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

Recording and Addressing Persecution and Threats to Our Raptors

2013

Department of Agriculture, Food and the Marine
An Roinn Talmhaíochta, Bia agus Mara

An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht

An Roinn Caiteachais Phoiblí agus Athchóirithe
Department of Public Expenditure and Reform

REPORT PREPARED BY

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

UTILISING ANALYSIS AND RESULTS FROM

REGIONAL VETERINARY LABORATORIES,
DEPARTMENT OF AGRICULTURE, FOOD AND THE MARINE

AND

THE STATE LABORATORY
DEPARTMENT OF PUBLIC EXPENDITURE AND REFORM

PUBLISHED AUGUST 2015

Corressponding author:

Dr. Barry O'Donoghue,
NPWS,
Custom House,
Flood Street,
Galway.

Barry.O'Donoghue@ahg.gov.ie

CONTENTS

SUMMARY **4**

1. INTRODUCTION **6**

2. CONFIRMED PERSECUTION AND POISONING INCIDENTS 2013 ..... **8**

3. NON-HABITAT RELATED INJURY AND MORTALITY INCIDENTS (OTHER THAN PERSECUTION AND POISONING) **13**

4. DISCUSSION OF RESULTS **16**

5. OTHER DATA RECORDED AND ANALYSED **17**

6. USE OF DNA IN INVESTIGATIONS **18**

7. INDIVIDUAL LIFE STORIES **19**

8. RECOMMENDATIONS **21**

ACKNOWLEDGEMENTS **23**

APPENDIX 1: PERSECUTION AND POISONING INCIDENTS RECORDED BETWEEN 2007 AND 2012 24

APPENDIX 2: ALL CONFIRMED POISONING AND PERSECUTION INCIDENTS 2007-2012 27

APPENDIX 3: KEY LEGISLATION 28

APPENDIX 4: E.U. SINGLE PAYMENT SCHEME 31

APPENDIX 5: PROTOCOL FOR INVESTIGATION OF DEATHS OF IRISH BIRDS OF PREY AND OTHER WILDLIFE 33

APPENDIX 6: CAMPAIGN FOR RESPONSIBLE RODENTICIDE USE 44

APPENDIX 7: CENTRAL CONTACT DETAILS OF STAKEHOLDERS 45

SUMMARY

This is the third annual report from the RAPTOR scheme detailing direct threats and pressures (other than habitat related threats and pressures) facing birds of prey in Ireland. A key objective of the RAPTOR scheme is to provide a platform for informed, targeted and effective approaches in addressing these threats and pressures.

Poisoning (whether intentional or not) and persecution (always illegal) are of particular concern. Poisoning of any wildlife (other than rats or mice) is recorded, because in the vast majority of cases raptors could have ingested the same poison, or fed on prey that had itself been poisoned. In 2013, a total of 25 poisoning or bird of prey persecution incidents were confirmed in Ireland. This figure is a 47% increase on 17 incidents in 2012, though less than the 33 such incidents recorded in 2011. The 25 poison/persecution incidents were comprised of 16 poison incidents (involving 11 birds of prey, 8 gulls (in two incidents), 90 corvids (in three incidents), 12 pigeons (in one incident) and 1 poisoned meat bait) as well as 8 shooting incidents and 1 illegal trapping incident (involving at least 1 bird of prey and 1 corvid). A number of suspected and unconfirmed incidents were also recorded. Such incidents are held on the NPWS RAPTOR database. Two examples (suspected persecution of Hen Harrier nests) are mentioned in this report. Such cases are as informative and important as confirmed cases in providing data on threats to our raptors.

Of the raptors confirmed to have been poisoned or persecuted in 2013, the most frequent casualty was Red Kite (7), followed by Peregrine Falcon (5), Common Buzzard (5), Sparrowhawk (2) and White-tailed Sea Eagle (1).

In addition to poisoning and persecution incidents, there were a further 36 injury and mortality incidents recorded in 2013, namely 30 road casualties, 2 wire collisions, 2 window collisions and 2 negative impacts by ornithologists. Barn Owl (22), Common

Buzzard (6), Peregrine Falcon (3), Hen Harrier (2 families), Sparrowhawk (2) and Kestrel (1) were affected by impacts other than poisoning or persecution,

1. INTRODUCTION

This is the third annual report derived from a national scheme to monitor human related injury and mortality in Irish birds of prey, as well as any incidents of poisoned bait or poisoning of any wildlife. The scheme is known as the RAPTOR (Recording and Addressing Persecution and Threats to Our Raptors) scheme.

In 2011, a protocol for dealing with suspected poisoning and 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 Public Expenditure & Reform). The full text of the protocol as updated in 2013 is presented in Appendix 5. The majority of records produced in this report have been derived from work under this protocol. The NPWS RAPTOR Database was also set up in 2011.

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 incident recording database maintained by the National Parks & Wildlife Service also incorporates other human related incidents of raptor deaths or injury (other than habitat loss), such as road casualties and collisions with fences, wind turbines and power lines.

The primary aim of this report is to catalogue all records of poisoning and persecution of birds of prey. Doing so will add to the datasets of previous years and build a clear and robust picture of poison and persecution incidents, with data including poison and persecution methods, peaks months for incidents, associated land-use types, black spot areas and much more. The recording, analysis and reporting of such data allows a more informed approach to dealing with these issues by means of education, enforcement and/or forward planning. The addition of information no other types of mortality and injury gives a more complete picture of the threats to wildlife.

