



Guidance on Ecological Survey and Assessment in the Republic of Ireland and Northern Ireland During the Covid-19 Outbreak

Version 1

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This guidance should be referenced as: CIEEM (2020). *Guidance on Ecological Survey and Assessment in the Republic of Ireland and Northern Ireland During the Covid-19 Outbreak*. Version 1. Published 30 May 2020. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

This is a live document, which may be updated following consultation with key stakeholders (e.g. Statutory Bodies and Consenting Authorities), to include additional taxa, or to address future changes in the Covid-19 restrictions.

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INTRODUCTION

This document provides guidance on temporary alternative approaches to ecological survey and assessment that would apply as a result of the Covid-19 pandemic, e.g. where field surveys cannot be undertaken for a given site or area, or where only limited survey effort is achievable. This guidance is aimed at parties:

- undertaking ecological surveys and assessments, particularly in relation to planning applications (ecological consultants);
- tasked with reviewing the adequacy of the ecological information provided in relation to a planning application, or in compliance, management or monitoring purposes (Planning Authorities and Statutory Nature Conservation Bodies);
- compiling and reviewing species licence applications; and
- undertaking or relying on pre-construction surveys.

The Covid-19 restrictions have constrained the collection of field data during spring and early summer 2020, and it is possible that further restrictions may apply in the future. This document provides guidance on alternative approaches to address the challenges that a lack of field data will present. It suggests strategies that will ensure that our profession and members' businesses remain resilient, but that will also be based on the important requirements for any field survey or alternative approaches to evidence collection, which include:

- the safety and wellbeing of our members;
- the protection of citizens, society and biodiversity;
- supporting the government's position and the different emphasis in the different UK and Irish jurisdictions on travel and working; and
- ensuring that any alternative approach to evidence collection for decision-making meets legislative requirements and any limitations and mitigation strategies for these limitations are clearly identified and communicated.

On 7 May 2020, CIEEM published [Guidance on Ecological Survey and Assessment in the United Kingdom During the Covid-19 Outbreak](#). For this guidance document, the UK document has been adapted to cover the main taxa of relevance to ecologists in Ireland, and to exclude species that only occur in Great Britain. This document also includes planning considerations and data sources that apply only in Ireland.

CIEEM Ireland covers two legal jurisdictions: the Republic of Ireland and Northern Ireland. Guidance for ecological assessments in Northern Ireland has been provided as part of the UK-wide document. However, considering that ecological features in Northern Ireland are nearly identical to those in the Republic of Ireland, much of the guidance in this document will also apply to ecologists working in Northern Ireland.

Members are encouraged to check [the Covid-19 section](#) of the CIEEM Website for regular updates and for key resources. Guidance on safety considerations for fieldwork [are also available](#).

SUMMARY OF COVID-19 RESTRICTIONS IN IRELAND

In March 2020 the Governments of Ireland and the United Kingdom instructed all citizens to stay at home to restrict the spread of Covid-19. Employees were expected to work from home (where possible), but could travel for work if it was for certain types of ‘essential’ or ‘priority’ services. There were several key differences between the restrictions in the Republic of Ireland and Northern Ireland, which are summarised below.

In Northern Ireland, citizens were permitted to travel for work if the task could not be carried out from home. In addition, the Northern Ireland Economy Minister published a list of ‘priority sectors’, which included *ecological surveyors* in relation to *land use planning*. Therefore, many ecologists in Northern Ireland were able to continue some fieldwork during the restricted period. However, in line with the government advice that “*non-essential travel should be avoided*”, many ecologists delayed or avoided any survey work that was considered non-essential. In addition, the lack of overnight accommodation (e.g. hotels) posed problems to ecologists working at night or early morning, particularly surveys of bats and birds.

In the Republic of Ireland, citizens were only permitted to travel for work if it was for an ‘essential service’. The list of essential services was published in a statutory instrument on 10 April 2020, and it did not include ecological/environmental surveys, nor any technical services related to planning or construction projects. Some surveys were permitted if they were required for an essential service, e.g. wind energy. However, the vast majority of fieldwork was considered to be non-essential, and many ecologists ceased all fieldwork during the restricted period.

It is important to note that there were significant differences in the restrictions between Northern Ireland and the Republic of Ireland. This is a particular problem for professional ecologists that work on both sides of the border. For example, although ecological fieldwork was permitted in Northern Ireland, surveyors based in the Republic of Ireland could not undertake fieldwork in Northern Ireland, because it would have involved non-essential travel to and from the border.

On Friday 1 May 2020 the Republic of Ireland government published a ‘Roadmap for Reopening Society and Business’ to ease the Covid-19 restrictions and reopen Ireland’s economy and society in a phased manner. A similar process was announced by the UK government in early May, although some aspects may be devolved to the Northern Irish Assembly. These plans will allow many ecologists to return to work, subject to social distancing restrictions. However, it is important to note that these restrictions only relate to the first wave of Covid-19 infections in Ireland, and that restrictions may need to be re-introduced if a second wave occurs. Therefore, this document is intended to cover all periods in which Covid-19 restrictions are in place, and may be revised in the future to reflect changes in the scale or duration of restrictions.

HOW THE RESTRICTIONS HAVE AFFECTED CIEEM MEMBERS

At the CIEEM annual conference in April 2020, a survey was carried out among CIEEM members from the Republic of Ireland and Northern Ireland. More than two thirds (68%) of members had stopped all fieldwork for the duration of the restrictions, 16% were still carrying out some surveys, 11% were still carrying out most surveys, and only 5% (all from Northern Ireland) were continuing surveys as normal. Nearly a quarter of all members (23%) worked on both sides of the border.

Ecologists were concerned that some projects would be data deficient due to the inability to carry out fieldwork, with 70% of respondents highlighting such concern in the Republic of Ireland, and 30% in Northern Ireland. Even among members that were continuing work, 48% of members reported difficulties with fieldwork that required overnight stays, due to unavailability of accommodation; this would apply to ecologists working at night or early morning (e.g. bat surveys), or ecologists travelling long distances from their home.

In summary, the vast majority of ecologists in Ireland stopped or significantly reduced their fieldwork during the restricted period. This means that many ecological assessments will be lacking in the usual level of field data, and that some alternative approaches will be necessary during this period. Clearly these restrictions were unprecedented, and many ecologists had to take short-term decisions based on evolving government guidance and safety considerations for employees. However, now that the scale of the restrictions have become clear, it would be beneficial to discuss some of the approaches that can be taken to deal with potential limitations in data.

