheep's-bit (*Jasione montana*) and Wild Madder (*Rubia peregrina*). These rocks also support good lichen and moss assemblages with *Ramalina subfarinacea* and *Hedwigia ciliata*.

Dry Heath at the site generally grades into wet woodland or wet swamp vegetation lower down the slopes on the river bank. Close to the Blackstairs Mountains, in the foothills associated with the Aughnabriskey, Aughavaud and Mountain Rivers there are small patches of wet heath dominated by Purple Moor-grass (*Molinia caerulea*) with Heather (*Calluna vulgaris*), Tormentil (*Potentilla erecta*), Carnation Sedge (*Carex panicea*) and Bell Heather (*Erica cinerea*).

Saltmeadows occur at the southern section of the site in old meadows where the

embankment has been breached, along the tidal stretches of in-flowing rivers below Stokestown House, in a narrow band on the channel side of Common Reed (*Phragmites*) beds and in narrow fragmented strips along the open shoreline. In the larger areas of salt meadow, notably at Carrickcloney, Ballinlaw Ferry and Rochestown on the west bank; Fisherstown, Alderton and Great Island to Dunbrody on the east bank, the Atlantic and Mediterranean sub types are generally intermixed. At the upper edge of the salt meadow in the narrow ecotonal areas bordering the grasslands where there is significant percolation of salt water, the legally protected species Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) and Meadow Barley (*Hordeum secalinum*) (Flora Protection Order, 1987) are found. The very rare Divided Sedge (*Carex divisa*) is also found. Sea Rush (*Juncus maritimus*) is also present. Other plants recorded and associated with salt meadows include Sea Aster (*Aster tripolium*), Sea Thrift (*Armeria maritima*), Sea Couch (*Elymus pycnanthus*), Spear-leaved Orache (*Atriplex prostrata*), Lesser Sea-spurrey (*Spergularia marina*), Sea Arrowgrass (*Triglochin maritima*) and Sea Plantain (*Plantago maritima*).

Salicornia and other annuals colonising mud and sand are found in the creeks of the saltmarshes and at the seaward edges of them. The habitat also occurs in small amounts on some stretches of the shore free of stones.

The estuary and the other Habitats Directive Annex I habitats within it form a large component of the site. Extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. Good quality intertidal sand and mudflats have developed on a linear shelf on the western side of Waterford Harbour, extending for over 6 km from north to south between Passage East and Creadaun Head, and in places are over 1 km wide. The sediments are mostly firm sands, though grade into muddy sands towards the upper shore. They have a typical macro-invertebrate fauna, characterised by polychaetes and bivalves. Common species include *Arenicola marina*, *Nephtys hombergii*, *Scoloplos armiger*, *Lanice conchilega* and *Cerastoderma edule*.

The western shore of the harbour is generally stony and backed by low cliffs of glacial drift. At Woodstown there is a sandy beach, now much influenced by recreation pressure and erosion. Behind it a lagoonal marsh has been impounded which runs westwards from Gaultiere Lodge along the course of a slow stream. An extensive reedbed occurs here. At the edges is a tall fen dominated by sedges (*Carex* spp.), Meadowsweet, Willowherb (*Epilobium* spp.) and rushes (*Juncus* spp.). Wet woodland also occurs. This area supports populations of typical waterbirds including Mallard, Snipe, Sedge Warbler and Water Rail.

The dunes which fringe the strand at Duncannon are dominated by Marram grass (*Ammophila arenaria*) towards the sea. Other species present include Wild Sage (*Salvia verbenaca*), a rare Red Data Book species. The rocks around Duncannon ford have a rich flora of seaweeds typical of a moderately exposed shore and the cliffs themselves support a number of coastal species on ledges, including Thrift (*Armeria maritima*), Rock Samphire (*Crithmum maritimum*) and Buck's-horn Plantain (*Plantago coronopus*).

Other habitats which occur throughout the site include wet grassland, marsh, reed swamp, improved grassland, arable land, quarries, coniferous plantations, deciduous woodland, scrub and ponds.

Seventeen Red Data Book plant species have been recorded within the site, most in the

recent past. These are Killarney Fern (*Trichomanes speciosum*), Divided Sedge (*Carex divisa*), Clustered Clover (*Trifolium glomeratum*), Basil Thyme (*Acinos arvensis*), Hemp nettle (*Galeopsis angustifolia*), Borrer's Saltmarsh Grass (*Puccinellia fasciculata*), Meadow Barley (*Hordeum secalinum*), Opposite-leaved Pondweed (*Groenlandia densa*), Autumn Crocus (*Colchicum autumnale*), Wild Sage (*Salvia verbenaca*), Nettle-leaved Bellflower (*Campanula trachelium*), Saw-wort (*Serratula tinctoria*), Bird Cherry (*Prunus padus*), Blue Fleabane (*Erigeron acer*), Fly Orchid (*Ophrys insectifera*), Broomrape (*Orobanche hederaceae*) and Greater Broomrape (*Orobanche rapum-genistae*). Of these the first nine are protected under the Flora Protection Order 1999. Divided Sedge (*Carex divisa*) was thought to be extinct but has been found in a few locations in the site since 1990. In addition plants which do not have a very wide distribution in the country are found in the site including Thin-spiked Wood-sedge (*Carex strigosa*), Field Garlic (*Allium oleraceum*) and Summer Snowflake (*Leucojum aestivum*). Six rare lichens, indicators of ancient woodland, are found including *Lobaria laetevirens* and *L. pulmonaria*. The rare moss *Leucodon sciuroides* also occurs.

The site is very important for the presence of a number of EU Habitats Directive Annex II animal species including Freshwater Pearl Mussel (*Margaritifera margaritifera* and *M. m. durrovensis*), Freshwater Crayfish (*Austropotamobius pallipes*), Salmon (*Salmo salar*), Twaité Shad (*Alosa fallax fallax*), three Lamprey species - Sea (*Petromyzon marinus*), Brook (*Lampetra planeri*) and River (*Lampetra fluviatilis*), the marsh snail *Vertigo moulinsiana* and Otter (*Lutra lutra*). This is the only site in the world for the hard water form of the Pearl Mussel *M. m. durrovensis* and one of only a handful of spawning grounds in the country for Twaité Shad. The freshwater stretches of the River Nore main channel is a designated salmonid river. The Barrow/Nore is mainly a grilse fishery though spring salmon fishing is good in the vicinity of Thomastown and Inistioge on the Nore. The upper stretches of the Barrow and Nore, particularly the Owenass River, are very important for spawning.

