

## **Environment, Climate Change and Land Reform Committee**

### **PE01750: Independent Monitoring of Satellite tags fitted to raptors**

#### **Correspondence from the Golden Eagle Satellite Tagging Group**

The Golden Eagle Satellite Tagging Group (GESTG) was established to convene the collaborative efforts from several parties actively engaged in funding, deploying and using satellite tagging to increase knowledge of the biology of golden eagles in Scotland.

Full comments to each part of the petition's background information are set out in detail in the main body of this submission but a summary is given below.

#### **Summary of GESTG response**

The use of satellite tags has revolutionised our understanding of the biology of numerous species, and therefore their conservation. In Scotland, tags fitted to raptors continue to provide invaluable information on a range of important conservation issues including, so long as it continues to affect those species, the pattern and scale of wildlife crime.

The Scottish Government already has the capacity for "oversight" and knowledge of satellite telemetry activities, involving a whole range of species, not just raptors. There are no new provisions which need to be instigated for such; despite the petitioner's plea.

Fitting tags requires great skill and is, quite correctly, tightly regulated. Paramount in fitting tags is the welfare of the birds: recently published data for Scottish raptors indicate this priority has been met across several metrics. Potential errors may occur but are evidentially rare: such errors can inform or potentially discard the method under existing regulatory scrutiny via Government proxy agencies.

Interpretation of tag data also requires a level of expertise through knowledge of how tags work and in interpretation of the large volumes of data which tags provide. This knowledge already resides in personnel acknowledged as independent experts by Scottish Government: such knowledge has also been published and has been passed to Police Scotland for instances where tag data may infer criminality. It does not reside in SASA (Science and Advice for Scottish Agriculture) as proposed to be an appropriate "independent" body by the petitioner. For this organisation to gain expertise in tag data interpretation, would require training of SASA by the current experts which this petition explicitly seeks to remove from any prospective criminality process.

The petitioned basis of this proposed removal of acknowledged experts from the process seems to be that these personnel are not "independent" (which should now include Police Scotland) and that – to paraphrase the petition - 'if only independent experts could be used this will mean better crime statistics could be produced by Police Scotland'. Both notions are evidentially fallacious.

No prosecutions have been brought the basis of satellite tags nor are they likely to be in the future (unless there are substantial advances in technology) given the

requirement to link any crime (plus physical evidence of criminality) to an individual. One of the main values of tags is the potential documentation and potential detection of crime, not its prosecution. Even when there has been physical evidence of criminality (via autopsies such as conducted by SASA), which sat tagging rarely provides, when criminals are apparently aware of its limitations: prosecutions are rare. For golden eagles since 1981 there have been no prosecutions of individuals from 67 'official' criminal records despite accompanying physical evidence of illegal poisoning, shooting and trapping.

The petition invokes differing tags' "functionality" and "signal" rates, but these are not relevant considerations: the relevant consideration is that tags suddenly stop functioning, with no prior signs of failure on the tag's performance (these signs include consideration of "functionality" and signal rate). The tags used have a high level of reliability. Though, like any technology it is not without occasional manufacturer error and failure: such occasional failure is acknowledged in scientific analyses, and can be recognised prior to submission to Police Scotland and can be further considered by such policing of the data under current protocol.

Nevertheless, the 'unexpected failure rate' in the UK is far higher than in other countries where tag deployment was comparable by model and species, and is concentrated in some areas of intensive management for driven grouse shooting. The only reasonable explanation for this is that the bird has been killed and the tag destroyed; and both bird and tag removed from the scene of the crime. Such data will not rise to the level of physical evidence for which 'official records' of criminality are required by Police Scotland.

In such cases, however, the tag information is rapidly made available to Police Scotland which is now well-versed in the interpretation of such data and is thereby able to make its own independent investigations and draw its own conclusions. Therefore, the tag data are already available for independent and informed scrutiny by Police Scotland. Police Scotland can also obtain – at original source – the relevant data from the tag manufacturer or data provider, should even further evidence of "independence" and "expertise" be needed.

Robust and expert procedures already exist in the interpretation of satellite telemetry data as they may apply to wildlife crime: including, and critically, Police Scotland and the National Wildlife Crime Unit. This petition would not provide any benefits to the current process – indeed, it would hamper it and make the efforts to combat and document wildlife crime more difficult.

Background information to the petition (in black) and responses (in blue) from GESTG follows:

The fitting of satellite tags to raptors today has moved away from conservation, exclusively, to include potential detection of wildlife crime.