DEVELOPING ALTERNATIVE APPROACHES

Technical notes for a number of key ecological features have been provided as appendices to this document. They have been compiled by suitable experts in each discipline to help less experienced ecologists and to provide a consistent approach for our members. These notes acknowledge standard methodologies and, where appropriate, specific survey requirements (notably in Northern Ireland). Technical notes for certain species have been prioritised over others, focusing on those most frequently surveyed and those most likely to be affected by a lack of surveys in spring/summer. Technical notes for other species may be added for future revisions of the document.

In addition, some general considerations for ecological surveys/assessments, planning decisions and licensing are provided below.

Considerations for Ecological Surveys and Assessments

It is good practice to undertake a desk-study for any project (CIEEM, 2020), and the technical sections below direct practitioners to a wider range of resources than might be needed in 'normal' circumstances. Some considerations for alternative sources of information are provided in Figure 1, based on the purpose of the data collected, the availability of sources, and the stakeholders that you may be able to engage with. As there may be an increase in requests (and potentially a shortage of staff in these organisations), it will be important to allow sufficient time to obtain the data, and sufficient expertise to be able to analyse it properly.

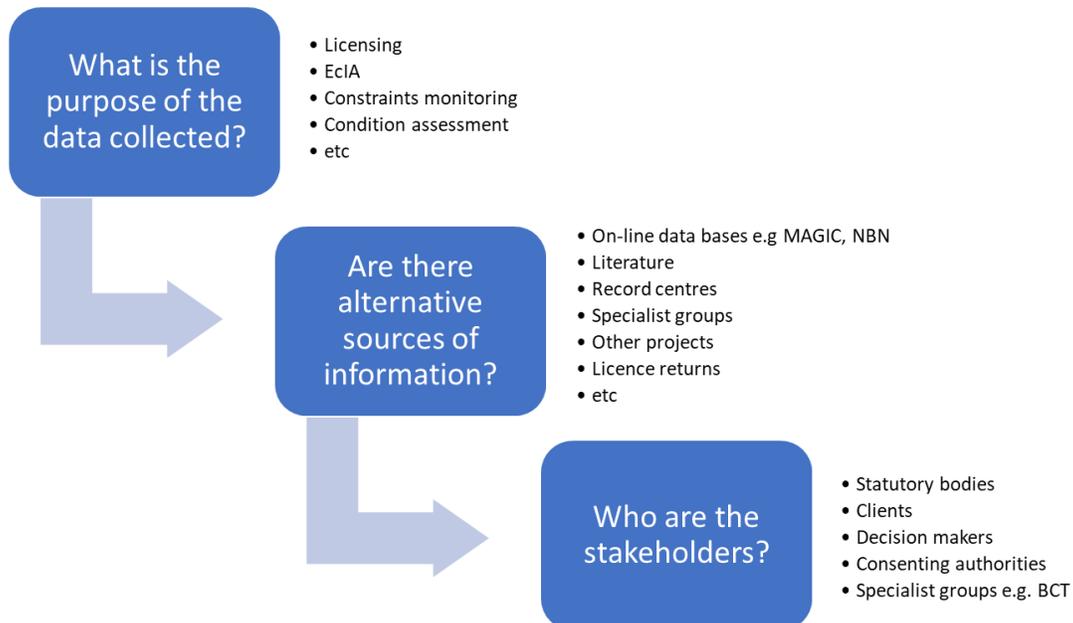


Figure 1. Steps needed to arrive at alternative approaches to evidence collection.

Some general principles for the use of alternative approaches in an Ecological Impact Assessment are outlined in Figure 2, based on an identification of limitations, a review of options for mitigation, and the clear communication of results. If any alternatives to best practice are used in an ecological assessment,

they must be discussed in detail in the 'Limitations' section of an ecological assessment. It is recommended that members review the sections on 'Data' and 'The Precautionary Principle' in the latest version of the CIEEM EclA guidelines. Professional judgement¹ will be key to ensuring that any alternative approaches applied will generate data that are fit for purpose. It is strongly recommended that consultants engage with stakeholders (i.e. Statutory Bodies and Consenting Authorities) to discuss any alternative approaches that will be used, and provide sufficient time for stakeholders to respond.