The site supports many other important animal species. Those which are listed in the Irish Red Data Book include Daubenton's Bat (*Myotis daubentoni*), Badger (*Meles meles*), Irish Hare (*Lepus timidus hibernicus*) and Frog (*Rana temporaria*). The rare Red Data Book fish species Smelt (*Osmerus eperlanus*) occurs in estuarine stretches of the site. In addition to the Freshwater Pearl Mussel, the site also supports two other freshwater Mussel species, *Anodonta anatina* and *A. cygnea*.

The site is of ornithological importance for a number of E.U. Birds Directive Annex I species including Greenland White-fronted Goose, Whooper Swan, Bewick's Swan, Bar-tailed Godwit, Peregrine and Kingfisher. Nationally important numbers of Golden Plover and Bar-tailed Godwit are found during the winter. Wintering flocks of migratory birds are seen in Shanahoe Marsh and the Curragh and Goul Marsh, both in Co. Laois and also along the Barrow Estuary in Waterford Harbour. There is also an extensive autumnal roosting site in the reedbeds of the Barrow Estuary used by Swallows before they leave the country.

Landuse at the site consists mainly of agricultural activities - many intensive, principally grazing and silage production. Slurry is spread over much of this area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of the salmonid river and to the populations of Habitats Directive Annex II animal species within the site. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the main rivers and their tributaries and there are a number

of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. There is net fishing in the estuary and a mussel bed also. Other recreational activities such as boating, golfing and walking, particularly along the Barrow towpath are also popular. There is a golf course on the banks of the Nore at Mount Juliet and GAA pitches on the banks at Inistioge and Thomastown. There are active and disused sand and gravel pits throughout the site. Several industrial developments, which discharge into the river, border the site. New Ross is an important shipping port. Shipping to and from Waterford and Belview ports also passes through the estuary.

The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, overgrazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel and Rhododendron (*Rhododendron ponticum*). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein.

Overall, the site is of considerable conservation significance for the occurrence of good examples of habitats and of populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore it is of high conservation value for the populations of bird species that use it. The occurrence of several Red Data Book plant species including three rare plants in the salt meadows and the population of the hard water form of the Pearl Mussel which is limited to a 10 km stretch of the Nore, add further interest to this site.

Carnsore Point (002269)

SITE NAME: Carnsore Point

SITE CODE: 002269

This site is situated in the south-east of Co. Wexford and comprises the area of sea and underlying bedrock and sediments off Carnsore Point. The coastal boundary follows the High Water Mark from just north of Greenore Point to Tacumshin Lake; the seaward boundary follows a line just to the west of Black Rock, south of the Barrels Rocks, east of the Bailies and as far north as South Long light. The bedrock of the site is of granite, felsite and other intrusive rocks rich in silica. Most of the site comprises rocky reefs that are typically strewn with boulders, cobbles and patches of sand, both on the shore and underwater, and areas of intertidal mud/sand flats. The site is exposed to the prevailing wind and swells from the west. Tidal streams tend to be moderate but are strong in some areas. Offshore, Barrels Rocks are extremely exposed to the full force of Atlantic swells.

Carnsore Point has good examples of intertidal and subtidal reef communities typical of areas that are very exposed to moderately exposed to wave action. Both on the shore and underwater, the reefs are typically strewn with boulders, cobbles and patches of sand.

The intertidal reef to the east of Carnsore Point is moderately exposed to wave action. It has an extensive area of granite with the limpet, *Patella vulgata*, the topshell, *Osilinu* (= *Monodonta*) *lineatus*, and abundant juvenile barnacles in the upper shore. The midshore has a poorly defined band of *Fucus vesiculosus* followed by luxuriant knotted wrack *Ascophyllum nodosum* with the epiphyte *Polysiphonia lanosa*. The low shore is characterised by *Fucus serratus* with occasional *Laminaria digitata* and the green algae *Cladophora rupestris*. The communities at each are typical for this type of shore.

There is a good example of a subtidal reef community very exposed to wave action in shallow water at Barrels Rocks characterized by abundant *Mytilus edulis* with the brown alga, *Alaria esculenta*, an understory of pink coralline algal crusts and *Corallina officinalis* with the hydroid, *Tubularia* sp on steep surfaces. Also in shallow water but in areas with a little less exposure to wave action species rich (81 - 110 species) kelp park of *Laminaria hyperborea* is found with an understory of hydroids, sponges, and bryozoans but at two sites this community is unusual. At south-east of Splagh rock the understory is very similar to the sea squirt community of *Stolonica socialis* and *Polyclinum aurantium* whereas north east of Terchen the bivalve *Musculus discors* carpets much of the area with a variety of sponges, hydroids, sea squirts and bryozoans.

In deeper water at depths of 11-30 m there are excellent examples of the sea squirt community dominated by the sea squirts *Polyclinum aurantium* with the bryozoan *Flustra foliacea*. *Stolonica socialis* may also be present in this community. There is an unusual variation of this community where the dominant sea squirt is *Polycarpa scuba* (= *rustica*) and the bryozoan *Flustra foliacea* is absent and at another site *Distomus variolosus* is the most abundant sea squirt. At 23 m low lying rock surrounded by coarse sand is covered by the bivalve *Musculus discors* which considered to be an uncommon community.