2. CONFIRMED PERSECUTION AND POISONING INCIDENTS 2013

Table 1 lists all persecution and poisoning incidents that were confirmed and recorded in 2013, while Figure 2 displays the geographical location of these incidents.

Table 1. Confirmed Persecution & Poisoning Records 2013

No.	10km	County	Month	Bait	Receiving Species	Cause	Comments
1	V95	Cork	Jan	-	White-tailed Sea	Poison	Nitroxynil
2	T39	Wicklow	Jan	-	Red Kite	Poison	Alphachloralose, carbofuran
3	N32	Offaly	Jan	-	Common Buzzard	Shot	Had to be euthanased
4	S38	Laois	Jan	-	Common Buzzard	Shot	Had to be euthanased
5	W05	Cork	Jan	Sheep	-	-	Nitroxynil
6	N93	Kildare	Feb	'Rabbit Bait'	Common Buzzard	Poison	As well as the dead Buzzard, Bromadiolone based 'Rabbit Bait' (Rabbit Bait is illegal) was found in the same field.
7	S87	Carlow	Mar	-	1 Common Buzzard, 7 Gulls	Poison	Alphachloralose, 7 gulls died, buzzard rehabilitated
8	T17	Wicklow	Apr	-	Red Kite	Poison	Brodifacoum
9	T18	Wicklow	Apr	-	Red Kite	Poison	Carbofuran
10	G10	Mayo	May	-	2 Rooks	Poison	
11	R37	Clare	May	-	12 Pigeons	Poison	Alphachloralose
12	O20	Wicklow	Jun	-	Common Buzzard	Poison	Broadifacoum, Bromadiolone and Flocoumafen
13	S01	Tipperary	Jun	-	Peregrine Falcon	Shot	
14	S22	Tipperary	Jun	-	Peregrine Falcon	Shot	

15	G12	Mayo	Jul	-	9 Rooks	Poison	
16	O07	Meath	Jul	-	79 Corvids, 1 Gull	Poison	
17	S22	Tipperary	Jul	-	Peregrine Falcon	Shot	
18	N09	Leitrim	Aug	-	Sparrowhawk and Hooded Crow	Fen Trap	Species identified by DNA analysis of feathers found at trap
19	N87	Meath	Sep	-	Sparrowhawk	Shot	
20	O15	Dublin	Sep	-	Red Kite	Poison	Difenacoum, Brodifacoum and Flocumafen
21	T26	Wicklow	Sep	-	Red Kite	Poison	Carbofuran
22	O20	Wicklow	Sep	-	Red Kite	Poison	Alphachloralose, brodifacoum, lead
23	O08	Louth	Sep	-	Peregrine Falcon	Shot	
24	T27	Wicklow	Nov	-	Red Kite	Poison	Brodifacoum and Flocoumafen
25	R73	Limerick	Dec	-	Peregrine Falcon	Shot (and poison)	This was a young bird that had travelled from Wicklow. She also had levels of Brodmadiolone and Brodifacoum in system, but shot (to head) is attributed as cause of death

Figure 1 compares the amount and type of poison and persecution incidents recorded in 2011, 2012 and 2013.