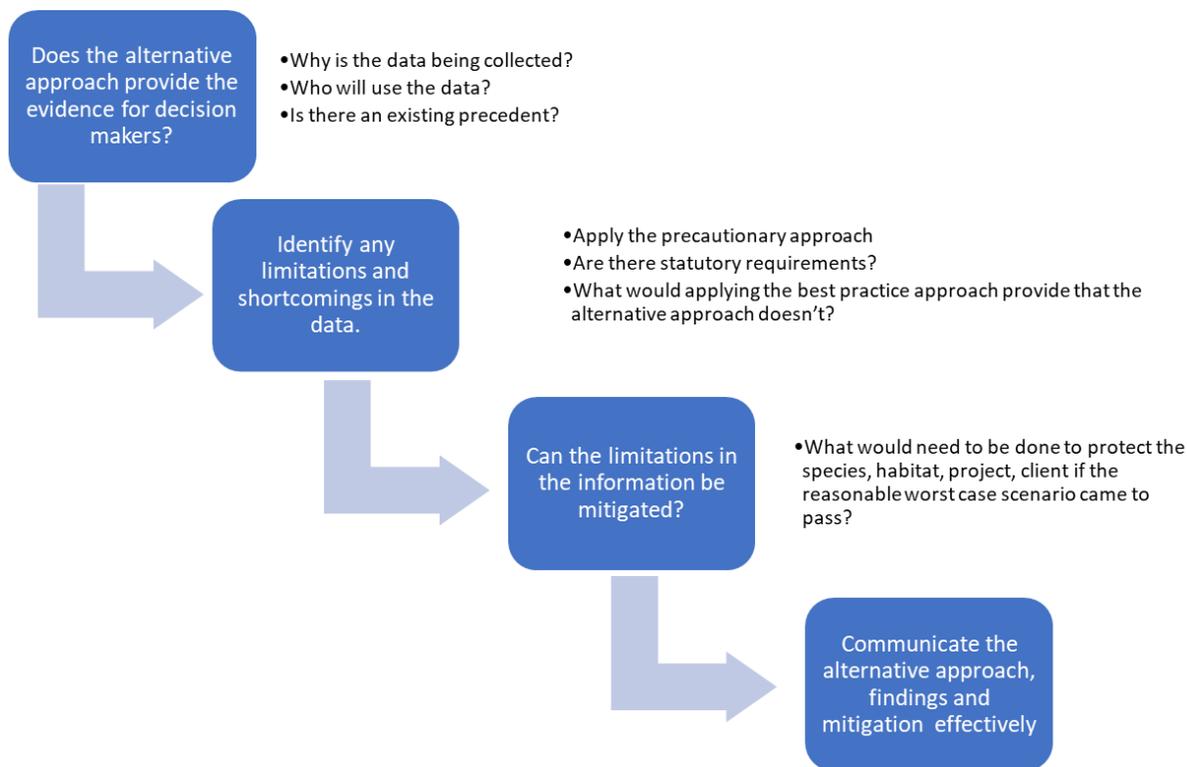


Figure 2. Key considerations for the data collected using an alternative approach

It should be noted that existing guidance documents are written to assist those with some experience to undertake surveys and design effective mitigation in normal circumstances. A greater level of expertise/competence with a given species or habitat is likely to be required in certain circumstances than would normally be the case, in relation to interpreting the results of alternative approaches that do not strictly accord with good practice guidance. All ecologists and environmental managers using alternative approaches will need to consider staff competence levels and these should be justified in any ecological survey or assessment reports.

This document does not provide guidance on Health & Safety or replace the need for a thorough Health & Safety risk assessment. However, any risk assessments need to consider both the risks of transmitting Covid-19 and the risks of undertaking field work. One of the obvious outcomes of the restrictions is the limited availability of overnight accommodation (closed or reserved for key workers). To reduce the

¹ See 'Pragmatism, Proportionality and Professional Judgement' in *In Practice* 91, pp57-60 [<https://cieem.net/resource/in-practice-issue-91-animal-plant-diseases-march-2016/>]

consequent risk from undertaking longer return journeys in a day, there may need to be an increased reliance on local sub-contractors. CIEEM's Sub-contractors Directory will assist members in finding suitably experienced sub-contractors.

Considerations for Planning Decisions and Licensing

Decisions need to be informed by ecological assessments based on sufficient and appropriate data². The approach to data collection should follow relevant good practice guidance documents, with any departures from such guidance clearly identified and justified.

The presence or likely absence of protected species, and the extent to which they could be affected by a proposed development, is a material consideration in determining a planning application and should be established before planning permission is granted. In the Republic of Ireland, planning conditions cannot be used to address gaps in baseline information. In Northern Ireland, surveys can be conditioned under exceptional circumstances (as per British Standard BS42020, Section 9.2.4), but none of the reasons would allow for the travel restrictions imposed during the Covid-19 outbreak. Therefore, alternative means of collecting sufficient information need to be considered (i.e. methods that differ from those set out in current good practice guidance or are adapted in terms of level of survey effort) and a precautionary approach to assessment and mitigation may be necessary.

Ideally, agreement on any divergence from standard survey methodologies and the implications for assessment should be undertaken as part of pre-planning discussions with the Planning Authority and, where relevant, Statutory Nature Conservation Bodies. The scope for flexibility in approach will depend on the environmental significance of, and risk to, ecological features. For widespread species or low-risk scenarios, it might be justifiable to assume the presence of a given species based on desk-study information and/or the presence of suitable habitat. Where presence is assumed on a precautionary basis, it should be clearly stated in any assessment. However, presence alone may not always be sufficient to inform the design of a scheme to avoid, mitigate or compensate for impacts adequately. In high-risk scenarios (e.g. for ecological features of national importance) there may be no other option than to wait until the next relevant season in order to fill any gaps in baseline survey data.

A protected species licence from the relevant Statutory Nature Conservation Body (e.g. NPWS, NIEA) may be required in some cases. The level of survey effort needed to secure a licence will need to be advised by the relevant SNCB and is not covered by this guidance. In some cases, it may be possible to avoid the need for licences by taking steps to minimise the likelihood of possible breaches of the legislation. The ecological consultant would need to be confident that offences would be reasonably unlikely even if the species were to be present. These approaches should be supported by Method Statements, and supported by consultation with SNCBs. However, Method Statements must not be used as a way of avoiding a licence where an offence is likely to occur.

² See Section 8.1 of the British Standard BS42020 Biodiversity – Code of practice for planning and development.

APPENDIX 1 – BIRDS

In the light of Covid-19 restrictions, amendments or deviations to ‘standard’ ecological survey methods may be considered by ecologists to enable them to plan and undertake work in line with government restrictions and recommendations by national Public Health Organisations. Any deviations from standard and accepted survey methods should be fully explained in reports and any limitations or other factors that may influence interpretation of the collected data should be clearly stated.

This advisory guidance note considers bird survey approaches in relation to Covid-19 restrictions imposed in the Republic of Ireland and Northern Ireland.

Summary of Commonly Used Survey Methods

This section includes a brief summary of commonly used methods for ecological assessments. A wide range of bird survey methods exist and the summary below is not intended to be comprehensive. For further information please consult the references listed at the end of this note. This is a general guide only and all surveys should be designed to collect the data required for the project, where the preferred survey methodology may vary according to the target species, season or political jurisdiction.

Survey Method	Survey Timing and Brief Method	Survey Effort
Breeding bird season survey (general)	For distance sampling transect or point count surveys (such as adoption of Countryside Bird Survey (CBS)/Breeding Bird Survey (BBS) approach), it is acceptable that two surveys are carried out between April and June/July, spreading the survey visits insofar as possible with one visit during the early part of the season (April/May) and the other during the late part of the season (June/July). Typically, for territory mapping purposes an adapted (reduced effort) version of Common Bird Census (CBC) methodology would be used, with a minimum of three morning visits employed plus additional species-specific surveys added as required.	Minimum of 2 to 4 depending on type of survey.
Wintering bird survey (general)	For general transect/point count assessment of a wintering bird community it is acceptable to carry out three surveys between October and March.	Typically, 3 survey visits spread out throughout the winter season.

