

Appendix 1

Data summary 2019

Raptor persecution (see also Appendices 2 and 4)

In 2019, the RSPB Investigations team recorded 85* confirmed raptor persecution incidents. These are mapped to an Ordnance Survey 10km (6 mile) grid square (see Appendix 4) and can be broken down further into the following incident types:

- **45 confirmed shooting or attempted shooting incidents.** Victims included 24 buzzards, four peregrines, three red kites, three goshawks, three barn owls, four sparrowhawks, one hen harrier, one marsh harrier, one merlin, and one kestrel.
- **25 confirmed poisoning (pesticide) abuse incidents.** Victims included 18 red kites, six buzzards and two peregrines.
- **Nine confirmed trapping incidents.** Victims included two buzzards, one golden eagle, one hen harrier, one goshawk, one tawny owl, and one sparrowhawk.
- **Six confirmed “other” persecution incidents.** Victims included one peregrine falcon and one sparrowhawk.
- **Victim total: 80.** Species split: 32 buzzards, 21 red kites, seven peregrines, four goshawks, two hen harriers, one golden eagle, six sparrowhawks, three barn owls, one marsh harrier, one merlin, one kestrel, and one tawny owl.

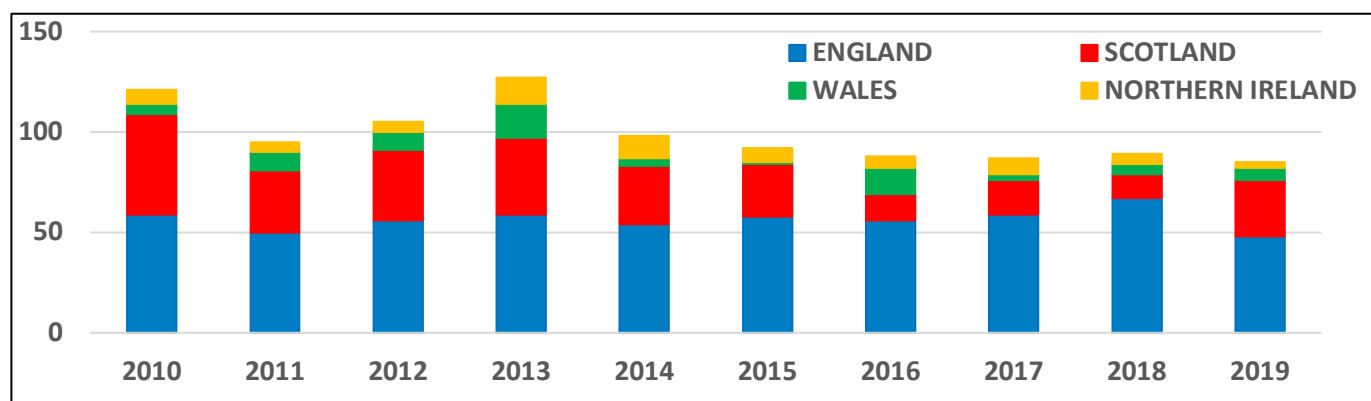
To see the most complete, centralised set of known confirmed raptor persecution incidents in the UK, including 2019 data, see our interactive Raptor Persecution Map Hub: rspb.org.uk/raptormap.

*Note that data delays from various sources due to COVID-19 are likely to result in further incidents or details being added retrospectively.

UK breakdown of 2019 confirmed bird of prey persecution incidents:

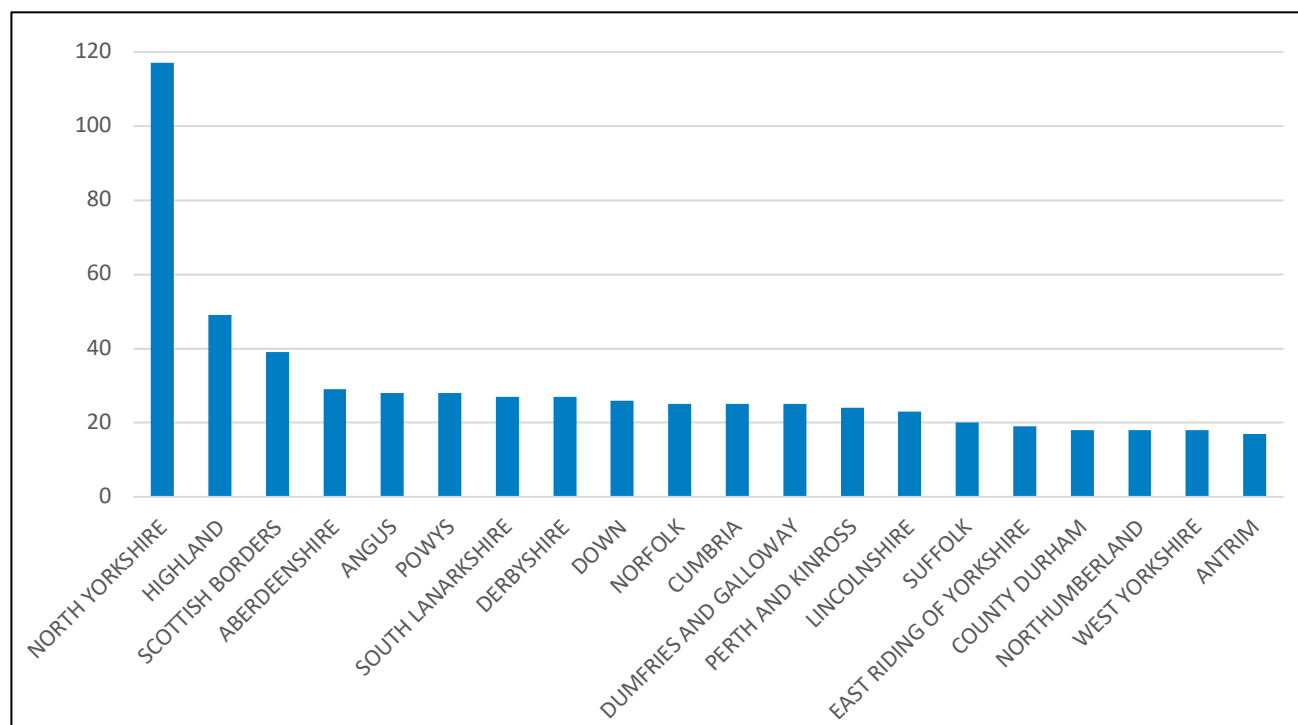
- 48 (56%) of confirmed bird of prey persecution incidents occurred in England
- 28 (33%) occurred in Scotland
- 6 (7%) occurred in Wales
- 3 (4%) occurred in Northern Ireland.