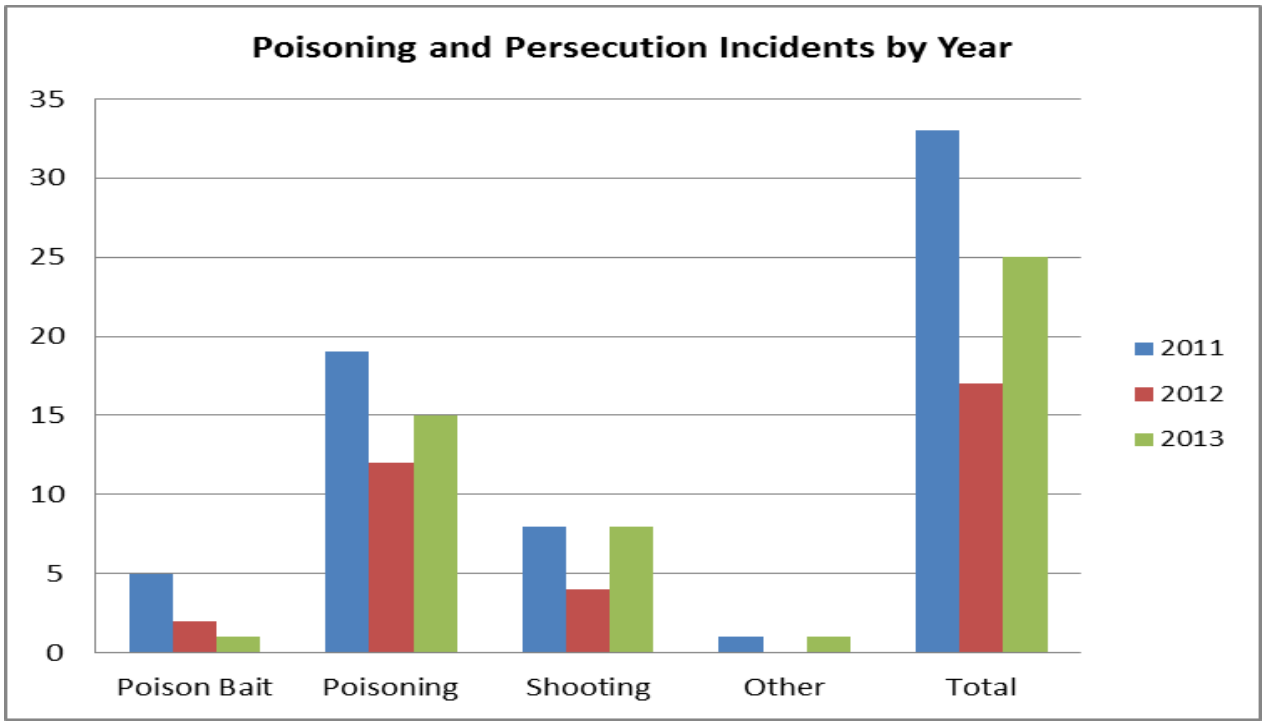

Figure 1 Annual poison and persecution incidents 2011, 2012 and 2013.

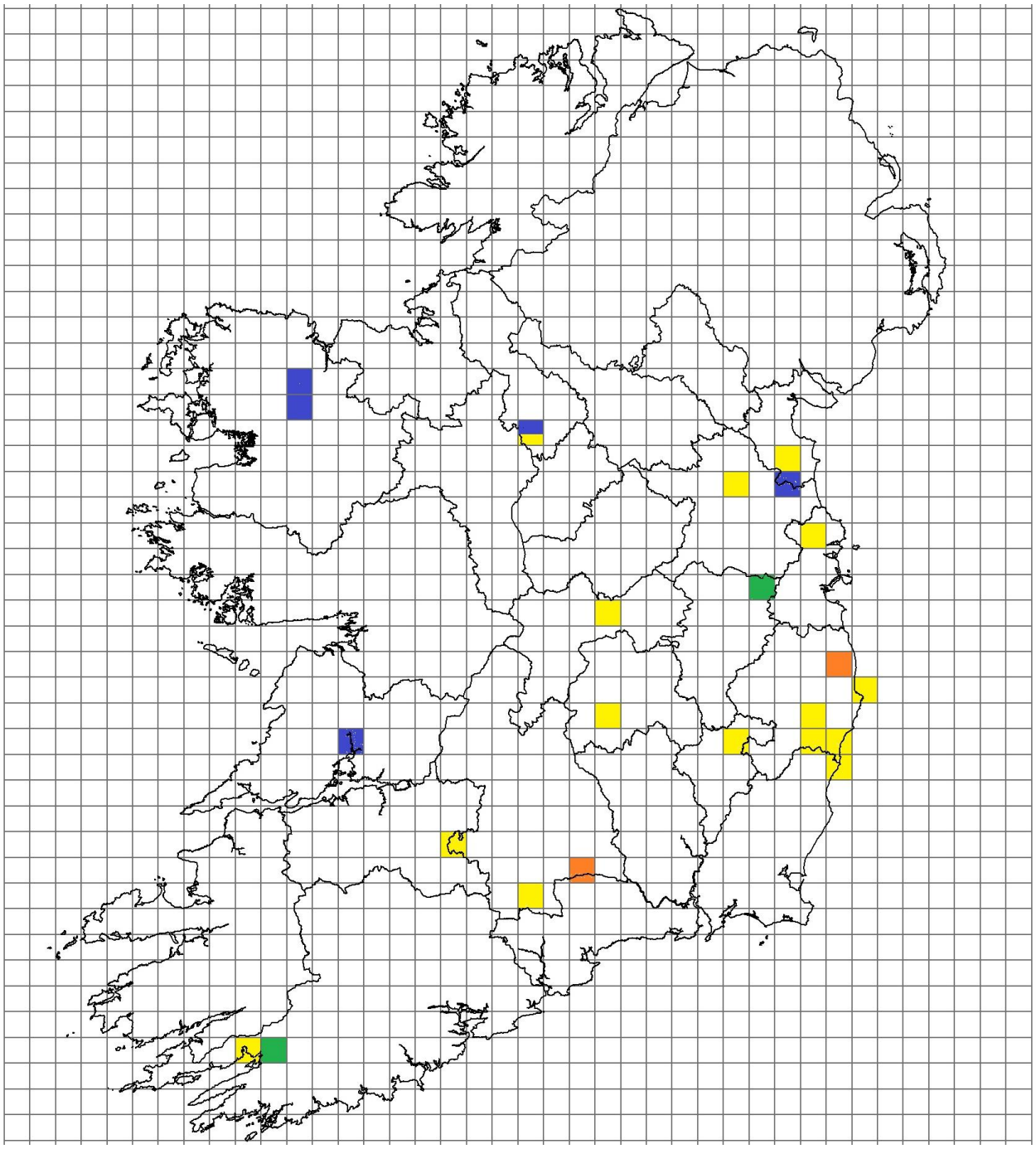

Figure 2. Map of Confirmed Poisoning and Persecution Incidents in Ireland 2013.

Figure 3 summarises the number of illegal incidents on a monthly basis in 2013, whereby use of illegal poison, poison meat bait or shooting was confirmed.

