



R.A.P.T.O.R.

**Recording and Addressing Persecution and
Threats to Our Raptors**

2011

PREPARED BY

NATIONAL PARKS & WILDLIFE SERVICE
DEPARTMENT OF ARTS, HERITAGE AND THE GAELTACHT

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SUMMARY

This is the first report on non-habitat, human related impacts on birds of prey in Ireland. Such reports will in future be published annually.

In 2011, a total of 33 poisoning or bird of prey persecution incidents were confirmed in Ireland. This included 24 bird of prey deaths. Of these, 15 individuals died from toxicosis. Eight birds were confirmed to have been shot. Another bird died from injuries induced by after sustaining human inflicted injuries to one of its wings. Four further birds were suspected to have been poisoned but tests were not possible due to the level of body decomposition. A number of anecdotal and unconfirmed incidents were also recorded and while not detailed in this report are held in a database for informative purposes.

Of the raptors known to have been poisoned or persecuted in 2011, the most frequent casualty was Red Kite (10 dead, 7 of which were probably poisoned accidentally), followed by Common Buzzard (7), Peregrine Falcon (4), Sparrowhawk (2) and Kestrel (1). Golden Eagle, White-tailed Sea Eagle and Hen Harrier have featured on the confirmed poison/persecution list in recent years, but not in 2011. Two Grey Herons, twenty Rooks and multiple gulls, pigeons and corvids were among the other birds known to have been poisoned or persecuted in 2011.

This report makes recommendations on improving reporting and recording of raptor injury and mortality incidents and increasing public awareness and education, in a bid to combat illegal bird of prey persecution and poisoning.

1. INTRODUCTION

This is the first annual report arising from a national scheme to monitor human related mortality in Irish birds of prey and other wildlife species.

In 2011, a protocol for dealing with suspected poisoning or persecution incidents was agreed between the National Parks & Wildlife Service (Department of Arts, Heritage & the Gaeltacht), the Veterinary Laboratory Service (Department of Agriculture, Food and Marine) and The State Laboratory (Department of Finance). The full text of the protocol is presented in Appendix 5. The majority of records produced in this report have been derived from work under this protocol. The NPWS Bird of Prey Persecution and Poisoning Database was also set up in 2011. The protocol and annual reports arising from the protocol are in response to an EU Pilot case, EU-PILOT 1451/10/ENVI, which raised the point that Ireland did not have any formal protocol for assessing and reporting on the impact of poisoning on vulnerable raptor populations.

The national scheme to monitor human related mortality in Irish birds of prey and other wildlife species has seven key aims:

1. Collection of evidence to support prosecutions for illegal poisoning.
2. Monitoring of the impact of poisoning on Irish raptor populations.
3. Monitoring the incidence of poisoning and impact of illegal poisoning on other vulnerable species (e.g. Raven)
4. Monitoring the incidence of poisoning in species vulnerable to secondary poisoning by rodenticides (in particular Common Buzzard, Barn Owl, Kestrel, Red Kite and Long-eared Owl).
5. Monitoring the impact of other types of persecution on Irish raptors and maintaining a database of such incidents.
6. Providing evidence of the causes of death of other wildlife species where poison is strongly suspected
7. Quantifying the use of specific poisons.

The primary aim of this report is to describe all bird of prey persecution and poisoning incidents that were logged to the National Parks & Wildlife Service Bird of Prey Persecution and Poisoning Database. By doing so, initial steps will have been taken to identify the impact of poisons on raptors and other wildlife in Ireland, black spots for persecution and poisoning may be identified, the types of poison and persecution employed will be known and a more informed approach to dealing with these issues will be made possible. By adding to and improving this database over time, a clearer picture of persecution and poisoning will emerge, counter-active measures can be applied and the success of dealing with such incidents can be assessed.

2. CONFIRMED PERSECUTION AND POISONING INCIDENTS 2011

Table 1 lists all persecution and poisoning incidents that were confirmed and recorded in 2011, while Figure 1 displays the geographical location of these poisoning incidents.

Table 1. Confirmed Persecution & Poisoning Records 2011

No.	10km sq	County	Month	Bait	Receiving Species	Cause of Death†	Comments
1	V44	Cork	Mar	Egg, sheep wool	-	-	Nitroxylnil
2	F71	Mayo	Apr	-	Hooded Crow	Poison	Alphachloralose
3	-	Kerry	Apr	-	Hooded Crow	Poison	Alphachloralose
4	S19	Offaly	Jul	Pigeon	-	-	Carbofuran. Associated with deaths of 2 Common Buzzards (see 6 and 7)
5	S19	Offaly	Jul	-	Common Buzzard	Poison	Carbofuran
6	S19	Offaly	Jul	-	Common Buzzard	Poison	Carbofuran
7	T18	Wicklow	Jul	Pigeon	-	-	Alphachloralose. Associated with death of Peregrine Falcon (see 9)
8	T18	Wicklow	Jul	-	Peregrine Falcon	-	Alphachloralose
9	O26	Dublin	Jul	-	Red Kite	Poison	Brodifacoum*
10	S19	Offaly	Jul	-	Sparrowhawk	Poison	Carbofuran
11	Q96	Clare	Jul	-	Peregrine Falcon	Shot	5 birds (including 2 Grey Herons shot in this 10k square in July). Probable more not found.
12	Q96	Clare	Jul	-	Kestrel	Shot	5 birds (including 2 Grey Herons shot in this 10k square in July). Probable more not found.
13	Q96	Clare	Jul	-	Sparrowhawk	Shot	5 birds (including 2 Grey Herons shot in this 10k square in July). Probable more not found.
14	N74	Meath	Aug	-	Common Buzzard	Shot	-
15	N93	Kildare	Aug	-	Gulls, Corvids, Pigeons	Poison	Brodifacoum (direct poisoning of multiple birds)
16	T27	Wicklow	Aug	-	Common Buzzard	Poison	Alphachloralose
17	T27	Wicklow	Sep	-	Red Kite	Poison	Alphachloralose
18	H40	Cavan	Sep	-	Common Buzzard	Shot	-