Fig.1 Confirmed bird of prey persecution incidents 2010–2019 split into UK countries



Note: these incidents represent a fraction of those that occur as many go undetected. Conclusions that can be drawn from these figures in isolation are limited. See “Explanatory notes” for bigger picture scientific studies.

Fig. 2 Number of confirmed bird of prey persecution incidents 2010–2019: worst 20 UK counties



Non-raptor persecution

Wild bird poisoning

There were seven confirmed wild bird poisoning incidents (other than raptor persecution incidents). See Appendix 3 for details.

Other offences:

Trade in wild birds and taxidermy

- 27 reports of illegal taking, possession or sale of wild birds other than birds of prey (predominantly finches)
- One report of illegal taxidermy
- 18 reports of illegal taking, possession or sale of birds of prey.

Egg collecting and taking eggs and/or chicks from nests of wild birds.

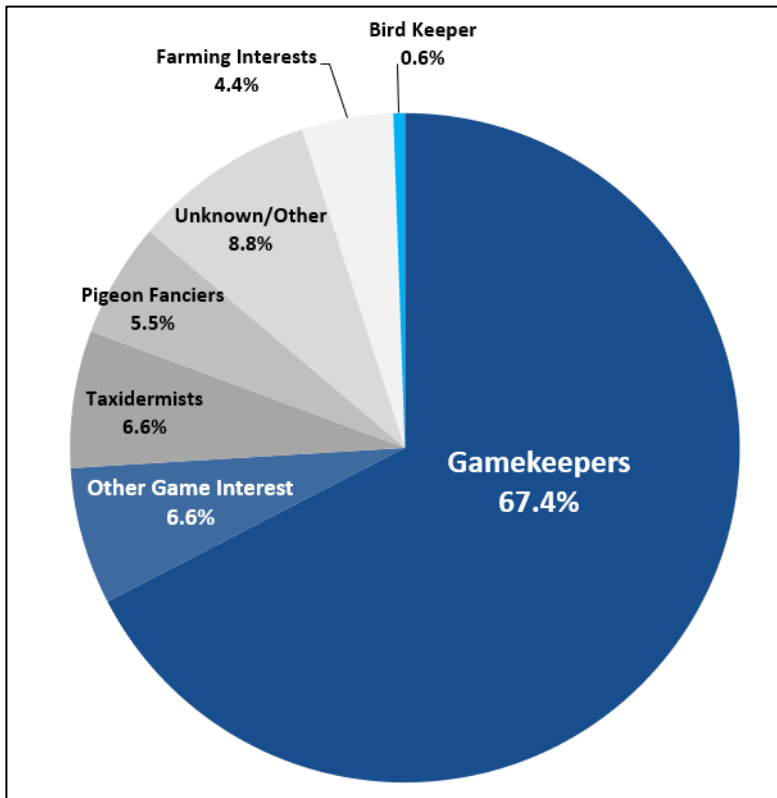
- Nine reported incidents of egg collecting and taking eggs from nests of wild birds.
- In relation to Schedule 1 species: one confirmed incident of taking eggs from a peregrine falcon nest; one confirmed incident of taking red kite chicks from the nest; one confirmed incident of taking eggs from seven individual little tern nests; one probable incident of marsh harrier eggs being taken from the nest; one probable incident of goshawk chicks being taken from the nest; and three probable chick robberies from individual peregrine falcon nests.
- More than 25 reports of eggs of wild birds being illegally sold.

Prosecutions

There were 15 wild bird crime prosecutions (see also Appendix 5). These involved a total of 45 charges: 40 (89%) of these resulted in a guilty outcome. Fines for the year amounted to £1,980 and two individuals were given a prison sentence for their crimes, both were custodial.