This statement is without basis. The objectives of fitting satellite tags and its licensing are to discover more on the biology of raptors through the insights which can be uniquely provided by the tool of satellite telemetry. This tool has, and is being increasingly used, in studies of a large range of bird and mammal species, including avian species in the UK, such as seabirds, cuckoos and gamebirds.

The conservation of several raptors, unfortunately, continues to be hindered by illegal persecution because it affects the conservation status of their populations. Wildlife crime is a key and influential factor in the conservation of several raptor species. The potential detection of wildlife crime from the fitting of satellite tags on raptor species, which is directly relevant to those species' conservation, is largely conditional on such crimes continuing, or not.

The petitioner doesn't seem to acknowledge that wildlife crime is, unfortunately, a continued major component of the conservation of several raptor species, and remains inherent in its study as long as raptor persecution continues.

The fitting of satellite tags continues to use this indispensable tool to discover more on the biology of the tagged subjects and such discoveries will relate to their conservation and the factors affecting conservation status. If illegal persecution continues as a threat to conservation status then satellite tagging will inevitably be involved in its "potential detection". Satellite tagging can consequently also contribute towards documenting the cessation of illegal persecution, should it eventually occur.

The petitioner's basic questioning of the inclusion of potential detection of wildlife crime "away from conservation, exclusively" in the fitting of satellite tags is odd in another respect. As noted, this is an inaccurate position when, unfortunately, conservation of several raptors and wildlife crime continue to be linked. Moreover, scientifically such exclusivity could be justified as it is clearly an ongoing factor affecting the conservation of several raptors. The petitioner's questioning seems additionally odd, however, because any position which wishes to see wildlife criminality exposed and expunged should welcome the use of satellite tagging and any insights it can provide towards these goals.

Despite possibly hundreds of birds being tagged (Scottish Government is attempting to establish oversight on how many there are), no prosecutions for potential wildlife crimes have ever been brought on the basis of satellite tag data as there has been an insufficient evidence base to do so.

Scottish Government (SG) can readily obtain statistics on the number of satellite tagged birds to gain "oversight", across all species (not just raptors), because these data are lodged annually by named licensees with the British Trust for Ornithology (BTO) which acts as a proxy agent for Scottish Natural Heritage (SNH) under the licensing of such 'special marking' activities (BTO's Special Methods Panel). SNH can legitimately obtain these data from BTO and can legitimately transfer this information to SG.

The procedures for SG "oversight" are already in place. No new procedures need to be enabled because procedures already exist and can already be acted on as regards SG "oversight". If they haven't been enacted so far, then that requires better communications within the relevant agencies/institutions involved, not new replicated measures as indicated by this petition. Further licensing impositions are not needed.

The reference to "prosecutions" seems odd in its framing. It seems to be equating the 'value' and necessity for SG "oversight" of satellite tagging insofar as "prosecutions for potential wildlife crimes". Recall, this is despite an earlier erroneous petitioner comment that satellite tagging is no longer involved "exclusively" in conservation by including the detection of wildlife crime.

This statement may imply that with greater SG “oversight” of satellite tagging this position may change, so far as prosecutions becoming more likely. This implication seems either extremely naïve or disingenuous of evidence, when there have been no or very few prosecutions of individual persons based even on records of “official” criminality involving the illegal killing of individual raptors (e.g. poisoning or shooting, as documented by SASA).

SG has had “oversight” (in the petitioner’s perspective) over SASA investigations for several years, and this has not met with any prosecutorial advancement regarding crimes against individual raptor deaths from recovered corpses (despite SASA’s expertise in autopsy). SASA has no expertise in satellite telemetry data, however and the nature of most scientific evidence on satellite telemetry is currently in expert hands (including Police Scotland), and within agreed protocols and SG-acknowledged expertise.

Greater SG “oversight”, in enacting such communication will not make any marked difference to the number of prosecutions under current legislation. This is despite Police Scotland now having expertise in the interpretation of satellite tag data, if criminality is inferred by those data.

In other words, the petitioner is correct in that no prosecutions have been brought on the basis of satellite tagging data (those data includes several examples where tagging has led to the recovery of a corpse with evidence of criminality derived from the corpse). But that is irrelevant to the main revisionism which the petition promotes. This is especially when absence of any evidence is an increasingly inevitable outcome when this issue involves criminals who can readily destroy and clear any evidence of their criminality surrounding the killing of satellite tagged birds.