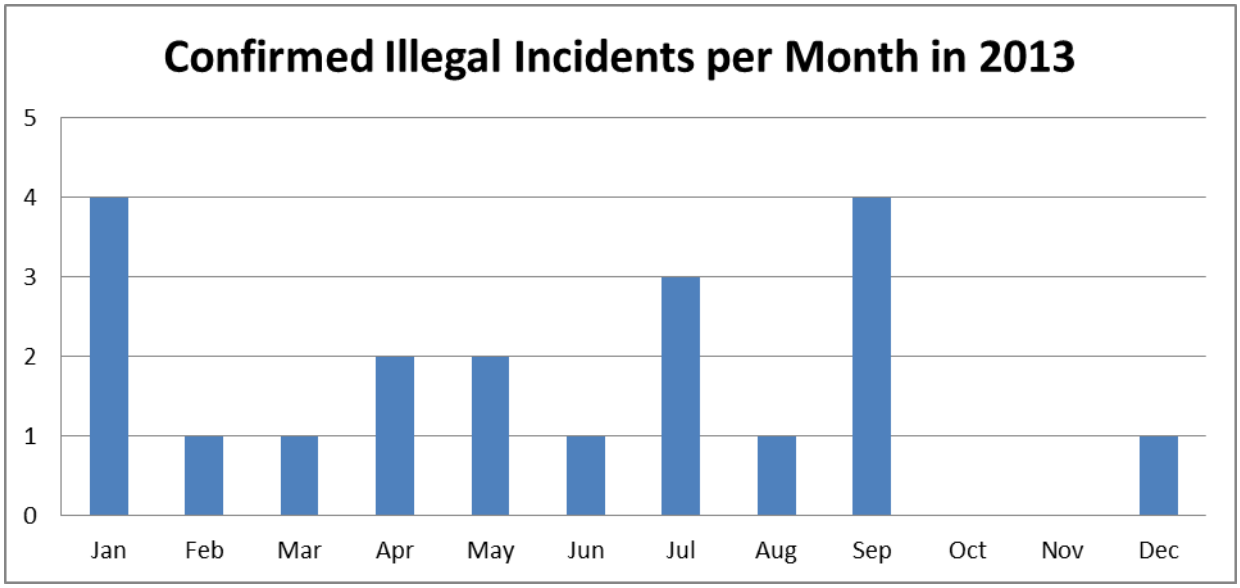

Figure 3. Confirmed illlegal incidents per month in 2013.

3. NON-HABITAT RELATED INJURY AND MORTALITY INCIDENTS (OTHER THAN PERSECUTION AND POISONING)

Table 2 summarises the incidents other than poisoning or persecution that were recorded in 2013, detailing species, month, location, road and road type.

Table 2. Human-related bird of prey injury and mortality incidents other than poisoning or persecution.

No.	10km	County	Month	Species	Cause	Road Type	Comments
1	W57	Cork	Jan	Barn Owl	Road Collision	Regional	
2	S03	Tipperary	Feb	Barn Owl	Road Collision	Motorway	
3	S03	Tipperary	Feb	Barn Owl	Road Collision	Motorway	
4	S04	Tipperary	Feb	Barn Owl	Road Collision	Motorway	
5	S04	Tipperary	Feb	Barn Owl	Road Collision	Motorway	
6	R81	Tipperary	Mar	Barn Owl	Road Collision	Motorway	
7	O15	Dublin	Mar	Barn Owl	Road Collision	Motorway	
8	S04	Tipperary	Mar	Barn Owl	Road Collision	Motorway	
9	S15	Tipperary	Apr	Barn Owl	Road Collision	National	

10	Q90	Kerry	Apr	Barn Owl	Road Collision	National	
11		Tipperary	Jun	Barn Owl	Road Collision	Motorway	
12	G73	Sligo	Jul	Peregrine Falcon	Road Collision	Regional	
13	Q91	Kerry	Jul	Hen Harrier	Research	-	Male trapped for study on effects of wind farms –deserted – subsequently nest failed
14	Q91	Kerry	Jul	Hen Harrier	Research	-	Male trapped for study on effects of wind farms –deserted – subsequently two chicks reared by mother with help from NPWS Ranger.
15	T15	Wexford	Jul	Peregrine Falcon	Road Collision	Regional	
16	W37	Cork	Aug	Sparrowhawk	Window Collision	-	
17	N00	Offaly	Aug	Kestrel	Road	Regional	
18	R46	Clare	Aug	Barn Owl	Road	Motorway	
19	S31	Tipperary	Aug	Barn Owl	Road	Motorway	
20	M95	Roscommon	Sep	Sparrowhawk	Road	Regional	
21	S32	Tipperary	Sep	Barn Owl	Road	National	
22	M95	Roscommon	Sep	Peregrine Falcon	Road Collision	National	
23	N35	Westmeath	Sep	Common Buzzard	Window Collision	-	
24	O03	Dublin	Sep	Common Buzzard	Wire Collision	-	

25	N46	Westmeath	Oct	Common Buzzard	Road Collision	Regional	
26	N97	Dublin	Oct	Common Buzzard	Road Collision	National	
27	Q81	Kerry	Oct	Barn Owl	Road Collision	National	
28	J00	Louth	Nov	Barn Owl	Road Collision	Motorway	
29	Q71	Kerry	Nov	Barn Owl	Road Collision	Regional	
30	M29	Monaghan	Nov	Barn Owl	Road Collision	National	
31	R87	Tipperary	Nov	Barn Owl	Road Collision	Motorway	
32	S02	Tipperary	Nov	Barn Owl	Road Collision	Motorway	
33	V87	Kerry	Nov	Barn Owl	Road Collision	National	
34	O16	Meath	Dec	Common Buzzard	Wire Collision		
35	S02	Tipperary	Dec	Barn Owl	Road Collision	Motorway	
36	N01	Offaly	Dec	Common Buzzard	Road Collision	Regional	