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19	N80	Kildare	Oct	-	Common Buzzard	Shot	-
20	B92	Donegal	Nov	Lagomorph	-	-	Nitroxylin
21	B61	Donegal	Nov	Lagomorph	-	-	Nitroxylin
22	C20	Donegal	Nov	-	Rook (x20)	Poison	Alphachloralose
23	O25	Dublin	Nov	-	Red Kite	Poison	Brodifacoum*
24	O26	Dublin	Nov	-	Red Kite	Poison	Brodifacoum*
25	T28	Wicklow	Nov	-	Red Kite	Poison	Alphachloralose
26	O25	Dublin	Nov	-	Red Kite	Poison	Brodifacoum*
27	O25	Dublin	Nov	-	Red Kite	Poison	Brodifacoum*
28	T38	Wicklow	Dec	-	Red Kite	Poison	Alphachloralose
29	O25	Dublin	Dec	-	Red Kite	Poison	Brodifacoum*
30	O25	Dublin	Dec	-	Red Kite	Poison	Brodifacoum*
31	S77	Carlow	Dec	-	Common Buzzard	Shot	Shot by Rifle
32	R55	Clare	-	-	Peregrine Falcon	Shot	-
33	R44	Limerick	-	-	Peregrine Falcon	Injury	Wing cut off

† Poison determined where significant/lethal levels present

*Brodifacoum is the principal agent in rat poison and these birds may have been inadvertently killed through secondary poisoning.

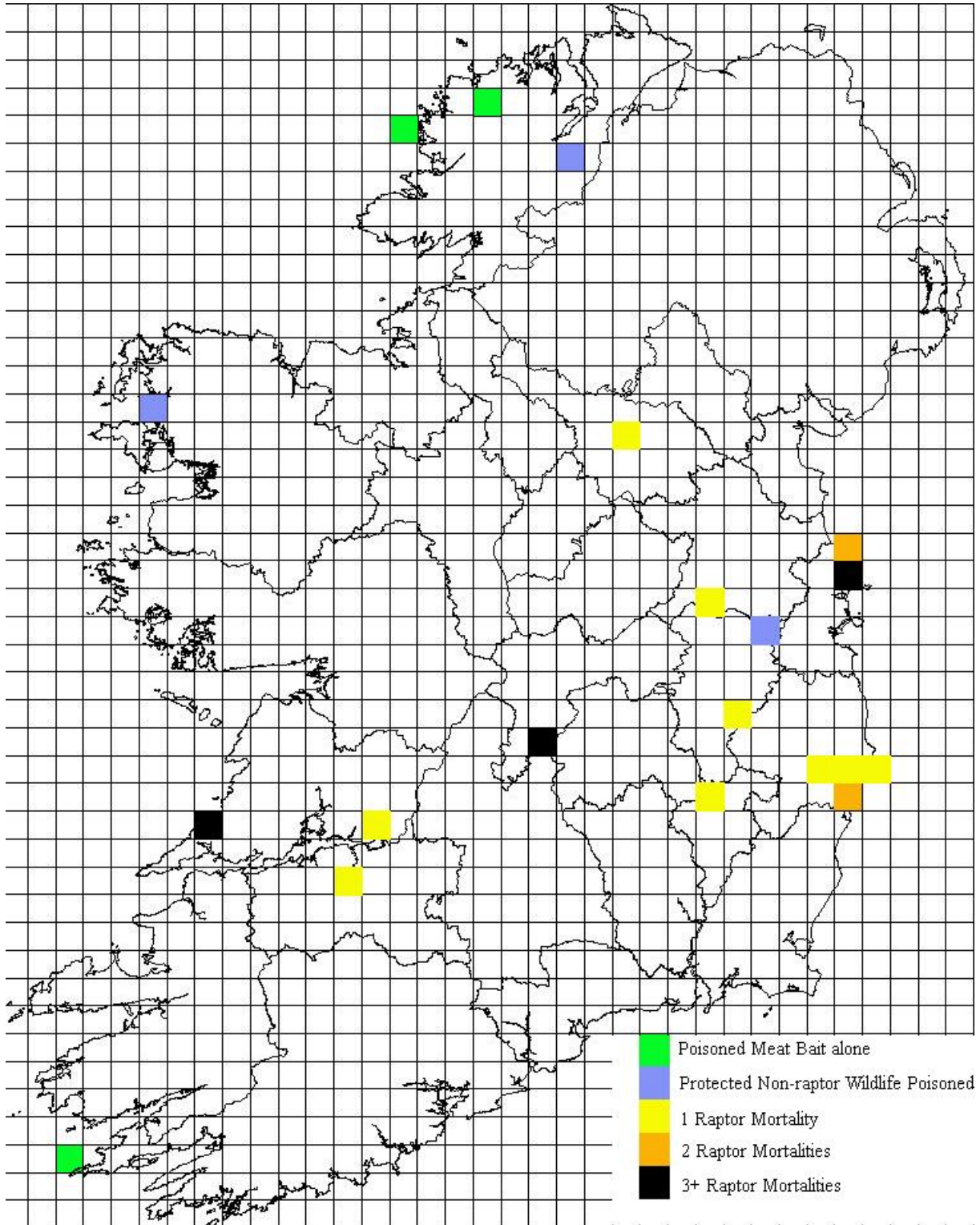


Figure 1. Map of Confirmed Poisoning and Persecution Incidents in Ireland 2011.

3. DISCUSSION OF RESULTS

While in 2011, 15 birds of prey were recorded as having being poisoned and 9 as otherwise persecuted, this is likely to be a fraction of the number of incidents that occurred in total. As the monitoring scheme continues and expands in the future, a more complete picture of such threats to our native birds of prey will emerge. This will inform the authorities of where best to target actions to prevent such incidents re-occurring.