Even with physical evidence, in relation to the killing of individual birds (tagged or not), hardly any prosecutions over raptor persecution have been brought over many decades since the practice became illegal (for all but one raptor species, in 1954). This is despite any and all additional physical evidence; whether that evidence comes from satellite tagging or other sources. That outcome is, primarily, because a prosecutorial case can only rarely, if ever (given how and where these crimes are committed) be brought to bear against an individual named person, as required in legislation.

If satellite tags were monitored by government or government-approved agencies/bodies, Police would have instant data access and an independent resource to interpret complex tag information so it can be of use to investigators in live cases. It would have, at its disposal, timely, independent, expert information.

This is another red herring: Police Scotland is already given rapid access to any tag data which may relate to potential wildlife crime. There is an established protocol for such access, and Police Scotland have been educated and trained in the interpretation of such data by experts – not by “government or government-approved agencies/bodies” (whatever that means: presumably including SG, SNH or SASA) – since these bodies do not have the experience or expertise to do so (if that involves SG, SNH or SASA, as implied/indicated). Such “government or government-approved agencies/bodies” would have to be trained by the same experts that the petitioner seeks to remove from the process.

Police Scotland already has such expertise at its disposal, internally, because there has already been such proactive and collaborative education and training from experts in the field. This has included a dedicated workshop at SNH's Battleby facilities between Police Scotland officers, SNH, SG, and experienced expert practitioners in the field of satellite telemetry data analysis and interpretation.

These current practitioners are independent and can contribute any further advice which is required by Police Scotland, despite there now being increasing in-house expertise in Police Scotland and the National Wildlife Crime Unit. Additionally, such advice is also available from the tag manufacturers and original data providers – with further independence – as these are sources which also hold the same transmitted data and can potentially further assist interpretation if required by the criminal process.

Regardless of the clearly independent nature of Police Scotland and their capacity to interpret “complex tag information” themselves, that the petitioner is questioning the ‘independence’ and ‘expertise’ of those practitioners involved in satellite tagging of raptors is not only grossly insulting and potentially defamatory, but also, objectively, fact-free.

As agreed by our Group (GESTG), Natural Research (NR) is the repository for all satellite tagging data for golden eagles in Scotland, funded under several initiatives, in order to take forward analyses and publications on this collective dataset. These works do not just involve the effect of illegal persecution on golden eagles. NR has a long-standing demonstrable history of involvement in research publications on golden eagles<sup>1</sup>. There are several peer-reviewed outputs which have been produced or are in production which, through satellite telemetry, have substantially enhanced our knowledge of tagged subjects.

Such knowledge informs conservation efforts and has several practical applications. These publications often do not refer directly or indirectly to illegal persecution but, unfortunately they may, when such persecution continues to influence the conservation of several raptor species. Aside from research related to satellite telemetry, there is a large body of evidence which continues to show the influence of this factor on many raptors' conservation status.

NR was selected by SG as the independent and expert basis to undertake the review of ‘suspicious tag fates’ in golden eagles (Whitfield & Fielding 2017<sup>2</sup>) as instigated by the Cabinet Secretary for Environment, Climate Change and Land Reform, Roseanna Cunningham. The Cabinet Secretary has publicly and privately (in letter to the authors) praised the objective and thorough analyses and reporting. The main tag manufacturer (MTI) in its Winter 2017 Newsletter<sup>3</sup> noted that: “*The official report [Whitfield & Fielding 2017] must be among the most extensive analyses of data collected from PTTs [satellite tags] that we have seen, a truly amazing report detailing the validation of the collected data*”. Further international praise for the methods used, including the documentation of suspicious fate tags, with no preceding signs of tag malfunction (and

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<sup>1</sup> See, for example: <https://www.nature.scot/snh-commissioned-report-193-conservation-framework-golden-eagle-implications-conservation-and>

<sup>2</sup> <https://www.nature.scot/snh-commissioned-report-982-analyses-fates-satellite-tracked-golden-eagles-scotland>

<sup>3</sup> [https://www.microwavetelemetry.com/uploads/NewsletterPDFs/MTINewsletter\\_2017\\_Winter.pdf](https://www.microwavetelemetry.com/uploads/NewsletterPDFs/MTINewsletter_2017_Winter.pdf)

so likely killed tagged birds) was also highlighted by Sergio *et al.* (2018: Journal of Applied Ecology<sup>4</sup>).