A number of species with a limited distribution in Ireland occur at two or more sites within the area. These are the sponge *Tethyspira spinosa*, the anemone *Cataphellia brodricii* and the sea squirts *Distomus variolosus*, *Stolonica socialis* and *Archdistoma aggregatum*, and *Polycarpa scuba*. The sea squirt *Sidnyum elegans* and the recently described bryozoan *Schizomavella sarniensis* each occur at a single site. *Tethyspira spinosa* is only known from the Saltees, Hook Head and Roaringwater Bay in Ireland. *Cataphellia brodricii* occurs in this community and in shallow water both around the Saltee Islands and other areas in the south-east. *Stolonica socialis* in Ireland is only known from the south-east and north-west coasts and in Britain in the south, south-west, and English Channel. *Sidnyum elegans* has not previously been recorded in Ireland and to date all records are from the south-east and it has a limited distribution in Britain. *Archdistoma aggregatum* is known from a few sites in south-west Britain, Northern Ireland, the Saltee Islands, Carnsore Point area and south of the River Shannon Estuary. *Polycarpa scuba* (= *rustica*) is only known from the Irish Sea, English Channel and Brittany.

The littoral sediment communities of Carnsore Point are represented by a moderately exposed shore at Carne Beach. There are talitrid amphipods living under drift algae on the strand line. The midshore is populated by polychaete worms (*Arenicola marina*, *Scolecopsis foliosa* and *Nephtys cirrosa*), and the burrowing amphipod, *Bathyporeia pelagica*. The low shore is characterized by *Nephtys cirrosa*, crustacea (*Crangon crangon* and *Portunus latipes*) and the bivalve mollusc (*Angulus tenuis*).

The site is of considerable conservation significance for the presence of intertidal mud/sand flats and of reefs, both habitats that are listed on Annex I of the E.U. Habitats Directive.

22.2 SPECIAL PROTECTION AREAS (SPA's)

Saltee Islands SPA (004002)

SITE NAME: Saltee Islands SPA

SITE CODE: 004002

The site comprises the two islands, Great Saltee and Little Saltee, situated some 4-5 km off the south Wexford coast. The bedrock of the islands is of Precambrian gneiss and granite. Both islands have exposed rocky cliffs on their south and east ? those on Great Saltee being mostly c. 30 m high, those on Little Saltee about half this height. The cliffs support a typical sea-cliff flora, with Thrift (*Armeria maritima*), Sea Campion (*Silene maritima*), Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Common Scurvy-grass (*Cochlearia officinalis*), Rock Sea-spurrey (*Spergularia rupicola*), Scentless Mayweed (*Matricaria maritima*), Red Fescue (*Festuca rubra*), Sea Spleenwort (*Asplenium marinum*) and Rock Samphire (*Crithmum maritimum*). Sea Stork?s-bill (*Erodium maritimum*) also occurs and the scarce Golden-samphire (*Inula crithmoides*) has been recorded in the past. The cliffs also support a variety of lichens (*Ramalina* and *Xanthoria* spp.). The northern and western sides of both islands are fringed with shingle and boulder shores, backed by boulder clay cliffs, as well as small areas of intertidal sandflats. Sea caves occur at the base of the cliffs on Great Saltee.

Since the abandonment of farming on the islands (apart from sheep and cattle grazing recently re-introduced on Little Saltee), Bracken (*Pteridium aquilinum*) has become dominant over much of the terrestrial areas and often occurs in association with Bluebells (*Hyacinthoides non-scripta*). Brambles (*Rubus fruticosus*) are also common. Dry grassland occurs in some of the old fields and here a variety of grassland species occur, including Yorkshire Fog (*Holcus lanatus*), Ragwort (*Senecio jacobaea*), Common Nettle (*Urtica dioica*) and thistles (*Cirsium* spp.). Several springs and seepage areas provide habitat diversity and species present include Water-cress (*Nasturtium officinale*), Jointed Rush (*Juncus articulatus*), Bog Stitchwort (*Stellaria alsine*), Marsh Pennywort (*Hydrocotyle vulgaris*) and, in at least one location, Early Marsh-orchid (*Dactylorhiza incarnata*). In places there are dense stands of Hogweed (*Heracleum sphondylium*). On Great Saltee there are Cordylines (*Cordyline australis*) along the main path (planted in the 1950s), and in the garden area are found Sycamore (*Acer pseudoplatanus*), Elder (*Sambucus ebulus*), Ash (*Fraxinus excelsior*), Alder (*Alnus glutinosa*), willow (*Salix* sp.), Hawthorn (*Crataegus monogyna*) and Olearia (*Olearia* sp.).

The Saltee Islands are internationally important for breeding seabirds. The colony of Gannets on Great Saltee has been well documented since its establishment in the 1920s and 2,050 pairs were present in 2000. The Razorbill population is of international importance (5,200 individuals in 2000). A further 8 species have populations of national importance, as follows (all counts in 1999/2000): Fulmar (525 pairs), Cormorant (273 pairs), Shag (265 pairs), Lesser Black-backed Gull (175 pairs), Great Black-backed Gull (c. 90 pairs), Kittiwake (2,125 pairs), Guillemot (21,250 individuals in June 2000) and Puffin (1,822 individuals). There is also a small Manx Shearwater colony (c.150-175 pairs) on Great Saltee. The breeding populations of large gulls have declined dramatically in recent

years, especially Herring Gull (c. 50 pairs). Seabird populations are monitored annually and large numbers of chicks, especially of Gannets, auks and Shags, are ringed.

Peregrine Falcon breeds (1-2 pairs) and Chough (1 pair) occurs at the eastern edge of its Irish range. Both of these species are listed on Annex I of the E.U. Birds Directive.

Great Saltee is a major site for spring and autumn landbird migration and was the site for Ireland's first bird observatory. While the observatory is no longer operational, substantial numbers of migrants are still ringed annually. Large numbers of pipits, swallows and martins, thrushes, warblers and finches occur, while smaller numbers of a great variety of other species (some very rare in Ireland) are also recorded. The island is also a good site for migrant Lepidoptera, especially Red Admirals, Painted Ladies, Clouded Yellows, Silver Y moths and Humming-bird Hawk-moths.

Great Saltee has a breeding population of Grey Seal (a species that is listed on Annex II of the E.U. Habitats Directive), one of the very few in eastern Ireland. Up to 120 animals are present in autumn and up to 20 pups are produced annually.

Renovated old farm buildings on both islands are used by the owners, mainly in summer.

This site is of international importance for breeding seabirds and has two further species (Peregrine and Chough) which are listed on Annex I of the E.U. Birds Directive. It is one of the best documented sites in the country and is monitored annually.