A high proportion of records in 2011 were in the east of the country, in Counties Carlow, Kildare, Meath, Wicklow and Dublin. Ten out of thirteen confirmed poisoning incidents in Wicklow and Dublin involved Red Kites, which have been recently reintroduced to both counties by the National Parks & Wildlife Service and Golden Eagle Trust. As these birds were fitted with radio-tracking devices, they were relatively easy to find. Seven of the kites were killed by the rodenticide Brodifacoum and it seems likely that the birds were poisoned through eating rodents that themselves had ingested poison. The other three kites were poisoned by Alphachloralose. Also in Wicklow, a Common Buzzard and a Peregrine Falcon were poisoned by Alphachloralose and a pigeon illegally laced with this poison was found. In Kildare, 'multiple' injuries and mortalities of corvids, gulls and pigeons were recorded and poison pellets were found close to these birds.

In Donegal, 20 rooks were found dead after ingesting Alphachloralose. Three shootings of Sparrowhawk, Kestrel and Peregrine Falcon in West Clare were associated with two shootings of Grey Herons, all within a period of weeks. In cases such as West Clare 2011, factors motivating this illegal action can be identified and investigations pursued. Another Peregrine Falcon was shot in East Clare. Cavan, Cork, Limerick, Mayo, Meath and Offaly also had poisoning incidents in 2011.

The majority of persecution/poisoning incidents in 2011 occurred in lowland locations, with 21 incidents at elevations less than 100m above sea level, whereas 12 occurred at

elevations greater than 100m above sea level. The key months for persecution incidents in 2011 were July and November.

There are a number of anecdotal records of birds of prey having been poisoned or persecuted in 2011. For example two adult female Hen Harriers were found dead at their nests in West Clare. Toxicology tests were carried out but unfortunately these birds were not x-rayed for gunshot, which would be a more likely cause of death for a harrier at a nest. In the previous year (2010) another female Hen Harrier was seen flightless and later recovered dead near her nest in West Clare. While such incidents cannot be included on the confirmed persecution list, it is nonetheless imperative that they are recorded and collated so that over time a picture begins to emerge.

In previous years, there have been a number of high profile incidents of poisoning/persecution of both White-tailed Sea Eagles and Golden Eagles (see Appendix 1 and Appendix 2), which have been re-introduced to Ireland by the National Parks & Wildlife and Golden Eagle Trust. While no poisoning/persecution incidents occurred in 2011, there were three casualties of White-tailed Sea Eagle in Kerry – one of which had insignificant levels of DDE (a breakdown product of DDT, which has been banned in Ireland since 1985), another which was killed by a wind turbine and the third died from acute haemorrhage of the liver while ingesting food. It is important to record bird of prey mortality and injury records as this will point towards other existing and potential threats on the landscape for these species which require special conservation effort.

The four principal poisons that were implicated in the deaths of birds of prey were Alphachloralose, Nitroxylin, Carbofuran and Brodifacoum. Alphachloralose is now only registered and approved in Ireland for the control of mice. Nitroxylin is an active ingredient in flukicides. Carbofuran, which is highly lethal has been banned in Europe since 2008. Brodifacoum is a second generation anticoagulant rodenticide that is regularly linked with primary and secondary poisoning of wildlife.

A number of potential poisoning cases were submitted for toxicology tests at the regional and state laboratories, including Starlings from Offaly, 2 Common Buzzards, 1 Long-Eared Owl, 1 Red Kite, a Rabbit and apples from Wicklow but no poisons were determined. A Barn Owl hit by a car in South Tipperary was found to have varying levels of four rodenticide compounds (Brodifacoum, Flocoumafen, Bromadiolone and Difenacoum), which may have potentially increased the risk of collision. Other confirmed poisoning incidents in 2011 included 4 dogs and 3 hens. The bait ingested by these casualties could have also been a potential risk to wildlife.

4. LEGISLATION

There are a number of key Irish statutes that deal with the poisoning and persecution of wildlife. The Wildlife acts 1976, 2000 and 2010 are the primary Acts concerning the protection of wildlife in Ireland. Under the Wildlife Acts, in line with the EU Birds Directive (2009/147/EC), all birds in Ireland are protected. Article 9 of the Birds Directive allows Member States to make derogations from its protective measures in the interests of public health and safety, air safety, to protect flora and fauna and to prevent serious damage to crops, livestock, forests, fisheries and fauna. The European Communities (Wildlife Act, 1976) (Amendment) Regulations, 1986 – (S.I. No. 254 of 1986) allow specific derogations to be implemented by way of Ministerial Declarations, which are renewed every four months. The species included in the Irish Ministerial Declarations are grey crows, magpies, rooks, jackdaws and some members of the pigeon family. Until the beginning of 2008, poisoned or anesthetic bait was allowed for control of grey crows, magpies and pigeons. From 1 January 2008, the Ministerial Declarations allowed the use of non-meat baits only when laying poison for the control of grey crows, magpies and pigeons. The change was made due to concerns that the use of meat baits could lead to the accidental poisoning of birds of prey such as the reintroduced species. Ministerial Declarations with effect from September 2010 have prohibited the use of any poisoned or anaesthetic bait for the control of grey crows and magpies. Thereafter, grey crows and magpies could only be controlled by shooting or the use of legal cage traps. The provision in the Ministerial Declarations on the use of non meat-based poisoned or anaesthetic bait to control certain species of pigeon was retained on the basis of a licensing regime by National Parks & Wildlife Service.

There are various directives and regulations concerning the use of biocides and poisons in the EU and Ireland (e.g. Poisons Regulations 2008; Use and Control of Biocidal Products) Regulations, 2001) and it is illegal to sell or use any pesticides/biocides in a manner which is not registered or approved. Since 2008 there has been no pesticide/biocide registered for use in the control of birds or any mammal other than rabbits, rats or mice. Proper use is ensured through inspections at wholesale, retail and farm level and through the testing of food commodities on the Irish market for the presence of pesticides

residues. The State took prosecutions in 2009 and 2010 which led to convictions and fines against landowners using Alphachloralose to kill rooks. The Restrictions on Use of Poison Bait Regulations (SI No. 481 of 2010) underpin the legalities relating to poison bait. The Animal Health and Welfare Bill (2012) outlines an offence where a person lays “poison by a method or in a manner that a protected animal or a wild bird would have access to the poison.”