And yet, the petitioner claims that monitoring of tag data is not being conducted by an “independent” and “expert” source, implying that current provisions cannot “interpret complex tag information”? Aside from the additional facts that such interpretational faculties are also well-established in Police Scotland (when needed in view of possible criminal behaviour) and that the petitioner’s preferred choice (SASA: as noted later) has none, this is a set of absurd claims and suggestions.

Independent information, rather than owner or third party data, would provide transparency and end mistrust amongst stakeholders. It has the potential to offer Scottish Government and the Scottish public greater clarity on the extent of raptor crime occurring today in Scotland.

The information is already “independent” and to suggest otherwise is incorrect. The satellite tagging information is gathered and enabled through funding from several research parties, with considerable cost and effort, wishing to study the biology of the tagged subjects. The thrust of this petition doubts the independence, motives and capacity to ‘properly’ analyse or be otherwise responsible for these data.

The petitioner is not only disputing the independence of the researchers behind the tagging but is also implying that those researchers have no property rights to the information which they have funded and thereby own. This information does not always involve potential wildlife crime – even though it is frustrating and depressing that it does when it often means that the natural life cycle of the tagged bird has been illegally curtailed and an expensive satellite tag has been ‘lost’ (likely destroyed). Nevertheless, the petitioner is promoting that all such tag data which is the property of the funders (or “owners” as correctly revealed by the petition’s terminology), and the fundamental basis of research, should be handed over to another party (e.g. SASA) with less expertise. And when Police Scotland already has the relevant knowledge of interpretation for those data, when needed, and hence rapidly receives the relevant data if they may involve a potential wildlife crime. This petition’s argument is ill-conceived and unnecessary.

The petition also opens the door to any research on any satellite tagging of any species having to be handed over as-and-when-received from the expert researchers to another less-informed party which is “Government-approved” (despite that the current researchers are actually already recognised as being independent experts by SG). That research would include data which are the property of Universities, GWCT, BTO, amongst many others.

There is no generic “mistrust” amongst all stakeholders, only that perpetrated by a minority of ‘stakeholders’ such as the petitioning organisation. As scientists and practitioners of this invaluable investigative method, we could point out objectively with considerable evidence that where the ‘mistrust’ lies is in a practice, namely some actions associated with intensive grouse moor management, which have been

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<sup>4</sup> <https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2664.13294>

repeatedly identified as being the source of much recorded ‘raptor crime’, directly and vicariously at multiple levels of evidence<sup>5</sup>.

There will be no “public greater clarity on the extent of raptor crime” through the petition’s proposals. First, as we’ve noted, procedures are already in place to provide relevant SG “oversight” and independent expertise; including Police Scotland in-house. Second, on providing “greater clarity” no level of expertise can counter that these criminal acts, which may be documented by several potential detection methods, occur in remote environments where witnesses are few, policing efforts are thinly stretched and criminals will typically hide or avoid leaving any physical evidence or witnessing of their crimes.

Under any recording method to document ‘raptor crime’ whether this be several sources of scientific evidence, ‘official’ records of criminality, prosecutions, or convictions then it will always be the ‘tip of the iceberg’. The iceberg’s tip is increasingly and progressively small under these four evidential classes of ‘criminal records’. The Cabinet Secretary for Environment, Climate Change and Land Reform, Roseanna Cunningham, has repeatedly acknowledged this basic feature of data and ‘evidence’ of wildlife crime as they relate to raptor persecution.

So far as satellite tagging and evidence of criminality is concerned then physical evidence may on occasion be obtained and enabled by tagging in the discovery of a corpse which includes incontrovertible evidence of illegality (e.g. banned poisons in the corpse’s tissues). This then transfers the record to an ‘official criminal record’ logged by Police Scotland (which will then be published by SG). For this to transfer further up the evidential chain towards prosecution and conviction is evidentially unlikely, as in the sparsity of such events in existing data.

For example, 51 golden eagles were recorded ‘officially’ as poisoned, and a further 16 were confirmed as having being shot or illegally trapped from 1981 to 2019<sup>6</sup>. There were therefore 67 ‘official records’ (documented as criminal through available physical evidence and autopsies on recovered dead birds). Over this time period there was **no** individual prosecution or even offence-charging related specifically to any of these official records of criminal killing of a golden eagle.

Hence, even when physical evidence of criminality is recorded, as in scores of cases, this has rarely (or has not) resulted in direct and specific criminal charges (zero, since 1981, for golden eagle). Elevating scientific evidence of likely criminality to the next evidential level – an ‘official record’ of criminality – has to involve physical evidence under current strictures. Even then, as illustrated for golden eagle that elevation means nothing – literally, demonstrably - so far as subsequent advancements under the legislative and justice system towards criminal charging are concerned.