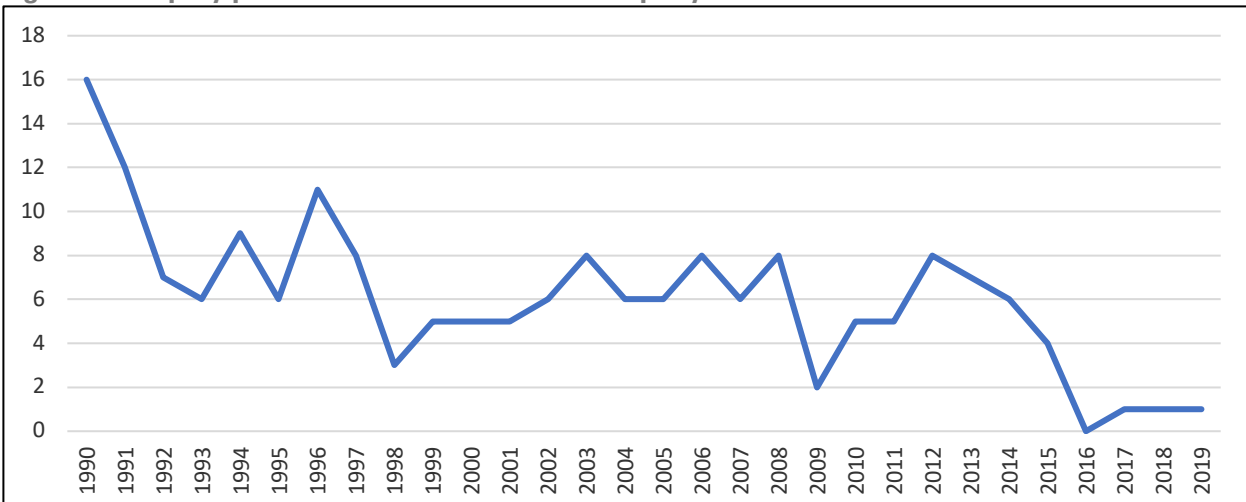
In 2019 there was just one bird of prey persecution-related prosecution, and this led to a conviction (see Appendix 5). The defendant (gamekeeper) pleaded guilty to nine charges including killing two goshawks, three common buzzards, three badgers and an otter, along with other charges involving the setting of illegal snares, possessing banned pesticides and devices to catch raptors. He was sentenced to 225 hours of unpaid work and given a 10-month Restriction of Liberty Order (9pm-6am).

Fig. 3



The occupations or interests of the 181 individuals convicted of bird of prey persecution-related offences 1990–2019

Fig. 4 Bird of prey persecution-related convictions per year 1990–2019



Appendix 2

2019 Confirmed bird of prey persecution incidents (including poisoning)

Type	Month	Species	Number	Poison	Bait	County	10km grid ref
Shooting or attempted shooting	Jan	Buzzard	1	NA	NA	North Yorkshire	SE86
	Jan	Buzzard	1	NA	NA	West Midlands	SP06
	Jan	Goshawk	1	NA	NA	Scottish Borders	NT76
	Feb	Buzzard	1	NA	NA	North Yorkshire	SE87
	Feb	Buzzard	1	NA	NA	Cambridgeshire	TL65
	Feb	Sparrowhawk	1	NA	NA	North Yorkshire	SE19
	Feb	Buzzard	1	NA	NA	Suffolk	TL96
	Mar	Buzzard	1	NA	NA	Northamptonshire	TL06
	Mar	Buzzard	1	NA	NA	North Yorkshire	NZ10
	Mar	Goshawk	1	NA	NA	Scottish Borders	NT25
	Mar	Buzzard	1	NA	NA	North Yorkshire	NZ10
	Apr	Sparrowhawk	1	NA	NA	Stirling	NS88
	Apr	Peregrine falcon	1	NA	NA	Cheshire	SJ45
	Apr	Buzzard	1	NA	NA	Northumberland	NY95
	May	Buzzard	1	NA	NA	Northumberland	NY95
	May	Red kite	1	NA	NA	Buckinghamshire	SP84
	May	Peregrine falcon	1	NA	NA	Greater Manchester	SD70
	May	Buzzard	1	NA	NA	North Yorkshire	SE69
	May	Peregrine falcon	1	NA	NA	West Midlands	SP28
	May	Buzzard	1	NA	NA	North Yorkshire	SE69
	May	Red kite	1	NA	NA	Worcestershire	SO66
	Jun	Hen harrier	1	NA	NA	Dumfries and Galloway	NS81
	Aug	Merlin	1	NA	NA	Buckinghamshire	TQ09
	Aug	Marsh harrier	1	NA	NA	North Yorkshire	SE98
	Aug	Buzzard	1	NA	NA	East Riding of Yorkshire	SE85
	Aug	Sparrowhawk	1	NA	NA	Worcestershire	SO94
	Aug	Barn owl	1	NA	NA	Suffolk	TM15
	Sep	Sparrowhawk	1	NA	NA	Dorset	SY78
	Oct	Buzzard	1	NA	NA	North Yorkshire	SE53
	Oct	Peregrine falcon	1	NA	NA	Cambridgeshire	TL49
	Oct	Barn owl	1	NA	NA	Staffordshire	SJ94
	Nov	Buzzard	1	NA	NA	Tyrone	H48
	Dec	Kestrel	1	NA	NA	North Yorkshire	SE25
Dec	Red kite	1	NA	NA	Herefordshire	SO46	
Dec	Barn owl	1	NA	NA	North Yorkshire	SE85	
Unknown	Goshawk	1	NA	NA	Aberdeenshire	NJ61	
Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld	
Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld	