*Regional roads include local roads

4. DISCUSSION OF RESULTS

The number of poison and persecution incidents recorded in 2013 was greater than that recorded in 2012, though less than that recorded in 2011. As referenced in the 2011 and 2012 reports, the number recorded is likely to be only a fraction of the number of incidents that occurred in total. Many incidents might never have been discovered if not for radio/satellite tracking devices that pointed towards the location of the birds and the fact that they were stationary. As the monitoring scheme continues and expands in the future, a more complete picture of such threats to our native birds of prey and a long-term trend of poisoning and persecution will emerge. This will inform the relevant authorities of where best to target actions to prevent such incidents re-occurring and act as a measure of success with regard to actions taken. Already, trends are beginning to emerge as to the main threats, the main victims, timing, methods and reasons for poisoning and persecution incidents.

As in previous years, a significant proportion (52%) of poison and persecution records in 2012 were in the east of the country, in Counties Wicklow, Kildare, Carlow, Louth, Meath, and Dublin. Counties Offaly, Mayo, Cork, Clare, Tipperary, Leitrim and Laois also featured, showing that poisoning and persecution incidents are widespread throughout the country. There are however, poison and persecution black spots and these can be seen in Figure 4, which is based on data from 2007 to 2013.

It is important to point out that in five incidents, the poisoning of protected wild animals would have been unintentional and would have arisen as a result of rodenticide use (the non-target bird having ingested poisoned rats or mice). On a number of occasions, multiple types of poison were found in the one bird.

The majority of persecution/poisoning incidents in 2013 occurred in lowland locations, with 22 incidents at elevations less than 100m above sea level and just 3 at elevations

greater than 100m above sea level. The key months for poison and persecution incidents in 2013 were January and September.

There are a number of anecdotal records of birds of prey having been poisoned or persecuted in 2013. While such incidents are not included on the confirmed persecution list, they are recorded and collated. In total, anecdotal information suggests that 12 more birds of prey may have been killed (11 of which were Hen Harriers).

Other records of bird of prey mortality and injury records are useful as they point towards other existing and potential threats to these species. In 2013, a total of 36 such events were recorded, 30 of these being road casualties.

The five principal poisons that were implicated in the deaths of birds of prey were Alphachloralose (in 3 cases), Carbofuran (3), Lead (1), Brodifacoum (5), Bromadiolone (3), Difenacoum (2), and Flocoumafen (2). Alphachloralose is only registered and approved for the control of rats and mice. Carbofuran, which is highly lethal to vertebrates has been banned in Europe since 2008. However in Ireland, it is the use, rather than its possession which is illegal. The continued illegal use of carbofuran is a matter of particular concern. Is there any sense that it may be the same person or group using it, or does it turn up randomly in different places? We might say that further legislation may be required for carbofuran and alphacholorolose. Brodifacoum, Bromadiolone, Difenacoum, and Flocoumafen are second generation anticoagulant rodenticide ingredients that are regularly linked with secondary poisoning of wildlife.

5. OTHER DATA RECORDED AND ANALYSED

The database has recorded the land use type with which poisoning and persecution incidents have been associated. While particular trends with regard to land-use type and

recent activity in the areas are already emerging, for the time being these will not be reported on publically.

Other data recorded includes the age and sex of the birds/animals affected. Of the 25 poisoning or persecution events recorded, 3 individuals were known to be rearing young and 5 others may have been rearing young at the time, so it is important to consider that the effects of the poisoning or persecution may have extended beyond the individual themselves, if young were depending on that bird or animal as a parent, for food and protection.

Wildlife rehabilitators were successful in helping at least six birds of prey survive injury (including some poison/persecution incidents). Three casualties to poison/persecution died while in care and another survived but was unfit for release.

Of the 61 cases recorded in 2013 (25 poison/persecution and 36 others), Regional Veterinary Labs and the State Lab were involved in 25 cases. Private veterinary clinics provided x-ray services where necessary.

6. USE OF DNA IN INVESTIGATIONS

2013 saw the first use of DNA techniques under the RAPTOR scheme. A fen trap had been found on a post and some feathers which could not otherwise have been identified were collected. DNA analysis showed the feathers to belong to a Sparrowhawk and a Hooded Crow. Without this analysis, it could not be proven that birds were being illegally trapped. Further details are not included as a prosecution may arise from this case.

DNA analysis and modern forensic techniques provide various possibilities in the investigation of wildlife crime, just as much as in any other crime.

7. INDIVIDUAL LIFE STORIES

Reading a report such as this, which deals primarily in facts and figures, can remove the reader somewhat from the real damage caused to our environment and wildlife by the irresponsible or deliberate actions of certain individuals. Every individual bird or animal that was lost in 2013 and indeed in previous years has their own individual life story, as seen in the case below.

Rush – a young male Hen Harrier fitted with Satellite tag on 13 July 2013 but subsequently believed to have been persecuted.

A Hen Harrier satellite tracking programme (www.henharrierireland.blogspot.ie / www.facebook.com/henharrierireland) has been since 2012. This has opened up a new dimension in the knowledge of Hen Harrier dispersal, habitat use, roost locations, survival and philopatry, as well as many other important ecological considerations. Young birds are fitted with lightweight location tags, soon before they fledge. In 2013, one of the young birds, a male named Rush (named by local school children) was believed to have been deliberately persecuted, along with his two brothers and possibly one or both parents.