Waterfowl/wader counts	Counts undertaken at waterbodies or at other areas where wildfowl and/or waders are known to congregate. Typically based on Irish Wetland Bird Survey (I-WeBS) or Wetland Bird Survey (WeBS) 'look-see' methodology with particular importance during the non-breeding winter season (September to March inclusive). Can include spring and autumn migration periods (April-May and August-October) or breeding season from April.	At least monthly (and up to fortnightly) survey visits during relevant period.
Vantage point (VP) survey	Timing varies to suit the target species in question – can be breeding (March/April to August) passage (April-May and August-October) wintering seasons (October to March).	Generally, a minimum seasonal coverage of 36-hours per VP.
Other species-specific survey (e.g. Barn Owl, Swift, breeding waders)	Survey method varies depending on target species. Breeding season generally of more importance that typically commences from late March/April for most target species.	Varies but typically two to three survey visits required during the breeding season.

Species-specific survey methods exist for a range of protected and priority bird species (see for example Gilbert *et al.* 1998; Hardey *et al.* 2013) and there are also specific methods targeted at certain species groups, e.g. breeding waders and breeding wildfowl.

Specific survey guidelines also exist for certain development projects, for example wind farms (SNH, 2017). These typically involve a combination of generic methods alongside more bespoke, development-specific survey methods, such as Vantage Point flight activity surveys for wind farms.

There is high potential for breeding bird surveys in particular to be affected by restrictions relating to Covid-19.

Suggested Adaptations to Methods

Where it is not possible to carry out some of the breeding season survey visits that would normally be undertaken, due to Health & Safety and/or access constraints, the quality and coverage of the data may be affected. This could include distant study sites where staying overnight locally is not currently possible from a Health & Safety travel perspective. However, if survey restrictions are lifted before the end of the breeding survey season relevant to the survey type, it may still be possible to collect useful data.

General breeding bird assessments tend to follow a transect or point-count based approach with visits made over the season in order to take account of the variation in seasonal activity across species. This somewhat lessens the difficulty associated with a constrained survey season as it should be possible to conduct survey visits from May onwards without significantly compromising the quality of the dataset as the early part of the season can still be captured. Obviously, the more curtailed the survey period the greater the risk of under-recording certain species and in such circumstances an additional third survey visit may be merited. Also, a greater reliance on desktop review and consultation with relevant experts/organisations may be required.

There could, for instance, be some benefit in increasing the frequency of survey visits during the remaining time period available in a given season. However, it should be recognised that increasing the frequency of surveys in this way may not fully compensate for survey visits that were missed earlier in the season, even if only a small part of the required season is missed. Evaluation of a site will need to be made on its own merits and will also depend on what stage the project in question is at as well as the known information for the target species under consideration in relation to the study site. Desk studies, including the use of on-line databases, bird atlases and consultation with statutory bodies and NGOs can be of significant benefit in advising of potential use of sites by different species where survey gaps exist.

In all cases, where survey effort has been curtailed, a precautionary approach to assessing the data must be taken. For sites with certain target species, there may be information available on the location of historic nest sites and the number of breeding pairs of such species present in an area. In the event that these sites are still occupied at the onset of field surveys in late April/May, there may be relatively minor impact on the survey data collected across the remainder of the field season.

However, in other scenarios, especially where there is less contemporary information available in relation to key target species, it is possible that failures of early nesting pairs may be missed and therefore the constraints and potential gaps in the field-data need to be acknowledged and understood in relation to the ultimate ecological impact assessment. Such a circumstance may even merit consideration by a client to wait for the next relevant season to close out potential gaps in field-data.

Key Survey Limitations

At this stage, potential constraints surrounding bird surveys are (most likely) only relevant to the earlier part of the 2020 breeding season although restrictions could also potentially impact the upcoming 2020/2021 winter season. Due to Covid-19 restrictions in Ireland, any field surveys need to be carefully considered and only proceed when considered safe to do so.

Due to timing, the most significant disruption due to Covid-19 is likely to be to 2020 breeding season Vantage Point (VP) surveys and associated hinterland surveys for displaying raptors. VP surveys are typically carried out during both breeding and winter seasons, to achieve a minimum recommended coverage of 36-hours per VP per survey season. Vantage Point surveys in the breeding season are required to record the flight-lines of high conservation value target bird species. Flightlines are likely to change through the breeding season as birds react to situations relating to nesting and foraging requirements, as well as other aspects such as predation, disturbance/displacement *etc.* For example, hen harrier may initiate a nesting attempt in one location but move to another nest location in the early

part of the nesting season due to a failure event or even give up on nesting for that particular season. Hence a loss of survey data in part of the breeding season could result in an incomplete data-set and this needs to be considered and discussed in appraisal of target species activity recorded at each study site.

As previously mentioned, constraints surrounding bird surveys are most likely to impact upon the 2020 breeding season. However, given the uncertainty surrounding future developments in the pandemic it is possible that 2020/2021 wintering bird surveys and non-breeding waterfowl/wader surveys may be affected. Limitations and restrictions may differ from project to project and from the Republic of Ireland to Northern Ireland.

Key Considerations for Results Interpretation

The degree to which an ecological impact assessment is compromised through constrained data collection will depend on the significance of the potential data gap in question (*e.g.* study site within historic nesting area and/or supports suitable nesting habitat for target raptor species). Such a data gap may be countered through desktop review (*e.g.* online databases of the National Biodiversity Data Centre, CeDaR or National Biodiversity Network, scientific papers or notes, previous ecological reports) and sourcing contemporary information on known nesting sites/territory occupation from relevant experts/organisations (*e.g.* NPWS, NIEA, BWI, BTO, IRSG *etc.*) in combination with obtaining information for the rest of the season or overall study (*e.g.* VP surveys that still fulfil the minimum of 36hrs effort typically recommended per VP along with hinterland surveys over two summer/winter seasons).

The ‘precautionary principle’ is well-established in ecological impact assessment guidance. In cases where there is reasonable doubt and it is not possible to robustly justify a conclusion of no significant effect, a potential significant effect cannot be discounted. Where uncertainty exists, it must be acknowledged in the ecological impact assessment. Hence a sensible precautionary approach will need to be taken when assessing field data collected where the collection period has been significantly curtailed.