Type	Month	Species	Number	Poison	Bait	County	10km grid ref
Shooting or attempted shooting (cont'd.)	Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld
	Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld
	Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld
	Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld
	Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld
	Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld
	Withheld	Buzzard	1	NA	NA	[Scotland]	Withheld
Number of birds			45				
Illegal pole or spring trapping	Jan	Goshawk	1	NA	NA	Moray	NJ12
	Apr	Birds of prey	T	NA	NA	Cheshire	SJ77
	May	Hen harrier	1	NA	NA	South Lanarkshire	NS91
	Jun	Birds of prey	T	NA	NA	South Lanarkshire	NS92
	Aug	Golden eagle	1	NA	NA	Aberdeenshire	NO29
Number of birds			3				
Illegal trapping (other)	Jan	Buzzard	1	NA	NA	South Lanarkshire	NS82
	Apr	Buzzard	1	NA	NA	Northumberland	NU02
	Apr	Sparrowhawk	1	NA	NA	Angus	NO53
	May	Tawny owl	1	NA	NA	North Yorkshire	SD99
Number of birds			4				
Other	May	Birds of prey	T	NA	NA	North Yorkshire	SD97
	May	Birds of prey	T	Withheld banned pesticide	Unknown	South Lanarkshire	NS81
	Dec	Sparrowhawk	1	NA	NA	Hampshire	SU60
	Dec	Peregrine falcon	1	NA	NA	Staffordshire	SK10
	W	Birds of prey	T	NA	NA	[Scotland]	Withheld
	W	Birds of prey	T	NA	NA	[Scotland]	Withheld
Number of birds			2				
Poisoning	Jan	Buzzard	1	Carbofuran	Unknown	North Yorkshire	SE86
	Jan	Red kite	1	Bendiocarb	Unknown	Cambridgeshire	TF20
	Jan	Red kite	1	Bendiocarb	Unknown	Wiltshire	SU13
		Raven	3				
		Fox	1				
	Jan	Buzzard	1	Alphachloralose	Unknown	Suffolk	TM15
	Feb	Birds of prey	B	Metaldehyde	Fowl	Isle of Anglesey	SH57
		Fox	1				
	Mar	Red kite	1	Bendiocarb, Isofenphos	Unknown	North Yorkshire	SE16
	Apr	Buzzard	1	Alphachloralose	Red-legged partridge	Derbyshire	SK09
	Apr	Buzzard	1	Carbofuran	Unknown	Down	J45
	Apr	Red kite	1	Bendiocarb, Carbofuran, Difenacoum	Unknown	Lincolnshire	SK91
Apr	Raven	1	Diazinon	Lamb	Wrexham	SJ13	

Type	Month	Species	Number	Poison	Bait	County	10km grid ref
Poisoning (cont'd.)	May	Red kite	1	Withheld banned pesticide	Unknown	Dumfries and Galloway	NX75
	May	Red kite	1	Withheld banned pesticide	Unknown	Dumfries and Galloway	NX75
	May	Red kite	1	Withheld banned pesticide	Unknown	Dumfries and Galloway	NX75
	May	Red kite	1	Withheld banned pesticide	Unknown	Dumfries and Galloway	NX76
	May	Red kite	1	Bendiocarb	Unknown	Gloucestershire	SP20
	Jun	Red kite	1	Withheld banned pesticide	Withheld	Dumfries and Galloway	NX77
	Jun	Peregrine falcon	2	Aldicarb, Carbofuran	Unknown	Antrim	D10
	Aug	Birds of prey	B	Bendiocarb, Carbofuran	Pheasant	Worcestershire	Withheld
	Sep	Red kite	5	Alphachloralose	Pheasant	Northamptonshire	Withheld
		Buzzard	2				
		Carrion crow	2				
	Sep	Red kite	1	Aldicarb	Rabbit	East Riding of Yorkshire	SE85
	Sep	Birds of prey	B	Oxamyl	Rabbit	Denbighshire	SJ04
	Sep	Red kite	1	Carbofuran, Carbosulfan	Unknown	Denbighshire	SJ15
	Nov	Red kite	1	Diazinon	Unknown	Conwy	Withheld
Nov	Raven	2	Diazinon	Unknown	Worcestershire	Withheld	
Dec	Birds of prey	B	Diazinon	Raven	Powys	SN93	
Number of birds (of prey)			26				

The above shows confirmed raptor persecution incidents where raptors were victims, targeted or vulnerable eg to a poisoned bait.

“T” indicates known target species, victims unknown.

