NATIONAL REPS CONFERENCE - *REPS IN A CHANGING ENVIRONMENT*

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Current Status and Evaluation of REPS 2

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Introduction

To date REPS 2 has received some criticism from various parties as to the reduced uptake compared to the initial projections. This has had knock on effects in terms of the money distributed to the farming community and also the environmental benefits which were potentially accruable with larger participation levels. However while targets have not been met, current participation rates are reasonable and compliance with the scheme is steadily improving. The Mid Term review report of REPS by Afcon consultants highlighted that REPS was contributing environmental improvements such as reduced nutrient input, protection of habitats, reduced soil erosion etc. However, these gains are happening at a reduced level than anticipated.

Number of participants

The level of participation in REPS 1 and 2 is shown in Table 1. There are currently a total of 36,948 farmers in REPS; 5,261 of these in REPS 1 and another 31,687 applicants in REPS 2.

The highest number of farmers in the scheme are in Mayo, with a total 4,575 farmers in the scheme. The highest level of participation, based on the number of Area Aid applications (AA) received per county is Leitrim, with 61% of all farmers who made an Area Aid application in 2003 being in REPS. Average uptake of the scheme among Area Aid applicants in 2003 is 29%. The percentage of farmers in REPS 2 who were also participants in REPS 1 is 77%.

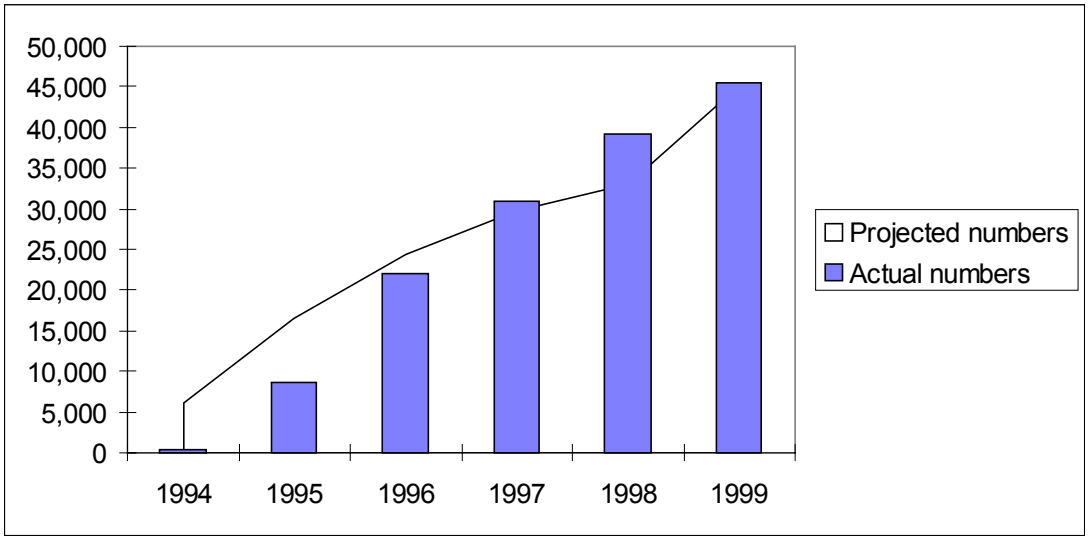
Table 1: **Current Participation rates in REPS**

County	REPS 1 Participants	REPS 2 Participants	REPS 1 & 2 Participants	Percentage of AA applicants in REPS 1 & 2	Hectares in REPS 1 & 2
Carlow	29	308	337	21	12,449
Cavan	258	1,106	1,364	27	37,901
Clare	232	1,478	1,710	27	64,495
Cork	440	2,379	2,819	22	110,279
Donegal	456	2,602	3,058	37	113,701
Dublin	13	66	79	13	2,715
Galway	494	3,990	4,484	35	146,288
Kerry	223	1,983	2,206	28	118,699
Kildare	67	366	433	23	14,868
Kilkenny	182	738	920	27	39,188
Laois	71	733	804	28	28,114
Leitrim	249	1,938	2,187	61	63,729
Limerick	211	885	1,096	22	37,481
Longford	113	826	939	38	28,406
Louth	29	208	237	17	6,905
Mayo	594	3,981	4,575	37	150,473
Meath	120	651	771	22	23,376
Monaghan	169	799	968	24	24,080
Offaly	153	803	956	32	34,290
Roscommon	215	890	1,105	18	31,539
Sligo	222	1,004	1,226	29	41,286
Tipperary	250	1,175	1,725	25	66,913
Waterford	127	545	672	28	30,147
Westmeath	157	859	1,016	23	34,418
Wexford	134	671	805	26	30,377
Wicklow	53	403	456	38	20,099
Total	**5,261**	**31,687**	**36,948**	**29**	**1,312,227**

REPS 1

Figure 1 shows that REPS was behind the target level of participation during its first two years. However, during the years 1996 to 1998 uptake of REPS increased steadily with the number of participants at 45,500 in 1999 being almost exactly as projected at commencement of the programme.

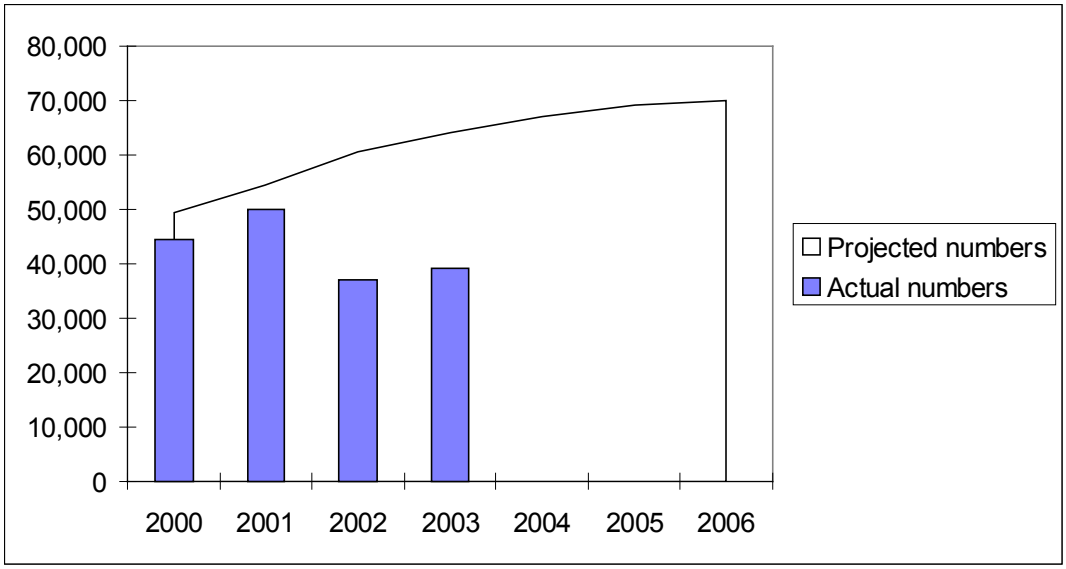
Figure 1. Projected versus actual numbers in REPS 1.



REPS 2

The trend of actual versus projected numbers for the 2000 – 2006 period of participants in REPS 1 & 2 is shown in Figure 2. The target level of participants in the Scheme has not been met since 2000. However, REPS 2 was late getting started and the Foot and Mouth Disease problem resulted in slower than anticipated uptake. Some 10,000 farmers have been accepted into REPS 2 since the beginning of this year, which is similar to the numbers of farmers joining the scheme in 2001 and 2002.

Figure 2. Projected versus actual numbers in REPS (1 and 2).



The numbers of participants in REPS 2 with less than 20 hectares are shown in Table 2. There are a total of 8,796 farmers, or 28% of all REPS 2 applicants in this category. Mayo has the highest number of participants with less than 20 hectares at 1,470 farmers. Of the total number of applicants in the scheme with less than 20 hectares, 45% of these are in Connaught. Only 7% of current REPS 2 participants in Kilkenny have less than 20 hectares.

Table 2: **Number of REPS 2 participants with less than 20 hectares.**

County	Number of REPS 2 participants under 20 ha.	Percentage of REPS 2 participants under 20 ha.
Carlow	49	16
Cavan	428	39
Clare	301	20
Cork	505	21
Donegal	779	30
Dublin	27	41
Galway	1,292	32
Kerry	371	19
Kildare	98	27
Kilkenny	55	7
Laois	130	18
Leitrim	623	32
Limerick	199	22
Longford	245	30
Louth	193	33
Mayo	1,470	37

Meath	217	33
Monaghan	205	41
Offaly	162	20
Roscommon	294	33
Sligo	325	32
Tipperary	124	17
Waterford	133	28
Westmeath	155	26
Wexford	223	18
Wicklow	119	18
Total	**8796**	**28**

Expenditure on REPS

The total expenditure on REPS per county since 1994 is shown in Table 3. Total expenditure on REPS since its inception amounts to €1.3 billion. Annual payments have increased from €1 million in 1994 to an anticipated €170 million spend for 2003. Mayo and Galway, due to the high participation rate, received the highest amount of money.

Table 3: **Total expenditure on REPS up until 14 October 2003 (€).**

County	Total Expenditure REPS 1 and 2
Carlow	12,386,244
Cavan	41,319,429
Clare	74,468,629
Cork	97,207,116
Donegal	92,586,354
Dublin	3,150,513
Galway	147,486,427
Kerry	79,884,134
Kildare	20,236,681
Kilkenny	30,063,687
Laois	31,239,008
Leitrim	68,636,467
Limerick	41,172,845
Longford	32,107,242
Louth	9,086,978
Mayo	143,012,806
Meath	27,976,012
Monaghan	23,428,517
Offaly	39,660,233
Roscommon	34,944,550
Sligo	37,558,341

Tipperary	70,559,932
Waterford	23,892,238
Westmeath	40,980,247
Wexford	32,743,540
Wicklow	15,167,758
Total	**1,270,955,932**

The total expenditure on REPS per region since 1994 is shown in Table 4. The highest expenditure has been in Connaught, accounting for nearly one third of all payments. Participants in border, midland and western counties together have received €0.7 billion since the scheme started.

Table 4: Total expenditure on REPS up until 14 October 2003 (€).

Region	Total Expenditure REPS 1 and 2
Ulster	157,334,300
Munster	387,184,894
Leinster	294,798,146
Connaught	431,638,592
Total	**1,270,955,932**

Penalties Imposed

Table 5 shows the most common non-compliance issues which have occurred during the last four years.

