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Spatial and temporal patterns of Bald Eagle (Haliaeetus leucocephalus) winter habitat use along the Upper Mississippi River corridor

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SPATIAL AND TEMPORAL PATTERNS OF BALD EAGLE (HALIAEETUS LEUCOCEPHALUS) WINTER HABITAT USE ALONG THE UPPER MISSISSIPPI RIVER CORRIDOR

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ABSTRACT

From March 1999 through February 2006, satellite transmitters were placed on 13 wild-caught individuals of the Bald Eagle (*Haliaeetus leucocephalus*) in southwestern Wisconsin. These individuals (6 males, 7 females, 11 adults, 2 immatures) were tracked along the Upper Mississippi River corridor during the winters of 1999 through 2006. The objectives of my study were to: 1) estimate winter home range size and to compare home range size between sexes, 2) characterize and quantify winter night roost habitat, and 3) identify spatial and temporal patterns of winter habitat use and behavior relative to temperature, wind speed, and ice-cover. Mean 95% fixed kernel estimate winter home range size was 6837 km^2 (range 8 – 36 591) and was not significantly different between sexes. Upland habitat was used significantly more than floodplain habitat for winter night roosts for eight of the 13 individuals; whereas, floodplain was used in significantly greater abundance for two of the 13 individuals. Winter night roosts, sited in forest habitat, generally were located in areas dominated by cultivated crops; however, relative to the proportion of habitat availability within the home range of a particular individual, habitat types associated with the floodplain generally were used more frequently. Although these were the general trends, variation in winter night roost habitat use was evident among individuals and years. The results suggested proximity to water and isolation from human disturbance influenced winter night roost habitat selection. However, use of upland habitat suggested that other factors influence habitat selection. K-means cluster analysis identified three patterns of winter night roost habitat use: 1) use of areas dominated by cultivated crops with less deciduous forest (35.1% of locations), 2) use of deciduous forest with less cultivated crops (34.5% of locations), and 3) use of

floodplain habitat (30.4% of locations). Likewise, K-means cluster analysis identified four behavioral patterns of winter night roost selection: 1) roost close to the river and to a lock and dam (67.5% of locations), 2) roost slightly south from a lock and dam but close to the river (23.5% of locations), 3) roost in an upland area relatively distant from the river, but no movement latitudinally (6.7% of locations), and 4) move south and roost in an upland area (2.3% of locations). The results of a discriminant function analysis using wind speed, temperature, and percent ice-cover as predictors of group membership detected no apparent patterns of winter night roost habitat use or behavioral patterns in response to wind speed, temperature, and ice-cover. Consequently, the high variability suggested that these factors alone or in combinations cannot account for the variation in macrohabitat use. Density-dependent competition for preferred food resources, dispersion because of other abiotic factors, or the level of habitat selection (e.g. microhabitat) might also be drivers of the variability in winter roosting behavior and habitat use. Further research into Bald Eagle winter night roosting behavior along the Upper Mississippi River corridor might help to elucidate possible patterns of habitat use that can guide future conservation efforts.

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PREFACE

This thesis has been formatted to meet the manuscript guidelines of the Journal of Raptor Research, to which a portion will be submitted for publication. Italics were used for addresses, scientific names, journal names, and third level headings. For complete common names for birds, the first letter of each word was capitalized; however, lowercase was used for all other common names. Metric units were used throughout. "Figure" was used only to start a sentence; otherwise, "Fig." or "Figs." was used. Abbreviations were used without spelling them out (e.g., hr, min, yr, mo, wk, d, km). Continental dating was used (e.g. 10 January 2000). Main headings were all capital letters and flush with the left margin. The introduction heading has been added to this thesis; however, should be omitted before publication. Second level headings were placed in bold with normal indentation with capitalization of the first letter of each word except prepositions and articles. Third level headings were placed in italics with capitalization of the first letter of the first word only.

Key words: *Bald Eagle*; *communal roost*; Haliaeetus leucocephalus; *satellite telemetry*; *Upper Mississippi River*; *winter habitat use.*

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

INTRODUCTION

The study of how and why organisms select particular habitats has long been central to ecology. Habitat selection is a hierarchical process in which an individual first selects a geographical location, then a particular habitat, and finally microhabitat (Hutto 1985). Habitat selection is influenced by a number of proximate factors, including landscape, terrain, or arrangement of vegetation (Wiens 1969). Additionally, habitat is selected for the quantity, quality, distribution, and juxtaposition of resources (Wiens 1986). The selection and use of appropriate habitat over time and space enhances the probability of survival and thus influences fitness (Klopfer and Ganzhorn 1985). Therefore, Southwood (1977) recommended that any discussion or description of habitat use must consider spatial and temporal patterns to incorporate variations in resource abundance and availability.

The flow of energy is a significant factor in studies of behavior patterns and habitat selection (Bakken 1990). Knowledge of the behavioral and physiological responses of animals relative to thermoregulation might help to explain habitat selection. Approximately half of the total avian energy budget is used up in basal and thermoregulatory metabolism (Weathers et al. 1984). Selection of suitable habitat that reduces thermoregulatory energy increases overall fitness.

During winter, the Bald Eagle (*Haliaeetus leucocephalus*) occurs in relatively high concentrations in many parts of the lower 48 states. Winter congregations are located in the Pacific Northwest, parts of Arizona and New Mexico, large river systems in the Midwest, the Chesapeake Bay and its tributaries, and areas of the southeastern United States (Buehler 2000). These congregations generally are associated with aquatic

areas near areas of high food availability. However, prey availability and habitat use vary greatly over the winter range (Keister et al. 1987). As opportunistic foragers, the Bald Eagle feeds on fish, waterfowl, and small mammals but also scavenges on carrion of various vertebrates if available (Buehler 2000).

Differences in home range size have been attributed to differences in body size, sex, trophic status, and habitat productivity (Harestad and Bunnell 1979). Larger individuals have higher energetic requirements than smaller individuals and presumably require a larger home range size to meet these requirements. Bald Eagle females are approximately 25% larger than males (Buehler 2000); therefore, based solely on body size, females should have larger home ranges. Because Bald Eagle adults and immatures have similar mass, body size does not play a role in home range size relative to age. Schoener (1968) distinguished differences in home range size of similar sized avian carnivores and herbivores. He suggested that because there is less biomass of food per unit area at higher trophic levels, home range sizes for carnivores are larger than that for herbivores. The diet of the Bald Eagle varies in response to changing prey availability or habitat productivity as it scavenges on carrion and pursues live prey; therefore, home range size of the Bald Eagle might be attributed to feeding strategy. If a supply of carrion was readily available, home range size would presumably be small, assuming a high biomass per unit area. In addition, if large ungulates were being scavenged, home range size would presumably be small because energetic requirements can be met at a single feeding site. Conversely, availability of live prey might be more dynamic, especially along a large river system during winter, if fish was the primary food source. If pursuing

live prey was the feeding strategy of a Bald Eagle, home range size would likely be large, or, at least, more variable.

Winter nights are perhaps the most thermally demanding part of the annual cycle (Walsberg and King 1980). High thermostatic demands that might occur on winter nights necessitate selection of appropriate habitat over time and space to minimize thermal stress (Walsberg 1986). Winter habitat selection, especially night roost sites, is a vital component in thermoregulation of many avian species during harsh environmental conditions. Cold stress induces shivering thermogenesis, such that energy stores are metabolized to produce heat (Stalmaster 1983). Examples of avifauna where thermoregulatory energy expenditures under cold stress have been described include the Bald Eagle (Stalmaster and Gessaman 1984), the Snowy Owl (*Bubo scandiacus*; Gessaman 1972), the Northern Spotted Owl (*Strix occidentalis caurina*; Barrows and Barrows 1978), the Boreal Owl (*Aegolius funereus*; Hayward et al. 1993), the European Starling (*Sturnus vulgaris*; Kelty and Lustick 1977), and the American Goldfinch (*Spinus tristis*; Buttemer 1985). Lower temperatures and longer nighttime hours during the winter increases thermoregulatory stress (Rickman et al. 2005). In addition, the winter season often coincides with limited food supplies, especially for diurnal foragers. Metabolic rates increase below the lower critical temperature (10.6°C for the Bald Eagle); however, selection of certain habitat has been shown to minimize energy expenditure for thermoregulation and to reduce heat loss (Stalmaster and Gessaman 1984). Thermostatic demands, ambient temperature, reducing radiative heat loss, and protection from wind and precipitation are factors considered in winter habitat selection (Walsberg 1986). For example, Stalmaster (1983) suggested that the Bald Eagle

conserved energy by roosting in coniferous trees as compared to deciduous riparian areas during winter in Washington. Microhabitat selection, such as use of a coniferous tree, or macrohabitat selection, such as use of a patch of deciduous forest in an upland valley, reduces energy costs because wind and ambient temperature are less severe in sheltered areas. In addition, selecting habitat near available food will further reduce energy costs of flying to feeding sites. The need for selecting habitat to minimize temperature loss while staying close to resources to minimize energy expenditure is critical to winter survival.

Most studies concerning winter habitat selection of the Bald Eagle have focused on physiological requirements (Buehler et al. 1991b, Stalmaster and Gessaman 1984), perch tree requirements (Buehler et al. 1992, Steenhof et al. 1980), and foraging behavior (Knight and Knight 1984, Stalmaster and Plettner 1992). Other studies have characterized microhabitat within winter communal roost sites used by the Bald Eagle (Buehler et al. 1991a, Keister and Anthony 1983, and Sabine and Klimstra 1985). Grubb et al. (1989) evaluated communal roosting behavior at a larger spatial scale in Arizona with the use of radio telemetry and reported preferential selection of roosting macrohabitat. Likewise, Keister et al. (1987) compared patterns of communal roost use at sites in Oregon and California. All of these studies agree that prey availability and weather conditions are drivers of winter night roosting behavior. Grubb et al. (1989), Grubb et al. (1994), and Steenhof (1976) reported that the Bald Eagle shifted to upland foraging sites during lake freezing on winter areas in Arizona, New Mexico, and South Dakota, respectively. Ice-covered water reduces fish and waterfowl availability; therefore, increases the likelihood of, or necessity for, feeding on ungulate carrion.

The goal of my study is to improve the understanding of how landscape level features and weather affect Bald Eagle selection of winter night roosts along the Upper Mississippi River corridor, which could lead to the manipulation of habitat used for winter night roosts and could facilitate management of the Bald Eagle. My objectives were to: 1) estimate winter home range size and compare home range size between sexes, 2) characterize and quantify winter night roost habitat from Bald Eagle locations obtained through satellite telemetry, and 3) identify spatial and temporal patterns of winter night roost selection relative to weather and ice-cover. To achieve my objectives, I tested the following hypotheses: 1) Bald Eagle females have larger winter home ranges than males. Without data to document habitat productivity or feeding strategies of the satellite telemetered individuals, body size was used as the rationale. 2) Bald Eagle individuals use landscape elements associated with upland habitat more than elements associated with floodplain habitat, 3) floodplain landscape elements are used in greater frequency than what is available within an individual's home range, 4) Floodplain forest is not used preferentially during high wind, low temperatures, and full ice-cover conditions, and 5) the Bald Eagle will roost farther from the river during high wind, low temperatures, and full ice-cover conditions.

METHODS

Study Site. The study site encompassed portions of the Upper Mississippi River, which extended from Minneapolis, Minnesota to Cairo, Illinois (Fig. 1), and the adjacent landscape of rolling hills and bluffs, alluvial plains, and tributaries. This region included the Upper Mississippi River National Wildlife and Fish Refuge, which meandered along 420 river km from Wabasha, Minnesota to Rock Island, Illinois comprised of nearly 97 125 ha, and the northern portion of the Mark Twain National Wildlife Refuge Complex, which consisted of 18 211 ha along 563 river km from Muscatine, Iowa to Gorham, Illinois. Before the 1930s, this portion of the river was free flowing until a series of locks and dams were constructed to regulate water levels for commercial navigation. These dams impounded the river causing widespread loss of floodplain forest, especially immediately upstream of each dam.

The habitat within the study area mainly consisted of floodplain forest, upland hardwood forest on the adjacent limestone bluffs, and extensive agriculture, primarily corn (*Zea mays*) and soybeans (*Glycine max*). Expanses of floodplain forest were generally located at the northern end of each river pool. The floodplain forest was dominated by silver maple (*Acer saccharinum*) with cottonwood (*Populus deltoides*) as a subdominant species. Upland hardwood forest remained where conversion to agriculture or pasture has not occurred, which generally was limited to valleys or ravines. These areas of forest can be used as roost sites by the Bald Eagle. The Driftless Region, located in northeastern Iowa, northwestern Illinois, southwestern Wisconsin, and southeastern Minnesota, contained the majority of the upland hardwood forest and was characterized by high topographic relief; however, similar terrain was located in areas farther south

(i.e., near Burlington, Iowa). In the upland areas, row crop agriculture and pasture cover higher elevation, relatively flat areas of the uneven terrain, while areas of forest generally remained along bluff areas and steep valleys. Row crop agriculture dominated the alluvial plains south of the Driftless Region.

The distribution of ice-cover in the study area was dynamic over the course of the winters. Ice-cover generally commenced in mid-December and depending on the severity of the winter might have lasted until late March, especially in the northernmost river pools. Because of the north to south orientation of the Upper Mississippi River, ice-cover in the river pools to the south of the study area was not as prolonged and might have fluctuated.

Trapping and Satellite Tracking. From March 1999 to February 2006, 14 Bald Eagle individuals were trapped primarily by rocket-netting while they were feeding on carrion near Glen Haven, Wisconsin (Fig. 1). One individual was not included in my study because of transmitter signal loss shortly after release. Sex was determined by using body mass, with females weighing on average 25% more than males, and beak depth, head length, narrowest tarsal thickness lateral, and narrowest tarsal thickness frontal. Garcelon et al. (1985) correctly classified sex in 97.7% of 38 individuals by using the four morphometric measurements later confirmed by laparoscopy and karyotyping techniques. For all individuals trapped near Glen Haven (n = 16), sex classification was confirmed by performing necropsies for all individuals that were later recovered because of death (n = 2) (Brett Mandernack, personal communication). Each individual was outfitted with a battery or solar-powered backpack mounted Platform Transmitter Terminal (PTT) consisting of a Global Positioning System (GPS) or doppler

satellite transmitter and was continuously tracked until PTT failure. The PTTs weighed between 60 and 95 g, which was less than 3 percent of an average individual's 5 kg body mass. Each PTT sent signals to orbiting satellites that relayed the message to a ground-processing center. The processing center calculated the transmitter location, processed any sensory data, and made the data available to the user via e-mail correspondence. Data included locations in latitude and longitude, date, time, and location quality. Location quality was reported as one of seven location classes (LC): LC3 = < 150 m, LC2 = 150-350 m, LC1 = 351-1000 m, LC0 = > 1000 m, LCA, B and Z = no location accuracy (Argos 1996).

Data Processing. I compiled all winter locations for each individual Bald Eagle and selected one winter night roost location for each available night by choosing the highest quality location, to reduce error, from 1 hr after sunset to 1 hr before sunrise (Appendix A). Little movement by an individual might occur during this time; however, it was assumed that the individual was stationary during the night. Location class 3 (LC3), the highest quality location, was selected first if available. If a LC3 location was not available, then location class 2 (LC2), location class 1 (LC1), or location class 0 (LC0) was selected. Location classes A, B, and Z were not used because of unknown location quality.

I acquired data at 34 weather stations along the Upper Mississippi River corridor (Fig. 2). Weather data, in a comma-delimited format, were downloaded from www.weatherunderground.com. I selected temperature and wind speed for the period that represented approximately 1 hr before sunset to sunset for each day a satellite fix was provided. I assumed that during this hour period, an individual evaluates the conditions

and selects a roost site. Each comma-delimited file was then converted to Excel for Geographic Information System (GIS) input. The mean distance between closest weather stations was 52 km (range 24-139).

I acquired historical ice-cover data from the U.S. Army Corps of Engineers to measure percent ice-cover for every pool along the Upper Mississippi River. Based on the latitude of the lock and dams and the night roost locations, I associated each roost location to the nearest river pool. I then related percent ice-cover to the roost location by applying the date of the night roost location and associated river pool.

GIS Analyses. I used GIS software ArcGIS, Version 9.3 and ArcView, Version 3.3 (Environmental Systems Research Institute, Redlands, California) for GIS analyses and for generating data arrays for statistical analyses. I acquired land-cover layers from the 2001 National Land Cover Database (NLCD) (Homer et al. 2004), which consisted of 15 land-cover classes (Table 1) in a 30 m raster coverage. Although the NLCD consisted of one year of temporal coverage, I presumed that little change occurred to the land-cover classes from 1999 through 2006 for two reasons. First, clear cutting forest for conversion to agriculture already had occurred up this point. Second, conversion of pasture or grassland to agriculture might have little influence on Bald Eagle behavior during winter because crops generally are harvested and snow covered during this time.

For the weather variables, I generated a temperature and wind speed isocline map for each day by performing the Ordinary Kriging method in the Spatial Analyst Extension of ArcGIS with applying a spherical semivariogram and variable search radius type. Each isocline map was then used to estimate temperature (ºC) and wind speed

(mps) for each winter night roost location by using the GridStack (Buja 2003) script in ArcView.

To estimate winter home range size, I used fixed kernel density estimation with least-squares cross-validation method in Home Range Tools (Rodgers et al. 2007) of ArcGIS. This method is used to estimate a user specified probability density of a distribution. Winter home ranges were estimated by using only winter night roost locations. Polygons representing a 95% fixed kernel estimate were generated for each individual for each year. Kernel methods have been shown to estimate home range size more accurately than minimum convex polygon methods (Seaman et al. 1999).

To quantify available winter habitat, I overlaid each winter home range area (95%) with the NLCD GIS layer to calculate total area for each of the 15 land-cover classes. To quantify habitat use at each winter night roost location, I used the Extract by Circle method in the Spatial Analyst Extension of ArcGIS. I buffered each winter night roost location by 1000 m to account for error in satellite location quality. I overlaid each buffered area with the NLCD GIS layer to calculate area for each of the 15 land-cover classes within the buffered area.

To assess proximity of each winter night roost location to the river, I first generated a polygon representing the Upper Mississippi River and associated floodplain. I then used the Euclidian Distance Function in the Spatial Analyst Extension of ArcGIS to measure the minimum distance (km) from each winter night roost location to the polygon, which was used in subsequent statistical analyses.

Statistical Analyses. To compare winter home range size between sexes, I performed a t-test (Zar 1999) on the mean area of the 95% fixed kernel estimates. Bald

Eagle immatures (1 male, 1 female) were omitted from analysis to eliminate age bias from the analysis.

To assess winter night roost habitat use, I performed three separate analyses. First, a t-test (Zar 1999) was performed on each individual to compare area of floodplain habitat used to the area of upland habitat used for winter night roosts. I reclassified the 15 land-cover classes into floodplain and upland. Floodplain consisted of open water, woody wetlands, and emergent herbaceous wetlands while the upland class consisted of the remaining 12 land-cover classes. For the second analysis, I tested for habitat preference. I compared the sum of the land-cover of the buffered areas to the total habitat available in that individual's winter home range for each individual for each year. I performed a Chi-square goodness-of-fit (Zar 1999) analysis to test whether the observed frequency of habitat use deviated significantly from expected values. Expected values of the sum of the buffered areas were adjusted for the proportion of land-cover type within the winter home range. For the final analysis, unequal variances precluded a parametric test; therefore, I performed a non-parametric Kruskal-Wallis test (Zar 1999) followed by a non-parametric Tukey multiple comparison test (Zar 1999) to compare area of winter night roost habitat used across all 15 land-cover categories for each individual.

To assess the influence of abiotic factors on winter night roost habitat use, I first removed all observations associated with 0% ice-cover before an individual encountered ice in a given year. In addition, I removed all observations associated with 0% ice-cover after spring ice out for each individual for each year. Removal of these observations assured that an individual was responding to some level of ice-cover within a season. I then performed a K-means cluster analysis (Hair et al. 2006) on the 15 land-cover classes

to define three categories of habitat use. Finally, I performed a direct discriminant function analysis (DFA) (Tabachnick and Fidell 2007) by using wind speed, temperature, and percent ice-cover as predictors of membership in the three categories. This analysis was performed for all individuals combined and individually for those with greater than 20 observations.

To assess the behavioral responses of the Bald Eagle relative to abiotic factors, I again removed all cases associated with 0% ice-cover as described above. I then performed a K-means cluster analysis (Hair et al. 2006) with the variables: distance to nearest lock and dam, distance to river, and change in latitude. Distance to nearest lock and dam was a measure of how far an individual roosted from ice-free water, which was located immediately downstream of a lock and dam. Distance to river was a measure of how far from the river an individual roosted and change in latitude was a measure of the north or south difference from one night roost location to the next. The four categories of behavioral responses defined by the K-means cluster analysis were then used as the grouping variables in a direct DFA (Tabachnick and Fidell 2007) with wind speed, temperature, and percent ice-cover as predictors of category membership. This analysis was performed for all individuals combined and individually for those with greater than 20 cases. SPSS v12.0 (SPSS 2003) was used for all analyses except for the Kruskal-Wallis test and subsequent Tukey test (Zar 1999). Statistical significance was set at $\alpha = 0.05$ for all statistical analyses.

RESULTS

The 13 satellite telemetered individuals consisted of 6 males, 7 females, 11 adults, and 2 immatures and were tracked between one and seven years (Table 2). Mean arrival date to the winter range was 13 December (range 28 October to 22 January), while mean departure date from the winter range was 26 February (range 12 January to 30 March). Mean number of days on the winter range was 69 d (range 8 to 120 d). A total of 754 winter night roost locations were identified for all individuals.

Winter Home Range. The winter home ranges of the 13 satellite telemetered individuals were located between Winona, Minnesota and St. Louis, Missouri (Figs. 3-15). Average mean winter home range was 6837 km^2 (range 8-28 563) (Table 3). Mean winter home range of adults only was not significantly different between sexes ($t = 0.197$, $df = 9$, $P = 0.848$). Small sample size of immatures precluded statistical analysis between age classes; however, both immatures had smaller than average winter home range sizes than adults. There was not a significant difference in winter range size relative to year ($H = 9.90$, $df = 6$, $P = 0.194$). However, there was a significant difference in mean winter home range size of the six individuals tracked multiple winters ($H = 13.021$, $df = 5$, $P = 0.043$) (Fig 16). A significant positive relationship existed between winter home range size and the number days spent on the winter range ($r^2 = 0.28$, $P = 0.003$).

Habitat Use. The mean area of upland habitat used within a 1000 m diameter of the observations was significantly greater than the mean area of floodplain habitat used for winter night roosts for Bald Eagle 221, 216, 217, 219, 365, 288, and 614 (Table 4).

Conversely, the mean area of floodplain habitat used was significantly greater than the mean area of upland habitat used for winter night roosts for Bald Eagle 838 and 945.

The observed frequency of winter night roost habitat use deviated significantly from the available habitat within the winter home range for all individuals for all years except for Bald Eagle 365 during the winter of 2001-2002, Bald Eagle 615 during the winter of 2004-2005, and Bald Eagle 944 during the winter of 2005-2006 (Table 5). The general trend was that individuals preferentially used habitat types associated with the floodplain for winter night roosts, such as open water and woody wetlands more frequently than what was available within the winter home range; however, variation was evident between individuals and years (Figs. 17-29). Open water was used more frequently than availability for all individuals for all winters except Bald Eagle 221 (1999-2000), Bald Eagle 365 (2002-2003), Bald Eagle 288 (2000-2001 and 2001-2002), and Bald Eagle 614 (2004-2005). Likewise, woody wetlands was used more frequently than expected for all individuals for all winters except Bald Eagle 221 (1999-2000), Bald Eagle 217 (2005-2006), Bald Eagle 365 (2002-2003), Bald Eagle 288 (2000-2001 and 2001-2002), and Bald Eagle 614 (2004-2005). Areas with cultivated crops were used less frequently for winter night roost than availability for all individuals except Bald Eagle 288 (2000-2001, 2001-2002, and 2002-2003). For less dominant habitat types, a high frequency of preferential use relative to availability was observed for barren land for Bald Eagle 832 (1999-2000), Bald Eagle 217 (1999-2000, 2001-2002, 2002-2003, and 2004-2005), Bald Eagle 216 (1999-2000), Bald Eagle 365 (2000-2001 and 2002-2003), Bald Eagle 288 (2001-2002), and Bald Eagle 614 (2004-2005 and 2005-2006). Likewise, mixed forest for Bald Eagle 221 (2001-2002) and evergreen forest for Bald Eagle 216

(1999-2000 and 2000-2001), Bald Eagle 365 (2001-2002), Bald Eagle 614 (2004-2005), and Bald Eagle 615 (2004-2005) were used preferentially. Grassland was used at a higher frequency relative to availability for Bald Eagle 221 (2000-2001). Additionally, developed-medium intensity for Bald Eagle 365 (2001-2002) and developed-high intensity for Bald Eagle 217 (2003-2004 and 2004-2005) and Bald Eagle 216 (2000-2001) were used preferentially.

There was a significant difference in mean area of the 15 habitat types located within a 1000 m diameter of the winter night roosts for all individuals (Table 6, Figs. 30-42). Of these 15 habitat types, open water, woody wetlands, deciduous forest, pasture/hay, and cultivated crops were most dominant across the landscape. These five landscape elements combined comprised between 80.4% and 96.1% (mean = 88.7%) of the mean area found within a 1000 m buffer of the winter night roost locations for all individuals. Within the buffered region, area of cultivated crops was most abundant for Bald Eagle 216, 219, 365, 288, 221, and 217. The second most abundant habitat used was deciduous forest for Bald Eagle 216, 219, and 365, pasture/hay for Bald Eagle 288 and 221, and open water for Bald Eagle 217. Area of deciduous forest habitat used was greatest for Bald Eagle 614, 615, and 832. The next most abundant habitat for these three individuals was cultivated crops for Bald Eagle 614, pasture/hay for Bald Eagle 615, and woody wetlands for Bald Eagle 832. Area of open water habitat used was most abundant for Bald Eagle 220, 838, and 944. The second most abundant habitat used was cultivated crops for Bald Eagle 220 and woody wetlands for Bald Eagle 838 and 944. Finally, woody wetlands were the most abundant habitat for Bald Eagle 945, with open water being next abundant.

Influence of Abiotic Factors. Wind chill, as estimated for each winter night roost location, ranged from –29.1°C to 20.4°C with a mean of –4.4°C. Only 2.9% of all estimated wind chill values were above the lower critical temperature of 10.6°C as calculated for the Bald Eagle by Stalmaster and Gessaman (1984). Mean wind chill for November, December, January, February, and March was 0.1, -6.5, -6.3, -3.9, and 2.7°C, respectively. There was a significant difference in wind chill, as estimated for each winter night roost location, among the 13 individuals ($F = 6.321$, $df = 12, 734$, $P < 0.001$) (Fig. 43). On average, Bald Eagle 220 wintered where wind chills were the lowest (-10.7°C); whereas, Bald Eagle 945 wintered where wind chills were the highest (5.5°C) although this individual was tracked in late February through early March.

The groups generated from K-means cluster analysis described three habitat use patterns: 1) use of floodplain habitat (30.4% of locations), 2) use of areas dominated by cultivated crops with less deciduous forest (35.1% of locations), and 3) use of deciduous forest with less cultivated crops (34.5% of locations). The explanatory power of DFA axis one was low (eigenvalue = 0.021); therefore, discriminant functions were not interpreted (Fig. 44). In addition, the explanatory power of DFA axis one in all individual analyses was low (eigenvalue range 0.021 – 0.106); therefore, discriminant functions were not interpreted (Figs. 45-49). Consequently, the high variability suggested that these factors alone or in combination do not influence the type of macrohabitat used for winter night roosts.

The groups generated from K-means cluster analysis identified four behavioral patterns: 1) roost close to the river and to a lock and dam (67.5% of locations), 2) roost slightly south from a lock and dam but close to the river (23.5% of locations), 3) roost in

an upland area relatively distant from the river, but no movement latitudinally (6.7% of locations), and 4) move south and roost in an upland area (2.3% of locations). The explanatory power of DFA axis one was low (eigenvalue = 0.032); therefore, discriminant functions were not interpreted (Fig. 50). In addition, the explanatory power of DFA axis one in all individual analyses was low (eigenvalue range 0.051 – 0.099); therefore, discriminant functions were not interpreted (Figs. 51-55). Consequently, the high variability suggested that these factors alone or in combination do not influence the behavioral response of the Bald Eagle.

DISCUSSION

My study examined Bald Eagle winter home range size and winter habitat use at a regional level along the Upper Mississippi River corridor. I hypothesized that Bald Eagle females, because they are larger than males, would have larger winter home range sizes than males because of increased energetic requirements; however, no significant difference was observed. The similarity in home range size might be an artifact of the small sample size; however, range size can be driven by many density-dependent and density-independent factors.

I also hypothesized that upland habitat would be used more for winter night roosting than floodplain habitat. Upland habitat occurred in greater abundance throughout the Upper Mississippi River corridor and was used more than floodplain habitat as predicted for over half of the individuals tracked. Individuals used habitat types associated with the floodplain more frequently than what was available within the individual's winter home range although variation was evident between individuals and years. There were no apparent patterns of habitat use or behavioral response relative to weather and ice-cover, which was unexpected. Variation in habitat use might be attributed to the scale of my study. Observations at a microhabitat level, which was not feasible because of the poor precision of satellite tracking technology, might have elucidated clear patterns of habitat use, especially relative to abiotic factors. In addition, spatial autocorrelation and pseudoreplication was evident in my data because of the spatial and temporal dependence of weather variables and satellite telemetry observations, which might have influenced my results.

Winter Home Range. The winter ranges estimated for the 13 individuals tracked along the Upper Mississippi River corridor was similar to the overall variation noted elsewhere within the United States. The mean winter range size was 6837 km^2 (range 8-28 563). Grubb et al. (1989) estimated a mean winter home range size of 401 km^2 (range 292-593, n = 4) of immatures tracked in Arizona with conventional telemetry. Another Bald Eagle, a third-year female, tracked by Grubb et al. (1994) in Arizona had a winter range size of 40 387 km^2. Other studies in western states have documented mean winter range sizes of 311 km^2 (range 61-795, n = 12) in Colorado (Harmata 1984), 1229 km^2 (range 102-3925, n = 7) in Montana (McClelland et al. 1996), and 16 km^2 for an adult male in New Mexico (Stahlecker and Smith 1993). In the Midwest, Griffin and Baskett (1985) reported mean winter home range sizes of Missouri individuals of 18.3 km^2 and 18.8 km^2 for 10 immatures and 4 adults, respectively. Conversely, Grubb et al. (1994) tracked a third year female in Michigan that had a much larger winter home range of > 21 000 km^2. Variability among these studies and my study can be attributed to feeding strategy, juxtaposition of resources, the number of days spent on the winter grounds (i.e., length of time tracked), number of observations, tracking technique, or method of estimating range size.

Relative to feeding strategy, home range size would presumably be small if carrion were readily available. Furthermore, if large ungulates were being scavenged, home range size would presumably be small because energetic requirements can be met at a single feeding site. Conversely, availability of live prey might be more dynamic, especially along a large river system during winter, if fish were the primary food source. If pursuing live prey were the feeding strategy of a Bald Eagle, home range size would

likely be large. Winter home range size was small (18 km^2 – 795 km^2) in studies that identified scavenging on carrion as the primary feeding strategy (Griffin and Baskett 1985, Grubb et al. 1989, Harmata 1984). One Bald Eagle tracked in New Mexico had a small winter home range of 16 km^2; however, this individual fed primarily on fish in a 1675 ha reservoir where a small wintering Bald Eagle population existed (Stahlecker and Smith 1993). A wide range of home range sizes were estimated in my study suggesting that different feeding strategies might be practiced along the Upper Mississippi River corridor. In addition, the north to south orientation of the Mississippi River could result in a large winter home range for a Bald Eagle feeding on live fish, for which availability is controlled by ice-cover.

The results of my study suggested winter range size increases with number of days spent on the winter grounds. An individual that spends more time in a given area could experience increased variability in biotic factors such as food availability or competition and increased variability in abiotic factors such as temperature or ice-cover over the course of the winter. Griffin and Baskett (1985) reported that there was no relationship between days spent in their study area of north central Missouri and winter range size; however, the 14 individuals tracked in their study had significantly smaller home ranges.

Neither my study, nor any known studies have reported on statistical differences in winter range size relative to sex. Comparisons relative to age and year have been published. Grubb et al. (1989) tracked four immatures of unknown sex and Grubb et al. (1994) tracked two immature females. Griffin and Baskett (1985) documented that mean winter range size did not differ between adults and immatures. Conversely, McClelland

et al. (1996) reported that the winter range size of three immatures was nearly five times smaller than three of the four adults. The males in their study had nearly two times the winter range size of females. In addition, Griffin and Baskett (1985) observed a overall difference in winter range sizes among years; however, no apparent difference was observed in my study.

Habitat Use. There are no known studies that have evaluated winter night roost selection across a region but have rather assessed the conditions at localized communal night roost sites. Steenhof et al. (1980) reported that a winter night roost along the Missouri River in South Dakota was near open water, contained large trees, and was relatively free of human disturbance. Keister and Anthony (1983) emphasized that night roosts that met roost tree requirements appeared to be as close to feeding sites as possible; however, this study was performed in the Pacific Northwest in the Klamath Basin where night roost dynamics might be different than in large river systems.

Area of upland habitat used for winter night roosting was generally greater than area of floodplain habitat. However, the high abundance of upland landscape elements, such as pasture and cultivated crops in this region, might still result in a lower frequency of use relative to the proportion of availability. The landscape elements of barren land, developed high intensity, evergreen forest, mixed forest, and scrub/shrub occur in small amounts in this region; therefore, non-use of any of these habitat types might be a function of its low abundance and not avoidance of the habitat. Developed areas generally were not used for winter night roosts unless preferred habitat, often floodplain habitat, was nearby. For example, Bald Eagle 217 often roosted in or near Muscatine, Iowa in close proximity to the river. The narrow floodplain along this stretch of river,

small area of floodplain forest, or competition for preferred roost trees within the floodplain might cause use of a certain habitat type that might otherwise not be used, such as developed areas.

The results of my study and others suggest proximity to water and isolation from human disturbance influences winter night roost habitat use. However, use of upland habitat away from the river might suggest other factors are influencing habitat use. Density-dependent competition for preferred food resources or dispersion because of abiotic factors might be drivers of the high variability in winter roosting behavior and habitat use.

Influence of Abiotic Factors. Habitat use and behavior responses relative to wind speed, temperature, and ice-cover was highly variable in my study suggesting that these variables do not influence the habitat type used by an individual for winter night roosting. Rather, microhabitat selection, wind direction, terrain, or juxtaposition of resources might be more critical than habitat type alone. Steenhof et al. (1980) reported that during severe wind chill conditions, individuals moved from exposed areas to protected areas of the floodplain and used trees farther from the river. During high thermal stress, the Bald Eagle often uses coniferous forest rather than floodplain forest for roosts (Stalmaster and Gessaman 1984). However, where stands of coniferous forest are not available, as in most areas of the Upper Mississippi River corridor, adjustments in microhabitat selection in otherwise unsuitable habitat at the macrohabitat level might still lower thermal stress. For instance, roosting on the downwind side of a patch of deciduous floodplain forest or in a higher density of preferred roost trees. These

protected areas have lower wind velocities and higher ambient temperatures than more exposed areas (Stalmaster and Gessaman 1984).

Another possible explanation for the high variability in habitat use relative to abiotic factors is individuals might select similar habitat but in different terrain. For example, using deciduous forest in steep upland valleys that afford protection from the weather; therefore, lowering thermal stress. However, there is a tradeoff between metabolic energy savings once in an upland roost and the energy cost of flight to get there. This tradeoff appears to be the cause of the variation in Bald Eagle behavior responses relative to abiotic factors. Under average conditions, Stalmaster and Gessaman (1984) predicted that the cost of flying to a coniferous night roost site might outweigh the metabolic energy savings once there if the roost is farther than 3.9 km away. Individuals that roosted near a lock and dam might have a competitive advantage in roosting close to a feeding site, which is found in open water immediately downstream of a dam; thereby, improving forage opportunities at daybreak. Individuals that roosted near the river but farther away from a dam might have been foraging near small pockets of open water, such as those produced by industry or produced by stronger water currents, during daylight hours. Individuals that roosted in the upland areas might have scavenged on carrion, which has been reported to be the most successful foraging strategy (Watson et al. 1991).

Management Implications. Based on the results of my study, it is evident that there is high variation within and among individuals relative to winter home range size and habitat use during various abiotic conditions. Floodplain habitat is a vital component to the Bald Eagle wintering along a large river system. However, the loss of floodplain

forest and anthropogenic changes to the surrounding landscape is reducing the quality and quantity of habitat (Yin and Nelson 1996) available for winter roost sites. Consequently, sound forest practices that minimize degradation of roost sites on refuges, national forests, and private lands are recommended strongly. Although there appears to be high variation relative to using roosts in developed areas, the Bald Eagle along the Upper Mississippi River appears to be minimally tolerant of human development; however, as development replaces winter night roost habitat, unknown consequences might occur.

Traditional winter night roost areas consistently used by the Bald Eagle should be protected. For example, Eagle Valley Nature Preserve located near Glen Haven in southwest Wisconsin actively has protected a traditional upland roost site for over 20 years. Likewise, Elton Fawks Bald Eagle Refuge near Hampton, Illinois and Cedar Glen Nature Preserve near Warsaw, Illinois have been protecting traditional roosts since 1989 and 1975, respectively. Conversely, a large floodplain roost in Milan Bottoms near Milan, Illinois is facing impending threats of development. Therefore, further research is needed to identify traditional floodplain and upland roost sites and document their use.

A better understanding of the habitat requirements of the Bald Eagle at the landscape level and microhabitat level is needed in this region. While microhabitat selection was not a focus of my research, it is vital to survival, especially during the winter when thermal stress might be greatest. Therefore, future studies in this region could use a multi-scale approach in evaluating habitat use at landscape and microhabitat levels. At larger spatial scales, future studies could measure the influence of terrain, wind direction, and food availability on habitat use. Measuring abiotic factors in

floodplain and upland microhabitats throughout the region might elucidate behavioral responses to different weather conditions. Proper management for the continued persistence of winter Bald Eagle populations along the Upper Mississippi River will require a clear understanding of their night roost habitat requirements.

LITERATURE CITED

ARGOS. 1996. User's manual. CLS/Service Argos, Largo, MD U.S.A.

BAKKEN, G.S. 1990. Estimating the effect of wind on avian metabolic rate with standard operative temperature. *Auk* 107:587-594.

BARROWS, C.W., AND K. BARROWS. 1978. Roost characteristics and behavioral thermoregulation in the Spotted Owl. *Western Birds* 9:1-8.

BUEHLER, D.A. 2000. Bald Eagle (*Halieaeetus leucocephalus*). *In* A. Poole and F. Gill [EDS.], The Birds of North America, No. 506. The Birds of North America, Inc., Philadelphia, PA U.S.A.

BUEHLER, D.A., S. K. CHANDLER, T.J. MERSMANN, J.D. FRASER, AND J.K.D. SEEGAR. 1992. Nonbreeding Bald Eagle perch habitat on the Northern Chesapeake Bay. *Wilson Bull.* 104:540-545.

BUEHLER, D.A., T.J. MERSMANN, J.D. FRASER, AND J.K.D. SEEGAR. 1991a. Nonbreeding Bald Eagle communal and solitary roost behavior and roost habitat on the northern Chesapeake Bay. *J. Wildl. Manage.* 55:273-281.

BUEHLER, D.A., T.J. MERSMANN, J.D. FRASER, AND J.K.D. SEEGAR. 1991b. Winter microclimate of Bald Eagle roosts on the northern Chesapeake Bay. *Auk* 108:612-618.

BUJA, K. 2003. Gridstack. Last modified 27 Aug 2003. http://arcscripts.esri.com (last accessed 12 October 2009)

BUTTEMER, W.A. 1985. Energy relations of winter roost-site utilization by American Goldfinches (*Carduelis tristis*). *Oecologia* 68:126-132.

GARCELON, D.K., M.S. MARTELL, P.T. REDIG, AND L.C. BUOEN. 1985. Morphometric, karyotypic, and laparoscopic techniques for determining sex in Bald Eagles. *J. Wildl. Manage.* 49:595-599.

GESSAMAN, J.A. 1972. Bioenergetics of the Snowy Owl (*Nyctea scandiaca*). *Arctic and Alpine Res.* 4:223-238.

GRIFFIN, C.R., AND T.S. BASKETT. 1985. Food availability and winter range sizes of immature and adult Bald Eagles. *J. Wildl. Manage.* 49:592-594.