Lady's Island Lake SPA (004009)

SITE NAME: Lady's Island Lake SPA

SITE CODE: 004009

This site, situated in the extreme south-east of Ireland, comprises a shallow, brackish coastal lagoon separated from the sea by a sand and shingle barrier.

The lagoon habitat is an excellent example of a sedimentary lagoon with a sand/shingle barrier. It is by far the largest and best example of this type of lagoon in the country and is in a relatively natural condition, despite regular breaching of the gravel barrier. The flora is typically brackish with two species of Tasselweed (*Ruppia maritima* and *R. cirrhosa*) and the Red Data Book charophytes Foxtail Stonewort (*Lamprothamnion papulosum*) and *Chara canescens* (both lagoonal specialists). The fauna of the lagoon is rich with 44 taxa recorded in a short period in 1996. At least 13 lagoonal specialist species have been recorded which is the highest number for any lagoonal habitat in the country and at least 4 species appear to be rare. Three coleopteran (beetle) indicator species were recorded in 1996, indicating an ecologically well-developed site, and two of these are very rare species (*Atheta gyllenhalli*, *A. liliputana*). A rich swamp and freshwater marsh vegetation occurs at Ring Marsh. Elsewhere, the lagoon is fringed by marsh or wet grassland.

Lady's Island is of ornithological importance for both breeding and wintering birds, and is also an important stop-over point for passage migrants.

The site has one of the highest diversity of breeding wildfowl species in the country. Gadwall is resident, with at least 10 pairs breeding. It is one of the few sites in the country where Garganey have been known to breed, with probably 1-2 pairs in most years. Shoveler, another scarce nesting duck, breeds (1-3 pairs). Marsh Harrier (1-2 birds) is a regular visitor to Lady's Island in spring and summer, with Ring Marsh a favoured spot. Breeding may be attempted in some years.

Lady's Island formerly supported internationally important numbers of wintering waterfowl, but in recent years numbers have declined drastically, possibly partly due to a decline in the abundance of their main food source, *Ruppia* spp. Nowadays numbers are only of regional or local importance. Over the five winters 1995/96 to 1999/00 the main species present were: Whooper Swan (41), Wigeon (819), Teal (184), Pochard (299), Tufted Duck (110), Scaup (46), Coot (63), Lapwing (785), Black-tailed Godwit (43) and Curlew (221). In winter, the resident Gadwall population is supplemented by immigrants and in winter 1998/99 an exceptional total of 330 was recorded, one of the highest totals ever recorded in Ireland for this scarce duck.

Lady's Island is a regular stop-off point, mainly in autumn, for several wader species though numbers can vary considerably between years. Species which are recorded annually are Little Stint (up to 5 birds), Curlew Sandpiper (usually between 10 and 20 birds), Ruff (10-20 birds in most years), Spotted Redshank (1-2 birds), Green Sandpiper (1-2 birds) and Wood Sandpiper (1-2 birds).

Islands within the lagoon support an internationally important tern colony; while these are included in a separate SPA, the lagoon is obviously of importance to the overall breeding success of the terns. Mediterranean Gull, a typical lagoonal species, has bred in the tern colonies, and birds are regularly present on the lagoon. Other species which are occasional visitors to the site, and which are typical lagoonal species, include Black-necked Grebe, Little Gull, Black Tern, and Yellow Wagtail.

Deliberate breaching of the gravel barrier (for flood relief) leads to increased salinity of the lagoon which could be detrimental to its flora and fauna, including the bird species. The lagoon is also prone to eutrophication from agricultural and domestic effluents. Increased recreational activities in the area, including water sports, may cause disturbance to breeding and wintering birds. A population of feral Greylag Geese present at the site could have negative interactions with some bird species.

This important site supports one of the best examples of a lagoonal bird fauna in the country. Of particular note is that several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, including Marsh Harrier, Ruff and Wood Sandpiper, as well as Whooper Swan and Golden Plover in winter. The site is important both for breeding and wintering birds and is one of the top sites in the country for Gadwall.

Inish & Sgarbheen SPA (004010)

SITE NAME: Inish & Sgarbheen SPA

SITE CODE: 004010

This site comprises two small, low-lying islands within Lady's Island Lake. Inish, the larger of the islands, is the one most used by the nesting terns and gulls. It is mainly vegetated by a mix of Bracken (*Pteridium aquilinum*) and dry grassland, though there is a strip of more salt-tolerant vegetation around the margin of the island. Lady's Island Lake is the largest and best example of a sedimentary lagoon in the country.

The site is internationally important for breeding terns and is the largest tern colony in the country. Four species of tern are present: Sandwich, Roseate, Common and Arctic. In the past, Little Tern has also bred. The Sandwich Tern population (1,048 pairs in 1999) is the largest in the country. The population of Roseate Tern (116 pairs in 1999) is the second largest after Rockabill and one of only two large colonies in Ireland. The populations of Common Tern (480 pairs in 1999) and Arctic Tern (235 pairs in 1999) are of national importance. The site also supports one of the largest colonies of Black-headed Gulls (600+ pairs in 1999) in the country. In recent years, Mediterranean Gull has become established as a breeding species (1-2 pairs) and this is the only known nesting site in the Republic (a further site exists in Northern Ireland).

The terns at Lady's Island have been studied since the 1960s. Since 1993, the National Parks and Wildlife Service and BirdWatch Ireland have co-managed the colonies as part of a long-term conservation programme. This programme includes annual wardening, habitat management, thorough monitoring of breeding parameters, and the ringing of chicks. The importance of the site is recognised by its designation as a Refuge for Fauna.

Despite wardening of the colony, some disturbance can be caused to the nesting terns by recreational activities such as water skiing. Also, a feral Greylag Goose population causes disturbance to the nesting terns. In most years a channel is artificially cut in the gravel barrier of the lagoon to relieve flooding; however, this reduction in water-level can permit terrestrial predators, such as rats and foxes, to reach the nesting terns.

This is one of the most important ornithological sites in the country. Of particular note is that all of the breeding tern species, as well as Mediterranean Gull, are listed on Annex I of the E.U. Birds Directive.

