**Appendix S1**

*Land Cover Classification*

To classify land cover, we began with a forest inventory map of Sandhill (Wisconsin DNR, WISFIRS) with 31 habitat types. Using a combination of fine-scale vegetation surveys and a principal component analysis, we reclassified land cover into 5 classes: Aspen-Alder, Mature Forest, Clearcut, Open, and Other. After examining the number of used and available roost sites in each land cover class, we grouped “Clearcut” with “Other” (due to a low number of sites in Clearcut), removed “Scrub Oak” from “Other” and created a separate class for Scrub Oak. Our final land cover map had a 5 m- resolution and 5 land cover classes: Aspen-Alder (referred to as Dense Cover), Mature Forest, Scrub Oak, Open (emergent vegetation, lowland brush/willow, and lowland grass), and Other.