GRUBB, T.G., W.W. BOWERMAN, AND P.H. HOWEY. 1994. Tracking local and seasonal movements of wintering Bald Eagles (*Haliaeetus leucocephalus*) from Arizona and Michigan with satellite telemetry. Pages 347–358 *in* B.U. Meyburg and R.D. Chancellor [EDS.], Proceedings of the IV World Conference on Birds of Prey and Owls. Pica Press, Berlin, Germany.

GRUBB, T.G., S. J. NAGILLER, W.L. EAKLE, AND G.A. GOODWIN. 1989. Winter roosting patterns of Bald Eagles (*Halieaeetus leucocephalus*) in north-central Arizona. *Southwest. Nat.* 34:453-459.

HAIR, J.F. JR., W.C. BLACK, B.J. BABIN, R.E. ANDERSON, AND R.L. TATHAM. 2006. Multivariate data analysis. Sixth Ed. Pearson Education, Inc. Upper Saddle River, NJ U.S.A.

HARESTAD A.S., AND F.L. BUNNEL. 1979. Home range and body weight – a reevaluation. *Ecology* 60:389-402.

HARMATA, A.R. 1984. Bald Eagles of the San Luis Valley, Colorado: their winter ecology and spring migration. Ph.D. dissertation, Montana St. Univ., Bozeman. 222p.

HAYWARD, G.D., P.H. HAYWARD, AND E.O. GARTON. 1993. Ecology of boreal owls in the northern Rocky Mountains, USA. *Wildl. Monogr.* 124.

HOMER, C.C.H., L. YANG, B. WYLIE, AND M. COAN. 2004. Development of a 2001 National Landcover Database for the United States. *Photogrammetric Engineering and Remote Sensing.* 70:829-840.

HUTTO, R.L. 1985. Habitat selection by non-breeding, migratory land birds. Pages 455-473 *in* M.L. Cody [ED.], Habitat selection in birds. Academic Press, San Diego, CA U.S.A.

KEISTER, G.P. JR., AND R.G. ANTHONY. 1983. Characteristics of Bald Eagle communal roosts in the Klamath Basin, Oregon and California. *J. Wildl. Manage.* 47:1072-1079.

KEISTER, G.P. JR., R.G. ANTHONY, AND E.J. O'NEILL. 1987. Use of communal roosts and foraging areas by Bald Eagles wintering in the Klamath Basin. *J. Wildl. Manage.* 51:415-420.

KELTY, M.P., AND S.I. LUSTICK. 1977. Energetics of the Starling (*Sturnus vulgaris*). *Ecology* 58:1181-1185.

KLOPFER, P.H., AND J.U. GANZHORN. 1985. Habitat selection: behavioral aspects. Pages 435-453 *in* M.L. Cody [ED.], Habitat selection in birds. Academic Press, San Diego, CA U.S.A.

KNIGHT, R.L., AND S.K. KNIGHT. 1984. Responses of wintering Bald Eagles to boating activity. *J. Wildl. Manage.* 48:999-1004.

MCCLELLAND, B.R., P.T. MCCLELLAND, R.E. YATES, E.L. CATON, AND M.E. MCFADDEN. 1996. Fledging and migration of juvenile Bald Eagles from Glacier National Park, Montana. *J. Raptor Res.* 30:79-89.

RICKMAN, T.H., B.E. JONES, D.R. CLUCK, D.J. RICHTER, AND K.W. TATE. 2005. Night roost habitat of radiotagged Northern Goshawks on Lassen National Forest, California. *J. Wildl. Manage.* 69:1737-1742.

RODGERS, A.R., A.P. CARR, H.L. BEYER, L. SMITH, AND J.G. KIE. 2007. HRT: Home Range Tools for ArcGIS. Ontario Ministry of Natural Resources, Centre for Northern Forest Ecosystem Research, Thunder Bay, Ontario, Canada.

SABINE, N., AND W.D. KLIMSTRA. 1985. Ecology of Bald Eagles wintering in southern Illinois. *Trans. of Ill. Acad. Scien.* 78:13-24.

SCHOENER, T.W. 1968. Sizes of feeding territories among birds. *Ecology* 49:123-141.

SEAMAN, D.E., J.J. MILLSPAUGH, B.J. KERNOHAN, G.C. BRUNDIGE, K.J. RAEDEKE, AND R.A. GITZEN. 1999. Effects of sample size on kernel home range estimates. *J. Wildl. Manage.* 63:739-747.

SOUTHWOOD, T.R.E. 1977. Habitat, the templet for ecological strategies? *J. Anim. Ecol.* 46:337-365.

SPSS, INC. 2003. SPSS ver. 12.0 for Windows. SPSS Inc., Chicago, IL, U.S.A.

STAHLECKER, D.W., AND T.G. SMITH. 1993. A comparison of home range estimates for a Bald Eagle wintering in New Mexico. *J. Raptor Res.* 27:42-45.

STALMASTER, M.V. 1983. An energetics simulation model for managing wintering Bald Eagles. *J. Wildl. Manage*. 47:349-359.

STALMASTER, M.V., AND J.A. GESSAMAN. 1984. Ecological energetics and foraging behavior of overwintering Bald Eagles. *Ecol. Monogr.* 54:407-428.

STALMASTER, M.V., AND R.G. PLETTNER. 1992. Diets and foraging effectiveness of Bald Eagles during extreme winter weather in Nebraska. *J. Wildl. Manage.* 56:355-367.

STEENHOF, K. 1976. The ecology of wintering Bald Eagles in southeastern South Dakota. M.S. Thesis, Univ. of Missouri, Columbia. 148pp.

STEENHOF, K., S.S. BERLINGER, AND L.H. FREDRICKSON. 1980. Habitat use by wintering Bald Eagles in South Dakota. *J. Wildl. Manage*. 44:798-805.

TABACHNICK, B.G. AND L.S. FIDELL. 2007. Using multivariate statistics. Fifth Ed. Allyn and Bacon. Boston, MA U.S.A.

WALSBERG, G.E. 1986. Thermal consequences of roost-site selection: the relative importance of three modes of heat conservation. *Auk* 103:1-7.

WALSBERG, G.E., AND J.R. KING. 1980. The thermoregulatory significance of the winter roost-sites selected by Robins in Eastern Washington. *Wilson Bull.* 91:33-39.

WATSON, J.W., M.G. GARRETT, AND R.G. ANTHONY. 1991. Foraging ecology of Bald Eagles in the Columbia River Estuary. *J. Wildl. Manage*. 55:492-499.

WEATHERS, W.W., W.A. BUTTEMER, A.M. HAYWORTH, AND K.A. NAGY. 1984. An evaluation of time-budget estimates of daily energy expenditure in birds. *Auk* 101:459-472.

WIENS, J.A. 1969. An approach to the study of ecological relationships among grassland birds. *Ornithol. Monogr*. 8.

WIENS, J.A. 1986. Spatial scale and temporal variation in studies of shrub-steppe birds. Pages 154-172 *in* J. Diamond and T.J. Case [EDS.], Community ecology. Harper and Row, NY U.S.A.

YIN, Y., AND J.C. NELSON. 1996. Modifications of the Upper Mississippi River and the effects on floodplain forests. Pages 29-40 *in* D.L. Galat and A.G. Frazier [EDS.], Overview of river – floodplain ecology in the Upper Mississippi River Basin. Vol. 3 of J.A. Kelmelin [ED.], Science for Floodplain Management into the 21st Century, U.S. Government Printing Office, Washington, D.C. U.S.A.

ZAR, J.H. 1999. Biostatistical analysis, Fourth Ed. Prentice-Hall, Inc. Upper Saddle River, NJ U.S.A.

Table 1. Land-cover classes with description (modified from National Land Cover Database, 2001).

Land Cover Type	Description
Open Water	All areas of open water, generally with less than 25% vegetation or soil cover.
Developed, Open Space	Mixture of some constructed materials, but mostly vegetation in the form of lawn grasses such as large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.
Developed, Low Intensity	Areas of single-family housing units.
Developed, Medium Intensity	Areas of multifamily housing units.
Developed, High Intensity	Areas of retail, commercial, and industrial uses.
Barren Land (Rock/Sand/Clay)	Barren areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits, and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.
Deciduous Forest	Areas dominated by deciduous trees generally taller than 5 m, and greater than 20% of total vegetation cover.
Evergreen Forest	Areas dominated by evergreen trees generally taller than 5 m, and greater than 20% of total vegetation cover.
Mixed Forest	Areas dominated by deciduous and evergreen trees generally taller than 5 m, and greater than 20% of total vegetation cover.
Scrub/Shrub	Areas dominated by shrubs less than 5 m tall with shrub canopy typically greater than 20% of total vegetation, including true shrubs, young trees in an early successional stage, or trees stunted due to harsh environmental conditions.
Grassland/Herbaceous	Areas dominated by gramminoid or herbaceous vegetation, and greater than 20% of total vegetation.

Table 1. Continued

Land Cover Type	Description
Pasture/Hay	Grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle.
Cultivated Crops	Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards.
Woody Wetlands	Areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.
Emergent Herbaceous Wetlands	Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

Table 2. Bald Eagle ID (PTT #), age, sex, capture date, arrival and departure date, number of days on winter range, and number of winter night roosts identified for 13 satellite telemetered individuals captured near Glen Haven, Wisconsin.

Eagle ID	Age / Sex	Capture Date	Date Arrive on Winter Range	Date Depart from Winter Range	No. Days on Winter Range	No. Winter Night Roosts
838	Imm / ♂	02 Mar 1999		07 Mar 1999 [1]		
			10 Jan 2000	05 Mar 2000	55	7
832	Adult / ♀	16 Nov 1999	28 Dec 1999	23 Jan 2000	26	10
221	Adult / ♂	17 Nov 1999	27 Dec 1999	26 Jan 2000	30	13
			23 Dec 2000	29 Jan 2001	37	9
			09 Dec 2001	22 Mar 2002	103	16
			16 Nov 2002	07 Feb 2003	83	22
216	Adult / ♂	08 Dec 1999	18 Dec 1999	26 Feb 2000	70	29
			10 Dec 2000	11 Mar 2001	91	36
217	Adult / ♂	08 Dec 1999	15 Dec 1999	05 Mar 2000	81	36
			13 Dec 2000	30 Mar 2001	107	56
			02 Dec 2001	31 Mar 2002	119	56
			25 Nov 2002	24 Mar 2003	119	73
			06 Dec 2003	23 Mar 2004	108	54
			14 Dec 2004	30 Mar 2005	106	58
			19 Jan 2006	17 Mar 2006	57	27
219	Adult / ♀	09 Dec 1999	15 Dec 1999	11 Feb 2000	58	16
220	Adult / ♀	10 Dec 1999	20 Dec 1999	18 Feb 2000	60	19
365	Adult / ♀	13 Dec 2000	13 Dec 2000	28 Jan 2001	46	9
			12 Dec 2001	18 Feb 2002	68	15
			20 Nov 2002	17 Feb 2003	89	28
			28 Oct 2003	25 Feb 2004	120	29
288	Adult / ♂	11 Jan 2001	13 Jan 2001	21 Jan 2001	8	4
			03 Jan 2002	22 Jan 2002	19	8
			09 Jan 2003	19 Jan 2003	10	4
614	Adult / ♀	29 Dec 2004	29 Dec 2004	06 Mar 2005	67	43
			30 Nov 2005	27 Feb 2006	89	54
615	Adult / ♀	11 Jan 2005	05 Feb 2005	06 Mar 2005	29	2
945	Imm / ♂	09 Feb 2006	22 Feb 2006	10 Mar 2006	16	10
944	Adult / ♀	26 Feb 2006	26 Feb 2006	18 Mar 2006	20	11

[1] Captured during spring migration; therefore, removed first year from analysis.

Table 3. Summary of winter home range sizes (95% fixed kernel estimates) for 13 Bald Eagle individuals captured near Glen Haven, Wisconsin and tracked between 1999-2006.

Bald Eagle	'99-'00	'00-'01	'01-'02	'02-'03	'03-'04	'04-'05	'05-'06	Mean
838	9055							“9055”
832	2730							“2730”
221	932	879	5797	1566				2293
216	18 543	16 933						17 738
217	20 299	4258	14 015	16 673	6205	15 421	3874	11 535
219	28 563							“28 563”
220	4392							“4392”
365		7577	45	1268	36 591			11 370
288		191	195	377				255
614						159	186	172
615						30		“30”
945							740	“740”
944							8	“8”

Table 4. Results of t-test comparing area of floodplain and upland habitat used within a 1000 m buffer of winter night roosts for 13 Bald Eagle individuals captured near Glen Haven, Wisconsin and tracked between 1999-2006.

Bald Eagle	Mean Area (km^2) of Floodplain	Mean Area (km^2) of Upland	t	df	P
838	0.60	0.18	7.67	12	0.017
832	0.31	0.47	1.48	18	0.240
221	0.12	0.67	168.50	118	<0.001
216	0.16	0.62	83.19	124	<0.001
217	0.24	0.55	198.80	708	<0.001
219	0.11	0.68	46.08	30	<0.001
220	0.44	0.35	0.54	36	0.466
365	0.17	0.62	88.82	160	<0.001
288	0.05	0.74	98.45	30	<0.001
614	0.22	0.56	48.28	192	<0.001
615[1]	0.00	0.78			
945	0.52	0.27	4.09	18	0.058
944[2]	0.78	0.00			

[1] Inadequate sample size for statistical comparison
[2] Unequal variances

Table 5. Chi-square goodness-of-fit results comparing sum of winter night roost habitat to available habitat within the winter home range for 13 Bald Eagle individuals captured near Glen Haven, Wisconsin and tracked between 1999-2006.

Bald Eagle	Year	χ^2	df	P
838	1999-2000	48 290	14	<0.0001
832	1999-2000	3874	14	<0.0001
221	1999-2000	130	14	<0.0001
	2000-2001	1993	12	<0.0001
	2002-2003	2675	14	<0.0001
	2003-2004	162	14	<0.0001
216	1999-2000	211 177	14	<0.0001
	2000-2001	9637	14	<0.0001
217	1999-2000	48 516	14	<0.0001
	2000-2001	719	12	<0.0001
	2001-2002	14 428	14	<0.0001
	2002-2003	52 083	14	<0.0001
	2003-2004	8519	14	<0.0001
	2004-2005	17 689	14	<0.0001
	2005-2006	704	12	<0.0001
219	1999-2000	12 267	14	<0.0001
220	1999-2000	34 144	14	<0.0001
365	2000-2001	1714	14	<0.0001
	2001-2002	5	12	0.953
	2002-2003	98	14	<0.0001
	2003-2004	182 856	14	<0.0001
288	2000-2001	28	13	0.009
	2001-2002	25	13	0.023
	2002-2003	187	13	<0.0001
614	2004-2005	44	13	<0.0001
	2005-2006	156	13	<0.0001
615	2004-2005	17	9	0.055
945	2005-2006	1072	14	<0.0001
944	2005-2006	1	6	0.998

Table 6. Results of Kruskal-Wallis non-parametric test comparing mean area of the 15 land-cover types used within a 1000 m buffer of winter night roosts for 13 Bald Eagle individuals captured near Glen Haven, Wisconsin and tracked between 1999-2006. Standard error in parentheses below mean.

	Mean Area of Habitat Type (km^2) [1]													
Bald Eagle	Open Water	Developed, Open	Developed, Low Intensity	Developed, Medium Intensity	Developed, High Intensity	Deciduous Forest	Evergreen Forest	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emergent Herbaceous Wetlands	H^2	P
838	0.32	0.00	0.02	0.00	0.00	0.06	0.00	0.03	0.05	0.01	0.22	0.05	32.20	0.006
	(0.09)	(0.00)	(0.01)	(0.00)	(0.00)	(0.03)	(0.00)	(0.02)	(0.05)	(0.01)	(0.08)	(0.03)		
832	0.14	0.01	0.02	0.00	0.00	0.23	0.00	0.00	0.08	0.14	0.16	0.01	49.43	<0.001
	(0.05)	(0.01)	(0.01)	(0.00)	(0.00)	(0.09)	(0.00)	(0.00)	(0.03)	(0.05)	(0.04)	(0.01)		
221	0.06	0.04	0.02	0.01	0.01	0.15	0.00	0.06	0.16	0.23	0.04	0.02	264.51	<0.001
	(0.02)	(0.01)	(0.01)	(0.00)	(0.01)	(0.02)	(0.00)	(0.01)	(0.02)	(0.03)	(0.01)	(0.01)		
216	0.10	0.03	0.03	0.01	0.00	0.12	0.00	0.02	0.06	0.35	0.06	0.01	226.20	<0.001
	(0.02)	(0.01)	(0.01)	(0.00)	(0.00)	(0.02)	(0.00)	(0.01)	(0.01)	(0.04)	(0.01)	(0.00)		
217	0.14	0.04	0.03	0.01	0.01	0.08	0.00	0.04	0.03	0.31	0.09	0.01	1116.68	<0.001
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.02)	(0.01)	(0.00)		
219	0.08	0.03	0.03	0.01	0.00	0.10	0.00	0.06	0.05	0.39	0.02	0.01	66.55	<0.001
	(0.05)	(0.01)	(0.01)	(0.01)	(0.00)	(0.04)	(0.00)	(0.03)	(0.02)	(0.08)	(0.01)	(0.01)		
220	0.35	0.03	0.01	0.00	0.00	0.07	0.00	0.01	0.05	0.17	0.04	0.05	56.63	<0.001
	(0.07)	(0.02)	(0.01)	(0.00)	(0.00)	(0.03)	(0.00)	(0.01)	(0.02)	(0.07)	(0.01)	(0.02)		
365	0.07	0.02	0.01	0.00	0.00	0.20	0.00	0.01	0.12	0.26	0.09	0.01	325.75	<0.001
	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)	(0.00)	(0.01)	(0.02)	(0.02)	(0.00)		

Table 6. Continued

Bald Eagle	Mean Area of Habitat Type (km^2) [1]												H [2]	P
	Open Water	Developed, Open	Developed, Low Intensity	Developed, Medium Intensity	Developed, High Intensity	Deciduous Forest	Evergreen Forest	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emergent Herbacous Wetlands		
288	0.04	0.02	0.02	0.00	0.00	0.13	0.00	0.02	0.16	0.40	0.01	0.00	100.44	<0.001
	(0.04)	(0.00)	(0.00)	(0.00)	(0.00)	(0.05)	(0.00)	(0.01)	(0.03)	(0.05)	(0.01)	(0.00)		
614	0.10	0.01	0.01	0.00	0.00	0.25	0.00	0.00	0.10	0.19	0.12	0.01	308.75	<0.001
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)	(0.00)	(0.00)	(0.01)	(0.02)	(0.02)	(0.00)		
615[3]	0.00	0.05	0.00	0.00	0.00	0.22	0.02	0.09	0.22	0.20	0.00	0.00		
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.17)	(0.02)	0.06)	(0.11)	(0.01)	(0.00)	(0.00)		
945	0.23	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.12	0.25	0.04	60.21	<0.001
	(0.04)	(0.00)	(0.00)	(0.00)	(0.00)	(0.05)	(0.00)	(0.00)	(0.00)	(0.04)	(0.07)	(0.02)		
944	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.03	79.89	<0.001
	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)		

[1] Area of barren land, mixed forest, and scrub/shrub used <0.005 km^2 for all individuals

[2] df = 14

[3] Inadequate sample size for statistical comparison

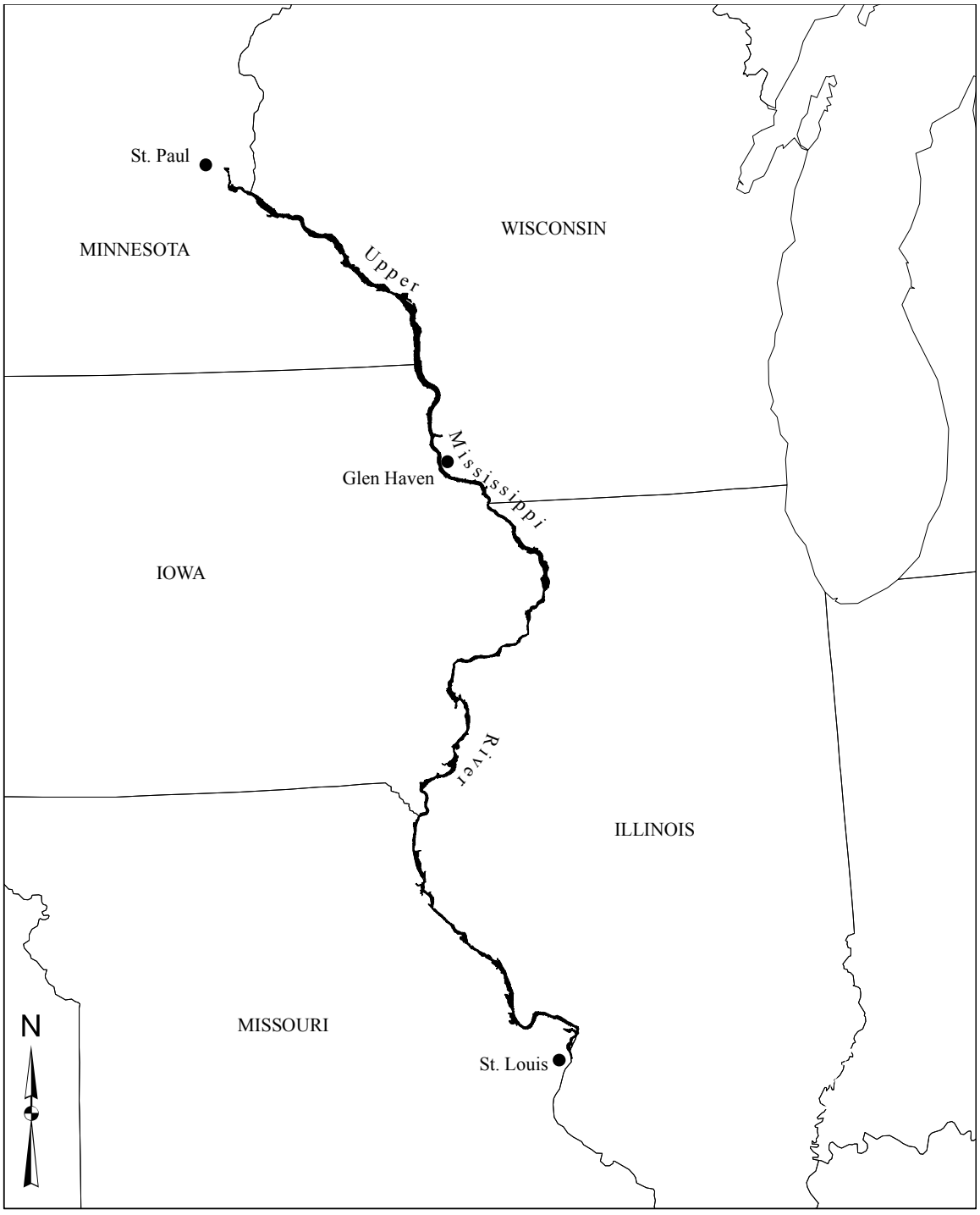

Figure 1. Study Site of Upper Mississippi River corridor.

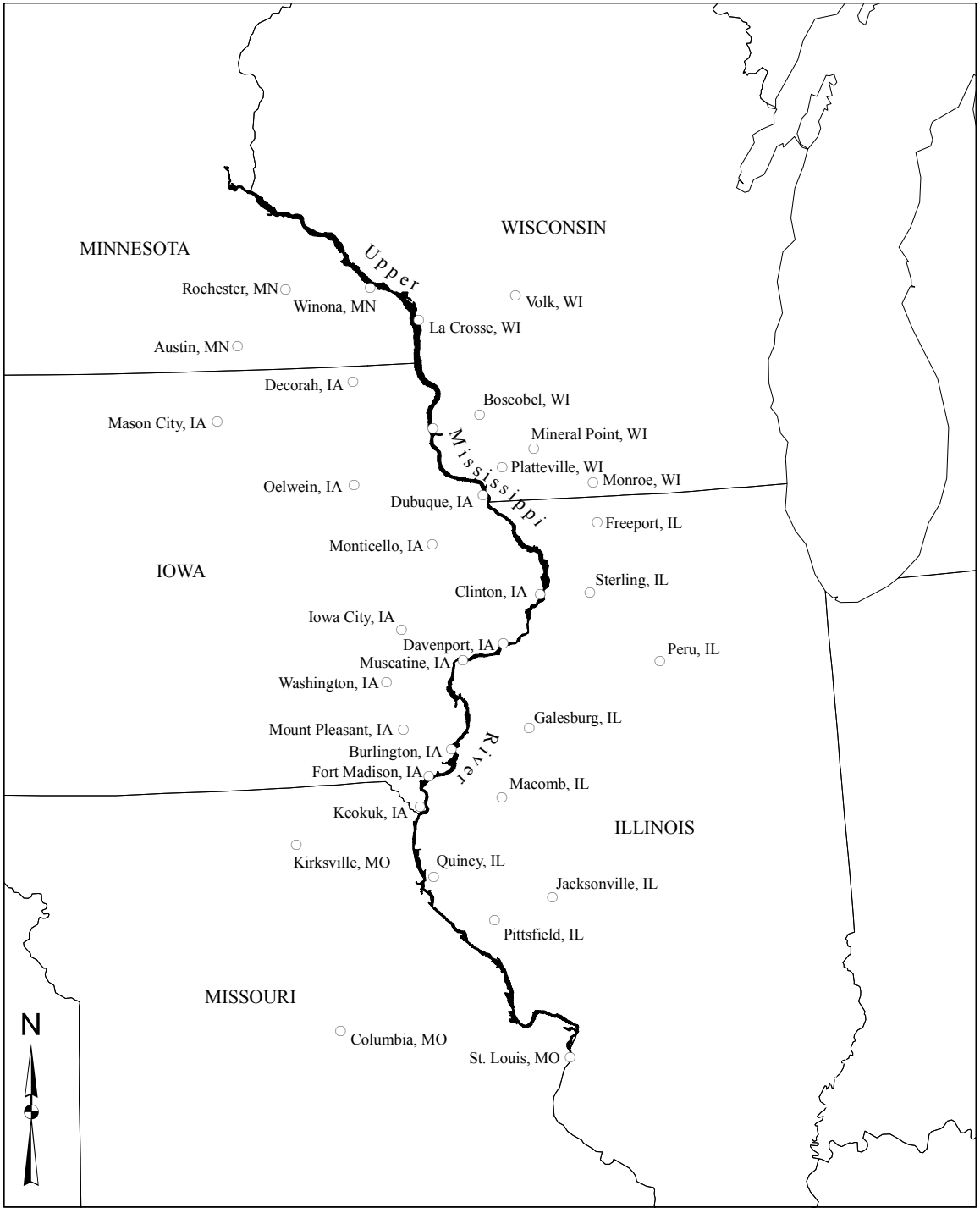

Figure 2. Locations of weather stations along the Upper Mississippi River corridor.

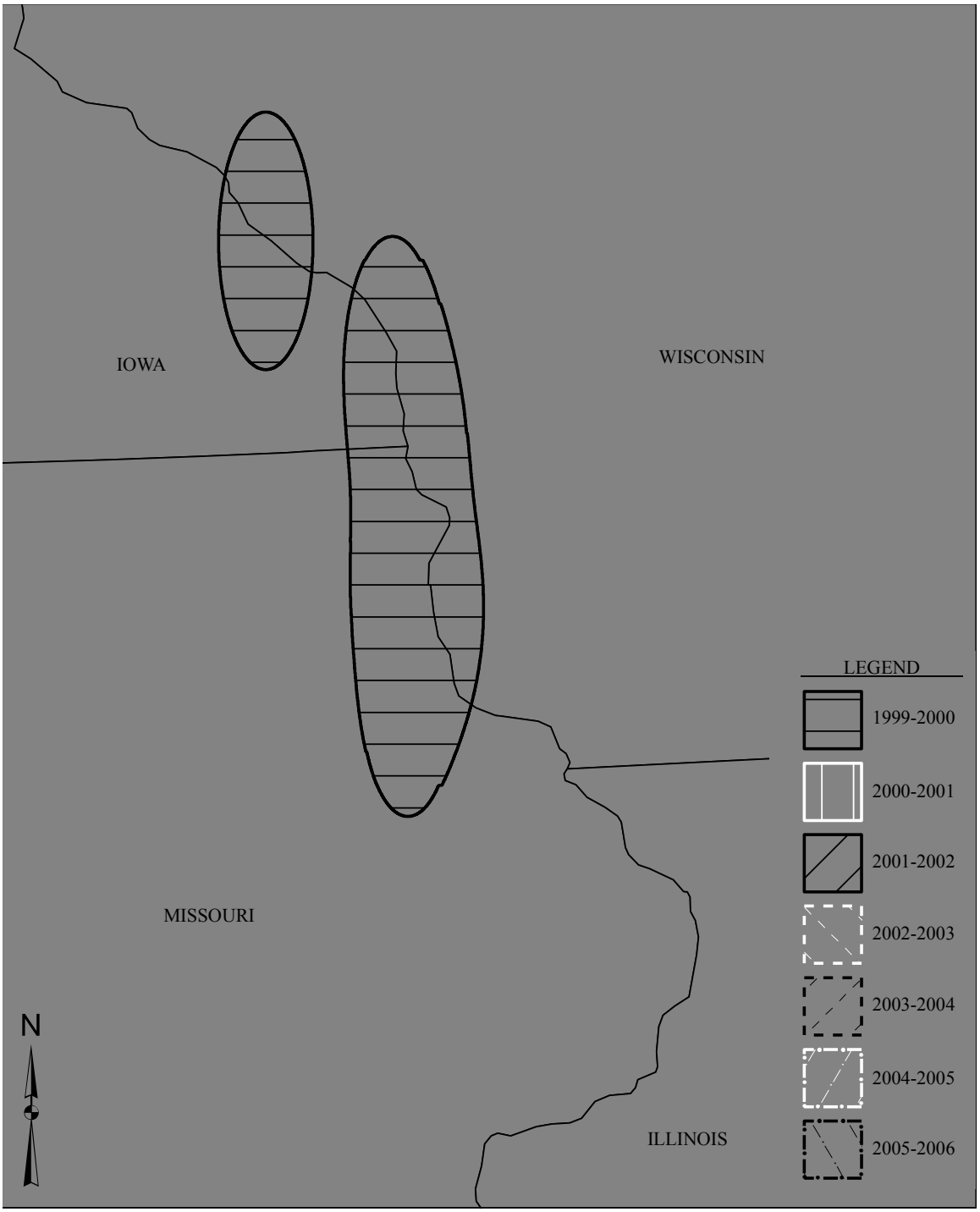

Figure 3. Bald Eagle 838 winter home range (1999-2000).

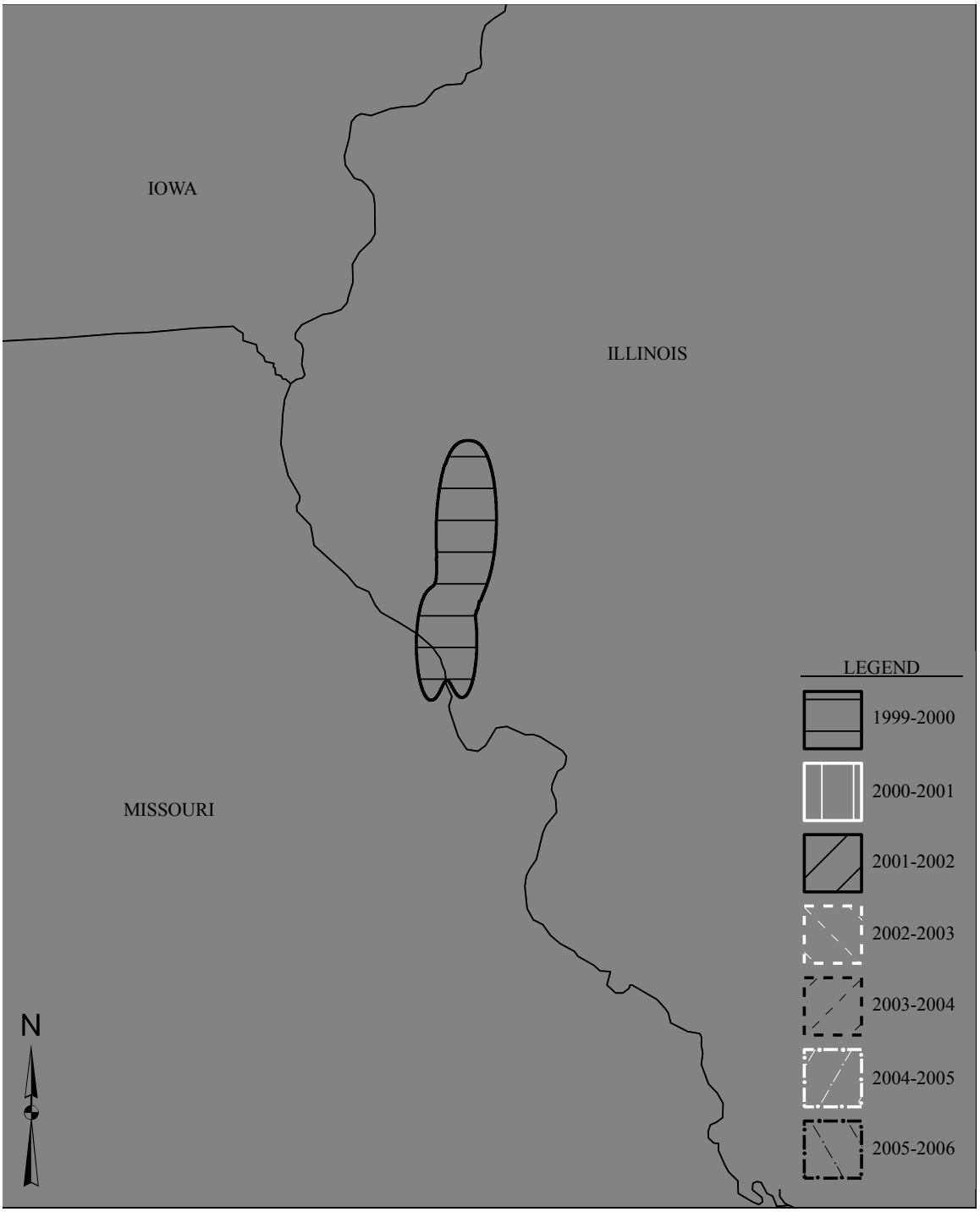

Figure 4. Bald Eagle 832 winter home range (1999-2000).

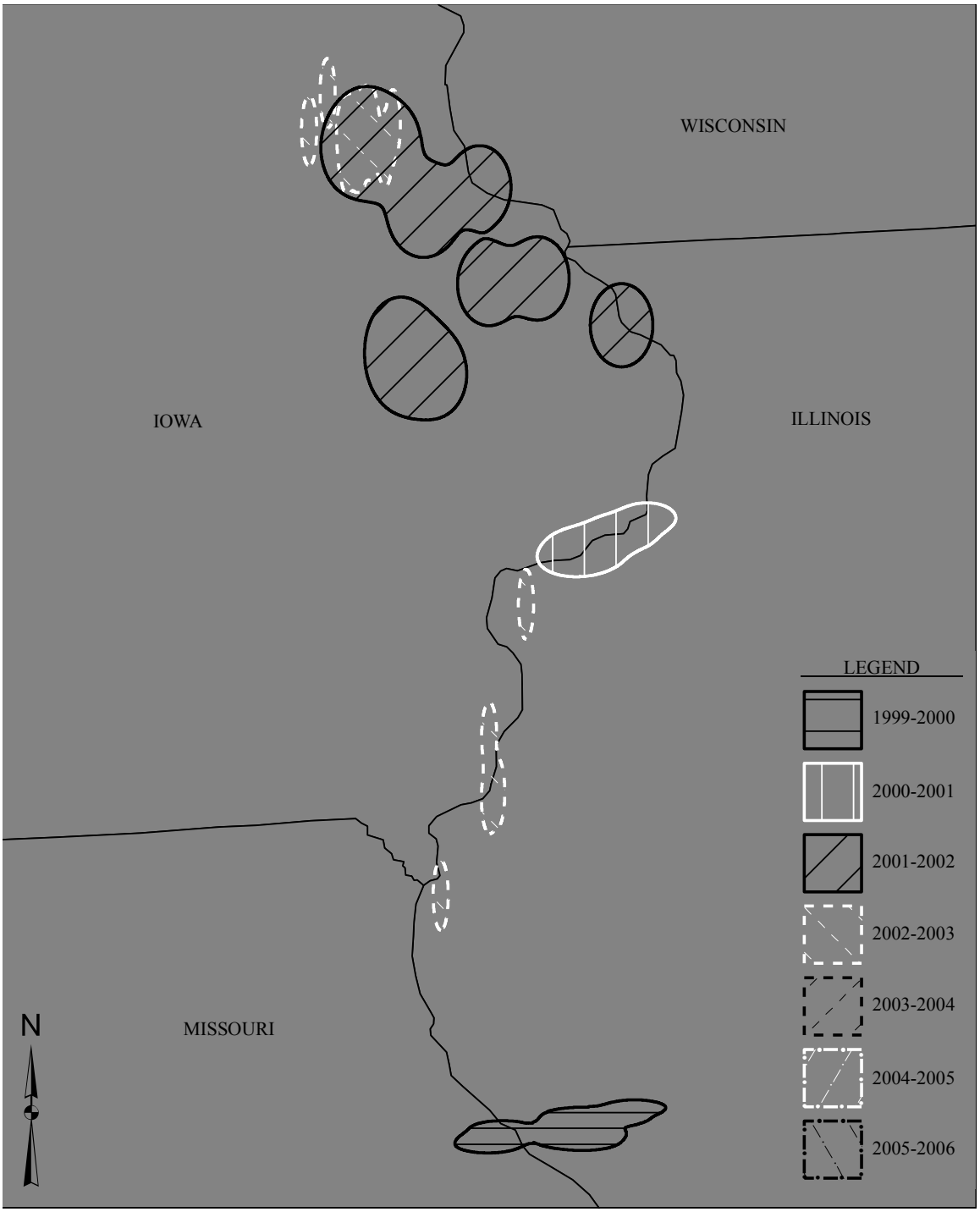

Figure 5. Bald Eagle 221 winter home ranges (1999-2003).

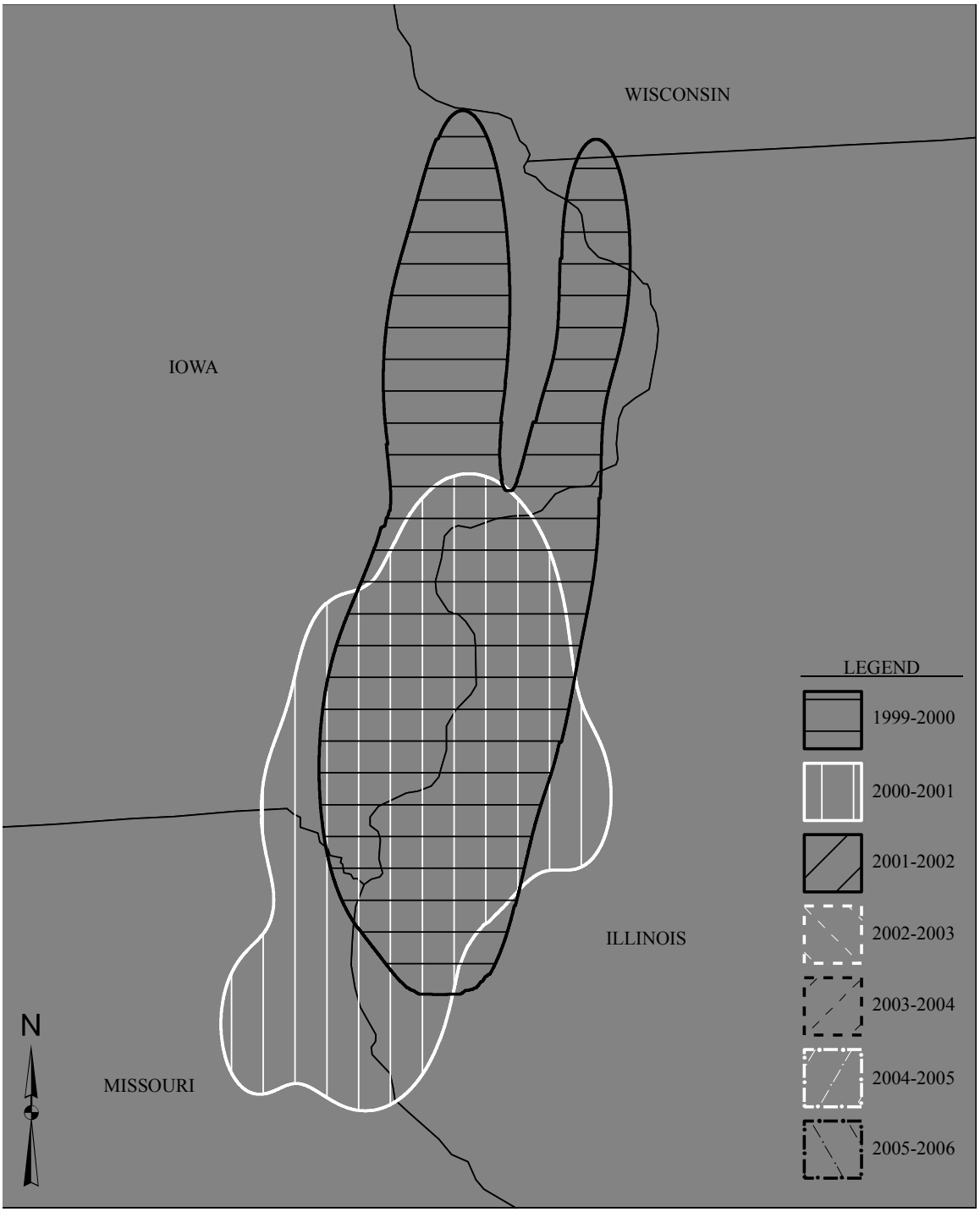

Figure 6. Bald Eagle 216 winter home ranges (1999-2001).