The Raven SPA (004019)

SITE NAME: The Raven SPA

SITE CODE: 004019

The Raven SPA is situated on the north side of Wexford Harbour, incorporating the dynamic sand dune system of Raven Point and the coastal strip running north to Blackwater Head. The seaward boundary of the site extends a distance of 2 km from the shoreline.

The Raven sand dune system comprises a suite of coastal habitats listed on Annex I of the EU Habitats Directive. The dynamic nature of the system is best seen at the southern end of the site where sand flats, lagoons, driftlines and small dune slacks develop and are being continuously transformed by the activity of the sea and the wind. Much of the dunes was planted with commercial conifer forest in the 1930s and 1950s, partly as a coastal defence measure to stabilise the dunes and protect the polder behind. The

unplanted areas of fixed dunes are fairly typical of the habitat, with a low open sward of grasses, herbs, bryophytes and lichens occurring amongst areas of Marram Grass (*Ammophila arenaria*). Species present include Red Fescue (*Festuca rubra*), Common Bird-foot Trefoil (*Lotus corniculatus*), Lady's Bedstraw (*Galium verum*), and Sea Pansy (*Viola tricolor* subsp. *curtisii*). A feature of the site is the presence of dune slacks. Some of the current slack communities are associated with artificial ponds that were originally created as forest fire control reservoirs. Where the slacks maintain moist conditions, characteristic species include Creeping Willow (*Salix repens*), Common Sedge (*Carex nigra*) and Heath-grass (*Danthonia decumbens*). Dune ridges with Marram Grass (*Ammophila arenaria*) occur in a more or less continuous band as far as Blackwater Head. A number of rare and protected plants have also been recorded from this dune system including Round-leaved Wintergreen (*Pyrola rotundifolia* subsp. *maritima*), Lesser Centaury (*Centaureum pulchellum*) and Wild Asparagus (*Asparagus officinalis* subsp. *prostrata*). A small, though good example of Atlantic salt meadow occurs below the fixed dunes at the more sheltered western side of Raven Point.

The sheltered intertidal shore to the west of Raven Point supports communities of bivalves and worms (e.g. Common Cockle (*Cerastoderma edule*), Lugworm (*Arenicola marina*). The steeper shore to the north-east of the Point, which is predominantly sandy sediment, supports a sparser fauna, but with one notable species *Pseudorchestoidea brito* - a sandhopper which is known from only one other location in Ireland.

The Raven has important bird interests, being part of the Wexford Slobs and Harbour complex. Of critical significance is that it forms the principal night roost for the internationally important Wexford Harbour population of Greenland White-fronted Geese. A range of other waterfowl species are attracted to the site during winter, both for feeding and roosting purposes. The shallow waters within the site are particularly suitable for divers, grebes and seaduck. Counts during the five winters 1995/96 to 1999/00 recorded the following species in Nationally Important numbers (figures are average maxima over the 5 winters): Cormorant (218), Common Scoter (3,234), Red-breasted Merganser (84), Grey Plover (448) and Sanderling (81). The Scoter population represents over 25% of the national total. The population of Red-throated Diver (77) is also of national importance and these shallow waters support one of the largest populations in the country. Other species which occur in significant numbers include Great Northern Diver (24), Great Crested Grebe (10), Slavonian Grebe (4), Wigeon (67), Mallard (75), Golden Plover (569), Lapwing (115), Knot (131), Dunlin (552), Bar-tailed Godwit (112), Curlew (93), Black-headed Gull (386) and Common Gull (157). Other species using the site include Shelduck (16), Oystercatcher (93) and Ringed Plover (12).

In addition to the Greenland White-fronted Geese, the occurrence of Red-throated Diver, Great Northern Diver, Slavonian Grebe, Golden Plover and Bar-tailed Godwit is of especial conservation interest as these are listed on Annex I of the E.U. Birds Directive.

The Raven SPA is an important breeding site for Little Tern, with up to 30 pairs in some years. The birds nest on the shingle and sandy beaches or on offshore sandbanks. Numbers vary a lot between years, partly due to the suitability of potential nesting habitat after the winter storms. A number of pairs of Ringed Plover breed on the sandy beaches.

This site is of international ornithological importance as it provides crucial roosting habitat for the Wexford Harbour flock of Greenland White-fronted Geese. The site also provides habitat for a range of other species, including six which have populations of National

Importance; the Raven is probably the most regular site in the country for Slavonian Grebe. Of particular significance is that six of the wintering species are listed on Annex I of the E.U. Birds Directive, i.e. Red-throated Diver, Great Northern Diver, Slavonian Grebe, Golden Plover, Bar-tailed Godwit and Greenland White-fronted Goose. Little Tern, a species breeding in the site, is also listed on Annex I of this directive. Owing to the recognised importance of the area, Raven Point is a statutory Nature Reserve and a Ramsar site.

Ballyteigue Burrow SPA (004020)

SITE NAME: Ballyteigue Burrow SPA

SITE CODE: 004020

This site is located on the south coast of Co. Wexford between the towns of Kilmore Quay and Cullenstown. It comprises a sand and shingle barrier beach, approximately 8 km in length, and the estuary of the Duncormick River. The extensive overlying sand spit is known as the Burrow, while the estuary that it encloses is known as the Cull.

The site has a range of coastal habitats, including various types of sand dunes, salt meadows, and intertidal sand and mud flats. Former estuarine areas adjacent to the site have been reclaimed as polders and are intensively managed for agriculture. The dune system includes embryonic shifting dunes and Marram (*Ammophila arenaria*) dunes along the seaward side with more stable fixed dunes and dune heath inland. Typically, plants such as Marram, Portland Spurge (*Euphorbia portlandica*) and Sea-holly (*Eryngium maritimum*) are common on the seaward dunes. The fixed dunes are well-developed and species-rich and include species such as Common Restharrow (*Ononis repens*), Wild Pansy (*Viola tricolor* subsp. *curtisii*), Common Centaury (*Centaureum erythraea*), Wild Thyme (*Thymus praecox*) and Red Fescue (*Festuca rubra*). In places, scrub is encroaching and Bracken (*Pteridium aquilinum*) and Burnet Rose (*Rosa pimpinellifolia*) are common. The dune heath element is typified by Bracken and Gorse (*Ulex europaeus*).