“B” indicates that a bait was found, victims unknown.

Grey shading shows one incident spanning more than one row in the table because it involves more than one species, offence type or category.

“W” or “Withheld” indicates that details are pending permission from enforcement partner to be released. Once available, they are added retrospectively to [rspb.org.uk/raptormap](https://www.rspb.org.uk/raptormap)

For a definition of “confirmed” see the explanatory notes at the end of these Appendices.

Persecution “other” captures confirmed persecution incidents that do not fall to the other categories of shooting, trapping, nest destruction or poisoning. For example, this could include: killing or attempted killing using other means; possession of equipment capable of being used to commit an offence (where there is supporting evidence or intelligence of sufficient standard to substantiate that birds of prey are the intended target) eg possession of a banned pesticide for use in poisoned baits.

Explore our UK map of confirmed raptor persecution incidents at [rspb.org.uk/raptormap](https://www.rspb.org.uk/raptormap)

Appendix 3

2019 Confirmed poison abuse incidents (excluding raptor persecution)

Month	Species	Number	Poison	Bait	County	10km grid ref
Feb	Pigeons	T	Bromadiolone, Difenacoum	Grain	Greater London	TQ17
Mar	Badger	2	Paraquat	Meat	Shropshire	SO59
	Dog	1				
April	Greylag goose	4	Withheld banned pesticide	Unknown	Highland	NH70
Aug	Dog	1	Carbofuran, methomyl	Meat	Greater London	TQ07
	Fox	2				
Aug	Fox	4	Bendiocarb	Unknown	Greater London	Withheld
Nov	Dog	1	Difenacoum	Rodenticide blocks and powder	Hampshire	SU50

The above shows confirmed poison abuse incidents involving species other than raptors where wild birds were involved or at risk. For raptor persecution poison abuse incidents see Appendix 2.

For a definition of “confirmed” please see the Explanatory notes at the end of these Appendices.

“T” indicates known target species, victims unknown.

Grey shading shows one incident spanning more than one row in the table because it involves more than one species, offence type or category.

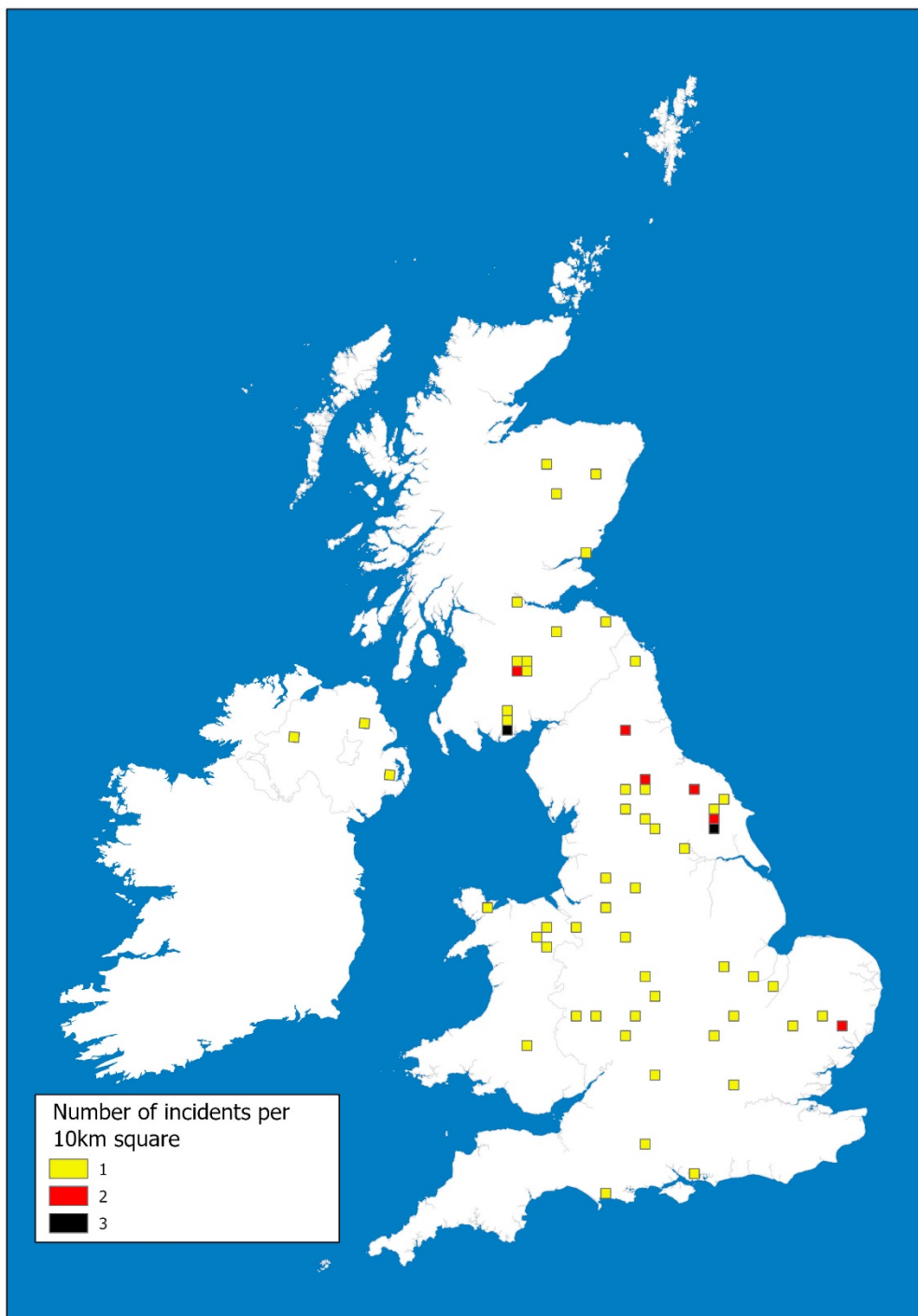
The data above were extracted from RSPB database on 01 September 2020 and were accurate at time of extraction but are constantly being updated and may be subject to change. Additional incidents or details may be added retrospectively pending release from statutory agencies or other sources.

