

Introduction & Purpose

Following the publication of the Bat Conservation Trust's "Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition", which supersedes the 3rd edition (Collins, 2016), NIEA Natural Environment Division (NED) expects Night Vision Aids (NVAs) to be also refer to the "Bat Conservation Trust, Bat emergence surveys with night vision aids – A technical guide for professional ecologists 1st edition – 2026".

It is the responsibility of the ecologist to ensure that the equipment being used is sufficient, has been deployed correctly, and is operated by a suitably qualified, trained and experienced individual.

Below is a checklist indicating the types of information that NIEA requires to be addressed within reports, to assess the robustness of bat emergence surveys. If any of the points below are not clear, further information may be sought from the ecologist via a planning consultation response. To ensure timely processing of consultations, all information should be included before NED is consulted.

Report Checklist¹

1. What type of survey was conducted with NVAs – survey aid or survey method
 - a. This can be addressed via a well-annotated diagram showing the various vantage points during the survey and which ecologist / NVA was located at which point or it may be described within the survey methodology. Distances between the Potential Roost Feature (PRF) and the NVA and bat detector should be documented.
 - b. The maintenance of equipment during surveys should not be the responsibility of an ecologist allocated to a specific survey position/location to make observations, or this may compromise the survey results. If NVAs or associated equipment need to be monitored or maintained, this should be considered when planning survey coverage for the site.
2. Equipment used
 - a. The technical details below provide examples of information that ecologists may wish to include to demonstrate that their NVA equipment is sufficient:
 - i. Camera make and model
 - ii. Detector sensor resolution
 - iii. Frame rate (fps)
 - iv. Lens field of view (degrees)
 - v. Sensor area
 - vi. Pixel size

¹ For further detail on best practice report writing for bat surveys please refer to Chapter 11 of the Bat Conservation Trust's "Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition".

vii. Pixel count

This is not an exhaustive list. There is a wide variety of cameras available, resulting in differing capabilities across a range of scenarios. Please refer to manufacturer specifications and BCT's technical guide for more information.²

- b. The technical details of the equipment will inform how far away from a PRF, structure or tree an NVA can be placed and still operate effectively.
- c. The position of the bat detector should be documented.
 - i. A bat detector might operate effectively up to 25-30 m; however, if it is linked to an NVA set 35-40 m from a PRF, it will no longer be effective.
- d. For infrared NVAs, details of additional light sources and where they are positioned should be provided. Infrared cameras require a separate source of true infrared illumination (not a red-light filter) to be most effective. The still shot taken at the darkest point of the survey should show the field of view and that appropriate illumination has been used.
- e. Reports should state whether the equipment required adjustment throughout the survey.
- f. Reports should detail any discrepancies between live and re-watched footage.

3. Results

- a. All relevant recordings/observations of bats detected during the surveys should be included within the report.

4. Diagrams and photographs

- a. All reports should include:
 - i. A diagram showing all identified PRFs on the structure or tree. **PRFs marked on NVA stills have proven useful in assessing NVA surveys.**
 - ii. A diagram showing the position of each ecologist and NVA and their field of view. Any additional light sources should also be shown on the diagram. In instances where multiple surveys are being conducted on the same structure, tree or PRF the ecologist should consider the need to rotate ecologists and NVAs, depending on the survey methodology.
 - iii. A still image taken from the NVA, in position, at the darkest point of the survey.

² Bat Conservation Trust, Bat emergence surveys with night vision aids – A technical guide for professional ecologists 1st edition – 2026.

- iv. Screenshots and/or video of emerging bats, where relevant.

5. Operator details

- a. The survey report must detail the ecologist's qualifications, training and/or experience in the use and subsequent analysis of NVAs.
- b. Their role and where they were positioned throughout the survey(s).

6. Analysis procedure

- a. NED is aware that various software tools are currently in development to aid in the review of NVA footage through automated analysis. As such the report should include details on how the NVA footage was analysed after the survey, i.e. whether the analysis was undertaken manually or using software.
- b. At present, it is recommended that **all** NVA survey footage recorded is reviewed, and not just footage associated with echolocation calls detected on acoustic bat detectors. If only footage associated with bat calls is reviewed, emerging bats could be missed. This consideration is particularly important for later emerging species with quieter echolocation calls.