APPENDIX I

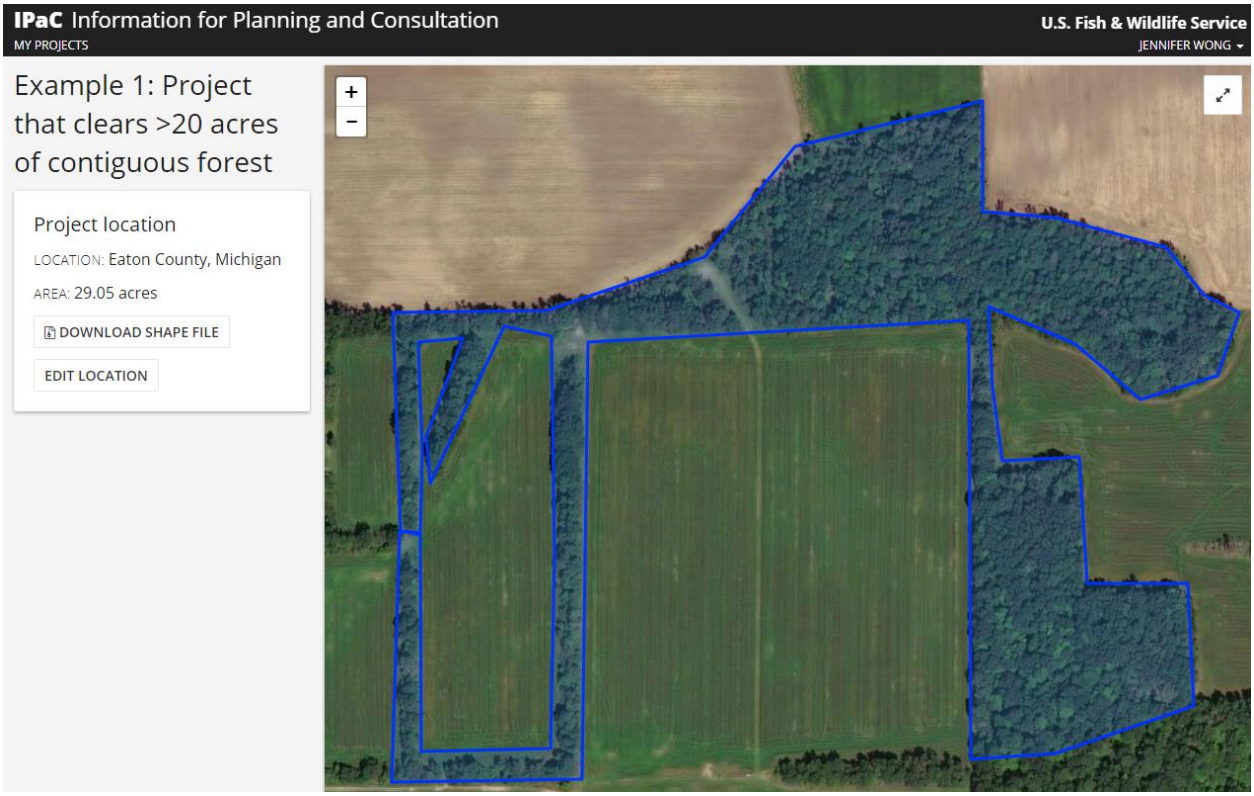
Projects that clear ≥20 acres of contiguous forest or fragment a connective corridor between two or more suitable forest patches