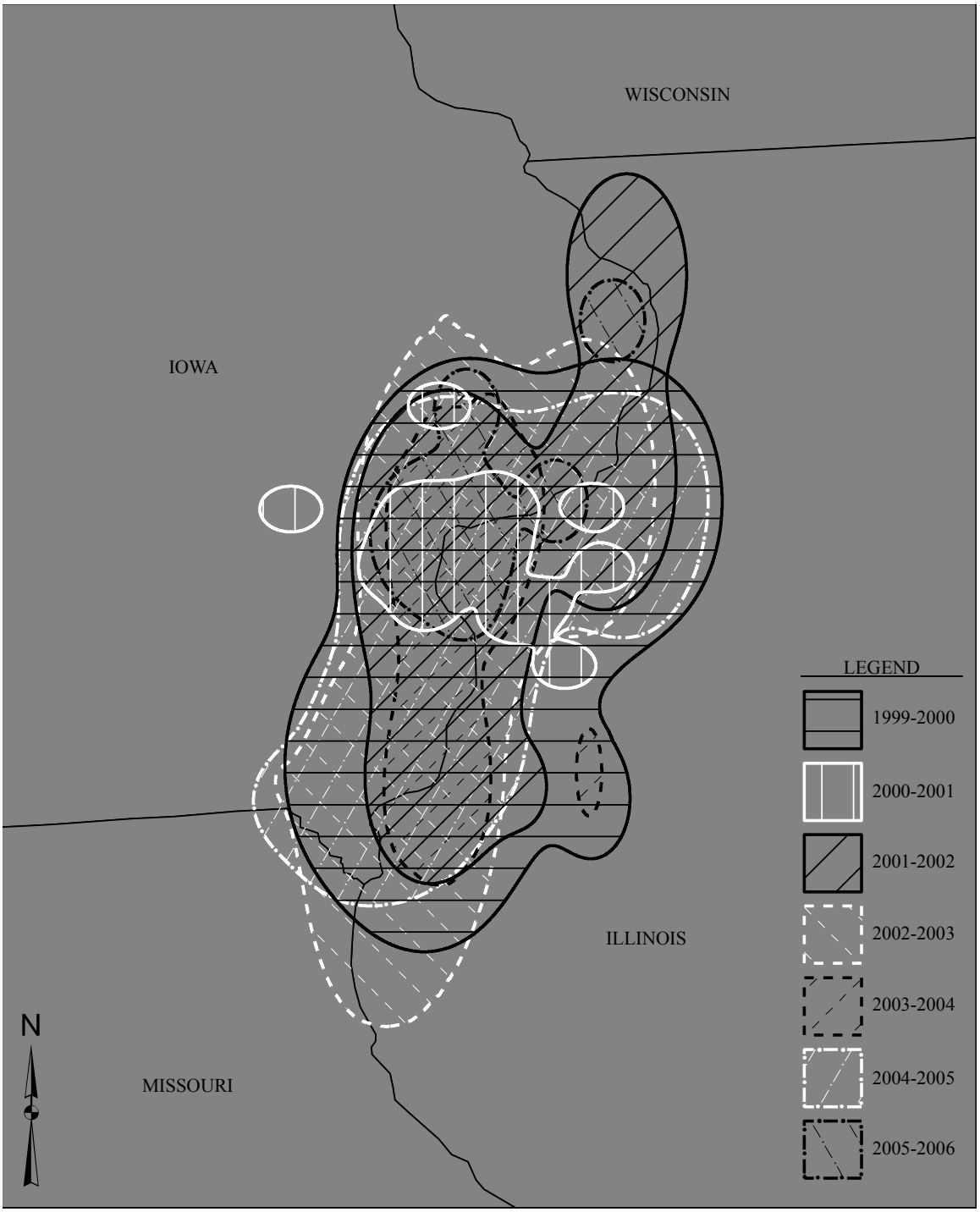

Figure 7. Bald Eagle 217 winter home ranges (1999-2006).

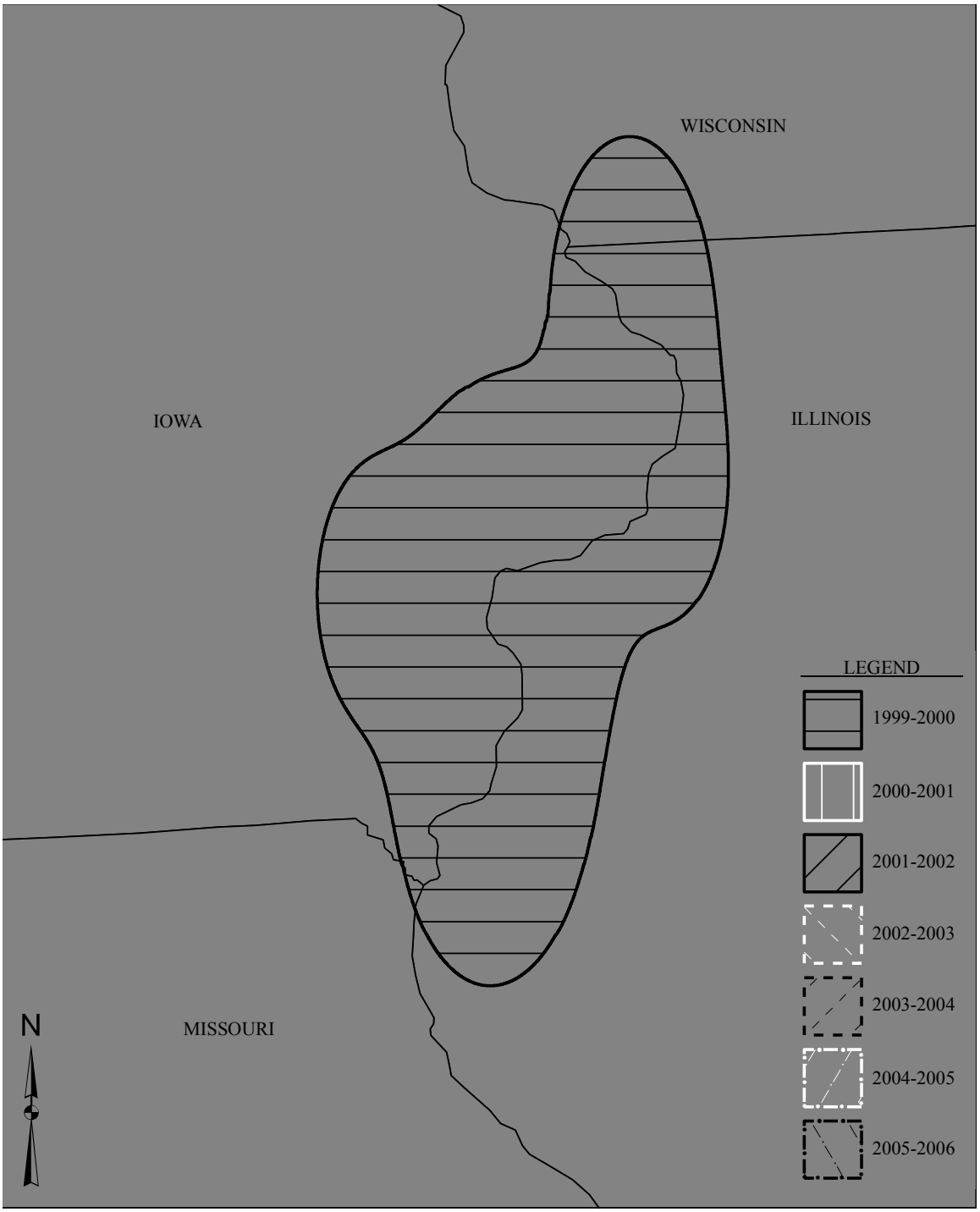

Figure 8. Bald Eagle 219 winter home range (1999-2000).

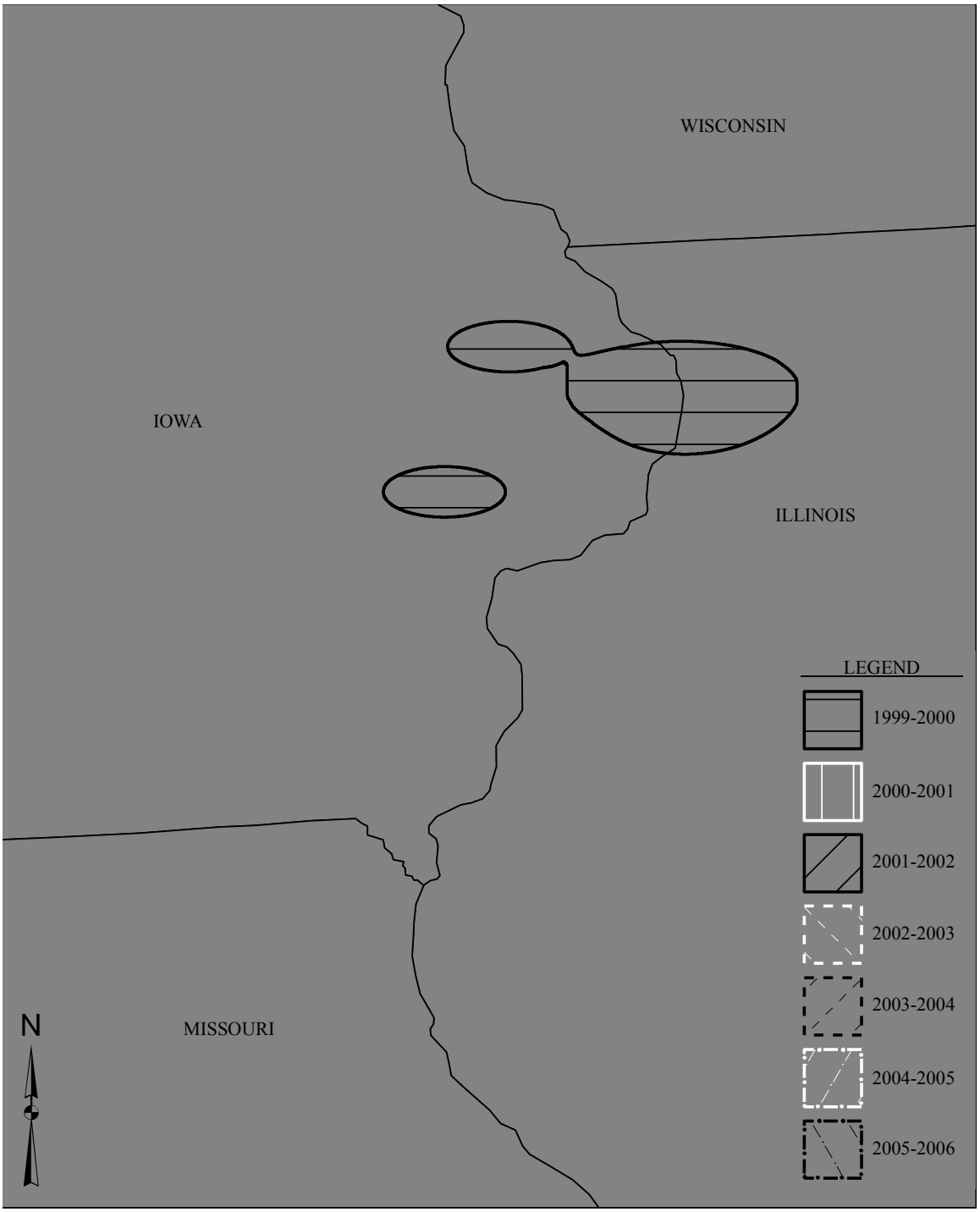

Figure 9. Bald Eagle 220 winter home range (1999-2000).

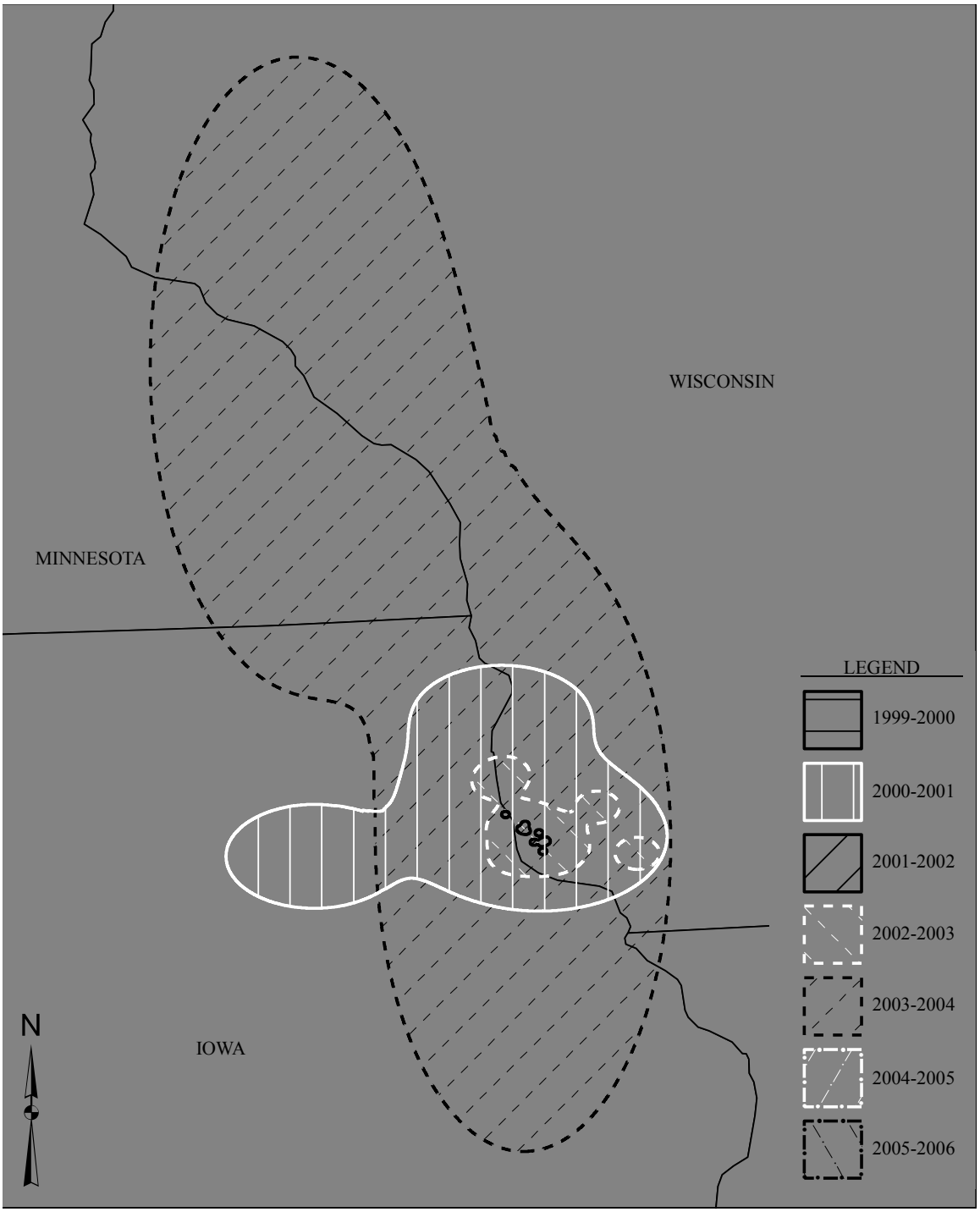

Figure 10. Bald Eagle 365 winter home ranges (2000-2004).

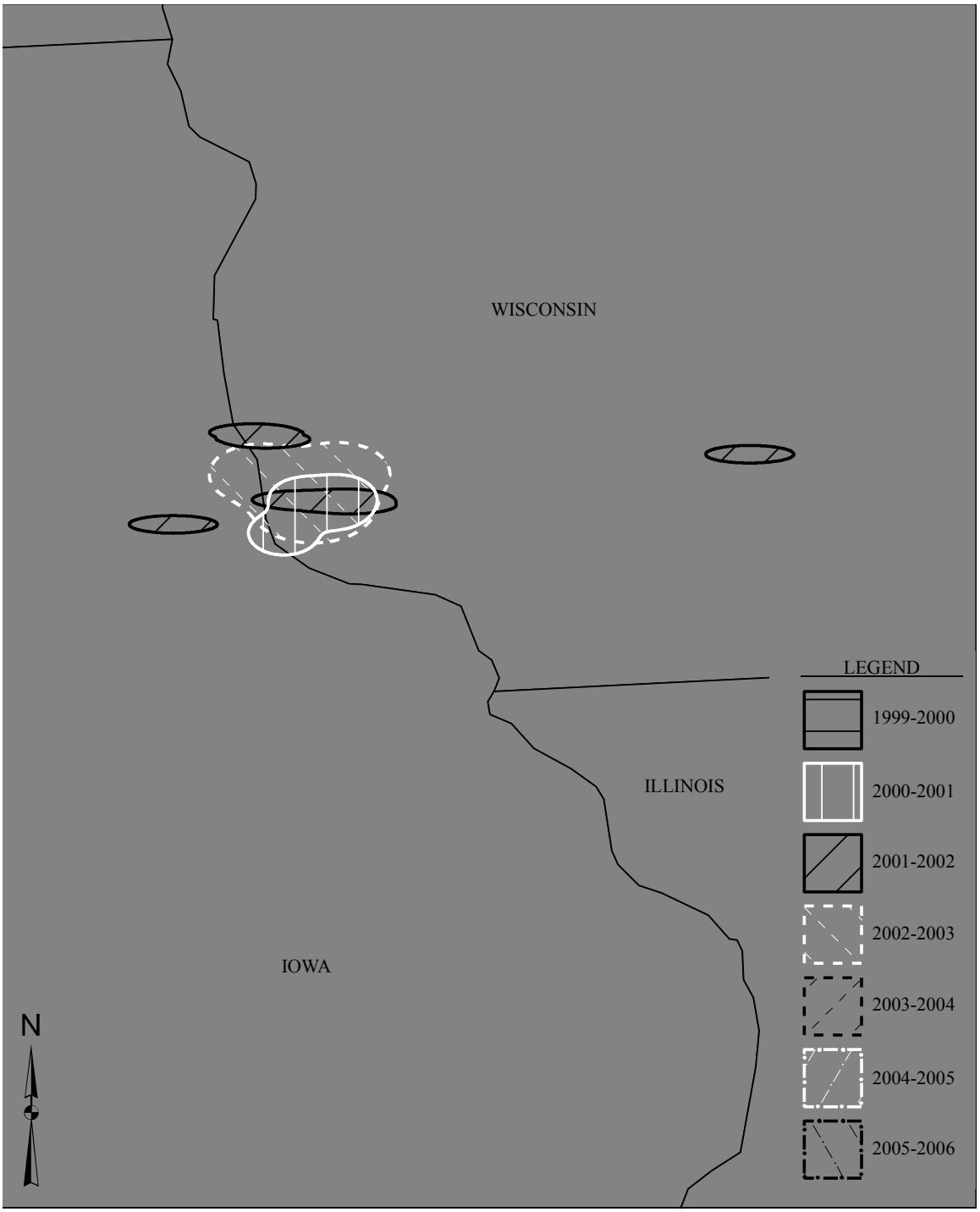

Figure 11. Bald Eagle 288 winter home ranges (2000-2003).

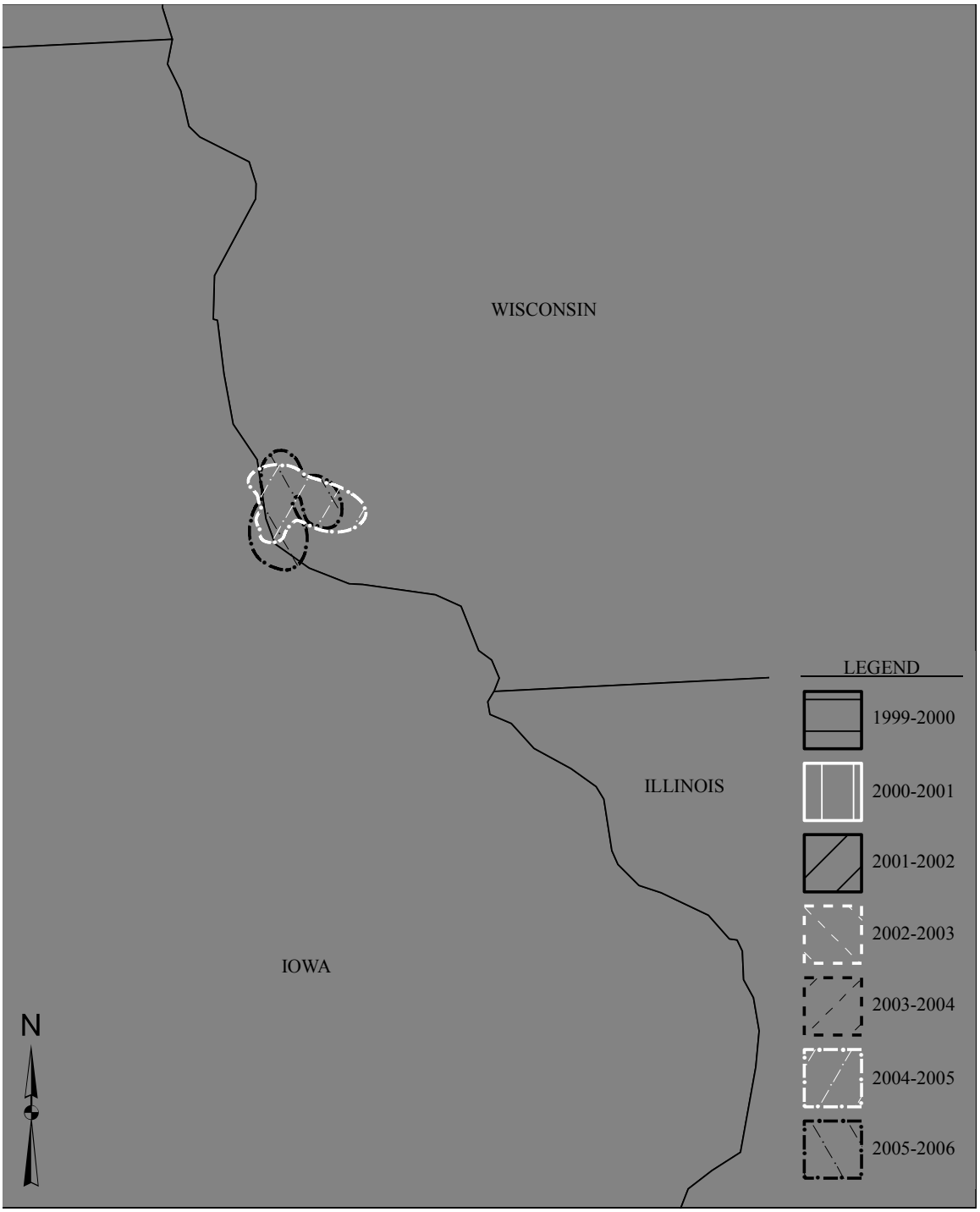

Figure 12. Bald Eagle 614 winter home ranges (2004-2006).

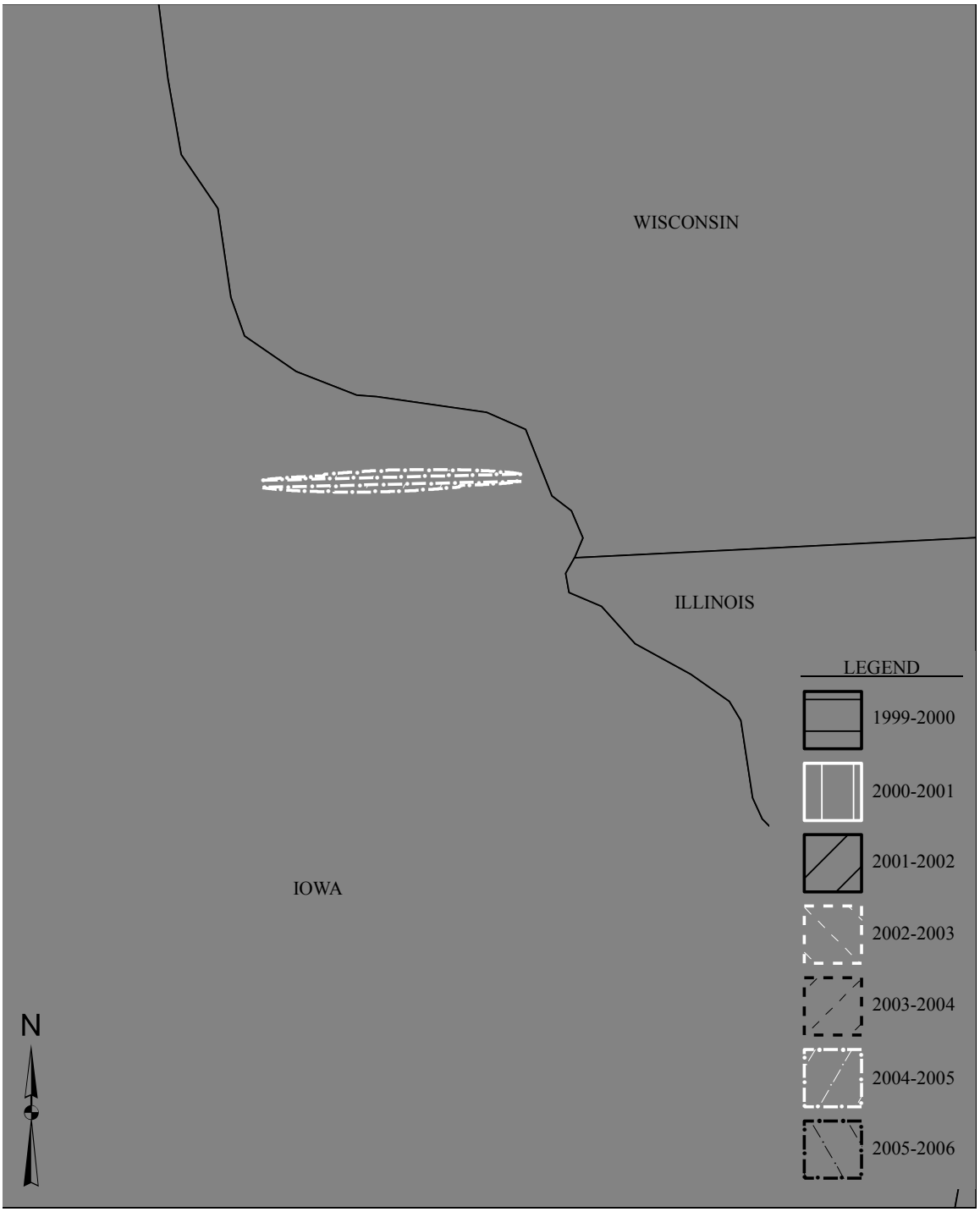

Figure 13. Bald Eagle 615 winter home range (2004-2005).

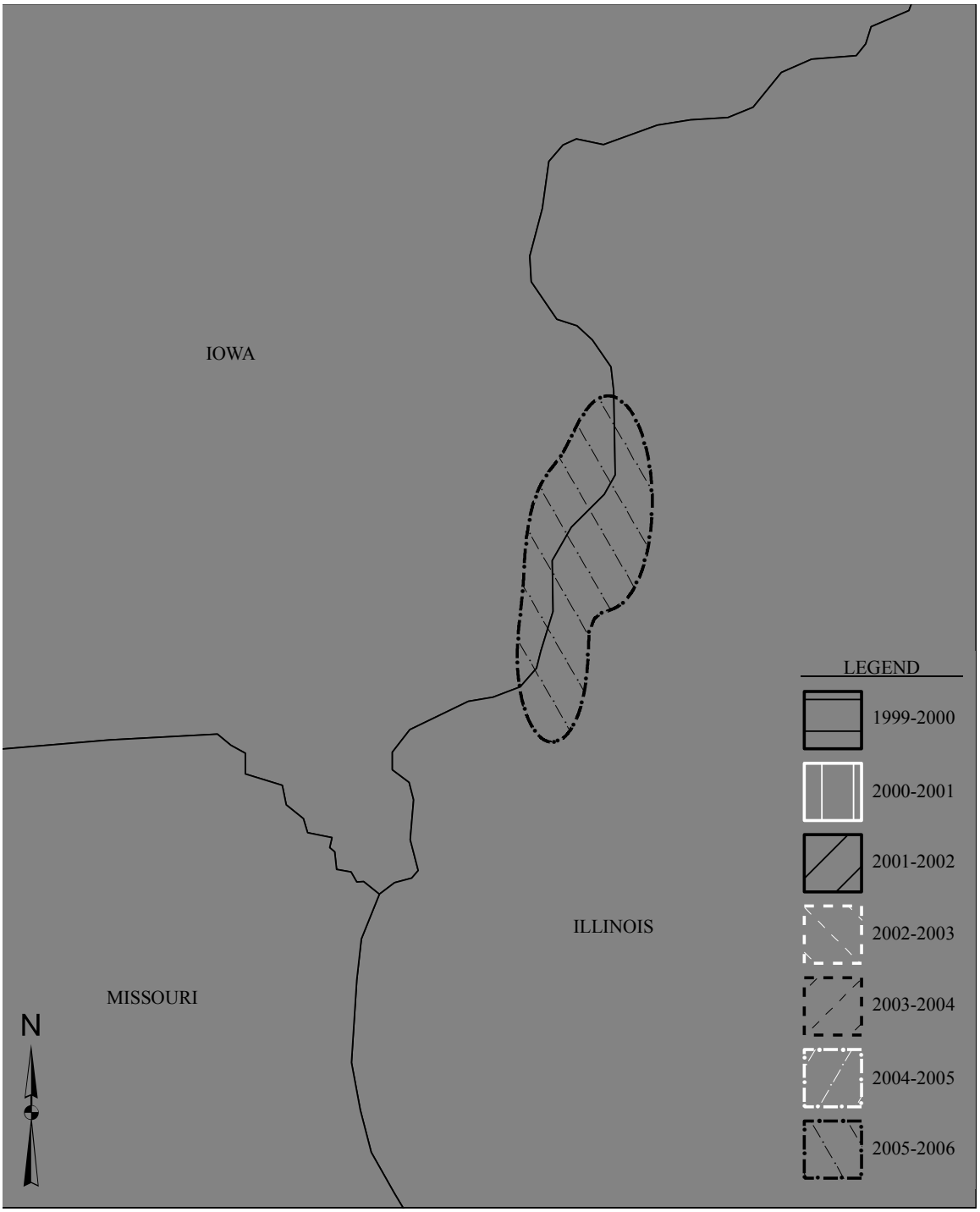

Figure 14. Bald Eagle 945 winter home range (2005-2006).

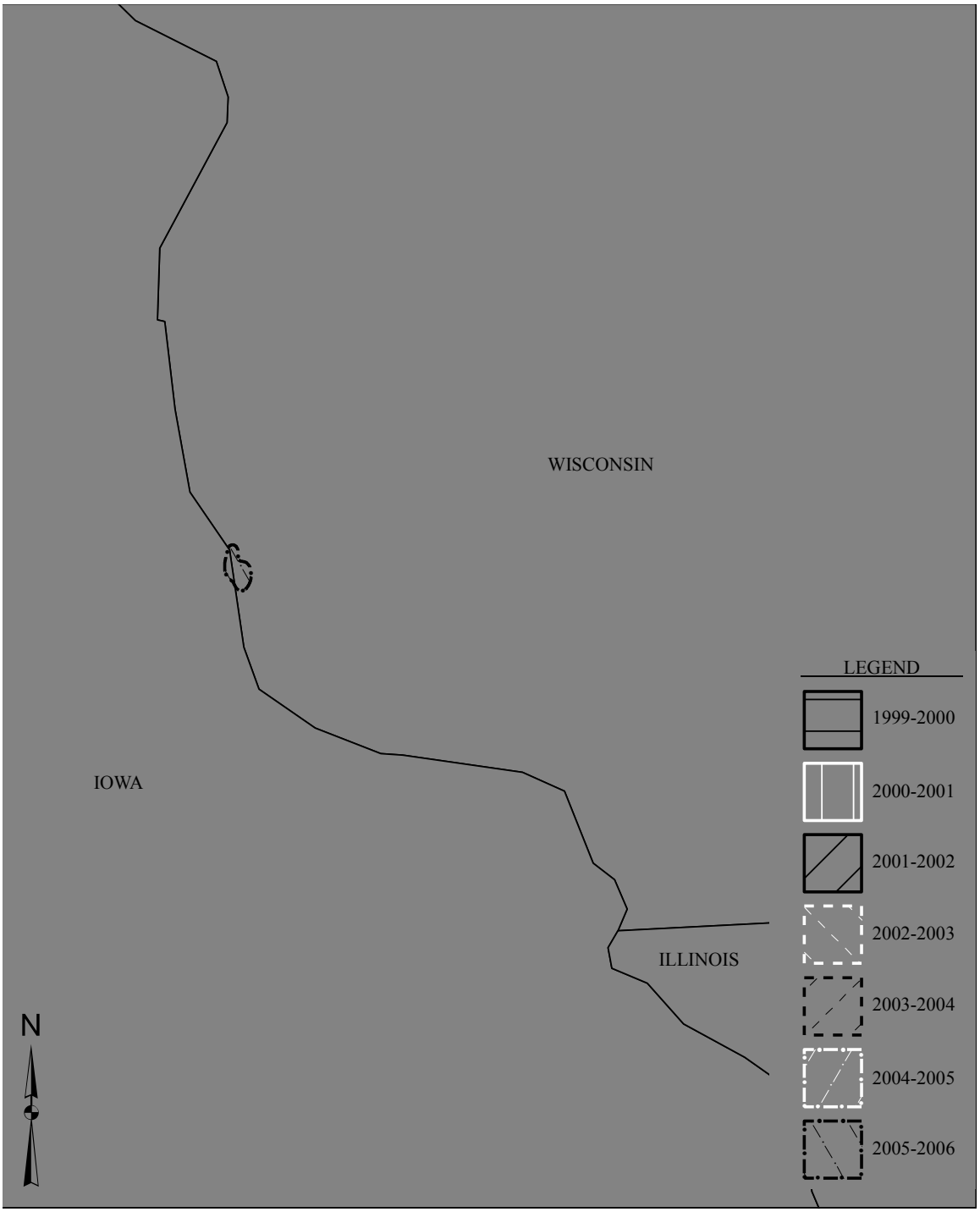

Figure 15. Bald Eagle 944 winter home range (2005-2006).

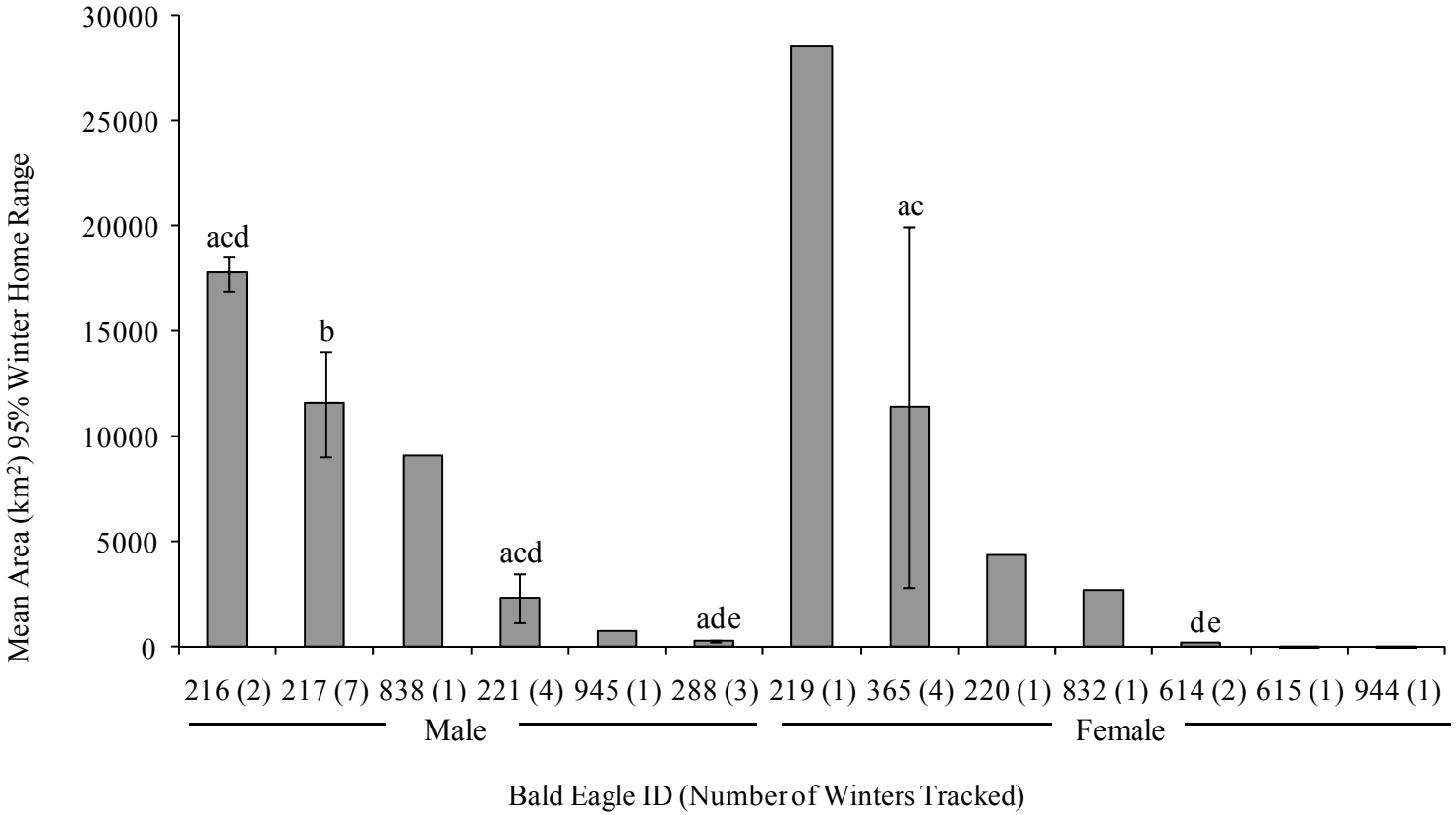

Figure 16. Comparison of mean winter home range size (±SE), 95% kernel estimate, of males and females tracked between one and seven years. Numbers in parentheses designate number of winters tracked. Letters above bars designate significance from Tukey test following Kruskal-Wallis non-parametric test.