Table 5: Number of REPS Participants who have had Penalties Imposed for Non-Compliance in 2000, 2001, 2002 and between 1 January 2003 and 14 October 2003

Measure	Number of Failures in 2000	Number of Failures in 2001	Number of Failures in 2002	Number of Failures in 2003
Undertakings in respect of farm and farmyard not carried out	931	511	673	332
Hedgerows/Stonewalls not maintained as specified in plan	907	346	337	168
Bovines not excluded from Watercourses/Wells	348	225	124	121
Farm Boundaries not stock proofed	568	250	241	97
Stock not wintered as set out in plan	199	146	121	84

Planned Waste storage facilities not provided	171	100	123	68
Planned Animal housing facilities not provided	141	76	106	53
Late Application for Payment	453	291	85	103
Any other reason	857	436	781	332
Total (Excluding Interest and Change in area)	**4,575**	**2,381**	**2,591**	**1,358**

Nearly a quarter of all penalties in 2003 were applied to farmers for non-compliance with undertakings relating to farmyards (Measure 8). These relate to participants not completing the specified yearly maintenance work around the farm and farmyard as set out in the plan.

Incorrect yearly maintenance of hedgerows/stone walls resulted in 168 farmers receiving a penalty under this Measure.

Bovines not being excluded the specified distance from watercourses and wells as set out under Measure 3 accounted for 121 farmers receiving a penalty under this measure in 2003.

The failure to return the annual application for payment (REPS 1C) resulted in 103 applicants being penalised for this infringement this year.

There is a noticeable downward trend over the years as indicated in the table in the number of penalties being applied across all measures. The level of compliance with Scheme requirements has increased steadily since the inception of the Scheme, reflecting a continuing improvement on behalf of the participants of their requirements and obligations under the Scheme.

The amount of penalties imposed in 2003 expressed in monetary terms is shown in Table 6. Penalties of less than €2 million, representing 1.27% of all monies paid out were imposed on scheme applicants in 2003.

Table 6: **Penalties imposed in 2003.**

Payment (€) 01/01/03 – 14/10/03	**Penalties imposed (€)**	**% Penalty imposed**
140,273,005	1,788,036	1.27

Some TEAGASC National Farm Survey 2002 data

- **NFS2002 Analysis – Financial Results**

The 2002 National farm survey shows the financial performance for the REPS and non-REPS farms as indicated by gross output, direct costs, gross margins, overhead costs and family farm incomes. These results are summarised in Table 7.

Table 7: Financial performance indicators for REPS and non-REPS farms (€/ha).

	REPS	Non-REPS	
	Incl. Payment	Extensive	Intensive
Gross Output	1,075	1,136	2,404
Direct Costs	329	396	952
Gross Margin	746	740	1,451
Overhead Costs	345	382	691
Family Farm Income	401	358	760

Gross output for REPS farms, including the REPS payment was €1,075/ha. The corresponding gross outputs for the extensive and intensive non-REPS groups were €1,136 and €2,404, respectively. Participating in REPS therefore, substantially increases the total gross output on REPS farms

Direct costs for the REPS group were €329/ha compared to €396/ha and €952/ha for the extensive and intensive non-REPS groups, respectively. The gross margin for the REPS group was €746/ha. The gross margins for the extensive and intensive non-REPS groups were €740/ha and €1,451/ha, respectively.

Overhead costs for the REPS group were €345/ha compared to €382/ha and €691/ha for the extensive and intensive non-REPS groups, respectively.

The family farm income for REPS farmers was €401/ha. Family farm incomes for the extensive and intensive non-REPS groups were €358/ha and €760/ha, respectively. While gross output on REPS farms was lower than that on extensive and intensive non-REPS farms, lower direct and overhead costs resulted in a higher family farm income on the REPS farms than the non-REPS extensive farms.

- **NFS02 - Stocking Rates, fertiliser and lime costs**

The stocking rates, organic nitrogen, chemical nitrogen and phosphorus, input costs, for the REPS and non-REPS Farms in 2002 are summarised in Table 8.

Table 8: Stocking rates (LU/ha), organic nitrogen (kg/ha), chemical nitrogen and phosphorus (kg/ha), input costs (€/ha), for the REPS and non-REPS Farms in 2002.

	REPS	non-REPS	
		Extensive	Intensive
Stocking Rate	1.23	1.23	2.43
Organic nitrogen	91	95	197
Chemical nitrogen	65	94	214
Chemical phosphorus	7	12	16
Lime	3	3	4
Fertiliser	58	82	166

Stocking rates for REPS farmers and non-REPS extensive farmers were similar (1.23 LU/ha and 1.23 LU/ha, respectively). The stocking rate of the non–REPS intensive farmers at 2.43 LU/ha was nearly twice that of the REPS and non-REPS extensive farmers.

Chemical Nitrogen use on REPS farms at 65 kg/ha was less than that used on extensive non-REPS farms at 95 kg/ha. Intensive non-REPS farms used 214 kg/ha, reflecting the higher stocking rate on these farms. The total Nitrogen use by REPS farmers at 156 kg/ha was significantly below the maximum total Nitrogen limit of 260kg/ha set down in the scheme.

Chemical Phosphorous use for the three groups varied widely. Of the three groups, REPS farms used the lowest level (7 kg/ha).

Expenditure on lime for the REPS and non-REPS group in 2002 was similar at €3/ha compared to €3/ha and €4/ha for the extensive and intensive non-REPS groups, respectively. The REPS farms spent less money per hectare on fertiliser than the non-REPS farms. Fertiliser costs on the REPS farms at €58/ha was significantly lower than that of €82/ha and €166/ha for the extensive and intensive non-REPS farms, respectively. This reflects the better recycling of animal manures and proper management of chemical fertiliser inputs due to the nutrient management plan element of REPS.

Planner issues/Planner output

The Department has approved 781 planners for REPS 2 (see Table 9). However, only 699 of these have had plans approved up to October 2003. This represents an average of about 45 plans prepared per active planner since REPS 2 was launched in late 2000. Table 3 shows that about half of all active

planners prepared 30 plans or less in the three years of which REPS 2 has been in operation.

Table 9: **Number of approved planners in REPS 2.**

Number of Plans Approved	Number of Planners
None	82
1 to 10 plans	188
11 to 20 plans	94
21 to 30 plans	67
31 to 40 plans	48
41 to 50 plans	48
51 to 70 plans	100
71 to 100 plans	78
101 to 150 plans	65
151 to 200 plans	11
Total	**781**

Agency training courses are held whenever there is sufficient demand. Table 10 shows the number of courses held, and the number who attended these courses since 2001. Less than half of the people who participated completed the full procedure required in order to receive full agency status. The Department plans to hold a further agency training course during 2004 and are currently accepting names of planners interested in attending this course.

Table 10: REPS planning agency courses held since 2001

Course date	No. of applicants	No. Approved	No. continuing with the approval procedure
July 2001	44	18	5
November 2001	44	5	10
October 2002	29	2	7

Conclusion

The general trend in the last few years is that current participants are participating successfully in the scheme, with a steadily reducing level of non compliance being detected. Overall numbers are less than anticipated in the Rural Development programme, however projected numbers are anticipated to increase up to 2006 due to the proposed increased payment rates and projected enhancements to the content of the scheme.

Future Direction of Agri-Environmental Policy

Jan-Erik Peterson, Project Manager, Agriculture & Environment, European Environment Agency

Reflections on EU agri-environment policy

- Objectives of talk:
- review the policy context
- survey demands on farming and farmers
- evaluate agri-environment schemes
- reflect on future directions and challenges

Demands on farming

- Produce sufficient 'quality' food
- provide income to a (decreasing) part of the rural population
- ensure env. protection and management
- provide animal welfare and 'feel good factor'

Changes in agriculture during last decades

- Decrease of labour force
- higher output via mechanisation + input use
- increasing specialisation
- larger farms
- increased pollution pressures
- divorce of farm practices from nature management

Demands on agriculture policy

- Ensure supply of quality food
- contribute to farm incomes and rural development
- integrate environmental objectives
- provide value for money
- justify its large budget

Developments in agriculture policy during last 15 years

- De-coupling of income support from production

- shift of budget resources into R.D. pillar
- introduction of environmental baselines and management instruments
- ever higher control demand on expenditure
- much greater administrative complexity (planning and delivery)

Demands on farmers

- Produce more food at less cost
- cut labour and input costs
- diversify (new products + income sources)
- minimise environmental pollution
- provide nature and landscape management
- cope with increasing bureaucratic and management demands

Link with agri-environment schemes - strong points

- Integrate anv. objectives into CAP
- (some) extra income for farmers
- help minimise environmental pollution
- support nature and landscape management
- provide some farm planning and environmental training

Link with agri-environment schemes - weak points

- Value for money? (polluter pays principle)
- environmental benefits ensured ?
- Administrative demands very high
- a long term option?
- Output rather than outcome orientated?
- Changing (some) farm practices rather than long-term farmer planning and attitudes?

Agri-environment schemes - knowledge gaps

- EU - level:
- area enrolled + expenditure by AE objective
- targeting on Natura 2000 / high nature value farmland / environmentally vulnerable zones
- national level AE scheme effectiveness:
- biodiversity benefits ?
- Extent of farm practice change on farms ?

- Long-term effect on farmer planning and thinking?
- Monitoring results used for design of new AE schemes?

Agri-environment policy challenges

- Society and policy demands on environment. management in agriculture will increase
- AE baselines to rise and AE scheme control and monitoring to be improved
- need to demonstrate anv. value for money
- need to improve monitoring standards and policy design + administrative delivery
- management resources have to improve to cope with increased policy demands and complexity

New Environmental Requirements – Meeting the Challenge

Sean Regan, Chief Environment Advisor, Teagasc

After 25 years of European water protection legislation Europe's waters are still in need of a greater effort to reverse or prevent pollution. The demand for cleaner rivers, lakes, groundwater and coastal beaches is expressed, not only by the scientific community and environmental organisations, but to an ever increasing extent by citizens. This is one of the main reasons why the Commission has made water protection a key priority.

This paper is concerned with two major water quality Directives currently in the news: the Water Framework Directive (2000/60/EC) and the Nitrates Directive (91/676/EEC). These Directives are in the process of being implemented in Ireland and both have implications for agriculture. The Water Framework Directive (WFD) sets demanding quality standards for all waters and a precise time-scale for implementation.

While the Nitrates Directive is designed to deal with a specific problem, such as agricultural pollution, it must do so in the context of the objectives and quality parameters set down in the WFD. The effectiveness of the legislation must be monitored and member states are required to put more stringent measures in place where the quality objectives are not being attained.

Background

The first phase of European water protection legislation, in the mid 1970s, began with standards for rivers and lakes used for drinking water abstraction and culminated in the setting of binding quality targets for our drinking water in 1980. The first phase also included quality objective legislation on fish waters, shellfish waters, bathing waters and groundwaters.

Recognising a number of gaps relating to pollution from urban wastewater and from agriculture, the EU commission introduced the second phase of water legislation in the early 1990s. The first results of this were the adoption in 1991 of the Urban Waste Water Treatment Directive, providing for more stringent waste water treatment, and the Nitrates Directive, designed to address water pollution by nitrates from agriculture.

Other legislation arising from developments in this phase were a new Drinking Water Directive, reviewing the quality standards adopted in 1998, and a Directive for Integrated Pollution and Prevention Control (IPPC), addressing pollution from large industrial installations adopted in 1996.