An NPWS official (author of this report) who coordinated the satellite tagging was observing the nest when a man walked directly towards and approached the nest to within 5m before he saw the NPWS official and left abruptly. There was no other item of interest where the nest was, some distance from the nearest track. Within a few days, the satellite signal from Rush's tag stopped transmitting and the nest and hinterland was searched only to find the entire family of harriers had disappeared. Hen Harriers will normally remain around the nest area for a number of weeks after fledging, with the young being provisioned by the parents. Predation is thought unlikely, given at least two the three brothers were capable of strong flight and roosting outside of the nest. There was no evidence of predation. The fact that the satellite tag has not transmitted since, and the fact that a mortality ground track signal was not emitted when the sensors detected no motion, points to the strong possibility that it was destroyed, buried or otherwise rendered useless. The parent birds did not return in 2014. Another Hen Harrier nest in the same general area in 2013 disappeared and when visited had human footprints leading to it. Nevertheless, there is only circumstantial evidence to say that either the case of Rush and his family or the other nest were persecution incidents and thus they are not included in the report as a confirmed poisoning/persecution case. In Summer 2013, an elected official called for 'open season' on the Hen Harrier and there was significant negative press surrounding the protection of the species' habitat.

These cases typify how difficult it can be to confirm persecution. By its very definition, illegal persecution will be surreptitious and evidence often destroyed or hidden. In many cases the casualty or materials may never be found. Each year, a number of such examples

are recorded on the NPWS database and such cases should not be ignored, given they can point to areas where persecution is thought to happen or point to particular patterns that can inform appropriate action.

8. 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 recorded in the NPWS database that had been fitted with telemetry (namely radio and satellite tags) suggests that many more birds without telemetry devices were not discovered. It is 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.

Intelligence gathering, training, surveillance and forensic analysis of wildlife crime scenes are all necessary to get on top of wildlife crime.

The RAPTOR protocol (providing the NPWS database and annual reports) is beginning to provide a clearer picture of poisoning and persecution in Ireland and just how big an issue it is. We now have a good idea of the species affected, the methods of poisoning and persecution and hotspots of such incidents. Continuing to record confirmed and possible events in a systematic fashion will build on the database and provide stronger background information to target illegal activity through enforcement and education and in turn combat human-related raptor mortality. Likewise, the information garnered from recording and analysing incidents of road, turbine or fence collisions can help inform forward planning on such matters.

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.

Local wildlife rehabilitators are usually the 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 An Garda Síochána 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.

Detecting poison levels

At present, the tests undertaken under this protocol can detect poison above particular levels but it is not possible to determine the precise level. If tests can be developed and made available under the protocol to determine exact toxin levels, these can be used to provide more certainty as to whether the toxins found in the system were enough to have killed the bird, or whether there may have been sub-lethal effects.

ACKNOWLEDGEMENTS

Thanks to NPWS staff for finding, collecting and submitting samples and reporting incidents. Those on the frontline in 2013 included Sean Breen, Kieran Buckley, Noel Bugler, Damian Clarke, Cameron Clotworthy, Maurice Eakin, Triona Finnen, Ann Fitzpatrick, Ciara Flynn, Niall Harmey, Clare Heardman, Elaine Keegan, James Kilroy, Annette Lynch, John Matthews, Emer Magee, David McDonagh, Declan O'Donnell, Barry O'Donoghue, Tim O'Donoghue, Tim Roderick and Fiona Wheeldon.

Micheál Casey and staff of the Regional Veterinary Laboratories are credited for their professionalism and diligence. Ed Malone and Barbara O'Leary of the State Laboratory for expert analysis of toxin levels. The Golden Eagle Trust, in particular Lorcan O'Toole, Marc Ruddock and Allan Mee for reports and advice. BirdWatch Ireland, in particular John Lusby for reports and advice. The majority of data on road traffic incidents involving Barn Owls was provided by John Lusby (and reported to John by members of the public). Local wildlife rehabilitators and Wildlife Rehabilitation Ireland for providing an insight on the prevalence and nature of non-poison/persecution related incidents. Private veterinary practices for providing x-ray services. The media for reporting on poisoning and persecution and bringing these serious issues to the public.