The conservation of biodiversity in Ireland has been strengthened and expanded by EU law, most notably by the EU Birds Directive and EU Habitats Directive (92/43/EEC) and also by the EIA Directive (85/337/EEC). The European Communities (Birds and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats)(Control of Recreational Activities) Regulations 2010. Many of our native raptors (including Peregrine Falcon, Merlin, Hen Harrier, Golden Eagle, White-tailed Sea Eagle and Red Kite) are listed on Annex I of the EU Birds Directive (Directive 2009/147/EC). Special Protection Areas (SPAs) may be designated to protect the habitats and ranges of these species. Article 4(4) of the same directive requires that even outside of SPAs, Member States shall strive to avoid pollution or deterioration of habitats of these birds.

For farmers, poisoning of bird species is a breach under cross-compliance (Statutory Management Requirement 1 - Conservation of Wild Birds and Statutory Management Requirement 9 – Plant Protection Products (Pesticides)). Further details are provided in Appendix 4.

5. RECOMMENDATIONS

It would be naive to think that any more than a fraction of raptor poisoning and persecution can be formally recorded. The chances of finding a bird carcass, considering a varied landscape and terrain, tall vegetation and scavengers can be considered as slim. The relatively large proportion of individuals found in 2011 that had been fitted with telemetry (namely radio tags) is testament to this (i.e. there would have been many more birds without telemetry devices that were not discovered). It should be considered even more difficult to discover birds that have been shot illegally, as the perpetrator will often remove or conceal the carcass to reduce the chance of being apprehended. Nevertheless, this first report has provided an initial picture of poisoning and persecution in Ireland by documenting the species known to be affected by poisoning and persecution, the devices of poisoning and persecution and the known locations of these incidents. Continuing to record known events in a systematic fashion will build on this database and provide stronger background information to target illegal activity through enforcement and education and in turn combat human-related raptor mortality.

Recording information

Members of the public are asked to contact their local National Parks & Wildlife Service office (see www.npws.ie/contactus) with any information regarding poisoning or persecution incidents. These matters will be treated confidentially. If the incident occurs out of normal office hours, please take a photograph of the carcass/poison and record its precise location.

Your local wildlife rehabilitator may be best placed to treat injured wildlife (see www.irishwildlifematters.ie).

Wildlife rehabilitators are asked to submit annual returns of injuries and deaths of birds of prey to NPWS, using a standard reporting form. Where foul play is suspected, NPWS or the Gardai should be contacted immediately upon receiving the animal or hearing about the incident. For live birds where poisoning is suspected, the first faecal droppings to be

passed should be collected and sent via NPWS for testing at the RVLs or State Lab. Carcasses should not be frozen, but can be refrigerated if necessary.

Combating Poisoning and Persecution

The poisoning and persecution protocol agreed between the relevant state agencies is reviewed on an annual basis or as necessary. With regard to enforcement of legislation, the responsible authorities will continue in concerted efforts to combat illegal poisoning and persecution and the misuse of drugs and biocides. Education is seen as an important tool in this campaign also. The continued reporting and recording of relevant incidents will ensure a targeted and more effective approach.