Data delays from various sources due to COVID-19 are likely to result in further incidents or details being added retrospectively to the UK map of confirmed raptor persecution incidents at [rspb.org.uk/raptormap](https://www.rspb.org.uk/raptormap).

Appendix 4

2019 Confirmed bird of prey persecution incidents – UK map

This map shows 70 of the 85 of the confirmed bird of prey persecution incidents in 2019, each mapped to a 10km grid square (15 are withheld pending permission for release).



To see an interactive version of this map, including more years' worth of data, visit our interactive Raptor Persecution Map Hub: rspb.org.uk/raptormap

Appendix 5 wild bird crime prosecutions in 2019

Date	Prosecutor	Court	Surname	Act	Section/Reg	No of Charges	Plea	Out-come	Penalty Type 1	Penalty 1 Details	Penalty Type 2	Penalty 2 Details	Summary
10/01/2019	Customs	Snaresbrook Crown	Lendrum	Customs and Excise Management Act 1979	170(2)(b)	4	G	G	Jail	37 months			Defendant pleaded guilty to four counts of smuggling 19 birds' eggs listed under CITES Appendix II into the UK from South Africa. Species included African fish eagle, Cape vultures, African hawk-eagles and black sparrowhawks. He was sentenced to 37 months' imprisonment and ordered to pay £170 victim surcharge. All birds were forfeited.
12/03/2019	RSPCA	North Somerset Magistrates	Llewellyn Jones	Wildlife and Countryside Act 1981	1(1)(a)	1	U	G	CU	12 weeks			Defendant was found guilty of intentionally killing a wild bird (lesser black-backed gull). Sentenced to a 12-week curfew and ordered to pay £750 costs and £85 victim surcharge.
31/03/2019	Fiscal	Dundee Sheriff	Deas	Firearms Act 1968	1(2)	1	G	G	Fine	£335 total			Defendant pleaded guilty to shooting a herring gull and failing to keep a rifle properly secured. Fined a total of £335. He voluntarily gave up his firearms and ammunition.
				Wildlife and Countryside Act 1981	1(1)(a)	1	G	G	Fine				
04/04/2019	CPS	Cheltenham Magistrates	Reynolds	Control of Trade in Endangered Species (Enforcement) Reg. 1997	8(1)	1	G	G	CU	6 months total 1900-0700 hrs			Defendant pleaded guilty to the sale of an African grey parrot contrary to Regulation 8(1) and 4(2) of the Control of Trade in Endangered Species (COTES)(Enforcement) Regulations. Sentenced to a 6-month curfew order with the condition that upon fitting of the appropriate tagging device he must remain in his home between 7pm and 7am. He was ordered to pay £85 costs and an £85 victim surcharge.
				Control of Trade in Endangered Species (Enforcement) Reg. 1997	4(2)	1	G	G	CU				
				Control of Trade in Endangered Species (Enforcement) Reg. 1997	4(1)	2	D						
22/07/2019	FISCAL	Jedburgh Sheriff	Wilson	Wildlife and Countryside Act 1981	1(1)(a)	2	G	G	CBO	225 hours total	CU	10 months total 9pm-6am	Defendant (gamekeeper) pleaded guilty to nine charges including: killing two goshawks, three buzzards, three badgers, and an otter; possessing banned pesticides (two bottles of carbofuran); possessing items capable of being used to commit offences (raptor traps and calling device); and setting 23 illegal snares. Other charges related to snaring, and lack of certificate for an air weapon. He was sentenced to 225 hours of unpaid work and a 10-month Restriction of Liberty Order requiring him to stay at home between 9pm and 6am. Firearm and gamekeeping equipment confiscated.
				Wildlife and Countryside Act 1981	15(a)	1	G	G	CBO	225 hours total	CU		
				Wildlife and Countryside Act 1981	11(1)(a) & 21(1)	1	G	G	CBO	225 hours total	CU		
				Wildlife and Countryside Act 1981	9(1) & 21(1)	1	G	G	CBO	225 hours total	CU		
				Wildlife and Countryside Act 1981	18(2)	1	G	G	CBO	225 hours total	CU		