Appendix 1: Persecution and Poisoning Incidents Recorded between 2007 and 2012

No.	10km sq	Species	Incident	Date found	County
1	G13	Red Kite	Poison	Oct 2007	Leitrim
2	V98	White-Tailed Sea Eagle	Poison	Nov 2007	Kerry
3	V77	White-Tailed Sea Eagle	Poison	Feb 2008	Kerry
4	V78	White-Tailed Sea Eagle	Poison	Feb 2008	Kerry
5	V77	White-Tailed Sea Eagle	Poison	May 2008	Kerry
6	B81	Golden Eagle	Poison	Feb 2009	Donegal
7	T29	Redkite	Poison	Mar 2009	Wicklow
9	V99	White-Tailed Sea Eagle	Poison	Mar 2009	Kerry
10	G74	Golden Eagle	Poison	Feb 2010	Leitrim
11	T39	Red Kite	Poison	Feb 2010	Wicklow
12	T18	Red Kite	Poison	Feb 2010	Wicklow
13	N70	Red Kite	Poison	Mar 2010	Kildare
14	T27	Peregrine	Poison	Mar 2010	Wicklow
15	XO9	Common Buzzard	Poison	Mar 2010	Waterford
16	W87	Buzzard	Poison	Mar 2010	Cork
17	V89	White-Tailed Sea Eagle	Poison	Apr 2010	Kerry
18	V89	White-Tailed Sea Eagle	Poison	Apr 2010	Kerry
19	T08	Red Kite	Poison	Apr 2010	Wicklow
20	B83	Common Buzzard	Poison	Apr 2010	Donegal
21	N55	Common Buzzard	Poison	Apr 2010	Westmeath
22	T27	Peregrine	Poison	Apr 2010	Wicklow
23	V89	White-Tailed Sea Eagle	Poison	May 2010	Kerry
24	V44	Poison Meat Bait	Poison Meat Bait	Mar 2011	Cork
25	F71	Hooded Crow	Poison	Apr 2011	Mayo
26	-	Hooded Crow	Poison	Apr 2011	Kerry

27	S19	Poison Meat Bait	Poison Meat Bait	Jul 2011	Offaly
28	S19	Common Buzzard	Poison	Jul 2011	Offaly
29	S19	Common Buzzard	Poison	Jul 2011	Offaly
30	T18	Poison Meat Bait	Poison Meat Bait	Jul 2011	Wicklow
31	T18	Peregrine Falcon	Poison Meat Bait	Jul 2011	Wicklow
32	O26	Red Kite	Poison	Jul 2011	Dublin
33	S19	Sparrow-hawk	Poison	Jul 2011	Offaly
34	Q96	Peregrine Falcon	Shot	Jul 2011	Clare
35	Q96	Kestrel	Shot	Jul 2011	Clare
36	Q96	Sparrow-hawk	Shot	Jul 2011	Clare
37	N74	Common Buzzard	Shot	Aug 2011	Meath
38	N93	Gulls, Corvids, Pigeons	Poison	Aug 2011	Kildare
39	T27	Common Buzzard	Poison	Aug 2011	Wicklow
40	T27	Red Kite	Poison	Sep 2011	Wicklow
41	H40	Common Buzzard	Shot	Sep 2011	Cavan
42	N80	Common Buzzard	Shot	Oct 2011	Kildare
43	B92	Poison Meat Bait	Poison Meat Bait	Nov 2011	Donegal
44	B61	Poison Meat Bait	Poison Meat Bait	Nov 2011	Donegal
45	C20	Rook (x20)	Poison	Nov 2011	Donegal
46	O25	Red Kite	Poison	Nov 2011	Dublin
47	O26	Red Kite	Poison	Nov 2011	Dublin
48	T28	Red Kite	Poison	Nov 2011	Wicklow
49	O25	Red Kite	Poison	Nov 2011	Dublin
50	O25	Red Kite	Poison	Nov 2011	Dublin
51	T38	Red Kite	Poison	Dec 2011	Wicklow
52	O25	Red Kite	Poison	Dec 2011	Dublin
53	O25	Red Kite	Poison	Dec 2011	Dublin
54	S77	Common Buzzard	Shot	Dec 2011	Carlow

55	R55	Peregrine Falcon	Shot	2011	Clare
56	R44	Peregrine Falcon	Injury	2011	Limerick
57	N10	-	Poison Meat Bait	Jan 2012	Offaly
58	O25	Common Buzzard	Poison	Jan 2012	Dublin
59	N50	Common Buzzard	Poison	Feb 2012	Laois
60	T17	Raven	Poison	Mar 2012	Wexford
61	T00	Rook, Jackdaw, Magpie, Pheasant	Poison	Mar 2012	Wexford
62	V78	-	Poison Meat Bait	Mar 2012	Kerry
63	M09	White-tailed Sea Eagle	Poison and Shot	Apr 2012	Mayo
64	G99	White-tailed Sea Eagle	Poison	Apr 2012	Donegal
65	S88	Otter	Poison	May 2012	Wicklow
66	N06	Muscovy Duck	Poison	May 2012	Longford
67	T17	Red Kite	Poison	Sep 2012	Wicklow
68	T29	Red Kite	Poison	Oct 2012	Wicklow
69	T18	Red Kite	Poison	Nov 2012	Wicklow
70	S54	Common Buzzard	Poison	Nov 2012	Kilkenny
71	T02	Hen Harrier	Shot	Nov 2012	Wexford
72	O07	Common Buzzard	Shot	Dec 2012	Meath
73	Q93	Short-eared Owl	Shot	Dec 2012	Kerry