There is a marked contrast in the discovery of corpses of tags associated with suspicious events and natural deaths. Physical evidence of tagged corpses with

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<sup>5</sup> One example of many possibilities, based on a higher evidential level in documentation of wildlife criminality: <https://www.rspb.org.uk/contentassets/541bb4e4100a40bfacc55feb5f8fbc29/birdcrime-2018-appendices.pdf>

<sup>6</sup> See: <https://www.tandfonline.com/doi/pdf/10.1080/00063650709461476> for earlier published records and again highlighting the influence of illegal persecution on golden eagles. Later records were involved in analyses described by Whitfield & Fielding (2017)

suspicious fates is rarely discovered – unlike those with a ‘natural death’ – the likely reason being that the tagged birds have probably been killed by criminals and evidence removed. It is reasonable to suppose that these particular criminals act like other criminals, in that they will typically avoid leaving any physical evidence of their criminality. They will be attuned and responsive to any advancement in methods to detect their criminality. There should be no bones about it, in any consideration of records: wildlife crimes involve criminals who have had decades to appreciate the laws and circumvention of those laws in leaving any evidence of their illegal activities. This fact has been repeatedly stated by the current Cabinet Secretary for the Environment and Rural Affairs, no less.

Consequently, in the most typical likely scenario, a tagged raptor is killed and evidence of both the bird and its tag is presumably destroyed and removed. Hence the tag suddenly and inexplicably stops transmitting, and there are no signs of either the tag or its bearer at or near the last tag transmission location on subsequent searches. That is the reasonable conclusion from scientific published studies involving the interaction with satellite tagged raptors and wildlife criminals. These are not isolated incidents but represent a repeated theme across many suspicious tag fates in particular areas predominantly associated with intensive grouse moor management. Those associations also involve independent records of other acts of criminality (involving those recognised ‘officially’).

This reasonably supposes that the criminal is aware of how satellite tag data can reveal even some evidence of their criminality: satellite tagging is a relatively new innovation in the study of raptors and many other birds and mammals. There is some evidence of how learning may have been involved in the criminal fraternity on the limits of satellite tagging so far as any revelatory evidence. This includes the most recent history of (decline in) poisoning records, which is illustrated by golden eagle telemetry data. A poisoned bird is far more likely to be detected if it is satellite tagged and the corpse can potentially be found quicker than the perpetrator can check on his/her poison-baiting consequences.

### **Present Problems:**

There is little uniformity when it comes to the type of tags operational today. Many types offer different functionality. Many tags signal, for example, when there is enough solar power.

These signals, in some cases, can be hours apart. When it comes to how tags are fitted, there are human error considerations.

“Functionality” can differ and “signals” can be hours apart (or minutes apart) but these are not relevant considerations: the relevant consideration is that several tags suddenly stop functioning, with no prior signs of failure on the tag’s performance (these signs include consideration of “functionality” and signal rate), such that a sudden stop could be due to the tag’s malfunction. The petitioner is clearly unaware and ignorant of the relevant considerations and how telemetry data should be analysed: a lengthy discourse on this is presented by Whitfield & Fielding (2017: and see praise for the methods noted earlier). The petitioner once again illustrates a basic lack of understanding.



Recall also that, as documented by Whitfield & Fielding (2017) tagged birds do die naturally and so their bodies can be and have been recovered by assistance from telemetry records on the birds' status and its final location. The spatial distribution of such natural deaths in golden eagles documented through telemetry was as expected on where the birds had travelled, and were not concentrated in and around areas of driven grouse moor management, as were the numerous suspicious tag fates.

Recent analyses indicate that there were no 'human error' considerations which could be detected in how tags are fitted (Whitfield & Fielding 2017). As Whitfield & Fielding (2017) note, however, that is not to say such errors do not or will not occur in an isolated occasion. This specialised method of fitting tags is constantly licensed (far more stringently than in many other countries), heavily scrutinised and monitored by independent expert panels (notably BTO's Special Methods Panel). Any potential errors are and will be reported to the licensing authority and enacted on for improvement or, potentially, cessation.

The recent documented evidence (Whitfield & Fielding 2017) is that fitting of tags caused no behavioural, physiological or demographic problems for tagged raptors in Scotland. Data collected subsequent to that report further supports those conclusions. The petitioner may not appreciate it, through having no experience, but all those involved in satellite tagging of raptors take the welfare of their tagged subjects as a first priority: not only on individual birds' health but also in how the act of tagging should have no research influence.