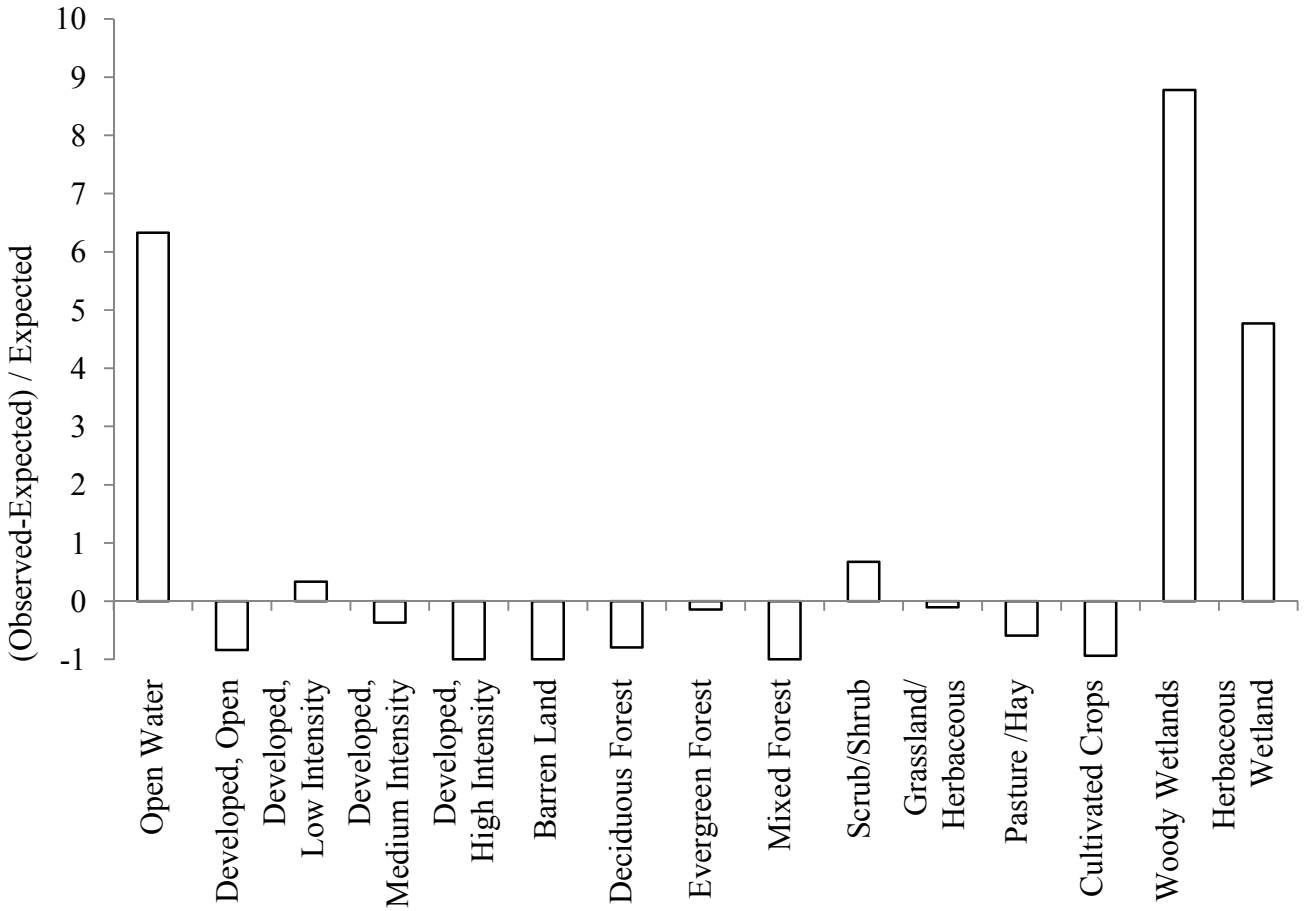

Figure 17. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 838 during the winter of 1999-2000.

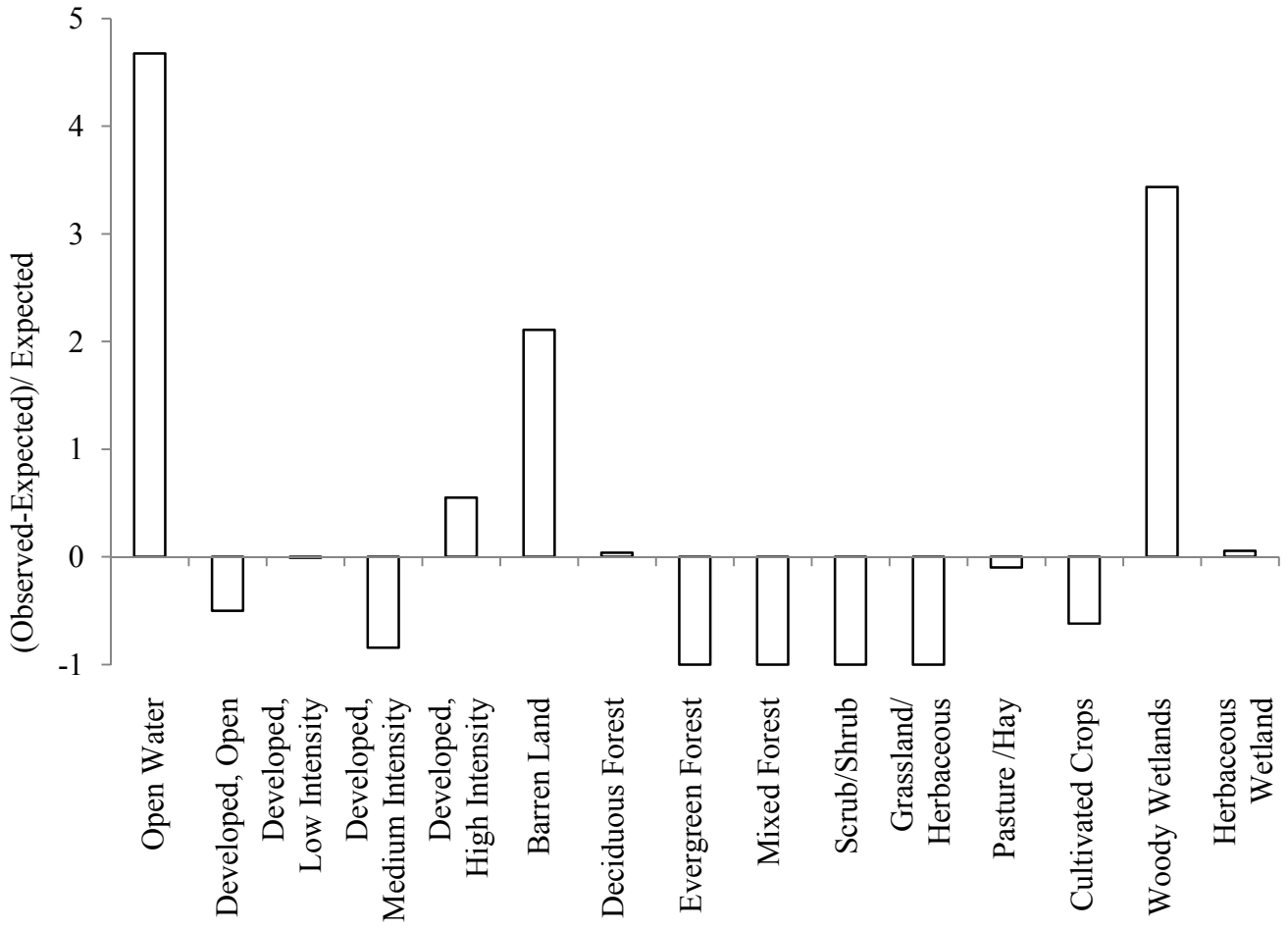

Figure 18. Relative difference between winter night roost habitat use and available winter range habitat for Eagle 832 during the winter of 1999-2000.

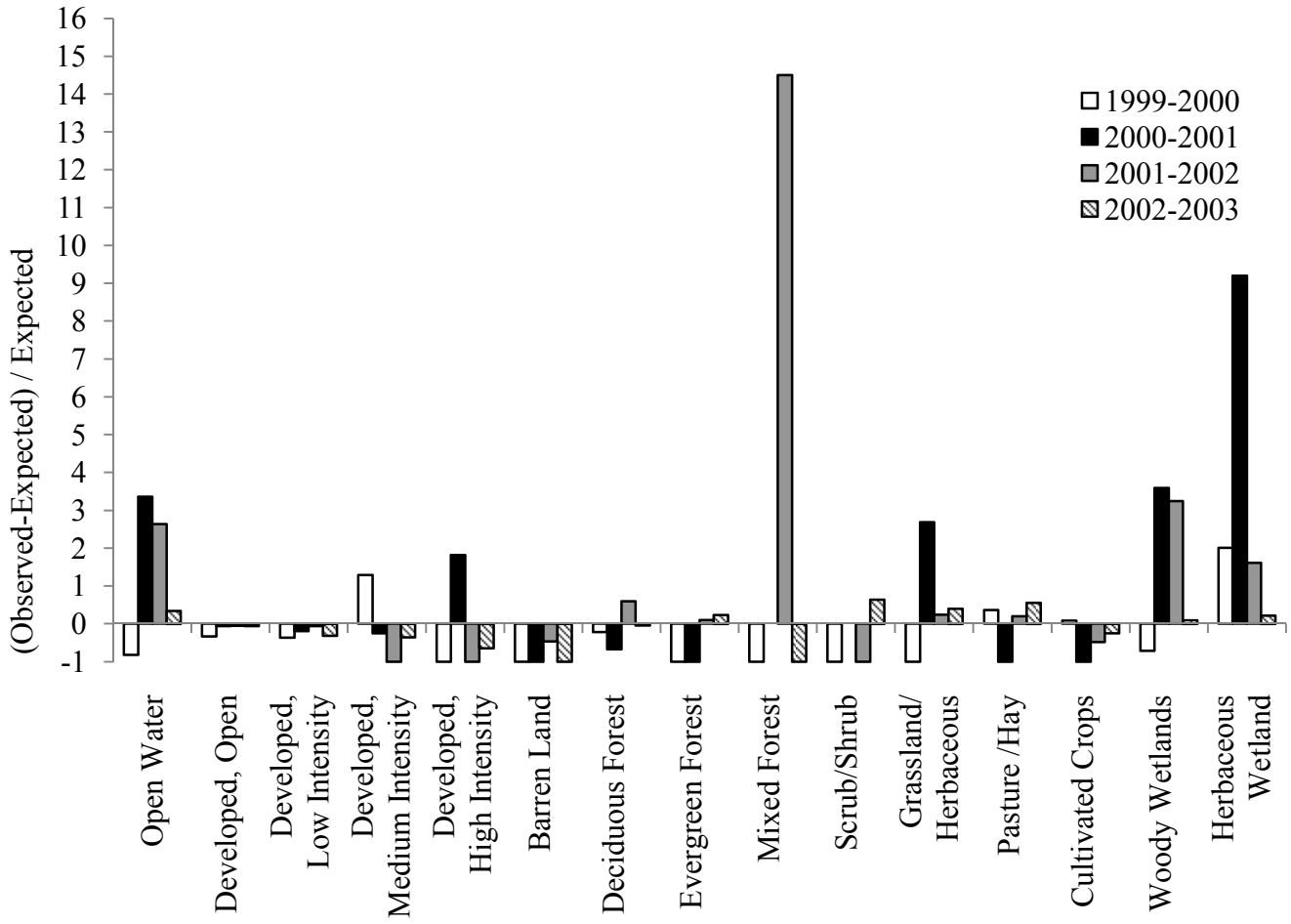

Figure 19. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 221 during the winters of 1999-2003.

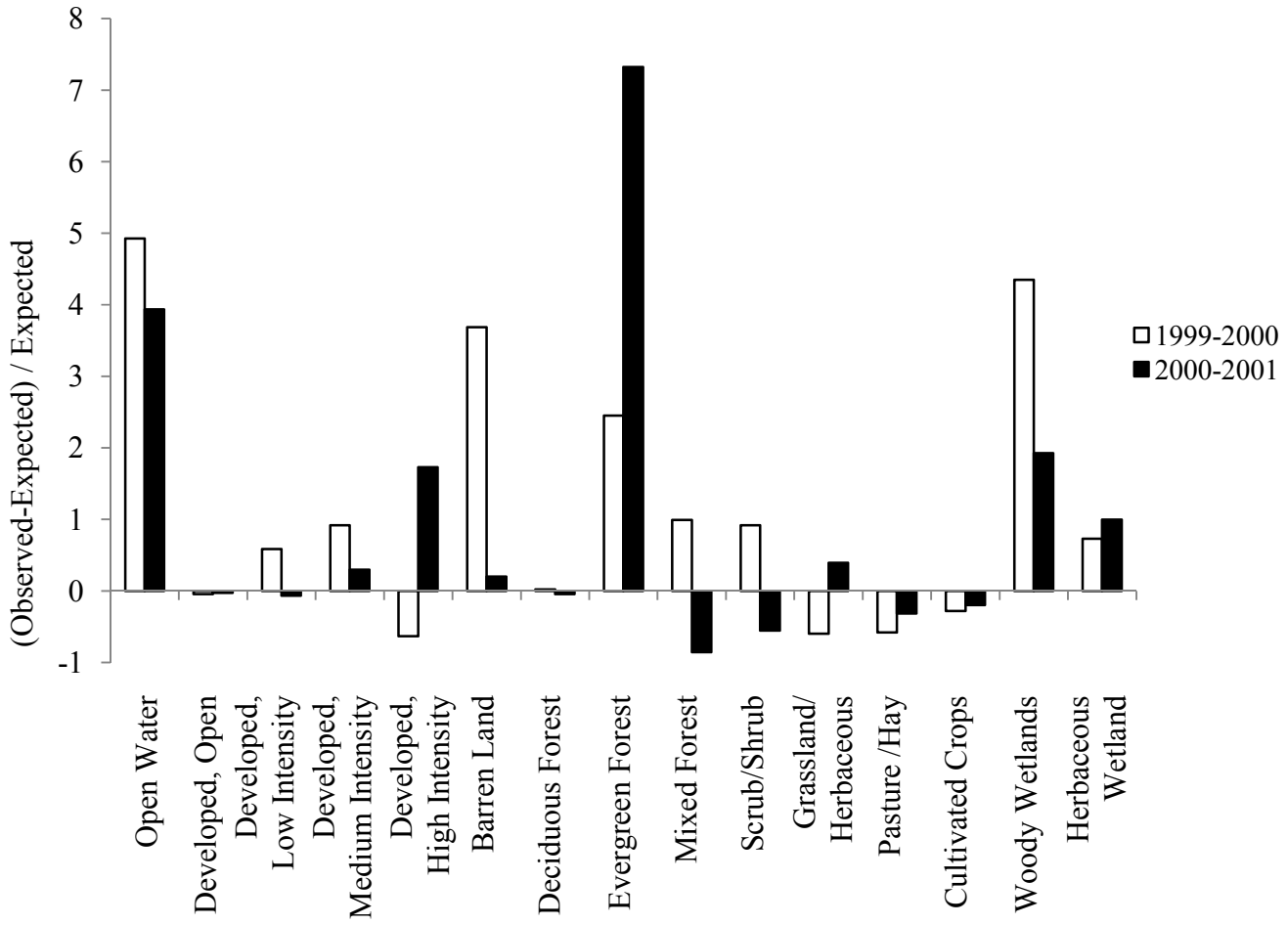

Figure 20. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 216 during the winters of 1999-2001.

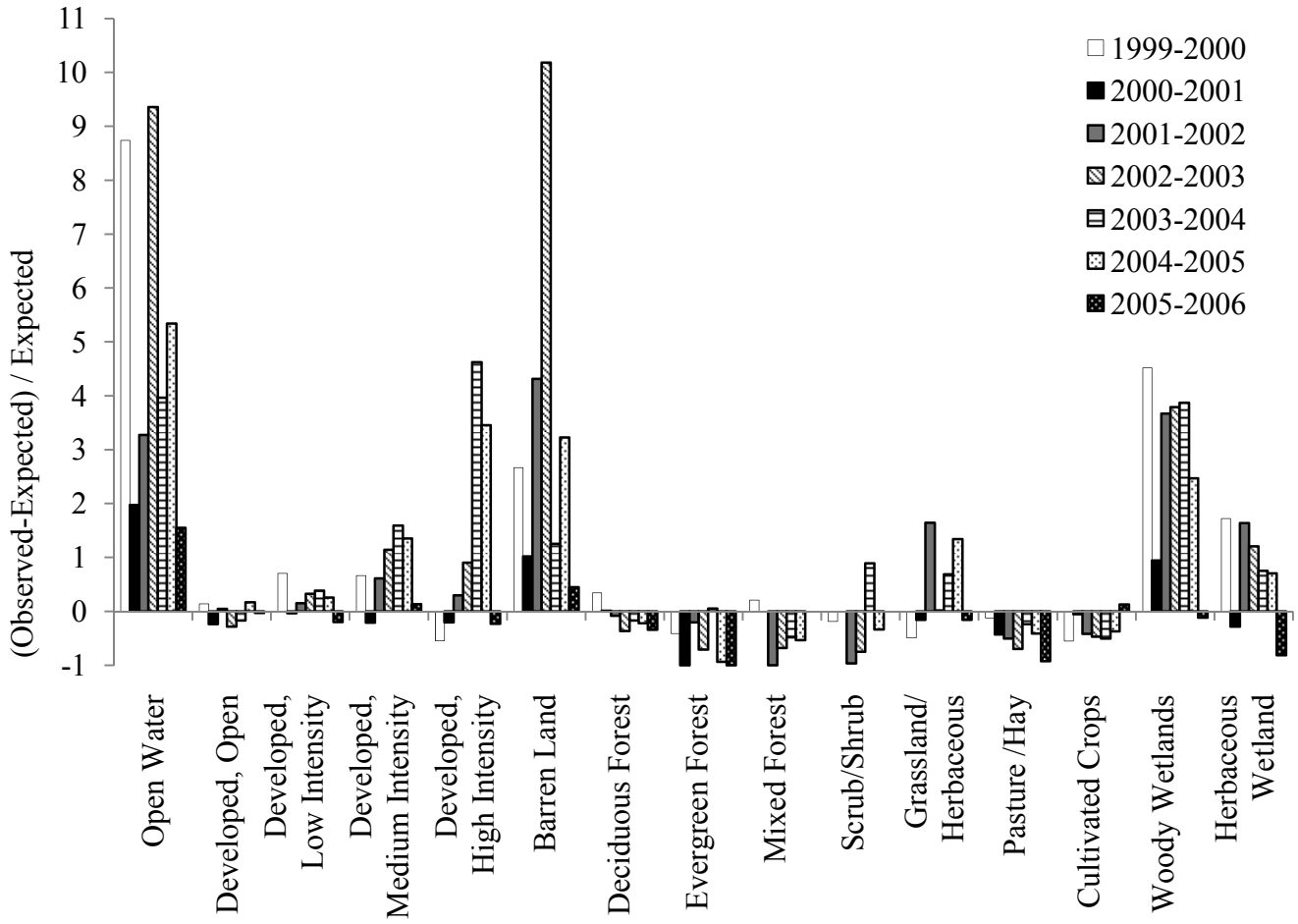

Figure 21. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 217 during the winters of 1999-2006.

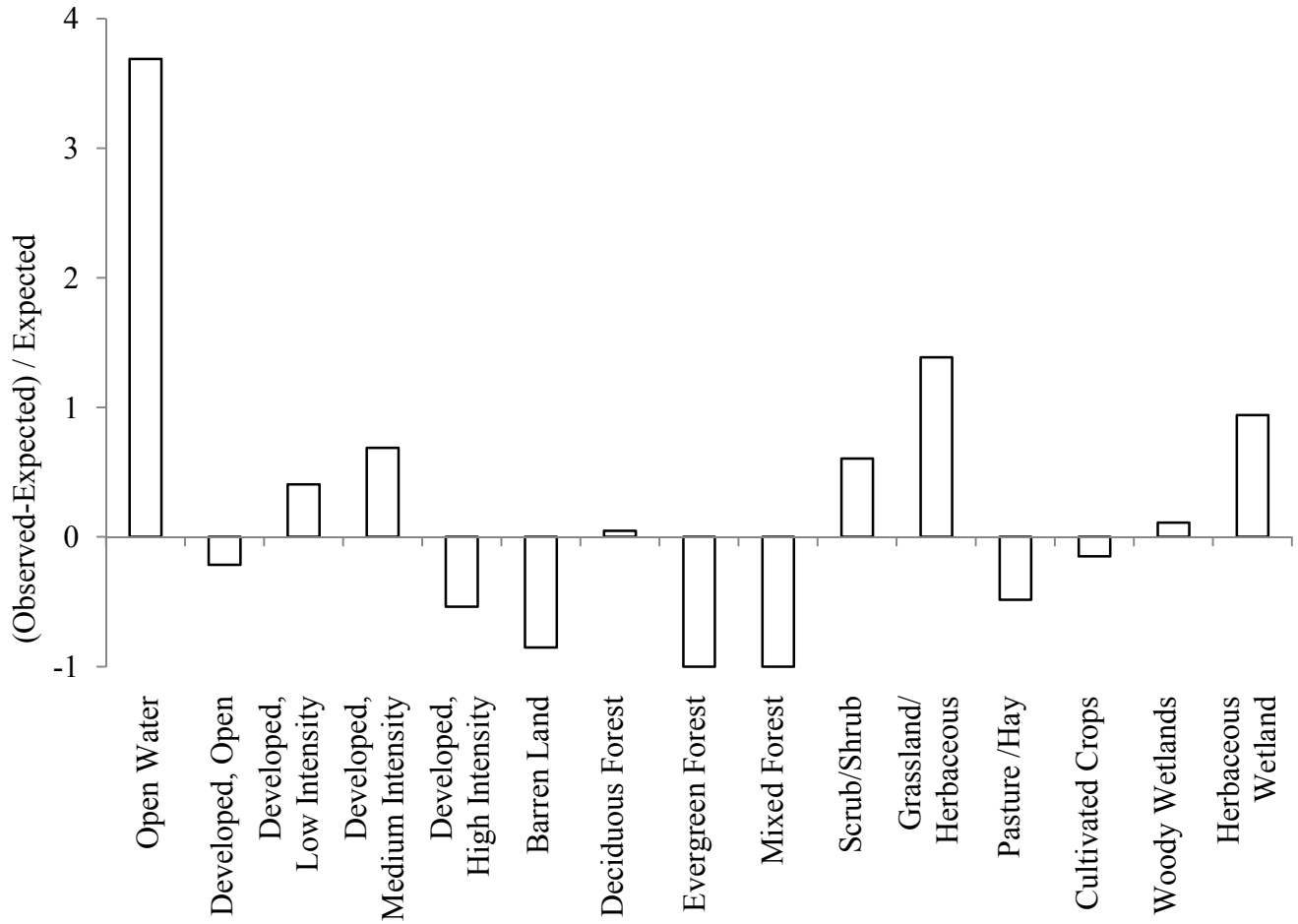

Figure 22. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 219 during the winter of 1999-2000.

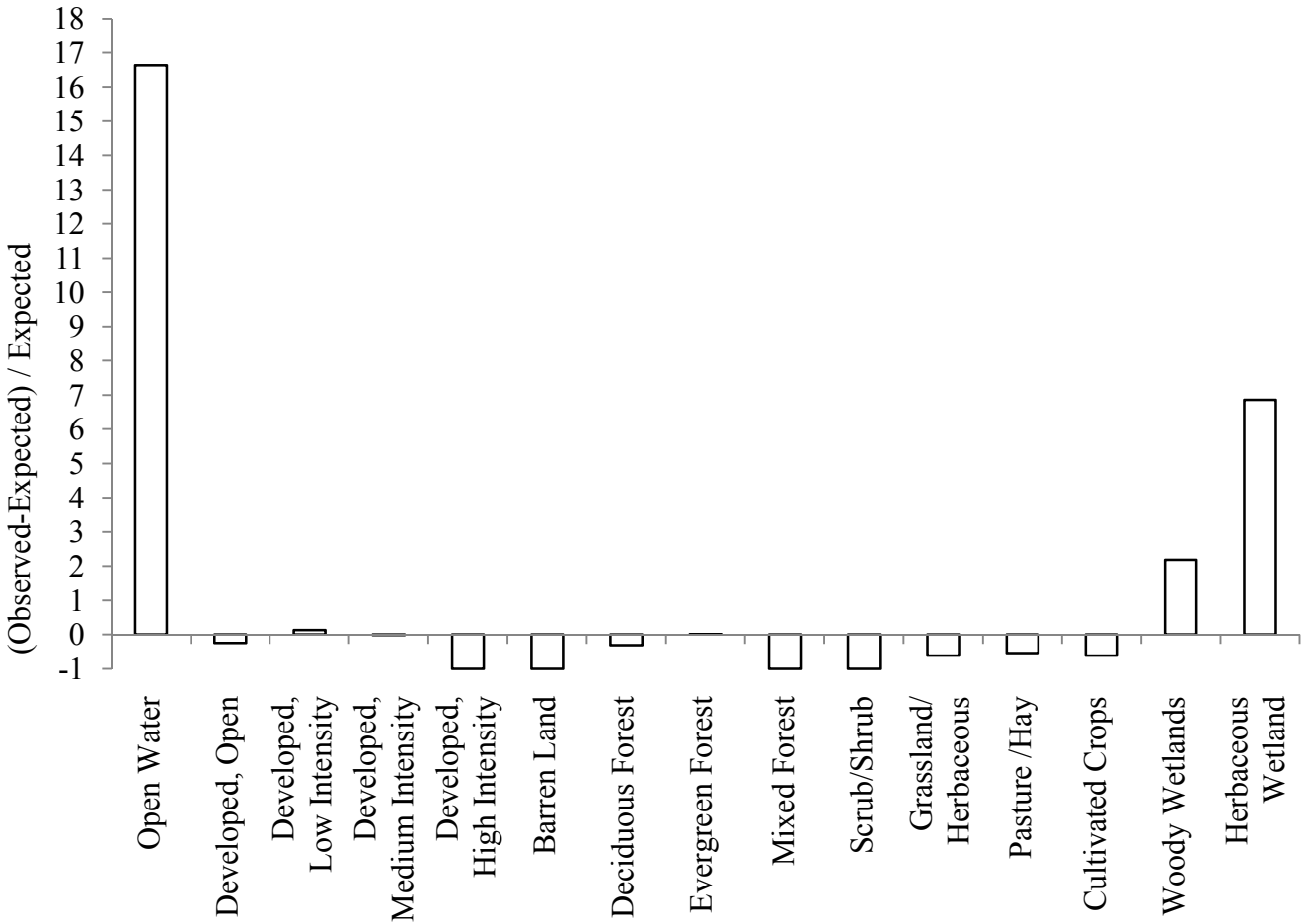

Figure 23. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 220 during the winter of 1999-2000.

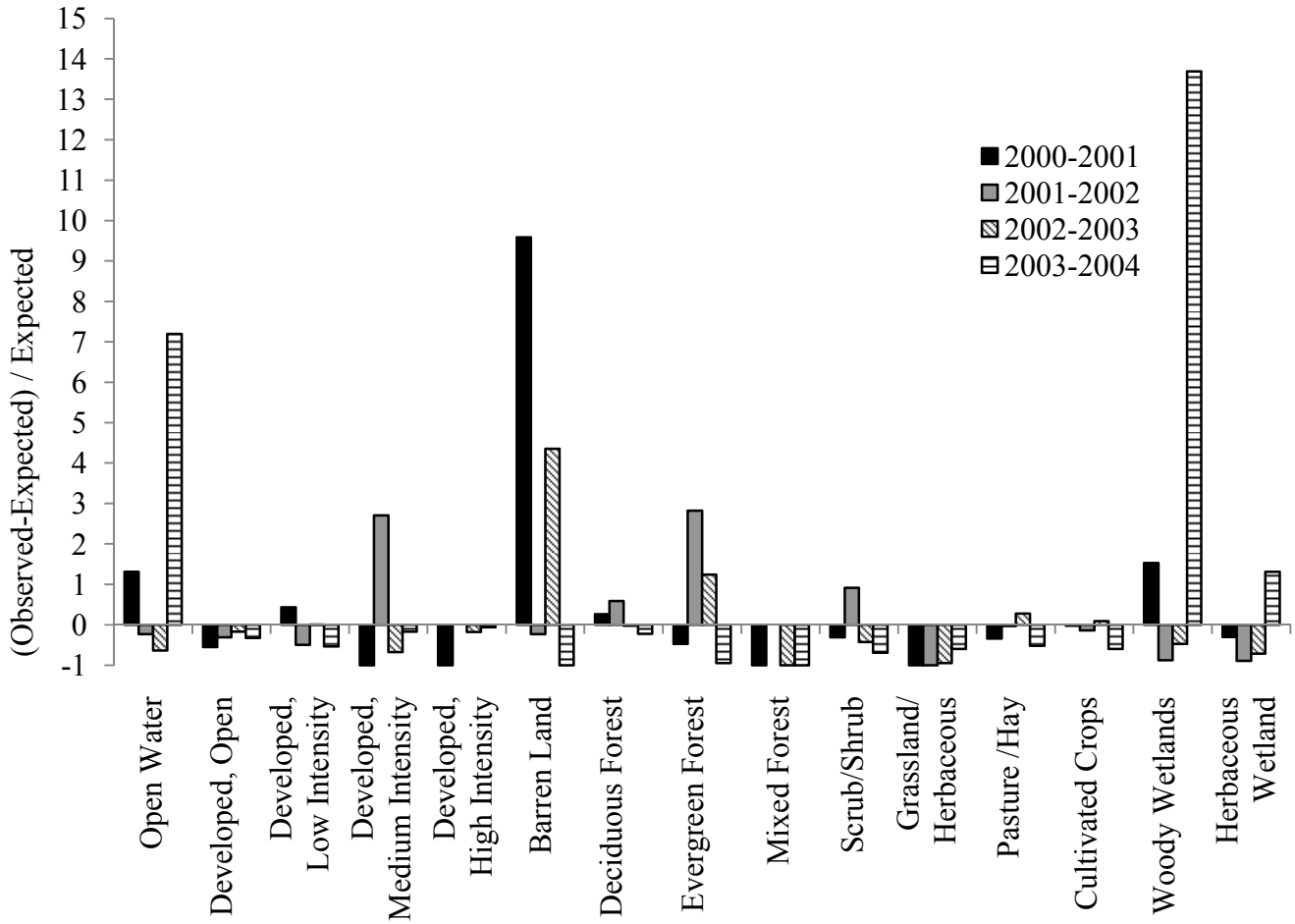

Figure 24. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 365 during the winters of 2000-2004.

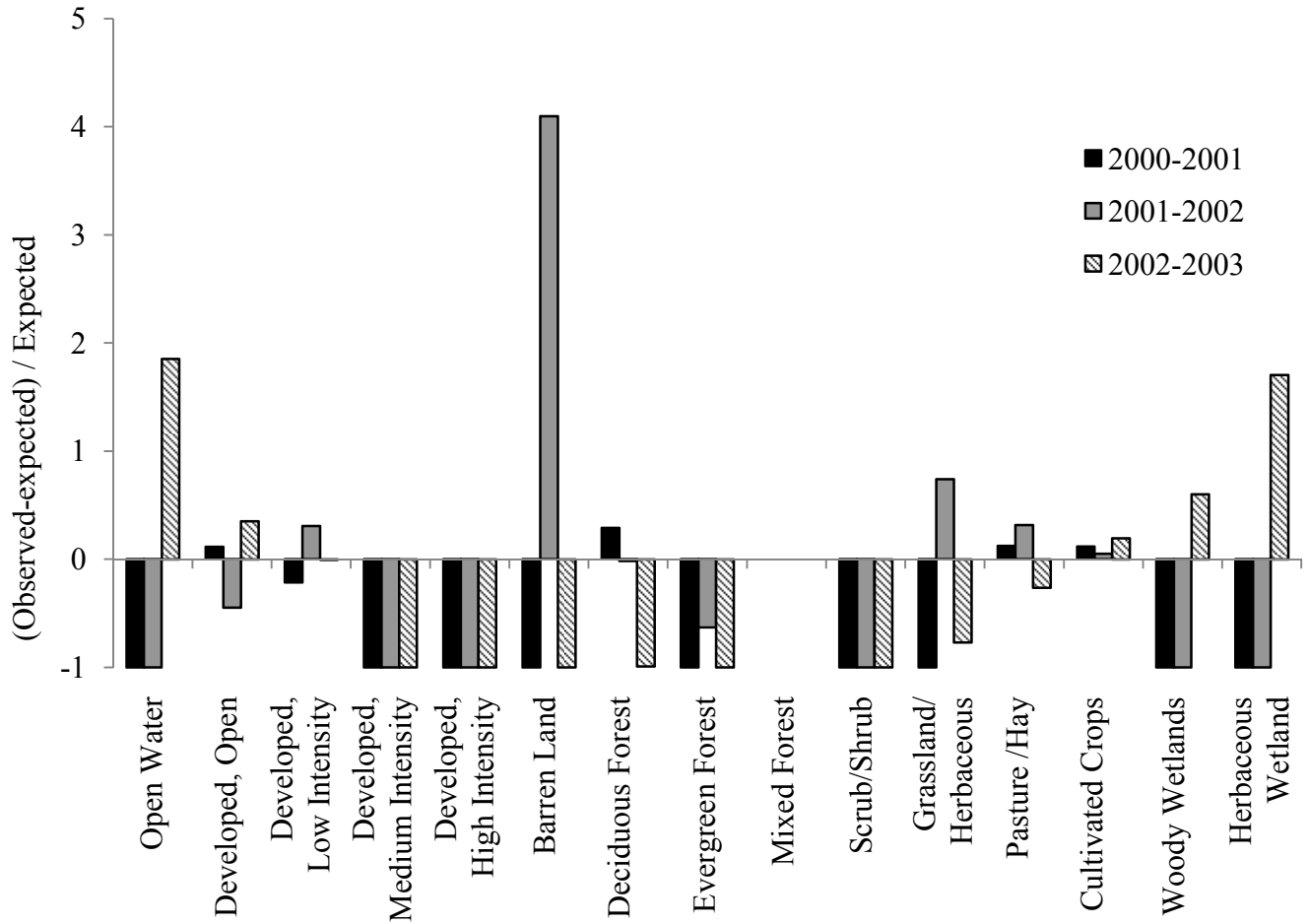

Figure 25. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 288 during the winters of 2000-2003.

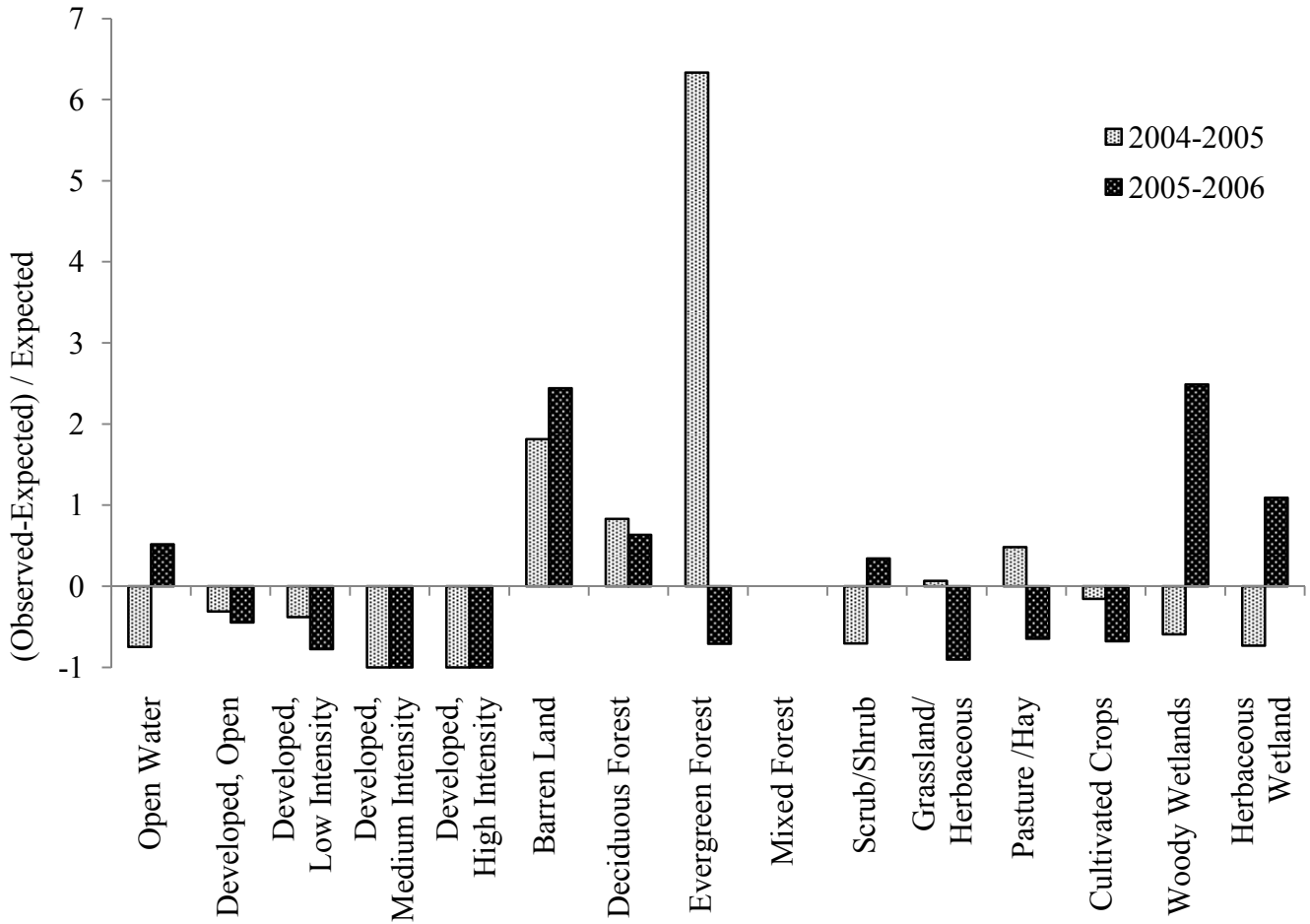

Figure 26. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 614 during the winter of 2004-2006.

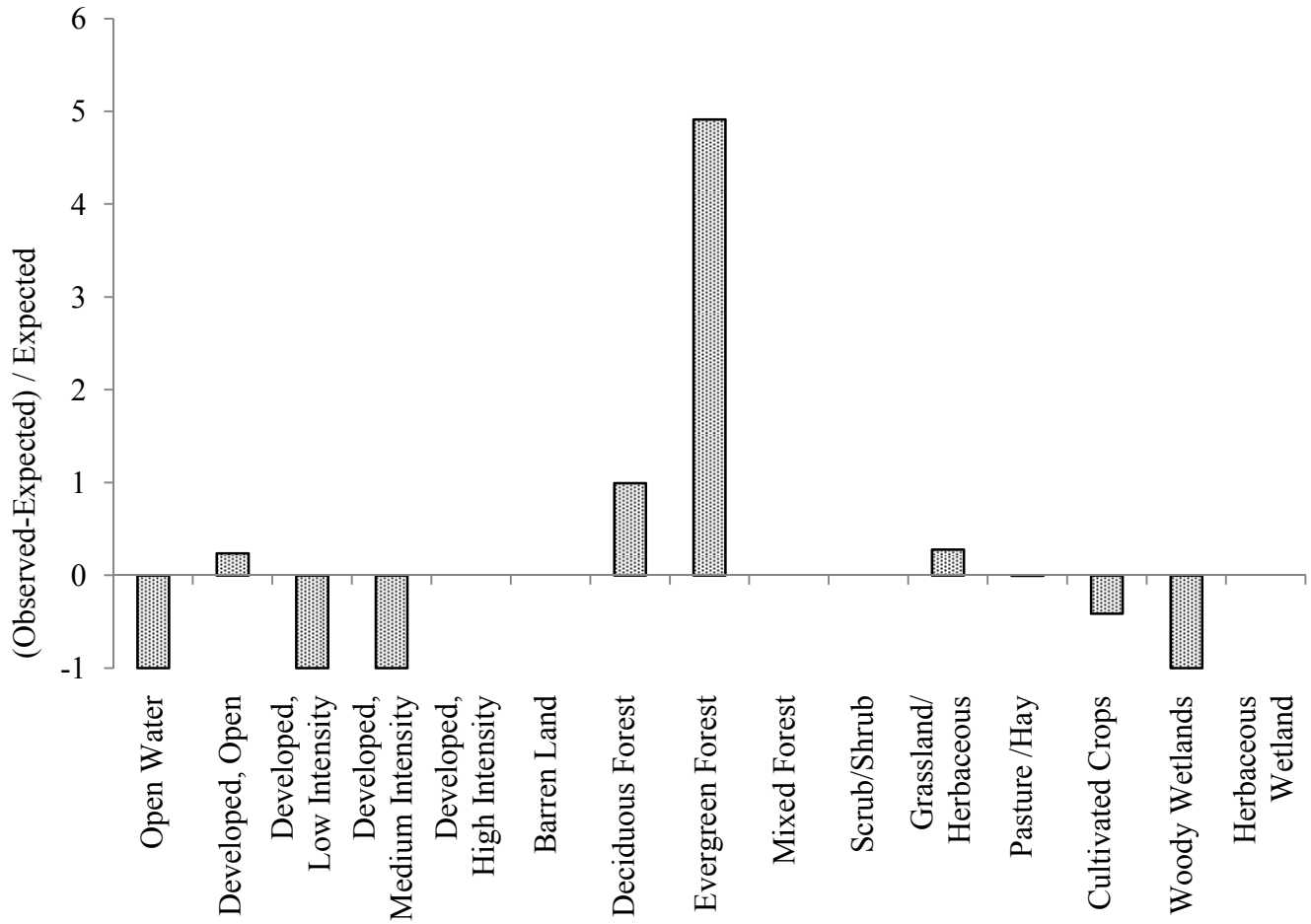

Figure 27. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 615 during the winter of 2004-2005.