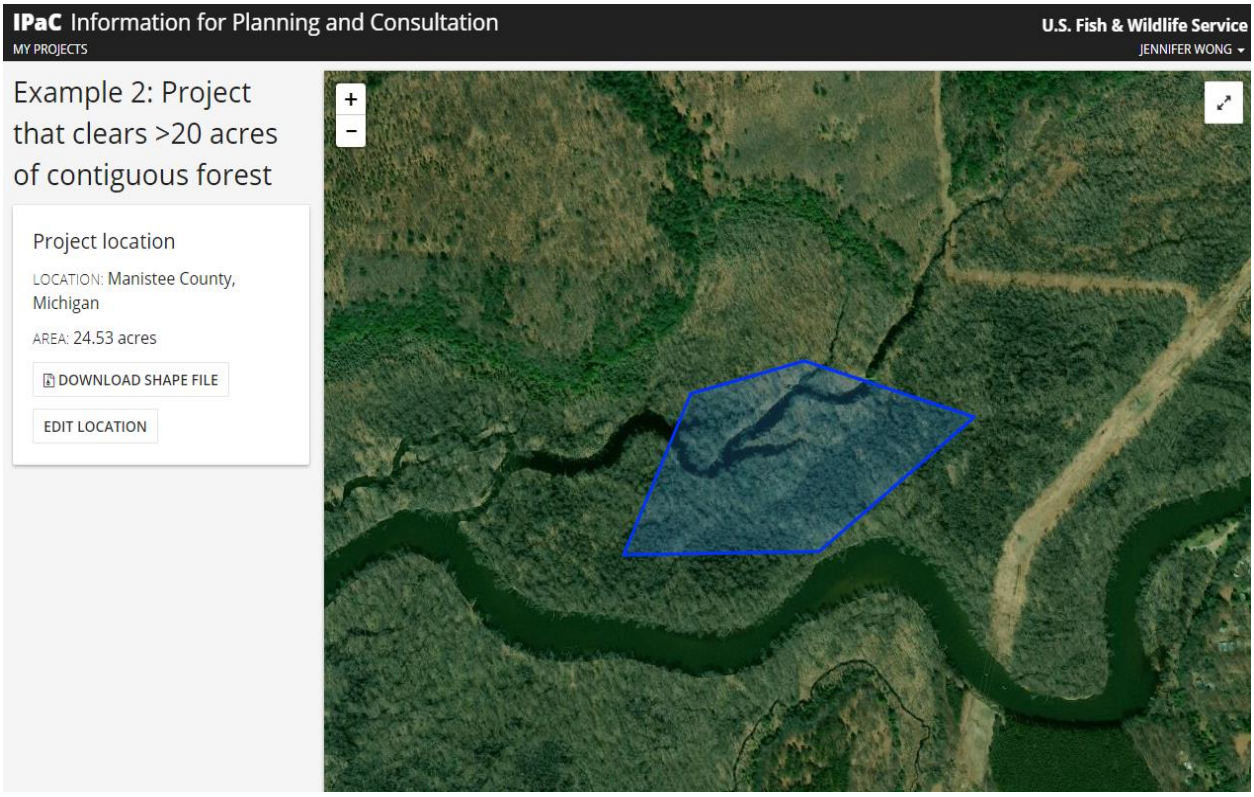
Indiana bats and northern long-eared bats (NLEB) are forest dependent and require large, contiguous[1] forested tracts for roosting, commuting and foraging. The Service defines suitable roosting habitat for Indiana bats as forest patches with trees of 5 inches in diameter at breast height (DBH) or larger, and suitable roosting habitat for NLEB as forest patches with trees of 3 inches DBH or larger. However, early successional habitat with small diameter trees may be used as important foraging and/or commuting habitat by listed bats. Projects that clear ≥20 acres of contiguous forest have potential to adversely affect or indirectly take federally listed bats even if the clearing is done during the inactive season, due to the extensive removal of available habitat. Therefore, projects that clear ≥20 acres of contiguous forest warrant project-specific consideration and coordination with the Service. (For more information, refer to the Range-wide Indiana Bat Summer Survey Guidelines, available at https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html).

