Colony Counts- Protocols (Taken from nabatmonitoring.org)

The goal of colony count surveys is to estimate population abundance in gregarious species or to record species whose call characteristics are not suited to acoustic monitoring. Bat colony sites can be sensitive locations, NABat offers multiple levels of security for when site secrecy is a concern.
Disclaimer: NABat recognizes that many ongoing colony monitoring programs consist of years or decades of effort. NABat guidelines encourage survey effort consistency to create comparable datasets; however, existing colony monitoring programs should not significantly alter their current protocols unless their data reliability would be significantly improved. Consistent long-term monitoring is more important than full integration of colony count efforts into the NABat framework.

Internal Colony Counts

1. Assess the need for an internal colony count. Entering a roost may negatively impact bats and should be avoided when possible. An internal colony count may be appropriate if external counts cannot be conducted or cannot reliably identify a roost's species, or if data needs require winter-specific population estimates to assess threats associated with hibernacula (e.g., WNS). To ensure reproductive success is not compromised in maternity colonies, internal surveys of summer roosts are not recommended unless absolutely necessary.

2. Establish a survey sample design. If a regular sampling interval can be maintained (≤ 3 years between surveys), it may be most appropriate to monitor all colonies in a region. Alternatively, GRTS cell selection protocol can be used to prioritize monitoring when the number of colonies exceeds monitoring resources in a region.

3. Conduct surveys. Whenever possible, winter surveys should be conducted between late January and early March. To minimize disturbance, conduct surveys no more than once per season — some species-specific guidance may recommend surveying once every other season. If internal roost counts must be conducted in the summer, surveys should occur during the final two weeks of pregnancy. Entering roosts with non-volant pups incurs a high risk of pup mortality.

Multiple-observer surveys are recommended to minimize bias in abundance estimates. However, it is critical that data collected in this manner be independent (i.e., no communication between observers). Surveyors must also consider that duplicated effort has the potential to increase disturbance within a roost and should make every effort to minimize disturbance. Digital photography is the preferred method for internal colony counts as it minimizes time spent in a roost and creates a permanent record of the survey. Performing a visual survey in tandem with digital photography generally results in a reliable colony count. Cameras must be capable of producing clear images where individual bats are easily distinguished. Cluster abundance may be estimated by extrapolating bat density estimates over the cluster area; in such cases, packing density should be estimated for each cluster and for multiple subsets of large clusters.

Note: It is crucial that large roosts be subdivided into named sections and bat counts be attributed to their respective section. Spatial inconsistency between surveys often renders incomparable data; however, comparisons may still be drawn at the roost section level when such data exists.

For more information, visit https://www.nabatmonitoring.org/collect-data