Similarly, some tag types may be more reliable than others. Even then, seemingly foolproof technology can fail. There have been a number of publicised cases where birds were given up as lost, their tag no longer signalling, only to be found years later.

Again this appears to be misdirection and again betrays a lack of appreciation or reading of Whitfield & Fielding (2017). The technology is not "foolproof" and that is well-known and acknowledged by expert analysts. When the technology does fail it can be detected from the data provided by the tag(s).

The petitioner cites "a number of publicised cases" without further elaboration. On the other hand, (e.g.) none of the many golden eagle examples in Whitfield & Fielding (2017) have suddenly 'come back to life'. In general, the petitioner seems to be entirely avoiding the wider context of the scale and number of sudden suspicious disappearances of satellite tagged raptors, which are numerous, and documented thoroughly. For example, Whitfield & Fielding (2017) explicitly acknowledged that varying proportions of suspicious tag fates may have been incorrectly assigned – far greater than was indicated by other evidential sources – yet, still the pattern of association of sudden tag failures with intensive grouse moor management, and drastic effects on the survival of young eagles, remained. Such was the scale and number of birds most likely killed.

So yes, a small number of suspicious satellite tag fates may be misclassified (even fewer with most recent telemetry technology), but these are dwarfed evidentially as documented in rigorous scientific analyses, by those correctly classified. This seems to be yet a further piece of misdirection on the part of the petitioner towards the committee which may consider its submission – the petitioner is not bringing the committee's attention towards the relevant body of substantial evidence compiled by

experts, but to bring attention to potential unsubstantiated outliers: which scientific studies have already considered as possible in objective analyses but are negligible, at best.

The petitioner goes even further down the very deep metaphorical rabbit hole of its own creation (see many other petition statements) by equating such unsubstantiated outliers with a lack of 'expertise' and 'if only independent experts' could be used this will mean better crime statistics could be produced by Police Scotland. This is once again, fact-free nonsense, on many levels which are covered in our other responses.

Given the many variables, having access to an independent analyst or team of analysts to interpret the data, and any other considerations, could help Police when trying to ascertain whether crimes have been committed. Wildlife crime is one of Scottish Government and Police Scotland's top priorities.

Such "analysts" already exist and their expertise is far greater and completely open to helping to Police Scotland, should Police Scotland need it given their current in-house expertise.

However, Police Scotland themselves have admitted to Ministers in Parliament that bringing cases on the back of satellite tag information can be challenging.

In response to a question raised by the Environment, Climate Change and Land Reform Committee on March 12th 2019, with regard to whether the tags were 100 percent reliable, Police Scotland), said:

"There is still a margin of failure. Some tags are out in the extremes for a long time, they have issues and they fail...From an investigator's point of view, it is often difficult to hang your hat on a tag's disappearance definitely being the result of persecution. There is no doubt that that will be the case on some occasions, but differentiating between tag failure and persecution is a real challenge."

Addressing the same points about investigative challenges, Police Scotland said: "In the past six months to a year, there have been instances of birds seeming to disappear then to reappear due to issues with the tags. That is always a challenge for us.

"On the recording of crime, we need to be absolutely certain that a crime has taken place- as opposed to just considering that, in all probability, a crime has taken place- before we can record the incident as a crime."

Of course bringing cases will be "challenging": even if satellite tagging has enabled the discovery of a poisoned corpse or illegally trapped corpse (which the method has), never mind revealing many other potential crimes which cannot be 'officially documented' through lack of a body – or having no potential role in further evidential elements.

Recording any wildlife crime is "challenging" given the many factors which combine to minimise its detection, never mind leading to a prosecution or conviction. Bringing cases will remain challenging, no matter what the scrutiny of the relevant telemetry data, when the relevant criminals are aware – as they apparently are – that when killing a satellite tagged raptor the scene of the crime should be cleared of all evidence and

its immediate destruction (an operational tag and the body of the now-dead raptor to which it was attached).

Even so, as we have documented, when there is a physical corpse recovered with indisputable evidence of criminality this rarely results in a case being brought as a consequence of that specific discovery and registration as a “crime” (level 2 of evidence, lowest ‘official’ level, as we noted earlier). If suddenly or occasionally the criminal perpetrators forget or do not know that killing a satellite tagged raptor and just leaving the victim open to discovery (which is enhanced via satellite telemetry) will lead to an ‘official’ criminal record, then this will hardly matter either so far as any further action up the prosecutorial chain: evidentially so.