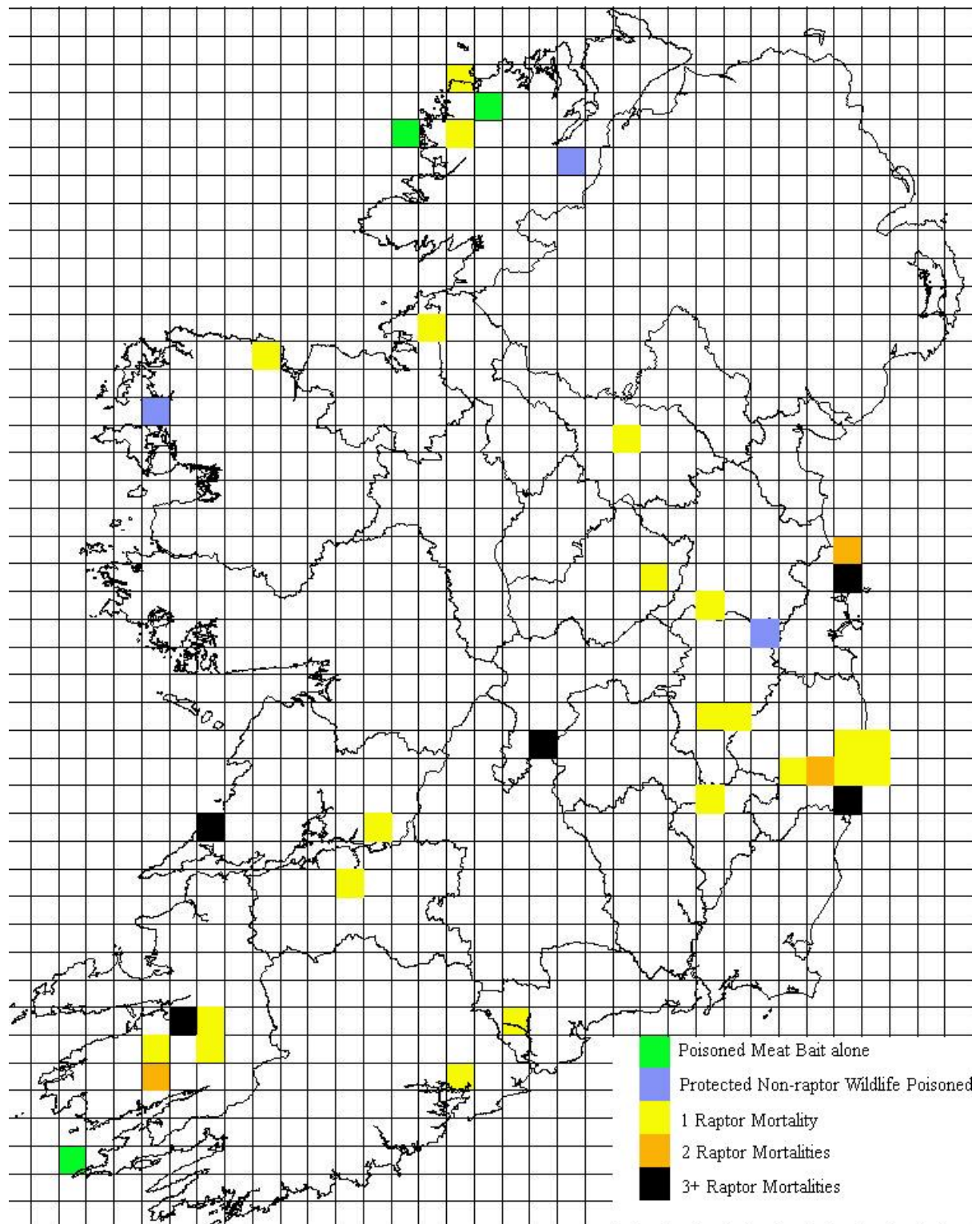
ACKNOWLEDGEMENTS

Thanks to Naomi Kingston and Damian Clarke for their work on the Bird of Prey Persecution and Poisoning Database. NPWS Rangers for submitting samples and reporting incidents. Micheál Casey and staff of the Regional Veterinary Laboratories. Ed Malone and Ita Kinahan of the State Laboratory. The Golden Eagle Trust, in particular Lorcan O'Toole, Marc Ruddock and Allan Mee. BirdWatch Ireland, in particular John Lusby. Local wildlife rehabilitators including Pascal Walsh, Rosie and Denis Campbell and Martin Moloney for providing an insight on the prevalence and nature of non-poison/persecution related incidents.

Appendix 1: Persecution and Poisoning Incidents Recorded between 2007 and 2010

10km sq	Bird of Prey Species	Poison (s)	Date found	County
V98	White-Tailed Eagle	Alphachloralose	06/11/2007	Kerry
V77	White-Tailed Eagle	Alphachloralose/ Nitroxinil	18/02/2008	Kerry
V78	White-Tailed Eagle	Alphachloralose/ Nitroxinil	19/02/2008	Kerry
V77	White-Tailed Eagle	Alphachloralose/ Nitroxinil	27/05/2008	Kerry
V99	White-Tailed Eagle	Carbofuran	12/03/2009	Kerry
V89	White-Tailed Eagle	Carbofuran	4/04/2010	Kerry
V89	White-Tailed Eagle	Carbofuran	12/04/2010	Kerry
V89	White-Tailed Eagle	Carbofuran	9/05/2010	Kerry
B81	Golden Eagle	Paraquat	18/02/2009	Donegal
G74	Golden Eagle	Alphachloralose/ Nitroxinil	19/02/2010	Leitrim
G13	Red Kite	Alphachloralose	01/10/2007	Leitrim
T29	Redkite	Alphachloralose	16/03/2009	Wicklow
T39	Red Kite	Alphachloralose	22/02/2010	Wicklow
T18	Red Kite	Alphachloralose	27/02/2010	Wicklow
N70	Red Kite	Alphachloralose	16/03/2010	Kildare
T08	Red Kite	Alphachloralose	05/04/2010	Wicklow
X09	Buzzard	Alphachloralose	17/03/2010	Waterford
W87	Buzzard	Alphachloralose	26/03/2010	Cork
B83	Buzzard	Alphachloralose	11/04/2010	Donegal
N55	Buzzard	Carbofuran	16/04/2010	Westmeath
T27	Peregrine	Alphachloralose	22/03/2010	Wicklow
T27	Peregrine	Alphachloralose	08/04/2010	Wicklow

Appendix 2: All Confirmed Poisoning and Persecution Incidents 2007-2011



Appendix 3: Key Legislation

Wildlife Acts 1976, 2000 and 2010

www.irishstatutebook.ie

EU Birds Directive Derogations

<http://www.npws.ie/legislationandconventions/irishlaw/eubirdsdirectivederogations/>

SI No. 481 of 2010. Restrictions on Use of Poison Bait Regulations 2010

www.irishstatutebook.ie

Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market as amended by Council Regulation 1882/2003/EC) and Commission Directives 2006/50/EC, 2006/140/EC and 2007/20/EC

<http://eur-lex.europa.eu>

S.I. No. 625 of 2001. European Communities (Authorization, Placing on the market, Use and Control of Biocidal Products) Regulations 2001

www.irishstatutebook.ie

S.I. No. 511 of 2008. Poisons Regulations 2008.

www.irishstatutebook.ie

Regulation (EU) No. 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products.

<http://eur-lex.europa.eu>

Animal Health and Welfare Bill 2012

<http://www.oireachtas.ie/documents/bills28/bills/2012/3112/b3112s.pdf>

Appendix 4: E.U. Single Payment Scheme

The E.U. Single Payment Scheme replaced the Arable Aid and Livestock Premia Schemes in 2005. Whereas the schemes it replaced were largely production based the Single Payment Scheme is area based and is not tied to production. Farmers applying for any of the following schemes must make a Single Payment application; Single Payment Scheme, Disadvantaged Area Scheme, Afforestation Premium, REPS and Suckler Welfare scheme.

The Single Payment Scheme has as one of its main measures, the implementation of cross compliance measures. An important part of this reform are measures aimed at protecting the environment and improving the countryside as well as achieving high standards in food safety, animal health and welfare. In pursuit of this objective it is necessary to put in place adequate checking and control arrangements to ensure adherence to the required standards. Under the Single Payment Scheme, respect for basic standards for the environment, public, animal and plant health, animal welfare and for good agricultural and environmental condition is now incorporated as a condition of the scheme.

Cross compliance involves two key elements:

- A requirement for farmers to comply with a number of statutory management requirements (SMRs) set down in EU legislation (Directives and Regulations) on the environment, food safety, animal health and environmental condition.
- A requirement to maintain land in good agricultural and environmental condition (GAEC).

The Cross Compliance conditions consist of respecting a total of 18 Statutory Management Requirements (SMRs) in addition to maintaining the land in Good Agricultural and Environmental Condition (GAEC). If an applicant is found to be non-compliant sanctions will be applied under the Single Payment Scheme. Two of the Single Management Requirements related to the protection of birds of prey and the use of poison are:

- SMR 1 Conservation of Wild Birds (Birds Directive)

All Irish Birds of Prey are fully protected under the 1979 European Birds Directive and any killing of a Bird of Prey is in breach of this Cross Compliance Measure.