Appendix 2: All Confirmed Poisoning and Persecution Incidents 2007-2012

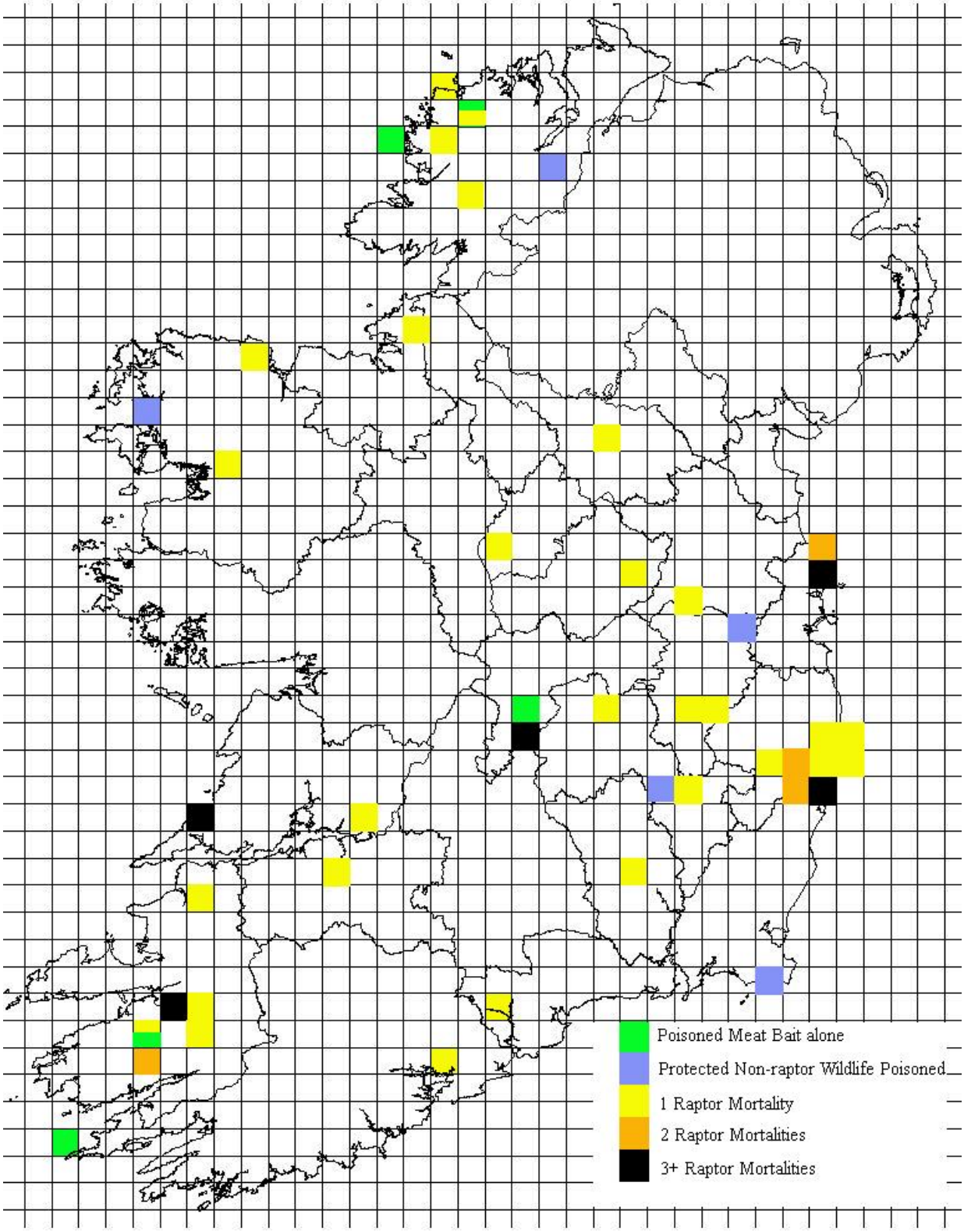

Figure 4. All poison and persecution incidents recorded between 2007 and 2013.

Appendix 3: Key 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. Ministeral 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 Act (2013) outlines an offence where a person lays "poison by a method or in a manner that a protected animal has or 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.

Where to find relevant 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 Act 2013
www.irishstatutebook.ie

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.

Responsible use of rodenticides, and abiding by the law with regard to poisons, pesticides and veterinary medicines is imperative if Ireland is to promote the image of green environmentally sustainable produce and of being a place to enjoy nature and the outdoors.

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 Public Expenditure & Reform)
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 (µg/kg)
a.	Strychnine	2000
b.	Nitroxynil	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
    a. Present at greater than the reporting level
    b. A response was noted at the retention time of “analyte” but is less than the reporting level.
    c. Not Detected
    d. 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,	Barry O'Donoghue	Ita Kinahan
On behalf of RVLs	On behalf of NPWS	On behalf of State Lab.

Appendix 6: Campaign for Responsible Rodenticide Use

The demands of consumers for high quality and safe food means that there is an ever-increasing need for higher standards in all stages of the food chain. This has led to much stricter quality assurance requirements from buyers, such as supermarkets and food processing companies.

Among these requirements is the need for more effective control of pests, such as rodents, which contaminate and destroy food while still in farm stores. At the same time, there is a greater recognition of the need to protect and enhance wildlife in rural areas.

The Campaign for Responsible Rodenticide Use (CRRU) aims to protect wildlife while promoting and providing effective rodent control through the responsible use of rodenticides. In a bid to ensure that any negative impact on wildlife caused by poor pest control practice is eliminated, CRRU is actively promoting the responsible use of rodenticides and has launched a code under the banner 'Think Wildlife'. These essential guidelines promote best practice in rodent control.

From advising those using rodenticides to have a planned approach and always using enough baiting points, to warning them never to leave bait around at the end of treatment, the code will help rural users to get the best results from their rodent control programmes, yet reduce the potential harmful effects on wildlife.

To learn more on this initiative, launched in Ireland in September 2013, or how to minimise risk to wildlife, go to www.thinkwildlife.org

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 Public Expenditure & Reform	Backweston Laboratory Campus Celbridge Co. Kildare +353 1 5057000 www.statelab.ie info@statelab.ie