Water Framework Directive

Pressure for a fundamental rethink of Community water policy came to a head in the late 1990s. This pressure was channeled through the European Parliament's environment committee and the Council of environment ministers. Water policy at the time was considered fragmented, in terms both of objectives and the means of achieving them. Finally the need for a single piece of framework legislation to resolve these problems was agreed and the Commission presented a proposal for what was to become the WFD. European water policy went through a major restructuring and the WFD was eventually adopted in 2000. The Directive is the operational tool for water protection and sets the objectives for water quality for the first quarter of this century.

The directive draws together and updates existing water legislation by setting common EU wide objectives for water. It is very broad in its scope and relates to water quality in rivers, lakes, canals, groundwater, transitional (estuarine) waters and coastal waters to a distance of at least one nautical mile.

Water Quality

The WFD introduced general requirements for "good biological status" and "good chemical status" to cover all surface waters. The controls allow only a small departure from the biological status that would be expected where the impact of human activity is minimal. This accords with the principle of minimum anthropogenic impact and has particular implications for intensive agriculture. Good chemical status is defined in terms of compliance with all the quality standards established for chemical substances at European level.

The presumption in relation to groundwater is broadly that it should not be polluted at all. The approach is essentially a precautionary one. It comprises a prohibition on direct discharges to groundwater, and (to cover indirect discharges) a requirement to monitor groundwater bodies so as to detect changes in chemical composition, and to reverse any upward pollution trend arising from human activity. A few standards have been established at European level for particular parameters such as nitrates and biocides. The WFD requires these to be adhered to.

One of the innovations of the Directive is that it provides a framework for integrated management of groundwater and surface water for the first time at European level.

River Basins

Water management by river basin as opposed to administrative or political boundaries is enshrined in the Directive. Eight River Basin Districts (RBDs) are proposed for the whole island of Ireland including three cross-border RBDs: the North Western, Neagh-Bann and Shannon. The Western, Eastern, South

Eastern and Southern RBDs are internal to the Republic while the North Eastern RBD is internal to Northern Ireland. RBD projects are already established in the Shannon and South Eastern districts. River basin management plans will eventually be finalised and published for each RBD. These have to be reviewed and updated every six years, a process which will provide the context for the co-ordination requirements of the Directive.

The management plan is a detailed account of how the objectives set for the river basin (ecological status, quantitative status, chemical status and protected area objectives) are to be reached within a specific time-scale. The plan will include the river basin's characteristics, a review of the impact of human activity on the status of waters in the basin, an estimate of the effect of existing legislation and the remaining 'gap' to meeting these objectives; and a set of measures designed to fill the deficit. These might include stricter controls on polluting emissions from industry and agriculture, or urban wastewater sources.

One additional component is that an economic analysis of water use must be carried out within each river basin. This is to enable a rational discussion on the cost-effectiveness of the various possible measures. It is essential that all interested parties are fully involved in this discussion, and indeed in the preparation of the river basin management plan as a whole. A major element is the public participation requirement.

Co-ordination of Measures

The WFD aims to co-ordinate the application of other measures designed to tackle particular pollution problems. A key example is the Nitrates Directive, which is specifically designed to control pollution due to agriculture. The Nitrate Directive should therefore be seen in the context of the requirements of the WFD. The WFD co-ordinates all the environmental objectives in existing legislation, and provides a new overall objective of 'good status' for all waters.

Nitrates Directive

Ireland is already before the European Court of Justice for non-implementation of the Nitrates Directive. This may result in an unfavourable judgement in the near future with the possible imposition of a substantial daily fine. While the whole country was designated for the purpose of the Directive earlier this year the preparation and implementation of the Action Programme (AP) is the key requirement. This process is being progressed by Government. The AP will address requirements such as stocking rate limits, slurry storage, non-spreading periods and best practice requirements. These measures will become the basis of a statutory instrument and become legally binding.

Implications

While the broad framework of the AP is set out in the Directive, the implementation details will have implications for intensive farmers in particular. Take the stocking rate issue – the Directive specifies a maximum of 210 kg/ha organic N (2.5 dairy cows or equivalent /ha) falling to 170kg/ha (2.0 cows/ha) after four years. Government has agreed to a derogation system whereby intensive farmers will be able, on an individual basis, to produce up to 250 kg/ha (3.0 cows/ha) provided there is no conflict with the objectives of the Directive.

An analysis of organic N production on farms based on the Teagasc National Farm Survey (NFS) is presented in Figure 1. This shows the numbers of farms affected. Almost 2,500 farms have an organic N production level between 210 and 250 kg/ha. A further 700 produce in excess of 250 kg/ha N. This means that more than 3,000 highly stocked farmers have the option of seeking a derogation to operate in the 210-250 kg/ha organic N production band. Some at least are likely to reduce stock numbers instead.

The derogation process may involve some form of risk assessment and the preparation of a specific nutrient management plan. Apart from dairying farmers the other beneficiaries of the derogation will be those involved with pigs and poultry.

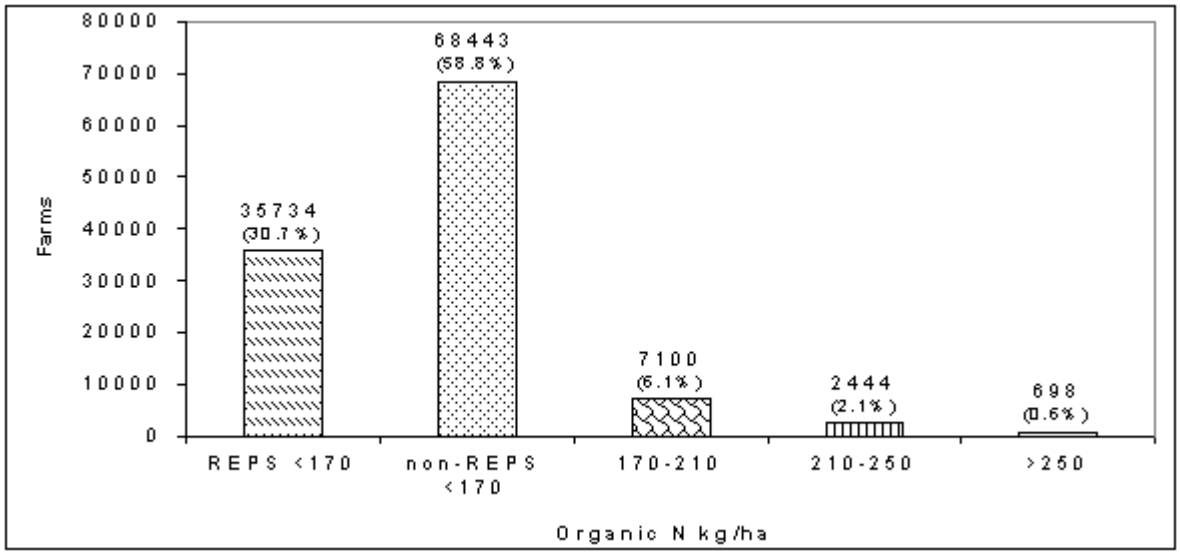


Figure 1. Distribution of REPS and non-REPS farms by organic N Production (Source: NFS 2002)

The impact of the organic N limit falling to 170 kg/ha after four years would be to add 7,100 farms to the potential number who may wish to seek a derogation to retain their stocking rate. This brings the total to more than 10,000. The level of organic N production that might apply to any derogation in such circumstances is not known.

It is clear from Figure 1 that on the vast majority of farms (100,000 +) organic N output is less than 170 kg/ha. At the time the survey was conducted almost 36,000 of these farms were in REPS. These are assumed to be in compliance with the Nitrate Directive. For the remaining 68,000 compliance with the Directive will involve much the same facilities and practices as REPS. Clearly, joining REPS is something the farmers in this category should consider. There are also farmers in the more highly stocked categories who may want to de-stock and join REPS. The CAP Mid-term Review proposals are likely to have a major impact on decision making on many such farms.

Enterprises Affected

Among farms with grassland enterprises those in specialist dairying are affected to the greatest extent. Further analysis of NFS data (Figure 2) shows that the 210 kg/ha organic N limit affects just over 2,000 'dairying' farmers and a further 800 in the 'dairying+other' category. About 200 drystock farms are affected. The numbers affected in the event that the limit falls to 170 kg/ha after four years are 5,820, 2,561 and 1,979 respectively.

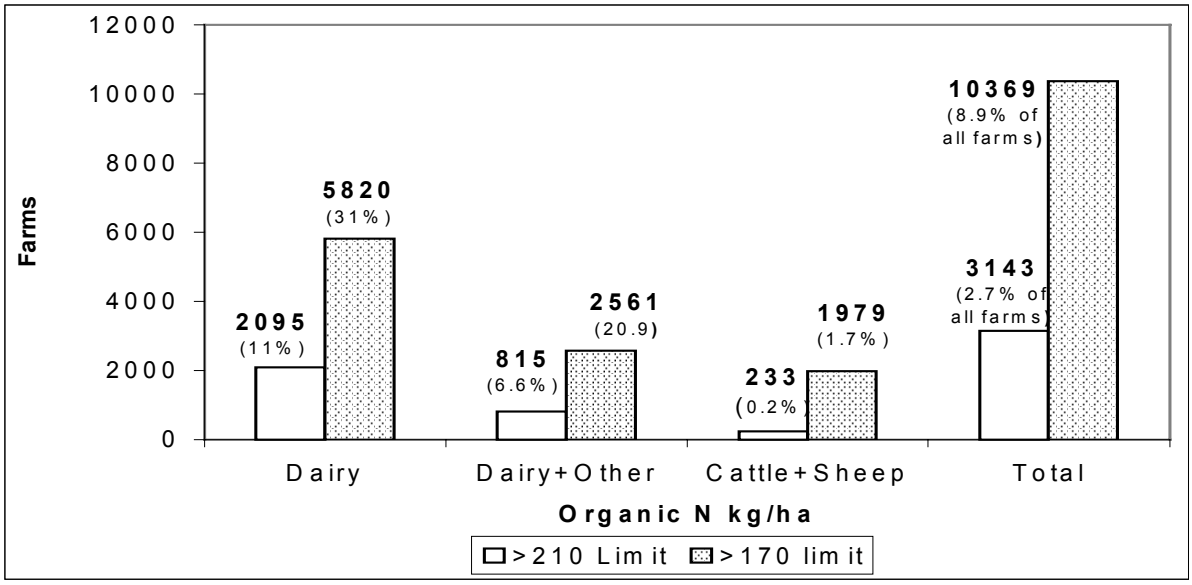


Figure 2. Distribution of farms by enterprise affected by organic N limits of 210 and 170 kg/ha.