For the petitioner to imply that recording ‘official’ criminal statistics, so far as satellite telemetry records, is down to tag reliability (which is actually high: Whitfield & Fielding 2017) is patent nonsense. Moreover, on invoking tag reliability, this is further misdirection. Tags are not 100 % reliable: that is known. The (high) reliability is explicitly recognised, as noted by Whitfield & Fielding (2017) and potential tag failure is a screening process by experts before they are passed, if a crime is implicated, to Police Scotland. Police Scotland, as noted elsewhere repeatedly, also have their own expertise in interpreting satellite tag data.

### **The role of owners and/or third parties:**

At present, if a tag fitted to a raptor stops signalling, Police are informed through the tag owner, or a third party monitoring that data for the owner. Police must then obtain the data. Police can be given data at different moments in a live investigation. As it is the property of the entity owning the tag, there is no obligation upon the owner to give data to the Police necessarily in a format or timescale which they might find most beneficial.

There are several misrepresentations in this statement, which again betrays ignorance and a distorted viewpoint.

Bodies or individuals fitting tags to raptors, as data owners, may have reasons for doing so beyond, exclusively, conservation. It is not uncommon for tag owners to use data to build political or campaign cases through the media.

The petitioner may see such media exposure as “political” or as part of a “campaign”. A more reasonable stance would see such exposure of scientifically-credible results as simply highlighting factual scientific evidence, as and when such results become apparent. Does the petitioner consider the media publicity from SG after the publication of Whitfield & Fielding (2017) as such a “political media campaign”? This lauded report was based on satellite tagging data.

Whilst it is possible that these public interpretations may be correct, there can be no accountable way of establishing this with certainty.

There is an established protocol. Again, a further misrepresentation: such publicity will have been preceded by supply of relevant data to Police Scotland, under an established protocol. There’s also a large body of scientific analyses of telemetry data which shows that such “public interpretations” are justified.

In the high profile disappearance of Fred the Eagle, which elicited Ministerial comment, tag owners advanced their interpretations of the case through campaign videos and media statements. Police Scotland are yet to establish criminality in that case.

Once more, the petitioner seems to be confounding presentation of factual information with a “campaign”. Police Scotland in their justified bases for recording a criminal act (a corpse + evidence of criminal influence on the corpse, is basic) will not establish “criminality” in this or any other case without such bases. That is not to say that a criminal act had not occurred; only that it did not rise to the level of an ‘official’ record according to Police Scotland criteria. There are scores of such records, other than “Fred” which also did not rise to the level of official criminality. Those records are still scientifically valid and recognised as such: including by SG.

As we have laboured repeatedly, this shortage of satellite tag ‘suspicious disappearances’ rising to official records is not through lack of expertise, far from it: it is apparently because criminals are well-aware of not leaving any physical evidence. Especially now that the capacity of satellite telemetry for exposing potential criminal actions is now years-old and this criminal fraternity has apparently learned more recently from the tool’s limitations in reaching an ‘official record’, never mind any weaker prospect for subsequent prosecution. As we should note again, there are scores of ‘official records’ of illegal persecution of individual raptors: these too rarely if ever rise to even a prosecution of an individual on this basis.

When additional large numbers of satellite tag suspicious failures may be illustrating yet more criminal actions, even if they don’t rise to the level of an ‘official’ record, it might be argued that the SGA may be attempting to suppress or undermine such an invaluable data source; and any public presentation of such information. Under this construed attempt, the cloak of this attempt is in a misguided, misleading and inaccurate need for ‘independent expert oversight’ when none is needed. The fallacious implicit suggestion that prosecutions or discovery of dead birds replete with signs of poison, shooting or trapping are the only permissible source of evidence of criminality or any publicity (does this include scientific publications?) would be consistent with such an argument.

Lack of independent monitoring of tag data means incidents, such as that of Fred, are contested in the public sphere, increasing mistrust amongst stakeholders. Accusations which would not hold in a court of law can be made in public without the scrutiny or accountability which would be required by a legal process. No cases have had the required evidential basis to bring a criminal case.

The lack of criminal cases brought as regards satellite tagging enabled records is hardly an indictment of satellite tagging in many instances or how this was due to “lack of independent monitoring”. The absence of criminal cases is almost certainly because criminals are involved, and criminals attempt to hide any evidence of their criminality.