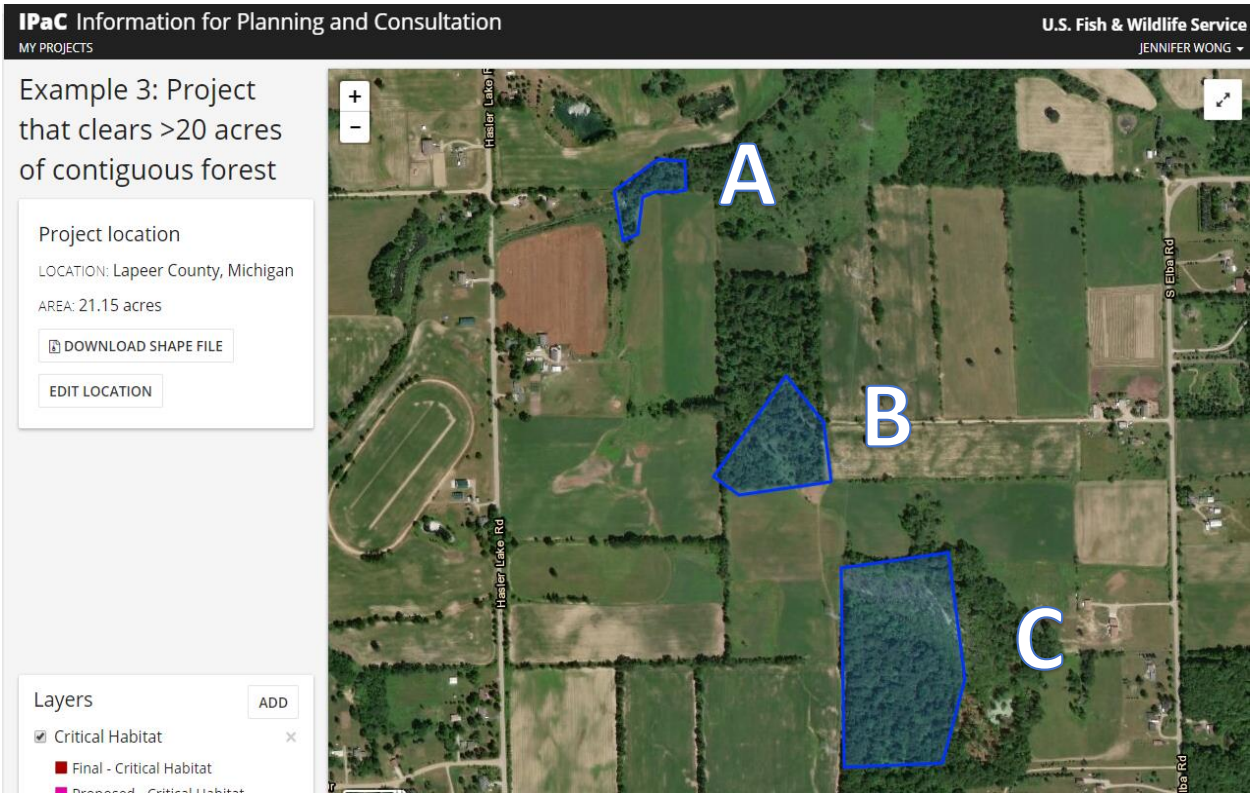
Based on life history information and available literature for Indiana bats (e.g., average foraging distances and occupied forest patch sizes), the Service believes that it is unlikely that an isolated forest stand of 10 acres or less would provide sufficient resources for an Indiana bat (see https://www.fws.gov/midwest/endangered/section7/s7process/mammals/inba/INBAEcologySummary.html for more information). However, available data indicate that Indiana bats may infrequently use isolated forest patches as small as 5.6 acres (Keith Lott, personal communication). The Michigan Ecological Services Field Office believes a conservative minimum patch size of 5 acres is appropriate for Indiana bats and NLEB. Although listed bats rarely traverse non-forested areas of 1000 feet or more, they are frequently observed using vegetated corridors, such as tree lines, to travel among suitable forest patches. Because they may connect important foraging and roosting habitats, removal of forested corridors (regardless of size/area of corridor, as long as it connects suitable forest patches) could severely fragment available habitat and result in adverse effects or indirect take of listed bats. Therefore, projects that remove connective corridors between forest patches warrant project-specific consideration and coordination with the Service. (For more information, refer to the Indiana Bat Section 7 and Section 10 Guidance for Wind Energy Projects, available at https://www.fws.gov/midwest/endangered/mammals/inba/WindEnergyGuidance.html).

[1] Connected to other forest patches by 1000 feet or less

Examples of projects that clear ≥20 acres of contiguous forest (blue = forested area to be cleared):







In Example 3, forest patch A is small, but it is connected to the other forest patches by <1000 feet, so it is considered contiguous forest. Removal of A, B, and C would result in loss of greater than 20 acres of contiguous forest.

*Note: Examples do not represent current or previously proposed projects.