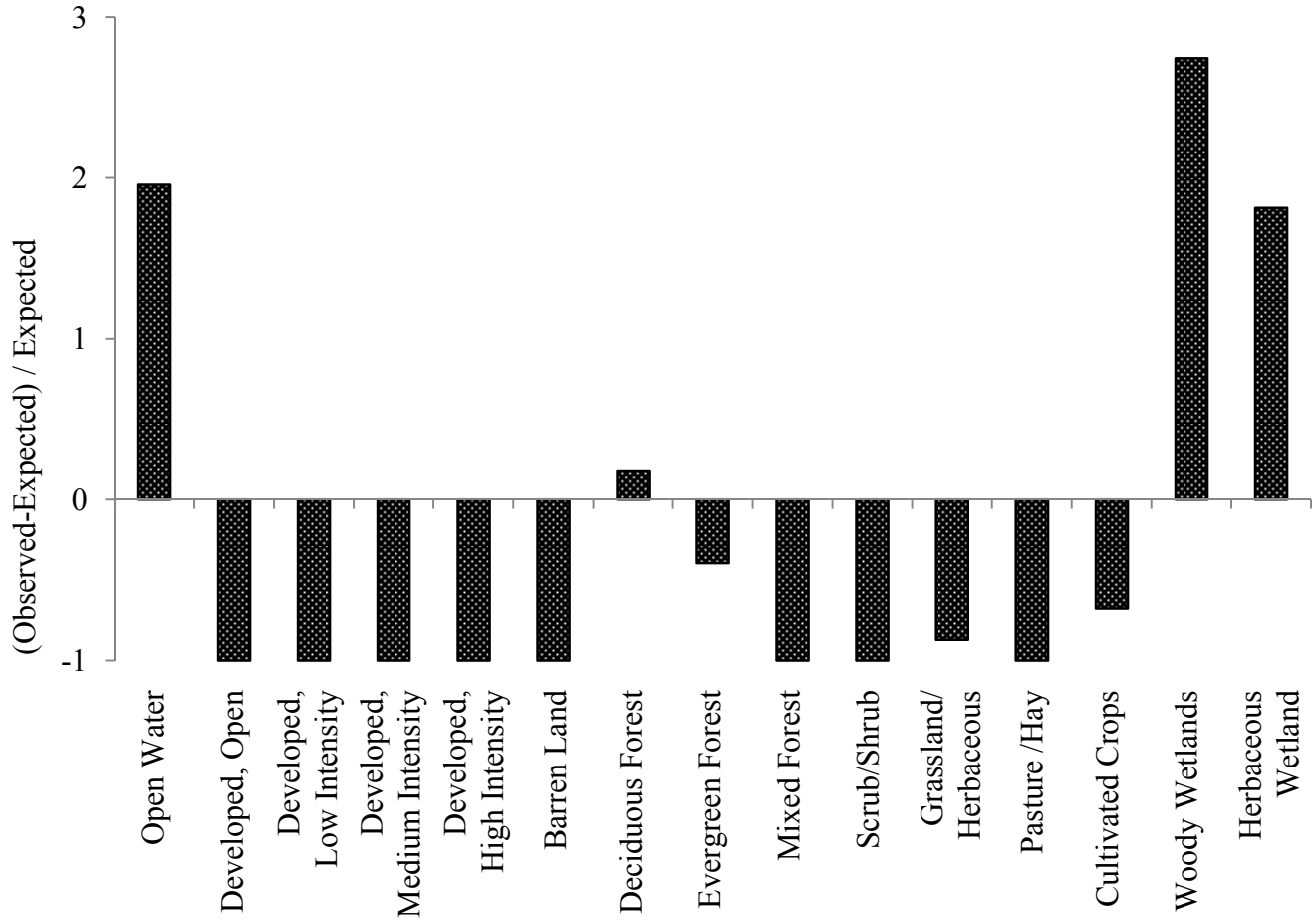

Figure 28. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 945 during the winter of 2005-2006.

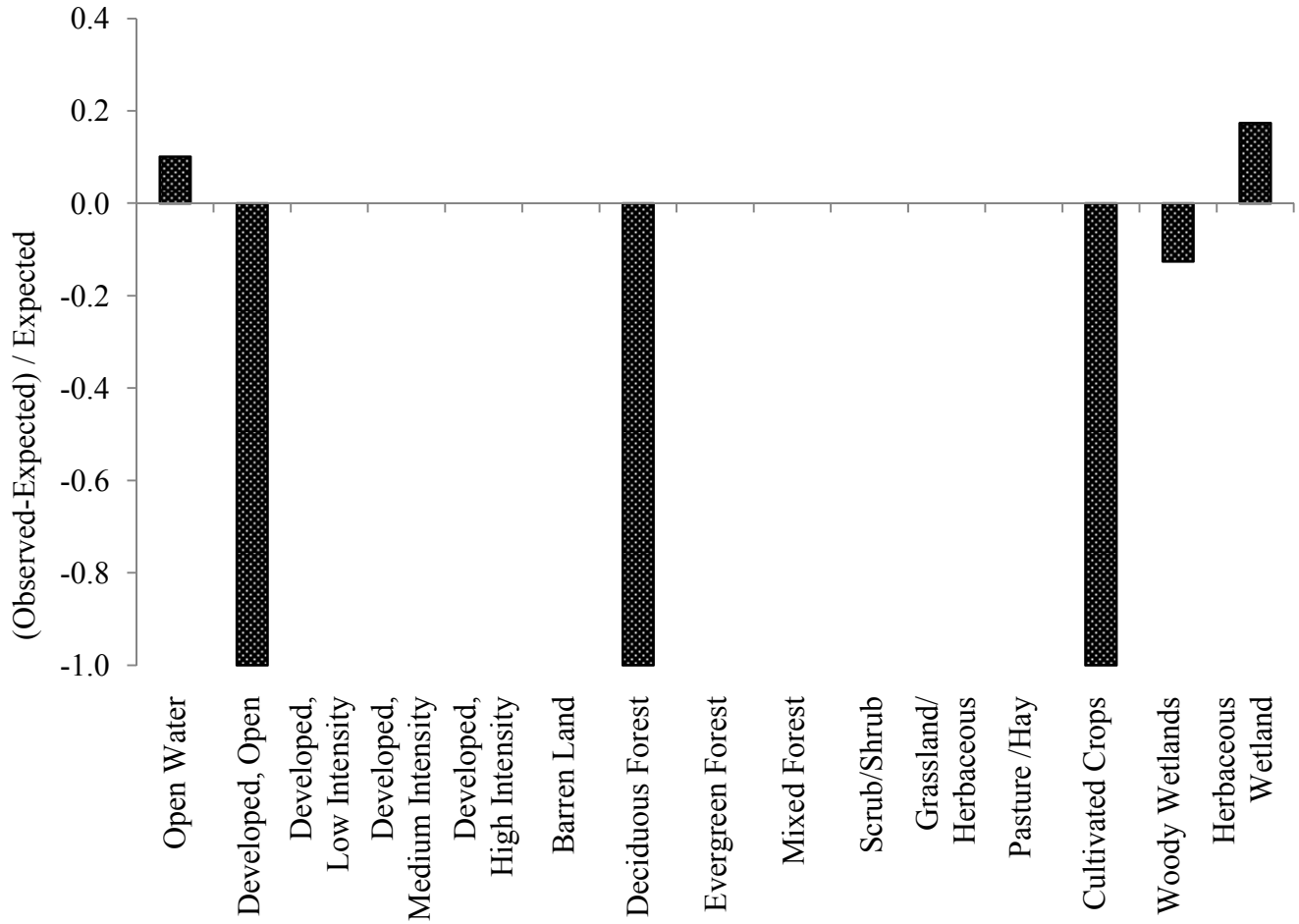

Figure 29. Relative difference between winter night roost habitat use and available winter range habitat for Bald Eagle 944 during the winter of 2005-2006.

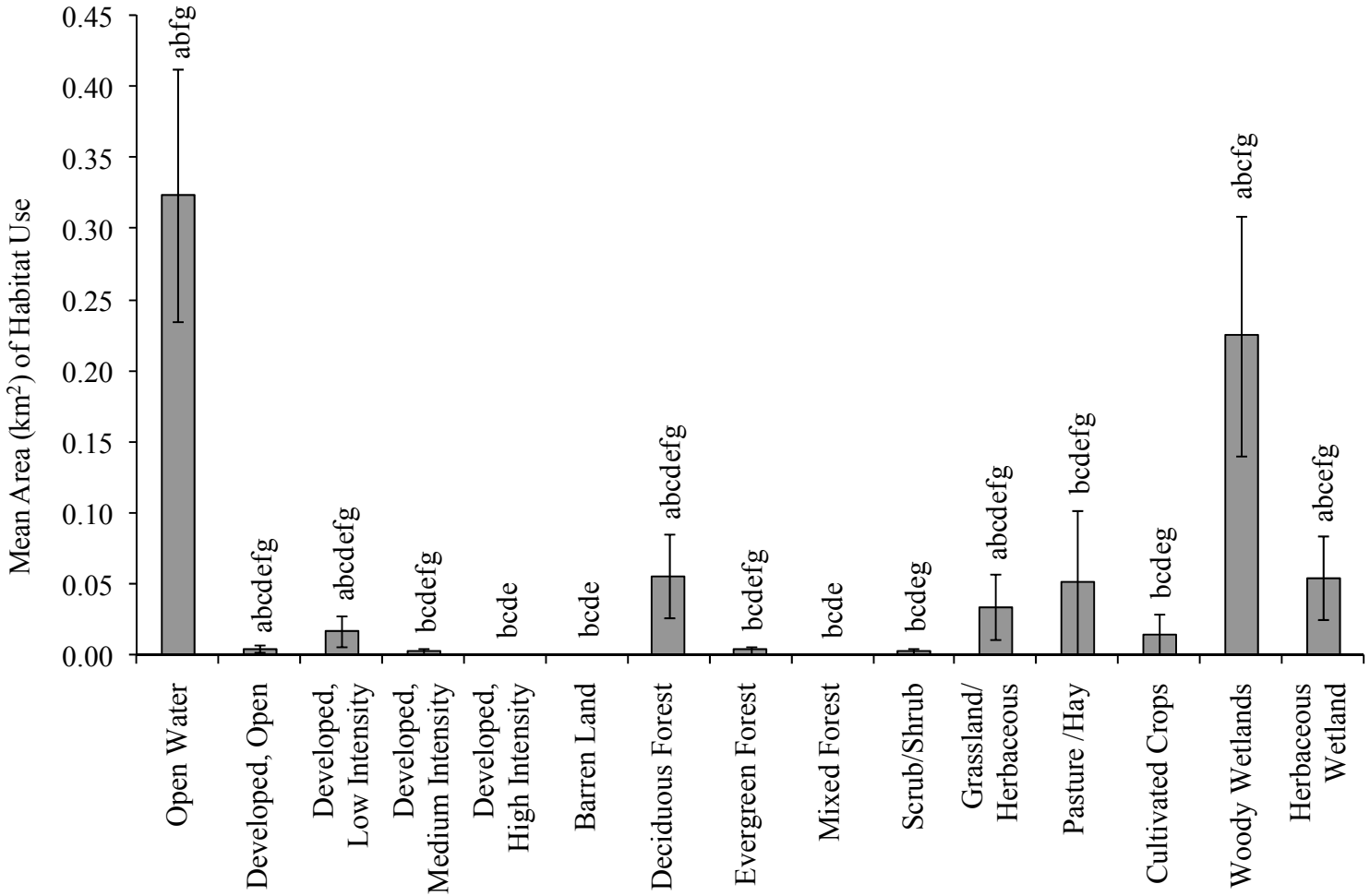

Figure 30. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 838.

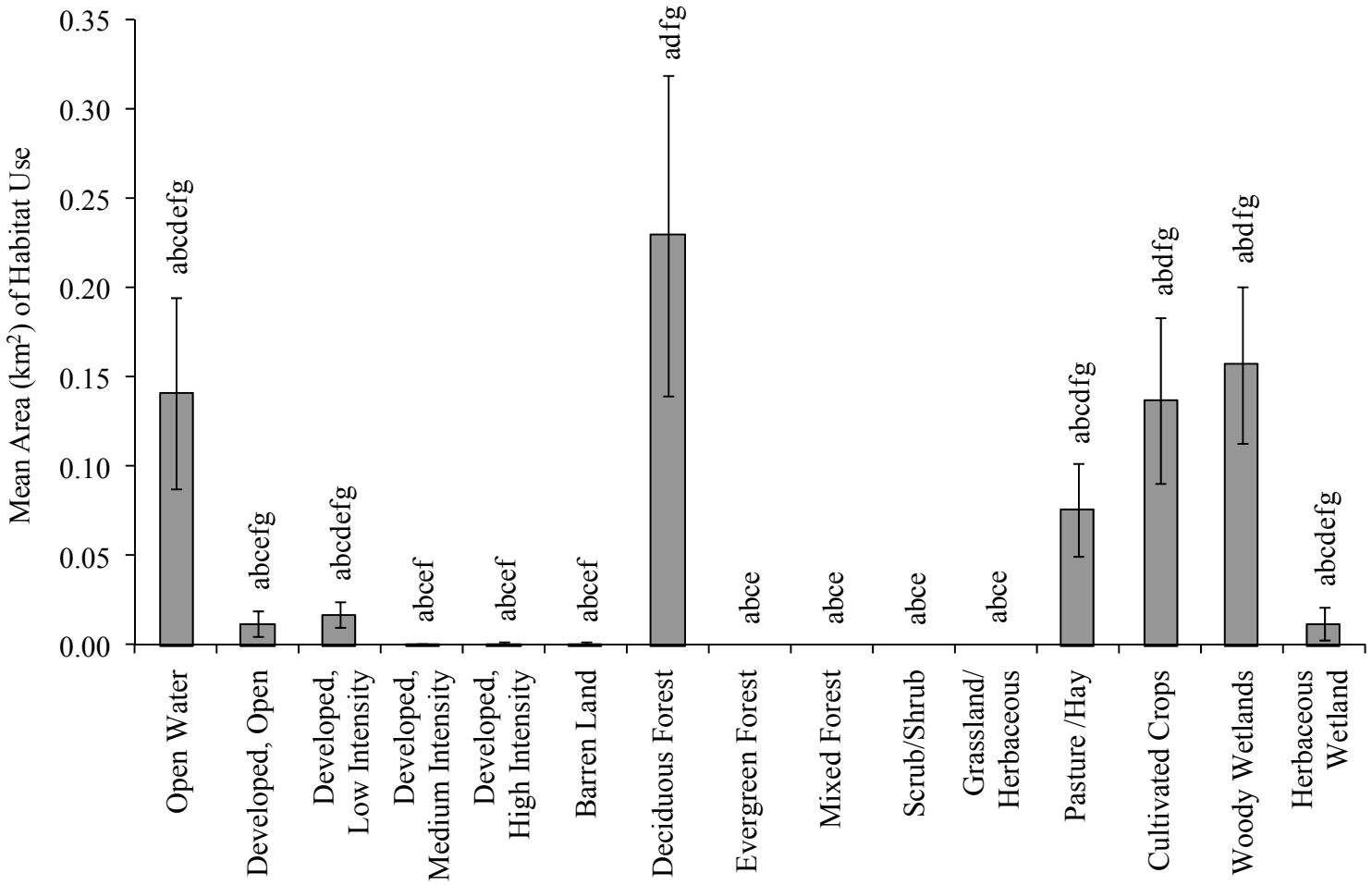

Figure 31. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 832.

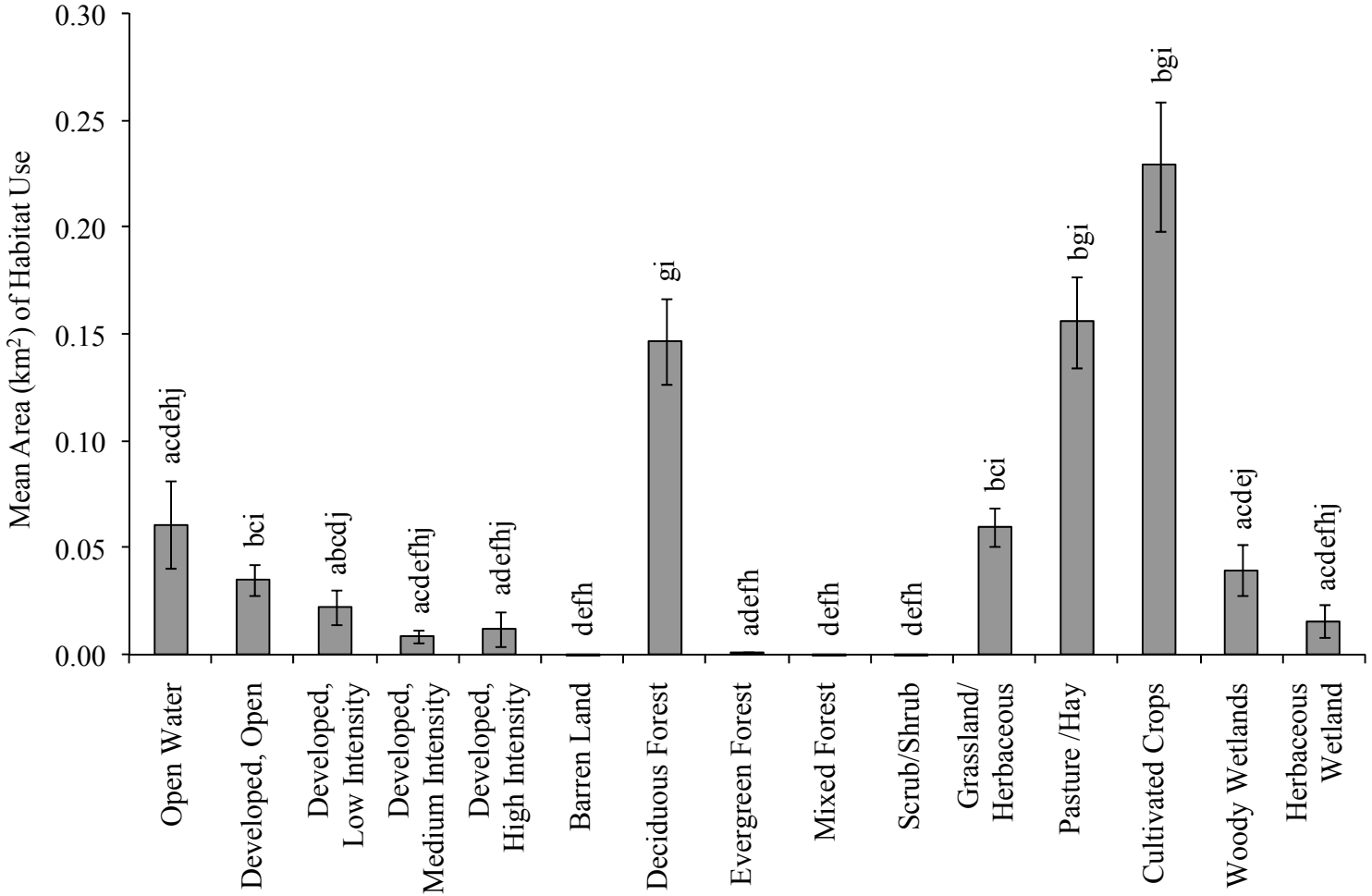

Figure 32. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 221.

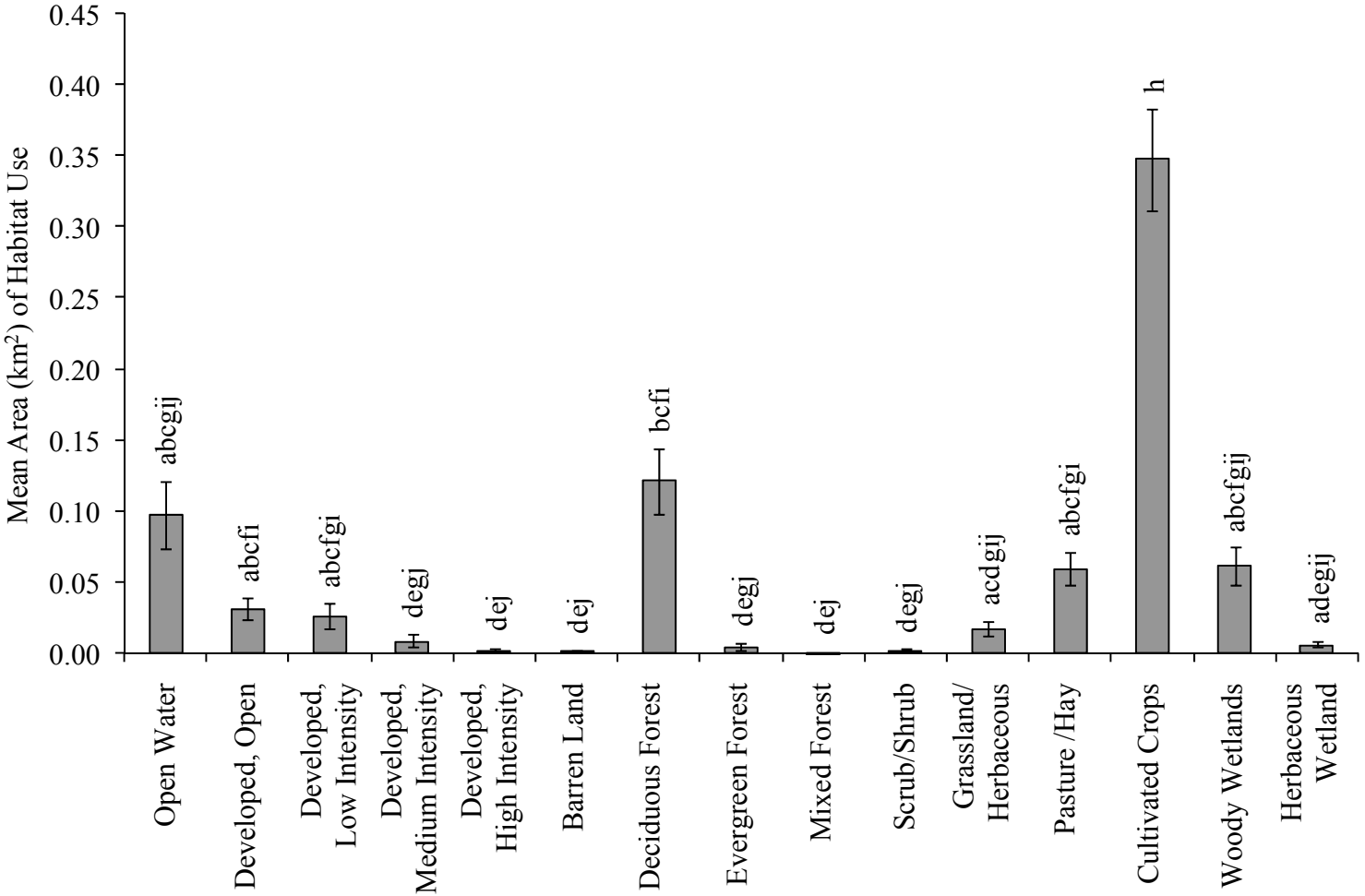

Figure 33. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 216.

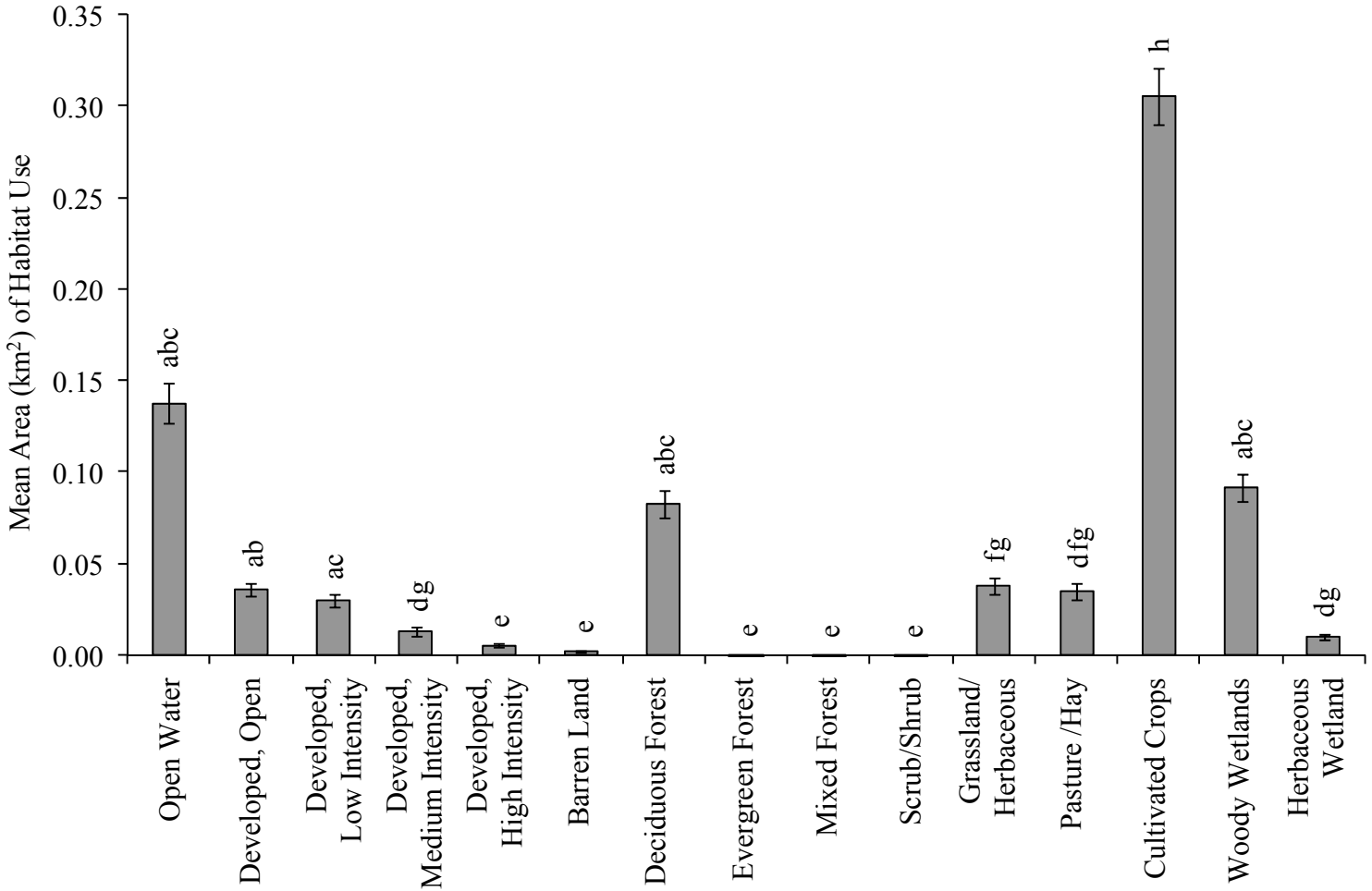

Figure 34. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 217.

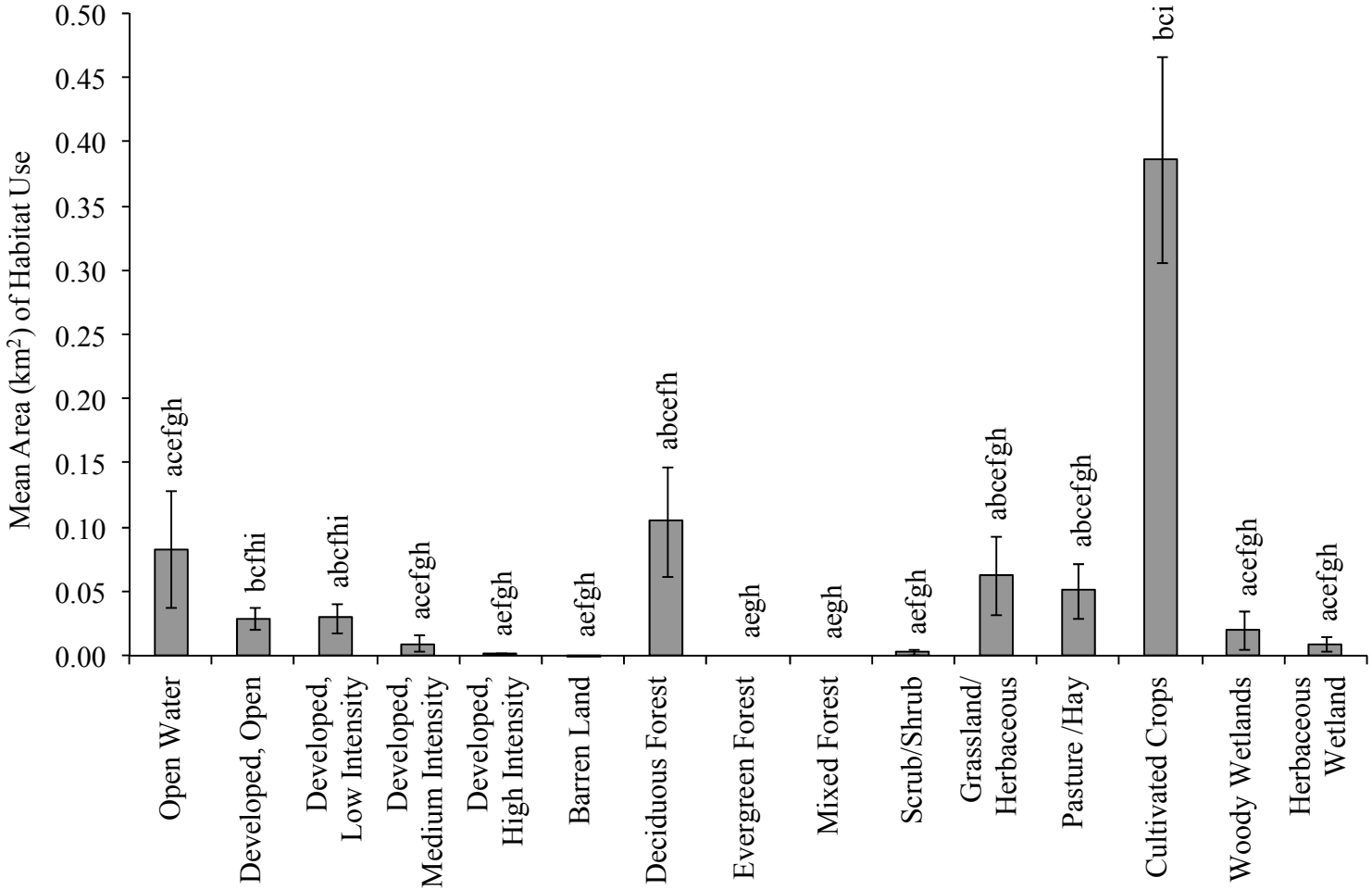

Figure 35. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 219.

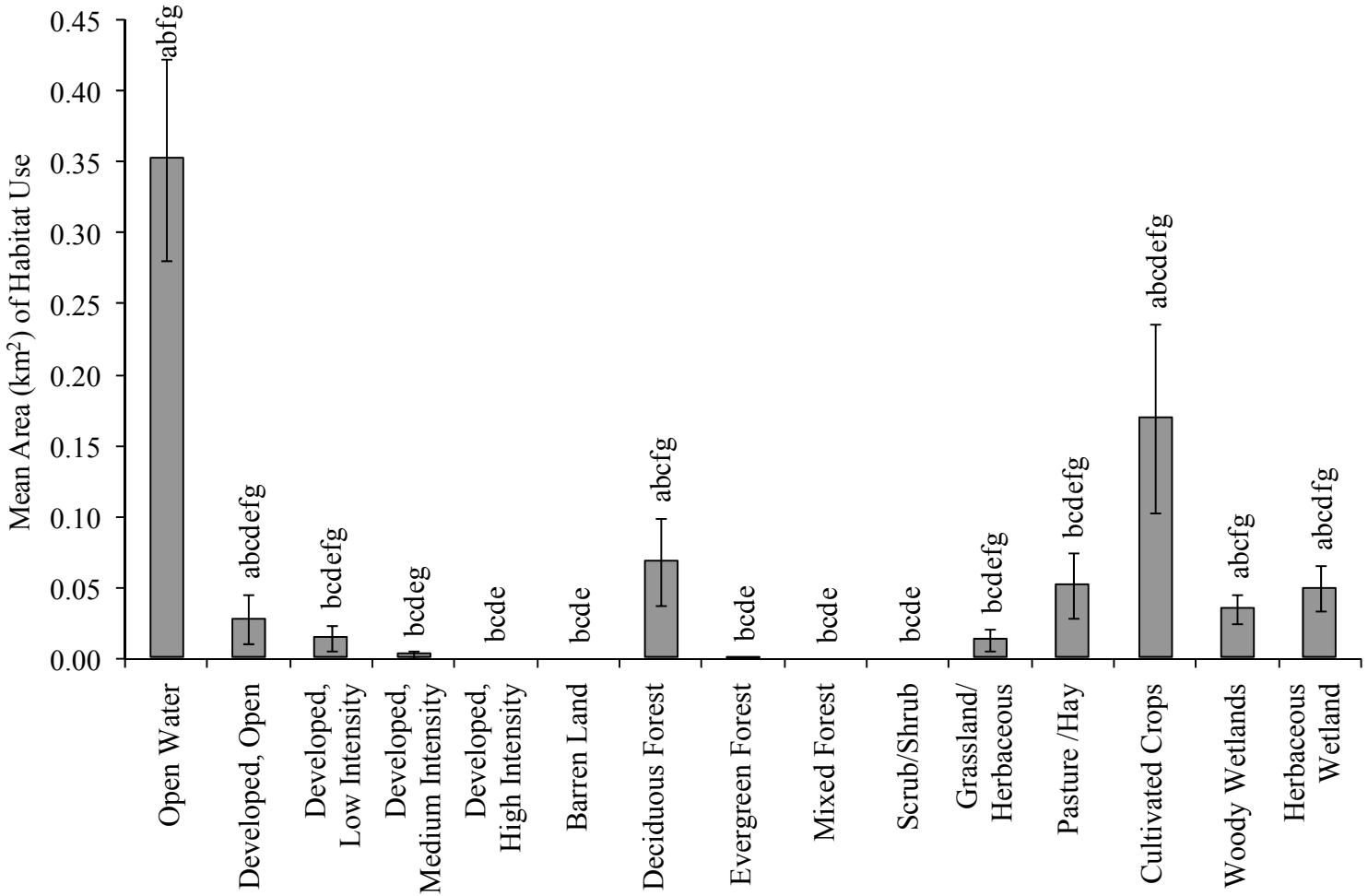

Figure 36. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 220.

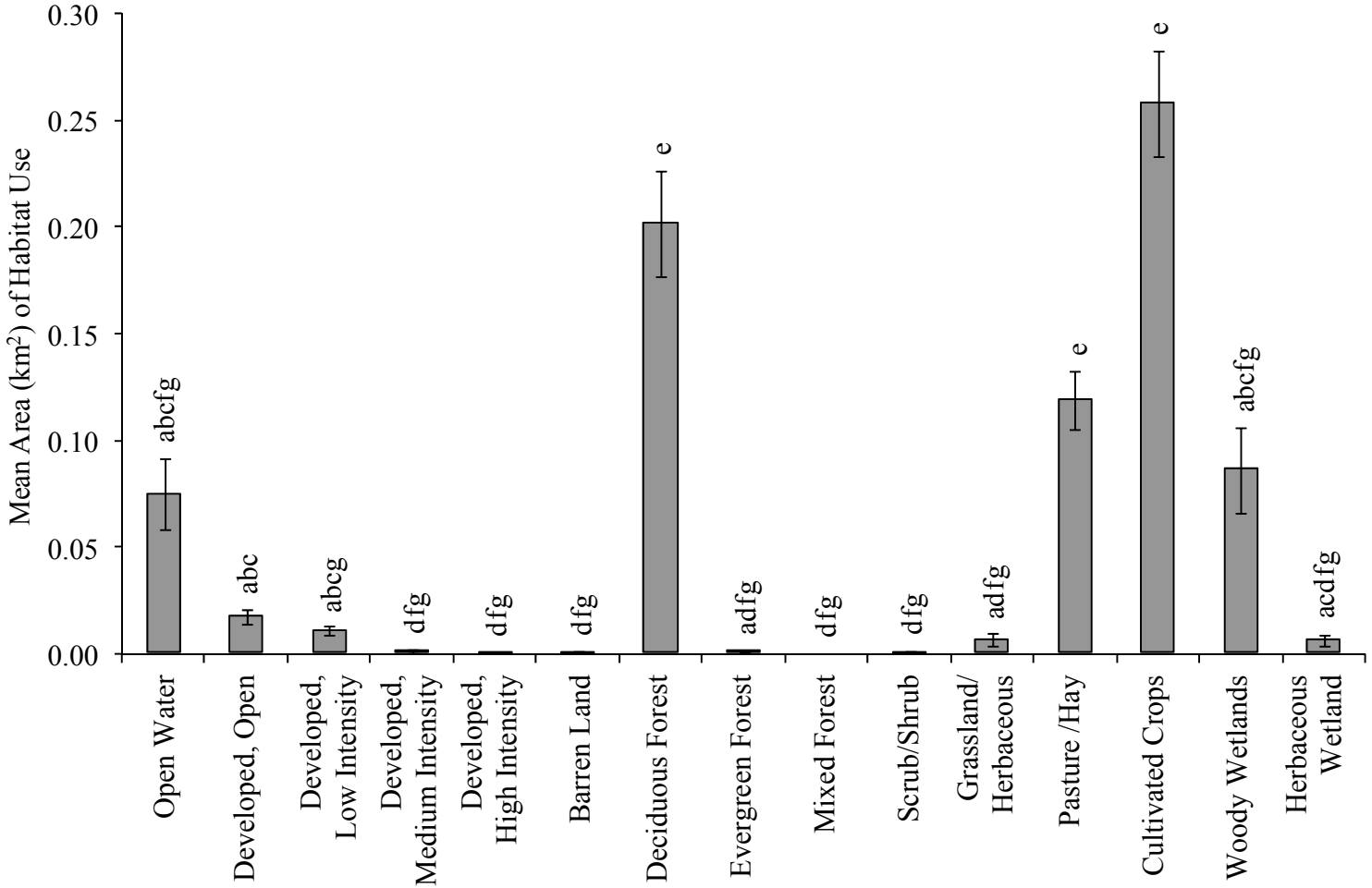

Figure 37. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 365.

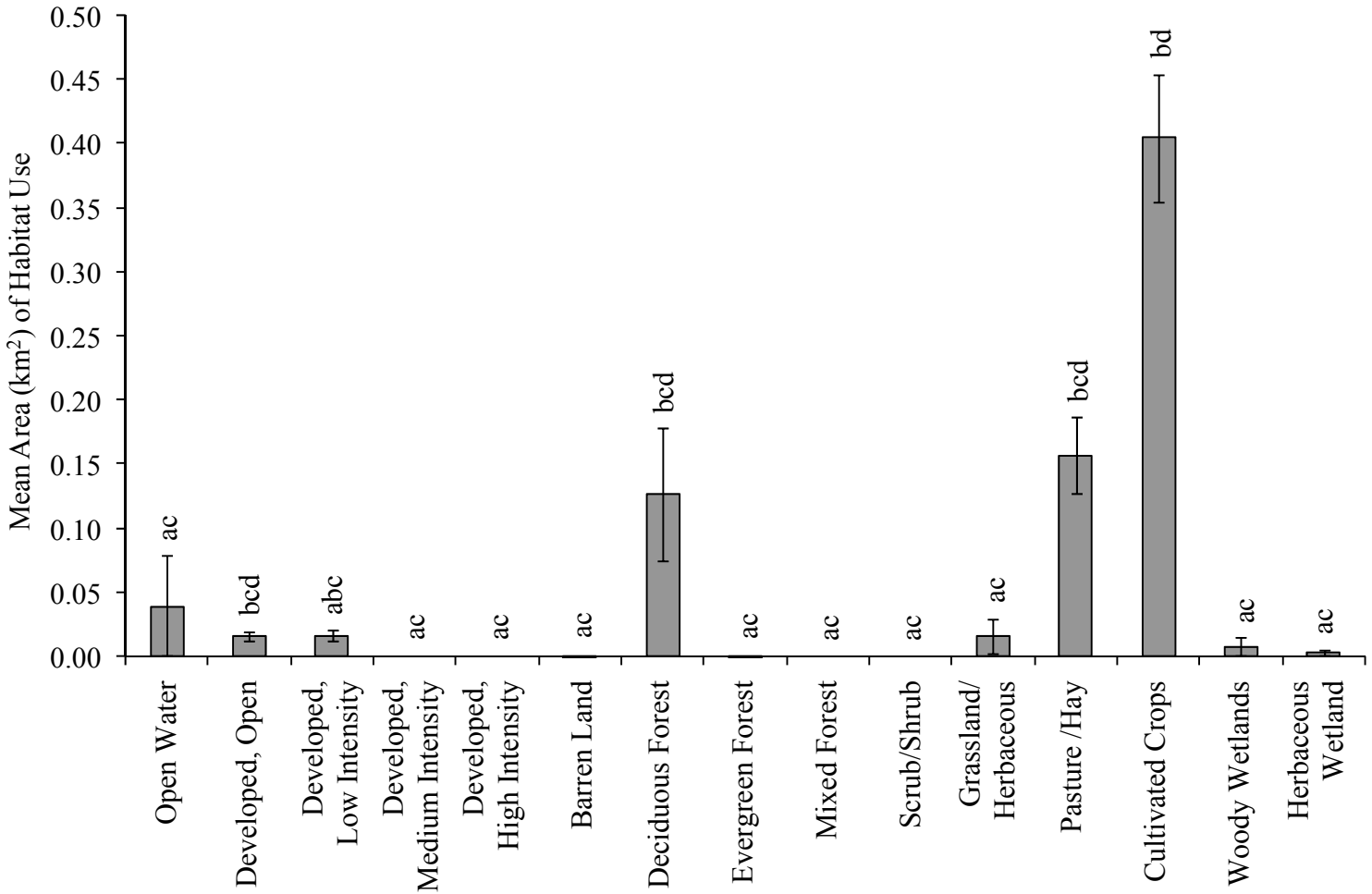

Figure 38. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 288.