Ultimately, if the assessment is considered to be substantially compromised by the lack of or key limitation for surveys, extending the project timeline to enable surveys to be fully undertaken at the appropriate time of year, assuming no further site work restrictions apply in relation to Covid-19, may be the only option. Such situations are likely to relate to proposals where there is a significant potential for ecological impact (for example those close to designated conservation areas or where Annex I species may be affected), and precautionary mitigation is not feasible or appropriate.

References and Data Sources

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APPENDIX 2 – BATS

The following provides a way forward where a full suite of surveys has not been possible in 2020. It is not intended as a replacement for current methods where surveys are possible, and relies on ‘reasonable worst-case scenarios’ (for example, in terms of species, numbers, or roost types) that may result in more mitigation than would strictly be necessary.

Restrictions on surveys could affect:

- Planning decisions
- EPS licence applications
- Site works where these are dependent on pre-construction surveys in the preceding season

Summary of Commonly Used Survey Methods

Surveys and Impact Assessments

Bat surveys may be required for a range of potential developments, particularly those that would involve the removal/modification of potential roosting sites (e.g. buildings, bridges, mature trees), the modification of potential foraging habitats (e.g. watercourses, woodland and linear habitat features) or that would pose a collision risk to bats (e.g. wind turbines, roads).

The primary guidance for all bat surveyors is *Bat surveys for professional ecologists: good practice guidelines* (Collins, 2016) which outlines methods for a range of surveys, and provides guidance on the assessment of potential impacts. For national road schemes and other related projects in the Republic of Ireland, the *Guidelines for the Treatment of Bats during the Construction of National Road Schemes (TII, 2006)* is the primary reference. Guidance for surveys and impact assessments relating to wind energy developments are outlined in *Bats and onshore wind turbines: survey, assessment and mitigation* (SNH, 2019). In Northern Ireland, survey requirements for bats are detailed in *Bat Surveys: NIEA Specific Requirements* (NIEA, 2017), which generally refers to appropriate sections of Collins (2016), and *Standing Advice (for Planning Officers)* provided as DAERA Environmental Advice for Planning, *Standing Advice: Bats* (DAERA, 2015, updated in 2017). Most bat surveys are carried out from ground level using bat-detecting equipment, and do not require any close contact with bats.

Roost Inspections and Mitigation Work

Where bat-detecting equipment cannot be used, ecologists occasionally need to inspect potential bat roosts, for example by searching the attic of a building, or by inspecting crevices in the underside of a bridge.

Alternatively, where construction work could have an impact on a bat roost, ecologists may need to implement mitigation measures to avoid or minimize impacts on bats, e.g. by making minor modifications around a roost, or occasionally by manually removing bats by hand. All such works bring bat surveyors into close contact with bats.

Guidelines for these activities are outlined in *Bat Mitigation Guidelines for Ireland* (Kelleher and Marnell, 2006), *Bat surveys for professional ecologists: good practice guidelines* (Collins, 2016) and a range of

similar publications. Any work that has potential to injure bats or disturb a bat roost must be carried out under licence from the relevant statutory agency (NPWS, NIEA).

Suggested Adaptations to Methods

Surveys and Impact Assessments

The main issue for ecologists during the ‘Stay At Home’ order between March and May 2020 was the inability to carry out field surveys during the spring and early-summer periods of 2020. The recommended survey times for UK and Irish bat species are outlined in Table 2.2 of Collins (2016), and this table has been reproduced below. In most cases, surveying during the spring period (e.g. April) is considered to be “*weather or location dependent*”, and is less effective than surveys at other times of the year, so an inability to survey in spring will not have significantly constrained surveyors. However, there is an exception for surveys of potential transitional roosts, which should usually take place in April. Where the surveyor was unable to survey a potential transitional roost in April, they may adapt their methods either by delaying the survey until the autumn transitional period (September/October), or by adopting a precautionary approach based on survey data from other times of the year.

Table 2.2 Recommended UK survey times for survey types described in these guidelines.

Survey type	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Preliminary ecological appraisal - fieldwork												
Preliminary roost assessment – structures ^a												
Emergence/re-entry survey for maternity or summer roosts ^b												
Emergence/re-entry ^c survey for transitional roosts ^b												
Emergence survey for mating roosts ^b												
Hibernation survey – structures ^a												
Preliminary ground level roost assessment – trees ^d												
Potential roost feature (PRF) inspection survey - trees												
Ground level bat activity survey – transects and automated/static												
Pre-, during and post-hibernation – automated/static bat activity survey												
Swarming survey												
Back-tracking survey												
Trapping survey ^e												
Radio tagging and tracking survey ^e												

= optimal period
 = sub-optimal period

= weather or location dependent (i.e. may not be suitable due to spring and autumn conditions in any one year or in more northerly latitudes). Note that October surveys are not acceptable in Scotland.

For wind energy developments (SNH, 2019), bat activity surveys are usually carried out for a minimum of ten nights in each of three ‘seasonal’ survey periods: spring (April/May), summer (June/July/August) and autumn (September/October). The ‘Stay At Home’ order has covered all of April and most of May 2020, preventing ecologists from sampling during the spring survey period.

Although some sampling was possible at the end of May, it is important to acknowledge that many ecologists survey multiple wind energy sites in any year, and will need to move sampling equipment between sites. During a meeting between consultants and NIEA in 2017, it was agreed that the normal spring activity survey period in Northern Ireland could be extended to mid-June, taking account of the largely upland nature of wind farm sites in Northern Ireland and the general lack of any bat activity at such sites in April. This is expected to be incorporated into NIEA Survey Requirements in due course. Taking account of this, and the core ‘activity’ period on many wind farm sites in Northern Ireland being from June to September, it is proposed that the spring survey period for 2020 is extended to include the full month of June, in order to allow for full coverage of multiple sites by ecologists following the re-commencement of survey work. On this basis, the three survey periods for activity surveys in 2020 for

wind energy developments would be: spring (May/June), summer (July/August) and autumn (September/October). No other changes to survey methods are proposed.

Roost Inspections and Mitigation Work

The IUCN SSC Bat Specialist Group³ has posted a notice (12 April 2020) recommending suspension of field activities for the protection of bats.

“Transmission of SARS-CoV-2 from humans to animals has been documented. If human-bat transmission is possible, the impact on bat populations and conservation will depend on the consequences of SARS-CoV-2 for bat health and the potential for bat-to-bat transmission. The worst-case scenario considers SARS-CoV-2 circulating in bat populations with the potential to spillover to other wildlife and people. Studies to determine whether humans can spread SARS-CoV-2 to bats, bat morbidity, and transmission are ongoing. Until we have a clearer picture of the magnitude of these risks, the IUCN Bat Specialist Group recommends suspending all field work that involves direct interactions with bats. This includes capture and handling bats, as well as being in sustained proximity (< 3 m) at roost sites.”