Saltmarsh vegetation fringes The Cull, with such species as Sea Aster (*Aster tripolium*), Sea Arrowgrass (*Triglochin maritima*), Sea Lavender (*Limonium humile*) and Glasswort (*Salicornia* spp.). Part of the saltmarsh complex contains halophilous scrub vegetation, a very rare habitat in Ireland. The estuary empties almost entirely on most tides, apart from the main central channel. Sediments vary from muds in the innermost areas, especially towards Duncormick, to sands elsewhere. In addition to the Duncormick River, the estuary receives the flow from a network of canals which drain the extensive polders to the east and north-east of the site. Water quality of the inflowing freshwater is moderate to poor.

The principal ornithological importance of Ballyteigue Burrow SPA is wintering waterfowl, with an internationally important population of Brent Goose (290, average maximum in the five winters 1995/96-1999/00). It also supports nationally important numbers of Shelduck (167), Ringed Plover (133), Golden Plover (4,630), Lapwing (7,808), Black-tailed Godwit (474) and Bar-tailed Godwit (582). A range of other species occur in numbers of regional importance, including Wigeon (306), Grey Plover (69), Dunlin (1,020) and Redshank (206). Both the Golden Plover and Bar-tailed Godwit populations represent just

over 3% of the respective national totals, while the Lapwing population is almost 4% of the total. The estuarine habitats provide feeding and roosting areas for the waterfowl species, though a lot of the birds also feed on the intensively managed lands of the adjacent polders.

Cullenstown Strand has a small colony of breeding Little Tern, though nesting may not occur in every year.

The site is host to a range of rare Red Data Book plant species, including Wild Asparagus (*Asparagus officinalis*), Borrer's Saltmarsh-grass (*Puccinellia fasciculata*), Perennial Glasswort (*Arthrocnemum perenne*) and Lesser Centaury (*Centaurium pulchellum*), and is the only Irish site for the protected (Flora (Protection) Order, 1999) lichen *Fulgensia fulgens*. The invertebrate fauna of the site includes a number of scarce species, examples being the bumble bees *Bombus distinguendus* and *B. sylvarum*, the jewel wasp *Hedychridium ardens* and the ant *Tetramorium caespitum*.

This coastal site is of high ecological value for its range of good quality coastal habitats, several being listed on Annex I of the E.U. Habitats Directive. It is a major site for wintering waterfowl, with an internationally important population of Brent Goose and a further six species with populations of national importance. Of particular note is that two of the species, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. Little Tern is also listed on Annex I of this Directive. Most of the site is designated as a Nature Reserve.

Bannow Bay SPA (004033)

SITE NAME: Bannow Bay SPA

SITE CODE: 004033

Situated on the south coast of Co. Wexford, Bannow Bay is a large, very sheltered, estuarine system with a narrow outlet to the sea. It is up to 14 km along its north-east/south-west axis and has an average width of about 2 km. A number of small- to medium-sized rivers flow into the site, the principal being the Owenduff and the Corock which enter at the top end of the estuary. Very extensive intertidal mud and sand flats are exposed at low tide. The sediments have a rich macroinvertebrate fauna, with such species as Peppery Furrow-shell (*Scrobicularia plana*), Ragworm (*Hediste diversicolor*) and Lugworm (*Arenicola arenaria*) occurring frequently. Mats of green algae (*Enteromorpha* spp.) are present on the intertidal flats and shorelines. Salt marshes are well-developed in the sheltered areas of the site and are characterised by species such as Common Saltmarsh-grass (*Puccinellia maritima*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Sea Plantain (*Plantago maritima*), Red Fescue (*Festuca rubra*), Saltmarsh Rush (*Juncus gerardi*) and Sea Rush (*Juncus maritimus*). Swards of Glasswort (*Salicornia* spp.) occur on the lower zones of the salt marshes and extend onto the intertidal flats. Halophilous scrub, a very rare habitat in Ireland, occurs in the saltmarsh areas, and is characterised by the presence of the protected (Flora (Protection) Order, 1999) plant Perennial Glasswort (*Arthrocnemum perenne*). Some freshwater habitats

occur at the northern end of the site. These consist mainly of a mosaic of marsh, reedbed and willows (*Salix* spp.).

Bannow Bay supports an excellent diversity of wintering waterfowl and is one of the most important sites in the south-east. Of particular note is an internationally important population of Brent Goose (561 - all figures are average peaks for the 5 winters 1995/96-1999/00). The site also supports nationally important numbers of a further twelve species as follows: Shelduck (500), Pintail (52), Oystercatcher (711), Golden Plover (1,955), Grey Plover (142), Lapwing (2,950), Knot (508), Dunlin (3,038), Black-tailed Godwit (546), Bar-tailed Godwit (471), Curlew (891) and Redshank (377). The populations of Shelduck and Black-tailed Godwit are of particular note as they comprise 3.4% and 2.0% of the respective national totals. Other species which occur in numbers of regional importance include Wigeon (412), Teal (256), Ringed Plover (38) and Turnstone (50). The intertidal sand and mud flats provide excellent feeding for the waterfowl species, while suitable high tide roosts are provided by the salt marshes and other shoreline habitats. Part of the site is a Wildfowl Sanctuary. The site has been well monitored since the 1970s.

There are no serious imminent threats to the wintering birds. However, shellfish farming is carried out over much of the intertidal areas and may cause disturbance to birds and/or their habitats.

Bannow Bay SPA provides an excellent example of an enclosed estuarine system, with habitats generally of good quality. It is of international importance for Brent Geese and supports a further twelve species in numbers of national importance. Of particular significance is that two species, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive.

Tacumshin Lake SPA (004092)

SITE NAME: Tacumshin Lake SPA

SITE CODE: 004092

Tacumshin Lake is a shallow coastal lagoon situated on the south Co. Wexford coast. The lagoon was formerly a shallow sea bay which, due to longshore drift, has over time become separated from the sea by a gravel/sand spit that extends across the mouth of the bay from east to west. At times in the past the lagoon was completely land-locked by the spit and, at the end of the 19th century, when this situation prevailed for some time, the lake was drained by means of a large bore pipe set through the gravel/sand bar. In the mid-1970s the spit again closed off the lagoon from the sea. To relieve subsequent flooding of surrounding farmland, the old drainage pipe was reactivated and a second pipe installed at a lower level. The capacity of these two pipes is insufficient to prevent the lagoon filling up in winter when inflow from streams is greater than the outflow through the pipes. To speed the drainage from the lagoon two main drains were excavated leading to the landward end of the pipes.