- SMR 9 Plant Protection Products (Pesticides)

Anyone using a non registered or non approved poison product or an approved product or a veterinary medicine contrary to its approved uses that kill Birds of Prey is in breach of this Cross Compliance Measure.

The Irish Government is required to carry out on farm inspections of 1% of Single Farm Payment Participants annually. At a meeting between the Minister for Agriculture, Food and Fisheries, Brendan Smith, T.D. and the Minister for Environment, Heritage and Local Government, John Gormley, T.D. and their officials on the 23 June 2010, the Department of Agriculture said that anyone found poisoning birds of prey could be in breach of SMRs 1 and 9. In addition DAFF stated that if the National Parks and Wildlife Service notified them that they thought that a farmer may have been responsible for a confirmed poisoning incident, they would include that individual within their required 1% farm inspection list.

Protocol for investigation of deaths of Birds of Prey and other wildlife

Veterinary Laboratory Service (Department of Agriculture, Fisheries and the Marine),

The State Laboratory (Dept. of Finance)

and

National Parks and Wildlife Service (Department of Arts, Heritage and the Gaeltacht)

May 2013

Further to a series of meetings between representatives of the Veterinary Laboratory Service of the Department of Agriculture, Fisheries and the Marine, the State Laboratory, and the National Parks and Wildlife Service (NPWS), the following protocol is agreed.

Scope:

This is a national scheme to monitor mortality in Irish birds of prey and other wildlife species with seven key aims:

1. Collection of evidence to support prosecutions for illegal poisoning.
2. Monitoring of the impact of poisoning on Irish raptor populations.
3. Monitoring the incidence of poisoning and impact of illegal poisoning on other vulnerable species (e.g. Raven)
4. Monitoring the incidence of poisoning in species vulnerable to secondary poisoning by rodenticides (in particular Barn Owl, Kestrel, Common Buzzard, Red Kite and Long-eared Owl).
5. Monitoring the impact of other types of persecution on Irish raptors and maintaining a database of such incidents.
6. Providing evidence of the causes of death of other wildlife species where poison is strongly suspected
7. Quantifying the use of specific poisons.

Scale of Work:

It is expected that the scale of the work is unlikely to exceed 50 specimens per annum. The State Laboratory has the capacity to deal with 5 of these specimens as urgent and treat them accordingly. Cases will be deemed urgent by a designated Wildlife Inspector with National Parks & Wildlife Service. Any urgent cases in excess of this would be dealt with on a case by case basis but urgent processing of these could not be guaranteed due to the extra resources required.

Stakeholders:

Government Departments and Agencies:

Department of the Arts, Heritage and the Gaeltacht (National Parks and Wildlife Service)

Department of Agriculture (Veterinary Laboratory Service)

The State Laboratory

Environmental Protection Agency

NGOs:

Farm organisations

Golden Eagle Trust Ltd

BirdWatch Ireland

NARGC

1. Publicising awareness of the scheme

A national awareness campaign will be carried out, targeting NARGC Gun Clubs, Farming representative bodies, Raptor Study Group members, Bird Watch Ireland branches, Gardai, veterinary practices, wildlife rehabilitation centres, falconers and taxidermists, giving details of scheme, and contact details for members of the public finding carcasses of wild birds of prey.

Information will also be provided on the NPWS website.

2. Day-to day operation of Scheme:

Routine Submissions:

Specimens for testing (i.e. dead birds or faecal samples from suspected poisoned but living birds) will normally be submitted by NPWS rangers to Regional Veterinary Laboratories (RVLs), or by certain other nominated individuals only. Members of the public and NGOs are asked to contact NPWS in the first instance to arrange delivery of specimens to RVLs where possible. Protocols on collection, assessment, investigation and chain of evidence will be followed. [RVL may decide to accept specimens from other sources.]

In the following cases, specimens will be held for post-mortem and toxicology analysis in monthly batches to allow for cost-effectiveness:

- Any bird of prey or Raven, or other bird species where a number of specimens are involved, found dead in circumstances suggesting poisoning but where prosecution is not considered appropriate/possible [Note: where multiple birds/samples arise from the same event, they will share a common submission form, reference number etc.]
- Any barn owl, long-eared owl or kestrel
- Suspected bait items where poisoning is suspected but where a prosecution is not considered possible
- Suspected poisons or other chemicals recovered during an investigation or search
- Faecal samples from birds suspected to have been poisoned but still living (these samples should be taken at the very earliest stages of discovering the bird).

Urgent Submissions:

In the following cases, and where NPWS requests through Wildlife Inspector Dr. Barry O'Donoghue, post-mortem and toxicology analysis will be fast-tracked (subject to the note on capacity in the State laboratory under "Scale of Work" on p1):

- Any Golden Eagle, White-tailed Eagle or Red Kite
- Any other bird of prey found dead in circumstances suggesting poisoning and where a prosecution following investigation is considered possible

- Any bird species where a number of specimens are found dead suggesting poisoning and where a prosecution following investigation is considered possible
- Any suspected bait items where poisoning is suspected and a successful prosecution is considered likely

Sample Reception:

Cases will be booked in advance, by an NPWS conservation ranger, who will specify that this is a Raptor Poisoning case. The ranger & RVL will agree a suitable time to deliver it to the RVL. The NPWS Ranger will be given the name of a person to hand it to, who will complete the 'chain of custody' section of the submission form (see below).

RVL Addresses, directions, and contact times are attached in Appendix 1

On arrival at the RVL, the NPWS ranger will present

- carcass/suspect bait as defined in NPWS section of protocol
- specimen will be in a leak-proof container (e.g. Ziploc bag, plastic box), sealed and clearly labelled with species, site, contact number (ranger's mobile)
- completed submission form – this will show chain of custody, and this should be maintained in the RVL. This form (with copy retained in RVL is sent to the State Lab with the samples
- hard copy of x-rays (if digital X-Ray system has been used, a set of digital images e-mailed in advance to Research Officer on duty will substitute) [RVLs do not undertake x-rays. X-rays should be undertaken at designated veterinary practices]

Chain of custody:

Each person taking custody of the samples will complete the “chain of custody section’ of the form and will take responsibility for securely handling, storing, testing or dispatching samples as required.