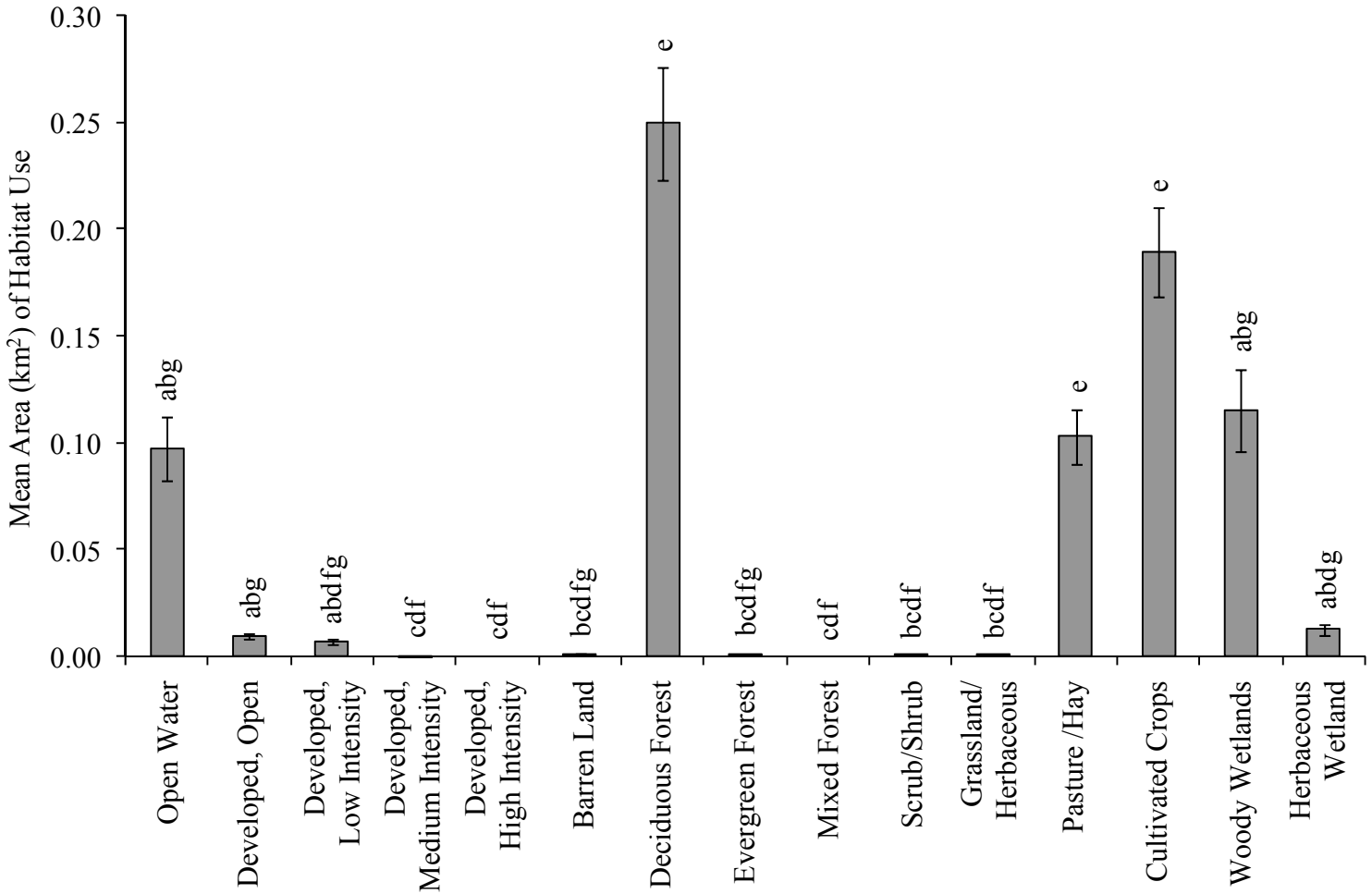

Figure 39. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 614.

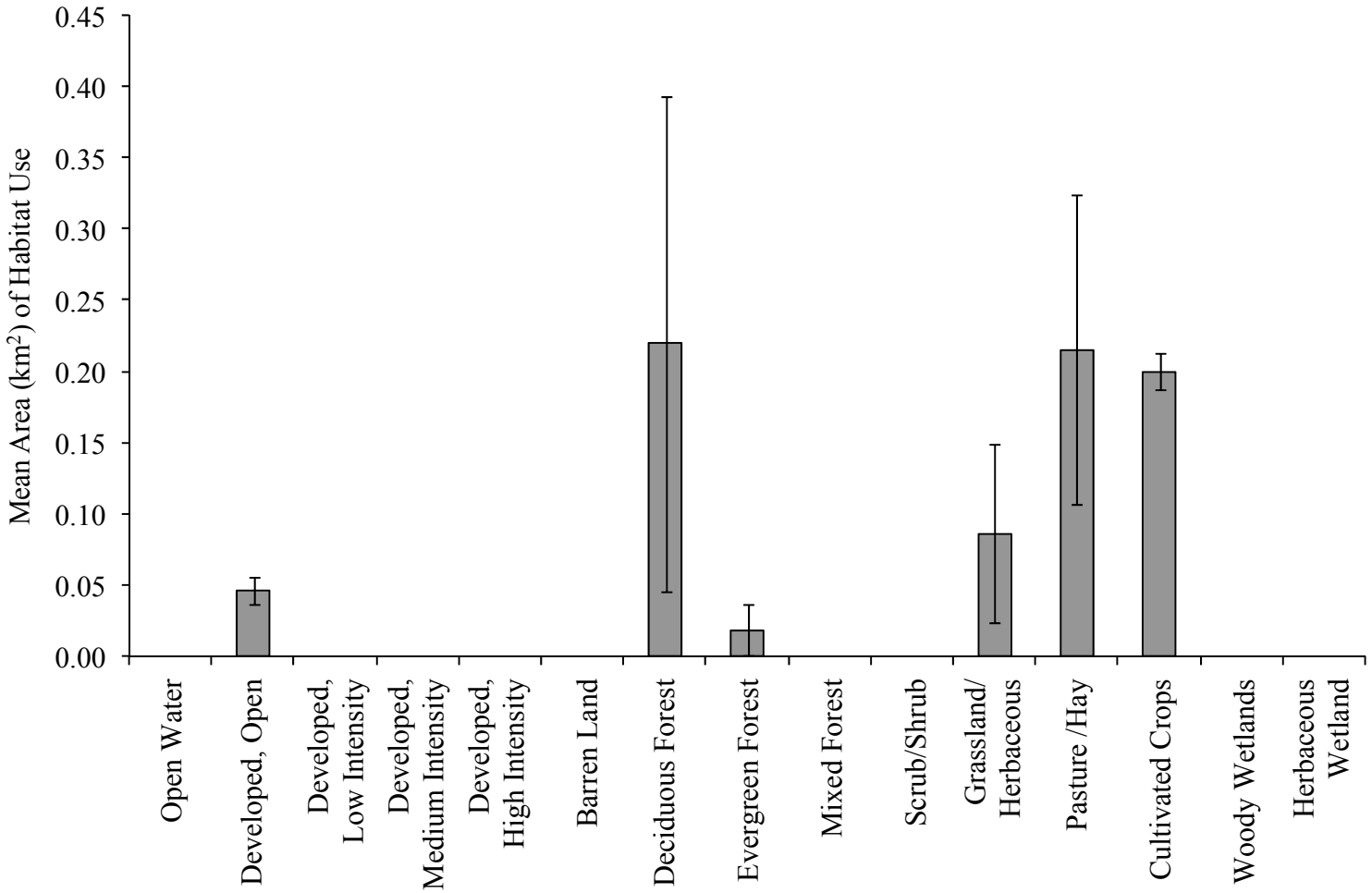

Figure 40. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 615.

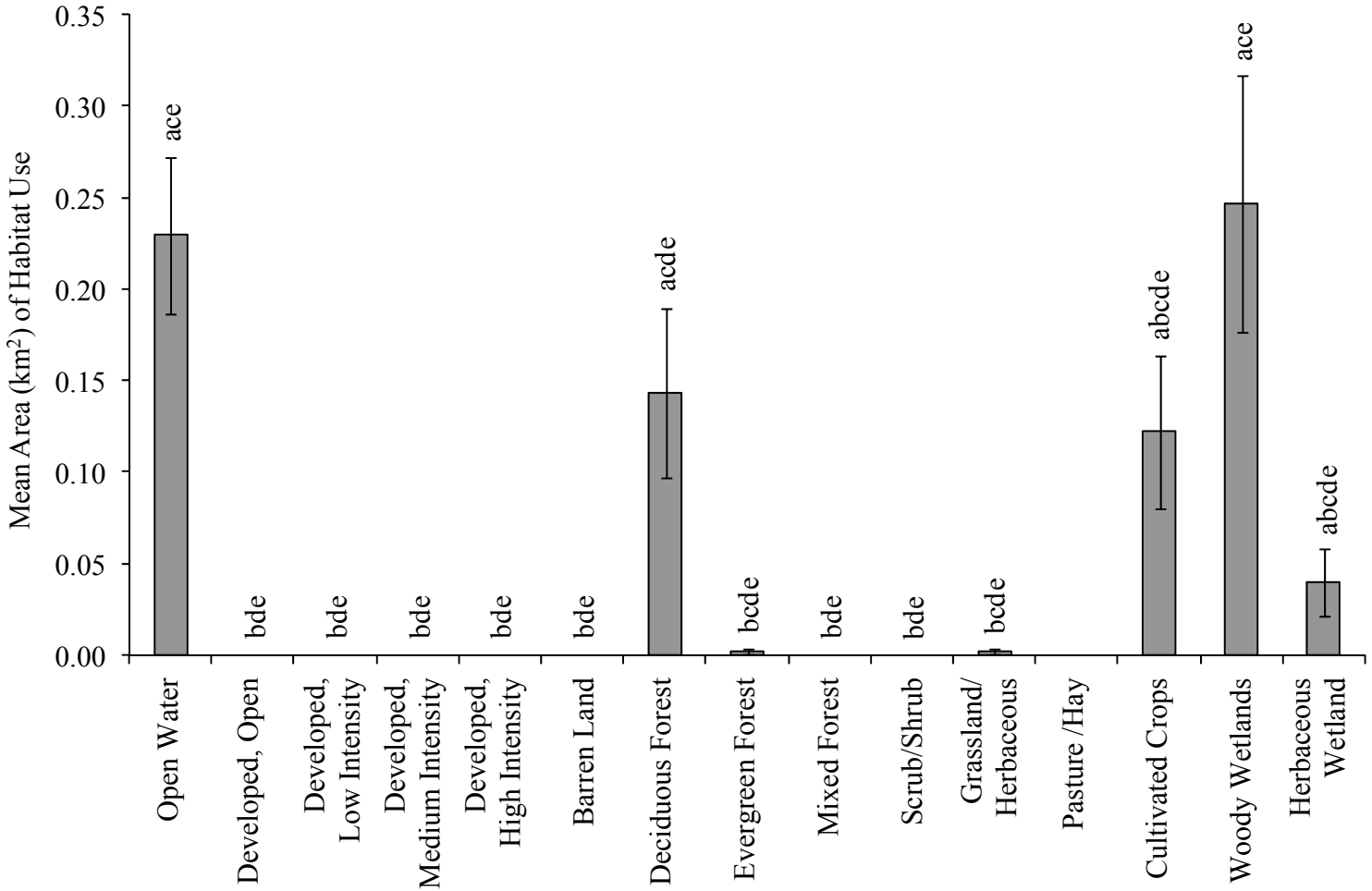

Figure 41. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 945.

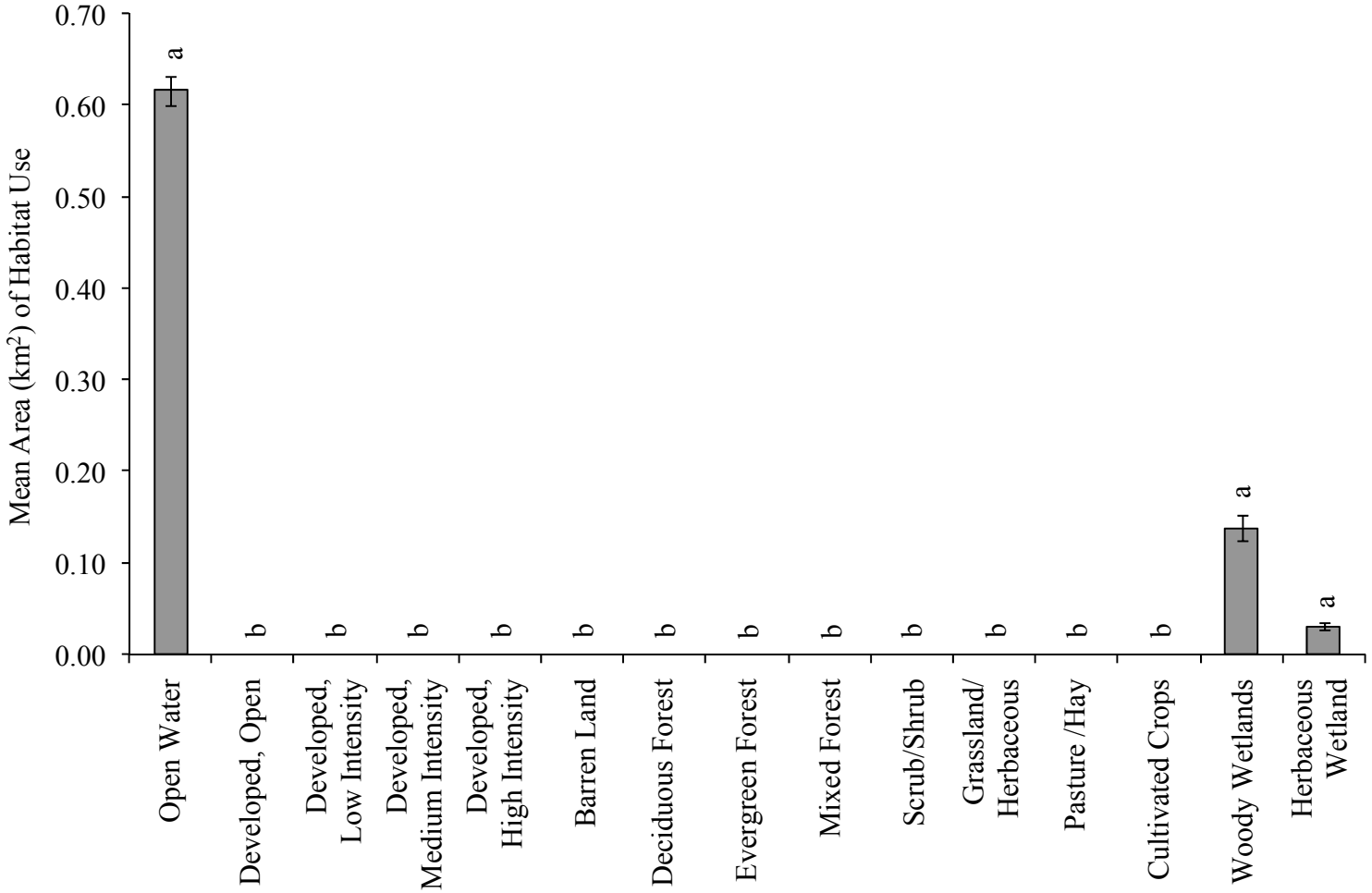

Figure 42. Comparison of mean area (km^2) (±SE) of the 15 land-cover types used within a 1000 m buffer of winter night roosts for Bald Eagle 944.

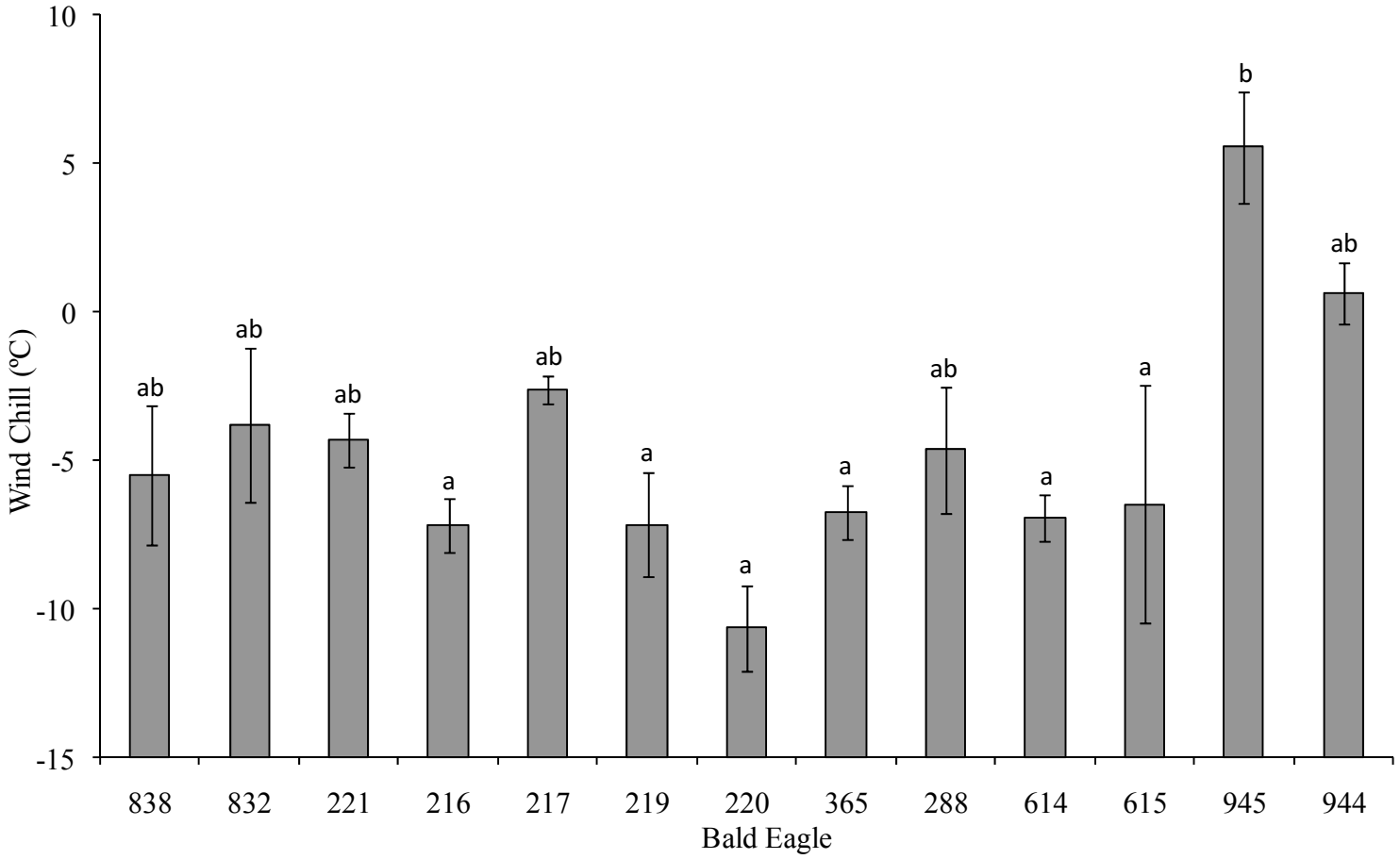

Figure 43. Comparison of mean wind chill (±SE) as estimated for each winter night roost (1 hr before sunset to sunset) for 13 Bald Eagle individuals captured near Glen Haven, Wisconsin and tracked between 1999-2006.

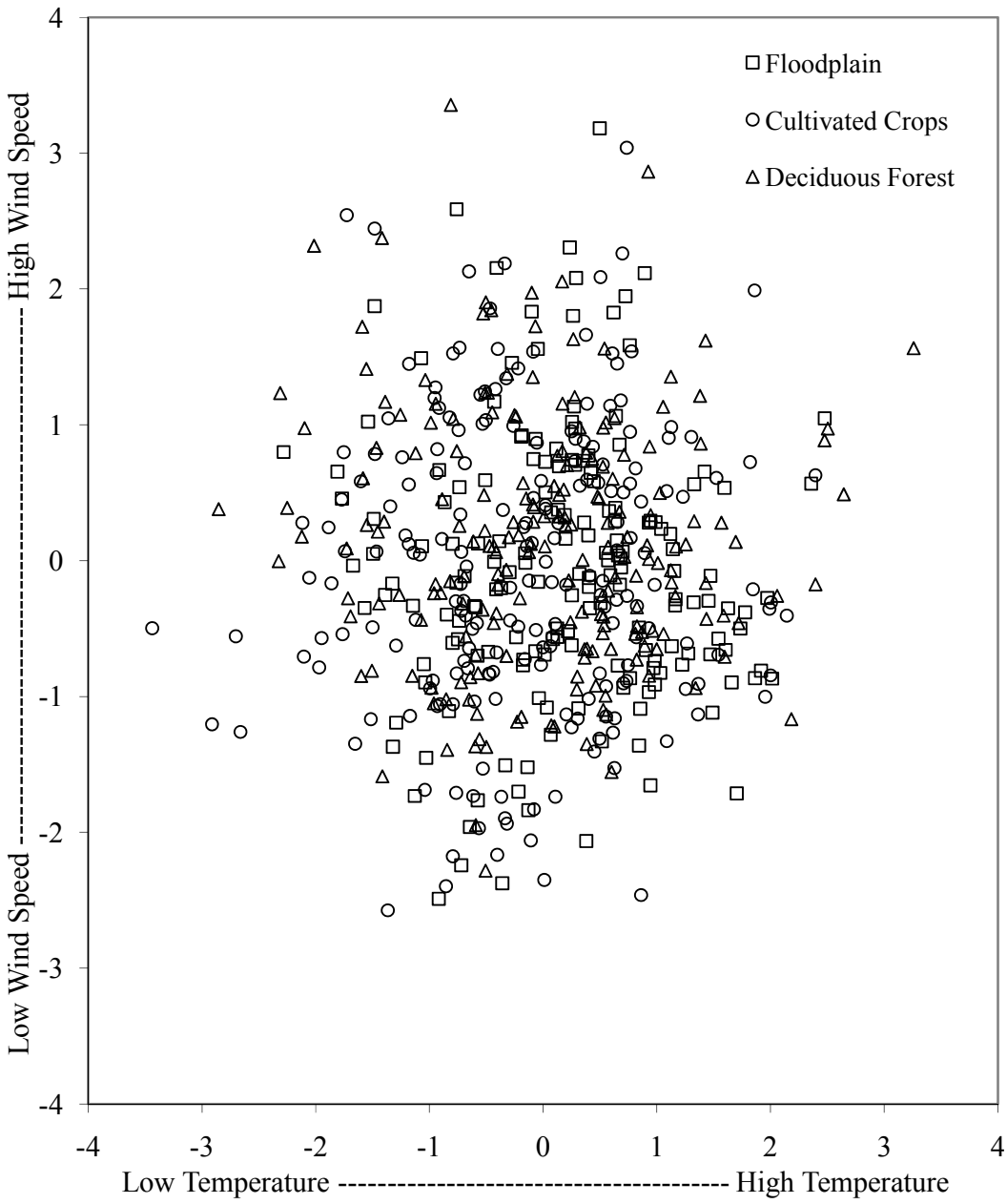

Figure 44. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for all Bald Eagle individuals combined. The three variables used in classifying habitat use were wind speed, temperature, and percent ice-cover.

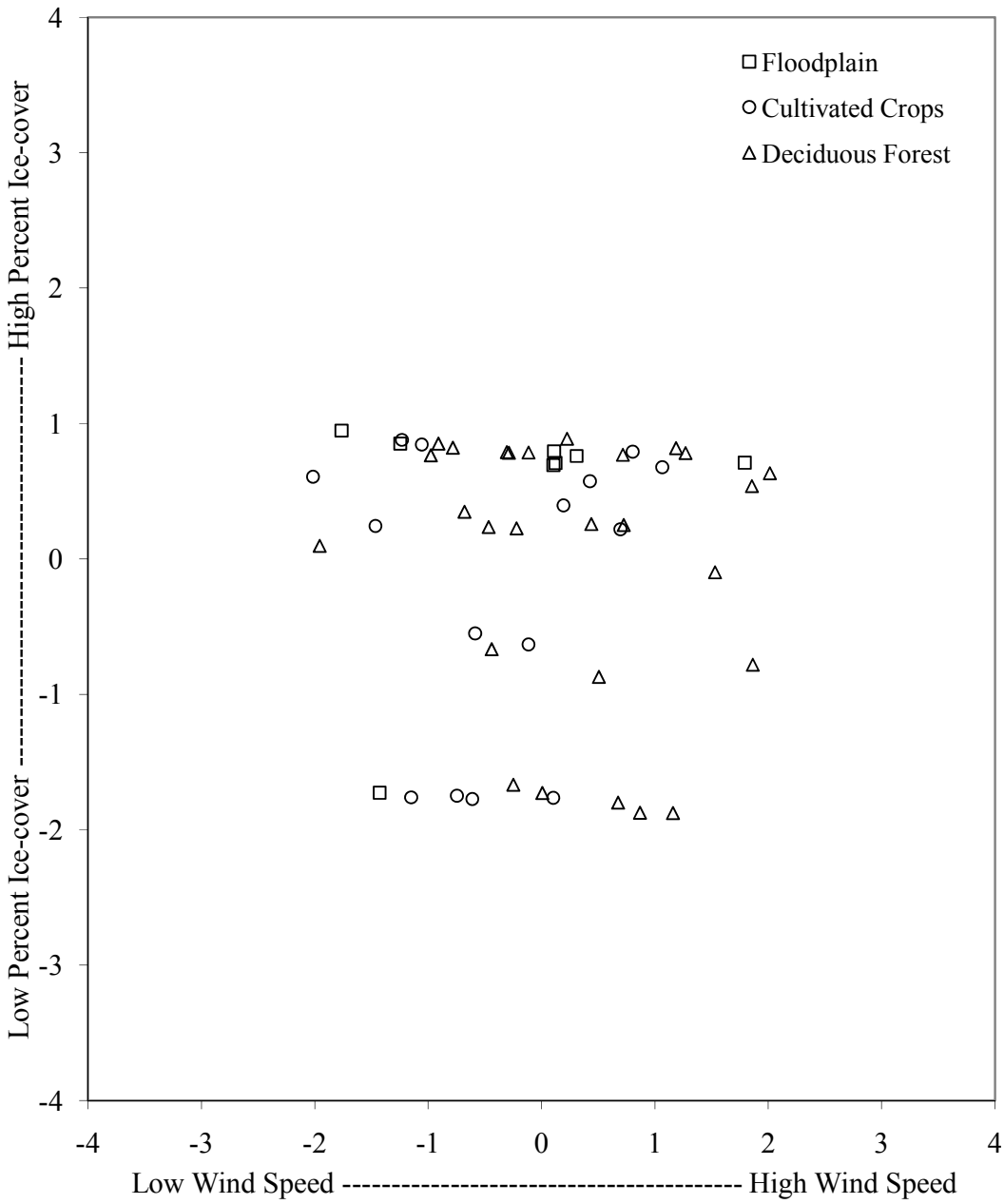

Figure 45. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 221. The three variables used in classifying habitat use were wind speed, temperature, and percent ice-cover.

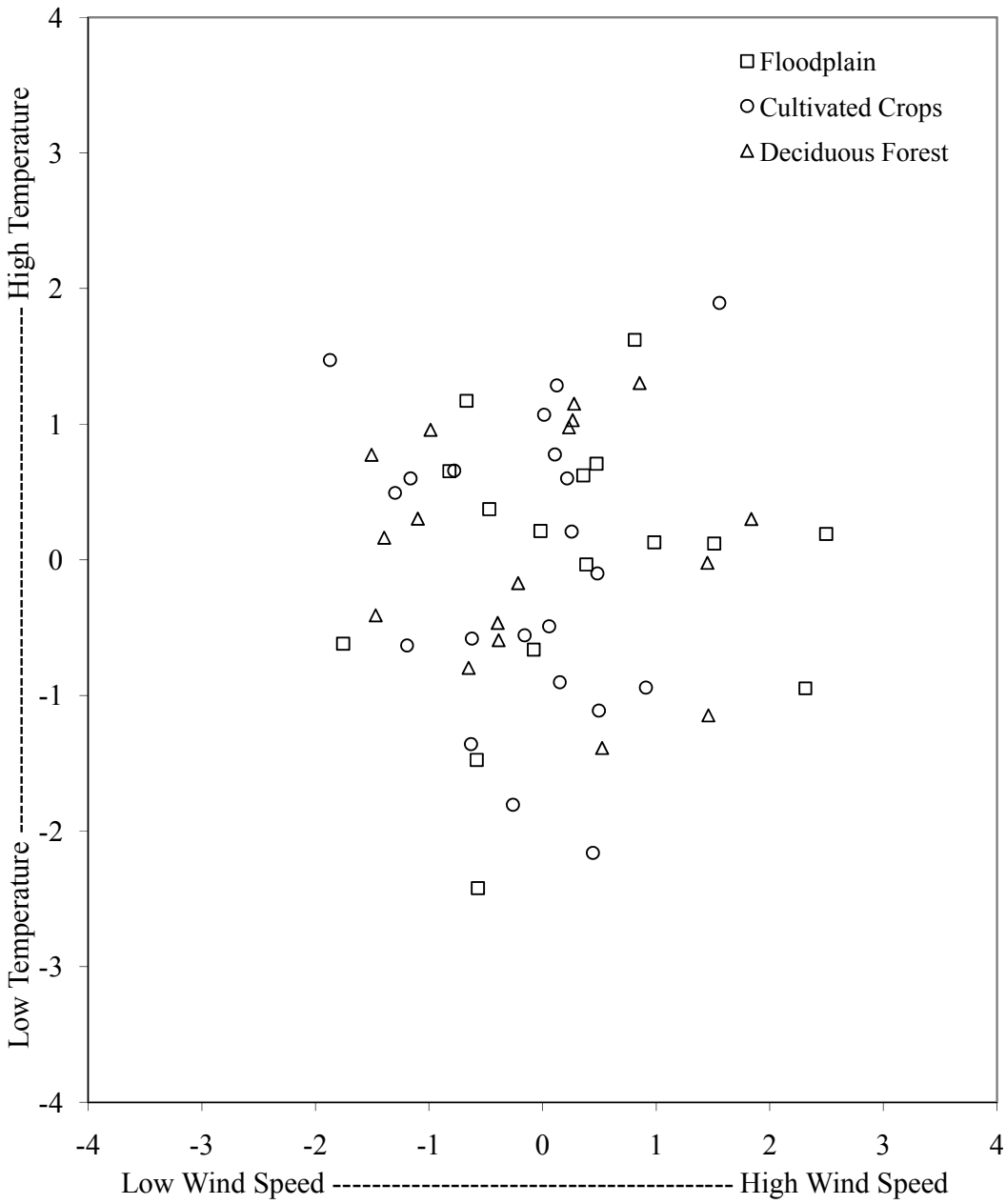

Figure 46. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 216. The three variables used in classifying habitat use were wind speed, temperature, and percent ice-cover.

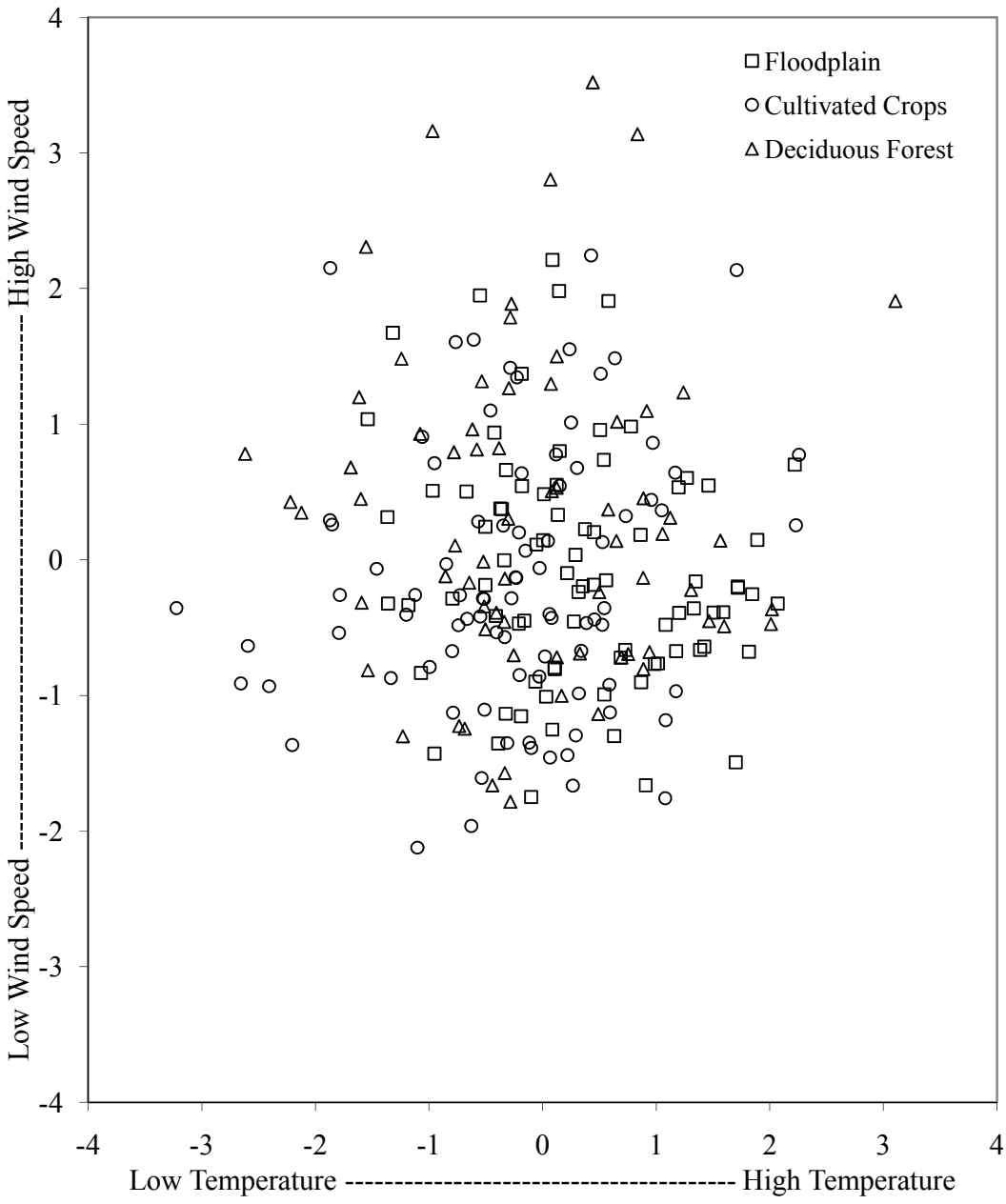

Figure 47. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 217. The three variables used in classifying habitat use were wind speed, temperature, and percent ice-cover.

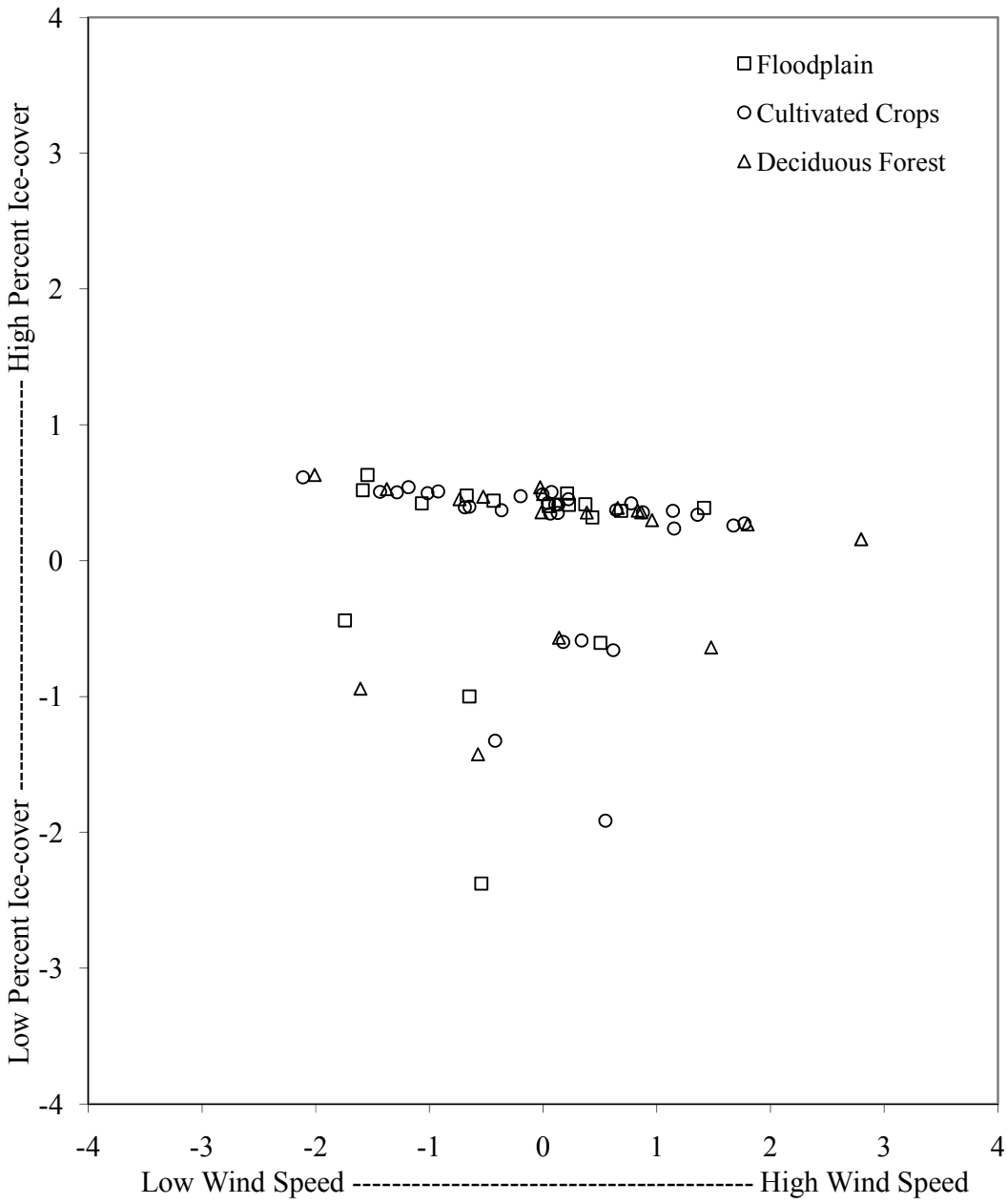

Figure 48. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 365. The three variables used in classifying habitat use were wind speed, temperature, and percent ice-cover.