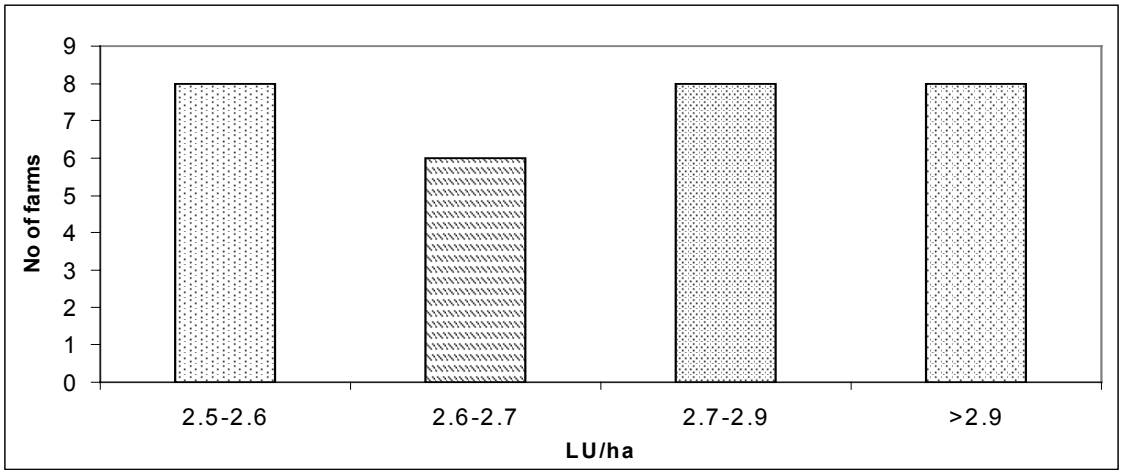
(Source: NFS 2002)

Economic Impact on Dairying Farms

A new Teagasc study by Lally and Riordan (2003) shows the economic impact on specialist dairying farms of reducing stocking rate to comply with the 210 kg/ha organic N limit. The study was undertaken for the 30 dairying farms above 2.5 LU/ha in the 2001 Teagasc NFS. These represent 2,130 (more than

10%) dairying farms. The farms were divided into four stocking rate (LU/ha) categories: 2.5-2.6, 2.6-2.7, 2.7-2.9 and >2.9. The distribution of farms in the sample is presented in Figure 3. The average reduction in farm income arising from reducing the stocking rate to 2.5 LU/ha to comply with the 210 kg/ha N limit was found to be 1%, 3%, 4% and 11% respectively for the farms in the 4 categories.

Figure 3. Distribution by stocking rate of sample dairy farms (30) in NFS with 2.5 LU or more per ha.



Lally and Riordan, (2003)

The authors of the study concluded that the impact of reducing the stocking rate to comply with the 210 kg/ha N limit would be greatest on the most intensive dairying farms where dairy cows account for over 70% of total livestock units and where stocking rate is in excess of 2.9 LU/ha. A very small number of farms may have to reduce the number of dairy cows rather that drystock to comply, and this could cause a reduction in farm income in excess of 20%. These conditions were found on just two farms in the sample studied.

The possibility of a reduction in the profitability of drystock on dairy farms following the CAP Mid-term Review could further reduce the economic impact of de-stocking. Based on the economic analysis in this study and the fact that there is the facility to export some slurry off the farm to comply with the organic N limit, it is thought that the number of dairying farms who decide to seek a derogation may not exceed 1,000 in the short term.

Farmers could potentially reduce the severity of the stocking rate ceiling by increasing milk yield and reducing the number of cows. This assumes that the standard organic N excretion level of 85 kg/annum for average yielding dairy cows in Ireland can be retained for higher merit cows. The scientific evidence suggests that this position can be defended.

Lally and Riordan also looked at chemical nitrogen use on the 30 farms studied. The average usage was 281 kg/ha. This was below the Teagasc advice of 320 kg/ha for the average stocking rate (2.67 LU/ha) in the group but matched the advice (280 kg/ha) for 2.5 LU/ha. This indicated that on average the chemical N restriction would not be a problem. However, six of the farms in the highest stocking rate category (>2.9 LU/ha) applied chemical N in the range 300 kg/ha to 480 kg/ha. The latter rate is considered to be in excess of what is sustainable from both an agronomic and environmental viewpoint.

Intensive Enterprises

One of the biggest challenges created by the organic N limit will be for pig and poultry farmers who require other farmer's land for spreading their slurry. The stocking rate limit will reduce the potential land base available to them. It would appear they will have to rely to a far greater extent on tillage areas to acquire spreadlands.

Manure and Fertiliser Controls at Farm Level

The Nitrate Directive requires three important nutrient management issues to be addressed in the action programme:-

- storage and management of slurry and effluent in the farmyard.
- land application of slurries and fertilisers in accordance with best practice
- application of correct amounts of chemical fertilisers.

An unduly onerous regulatory regime is not expected. It is envisaged that the manure regulations will be flexible to reflect regional variation due to climate, rainfall and soil conditions. This would provide for differences in slurry storage requirements in different parts of the country. This is in line with current planning permission requirements of 16–24 weeks. A shorter storage period may be allowed in certain circumstances where it can be demonstrated that the full requirement is not necessary (eg in the case of extended grazing). In most grassland farming circumstances the slurry storage requirements and any winter non-spreading period imposed will probably reflect that required on a voluntary basis under the Code of Good Agricultural Practice to Protect Waters from Nitrates since 1996. The big difference will be that all the requirements of the AP will become legally binding.

Farmers will be expected to apply manures and fertilisers at application rates that cater for environmental as well as production objectives. Safe recycling of nutrients (N and P) in slurries and farm effluents to suitable farmland with minimum losses to the environment is a central objective. This also means that a lesser amount of nutrients will have to be bought as chemical fertilisers.

Tillage Restrictions

The practice of autumn ploughing and leaving ground fallow over the winter creates a potential for nitrate leaching. While some change in this practice on

farms growing spring cereals may be sought, practical solutions that are not unduly onerous for farmers to implement are in short supply.

Teagasc nutrient advice, which is based on achieving optimum crop production, is expected to provide the basis for nutrient inputs required in the AP. This should alleviate concerns that there will be major restrictions on fertiliser inputs.

Records

The Directive clearly sets out the requirement for farmers to maintain annual records to verify compliance with the measures in the AP. While a basic level of control is required to monitor implementation of the AP, an unduly onerous system is not envisaged. Nevertheless, the control system could potentially be a significant issue as regards the cost implications of the Directive for farmers.

Defence of 210 kg/ha N Limit

The Directive allows Member States to negotiate a derogation from the implementation of the 170 kg/ha organic N restriction after four years, but only where this is justified on the basis of objective criteria and non interference with the achievement of the objectives of the Directive.

A coherent strategy is required to ensure the AP delivers. This will depend on the scientific input to the development of the AP, the quality and degree of commitment to implementation and the advice and investment support available to underpin implementation. It is important that the stocking rate restrictions do not become the major focus of the AP. It is widely accepted that reductions in nutrient losses to water from agriculture will be achieved, not by controlling stocking rates, but through improvements in farmyards and better management of manures and fertilisers.

The EU Commission will have to be convinced that the practices set out in the AP have been implemented and secondly it must be demonstrated that they contribute to water quality improvement. As a first step in this process Teagasc in conjunction with the Department of Agriculture and Food are conducting a nationwide survey of farm facilities and practices. A repeat survey will be undertaken after the four-year period to assess the impact of the AP. Advice and education will have a big role in changing attitudes and practices.

The second requirement is to demonstrate through a series of studies that the practices in the AP actually contribute to water quality improvement. These studies will be carried out in a number of agricultural mini-catchments. These are small catchment where the predominant influence on water quality is agriculture. All the farmers in the study areas will receive intensive advice to assist with the implementation of the AP. The water quality will be monitored

to record the level of improvement. This work will be carried out in conjunction with the RBD projects established to implement the Water Framework Directive.

Previous work with the Lough Derg & Lough Ree Project showed that water quality responded to intensive advice and nutrient management planning at farm level. Winning the derogation to retain the 210 kg/ha limit after the four period will depend to a large extent on the recorded improvements in practices associated with the AP as well as the recorded impact on water quality.

Conclusion

The Water Framework Directive sets down stringent water quality objectives and a strict time frame for implementation. The Nitrates Directive is focused on getting agriculture to comply with these requirements. The controls allow only a small departure from the biological status that would be expected where the impact of human activity is minimal. This has implications for intensive agriculture. The WFD operates on the basis that member states are required to increase the stringency of the legislation if the existing legislation is not achieving the quality objectives.

A coherent strategy is required to ensure the Nitrates AP delivers. This will revolve around the quality of the AP, the degree of commitment to implementation and the advice and investment support available to underpin implementation. It will not be enough to pay lip service to the task. The EU Commission will have to be convinced that the practices set out in the AP have been implemented and secondly it will have to be demonstrated that they contribute to water quality improvement. The WFD flags the alternative scenario - an increasing legislative burden and further restrictions on production.

References

Connolly, L., Kinsella, A. and Quinlan, G. (2003). *National Farm Survey 2002.* Teagasc, Dublin.

Connolly, L. and Quinlan, G. (2003), *REPS Data Analysis Based on 2002 National Farm Survey* . Teagasc. (Unpublished).

De Clercq, P and Sinabell, F (2001), *E U Legislation and Multinational Environmental Legislation with Respect to Nutrient Management.* In Nutrient Management Legislation in European Countries (Chapter 3). Faculty of Agriculture and Applied Biological Sciences, University of Wageningen, The Netherlands.

Department of the Environment, N I. and Department of the Environment and Local Government, ROI (2003*). Managing Our Shared Waters – A Joint North/South Consultation Paper on International River Basin Districts and Administrative Arrangements for Implementation of the EC Water Framework Directive (2000/60/EC).* Belfast and Dublin.

Department of the Environment and Local Government (2000), *Guidelines for the Establishment of River Basin Management Systems.* Dublin.

Department of the Environment and the Department of Agriculture, Food and Forestry. (1996). *Code of Good Practice to protect waters from pollution by nitrates.* Dublin.

Environmental Protection Agency (2001), *An Assessment of the Trophic Status of Estuaries and Bays in Ireland.* EPA, Wexford

European Communities. (1991). Council Directive of 12 December 1991 concerning the protection off waters against pollution caused by nitrates from agricultural sources. (91/676/EEC), *Official Journal* L353, pp 001-008. Brussels.

Kirk McClure Morton (1999). *Management Proposals Report - Lough Derg & Lough Ree catchment monitoring and Management System*

Lally, B. and Riordan, B. (2003). Impact of implementing the Nitrates Directive on Dairy Farms. *Situation and Outlook Series No 11.* Rural Economy, Teagasc, Dublin.

NATURA 2000 - Sites in Ireland

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1. Introduction

NATURA 2000 sites are protected habitats for flora and fauna of European importance. They comprise **Special Areas of Conservation**, designated under the Habitats Directive and **Special Protection Areas**, designated under the Birds Directive.

The Habitats Directive was transposed into national legislation by the European Communities (Natural Habitats) Regulations, 1997 S.I. No. 94 of 1997. These regulations also cover the Birds Directive.