There are no “accusations” against specific persons made in any publicity, whether that is in press releases or in scientific publications, such as Whitfield & Fielding (2017). The published information is factual evidence. The benchmark of “to bring a criminal case” is hardly useful or appropriate, given the extreme rarity of such cases and the nature of wildlife crime.

## **Precedent:**

It would not be unusual for government to seek independent expertise in collating data on wildlife crime.

Science and Advice for Scottish Agriculture (SASA), a division of the Scottish Government Agriculture and Rural Economy Directorate currently administer the Wildlife Incident Investigation Scheme, investigating suspected poisoning of animals. These investigations inform Scotland's annual official Wildlife Crime reports and hotspot maps. SASA's independence and level of expertise is acknowledged and its work- and conclusions- are trusted by stakeholders. This is an example of an independent body which could monitor and analyse data for government.

SASA has no experience in dealing with satellite telemetry data. SASA does not need to have this expertise when it already exists between the data owners and Police Scotland, notably when potential criminality needs to be investigated. The protocol on tag data transfer, despite SGA's claims, already exists and works well.

SASA does have experience in providing autopsies, along with other certified veterinarian establishments, in documenting Wildlife Crime statistics. To re-iterate, however, SASA has no expertise or experience whatsoever in interpreting satellite telemetry data. Police Scotland does. That expertise in Police Scotland will matter nothing as regards 'official' crime statistics, however, so long as perpetrators continue to destroy any evidence of their criminality surrounding their killing of tagged birds and that Police Scotland continue to rely on physical evidence of criminality in recording an 'official crime'.

The SGA petition's theme that, to paraphrase, "if only we had some independent experts involved in scrutiny of satellite tagging data there would be a better chance of collating data from satellite tagging on wildlife crime" is demonstrably errant nonsense so long as Police Scotland require physical evidence and criminals continue to prevent such discovery. The problem is not in expertise, which is considerable under current protocols, but in the persistent criminal activities in removing evidence and the remote nature of these activities. Moreover, as we have demonstrated and which is well-known to any objective consideration, even 'official' criminal records hardly ever go further within the justice system.

Again, however, we see claims from SGA that those who own the satellite tagging data, paid for under projects designed for discovery and deployed in pursuance of knowledge of raptor biology using an innovative investigative telemetry tool, are not deemed by a SGA (a plainly partisan body) viewpoint as 'independent'.

At best this SGA position is insulting, given the many productions to discover biology which have resulted and will result from this remote telemetry method. At worst the SGA position is potentially defamatory as this patently partisan body directly claims that those in 'control' of raptor satellite tagging data are not 'independent'. This is a baseless affront.

An opportunity exists for satellite tag cases, in future, to be brought within the standard crime recording processes which govern all other wildlife crime reporting in Scotland, if there was independent monitoring of data.

This facility already exists. It is already independent. This petitioned “future” proposal will not help in recording ‘crime’ so far as ‘official’ statistics criteria because the typical ‘crime’ recorded by satellite telemetry is embodied by a sudden tag malfunction and no body or tag is discovered at or near the last location.

This may be improved if, according to the petitioner, such data were placed in the hands of patent novices (being kind to e.g. SASA). This is incorrect: no amount of the existing expertise within eagle researchers and Police Scotland can evidentially overcome those perpetrators operating in remote locations, with criminal knowledge and intent, bent on destroying and removing the evidence of their criminality.

### **In Summary:**

If the petition was successful Police Scotland would have immediate access to independently verified data, helping them investigate potential crimes.

The petition does not need to be “successful” in this regard: Police Scotland already has such access to the relevant data, when it may be needed – to claim otherwise is misinformation. Again, the petition’s inference on lack of independence on the supplier of the data and ‘verification’ are without foundation; and verging on defamatory.

Police would not have to obtain the data from owners or third parties, who may have objectives in how they utilise the data.

Police Scotland already have full access to any tag data which may indicate a ‘suspicious’ end fate via a fully co-operative protocol.

Tag Data would be transparent. Police Scotland already benefits from this type of transparent resource, provided by SASA, in other areas of wildlife crime investigation. This verified information enables Scottish Government to produce official wildlife crime reports annually.

See numerous comments above.

Damaging mistrust between stakeholders would be reduced and evidence and due process would take the place of public accusation.

To re-iterate, there is no “public accusation” involved in presenting factual information on location and within a previously justified level of scientific evidence. “Mistrust” seems to be only in particular quarters, including SGA. It is paradoxical that the SGA in this petition repeatedly refers to the term of ‘independence’ without any sense of irony or self-reflection.