Date	Prosecutor	Court	Surname	Act	Section/Reg	No of Charges	Plea	Out-come	Penalty Type 1	Penalty 1 Details	Penalty Type 2	Penalty 2 Details	Summary
				Protection of Badgers Act 1992	1(1)	1	G	G	CBO	225 hours total	CU	10 months total	
				Unknown	0	2	G	G	CBO	225 hours total	CU	9pm-6am	
				Wildlife and Countryside Act 1981	1(1)(a)	1	NG	NG					
				Unknown	0	2	NG	D					
11/10/2019	RSPCA	Barkingside Magistrates	Crotty	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£160			Defendant pleaded guilty to the unlawful possession of three wild birds (goldfinches). Fined £160 and ordered to pay £340 costs.
11/10/2019	RSPCA	Barkingside Magistrates	Borg	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£40			Defendant pleaded guilty to the unlawful possession of a wild bird (goldfinch). Fined £160 and ordered to pay £220 costs.
11/10/2019	RSPCA	Barkingside Magistrates	Thomas	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£120			Defendant pleaded guilty to the unlawful possession of three wild birds (goldfinches). Fined £120 and ordered to pay £180 costs.
11/10/2019	RSPCA	Barkingside Magistrates	Das	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£310			Defendant pleaded guilty to the unlawful possession of a wild bird (goldfinch). Fined £310 [RSPB note – this fine may include costs].
11/10/2019	RSPCA	Barkingside Magistrates	Price, R	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£170			Defendant pleaded guilty to the unlawful possession of two wild birds (goldfinches). Fined £170 and ordered to pay £180 costs.
11/10/2019	RSPCA	Barkingside Magistrates	Price, K	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£425			Defendant was found in possession of seven wild birds (goldfinches) including one in his pocket and four in his car. Magistrates made a deprivation order for the bird in his pocket. Fined £425 and ordered to pay £180 costs.
11/10/2019	RSPCA	Barkingside Magistrates	Rogers	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£160			Defendant pleaded guilty to the unlawful possession of a wild bird (goldfinch). Fined £160 and ordered to pay £180 costs.
11/10/2019	RSPCA	Barkingside Magistrates	Icel	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	Fine	£260			Defendant pleaded guilty to the unlawful possession of two wild birds (goldfinches). Fined £260 and ordered to pay £180 costs.
24/10/2019	CPS	Walsall Magistrates	Wellings	Wildlife and Countryside Act 1981	1(2)(a)	1	G	G	CBO	12 months total			Defendant, a breeder of barn owls, pleaded guilty to possessing three wild barn owls contrary to the Wildlife and Countryside Act 1981, two offences of “prohibited sale of Annex ‘A’ species” and ten offences of “making false statements to obtain A10 Certificates”, relating to 57 permits, contrary to the Control of Trade in Endangered Species. (Enforcement) Regulations 1997. Sentenced to a 12-
				Control of Trade in Endangered Species (Enforcement) Reg. 1997	3(1)(a)	10	G	G	CBO	12 months total			

Date	Prosecutor	Court	Surname	Act	Section/Reg	No of Charges	Plea	Out-come	Penalty Type 1	Penalty 1 Details	Penalty Type 2	Penalty 2 Details	Summary
				Control of Trade in Endangered Species (Enforcement) Reg. 1997	8(1)	2	G	G	CBO	12 months total			month community order, 80 hours unpaid work, £270 costs and forfeiture of six barn owls.
01/11/2019	CPS	Merthyr Tydfil Magistrates	Jones	Wildlife and Countryside Act 1981	1(1)(A)	1	G	G	Jail	12 weeks			Defendant pleaded guilty to intentionally killing a wild bird (lesser black-backed gull). Sentenced to 12 weeks in jail and ordered to pay a victim surcharge of £115.

Key to Appendix 5

CD	Conditional Discharge	CBO	Criminal Behaviour Order	CU	Curfew Order
D	Discontinued	G	Guilty	NCA	No Case to Answer
NG	Not Guilty	NP	Not Proven	NSP	No Separate Penalty
U	Unknown	YRO	Youth Referral Order	Text	Denotes raptor persecution case

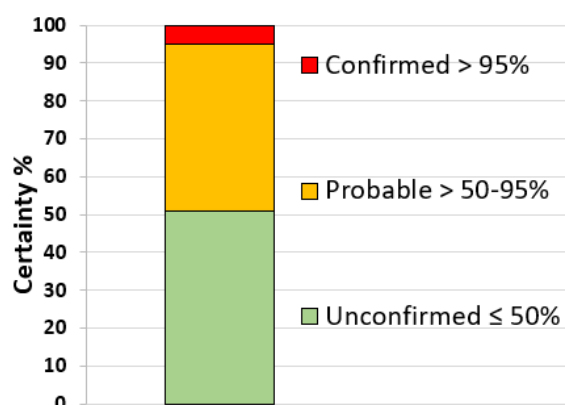
Note that the number of prosecutions listed above for 2019 will be lower than the true figure, particularly for categories involving species that are not of conservation concern. We endeavour to keep our records as up to date and accurate as possible. If you spot an error or omission, please email us at crime@rspb.org.uk

Explanatory notes

The RSPB's *Birdcrime* report summarises offences against wild bird legislation that are collated by the RSPB each year. We've published the report annually since 1990: it is the only centralised source of incident data for UK wild bird crime.