The lagoon bed sediments support extensive areas of Glasswort (*Salicornia* spp.) where conditions remain brackish in summer. Other areas support Lesser Sea-spurrey (*Spergularia marina*). The permanent water bodies (including the excavated channels) and the marshy areas associated with stream inlets are colonised by Common Reed

(*Phragmites australis*), Sea Club-rush (*Scirpus maritimus*) and Common Club-rush (*Scirpus lacustris*). Tasselweed (*Ruppia maritima*) forms dense stands in the permanent brackish water in the centre of the lagoon bed. Other typical lagoonal plants present include Horned Pondweed (*Zanichellia palustris*) and the rare charophyte (*Chara canescens*). Areas of salt marsh, "the patches" have dense Red Fescue (*Festuca rubra*) swards, with Sea Purslane (*Halimione portulacoides*) and Sea Rush (*Juncus maritimus*). The gravel/sand barrier is in two sections, the eastern one being a mature dune system with low-growing herbs and grasses, such as Lady's Bedstraw (*Galium verum*) and Kidney Vetch (*Anthyllis vulneraria*), while the western section has a developing dune vegetation with the pioneering Sea Couch (*Elymus farctus*) dominating. Marram (*Ammophila arenaria*) is found throughout and Lyme Grass (*Leymus arenarius*) also occurs. The endangered Red Data Book species, Cottonweed (*Otanthus maritimus*), has been recorded from the site in the past and is currently the subject of a re-introduction programme here.

The waterfowl population of the lagoon is exceptionally diverse and the area supports large numbers of birds through the whole year, which is unusual among Irish wetlands. In winter, Tacumshin is a principal roost for internationally important populations of both Whooper Swan (213) and Bewick's Swan (189), the latter species now being very localised in Ireland. Both of these swans feed mainly on improved grassland in the vicinity of the site. A further 13 waterfowl species occur in numbers of national importance, i.e. Little Grebe (71), Mute Swan (218), Wigeon (4,725), Gadwall (119), Teal (975), Pintail (322), Shoveler (107), Tufted Duck (420), Coot (1,669), Golden Plover (3,932), Grey Plover (85), Lapwing (5,302) and Black-tailed Godwit (538) - all figures are average peaks for the 5 seasons 1995/96-1999/00). Of particular note is that the Pintail population represents over 16% of the national total, whilst those of Wigeon, Gadwall and Coot are each just over 5% of the respective totals. Other species using the site in winter include Greenland White-fronted Goose (36), Dunlin (374), Curlew (391), Brent Goose (115), Shelduck (61), Pochard (314), Mallard (196), Redshank (74), Greenshank (6), Black-headed Gull (157) and Lesser Black-backed Gull (146). The site provides both feeding and roosting habitat for the various species, though some such as Golden Plover and Lapwing also feed outside of the site.

Marsh Harrier is a regular visitor in summer and nesting by this very scarce bird of prey is a possibility. Tacumshin is one of the few sites in Ireland where Garganey occurs regularly, and nesting probably occurs in most years. The swamp vegetation supports a good breeding population of the localised Reed Warbler (c. 10 pairs), whilst Sedge Warbler breeds commonly.

Tacumshin is an important site for passage waders, including Ruff (often more than 40 birds are recorded), Little Stint (more than 200 birds have occurred though up to 40 or 50 is more usual), Curlew Sandpiper (30 or more is regular), Green Sandpiper (up to 5 in most years), Spotted Redshank (up to 5 in most years) and the very scarce Wood Sandpiper (between 2 and 5 birds in most years). The lagoon is particularly attractive to vagrant North American and Eurasian waterfowl, with species such as Pectoral Sandpiper occurring annually. In autumn the abundant insect life of the dry lake bed provide food for large numbers of migrating Swallows and Martins which also use the reed beds as a night roosting area, with up to 10,000 individuals being recorded in recent years. Large numbers of Lesser Black-backed Gull (up to 1,000) gather at the lagoon for some weeks prior to their autumn migration southwards and some linger into the early winter period.

The lagoon habitat is potentially threatened by implementation of a more effective drainage system. In recent years parts of the lagoon and sand dune system have been seriously damaged by horse racing activities and such activities remain a threat. Significant disturbance occurs in summer and autumn due to a range of recreational activities, including dog exercising, bird watching and driving of cars.

Tacumshin Lake SPA is one of the most important ornithological sites in the country. The occurrence of internationally important populations of Whooper Swan and Bewick's Swan is of especial note, as is the presence of nationally important populations of an additional 13 wintering waterfowl species. It is one of the top sites in the country for species such as Pintail and Gadwall. It is also of importance for its summer visitors, including such rare and localised species as Marsh Harrier, Garganey and Reed Warbler. The site is also notable for a range of passage waders. Also of note is that a number of the species that occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Bewick's Swan, Golden Plover, Ruff, Wood Sandpiper and Marsh Harrier. Greenland White-fronted Goose which uses the site on occasions is also listed on Annex I of this directive.

Keeragh Islands SPA (004118)

SITE NAME: Keeragh Islands SPA

SITE CODE: 004118

The Keeragh Islands are two low-lying islets located just over 1 km offshore from the south Wexford coastline. The site includes the islets and associated rocky shorelines and reefs, as well as the surrounding marine area to a distance of 200 metres.

The islets, which rise to a maximum height of about 10 m above sea level, have a small area of land permanently above the tide line. The vegetation is predominantly maritime in character, with species such as Red Fescue (*Festuca rubra*), Thrift (*Armeria maritima*), Common Scurvygrass (*Cochlearia officinalis*) and Sea Campion (*Silene vulgaris* subsp. *maritima*). The surrounding reefs support a range of seaweeds.