Post mortem examination, sampling and sample dispatch by the RVL:

Post Mortem Examination:

1. Keep a printed copy of the attached PM summary in the post mortem area where it can be referred to by the duty pathologist, and the most recent version of this protocol in the front office where it can be referred to by reception staff
2. Record details of each Raptor Protocol submission on LIMS as per submission form (*attached*) using the Raptor Protocol Workflow (*currently in development & testing*)
3. Weigh the bird, record the weight
4. Photograph the carcass before the PM, and photograph any significant lesions, ensuring that the case number and scale are visible in the photos
5. Record carcass condition in respect of fat, muscle, degree of crop fill
6. Record plumage condition, any evidence of chemical staining or burns
7. Perform full post mortem where carcass is intact and fresh, with bacteriology, virology, histology as judged appropriate by the duty pathologist, and keeping a contemporaneous record of as a hard copy. Perform a post mortem directed primarily at sampling where carcass is decomposed and or scavenged, recording reasons for this.
8. Test a sample of fresh kidney for lead content

Sampling:

Regardless of condition of carcass, sample as many as possible of the following into rigid screw-top containers or twist-seal sterile sampling bags:

- Crop contents
- Stomach contents
- Intestinal contents
- Cloacal contents
- Liver
- Kidney

- Skeletal Muscle
- Blood
- Samples of suspected poison

Create a separate aliquot for each sample collected above, store each aliquot in a sealed container (universal type, or larger).

Label each tube with sample ID and state which matrix it contains (e.g. blood, faeces)

The aim of sampling is to recover a sample for testing and a sample for archiving, so up to 10g/10ml of each of the above to be sampled if available.

Dispatch of samples to State Lab:

1. Notify State Lab contact point (Ed Malone and John McBride) in advance of the arrival of Raptor Protocol samples by email to edward.malone@statelab.ie and john.mcbride@statelab.ie, and only dispatch samples when it is confirmed that somebody will be available to receive them
2. Dispatch all samples to Ed Malone, State Laboratory, Backweston Laboratory Campus, Young's Cross, Celbridge, Co. Kildare by registered post, clearly marked as "Raptor Protocol Samples" by the end of the working day after receipt.
3. Include the original submission form, keeping a photocopy on file at the RVL
4. Inform State Lab of any specific reasons to suspect toxicity, and any circumstantial evidence seen at PM e.g. yellow staining of nitroxynil
5. Put all samples into individual sealed evidence bags, labelled and identified on the included form

Testing by the State Lab:

1. The State Lab proposes to carry out all testing by LC-MS/MS and using confirmatory criteria commonly applied in others areas of similar testing,

2. These tests will not be accredited by the State Lab but validation work will be carried out to determine the fitness for purpose of the tests. The tests will be deemed confirmatory and stand up to some scrutiny because mass spectrometry is used as the primary detection technique.

3. Where a prosecution is in train, the State Lab will send reference samples to another laboratory in the UK for confirmatory testing if this is deemed necessary.

4. The State Lab currently tests for:

	Reporting Level ($\mu\text{g}/\text{kg}$)
a. Strychnine	2000
b. Nitroxylnil	50
c. Paraquat	5000
d. Alpha Chloralose	500
e. Carbofuran	50
f. Methaldehyde	2500
g. Warfarin	50
h. Brodifacoum	1000
i. Dicumarol	50
j. Difenacoum	50
k. Flocoumafen	500
l. Flunixin	250

5. The State Lab will report results as

- Present at greater than the reporting level
- A response was noted at the retention time of “analyte” but is less than the reporting level.
- Not Detected
- Not tested

6. The number of matrices tested will depend on whether the sample is routine or urgent
 - a. On urgent samples liver and crop contents will be tested, with other matrices examined only if SL believes that this may provide more information.
7. On routine samples, only crop contents and liver tissue will be tested routinely.
8. The State Lab will hold an archive of the tissues submitted. Tissues will be released for subsequent testing on
 - a. A case-by-case basis, by agreement between representatives of the State Lab (I. Kinahan) Veterinary Lab Service (M. Casey) and NPWS (B. O'Donoghue)
 - b. Or on the basis of a further protocol on sample sharing

Testing by the Agri-food Biosciences Institute, Northern Ireland:

Although not a party to this protocol, AFBI were consulted during its preparation and indicated that they may be in a position to support this scheme from time to time by:

- Botulism testing
- Confirmatory testing
- Testing urgent samples (which could be directed to State Lab/AFBI, depending on which one had a batch of routine samples 'ready to run')

Reporting arrangements

Routine cases:

A preliminary report will be issued by the receiving RVL within one week, giving PM findings and test results received to date. The State Lab will typically report toxicology results from routine cases in 28 days to the RVL

A final report on routine cases will typically issue from the RVL within one week of all tests being completed and results received at RVL

Urgent cases, where prosecution is likely:

Where sample has been flagged as urgent (by NPWS Wildlife Inspector Barry O'Donoghue), the preliminary findings of the PM will be issued by phone/email within two working days. Test results from the RVL on urgent cases will ordinarily be completed and reported within one week of the carcass's submission.

The State Lab will typically report toxicology results from urgent cases in 7 days to the RVL. A final report on urgent cases will typically issue within two working days of the last test result being received in the RVL

Publication of aggregated results:

3. Outputs

For all recording and reporting purposes, the RVLs shall send post mortem reports (preferably by email) to NPWS Wildlife Inspector Dr. Barry O'Donoghue and include in the same correspondence, NPWS staff member(s) relevant to the particular case.

Correspondence should include a full post mortem report and a copy of the completed submission form (showing reference number, chain of custody etc.). Where cases are referred to the State laboratory, the results will be sent back to the RVL, with NPWS contact point Dr. Barry O'Donoghue included in the same correspondence.

NPWS staff seeking updates shall contact Dr. Barry O'Donoghue only.

The NPWS will provide an annual report of the poison use surveillance data, with mapping of incidents associated with specific poisons, published in first quarter of each year.