NATURA 2000 sites comprise over ten per cent of the country. They have management implications for farmers with sites on their land. In REPS they bring in extra money under Measure A. This benefits individual farmers, local communities and the national economy.

This paper examines the habitats and species protected under these Directives. It explains the various lists of species. It provides information on species relevant to farming.

2. Habitats Directive: *Special Areas of Conservation*

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

The main aim of this Directive is to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It makes a contribution to the general objective of sustainable development

A coherent European ecological network of Special Areas of Conservation shall be set up under the title Natura 2000. This network, composed of sites hosting the natural habitat types listed in Annex I, and habitats of the species listed in Annex II, shall enable the natural habitat types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range. The Natura 2000 network shall include the special protection areas classified by the Member States pursuant to Directive 79/409/EEC.

Details of the Directives are on the following website:
www.europa.eu.int/comm/environment/nature/legis.htm

The Annexes contain the following information:

ANNEX I: Natural habitat types of community interest whose conservation requires the designation of Special Areas of Conservation

ANNEX II: Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation

ANNEX III: Criteria for selecting sites eligible for identification as sites of community importance and designation as Special Areas of Conservation

ANNEX IV: Animal and plant species of community interest in need of strict protection

ANNEX V: Animal and plant species of community interest whose taking in the wild and exploitation may be subject to management measures

ANNEX VI: Prohibited methods and means of capture and killing and modes of transport

2.1 ANNEX I: *Natural habitat types of community interest whose conservation requires the designation of Special Areas of Conservation*

Coastal and Halophytic Habitats
- Open sea and tidal areas
- Sea cliffs and shingle or stony beaches
- Atlantic and continental salt marshes and salt meadows
- Mediterranean and thermo-Atlantic salt marshes and salt meadows
- Salt and gypsum continental steppes

Coastal Sand Dunnes and Continental Dunes
- Sea dunes of the Atlantic, North Sea and Baltic coasts
- Sea dunes of the Mediterranean coast
- Continental dunes, old and decalcified

Freshwater Habitats
- Standing water
- Running water
- Sections of water courses with natural or semi-natural dynamics (minor, average and major beds) where the water quality shows no significant deterioration

Temperate Heath and Scrub

Sclerophyllous Scrub (Matorral)
- Sub-Mediterranean and temperate
- Mediterranean arborescent matorral
- Thermo-Mediterranean and pre-steppe brush
- Phrygana

Natural and Semi-natural Grassland Formations
- Natural grasslands
- Semi-natural dry grasslands and scrubland facies
- Sclerophyllous grazed forests (dehesas)
- Semi-natural tall-herb humid meadows
- Mesophile grasslands

Raised Bogs and Mires and Fens
- Sphagnum acid bogs
- Calcareous fens

Rocky Habitats and Caves
- Scree
- Chasmophytic vegetation on rocky slopes
- Other rocky habitats

Forests
- (Sub)natural woodland vegetation
- Forests of temperate Europe
- Mediterranean deciduous forests
- Mediterranean sclerophyllous forests
- Alpine and subalpine coniferous forests
- Mediterranean mountainous coniferous forests

2.2 ANNEX II: *Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation*

The following species listed in ANNEX II of the Habitats Directive for which sites have been selected in Ireland as detailed in 'Living with Nature' booklet from the Department of the Environment, Heritage and Local Government.

- **Lesser Horseshoe Bat** *Rhinolophus hipposideros* (Ialtóg crúshrónach)

Ireland has the largest national population of Lesser Horseshoe Bats in Europe. It was once widespread in Europe, but its range has been contracting. Although Ireland is at the extreme northwestern edge of its range, over 157

roosts were reported in a national bat survey in 1994 and the national population is about 12,000. It is confined to western coastal counties. The largest maternity roost in Europe (428 counted in 1998) is in an old building in Dromore in Clare.

Lesser Horseshoe bat is one of nine bat species in Ireland. All Irish bats are listed under Annex IV of the Habitats Directive (species in need of strict protection). The rarest are Whiskered and Natterer's bats. Fewer than fifty roosts of each of these were recorded in 1994. Leisler's bat is the largest at twenty grammes and Europe's largest population is here. Brown long-eared bat is one of our common bats. Common Pipestrelle is our most widespread and abundant bat. It is the smallest at eight grammes. There are two other pipestrelle species. Daubenton's bat flies close to the surface of slow-flowing or still water.

Sources: Hayden and Harrington, 2000. Whilde, 1993. EPA, 2000.

- **Otter** *Lutra lutra* (Madre uisce)

Ireland has the densest population of otters in western Europe, occuring in freshwater and coastal habitats. They are widespread throughout Ireland and appear to be thriving. Unlike other countries, they live within city limits. Elsewhere in Europe it is thinly distributed or extinct in large parts of its original range.

The otter is the fourth largest mammal, after the three deer species. They are rarely found far from water. The otter is primarily a fish-eater, but diet differs in different parts of the country depending on what food is available. Frogs, freshwater crayfish, crabs and water birds are also eaten.

They require suitable bank-side vegetation as cover for their burrows or rest sites, termed holts. Otters are largely solitary and territorial. The area of the home range depends to some extent on food supply. Otters may have a number of burrows or holts in their home range. These are usually based in natural recesses under the edge of the riverbank, usually among root systems of trees. The trees most favoured are ash, sycamore and horse chestnut. Drainage, which canalises the riverbed destroys holt sites and bank-side vegetation.

Sources: Hayden and Harrington, 2000. Whilde, 1993. EPA, 2000

- **Grey Seal** *Halichoerus gyrpus* (Rón mór)

The grey seal is the larger and more abundant of the two seals resident in Irish waters. They are found all round the coast, more abundant along the

south, southwest and west coasts. Grey seals prefer more exposed coastal headlands and islands. The long sloping head of the grey seal distinguishes it from the common seal.

Sources: Hayden and Harrington, 2000.

- **Common Seal** *Phoca vitulina* (Rón breacach)

At the beginning of the 19th century, the common seal was the most abundant seal, but numbers declined. Common seals are found all round the Irish coast, particularly in sealoughs and estuaries, on the western seaboard and northeast coasts. They grow up to 1.5 metres in length. The smaller dog-like head distinguishes it from the bigger grey seal. They prefer sheltered waters within bays.

Sources: Hayden and Harrington, 2000.

- **Bottle-nosed Dolphin** *Tursiops truncates* (Deilf bolgshrónach)

In Ireland the main populations are in sea-loughs, estuaries and harbours on the west coast. They are also regularly seen in the Irish sea. The Shannon estuary hosts a resident population, one of only five known resident populations in Europe. Bottle-nosed dolphins are slaty-blue or grey above, whitish below, with a short snout and a slender sickle-shaped fin. They can grow up to four metres in length, weighing over 400 kilograms. Ireland's most famous dolphin is Fungi, a bottle-nosed dolphin which came to Dingle harbour in the winter of 1983.

Sources: Hayden and Harrington, 2000. EPA, 2000. Carruthers, 1998.

- **Porpoise** *Phocaena phocaena* (Much mhara)

The porpoise is the smallest and most common cetacean in Irish waters. It is a stoutly built, rotund animal with a blunt snout. The upper body is dark grey with a white belly. They are usually found near the shore.

Sources: Hayden and Harrington, 2000.

- **Lampreys:**
  - **Brook Lamprey** *Lampetra planeri* – live in sandy and gravely streams. They occur in the Erne catchment and limestone regions.
  - **River Lamprey** *Lampetra fluviatilis* - live in shallow inshore waters and accessible rivers. They were recorded in Lough Neagh and in east and south coast rivers

- **Sea Lamprey** *Petromyzon marinus* – live in deep offshore waters, shallow inshore waters, estuaries and easily accessible rivers. They are found around the Irish coast and in larger estuaries**.**

All three species are known to spawn in Irish rivers or streams. They were once widespread in Europe but stocks have declined in recent years although this has not been quantified for Irish populations. Water quality is implicated in the demise of populations as well as the impediment by weirs and dams to upstream and downstream migration. Nevertheless, Irish populations appear to be still widespread.

Sources: Whilde, 1993. EPA, 2000

- **Salmon** *Salmo salar* (Bradán) - in fresh waters only

Ireland has a widespread, abundant and self-sustaining population of Atlantic Salmon, which although under pressure from commercial exploitation, is not considered to be threatened at present. Elsewhere in Europe outside Britain, the species is considered to be endangered, locally threatened or extinct.

It is an example of a species listed in Annex V of the Habitats Directive (species whose taking in the wild and exploitation may be subject to management measures)

Sources: Whilde, 1993.

- **Twaite Shad** *Alosa fallax*

Twaite shad is a member of the herring family. It lives mostly at sea, entering lower reaches of slow flowing rivers to spawn. Populations were recorded in the Barrow, Nore, Suir and Cork Blackwater. **Killarney Shad or Goureen** *Alosa fallax killarnesis* - are confined to the Killarney lakes.

Sources: Whilde, 1993.

- **White-clawed Crayfish** *Austropotamobius pallipes*

The crayfish, which is not native to Ireland, is relatively common and widely distributed in limestone rivers and lakes but is under threat from a lethal fungus *(Aphanomyces astaci)* disease which has devastated stocks throughout Britain and Europe and which may have been responsible for the collapse of some Irish lake populations

Sources: EPA, 2000

- **Marsh Fritillary Butterfly** *Euphydryas aurinia* (Fritileán Réisc)

There are 28 species of butterfly in Ireland, including three migrant species. The Marsh Fritillary is widely recorded, but extremely localised colonies. It is found in rough grassy meadows and damp wood edges, unimproved grassland especially wet grassland, eskers and bogs.

Its larval food plant is devil's-bit scabious. The Irish populations of this beautifully patterned little butterfly constitute a distinct subspecies with a colour pattern somewhat different from other races.

The decline of the Marsh Fritillary is linked to the decline in unimproved grassland, heavy summer grazing, abandonment of grazing and the lack of enough suitable habitat patches in a region to accommodate their pattern of spreading over large areas in some years and contracting to core breeding patches in others.

Sources: EPA, 2000. Feehan and O'Donovan, 1996. Asher et al., 2001.

- **Kerry Slug** *Geomalacus maculosus*

The Kerry slug is common over a considerable area in the south-west where it lives among rocks, in heather moorland and rough pasture or more rarely in oak woods on moss-covered timber. There is no evidence that it is declining.

Two colour forms are found depending on habitat. The open country form is a charcoal colour with numerous white spots. The woodland form is bronze or ginger in colour with yellow or gold spots and yellowish mucus. Each form blends in well with their surroundings.

It eats a wide range of lichens, fungi, liverworts, mosses and algae, often concentrating on the fruiting bodies of these organisms.

Sources: EPA, 2000. Carruthers, 1998.

- **Freshwater Pearl Mussel**
  - *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.

Sources: EPA, 2000.

- **Whorl Snail** *Vertiginidae* family
  - *Vertigo angustior*
  - *Vertigo geyeri*
  - *Vertigo moulinsiana*

They like wetlands or marshy grounds. The status of V. angustior in Ireland is declining, considered vulnerable. V. moulinsiana is rare and V. geyeriis is endangered. The main threats are from drainage, afforestation or other land use changes, which reduce the size of their habitat.