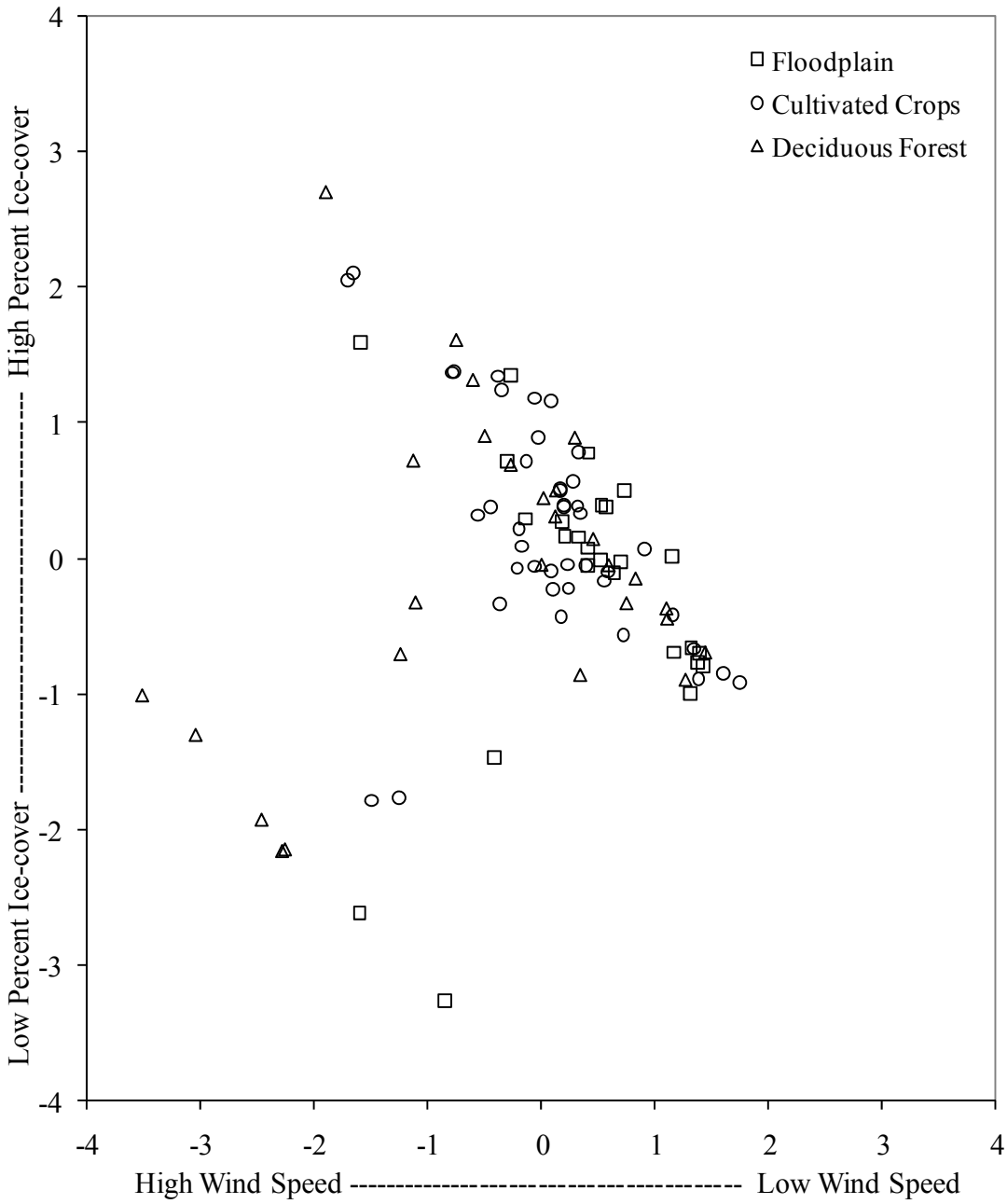

Figure 49. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 614. The three variables used in classifying habitat use were wind speed, temperature, and percent ice-cover.

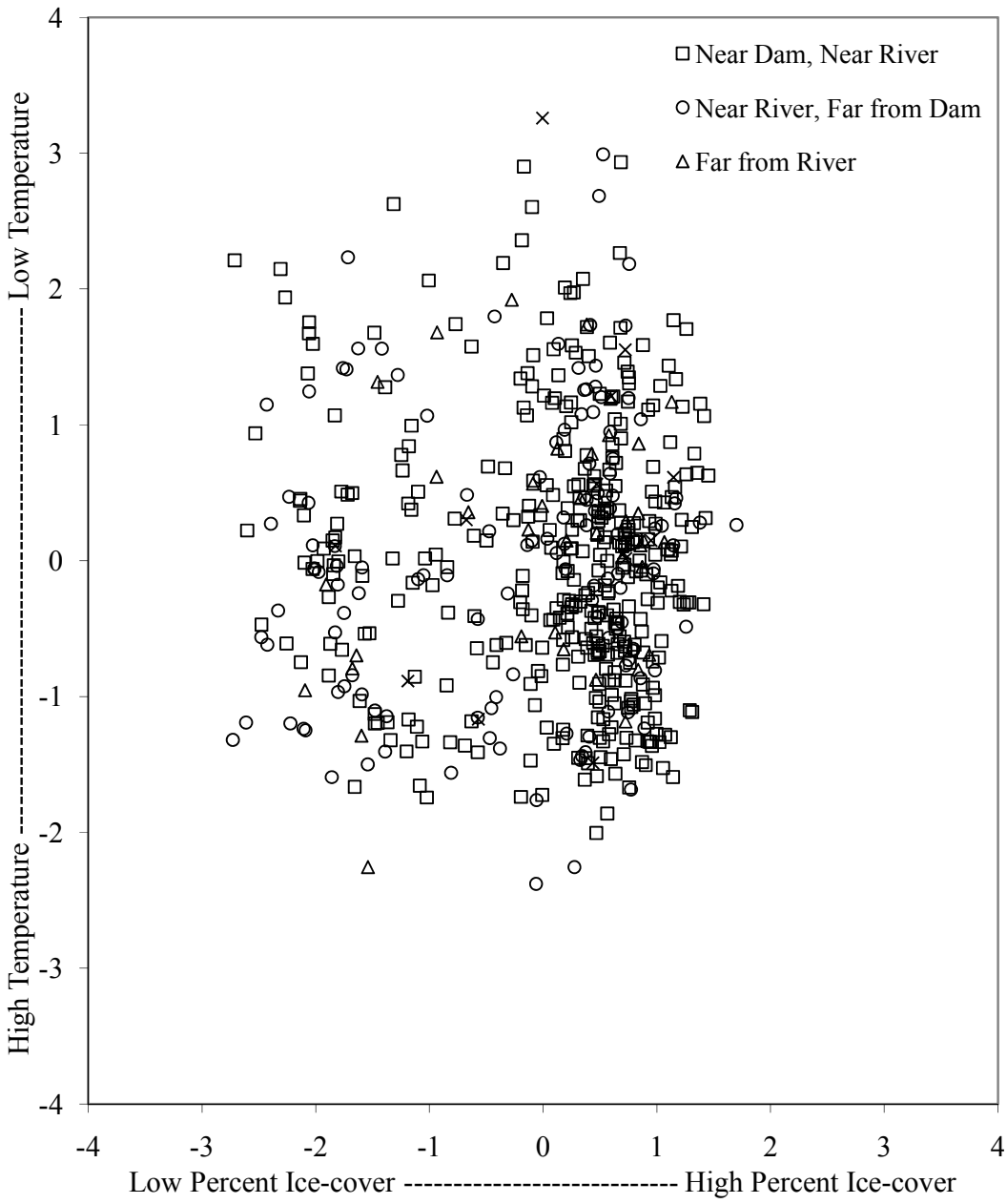

Figure 50. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for all Bald Eagle individuals combined. The three variables used in classifying behavioral response were wind speed, temperature, and percent ice-cover.

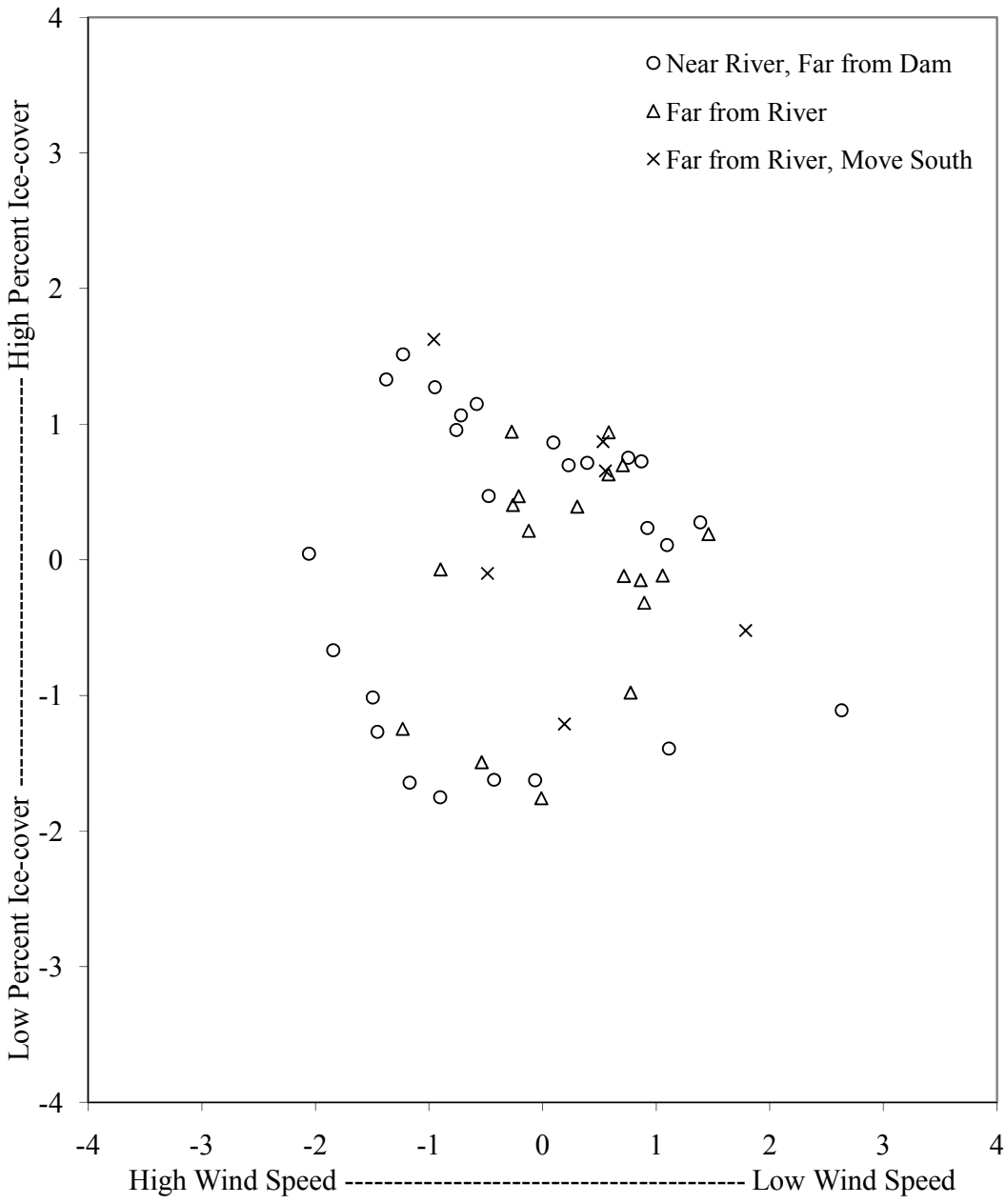

Figure 51. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 221. The three variables used in classifying behavioral response were wind speed, temperature, and percent ice-cover.

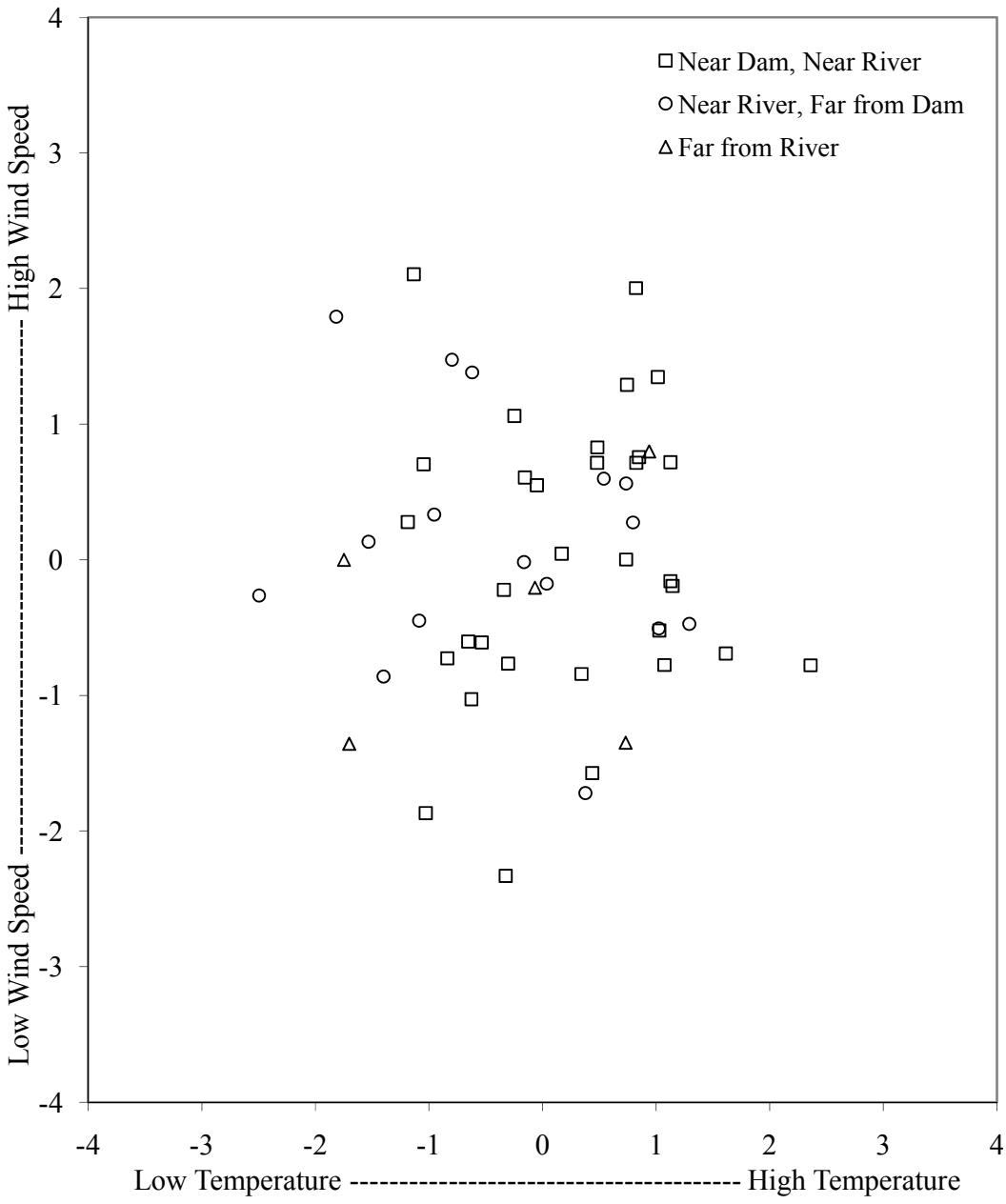

Figure 52. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 216. The three variables used in classifying behavioral response were wind speed, temperature, and percent ice-cover.

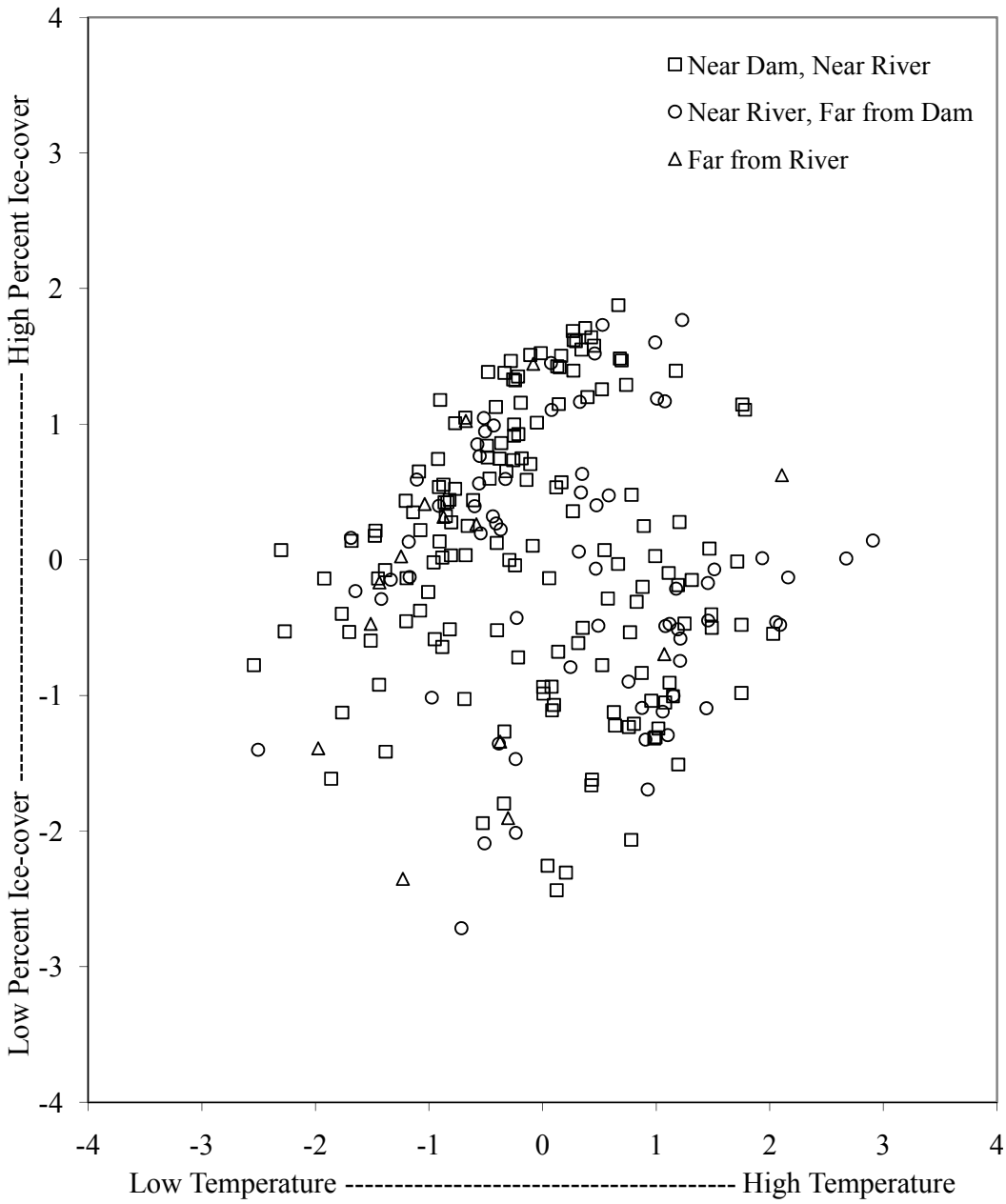

Figure 53. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 217. The three variables used in classifying behavioral response were wind speed, temperature, and percent ice-cover.

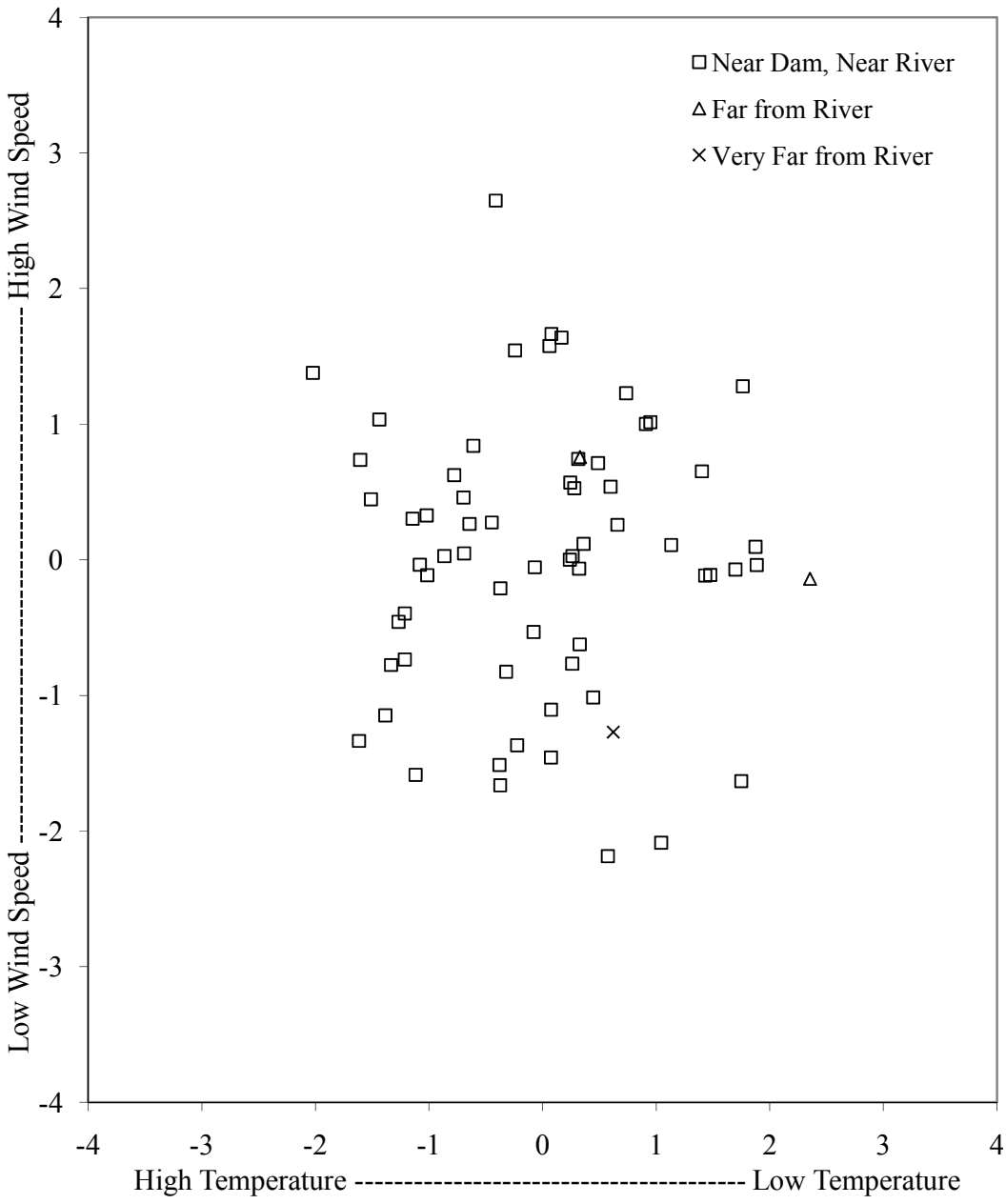

Figure 54. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 365. The three variables used in classifying behavioral response were wind speed, temperature, and percent ice-cover.

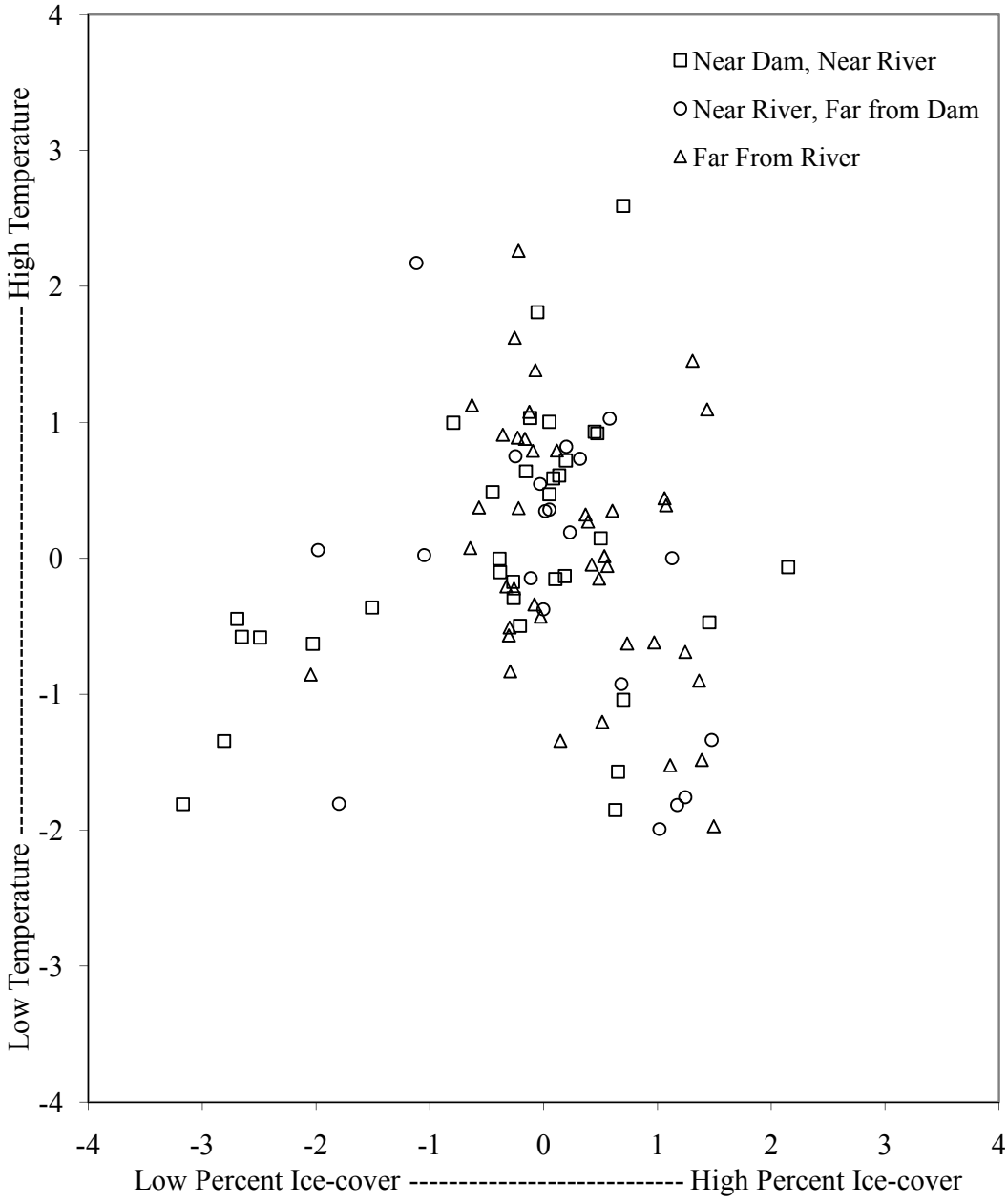

Figure 55. Scatter plot showing discriminate function analysis (DFA) scores for axis 1 and axis 2 for Bald Eagle 614. The three variables used in classifying behavioral response were wind speed, temperature, and percent ice-cover.

Appendix A. Satellite (winter night roost) location data and winter night roost attributes of 13 Bald Eagle individuals captured near Glen Haven, Wisconsin and tracked between 1999-2006.

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Bald Eagle 838												
Winter of 1999-2000												
10 Jan 00	0631	43.115	-91.285	1	09 Jan 00	3.2	4.2	1.4	10	100	8.5	18.35
14 Jan 00	1943	43.399	-91.191	1	14 Jan 00	4.6	-2.1	-7.3	9	70	0.0	19.41
18 Jan 00	2202	44.138	-91.777	1	18 Jan 00	3.1	-6.1	-11.0	5a	70	0.0	3.77
27 Jan 00	1813	43.747	-91.271	1	27 Jan 00	1.4	-7.7	-10.4	8	100	0.0	13.67
01 Feb 00	0327	43.531	-91.227	2	31 Jan 00	5.2	-4.4	-10.6	9	100	0.0	4.41
05 Feb 00	0648	43.009	-91.143	2	04 Feb 00	3.9	-1.0	-5.4	10	100	0.0	22.90
09 Feb 00	1822	42.778	-91.274	1	09 Feb 00	1.8	5.8	4.5	11	100	13.8	14.74
Bald Eagle 832												
Winter of 1999-2000												
28 Dec 99	1920	39.308	-90.621	2	28 Dec 99	5.9	7.7	4.3	25	0	10.5	25.37
31 Dec 99	0517	39.304	-90.783	2	30 Dec 99	4.4	8.0	5.4	25	0	0.0	13.12
02 Jan 00	1734	39.671	-90.631	3	02 Jan 00	5.3	8.9	6.1	22	0	38.1	40.46
04 Jan 00	1958	39.768	-90.606	1	04 Jan 00	6.3	-5.3	-12.3	22	0	47.3	50.76
11 Jan 00	2149	39.816	-90.495	1	11 Jan 00	2.8	2.7	-0.1	22	0	57.7	60.39
14 Jan 00	0512	39.777	-90.513	2	13 Jan 00	3.7	-1.7	-6.2	22	0	53.0	55.96
16 Jan 00	1855	39.765	-90.531	0	16 Jan 00	4.8	1.0	-3.5	22	0	51.2	53.97

[1] Date used for estimating wind speed, temperature, and wind chill from approximately 1 hr before sunset to sunset

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 1999-2000 (Continued)												
18 Jan 00	2200	39.782	-90.604	1	18 Jan 00	3.1	1.7	-1.5	22	0	48.3	52.21
21 Jan 00	0534	39.781	-90.608	1	20 Jan 00	4.0	-9.0	-15.4	22	0	47.9	51.95
23 Jan 00	1940	39.787	-90.569	1	23 Jan 00	5.8	-7.5	-14.9	22	100	51.0	54.21
Bald Eagle 221												
Winter of 1999-2000												
27 Dec 99	0506	39.483	-91.218	1	26 Dec 99	8.1	2.2	-3.5	24	0	8.3	17.56
31 Dec 99	1812	39.506	-91.192	1	31 Dec 99	3.5	9.9	8.1	24	50	5.3	15.50
03 Jan 00	0219	39.536	-91.149	0	02 Jan 00	5.7	7.9	4.7	24	0	0.5	14.07
05 Jan 00	0637	39.491	-90.803	1	04 Jan 00	6.3	-4.9	-11.9	24	100	13.4	15.54
07 Jan 00	1857	39.528	-90.842	1	07 Jan 00	3.3	3.3	0.2	24	0	15.8	17.87
10 Jan 00	0417	39.564	-90.830	0	09 Jan 00	6.3	7.6	4.1	24	0	19.9	22.02
12 Jan 00	0534	39.561	-90.743	1	11 Jan 00	2.3	3.3	1.1	24	0	22.7	24.90
14 Jan 00	1807	39.490	-90.876	2	14 Jan 00	5.8	2.8	-1.8	24	0	10.7	13.03
16 Jan 00	2044	39.551	-90.636	0	16 Jan 00	4.8	1.3	-3.2	24	0	25.8	30.15
19 Jan 00	0556	39.582	-90.556	0	18 Jan 00	3.2	1.7	-1.6	24	0	32.6	37.63
21 Jan 00	1845	39.538	-90.810	1	21 Jan 00	4.9	-1.2	-6.3	24	0	18.0	19.88
23 Jan 00	2057	39.476	-90.785	1	23 Jan 00	5.8	-6.5	-13.6	24	90	12.7	15.16
26 Jan 00	0435	39.506	-90.746	1	25 Jan 00	7.2	-5.0	-12.5	24	100	17.3	19.88

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2000-2001												
27 Dec 00	1928	41.473	-90.616	1	27 Dec 00	2.0	-11.6	-16.1	16	100	0.0	6.34
30 Dec 00	0415	41.497	-90.640	1	29 Dec 00	7.2	-7.6	-15.8	16	100	1.3	6.40
03 Jan 01	1827	41.476	-90.629	1	03 Jan 01	5.1	-1.7	-7.1	16	100	0.0	6.84
06 Jan 01	0432	41.489	-90.638	1	05 Jan 01	7.8	-0.8	-7.2	16	100	0.7	6.62
10 Jan 01	2153	41.459	-90.657	1	10 Jan 01	4.4	2.4	-1.6	16	100	0.0	9.84
13 Jan 01	0447	41.453	-90.708	0	12 Jan 01	2.5	-5.6	-9.6	16	100	0.0	13.66
17 Jan 01	1814	41.522	-90.452	0	17 Jan 01	2.0	1.4	-0.8	15	0	0.2	7.10
20 Jan 01	0212	41.537	-90.496	0	19 Jan 01	4.7	-5.2	-11.2	15	0	1.8	6.34
26 Jan 01	2143	41.576	-90.344	1	26 Jan 01	8.2	-1.0	-7.7	14	40	0.9	4.49
Winter of 2001-2002												
14 Dec 01	0154	42.894	-91.453	1	13 Dec 01	2.7	-1.1	-4.6	10	0	22.8	31.69
18 Dec 01	1913	42.940	-91.550	2	18 Dec 01	2.1	8.4	7.3	10	0	30.2	40.96
20 Dec 01	2304	42.881	-91.575	1	20 Dec 01	1.9	4.9	3.3	10	0	32.9	40.61
25 Dec 01	1724	42.877	-91.603	1	25 Dec 01	4.3	-6.2	-12.2	10	0	35.2	42.70
27 Dec 01	2127	42.853	-91.477	0	27 Dec 01	6.0	-3.1	-9.4	10	100	26.1	32.12
30 Dec 01	0636	42.225	-91.435	1	29 Dec 01	5.7	-10.9	-19.1	13	100	62.7	68.55
01 Jan 02	1741	42.100	-91.284	1	01 Jan 02	3.2	-6.2	-11.1	13	100	66.5	71.95
03 Jan 02	2135	42.127	-91.402	1	03 Jan 02	4.0	-2.7	-7.6	13	100	71.1	77.43

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2001-2002 (Continued)												
06 Jan 02	0437	42.149	-91.438	1	05 Jan 02	1.5	2.9	1.7	13	80	70.2	76.48
10 Jan 02	2142	42.143	-91.355	0	10 Jan 02	7.0	4.3	-0.4	13	70	67.9	73.27
13 Jan 02	0317	42.399	-91.013	1	12 Jan 02	7.8	4.5	-0.4	12	100	30.4	34.10
17 Jan 02	2149	42.409	-90.784	0	17 Jan 02	4.4	-2.8	-8.1	12	100	13.0	18.65
20 Jan 02	0540	42.234	-90.409	1	19 Jan 02	6.0	-1.6	-7.4	13	80	0.4	3.14
24 Jan 02	2015	42.729	-91.032	1	24 Jan 02	4.3	3.6	-0.1	11	100	0.0	7.99
27 Jan 02	0617	42.666	-91.279	1	26 Jan 02	2.2	12.0	11.4	11	90	18.1	20.15
08 Feb 02	2152	42.661	-91.316	0	08 Feb 02	3.1	4.8	2.2	11	50	20.9	22.83
Winter of 2002-2003												
18 Nov 02	2222	43.073	-91.721	0	18 Nov 02	1.9	4.0	2.4	10	0	43.4	52.46
21 Nov 02	0135	42.934	-91.651	0	20 Nov 02	3.8	11.8	10.4	10	0	38.4	48.29
25 Nov 02	2126	42.957	-91.422	1	25 Nov 02	1.2	-1.2	-2.6	10	0	20.0	32.91
28 Nov 02	0158	42.845	-91.643	2	27 Nov 02	1.8	-3.2	-5.9	10	0	39.2	45.21
02 Dec 02	2209	42.946	-91.532	1	02 Dec 02	4.2	-5.2	-10.9	10	40	28.8	39.94
05 Dec 02	0221	42.924	-91.581	0	04 Dec 02	1.1	-3.7	-5.2	10	70	32.8	42.58
09 Dec 02	2122	42.851	-91.588	1	09 Dec 02	3.9	1.9	-1.8	10	80	34.7	40.91
12 Dec 02	0242	42.945	-91.619	0	11 Dec 02	3.4	1.7	-1.9	10	80	35.8	46.32
16 Dec 02	2307	42.956	-91.529	2	16 Dec 02	5.7	0.8	-4.2	10	80	28.6	40.24

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
19 Dec 02	0413	42.949	-91.815	3	18 Dec 02	4.9	8.0	5.2	10	40	51.7	61.45
23 Dec 02	2240	42.889	-91.527	2	23 Dec 02	5.4	-1.6	-7.2	10	80	28.9	37.13
26 Dec 02	0146	42.918	-91.580	1	25 Dec 02	3.3	-4.2	-8.8	10	100	32.7	42.27
30 Dec 02	1811	42.943	-91.561	2	30 Dec 02	6.1	3.1	-1.6	10	100	31.1	41.92
02 Jan 03	0212	42.880	-91.588	2	01 Jan 03	4.0	-2.4	-7.3	10	100	33.9	41.61
06 Jan 03	2043	42.947	-91.545	1	06 Jan 03	2.5	0.3	-2.7	10	100	29.8	40.94
09 Jan 03	0233	42.948	-91.570	0	08 Jan 03	6.9	11.8	9.2	10	100	31.9	42.81
13 Jan 03	1820	42.865	-91.465	0	13 Jan 03	2.7	-7.6	-12.3	10	100	24.7	31.53
16 Jan 03	0256	41.307	-90.920	3	15 Jan 03	1.0	-4.5	-5.9	17	90	11.8	15.21
20 Jan 03	2207	40.674	-91.096	1	20 Jan 03	2.8	-5.4	-9.8	19	100	0.0	24.04
23 Jan 03	0317	40.336	-91.374	1	22 Jan 03	5.7	-11.2	-19.5	20	80	4.4	7.04
27 Jan 03	2112	40.656	-91.134	1	27 Jan 03	4.9	-3.8	-9.6	19	100	0.0	26.90
07 Feb 03	0358	40.864	-91.119	1	06 Feb 03	4.1	2.2	-1.7	19	0	2.4	8.01
Bald Eagle 216												
Winter of 1999-2000												
18 Dec 99	1802	41.133	-91.006	1	18 Dec 99	2.3	-2.8	-6.0	18	0	1.6	7.81
20 Dec 99	2129	40.792	-91.079	1	20 Dec 99	6.9	-7.2	-15.1	19	0	0.0	11.03
22 Dec 99	0254	40.767	-91.030	1	21 Dec 99	1.7	-10.4	-14.1	19	0	2.3	12.92

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 1999-2000 (Continued)												
25 Dec 99	2204	40.732	-91.097	2	25 Dec 99	5.4	3.0	-1.4	19	10	0.0	17.84
27 Dec 99	0507	40.649	-91.179	1	26 Dec 99	8.0	-1.4	-8.2	19	10	0.0	29.08
28 Dec 99	0505	40.738	-91.215	0	27 Dec 99	6.9	-6.4	-14.1	19	10	1.4	22.59
02 Jan 00	0549	40.575	-91.025	1	01 Jan 00	4.3	9.3	7.0	19	0	12.1	34.42
05 Jan 00	1941	40.758	-91.178	2	05 Jan 00	7.2	-1.1	-7.4	19	100	3.7	18.83
07 Jan 00	0309	40.765	-91.066	1	06 Jan 00	3.7	0.8	-3.1	19	100	0.0	13.55
10 Jan 00	1842	41.489	-90.566	0	10 Jan 00	4.6	5.2	1.7	16	60	2.5	3.13
12 Jan 00	0355	42.213	-90.379	3	11 Jan 00	4.3	-3.1	-8.3	13	50	0.0	6.33
13 Jan 00	0522	42.291	-90.921	2	12 Jan 00	6.0	-0.1	-5.6	12	100	29.9	35.96
15 Jan 00	1919	42.009	-90.925	0	15 Jan 00	3.0	4.8	2.2	13	50	49.5	50.10
16 Jan 00	1857	41.870	-91.132	0	16 Jan 00	4.8	-1.3	-6.4	14	0	49.1	50.77
19 Jan 00	0628	41.202	-91.044	1	18 Jan 00	3.7	2.1	-1.5	17	0	1.1	1.97
21 Jan 00	1845	40.718	-91.460	0	21 Jan 00	3.9	-5.9	-11.4	19	100	13.3	36.72
24 Jan 00	0318	40.810	-90.970	0	23 Jan 00	5.4	-10.3	-18.1	19	100	6.4	9.37
26 Jan 00	2014	40.959	-91.244	0	26 Jan 00	2.7	-10.6	-15.8	18	100	17.3	20.10
28 Jan 00	2132	40.754	-91.072	1	28 Jan 00	5.2	-5.2	-11.6	19	100	0.0	14.87
01 Feb 00	1939	40.714	-91.221	0	31 Jan 00	5.5	-2.2	-8.0	19	100	1.3	24.91
02 Feb 00	2210	40.737	-91.116	2	02 Feb 00	7.3	0.3	-5.6	19	100	0.0	17.92