CIEEM support these measures, and will aim to avoid or minimise any close contact with bats by using non-invasive techniques, where possible. Roost inspections may be carried out externally using bat detectors or other technological approaches (e.g. infra-red cameras). If bats need to be excluded from a structure in advance of construction work, this may be attempted using one-way gates, tubes or other equipment, rather than moving bats by hand.

In some cases it may be necessary to interact closely with bats, e.g. where this would prevent death or injury to a bat. Where this is the case, surveyors would need to use personal protective equipment (e.g. face masks) and ensure good hygiene practices (e.g. cleaning hands and using clean gloves) before approaching any bats. BCT advice can be found [here](#).

Key Survey Limitations

Given the need for many construction activities to continue, and as field work provides a low risk of Covid-19 transmission, it is unlikely that surveys will be restricted for the whole of the survey season in 2020. However, the early-summer period is key to determining the presence of maternity colonies and the resources on which they depend.

The effectiveness of mitigation, particularly for buildings (including domestic applications) may be reduced if roosting location(s) and access points cannot be confirmed accurately, and the relevance of this risk will need to be addressed on a case-by-case basis.

Key Considerations for Results Interpretation

Planning Decisions

³ <https://www.iucnbsg.org/>

If it is not possible to carry out sufficient acoustic surveys of structures, it is possible that small roosts of crevice-dwelling species (e.g. pipistrelles) may not be detected (Froidevaux 2020), although it is unlikely that maternity roosts would be missed. If surveyors are unable to enter potential roost spaces, it is possible that open-roosting species (e.g. brown long-eared bat) may not be detected.

Regarding tree roosts, ground-level roost assessments give an idea of the scale of the impact in terms of potential tree roost quality, but are unlikely to provide sufficient information on species presence. If sufficient additional surveys have not been undertaken to ascertain this, then a precautionary assemblage will need to be assumed for impact assessment and mitigation design.

In more complex scenarios, planning decisions may need to be delayed, e.g. in areas where Annex II species (lesser horseshoe bats) may be present and could be significantly affected.

Licensing Decisions

In some cases, planning decisions may be made based on the assumed (rather than confirmed) presence of bats, subject to the implementation of a mitigation strategy. If there is reason to strongly suspect the presence of a species, but this cannot be confirmed because surveys are restricted, then the licensing authority may consider there to be sufficient confidence to issue a licence based on assumed (rather than confirmed) presence. This will need to be judged on a case-by-case basis, and applicants should contact the relevant licensing authority for advice.

Where a licence is required from the outset, SNCBs may be able to consider relaxing constraints on the age of data, and/or accept less data than would normally be supplied, again on a case-by-case risk-based approach, potentially in conjunction with an assessment of the consultant's competence. The presumption against precautionary mitigation may need to be reviewed on a case-by-case basis. Advice should be sought from the relevant licensing authority, where appropriate.

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Transport Infrastructure Ireland (formerly the National Roads Authority) (2006). *Guidelines for the Treatment of Bats during the Construction of National Road Schemes*. Available online at <https://www.tii.ie/technical-services/environment/construction/>

APPENDIX 3 – HABITATS AND FLORA

The following advice note provides a way forward where botanical and field-based habitat surveys are limited during the 2020 field season. It is not intended as a replacement for current guidance on survey methods, but to provide examples of alternative approaches that may assist with project design, mitigation design, and impact assessment for relevant projects.

Current Standard Approaches and Sources

Habitat Survey

There are a number of different habitat classification systems that may be appropriate for use in ecological assessment, depending upon the jurisdiction and objectives of the particular study. CIEEM provides a useful list in the *Guidelines for Preliminary Ecological Appraisal*. Standard approaches for habitat survey in Ireland are detailed in the *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.*, 2011), and the *Handbook for Phase 1 Habitat Survey* (JNCC, 2003) provides guidelines for habitat mapping using that classification system. The NIEA has published survey specifications for Habitats and Active Peat.

Some classification systems in regular use include:

Guide to Habitats in Ireland – The standard habitat classification system used in Ireland (Fossitt, 2000)

Phase 1 Habitat Survey – Commonly used habitat classification in Northern Ireland, especially suited as a rapid survey tool in semi-natural habitat types in open countryside (JNCC, 2003).

UK Habitat Classification – A hierarchical classification applicable across the UK that integrates Broad Habitat, Priority Habitat and Annex 1 Habitats into a single unified system (UK Habitat Classification Working Group, 2018)

Annex I habitats – Habitats of European conservation importance listed in Annex I of the Habitats Directive (European Commission, 2013)

Botanical Survey

Suitable methods for detailed botanical surveys vary depending on the objectives of the survey. Briefly, they can be divided into:

Botanical inventories – Compilation of a list of all the plant species present in a site

Vegetation surveys – Quantitative surveys of vegetation that may include reference to the Irish Vegetation Classification (IVC) (National Parks and Wildlife Service *et al.*, 2019) or the National Vegetation Classification (NVC) (Rodwell, 2006)

Rare/indicator/invasive plant surveys – Targeted surveys for specific rare plants, indicator species or invasive exotic species

Suggested Adaptations to Methods

Habitat Survey

If a field-based habitat survey cannot be carried out during the optimum season, there are two alternatives:

1. conduct the field survey during a sub-optimal period; or
2. rely solely on desk-based information.

The first option is preferable if possible, as experienced habitat surveyors are able to identify most habitat types during most times of the year. It is essential that field surveyors have direct experience in the habitats present on site. Surveys carried out during sub-optimal periods should be bolstered by a thorough desktop review of existing information that may be available for the site, as outlined below.

Where a field survey is not possible, even during a sub-optimal period, it may be possible to classify and map habitats in a site using only a desktop review of existing information. *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.*, 2011) provides advice on conducting desktop reviews for habitat survey. The ecologist should list the information sources used and be clear about any limitations of the data, such as when it was collected or the classification system used. Sites that are likely to support habitats of conservation importance will require a more rigorous approach to data collection and should use multiple cross-referenced data sources to guide interpretation compared with sites supporting widespread habitats of lower biodiversity value.