Sources: EPA, 2000.

- **Killarney Fern** *Trichomanes speciosum*

This small fern with dark green, translucent leaves 8-25 cms long, occurs in dark, sheltered places with a humid atmosphere such as near waterfalls. Collecting, chiefly in the 19th century, has been responsible for its decline in some areas such as in south-west Ireland.

It is found beside waterfalls, in crevices between boulders, under overhanging rocks, and in similar damp, dark, sheltered situations. Formerly widespread, and fairly frequent in the South-west, it is now very rare and scattered, from Donegal and Fermannagh south and westwards to Mayo and Kerry with isolated populations in the centre and eastern counties.

Sources: EPA,2000. Webb et al., 1996. Fitter et al., 1996.

- **Slender Naiad** *Najas flexilis*

This is a slender submerged waterweed with narrow, grass-like leaves and minute green submerged flowers. It is found in lakes in the west, but is rare. It grows in deep water, and is usually seen as fragments washed ashore.

Sources: Webb et al., 1996. Fitter et al., 1996.

- **Marsh Saxifrage** *Saxifraga hirculus*

Saxifrages were some of the few species that could survive the great fluctuations in temperature which prevailed in Ireland as it was released from the ice. They grew and flowered during the first warm summers. They are found in wet bogs in Mayo and Antrim, but are very rare. They are low, downy, loosely tufted or mat forming. Flowers are bright yellow, often red spotted.

Sources: Pilcher and Hall, 2001. Webb et al., 1996. Fitter et al., 1996.

- **Mosses and Liverworts**
  - **Shining Sickle Moss** *Drepanocladus vernicosus*
  - **Petalwort** *Petallophyllum ralfsii*

Ireland, because of its moist climate is rich in mosses and liverworts. These bryophytes do not possess vascular systems or roots and are classed among the so-called lower plants. The number of species recorded for Ireland is 533 mosses and 226 liverworts.

Petalwort is a small liverwort found in coastal dune slacks and machairs. It occurs in scattered localities along the western seaboard, from Kerry to Donegal, as well as some dune sites in Dublin

Sources: EPA,2000.

2.3 ANNEX IV: *Animal and plant species of community interest in need of strict protection*

With regard to Annex IV, Regulation 23 of the European Communities (Natural Habitats) Regulations, 1997, sets out a system of strict protection for the following fauna listed in Part 1 of the First Schedule:

1. Mammals

- *Lutra lutra* (Otter)
- Cetacean Species
- Bat Species

2. Amphibians

Bufo calamita (Natterjack toad)

2.4 ANNEX V: *Animal and plant species of community interest whose taking in the wild and exploitation may be subject to management measures*

With regard to Annex V, Regulation 24 of the European Communities (Natural Habitats) Regulations, 1997, ensures that the taking in the wild, as well as their exploitation, is compatible with their being maintained at a favorable conservation status, of the following species of wild fauna and flora listed in Part II of the First Schedule:

1. Mammals

- *Martes martes* (Pine marten)
- *Lepus timidus* (Irish hare)
- *Halichoerus grypus* (Grey seal)
- *Phoca vitinula* (Common seal)

2. Amphibians

- *Rana temporaria* (Frog)

3. Fish

- *Lampetra fluviatilis* (Lampern)
- *Coregonus autumnalis spp. (Pollan)*
- *Alosa alosa* (Allis shads)
- Alosa fallax (Twaite shad)
- *Salmo salar* (Salmon) (only in freshwater)

4. Molluscs

- *Helix pomatia* (Edible snail)
- *Margaritifera margaritifera* (Freshwater pearl mussel)

5. Crustaceans

- *Austropotamobius pallipes* (White-clawed crayfish)

6. Lichens

- *Cladonia subgenus Cladina* (Reindeer Moss)

7. Mosses

- *Leucobryum glaucum*
- All Sphagna

8. Ferns and relatives

- *Lycopodium spp.* (Clubmosses)

3. BIRDS DIRECTIVE: Special Protection Areas

Council Directive of 2 April 1979 on the Conservation of Wild Birds (79/409/EEC

This Directive relates to the conservation of all species of naturally occurring birds in the wild state. It covers the protection, management and control of these species and lays down rules for their exploitation. It applies to birds, their eggs, nests and habitats.

The Annexes contain the following information:

ANNEX I: Species mentioned shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and conservation in their area of distribution.

ANNEX II/1: Species referred to may be hunted in the geographical sea and land area where this directive applies.

ANNEX II/2: Species referred to may be hunted only in the member states in respect of which they are indicated.

ANNEX III/1: The sale, transport for sale, keeping for sale and the offering for sale of live or dead birds and of any recognizable parts or derivatives of such birds shall not be prohibited in respect of these species, provided that the birds have been legally killed or captured or otherwise legally aquired.

ANNEX III/2: The sale, transport for sale, keeping for sale and the offering for sale of live or dead birds and of any recognizable parts or derivatives of such birds shall not be prohibited in respect of these species, making provision for certain restrictions, provided that the birds have been legally killed or captured or otherwise legally acquired.

3.1 ANNEX I: *Species mentioned shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and conservation in their area of distribution.*

Some of the 181 birds listed in Annex I, relevant to Ireland, as mentioned in the site descriptions for Special Protection Areas for Birds in Ireland (Dúchas, 2002)

Birds of Prey and Owls

- Hen Harrier *Circus cyaneus*
- Golden Eagle *Aquila chrysaetos*
- Osprey *Pandion haliaetus*
- Merlin *Falco columbarius*
- Peregrine *Falco peregrinus*

- Short-eared Owl *Asio flammeus*

Crakes and Rails
- Corncrake *Crex crex*

Passerines
- Nightjar *Caprimulgus eoropaeus*
- Kingfisher *Alcedo atthis*
- Chough *Pyrrhocorax pyrrhocorax*

Herons and Egrets
- Little Egret *Egretta garzetta*

Waders
- Golden Plover *Pluvialis apricaria*
- Ruff *Philomachus pugnax*
- Bar-tailed Godwit *Limosa lapponica*
- Wood Sandpiper *Tringa glareola*
- Red-necked *Phalarope Phalaropus*

Waterfowl
- Bewick's Swan *Cygnus columbianus bewickii*
- Whooper Swan *Cygnus Cygnus*
- Greenland White-fronted Goose *Anser albifrons flavirostris*
- Barnacle Goose *Branta leucopsis*
- Ferruginous Duck *Aythya nyroca*
- Smew *Mergus albellus*

Divers and Grebes
- Red-throated Diver *Gavia stellata*
- Black-throated Diver *Gavia arctica*
- Great Northern Diver *Gavia immer*
- Slavonian Grebe *Podiceps auritus*

Seabirds
- Storm Petrel *Hydrobates pelagicus*
- Leach's Petrel *Oceanodroma leucorhoa*

Gulls,Terns and Skuas
- Mediterranean Gull *Larus melanocephalus*
- Black Tern *Chlidonias niger*
- Sandwich Tern *Sterna sandvicensis*
- Common Tern *Sterna hirundo*
- Roseate Tern *Sterna dougallii*
- Little Tern *Sterna albifrons*
- Atic Tern *Sterna paradisaea*

3.2 Habitat and Status of some species relevant to farming

Source: Dempsey and O'Cleary, 2002

Hen Harrier *Circus cyaneus* (Cromán na gcearc)
A scarce breeding species with small numbers present in the midlands, eastern, south-western, western and northern regions. In summer, found on mountains and moorlands, nesting on the ground. Also nests in young conifer plantations. Breeding numbers appear to be declining. In winter, birds can be found in most parts of Ireland with some hunting over coastal areas. Hen harriers can roost communally in winter.

Golden Eagle *Aquila chrysaetos* (Iorlar fíréan)
Formerly a widespread breeding species. By the first decade of the twentieth century, breeding was confined to areas in Mayo and Donegal. Now a rare visitor with most reports referring to northern and north-eastern regions. Can occur at any time of the year. As part of the 'Millennium Project', Golden Eagles are being reintroduced into Donegal in an attempt to establish a new breeding population. Frequents wild coastal islands and headlands, and inland mountainous regions.

Short-eared Owl *Asio flammeus* (Ulchabhán réisc)
A scarce, thinly-distributed passage and winter visitor to Ireland from Iceland, northern Europe, Scotland and northern England. Breeding has occurred in the west and south-west, with summering birds being recorded in other regions on occasions. Found on the ground or perched on posts close to rough vegetation, usually in coastal marshes or dunes. Also found in stubble fields, bogs and moorlands. Nests on the ground in heather, grass or gorse.

Corncrake *Crex crex* (Traonach)
Formerly an extremely common summer visitor. Corncrakes have suffered a drastic population decline during this century. Between 1968 and 1972, Corncrakes were still breeding in all counties, but now are only present in small numbers along the Shannon Callows and areas in the west and north-west, with numbers still declining. Now a rare breeding bird. Found in rough pastures, meadows, flooded meadows and crop fields.

Nightjar *Caprimulgus eoropaeus* (Tuirne lín)
Formerly a widespread summer visitor. Nightjar is now a very rare breeding species and passage migrant. Small breeding populations are found most

years in some south-western, western and midland counties, with occasional reports from northern and eastern regions. Frequents felled woodland and conifer plantations with open moorland areas. On passage, found on coastal headlands and islands, usually flushed from ground vegetation or trees.

Kingfisher *Alcedo atthis* (Cruidín)
A common resident bird found in all counties. Found along rivers, streams, on lakes, canals and marshes. In winter, can occur on coastal estuaries and bays, occasionally found feeding on channels on tidal marshes. Nests in excavated tunnels on banks of rivers, streams and canals.

Chough *Pyrrhocorax pyrrhocorax* (Cág cosdearg)
An uncommon bird of rugged headlands and islands. Found along southern, western and northern coastal areas. Choughs are very rare in most eastern regions. Feeds in sand-dune areas or on short-cropped grass. Nests in coastal cliff holes or caves. Its name in Irish - Cág cosdearg aptly describes it as a red legged crow.

Whooper Swan *Cygnus Cygnus* (Eala ghlórach)
A common winter visitor to lakes and marshes. They can also be found in large mixed flocks grazing on fields and sloblands. Breeding in Iceland and northern Europe, Whooper Swans arrive in Ireland in late autumn, and leave by mid-April, although a few may remain throughout the summer. They were first recorded breeding in Ireland in 1992.

Greenland White-fronted Goose *Anser albifrons flavirostris* (Gé bhánéadanach)
Ireland holds approximately half of the world's wintering population of the Greenland race. The main population is concentrated in the south-east, with smaller numbers present in the midlands, the west and the north-west. Found on open grasslands, sloblands, marshland areas and loughs. At coastal localities, can roost on estuaries or sandbanks.