The report focuses on crimes of higher conservation concern, such as bird of prey persecution and threats to rare breeding birds. The data is gathered by the RSPB Investigations Team, a specialist unit set up to assist the statutory agencies with the investigation and prosecution of crimes against wild birds. The team includes specialist officers with investigative (field-based) and intelligence (office-based) capability.

Incidents of bird crime are rigorously and consistently recorded by the RSPB into three categories based on certainty:



Confirmed: Circumstances indicate that an illegal act has taken place. These incidents are typically substantiated by evidence such as post-mortem or toxicological analysis, or reliable eyewitness evidence.

Probable: the circumstances indicate that the most likely explanation is that an illegal act has taken place.

Unconfirmed: the circumstances indicate that an illegal act has possibly taken place.

"Confirmed" incidents are the primary focus for published figures due to their high evidential weighting – but note this report and associated mapped data represents only a fraction of the incidents that occur. Many incidents are simply not detected or reported because they often take place in remote and private locations. Also note that some incidents are not permitted for release: for example, whole incidents, or partial details, may be withheld to protect an ongoing investigation or at request of enforcement partners. Incidents and details may therefore be added retrospectively to future editions of *Birdcrime*, and to the associated Raptor Persecution Map Hub rspb.org.uk/raptormap.

The RSPB has been recording wildlife crime consistently for several decades. The figures in annual *Birdcrime* reports may vary from other published reports, because data sets compiled for different purposes, using very different methods, are unlikely to be directly comparable. Note that figures featured in this report were accurate at time of extraction, but are constantly being updated and may be subject to change. If you spot an error or omission email us at crime@rspb.org.uk.

Toxicology results from the government's Wildlife Incident Investigation Scheme (WIIS) form the primary source of wildlife poisoning data included in *Birdcrime* reports. In isolated cases, toxicology results may be obtained via other routes eg where victims or baits have not been accepted for analysis via the government schemes, so private analysis has been undertaken. The RSPB is the only organisation to present pesticide analysis data in a standardised format to reflect actual wildlife crime incidents.

Conclusions that can be drawn from annual crime figures alone are limited. A more complete picture of the severe effect that illegal killing is having on national populations of wild birds can be gauged through long-term, systematic scientific study of bird populations, including:

- The article in *Nature Communications* published March 2019 on patterns of satellite tagged hen harrier disappearances [nature.com/articles/s41467-019-09044-w](https://www.nature.com/articles/s41467-019-09044-w)
- The rigorous Conservation Framework reports by
 - Scottish Natural Heritage (SNH) on golden eagles [nature.scot/snh-commissioned-report-193-conservation-framework-golden-eagle-implications-conservation-and](https://www.nature.scot/snh-commissioned-report-193-conservation-framework-golden-eagle-implications-conservation-and))
 - Joint Nature Conservation Committee (JNCC) on hen harriers (<http://archive.jncc.gov.uk/page-5775#download>).
- A range of peer-reviewed scientific publications that demonstrate the impacts of persecution on species including red kites ([nature.scot/snh-commissioned-report-904-population-modelling-north-scotland-red-kites-relation-cumulative](https://www.nature.scot/snh-commissioned-report-904-population-modelling-north-scotland-red-kites-relation-cumulative)) and peregrines ([sciencedirect.com/science/article/pii/S0006320711003831](https://www.sciencedirect.com/science/article/pii/S0006320711003831)).
- The SNH review published May 2017 which showed that almost a third of golden eagles fitted with satellite tags disappeared in suspicious circumstances: [nature.scot/snh-commissioned-report-982-analyses-fates-satellite-tracked-golden-eagles-scotland](https://www.nature.scot/snh-commissioned-report-982-analyses-fates-satellite-tracked-golden-eagles-scotland)
- The British Birds paper showing the link between raptor persecution and land managed for driven grouse shooting in the Peak District National Park: [britishbirds.co.uk/raptor-persecution/](https://www.britishbirds.co.uk/raptor-persecution/)

For additional literature, material and a variety of scientific publications relating to raptor persecution, visit the "Resources" section of *Operation Owl* here: [operationowl.com/literature](https://www.operationowl.com/literature)

Acknowledgements

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- National Wildlife Crime Unit (NWCU)
- Chemicals Regulations Directorate (CRD)
- Food and Environment Research Agency (Fera) Science Ltd
- Science and Advice for Scottish Agriculture (SASA)
- Scottish Society for Prevention of Cruelty to Animals (SSPCA)
- The Royal Society for the Prevention of Cruelty to Animals (RSPCA)
- Raptor Study Group workers
- Predatory Bird Monitoring Scheme (PBMS)
- The Zoological Society of London (ZSL)
- Scotland's Rural College (SRUC)
- Scottish Government Rural Payments and Inspection Directorate (SGRPID)
- Scottish Natural Heritage (SNH)
- UK veterinary practices
- The Agri-Food and Biosciences Institute (AFBI NI)
- Ryedale Wildlife Rehabilitation Centre
- Welsh Government