The islands have a Nationally Important breeding colony of Cormorant (206 pairs recorded in 1989), which is considered to be one of the largest in the country. The colony has been well-monitored since it was first recorded in 1968 and there has been a long-term ringing programme. Terns, mainly Arctic Tern, have bred in the past but not since the 1970s. Herring Gull, Great Black-backed Gull and Lesser Black-backed Gull have also bred but no population estimates for recent years are available. A small number of Shag (c.10 pairs) were present in 1970.

In winter the islands are a refuge and night roost for flocks of Brent Goose and for ducks, notably Mallard and Wigeon with smaller numbers of Teal and Shoveler.

The Keeragh Islands SPA is of ornithological importance as it has a Nationally Important population of breeding Cormorant. It retains potential for attracting breeding terns, species that are listed on Annex I of the E.U. Birds Directive, though none have been recorded since the 1970s.

22.3 NATURAL HERITAGE AREAS (NHA's)

There are 28 proposed NHA's within County Wexford

Code	Area	status	Habitat	Interest
000698	Barrow River Estuary	pNHA		
000699	Boley Fen	pNHA		
000702	Leskinfere Church, Clogh	pNHA		
000703	Keeragh Islands	pNHA	Exposed Rock	Ecological
000706	Mountgarrett Riverbank	pNHA		
000711	Tintern Abbey	pNHA		
000712	Wexford Slob and Harbour	pNHA	Grassland	Ecological Mudflats
000741	Ballyconnigar Sandpits	pNHA		
000742	Ballyconnigar Upper	pNHA		
000744	Ballykelly Marsh	pNHA		
000745	Ballymoney Strand	pNHA		Ecological / Geological
000746	Ballynabarney Wood	pNHA	Heath/woodland	
000747	Ballyroe Fen and Lake	pNHA		
000750	Bunclody Slate Quarries	pNHA	Heath	Ecological
000754	Carrhill Wood	pNHA		
000755	Clone Fox Covert	pNHA		
000757	Courtown Dunes and Glen	pNHA	Sand dunes/woodland	Ecological
000761	Forth Mountain	pNHA	Heath	Ecological, Geomorphological
000765	Killoughrim Forest	pNHA	Woodland/Heath	Ecological
000774	Oaklands Wood	pNHA	Woodland	Ecological
000782	St Helen's Burrow	pNHA		Geological
000812	Pollmouny River Valley	pNHA	Woodland/ River Valley	Ecological
001733	Ardamine Woods	pNHA	Woodland	
001736	Cahore Point North Sandhills	pNHA		
001737	Donaghmore Sandhills	pNHA		
001738	Duncannon Sandhills	pNHA		Ecological
001834	Kilgorman River Marsh	pNHA		
001930	Ballyteige Marsh	pNHA		ecological

22.4 IRISH HABITATS AND SPECIES OF EUROPEAN IMPORTANCE

A number of Irish habitats and species have been identified as being of fundamental European importance and ear-marked for special conservation.

The **Red List** includes the following 18 species, along with their matching criteria of

Declining breeders (D),
Historically declining (H) and
Global conservation concern (G):

Black-Necked Grebe	(H)	Red-Necked Phalarope	(H)
Common Scoter	(D), (H)	Roseate Tern	(D), (H)
Hen Harrier	(D)	Barn Owl	(D)
Red Grouse	(D)	Nightjar	(D), (H)
Grey Partridge	(D), (H)	Ring Ouzel	(H)
Quail	(H)	Chough	(D)
Corncrake	(D), (H), (G)	Twite	(D), (H)
Lapwing	(D)	Yellowhammer	(D)
Curlew	(D)	Corn Bunting	(D), (H)

The Amber List includes the following 77 species, along with their matching criteria of:

Breeding species (B) , with moderate decline, rare/sporadic breeding and/or international important or localised.
Wintering/Passage species (W) which are internationally important or recognised
European conservation concern (E)

Red-throated Diver	(B), (E)	Knot	(W), (E)
Black-throated Diver	(E)	Dunlin	(W), (E)
Great Crested Grebe	(B), (W)	Jack Snipe	(E)
Cory's Shearwater	(W), (E)	Snipe	(B)
Great Shearwater	(W)	Woodcock	(B), (E)
Sooty Shearwater	(W)	Black-tailed Godwit	(B), (W), (E)
Manx Shearwater	(B), (E)	Bar-tailed Godwit	(W), (E)
Storm Petrel	(B), (E)	Redshank	(B), (W), (E)
Leach's Petrel	(B), (E)	Little Gull	(W), (E)
Gannet	(B), (E)	Mediterranean Gull	(B)
Cormorant	(B)	Black-headed Gull	(B)
Little Egret	(B)	Common Gull	(E)
Bewick's Swan	(W), (E)	Sandwich Tern	(B), (E)
Whooper Swan	(B), (E)	Common Tern	(B)
Greenland White-fronted Geese	(W)	Arctic Tern	(B)
Greylag Goose	(W)	Little Tern	(B), (E)
Barnacle Goose	(W)	Guillemot	(E)
Brent Goose	(W)	Razorbill	(B)
Skelduck	(W)	Black Guillemot	(E)
Wigeon	(B)	Puffin	(B), (E)
Gadwall	(E)	Stock Dove	(B)
Teal	(B)	Cuckoo	(B)

Pintail	(B), (W), (E)	Short-eared Owl	(B), (E)
Garganey	(B), (E)	Kingfisher	(B), (E)
Pochard	(B), (W)	Skylark	(B), (E)
Tufted Duck	(W)	Sand Martin	(E)
Scaup	(B), (W), (E)	Swallow	(E)
Elder	(W)	Yellow Wagtail	(B)
Goldeneye	(W)	Redstart	(B), (E)
Red-breasted Merganser	(W)	Whinchat	(B)
Goosander	(B)	Stonechat	(E)
Goshawk	(B)	Grasshopper Warbler	(B)
Merlin	(B)	Reed Warbler	(B)
Peregrine	(E)	Lesser Whitethroat	(B)
Water Rail	(B)	Wood Warbler	(B)
Spotted Crake	(B)	Spotted Flycatcher	(B), (E)
Coot	(B), (W)	Pied Flycatcher	(B)
Golden Plover	(B)	Redpoll	(B)
Grey Plover	(W)		