3.4 NATURA 2000 SITES

The following table shows the number of NATURA 2000 sites in each county. They are categorised according to predominant habitat type. Obviously many include more than one habitat type within the site. Some sites cross county boundaries and are mentioned in all counties concerned. Individual site descriptions are available, which are relevant to local areas.

	Peatland	Mountain	Grassland	Eskers	Machairs	Turloughs	Callows	Limestone pavement	Cave, Quarry Buildings	Woodland	Rivers	Estuaries	Lakes	Coastal	TOTAL
Carlow		1									3				4
Cavan	1	3									1		1		6
Clare	3	1	1			2		2	13	2	2	1	4	3	34
Cork	2	3								7	4	1	2	10	29
Donegal	11	3				1				2	2		9	20	48
Dublin			1							1		2		6	10
Galway	8	3	1	1	3	14	1	2	3	5			12	10	63
Kerry	3	3							4	3	3	1	3	8	28
Kildare	3										2		1		6
Kilkenny	4					1			1		2				8
Laois	2	1	1	1							1				6
Leitrim		4			1								1		6
Limerick	2	3	1							3	2				11
Longford						1									1
Louth		1									2			3	5
Mayo	9	4			1	8		1	4	2	1		7	12	49
Meath	1										3		1		5
Monaghan													1		1
Offaly	8	1		4			1			1	1		1		17
Roscommon	7		1	1		6	1						4		20
Sligo	3	2			1	1				1	1	1	2	4	16
Tipperary	3	6	2				1			1	5				18
Waterford		1								3	3			4	11
Westmeath	3			1			1				1		5		11
Wexford		2	1								2		2	10	17
Wicklow	2	1								5	2			5	15

From: **NATURA 2000 sites on website which includes individual site descriptions: www.duchas.ie/en/NaturalHeritage/SitesdesignatedforNatureConservation/SACSPASiteInformation**

4. NATURA 2000 sites in REPS

The following is the procedure for NATURA 2000 sites in REPS from the Department of Agriculture (2000, p.51). The planner(s) shall outline the boundary of the non-commonage target area on the map with an orange line.

The area within the orange line shall be established by the Planner. Information available from Duchas relating to the condition of the vegetation and habitat type and destocking/grazing requirements should be copied onto the map. Where such information is not available the planner and environmentalist shall walk as much of the site as is necessary to determine the condition of the vegetation, habitat type and percentage destocking/grazing reduction.

Mark on the map the habitat type and the condition of the vegetation. Planners should take a representative series of photographs with their precise location noted on the map. At least 4 close detail colour photographs, standard size, are required to show the range of habitats, condition of the vegetation and any special items. As well as close detail photographs 2-3 medium landscape shots should be taken. Photographs should be dated and numbered on the back according to the map location and be included with the REPS application.

5. CONCLUSIONS

- **Need for Information**

There is a great need for awareness about NATURA sites and their objectives. Information and knowledge is required to have informed discussions and decisions on agri-environmental issues. Farmers are interested in agri-environmental issues and are a great source of local knowledge.

- **Important Role**

Agricultural advisers and agri-environmentalists are in a unique position to access relevant information and interpret it for each farmer, whether in REPS or not. It is hoped this paper will help.

Sources of Information

Asher, J., Warren, M., Fox, Harding, P., Jeffcoate.G. and Jeffcoate. S., 2001
The Millennium Atlas of Butterflies in Britain and Ireland. Oxford.

Carruthers, T., 1998
Kerry: A Natural History. Collins, Cork.

Dempsey, E. and O'Clery, M, 2002
The Complete Guide to Ireland's Birds. Gill and Macmillan, Dublin.

Department of Agriculture, Food and Rural Development, 2000

Agri-Environmental Specifications for REPS 2000.

Department of the Environment, Heritage and Local Government
Living with Nature: The Designation of Nature Conservation Sites in Ireland.,

Dúchas, 2002
Special Protection Areas for Birds in Ireland.

EPA, 2000
Ireland's Environment: A Millenium Report. EPA, Wexford

Feehan, J. and O'Donovan, G., 1996
The Bogs of Ireland. UCD

Fitter, R., Fitter, A. and Blamey, M., 1996
Wild Flowers. HarperCollins, London.

Hayden, T. and Harrington, R., 2000
Exploring Irish Mammals. Duchas, Dublin.

Phillips, R., 1994
Grasses, Ferns, Mosses and Lichens of Britain and Ireland. Macmillan, London.

Pilcher,J. and Hall, V., 2001
Flora Hibernica. Collins, Cork.

Statutory Instruments: S.I. No. 94 of 1997, Government Publications, Dublin.

Webb, D.A., Parnell, J. and Doogue, D., 1996
An Irish Flora. Dundalgan, Dundalk.

Whilde, A., 1993
Threatened Mammals, Birds, Amphibians and Fish in Ireland. HMSO, Belfast.

Details of the Directives are on the website:
www.europa.eu.int/comm/environment/nature/legis.htm

Details of NATURA 2000 sites on COUNTY basis are on the website:
www.duchas.ie/en/NaturalHeritage/SitesdesignatedforNatureConservation/SACSPASiteInformation

Restoration at a Mayo NATURA 2000 Site

Dave Suddaby, Termoncarragh LIFE Project Officer, BirdWatch Ireland

Brief Abstract

BirdWatch Ireland, in partnership with Teagasc, are carrying out a major project with the support of EU LIFE-Nature III funding, based on the Mullet Peninsula in north-west Mayo. The project, which is concentrated on the Termoncarragh Lake Special Protection Area (SPA), aims to restore habitat and manage farmland for the benefit of a range of breeding and wintering bird species on the Mullet through restoration management on BirdWatch Ireland land and through management agreements with local landowners on surrounding farmland.

BirdWatch Ireland's Annagh Marsh reserve is an important part of the Termoncarragh Lake SPA and the last recorded breeding site for Red-necked Phalaropes in Ireland. As in much of the rest of Ireland, more intensive farming practices in the Mullet Peninsula in recent decades have led to declines in farmland birds. Management agreements will therefore aim to deliver ideal habitat conditions for the most threatened species. The emphasis will be on more active, positive management than is possible under the current agri-environment schemes, and the areas will be used to demonstrate how agri-environment prescriptions under the Rural Environment Protection Scheme or future schemes could be integrated with conservation management for species and habitats in Natura 2000 sites.

Introduction

BirdWatch Ireland, in partnership with Teagasc, was awarded EU LIFE-Nature III funding for a project based on the Mullet Peninsula in north-west Mayo. The project, which is concentrated at the Natura 2000 site: Termoncarragh Lake Special Protection Area (SPA), aims to restore habitat and manage farmland for the benefit of a range of breeding and wintering species on the Mullet, primarily Annex I species of the Birds Directive, these being Corncrake, Red-necked Phalarope, Barnacle Goose and Greenland White-fronted Goose, through restoration management on BirdWatch Ireland land and through management agreements with local landowners on surrounding farmland.

As in much of the rest of Ireland, more intensive farming practices in the Mullet Peninsula in recent decades have led to declines in farmland birds. Management agreements therefore aim to deliver ideal habitat conditions for the most threatened species with the emphasis on more active, positive management than is possible under the current agri-environment schemes. These areas will be used to demonstrate best practice in the management of farmland to benefit nature conservation.

Project area – description

The project area is 424 ha in size, 377 ha of which is designated as the Termoncarragh Lake SPA due primarily to the internationally important wintering goose populations. Termoncarragh Lake is a shallow freshwater lake, with well developed marsh and swamp vegetation around the margins surrounded by areas of machair and grassland, which are farmed to varying degrees of intensity. This is part of one of the largest and most important machair sites in Ireland. In a survey of 46 machair sites in 1996 this site was found to be one of only five sites which merited a grade I rating in both that survey and an earlier one in 1985.

The lake and surrounding areas are of importance for wintering wildfowl, including Barnacle Geese and Greenland White-fronted Geese and also Whooper Swan and wintering Golden Plover, as well as for breeding waders, including, in the recent past, Red-necked phalarope at Annagh Marsh.

Annagh Marsh is adjacent to Termoncarragh Lake, and is a BirdWatch Ireland reserve. The habitat include species-rich dry grassland, wet grassland, sedge-rich meadow, marsh and open water, and is an important site for breeding waders. In the past, Annagh Marsh was the most regular breeding site for Red-necked Phalarope in Ireland and was last noted in the early 1990s, but breeding has not been confirmed since 1986. The marsh was also the most southerly regular breeding limit of this species in the world, with breeding first recorded in 1902.

The habitats within the Project Area are, broadly, 80 ha being classified as machair grassland, 80 ha as improved grassland, 60 ha as wet marsh/grassland, 90 ha as open water/reed edge and the rest as marine (sea inlets and sand beaches), with the farming practices being predominately drystock cattle and sheep grazing with smaller areas utilised as hay and silage meadows.

Priority species - requirements and threats

- **Corncrake**

In Ireland, Corncrake breeds almost exclusively in hay and silage meadows. Tall vegetation (greater than 20 cm) throughout the breeding season is essential for breeding success. Birds use early-growing species such as reed sweet grass, reed canary grass, Yellow flag iris and nettle and occasionally common reed for shelter and feeding early in the season, and move into meadows as the grass grows tall enough. In areas where much of the grass is harvested over a short period, so that there is little re-growth to shelter

Corncrake, the availability of late season cover at field and drain margins is also important.

Research indicates that this species is relatively site-faithful in Ireland, with individuals returning to the same general area (within several kilometres, but usually much closer) each year to breed. As agricultural intensification has progressed at varying speeds throughout the country, Corncrake has become restricted to areas where "traditional" farming methods have been retained - the north-western seaboard counties, and the floodplains of the River Shannon.

Most females attempt to raise two broods per year, with peak hatching dates in mid June and late July. It is now known that the production of two broods is essential if numbers are to be maintained, and mowing date is therefore a key element in the conservation of this species.

Main threats to the population

The main threat faced by Corncrake in Ireland is reduced breeding success due to intensification of agriculture. Increasingly sophisticated machinery and a trend towards silage production have led to earlier mowing dates and more rapid completion of mowing. As a result, the production of a second brood of young, which is essential for the maintenance of numbers, is curtailed. Corncrake are also threatened by loss of suitable habitat, as hay meadows are converted to pasture, with a consequent loss of tall vegetation early in the season and during the summer, through agricultural abandonment and developments.

Intensive research has demonstrated that the change in agricultural practices in Ireland and Britain can account for the entire decline seen in Corncrake numbers, and the different rates of decline seen in different areas. These studies have also shown clearly the requirements of Corncrake on the breeding grounds:

- Early season vegetative cover, such as yellow flag iris, nettle and reed grasses
- Mowing delayed until Corncrake have hatched two broods
- Centre-out mowing
- Adequate cover for adults and chicks late in the season after meadows have been cut

The threats to Corncrake in the Termoncarragh Lake SPA are the result of these requirements not being adequately provided.