Copies of the report will be sent to the Minister for Agriculture, Fisheries and the Marine, the Minister for Arts, Heritage and the Gaeltacht, , the Pesticide Registration & Control Division (Pesticides Registration Authority), the EPA and interested NGOs.

Peer-reviewed scientific publication of the aggregated results of this testing shall be by agreement of representatives of the State Lab (I. Kinahan) Veterinary Lab Service (M. Casey) and NPWS (C. O'Keefe).

All three partner organisations will be able to use aggregated results in non-peer-reviewed publications e.g. annual reports, which can be published on official websites where agreed.

Enforcement of Legislation

Depending on the situation, follow-up investigation or enforcement will be carried out by the authority/authorities responsible for the relevant legislation.

Legislation that may be invoked includes

Legislation	Responsible Authority
The Wildlife Acts	NPWS, An Garda Síochána
SI No. 481 of 2010. Restrictions on Use of Poison Bait Regulations 2010	NPWS, An Garda Síochána
S.I. No. 625 of 2001. European Communities (Authorization, Placing on the market, Use and Control of Biocidal Products) Regulations 2001	
S.I. No. 511 of 2008. Poisons Regulations 2008.	

Review of Protocol


This protocol will be reviewed annually or as necessary, so that changes can be agreed if required ahead of the following calendar year, and a full uniform set of data acquired for the following using the revised Protocol.

Mícheál Casey,
On behalf of RVLs

Barry O'Donoghue
On behalf of NPWS


Ita Kinahan
On behalf of State Lab.

Appendix 6: Information Leaflet Distributed to Target Groups in 2009



**ADVICE LEAFLET
ON CONTROL OF
FOXES & CROWS**

*Help avoid unnecessary deaths
from accidental poisoning!*



April 2009

This leaflet was produced in consultation with the Department of Agriculture, the Golden Eagle Trust, Irish Farmers Association, Kerry County Council, the National Association of Regional Game Councils, and Teagasc.

CONTACTS
For further advice please contact:

Tom Shanahan
Area Manager • Teagasc • Tralee
Telephone: 066 712 5077

Tim Kelliher SVI
Department of Agriculture • Tralee
Telephone: 066 714 5052

Paddy Fenton CVO
Kerry County Council • Tralee
Telephone: 066 718 3509

Allan Mee
White-tailed Sea Eagle Reintroduction Project
Black Valley • Beaufort
Telephone: 087 311 7608.

Advice on making and siting Crow Traps: Contact Allan Mee
Advice on fox control: contact your local gun club (below)

NAMES, PHONE NOS OF CLUB SECRETARIES

BEAUFORT: Tom Murphy • Telephone: 086 600 1033
GLENBEIGH: Frank Joy; Telephone: 066 976 9197
GLENFLESK: David O'Doherty; Telephone: 087 769 5613
KILLORGLIN: Pat Foley; Telephone: 087 675 3303

Farmers share their land with much harmless and beneficial wildlife. This is an important and positive association that can be seen at its best in spring. But spring brings many challenges to the hill-sheep farmer, especially the worry of losing lambs to foxes and grey crows.

During spring, and especially before the main hill-sheep lambing season in mid-March and April, some farmers have traditionally controlled foxes and crows by laying poison applied to meat baits. However, protected wildlife and valuable sheep dogs can be accidentally killed as well as foxes and crows. Poisons also pose risks to human health, especially children, if accidentally ingested.

You can help keep your flock safe and avoid killing harmless wildlife by using alternatives to poison meat baits when controlling foxes and crows.

Poisons are a serious threat to scavenging birds of prey that feed on dead livestock, including White-tailed Sea Eagles recently released in Kerry. Many farmers have given up using poison in favour of other, safer methods.

Currently the use of poison meat bait for control of grey crows and magpies is illegal (Dept. of Environment, Jan 2008) but there are good alternatives available. We would appeal to landowners to consider the following methods as examples of good practice:

Shooting
This is the safest and best means of controlling foxes as only problem animals are killed. Local gun clubs may offer a fox control service to farmers (see Contacts).


Fox Deterrents
Electric fences around lambing fields have been successful in preventing losses to foxes. Lighting and even radio noise may help deter foxes.


Crow Traps
Crows can be caught live in larsen traps (available from gun shops). This is the best and safest way to control grey crows and magpies. Traps can also be made of wood and chicken wire and are light but strong enough so they can be moved easily. These are baited using hen's eggs, road-killed rabbits or other carrion. Traps are most effective if moved regularly so that birds in different areas can be caught.




Where poisons are considered to be the only option, please closely follow these regulations: notify local gardai; place signs at field gates/roadside; bait should be securely staked. Only baiting at night (when foxes are most active) and removing baits during daylight hours would greatly help to reduce the likelihood of accidentally poisoning protected birds such as eagles that are active only during daylight.

- If poison is used, it should also be placed under cover so only foxes can find it by scent and not birds that find food by sight. Poison left in the open is a serious risk to farm dogs.
- It is illegal to use fallen livestock as a meat bait as this will attract scavengers such as eagles resulting in their death. Dead livestock should be removed and sent to an approved knacker.
- Avoid using poison meat baits in upland areas where the bait cannot be regularly checked and removed (during daylight)
- Don't use banned substances such as strychnine.

Following good practices such as those outlined above will help protect your flock without relying on poison and help maintain a healthy and safe environment at the same time.





Appendix 7: Central Contact Details of Stakeholders

Central Contact Details of Key Stakeholders	
Stakeholder	Contact Details
National Parks & Wildlife Service, Department of Arts, Heritage & the Gaeltacht	7. Ely Place, Dublin 2 +353 1 888 3242 www.npws.ie nature.conservation@ahg.gov.ie
Regional Veterinary Laboratories Department of Agriculture, Food & Marine	Agriculture House, Kildare St. Dublin 2 +353 1 607 2000 www.agriculture.gov.ie info@agriculture.gov.ie
The State Laboratory Department of Finance	Backweston Laboratory Campus Celbridge Co. Kildare +353 1 5057000 www.statelab.ie info@statelab.ie