Data sources can include online aerial photography and maps, Google Street View, and historical mapping. NPWS, DAERA or local authorities may have existing habitat mapping for a site, especially if it is a designated area. Plant species records held by the NBDC and CEDaR can be used to extrapolate potential habitats present in an area. Data.Gov.ie (<https://data.gov.ie/>) and OpenDataNI (<https://www.opendatani.gov.uk/>) are government portals providing access to public spatial and non-spatial data and may help find additional sources of data.

Botanical Survey

Unless there are high quality, precisely localised and recent records, a detailed botanical survey will not be possible using only desktop information. When carrying out a botanical survey during a sub-optimal time of year, additional preparations should be undertaken. A thorough review of records of species from the site and in the wider area should be undertaken so that the ecologist is aware of the range of species likely to be present. The ecologist should then become familiar with key features for identifying non-flowering specimens; *The Vegetative Key* (Poland and Clement, 2020) and *The Plant Crib* (Rich and Jermy, 1998) are useful references. Additional survey time should be allowed to detect and identify rare or otherwise notable non-flowering plants. A license from NPWS or DAERA will be required if it is considered necessary to collect samples of a protected species to verify identification.

Key Survey Limitations

When surveying habitats during a sub-optimal season or using purely desk-based methods, there is the potential for error in habitat classification or delineation on maps. The likelihood of errors will vary depending on survey methodology, season and the habitat in question. All survey limitations and likely

sources of error should be clearly stated in survey reports and datasets. In a habitat GIS, it is best practice to provide an estimate of the accuracy of the data for each habitat polygon (Smith *et al.*, 2011). In botanical surveys, non-flowering species may be more difficult to detect and identify; these limitations should also be clearly stated.

The conservation condition of habitats will usually not be possible to determine using only desktop data and will be more difficult during sub-optimal seasons.

In Northern Ireland, information exists to assist identification and assess Priority Habitats through the use of Habitat Guides⁴, Classification Keys⁵ and Rapid Condition Assessments⁶. These include the use of indicator species. Equally, the identification and assessment of Northern Ireland Priority Habitats will usually not be possible to determine using only desktop data and will be more difficult during sub-optimal seasons.

Key Considerations for Results Interpretation

Where there is uncertainty in the identification of plant species or habitats of conservation importance, such as Annex I types, a precautionary approach should be taken where it is assumed species or habitats of conservation significance are present. Similarly, conservation value and condition of a habitat will be more difficult to assign. Unless there is evidence to the contrary, it should be assumed that it is a good quality example of its type in good condition.

References and Data Sources

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European Commission (2013). *Interpretation Manual of European Union Habitats*. EUR 28. DG Environment.

Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. Heritage Council, Kilkenny.

JNCC (2003). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. Joint Nature Conservation Committee, Peterborough.

National Parks and Wildlife Service, BEC Consultants and National Biodiversity Data Centre (2019). *Irish Vegetation Classification*. National Biodiversity Data Centre, Waterford.

<http://www.biodiversityireland.ie/projects/national-vegetation-database/irish-vegetation-classification/>

Northern Ireland Environment Agency. Specifications for Ecological Surveys, including habitats and active peat. <https://www.daera-ni.gov.uk/articles/site-surveys>

Northern Ireland Environment Agency. Northern Ireland Priority Habitat Guides. <https://www.daera-ni.gov.uk/articles/northern-ireland-priority-habitat-guides>

⁴ <https://www.daera-ni.gov.uk/articles/northern-ireland-priority-habitat-guides>

⁵ <https://www.daera-ni.gov.uk/articles/northern-ireland-priority-habitat-classification-keys>

⁶ Available by request. See - <https://www.daera-ni.gov.uk/articles/northern-ireland-priority-habitat-rapid-condition-assessments>

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<http://ecountability.co.uk/ukhabworkinggroup-ukhab/>.

APPENDIX 4 – BADGERS

In the light of Covid-19 restrictions a number of adaptations to ‘standard’ ecological survey methods can be considered by ecologists to enable them to plan and undertake work in line with government restrictions. Any adaptations to methods should be fully explained in reports and any limitations or other factors that may influence interpretation should be clearly stated.

Summary of Commonly Used Survey Methods¹

The primary guidance for badger surveys in the Republic of Ireland is *Guidelines for the treatment of badgers prior to the construction of National Road Schemes* (TII 2006). In Northern Ireland the primary guidance is *Badgers and Development* (NIEA 2011), and *NIEA Specific Requirements: Badger surveys* (NIEA 2017). These documents outline the main approaches for surveys, impact assessments and mitigation.

Suggested Adaptations to Methods

Where survey data is constrained, desk-based research may help to identify likely areas of importance for badgers. Aerial photography (e.g. from Google Earth) may help to identify setts and paths, or to highlight suitable habitat features (e.g. patches of woodland in an agricultural area). Historical aerial photography on Google Earth can show the site at previous points in time, e.g. when trees are not in leaf. Survey data may be available from planning applications in the surrounding area, and badger road-kill may have been recorded on nearby roads.

When a sett has been located, an ecologist often needs to assess status and activity levels. If regular visits to site cannot be undertaken safely, trail cameras may provide greater information on usage, or setts can be classified on a precautionary basis. Additional surveys during the next optimum survey window (i.e. next autumn or next spring) may help to fill survey gaps.

For assessments at a landscape scale (e.g. territory mapping by bait-marking), the following can be considered:

- Use Nearest Neighbour distance to estimate likely spacing between main setts (see explanation in Harris². Assume boundary will be approximately mid-way between main setts. Under normal circumstances this is a useful technique to see if any main setts have been ‘missed’.
- Use mean main sett density for the Land Class or main habitat type to estimate number of social groups present within an area of interest.
 - For Northern Ireland the Land Class system is described in Murray⁶ but is not available on Open Access data. The most recent estimates of badger densities associated with these Land Classes are given in Reid⁷.
 - For Republic of Ireland the most recent estimates are by Byrne *et al.*⁸, but the information is not available on open access.
- To confirm sett status - monthly monitoring of setts to record activity levels over a four to six month (or longer period). If levels of activity are sustained and pathways remain clear assume main sett – if activity levels turn out to vary with season, assume subsidiary.