- **Red-necked Phalarope**

Red-necked Phalarope breed at sites with open water, emergent swamp vegetation and wet and damp marsh. Open water is necessary for courtship and copulation as well as feeding. Emergent vegetation, usually sedges and bog bean is important for feeding adults. Wet marsh (with bog bean, marsh cinquefoil etc) is required as a feeding area for chicks and adults. Nests are usually located within tussocks in the transitional zone between wet marsh and dry grassland with sedges etc being predominant. Maintenance of all of these habitat components in a mosaic is critical for successful breeding.

The management of breeding sites, through creation of small pools and prevention of drainage is thought to be the most important conservation measure. Gaining control over water levels is an important step in the restoration of suitable habitat. Thereafter, a mosaic of pools, emergent vegetation and wet and damp marsh need to be created and maintained, through management of cattle grazing and water levels.

Main threats to the population

Threats to breeding Red-necked Phalarope include the effects of drainage and loss of a suitable mosaic of habitats. Human disturbance and trampling by grazing animals are also potential problems. At Annagh Marsh natural vegetation succession has occurred through inadequate management of the vegetation and as a result there has been a loss of open water pool areas and loss of suitable sparse structure of emergent vegetation.

- **Barnacle Geese and Greenland White-fronted Geese**

Both species return to their wintering grounds in October and stay until late April. During that time, population levels are quite constant within the main sites, although some movement within site complexes occurs, which is the case on the Mullet Peninsula.

Barnacle Goose is a coastal species in its winter distribution, usually occurring on salt marshes or agricultural pastures within 5 km of the sea. Traditionally, Greenland White-fronted Goose preferred raised and blanket bogs and freshwater marshes in winter. Now they use a variety of habitats, including unimproved grassland, callows and turloughs, machair, arable farmland, stubbles and mires with an increasing tendency to move to improved grasslands. They show high site fidelity in wintering areas, both between years and in the particular feeding areas utilised in any one winter.

Both species are very gregarious on the wintering grounds, both on the roost and when feeding. Highly digestible foods to meet energy requirements are needed to buffer against energy lost through disturbance therefore the food consists of a wide range of wild and cultivated grasses, clover, the seeds and leaves of salt marsh plants and spilt grain in stubbles (for Barnacle Goose).

This is similar to that for Greenland White-fronted Goose, where they feed on a range of vegetation including autumn stubble, poor agricultural grasses, plant roots and bulbils particularly white-beaked sedge and common cotton grass at bog sites.

Ideal feeding conditions can be affected both by intensification in grazing and by a reduction in grazing (as agricultural land is abandoned and the consequent growth in vegetation beyond suitable sward heights for geese).

Main threats to the population

A lack of suitably large enough managed grazing areas (and of winter stubble) reduces the amount of time spent on the site by wintering geese. With small areas the food supply is not large enough to support many birds for long periods.

Studies in Ireland have highlighted the importance of range size to energy costs and therefore to the condition of over-wintering geese. The probability of remaining on site after a disturbance flight increases with increasing site size, so average flight duration is lower on larger sites. In addition, disturbed geese spend longer selecting alternative feeding locations on smaller than on larger ranges and smaller sites may provide comparatively poor circumstances for obtaining the required quality and quantity of food. Small flocks on small sites may have to spend more time on the alert for predators and have less time to feed. A lack of suitable feeding habitat may therefore lead to a reduction in the local population.

Progress and results to date

- ***Restoring Annagh Marsh***

Following the production of an Annagh Marsh Reserve Management Plan, written consent by the Minister for the Environment, Heritage and Local Government, under the European Communities (Natural Habitats) Regulations 1997 was granted for the proposed management work. During September 2002, open water areas were created using anexcavator (under contract) on support mats. The original pool areas were cleared out and increased in size to produce a long linear pool with one edge being 'stepped' to produce underwater shelves of depths varying between 15cm and 50cm. These provide different pool depths and therefore different water temperatures which benefits aquatic macrophytes and invertebrates, which benefits the breeding birds, particularly breeding waders, such as Red-necked Phalarope.

In addition, appropriate cattle grazing regime has be re-introduced. Although ownership of Annagh Marsh was transferred to BirdWatch Ireland in the 1960s, the grazing rights are held by 18 former commonage tenants. Today, of these graziers only a small number are interested in continuing to graze the Marsh. Working with these graziers an appropriate cattle grazing regime has been re-introduced with the annual stocking density set at 0.3 LSU/ha and grazing is only permissible during the period August to October, thereby eliminating the risk of trampling to ground nesting birds and reducing the risk of causing detrimental damage to the marsh through excessive poaching during the winter months.

Prior to the restoration management starting the breeding wader populations have been showing a distinct decline in numbers e.g. Lapwing has declined from 40 pairs (1980s) to 22 pairs (1996) to 12 pairs (2002) and Dunlin has declined from 25 pairs (1980s) to 14 pairs (1996) to 4 pairs (2002). Redshank was not recorded at all during 2002 breeding season. The previous population levels were 12 pairs (1980s) declining to 1 pair (1996), which was the last documented record of breeding Redshank within the Termoncarragh Lake SPA. Red-necked Phalarope were last confirmed breeding in 1986.

However, the breeding wader populations have started to increase which is attributable to the restoration management work at Annagh Marsh in autumn 2002. Lapwings have increased to 18 pairs and encouragingly 2 pairs of Redshank were recorded breeding in 2003. The numbers of pairs of Dunlin have been maintained, but unfortunately no Red-necked Phalarope were seen during 2003. The marsh will continue to be grazed at an appropriate level to maintain the area in favourable condition, both in terms of vegetation mosaic and pool structure. This management is also being extended to around the lake edge working with farmers through management agreements to provide the vegetation mosaic required by breeding waders, to further enhance breeding numbers and maximise the habitat available.

- ***Management through agreements***

Species Management Action Plans were produced, which included identifying the area of priority habitat present in the SPA for each of the targeted species. These amounted to 50 ha for inclusion under Corncrake agreements, 20 ha for inclusion under Red-necked Phalarope agreements and 30 ha for inclusion under Barnacle Goose and Greenland White-fronted Goose agreements. As with Annagh Marsh, written consent by the Minister for the Environment, Heritage and Local Government, under the European Communities (Natural Habitats) Regulations 1997 was granted for the proposed management work.

Management Agreement prescriptions aim to address all the ecological requirements for each of the targeted species within the areas identified as

suitable for management for the respective species. These management prescriptions and payment levels were presented to the farmers within the Project Area in October 2002. Uptake to the scheme is on a voluntary basis, but is subject to suitable habitat on their land within the Project Area being available for the targeted species and payment conditional on the full compliance with a signed agreement. Agreements have only been available for one season due to the life span of the project funding.

In summary, habitat management options for each targeted species include

Corncrake
- late centre-out mown meadow with early/late cover provided
- late grazed meadow with early/late cover provided
- late centre-out mown (or grazed) meadow only
- creation of early and/or late season cover

Red-necked Phalarope
- wet marsh and lake edge grazing regime

Wintering geese
- non-grazing areas and non-disturbance over the winter months
- an appropriate vegetation management regime
    - mechanical topping of grassland areas
    - mechanical topping of areas heavily infested with soft rushes
    - enhancement of improved grassland areas
    - provision of a tillage crop

- ***Management Agreements for Corncrake***

Approximately 46 ha of the targeted area for Corncrakes were under management agreement as tall meadow grass for the 2003 breeding season, and were successful in attracting a breeding Corncrake. Of this area, approximately 20 ha was managed as meadow grass with early/late cover enhancement and 'centre out' mowing after 1 August (or later in the area with the breeding Corncrake), 15 ha as meadow grass with early/late cover enhancement but grazed after 1 August and the rest as meadow grass with no early/late cover enhancement but grazed after 1 August.

These management agreement areas were all inter-connected and acted as habitat corridors of tall grassland across the Project Area.

- ***Management Agreements for Red-necked Phalarope***

Following the success of the restoration of Annagh Marsh, 19 ha of wet marsh and/or lake edge is under management in autumn 2003 to benefit the 2004 breeding season. The management involving the grazing of rank vegetation associated with wet marsh and the lake edge between August and October.

- ***Management Agreements for Wintering Geese***

Approximately 26 ha of the specific areas of focus for management actions under Management Agreement for wintering geese have been signed up. This includes 16 ha targeted for Barnacle Geese and 10 ha for Greenland White-fronted Geese. Of these areas, 9 ha is improved grass management and 5 ha is rush management which is being carried out prior to the geese returning in the autumn. The rest is under management for non-disturbance to the geese during the winter months and 1 ha as tillage with the retention of winter stubbles/spoilt seed as an undisturbed food source.

Over the first winter (2002/03), this management has increased the numbers of geese utilising the area particularly during the period from December to March where between 900 and 1,200 Barnacle Geese were present on the management agreement areas during the day with a peak count of 1,222 on 13 January 2003 (compared to a peak count of 581 in winter 2001/02), and 52 Greenland White-fronted Geese (compared to a peak count of 32 in winter 2001/02). Of interest, one of the Greenland White-fronted Geese had a plastic neck collar with the number C2P inscribed which had been fitted as part of the studies into this species by the International Greenland White-fronted Goose Working Group. From this neck collar we know that the bird was ringed in West Greenland in July 1997, and was a successful breeding female that year. Since then the bird has been faithful to the wintering grounds on the inner Hebridean island of Islay, Scotland. It is unusual for a bird so regular on Islay to shift wintering site in this way.

- ***Demonstration***

These management areas are being used as a demonstration of best practice with regular courses held on site for REPS farmers which are organised both by Teagasc and private agricultural consultants (up to 180 farmers visited the site during autumn/winter 2002). These areas are also being utilised as a resource for advisors e.g. Teagasc Environmental planners in June 2003, and in demonstrating a principle of managing an area as a large unit requires the co-operation of those land owners and farmers to maximise the areas wildlife diversity. This starts with the strategic planning of an area with consultation at all levels, followed by the development of individual agri-environmental plans to build the bigger picture and deliver the management prescriptions to maximise the wildlife diversity of the area. It is these aspects that we aim to continue and expand for the duration of the project as the impacts of the management develop.

Summary
This project is providing a great opportunity to restore and enhance habitats for priority bird species within a Natura 2000 site through a targeted habitat management scheme, and provides the opportunity to work with the farming community to demonstrate how agri-environment prescriptions under the Rural Environment Protection Scheme or future schemes could be integrated with conservation management for species and habitats in Natura 2000 sites. The aim is to further develop this demonstration aspect (through presentations at such events as the National REPS Conference and through on-site visits, the production of 'farming and birds' advisory leaflets etc) and form a key element of a positive information campaign, aimed at counteracting some of the concerns of the farming community, especially in the West of Ireland, about Natura 2000 (SPA and SAC) designation and management.

By highlighting the positive aspects of environmental designations and the economic benefits they can have in disadvantaged rural areas, we hope to promote the sensitive management of Ireland's natural heritage resources, supporting the long-term viability of this country's Natura 2000 network.

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Title: Restoration Management for Annex I Birds at Termoncarragh Lake SPA