- Use next optimum survey window (i.e. autumn (late August to early October) or spring (February to April)) to carry out a bait-marking survey.

Key Survey Limitations

If surveys are carried out at sub-optimal times of the year (e.g. in summer months), it is possible that some small or inactive setts may not be detected. Where setts have been found, it may not be possible to accurately determine sett status or activity, to identify other features of importance (e.g. regularly used paths) or to determine territory size. Some mitigation proposals may also be affected by a lack of baseline data, for example the identify of an optimum location for artificial badger sett, or determining sections of roads that may require mammal-proof fencing.

The significance of these limitations will depend on the extent of the alternative approach, the type of development and the characteristics of badger populations in the area in question. The interpretation of results will take these limitations into account, as described below.

Key Considerations for Results Interpretation

Impact Assessment

The Precautionary Principle is well-established in EclA guidance (CIEEM, 2018). In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be fully explained and acknowledged in the EclA.

Mitigation and Licensing

Precautionary mitigation may be required if the status of a sett is unclear, as follows:

- an ecologist should assume that any sett, if directly affected, needs a receptor sett, and if there are no natural setts within 100m, provision of an alternative (artificial) sett is required;
- provision of an artificial sett may still be required for loss of a main sett even if natural setts are present within 100m; and
- site artificial setts within 50m if possible and certainly within 100m, ensuring that there are no barriers between them and there are clear habitat links between the affected setts and the artificial sett (hedges etc.).

The contractor's method statement must specify that works that cause an offence should stop immediately. The client must be made aware of the increased risk of this happening due to incomplete survey data. Any badger sett is protected under the legislation, whether active or inactive.

References and Data Sources

Byrne, A.W., Acevedo, P., Green, S. and O'Keefe, J. (2014) Estimating badger social-group abundance in the Republic of Ireland using cross-validated species distribution modelling. *Ecological Indicators* **43**, 94-102. <https://doi.org/10.1016/j.ecolind.2014.02.024>

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- Transport Infrastructure Ireland (formerly the National Roads Authority) (2006). *Guidelines for the Treatment of Badgers during the Construction of National Road Schemes*. Available online at <https://www.tii.ie/technical-services/environment/construction/>

APPENDIX 5 – SMOOTH NEWTS

Some adaptations to ‘standard’ smooth newt survey methods may be necessary during spring and summer 2020. This section mainly applies to Northern Ireland, where smooth newts receive legal protection and are a Priority Species, and where newt surveys are carried out on a regular basis. Smooth newts are also protected in the Republic of Ireland, but newt surveys are not carried out on a regular basis, except where high-quality habitat exists.

Summary of Commonly Used Survey Methods

In Northern Ireland, survey requirements for smooth newts have been prepared by the Northern Ireland Environment Agency (NIEA 2017). Survey methods are outlined in a range of sources, including *The Herpetofauna Workers’ Manual* (Gent and Gibson 1998) and *NARRS Amphibian Survey Protocols* (Oldham et al. 2000). In the Republic of Ireland, a key reference is *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (TII 2009).

The most reliable and efficient survey technique is torchlight surveys at night. Where visibility is poor (e.g. water turbidity is high), egg searching and dip-netting are alternative options. Bottle traps are not permitted in Northern Ireland, and are discouraged in the Republic of Ireland. Environmental DNA (eDNA) sampling can be used to confirm presence of great crested newts in Britain, but eDNA techniques are not currently available for smooth newts. After newts have left their breeding ponds, artificial refugia surveys may help to assess their usage of terrestrial habitats.

In the NIEA Survey Requirements for smooth newts, it is stated that newt surveys can only be carried out between mid-March and mid-June. In the TII guidelines, the survey season is suggested to be from late-March to late-May. Most of the published guidelines (e.g. Gent and Gibson 1998, TII 2009) recommend carrying out at least four surveys in order to reliably confirm presence or absence of newts from a waterbody. In the TII guidelines it is recommended that the surveys are spaced at roughly two-week intervals throughout the period, with at least two visits between early-April and early-May. However, the NIEA Survey Requirements provide a level of flexibility depending on site-specific circumstances, stating that “*the survey methods and survey effort must be proportional to the ecology and size of the site*”.

It is important to note that a protected species licence must be obtained from the NIEA Wildlife Team before commencement of any newt surveys.

Suggested Adaptations to Methods

To date the Covid-19 restrictions have prevented (or severely limited) surveys during the peak season of newt activity in April and May 2020. Although fieldwork was permitted in Northern Ireland during this period, night-time surveying has been restricted by the lack of hotel accommodation for night workers, and by safety concerns about lone working at night near open water. Therefore, it is proposed that the survey season is extended until the end of June in all cases.

It may not be possible to provide intervals of two weeks between surveys, due to the shortened survey season. Therefore, surveyors may need to provide shorter gaps between surveys, for example three-day intervals.

Key Survey Limitations

Most methods listed can only determine the presence of newts. Multiple methods and repeat visits are typically required to determine likely absence. Additional effort may be appropriate where surveys are constrained; e.g. surveys conducted outside the optimal season or in other unsuitable conditions (turbid water, densely vegetated ponds). Where additional effort is not possible, the constraints should be noted, and the precautionary principle should be adopted. Ecologists must consider how the limitations of their surveys may influence the interpretation of results.

Key Considerations for Results Interpretation

Impact Assessment

The Precautionary Principle is well-established in EclA guidance (CIEEM, 2018 as amended). In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EclA.

Mitigation and Licensing

Where precautionary mitigation is proposed, e.g. using robust, detailed Reasonable Avoidance Measures and in the absence of a protected species licence, construction method statements must specify that works that cause an offence should stop immediately.

Where mitigation works are planned, e.g. capture or exclusion of smooth newts from a site, it is likely that minor adaptations to working methods and the implementation of a Risk Assessment and Method Statement, which takes account of Covid-19 public health advice protocols, would allow these works to continue.

Where there are reasonable grounds to assume that smooth newt could be significantly affected by a development, a protected species licence will be required during construction works. In some cases it may be necessary to acquire a licence for a site at which an ecologist has not been able to confirm the presence of newts, but considers them likely to be present based on habitat suitability.

References and Data Sources

Northern Ireland Environment Agency Specific Requirements: Newt Surveys (last updated in 2017).
<https://www.daera-ni.gov.uk/publications/newt-surveys-specifications>

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