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 1999-2000 (Continued)												
05 Feb 00	0603	40.746	-91.165	1	04 Feb 00	5.8	-0.7	-6.3	19	100	2.0	19.17
07 Feb 00	2105	40.716	-91.338	0	07 Feb 00	2.9	0.1	-3.3	19	100	9.3	32.04
10 Feb 00	0456	40.806	-91.024	1	09 Feb 00	2.5	6.9	5.1	19	100	2.9	8.55
12 Feb 00	1855	40.755	-91.144	0	12 Feb 00	2.5	3.1	0.6	19	100	1.8	17.32
18 Feb 00	1822	41.006	-90.730	0	17 Feb 00	5.6	1.6	-3.3	18	80	16.8	28.36
21 Feb 00	0440	40.733	-90.997	0	20 Feb 00	2.3	4.4	2.3	19	10	6.0	16.90
22 Feb 00	1832	40.726	-91.101	1	22 Feb 00				19	0	0.0	18.58
24 Feb 00	2051	40.773	-91.084	1	24 Feb 00				19	0	0.0	13.15
Winter of 2000-2001												
09 Dec 00	2207	41.167	-90.972	2	09 Dec 00	4.9	0.0	-4.9	18	10	1.2	7.81
14 Dec 00	1738	40.857	-91.008	1	14 Dec 00	2.4	-7.8	-12.1	19	100	2.5	3.22
16 Dec 00	2037	40.898	-91.024	0	16 Dec 00	9.3	-9.2	-19.0	18	90	0.1	1.77
18 Dec 00	0109	41.013	-91.501	0	17 Dec 00	3.6	-13.9	-21.0	18	100	37.9	41.67
19 Dec 00	619	40.977	-91.043	0	18 Dec 00	4.4	-11.0	-18.2	18	100	6.4	10.69
21 Dec 00	1820	40.651	-91.221	0	21 Dec 00	7.9	-14.0	-24.5	19	100	0.6	30.60
24 Dec 00	0144	40.858	-91.013	0	23 Dec 00	5.4	-5.7	-12.3	19	100	2.3	2.94
27 Dec 00	1756	40.748	-90.910	1	27 Dec 00	1.6	-12.3	-16.0	19	100	12.5	17.92
30 Dec 00	0407	40.779	-91.350	0	29 Dec 00	7.2	-8.0	-16.3	19	100	13.1	29.44

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2000-2001 (Continued)												
02 Jan 01	2031	40.661	-91.340	0	02 Jan 01	4.6	-9.8	-16.9	19	100	4.1	29.49
04 Jan 01	0135	40.738	-91.114	3	03 Jan 01	4.1	-1.3	-5.9	19	100	0.0	17.74
05 Jan 01	0623	40.735	-91.089	1	04 Jan 01	6.0	-2.5	-8.6	19	100	0.0	17.31
08 Jan 01	2219	40.608	-91.699	0	08 Jan 01	3.5	-4.9	-9.8	19	100	23.2	36.71
10 Jan 01	0350	40.600	-90.589	0	09 Jan 01	3.4	-5.4	-10.4	19	100	42.7	48.39
13 Jan 01	1940	40.788	-90.952	0	13 Jan 01	5.9	0.8	-4.4	19	100	8.8	12.26
17 Jan 01	1816	40.849	-90.904	1	17 Jan 01	2.0	-3.4	-6.4	19	100	8.7	10.89
18 Jan 01	1928	40.960	-91.025	0	18 Jan 01	3.7	0.7	-3.3	18	100	4.8	8.70
21 Jan 01	0453	40.739	-91.131	1	20 Jan 01	2.4	-8.4	-12.8	19	100	0.0	18.28
23 Jan 01	1916	40.991	-91.072	0	23 Jan 01	2.2	0.3	-2.4	18	100	8.8	12.75
24 Jan 01	2212	41.056	-90.971	2	24 Jan 01	6.4	-6.1	-13.5	18	100	0.0	16.72
26 Jan 01	0249	41.154	-90.979	1	25 Jan 01	4.1	-4.2	-9.5	18	100	0.4	7.89
27 Jan 01	0622	41.126	-91.002	0	26 Jan 01	8.9	-0.6	-7.4	18	100	1.6	8.64
30 Jan 01	2232	41.071	-90.867	1	30 Jan 01	3.0	1.5	-1.7	18	100	6.0	20.90
01 Feb 01	0330	41.045	-90.925	2	31 Jan 01	5.9	-0.6	-6.2	18	100	0.5	19.75
04 Feb 01	1944	41.070	-90.841	0	04 Feb 01	5.4	-1.2	-6.7	18	100	8.0	22.68
12 Feb 01	0315	41.171	-91.047	2	11 Feb 01	5.7	-2.5	-8.5	18	100	0.0	2.38
15 Feb 01	2042	41.113	-90.953	0	15 Feb 01	1.1	-0.5	-1.6	18	80	0.0	12.41

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2000-2001 (Continued)												
17 Feb 01	0458	40.505	-91.029	0	16 Feb 01	8.2	-6.4	-14.7	19	80	18.5	30.55
20 Feb 01	2117	40.135	-91.436	1	20 Feb 01	5.6	-0.5	-5.8	21	50	1.0	6.42
21 Feb 01	2103	40.196	-91.337	0	21 Feb 01	2.9	-4.2	-8.4	20	80	11.7	15.82
25 Feb 01	1827	40.101	-91.408	2	25 Feb 01	6.7	2.5	-2.6	21	0	4.2	9.94
26 Feb 01	1946	39.970	-91.901	0	26 Feb 01	1.8	6.7	5.6	21	0	34.3	38.28
03 Mar 01	1932	40.105	-91.504	2	03 Mar 01	2.5	5.8	3.9	21	0	0.0	4.38
06 Mar 01	0433	40.134	-91.370	0	05 Mar 01	7.4	-0.8	-7.1	21	0	6.2	11.97
09 Mar 01	2037	40.072	-91.541	1	09 Mar 01	1.3	3.2	2.3	21	0	3.3	8.42
11 Mar 01	0340	40.886	-91.061	1	10 Mar 01	2.2	9.3	8.2	18	0	1.0	2.92
Bald Eagle 217												
Winter of 1999-2000												
14 Dec 99	1802	41.435	-90.899	1	14 Dec 99	3.4	3.7	0.6	16	0	0.0	9.28
20 Dec 99	1950	41.501	-90.862	1	20 Dec 99	7.6	-10.7	-20.0	16	0	5.0	14.92
22 Dec 99	0520	41.430	-91.012	2	21 Dec 99	1.3	-12.0	-14.9	16	0	0.0	0.55
25 Dec 99	2024	41.467	-90.978	2	25 Dec 99	4.7	1.8	-2.6	16	100	2.5	5.37
26 Dec 99	2153	41.429	-90.995	2	26 Dec 99	8.2	-3.0	-10.3	16	100	0.0	1.32
27 Dec 99	2321	41.169	-90.690	0	27 Dec 99	5.8	-7.3	-14.6	18	100	21.9	30.95
31 Dec 99	2052	41.437	-90.926	1	31 Dec 99	3.6	5.8	3.0	16	100	0.5	7.10

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 1999-2000 (Continued)												
01 Jan 00	1928	41.432	-91.028	1	01 Jan 00	3.2	6.9	4.7	16	100	0.2	1.66
03 Jan 00	0355	41.405	-90.905	0	02 Jan 00	7.2	3.9	-0.9	17	50	1.3	9.01
06 Jan 00	1919	41.429	-90.519	0	06 Jan 00	3.9	-1.4	-5.9	16	30	8.7	10.63
08 Jan 00	0536	41.463	-90.456	1	07 Jan 00	3.6	-2.7	-7.3	16	60	6.0	11.04
09 Jan 00	0517	41.456	-90.442	1	08 Jan 00	4.0	4.6	1.3	16	0	7.0	12.44
12 Jan 00	1846	41.529	-90.214	0	12 Jan 00	8.5	0.7	-5.5	15	0	12.1	15.93
14 Jan 00	0512	41.465	-90.421	2	13 Jan 00	3.7	-3.0	-7.7	16	0	6.8	12.04
18 Jan 00	2019	41.475	-90.353	1	18 Jan 00	4.6	1.5	-2.9	16	0	9.1	11.39
21 Jan 00	0543	41.428	-90.194	0	20 Jan 00	4.0	-17.8	-26.2	16	10	21.3	23.28
22 Jan 00	1824	41.415	-90.970	1	22 Jan 00	0.3	-4.0	-2.3	17	100	0.3	3.52
23 Jan 00	1941	40.667	-91.226	0	23 Jan 00	5.2	-9.3	-16.7	19	100	2.1	29.34
24 Jan 00	1919	40.640	-91.186	0	24 Jan 00	4.4	0.0	-4.5	19	100	0.0	30.25
26 Jan 00	0255	41.409	-91.267	0	25 Jan 00	6.6	-7.0	-14.7	17	100	17.1	21.39
27 Jan 00	0511	40.699	-91.172	1	26 Jan 00	2.7	-10.3	-15.4	19	100	1.7	23.87
31 Jan 00	2237	40.592	-90.519	0	31 Jan 00	5.6	-2.5	-8.3	19	100	48.6	53.51
02 Feb 00	0457	40.655	-91.170	2	01 Feb 00	4.9	-3.0	-8.6	19	100	0.0	28.15
05 Feb 00	2133	40.655	-91.177	2	05 Feb 00	3.5	0.2	-3.6	19	100	0.0	28.41
06 Feb 00	2120	40.656	-91.161	1	06 Feb 00	3.2	5.2	2.6	19	100	0.0	27.74

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 1999-2000 (Continued)												
08 Feb 00	0348	40.664	-91.175	2	07 Feb 00	2.9	0.0	-3.4	19	100	0.5	27.43
10 Feb 00	1938	40.672	-91.099	0	10 Feb 00	6.5	2.5	-2.5	19	100	0.0	24.32
11 Feb 00	2057	40.843	-91.406	0	11 Feb 00	2.3	-1.5	-4.6	19	100	21.0	32.04
13 Feb 00	0432	40.703	-91.523	0	12 Feb 00	2.5	3.7	1.3	19	100	14.2	36.67
14 Feb 00	0421	40.641	-91.177	0	13 Feb 00	5.6	0.3	-4.9	19	100	0.0	29.82
16 Feb 00	2051	40.637	-91.321	1	16 Feb 00	2.6	2.0	-0.8	19	50	1.0	26.97
17 Feb 00	2039	40.661	-91.167	1	17 Feb 00	5.4	2.6	-1.9	19	50	0.0	27.44
22 Feb 00	1935	40.840	-91.093	1	22 Feb 00				19	30	0.0	7.31
23 Feb 00	2104	40.846	-91.072	1	23 Feb 00				19	0	0.0	5.57
27 Feb 00	2013	41.397	-91.049	2	27 Feb 00				17	0	0.0	4.52
28 Feb 00	1939	41.398	-91.037	3	28 Feb 00				17	0	0.7	3.78
Winter of 2000-2001												
15 Dec 00	1736	41.357	-90.952	0	15 Dec 00	4.4	-4.9	-10.6	17	100	6.7	9.04
17 Dec 00	0117	41.505	-91.672	0	16 Dec 00	10.6	-10.9	-21.7	16	100	51.9	55.59
18 Dec 00	0452	41.390	-91.023	0	17 Dec 00	4.1	-15.0	-22.8	17	100	1.9	4.09
20 Dec 00	1948	41.792	-91.051	1	20 Dec 00	3.8	-9.1	-15.2	14	20	39.3	41.18
21 Dec 00	1820	41.295	-91.265	0	21 Dec 00	8.2	-16.1	-27.4	17	100	12.5	20.68
22 Dec 00	2239	41.310	-91.146	0	22 Dec 00	0.3	-16.2	-15.1	17	100	3.8	15.23

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2000-2001 (Continued)												
24 Dec 00	0552	41.143	-90.801	0	23 Dec 00	6.2	-6.4	-13.6	18	100	12.2	22.25
29 Dec 00	0052	41.352	-90.919	0	28 Dec 00	3.4	-8.2	-13.8	17	100	7.1	11.16
30 Dec 00	0404	41.191	-90.691	0	29 Dec 00	7.3	-7.6	-15.9	17	100	22.5	30.78
31 Dec 00	0538	41.381	-90.932	0	30 Dec 00	5.5	-7.0	-14.0	17	100	3.8	8.16
03 Jan 01	1828	41.420	-90.957	0	03 Jan 01	2.1	-1.6	-4.5	17	100	0.0	4.44
05 Jan 01	0304	41.389	-91.017	1	04 Jan 01	6.1	-1.8	-7.7	17	100	2.3	4.10
08 Jan 01	2220	41.417	-91.008	3	08 Jan 01	2.6	-5.1	-9.1	17	100	0.9	0.95
09 Jan 01	1931	41.400	-91.052	1	09 Jan 01	3.3	-5.9	-10.9	17	100	0.0	4.48
11 Jan 01	0201	41.457	-90.830	1	10 Jan 01	4.4	2.7	-1.3	16	100	0.0	15.35
16 Jan 01	0108	41.279	-90.428	0	15 Jan 01	7.2	0.5	-5.4	17	100	24.7	29.04
17 Jan 01	0511	40.995	-90.602	0	16 Jan 01	4.2	-4.2	-9.7	18	100	27.5	37.62
19 Jan 01	1955	41.514	-90.851	0	19 Jan 01	4.3	-3.8	-9.1	16	50	6.2	16.51
21 Jan 01	0340	41.377	-90.900	1	20 Jan 01	2.1	-11.0	-15.3	17	80	4.4	10.62
22 Jan 01	0327	41.397	-91.043	1	21 Jan 01	3.0	-6.0	-10.7	17	80	0.2	4.18
23 Jan 01	0608	41.455	-91.028	0	22 Jan 01	2.1	-3.1	-6.2	16	40	2.2	3.64
25 Jan 01	1831	41.375	-90.957	0	25 Jan 01	4.1	-4.9	-10.3	17	80	4.7	7.15
26 Jan 01	1948	41.408	-91.036	1	26 Jan 01	9.3	-0.1	-6.9	17	80	0.7	2.89
28 Jan 01	0047	41.467	-90.453	0	27 Jan 01	3.9	-9.2	-15.5	16	40	5.6	11.02

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2000-2001 (Continued)												
31 Jan 01	1933	41.333	-91.008	0	31 Jan 01	5.4	-1.1	-6.5	17	80	4.0	10.33
01 Feb 01	2204	41.311	-91.010	0	01 Feb 01	9.0	-12.9	-23.6	17	80	4.5	12.79
03 Feb 01	0127	41.369	-91.036	1	02 Feb 01	3.2	-12.9	-19.3	17	80	1.0	6.66
04 Feb 01	0456	41.370	-91.069	2	03 Feb 01	3.9	0.9	-3.1	17	80	0.1	7.89
06 Feb 01	2100	41.375	-91.042	2	06 Feb 01	2.6	-1.0	-4.3	17	80	0.5	6.22
07 Feb 01	2227	41.375	-91.053	1	07 Feb 01	3.6	1.7	-1.9	17	60	0.0	6.66
09 Feb 01	0429	41.387	-91.111	1	08 Feb 01	2.0	6.8	5.4	17	70	4.1	9.41
10 Feb 01	0558	41.357	-91.233	1	09 Feb 01	7.8	-6.8	-15.1	17	70	12.8	20.01
12 Feb 01	2003	41.406	-91.002	1	12 Feb 01	1.5	2.0	0.5	17	10	2.2	2.26
13 Feb 01	2248	41.367	-91.049	2	13 Feb 01	2.5	2.9	0.5	17	10	0.2	7.28
15 Feb 01	0105	41.426	-91.176	0	14 Feb 01	4.4	-1.6	-6.6	16	30	9.8	13.76
16 Feb 01	0446	41.375	-90.986	0	15 Feb 01	1.1	-0.1	-1.1	17	10	4.9	5.97
19 Feb 01	2128	41.380	-91.038	1	19 Feb 01	3.8	4.1	0.9	17	30	0.8	5.57
20 Feb 01	2118	41.357	-91.060	1	20 Feb 01	6.1	-3.1	-9.4	17	30	0.0	8.69
22 Feb 01	0131	41.345	-90.996	1	21 Feb 01	3.1	-5.9	-10.8	17	20	4.9	9.06
23 Feb 01	0502	41.395	-91.120	1	22 Feb 01	4.6	-1.1	-6.0	17	20	5.0	9.73
25 Feb 01	2011	41.361	-91.054	1	25 Feb 01	9.2	-0.7	-7.7	17	20	0.1	8.07
26 Feb 01	1958	41.360	-90.983	0	25 Feb 01	9.5	-0.7	-7.8	17	20	5.5	7.65

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2000-2001 (Continued)												
28 Feb 01	0405	41.191	-91.152	0	27 Feb 01	4.5	-4.9	-10.7	17	20	3.2	7.59
03 Mar 01	2113	41.325	-91.071	1	03 Mar 01	2.8	4.1	1.5	17	10	0.0	12.31
04 Mar 01	2021	41.405	-91.008	0	04 Mar 01	6.0	-1.1	-6.8	17	10	2.1	2.28
06 Mar 01	0508	41.345	-91.047	1	05 Mar 01	6.9	-2.1	-8.5	17	0	0.6	9.50
07 Mar 01	0421	41.367	-91.082	2	06 Mar 01	4.1	0.0	-4.3	17	0	1.0	8.84
10 Mar 01	2223	41.380	-91.038	1	10 Mar 01	4.0	5.2	2.1	17	0	0.8	5.57
13 Mar 01	0317	41.374	-91.033	1	12 Mar 01	5.7	3.0	-1.5	17	0	1.2	6.05
15 Mar 01	1820	41.354	-91.022	1	15 Mar 01	8.9	2.9	-2.9	17	0	2.7	8.04
17 Mar 01	2051	41.368	-91.056	2	17 Mar 01	2.6	1.7	-1.1	17	0	0.0	7.46
19 Mar 01	0504	41.492	-91.145	0	18 Mar 01	2.8	4.5	2.1	16	0	11.5	13.45
21 Mar 01	1921	41.397	-91.039	2	21 Mar 01	2.0	9.1	8.1	17	0	0.5	3.97
22 Mar 01	1859	41.399	-91.040	1	22 Mar 01	4.1	12.9	11.5	17	0	0.5	3.85
23 Mar 01	2018	41.337	-91.012	0	23 Mar 01	5.9	4.0	-0.4	17	0	3.6	9.89
25 Mar 01	0255	41.377	-91.018	1	24 Mar 01	7.7	-3.0	-10.1	17	0	2.5	5.45
Winter of 2001-2002												
02 Dec 01	0459	41.440	-90.900	2	01 Dec 01	2.3	5.5	3.7	16	0	0.3	9.28
05 Dec 01	2123	41.379	-91.040	2	05 Dec 01	10.7	20.7	20.4	17	0	0.7	5.75
07 Dec 01	0128	41.337	-90.988	1	06 Dec 01	4.5	12.7	11.1	17	0	5.6	10.05

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2001-2002 (Continued)												
08 Dec 01	0558	41.406	-91.044	1	07 Dec 01	3.6	9.8	7.9	17	0	0.2	3.55
09 Dec 01	1920	41.385	-91.078	1	09 Dec 01	4.4	6.2	3.1	17	0	1.6	7.22
10 Dec 01	2039	41.405	-91.047	2	10 Dec 01	2.9	8.6	6.9	17	0	0.0	3.81
11 Dec 01	2324	41.399	-91.044	2	11 Dec 01	5.6	8.2	5.1	17	0	0.1	4.07
14 Dec 01	1800	41.402	-90.992	0	14 Dec 01	1.6	3.8	2.5	17	0	2.3	3.01
16 Dec 01	2033	41.380	-91.082	2	16 Dec 01	1.2	7.9	7.6	17	0	1.6	7.83
18 Dec 01	0252	41.361	-91.051	1	17 Dec 01	4.3	5.4	2.2	17	0	0.2	7.96
20 Dec 01	1736	41.380	-91.110	1	20 Dec 01	2.4	6.8	5.2	17	0	3.7	9.72
22 Dec 01	2234	41.391	-91.055	3	22 Dec 01	8.2	10.9	7.8	17	0	0.1	5.35
24 Dec 01	0443	41.415	-91.024	1	23 Dec 01	9.0	-2.3	-9.7	17	0	0.5	1.63
26 Dec 01	1930	41.362	-91.036	1	26 Dec 01	5.1	-4.4	-10.5	17	0	1.4	7.40
27 Dec 01	2128	41.375	-91.022	2	27 Dec 01	7.0	-0.3	-6.3	17	100	2.1	5.72
28 Dec 01	2253	41.364	-91.054	1	28 Dec 01	5.1	-2.3	-7.8	17	100	0.0	7.77
30 Dec 01	0638	40.698	-91.098	1	29 Dec 01	5.5	-7.5	-14.6	19	30	0.0	21.49
02 Jan 02	1828	40.659	-91.215	1	02 Jan 02	2.9	-3.4	-7.4	19	80	1.6	29.58
04 Jan 02	0310	40.672	-91.177	1	03 Jan 02	4.1	-1.7	-6.4	19	80	1.4	26.71
05 Jan 02	0458	40.694	-91.120	1	04 Jan 02	5.9	5.6	1.7	19	80	0.0	22.50
08 Jan 02	1748	41.457	-90.353	1	08 Jan 02	4.5	7.2	4.4	16	100	10.6	13.31

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2001-2002 (Continued)												
10 Jan 02	0026	41.471	-90.414	1	09 Jan 02	3.5	10.5	8.8	16	100	6.6	11.29
11 Jan 02	0418	41.452	-90.422	1	10 Jan 02	6.8	4.5	-0.1	16	100	8.1	13.49
12 Jan 02	1758	41.129	-91.062	3	12 Jan 02	8.9	7.0	2.5	18	100	0.4	6.79
13 Jan 02	2240	41.152	-91.040	2	13 Jan 02	5.4	6.3	2.8	18	100	0.0	4.55
16 Jan 02	0102	41.145	-91.035	1	15 Jan 02	4.2	0.5	-3.8	18	100	0.5	5.44
19 Jan 02	1838	41.132	-91.093	1	19 Jan 02	4.8	0.7	-3.9	18	100	2.9	6.98
22 Jan 02	0320	41.134	-91.047	2	21 Jan 02	3.8	6.0	3.2	18	100	0.0	6.33
24 Jan 02	1802	41.175	-91.036	1	24 Jan 02	3.7	3.0	-0.4	18	100	0.2	2.63
25 Jan 02	1936	41.166	-91.032	2	25 Jan 02	5.9	11.1	8.7	18	100	0.0	3.57
27 Jan 02	0413	41.125	-91.045	0	26 Jan 02	4.5	13.8	12.5	18	50	0.0	7.35
28 Jan 02	0541	41.109	-91.141	1	27 Jan 02	4.2	13.6	12.3	18	50	6.5	11.23
05 Feb 02	2234	40.638	-90.781	0	05 Feb 02	3.2	0.7	-2.8	19	0	26.0	34.22
07 Feb 02	0349	40.690	-91.187	1	06 Feb 02	2.5	2.8	0.3	19	10	2.5	25.39
10 Feb 02	2124	41.455	-90.440	1	10 Feb 02	6.5	0.9	-4.6	16	0	7.2	12.64
12 Feb 02	2237	41.567	-90.370	2	12 Feb 02	11.7	1.6	-5.5	15	10	0.8	2.35
14 Feb 02	0537	41.680	-90.287	1	13 Feb 02	5.4	1.9	-2.7	14	0	2.4	15.24
16 Feb 02	2143	41.340	-91.079	2	16 Feb 02	8.1	7.8	3.8	17	0	0.3	11.13
19 Feb 02	0318	42.137	-90.260	2	18 Feb 02	6.4	10.1	7.2	13	0	1.1	19.10

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2001-2002 (Continued)												
20 Feb 02	0506	42.167	-90.257	2	19 Feb 02	3.0	8.2	6.4	13	0	0.0	17.02
24 Feb 02	0044	42.147	-90.258	1	23 Feb 02	6.7	10.5	7.6	13	0	0.0	18.42
25 Feb 02	0448	42.166	-90.258	2	24 Feb 02	6.5	15.5	14.1	13	0	0.0	17.02
01 Mar 02	2350	41.373	-91.049	1	01 Mar 02	6.5	0.8	-4.7	17	0	0.0	6.68
03 Mar 02	0250	41.393	-91.064	1	02 Mar 02	8.7	-5.5	-13.8	17	0	0.7	5.75
06 Mar 02	1913	41.362	-91.121	0	06 Mar 02	5.4	3.9	-0.2	17	80	4.1	11.61
07 Mar 02	2230	41.381	-91.007	0	07 Mar 02	5.1	6.1	2.7	17	10	3.3	4.97
09 Mar 02	0324	41.379	-91.073	3	08 Mar 02	3.7	17.6	17.4	17	0	0.9	7.35
12 Mar 02	2120	41.377	-91.085	1	12 Mar 02	3.4	9.1	7.2	17	0	1.6	8.24
13 Mar 02	2108	41.373	-91.075	2	13 Mar 02	3.5	11.6	10.2	17	0	0.7	7.95
15 Mar 02	0221	41.379	-91.060	1	14 Mar 02	4.9	17.3	16.8	17	0	0.0	6.63
18 Mar 02	1936	41.361	-91.044	1	18 Mar 02	2.7	8.7	7.1	17	0	0.8	7.73
19 Mar 02	2127	41.369	-91.083	1	19 Mar 02	3.3	9.4	7.6	17	0	1.2	8.74
21 Mar 02	0255	41.407	-91.051	0	20 Mar 02	3.8	8.7	6.5	17	0	0.0	3.96
23 Mar 02	1920	41.375	-91.057	2	23 Mar 02	2.2	9.9	8.9	17	0	0.0	6.84
26 Mar 02	0200	41.340	-90.965	1	25 Mar 02	6.3	0.4	-5.0	17	0	7.5	10.26
27 Mar 02	0332	41.367	-91.053	2	26 Mar 02	2.3	6.2	4.6	17	0	0.0	7.43

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003												
25 Nov 02	0353	41.368	-90.798	1	24 Nov 02	5.1	-2.1	-7.6	17	0	8.1	18.73
27 Nov 02	1805	41.453	-90.841	0	27 Nov 02	2.0	-2.8	-5.7	16	0	0.0	14.36
28 Nov 02	2213	41.436	-90.877	0	28 Nov 02	4.3	3.5	-0.2	16	0	0.0	11.10
30 Nov 02	0135	41.573	-90.717	0	29 Nov 02	8.0	7.7	3.7	14	0	11.3	13.87
01 Dec 02	0447	40.700	-91.791	0	30 Nov 02	8.5	-2.5	-9.8	19	0	32.9	49.32
03 Dec 02	1842	41.319	-90.954	0	03 Dec 02	3.0	-1.4	-5.2	17	0	8.8	12.78
04 Dec 02	2303	41.161	-91.057	0	04 Dec 02	4.6	-1.5	-6.5	18	0	0.0	3.22
06 Dec 02	0349	40.739	-91.118	2	05 Dec 02	4.5	-4.6	-10.2	19	0	0.0	17.78
07 Dec 02	0546	40.731	-91.083	1	06 Dec 02	5.4	3.6	-0.6	19	0	0.0	17.59
08 Dec 02	1910	40.328	-91.323	0	08 Dec 02	2.7	0.9	-2.2	20	0	7.0	8.58
09 Dec 02	2302	40.661	-91.238	1	09 Dec 02	2.7	2.9	0.3	19	50	1.0	30.46
12 Dec 02	0510	40.646	-91.266	1	11 Dec 02	2.6	4.7	2.4	19	80	0.1	28.92
14 Dec 02	1745	40.655	-91.204	2	14 Dec 02	3.9	9.6	7.5	19	70	1.3	29.48
15 Dec 02	1743	40.603	-91.331	2	15 Dec 02	1.5	10.9	10.7	19	70	0.0	23.09
17 Dec 02	0147	40.622	-91.319	2	16 Dec 02	5.5	4.0	-0.1	19	20	0.0	25.33
19 Dec 02	1729	40.659	-91.175	2	19 Dec 02	7.3	5.0	0.3	19	0	0.0	27.93
20 Dec 02	1844	40.707	-91.108	0	20 Dec 02	6.9	1.9	-3.4	19	0	0.0	20.79
21 Dec 02	2339	40.663	-91.352	0	21 Dec 02	2.1	0.9	-1.5	19	0	4.8	29.66

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
23 Dec 02	0221	40.587	-91.295	0	22 Dec 02	5.4	2.0	-2.6	19	0	3.0	21.90
26 Dec 02	2129	40.591	-91.394	1	26 Dec 02	2.7	1.7	-1.2	19	0	0.0	21.74
27 Dec 02	2357	40.637	-91.354	0	27 Dec 02	3.1	2.2	-0.9	19	60	2.0	26.75
29 Dec 02	0435	40.593	-91.395	1	28 Dec 02	3.7	9.3	7.3	19	100	0.0	21.97
30 Dec 02	1810	40.580	-91.414	1	30 Dec 02	6.8	9.4	6.2	19	30	0.0	20.79
31 Dec 02	2256	40.587	-91.415	1	31 Dec 02	3.5	4.2	1.2	19	0	0.0	21.58
02 Jan 03	0211	40.585	-91.365	3	01 Jan 03	5.6	1.2	-3.7	19	0	0.0	20.91
03 Jan 03	0341	40.616	-91.411	1	02 Jan 03	4.6	-0.6	-5.5	19	0	1.6	24.71
06 Jan 03	2042	40.641	-91.149	2	06 Jan 03	4.1	2.2	-1.7	19	0	0.5	28.91
08 Jan 03	0102	41.087	-91.012	1	07 Jan 03	6.8	9.9	6.9	18	0	3.7	12.18
09 Jan 03	0543	41.054	-91.112	0	08 Jan 03	6.8	17.6	16.8	18	0	6.7	15.77
11 Jan 03	1846	41.459	-90.415	1	11 Jan 03	9.1	-6.1	-14.8	16	0	7.7	12.64
12 Jan 03	2148	41.566	-90.386	1	12 Jan 03	8.6	3.1	-2.5	15	0	0.4	1.14
14 Jan 03	0317	41.567	-90.512	1	13 Jan 03	2.2	-5.0	-8.6	15	20	4.8	7.26
15 Jan 03	0458	40.707	-91.116	2	14 Jan 03	6.8	-4.8	-12.0	19	100	0.0	21.02
17 Jan 03	1927	40.388	-91.371	1	17 Jan 03	3.6	-8.9	-14.8	20	60	0.0	1.32
18 Jan 03	2113	40.390	-91.198	0	18 Jan 03	6.7	-5.0	-12.2	20	100	13.2	13.94
20 Jan 03	0439	40.658	-91.172	2	19 Jan 03	3.6	0.9	-2.9	19	100	0.0	27.92

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
21 Jan 03	0415	40.637	-91.180	2	20 Jan 03	2.8	-5.2	-9.5	19	100	0.0	30.33
24 Jan 03	2226	40.395	-91.368	0	24 Jan 03	5.1	-8.1	-15.1	20	80	0.0	0.54
25 Jan 03	2356	40.342	-91.472	1	25 Jan 03	3.2	1.0	-2.4	20	90	0.1	11.11
27 Jan 03	0411	40.409	-91.265	0	26 Jan 03	3.4	-12.2	-18.5	19	100	7.5	8.36
29 Jan 03	2258	40.403	-91.311	1	29 Jan 03	1.9	-2.5	-5.2	19	100	3.6	4.43
30 Jan 03	2245	40.394	-91.363	2	30 Jan 03	5.3	4.6	0.7	20	100	0.0	0.48
01 Feb 03	0015	40.376	-91.455	0	31 Jan 03	5.9	3.0	-1.7	20	100	1.3	8.11
02 Feb 03	0601	41.199	-91.086	1	01 Feb 03	2.7	6.8	4.8	17	100	0.0	2.35
04 Feb 03	1951	41.427	-90.904	0	04 Feb 03	8.0	-7.5	-16.1	16	100	0.0	8.80
05 Feb 03	2304	41.430	-90.924	3	05 Feb 03	3.5	-1.4	-5.6	16	60	0.0	7.16
07 Feb 03	0211	41.426	-90.609	0	06 Feb 03	6.0	-6.4	-13.6	16	70	2.6	10.74
10 Feb 03	2336	41.503	-90.548	2	10 Feb 03	5.0	-11.5	-19.3	16	70	0.8	2.25
11 Feb 03	2213	41.459	-90.447	1	11 Feb 03	12.3	-0.2	-7.9	16	70	6.6	11.91
13 Feb 03	0423	41.572	-90.394	2	12 Feb 03	6.9	-2.4	-8.9	14	40	0.0	0.33
14 Feb 03	0532	41.623	-90.508	0	13 Feb 03	1.8	3.2	1.4	14	40	9.4	10.80
16 Feb 03	2202	41.364	-91.065	1	16 Feb 03	4.1	-2.8	-7.9	17	100	0.0	8.24
18 Feb 03	0147	41.371	-91.060	2	17 Feb 03	2.8	-3.5	-7.6	17	100	0.0	7.35
19 Feb 03	0136	41.370	-91.058	2	18 Feb 03	2.4	4.2	2.1	17	100	0.0	7.36

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
20 Feb 03	0536	41.383	-91.063	1	19 Feb 03	2.5	2.5	0.0	17	100	0.5	6.46
21 Feb 03	1904	41.396	-90.999	0	21 Feb 03	2.4	2.1	-0.4	17	100	3.2	3.41
22 Feb 03	2231	41.367	-91.052	1	22 Feb 03	8.2	-0.2	-6.6	17	100	0.0	7.39
23 Feb 03	2244	41.376	-91.048	1	23 Feb 03	4.1	-3.2	-8.3	17	100	0.0	6.35
28 Feb 03	2054	41.344	-91.030	1	28 Feb 03	2.0	2.8	0.9	17	30	2.0	9.25
01 Mar 03	1921	41.370	-91.056	2	01 Mar 03	2.6	1.0	-1.9	17	30	0.0	7.27
03 Mar 03	0102	41.406	-91.064	1	02 Mar 03	5.2	-3.5	-9.4	17	30	0.3	4.97
06 Mar 03	2015	41.314	-91.149	2	06 Mar 03	4.5	-0.1	-4.7	17	30	4.3	15.74
07 Mar 03	2250	41.380	-91.063	1	07 Mar 03	1.4	-0.3	-1.9	17	30	0.3	6.71
09 Mar 03	0137	41.367	-91.198	0	08 Mar 03	6.9	-5.8	-13.4	17	30	10.5	16.90
10 Mar 03	0450	41.614	-91.233	0	09 Mar 03	5.7	-9.3	-17.1	14	10	26.6	28.05
12 Mar 03	2142	41.348	-91.070	2	12 Mar 03	3.3	6.0	3.5	17	100	0.0	9.98
13 Mar 03	2100	41.374	-91.056	2	13 Mar 03	3.0	3.0	0.1	17	0	0.0	6.89
15 Mar 03	0212	41.384	-91.053	2	14 Mar 03	2.7	6.9	5.0	17	0	0.0	5.83
16 Mar 03	0404	41.325	-91.122	0	15 Mar 03	3.7	11.0	9.3	17	0	3.4	14.57
18 Mar 03	2227	41.371	-91.007	1	18 Mar 03	9.2	13.0	10.4	17	0	3.4	6.08
19 Mar 03	2203	41.373	-91.020	1	19 Mar 03	5.2	6.9	3.6	17	0	2.3	5.91
21 Mar 03	0104	41.374	-91.070	0	20 Mar 03	4.4	10.7	8.7	17	0	0.4	7.59

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
24 Mar 03	2218	42.045	-91.005	0	24 Mar 03	6.2	15.4	14.1	13	0	53.3	53.72
Winter of 2003-2004												
06 Dec 03	1948	41.434	-90.908	2	06 Dec 03	2.1	0.5	-2.0	16	0	0.0	8.52
08 Dec 03	2240	41.395	-90.892	2	08 Dec 03	3.0	8.0	6.1	17	0	2.5	10.37
11 Dec 03	1847	40.858	-91.084	2	11 Dec 03	3.5	-7.2	-12.7	19	0	0.3	5.53
12 Dec 03	2110	40.812	-91.193	0	12 Dec 03	2.0	-5.7	-9.0	19	0	7.5	16.00
13 Dec 03	2015	40.672	-90.529	0	13 Dec 03	4.5	-2.5	-7.7	19	0	44.9	47.84
18 Dec 03	1817	40.733	-91.069	0	18 Dec 03	6.4	0.0	-5.7	19	0	0.2	17.10
20 Dec 03	0314	40.778	-91.179	1	19 Dec 03	7.0	-3.0	-9.7	19	0	5.5	17.30
21 Dec 03	0547	40.733	-91.131	1	20 Dec 03	4.9	0.7	-4.0	19	0	0.0	18.87
24 Dec 03	2139	40.659	-90.989	0	24 Dec 03	4.7	-0.3	-5.1	19	10	8.7	25.20
26 Dec 03	0206	40.719	-91.117	1	25 Dec 03				19	0	0.0	19.80
28 Dec 03	2123	40.730	-91.101	2	28 Dec 03	4.9	10.7	8.5	19	0	0.0	18.16
29 Dec 03	2127	40.628	-91.291	0	29 Dec 03	6.2	0.0	-5.5	19	0	0.0	26.44
01 Jan 04	0627	40.733	-91.097	1	31 Dec 03	1.8	3.8	2.1	19	0	0.0	17.73
06 Jan 04	0525	40.751	-91.184	0	05 Jan 04	6.9	-14.0	-23.8	19	0	3.3	19.75
08 Jan 04	1757	40.776	-91.085	0	08 Jan 04	3.6	0.0	-3.9	19	90	0.0	12.87
09 Jan 04	2154	40.736	-91.117	2	09 Jan 04	2.0	-2.0	-4.9	19	90	0.0	18.05

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2003-2004 (Continued)												
11 Jan 04	0225	40.726	-91.125	1	10 Jan 04	5.0	-0.9	-6.0	19	80	0.0	19.35
13 Jan 04	1829	40.726	-91.104	2	13 Jan 04	3.2	2.0	-1.3	19	0	0.0	18.67
15 Jan 04	2355	40.658	-91.175	1	15 Jan 04	3.9	0.9	-3.1	19	50	0.0	28.03
19 Jan 04	2331	41.131	-91.042	3	19 Jan 04	2.4	-6.9	-11.0	18	90	0.3	6.74
20 Jan 04	2307	41.145	-91.058	1	20 Jan 04	1.4	-5.0	-7.3	18	50	0.0	5.00
23 Jan 04	0607	41.161	-91.126	1	22 Jan 04	5.6	-10.3	-18.2	18	100	3.2	6.30
25 Jan 04	1821	41.244	-91.155	0	25 Jan 04	7.3	-4.2	-11.5	17	80	2.0	9.92
26 Jan 04	2119	41.439	-91.056	0	26 Jan 04	1.3	-5.2	-7.3	16	80	2.3	4.10
28 Jan 04	0233	41.492	-90.897	0	27 Jan 04	6.5	-12.7	-21.9	16	80	5.0	11.99
30 Jan 04	1818	41.497	-90.915	0	30 Jan 04	4.3	-17.3	-25.9	16	100	6.3	11.25
31 Jan 04	2151	41.364	-91.056	2	31 Jan 04	2.8	-10.2	-15.5	17	100	0.0	7.85
01 Feb 04	2335	41.609	-90.846	0	01 Feb 04	4.3	-2.5	-7.7	14	80	16.8	24.65
03 Feb 04	0307	41.357	-91.041	1	02 Feb 04	1.0	-0.1	-1.0	17	100	1.2	8.06
05 Feb 04	1903	41.254	-91.150	0	05 Feb 04	5.0	-2.5	-8.1	17	100	2.1	10.35
06 Feb 04	2322	41.376	-91.033	3	06 Feb 04	5.1	-2.1	-7.6	17	100	1.2	5.84
08 Feb 04	0351	41.396	-91.027	1	07 Feb 04	3.6	-8.2	-14.0	17	100	1.5	3.57
09 Feb 04	0340	41.356	-91.045	1	08 Feb 04	7.3	-2.2	-8.8	17	100	0.9	8.28
11 Feb 04	1950	41.483	-90.704	0	11 Feb 04	7.2	-2.9	-9.7	16	100	2.9	11.92

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2003-2004 (Continued)												
12 Feb 04	2248	41.455	-91.230	0	12 Feb 04	5.2	-5.2	-11.6	16	100	15.0	18.54
14 Feb 04	0101	41.316	-91.068	2	13 Feb 04	6.1	-0.1	-5.6	17	100	0.0	13.14
15 Feb 04	0232	41.348	-90.820	0	14 Feb 04	4.5	-1.3	-6.3	17	80	9.8	17.99
18 Feb 04	2209	41.373	-91.054	2	18 Feb 04	2.7	5.3	3.0	17	80	0.0	6.89
20 Feb 04	0314	41.375	-91.070	2	19 Feb 04	3.0	6.4	4.2	17	80	0.4	7.51
21 Feb 04	0303	41.350	-91.087	0	20 Feb 04	11.3	2.0	-4.8	17	80	1.2	10.57
23 Feb 04	1951	41.373	-91.057	1	23 Feb 04	5.0	3.0	-1.2	17	30	0.0	7.03
26 Feb 04	0348	41.397	-91.026	1	25 Feb 04	3.3	5.9	3.4	17	30	1.6	3.43
27 Feb 04	0516	41.376	-91.079	1	26 Feb 04	3.9	7.0	4.4	17	20	1.1	7.95
01 Mar 04	2238	41.373	-91.067	3	01 Mar 04	8.1	9.7	6.2	17	0	0.1	7.52
03 Mar 04	0416	41.411	-91.032	0	02 Mar 04	5.0	5.8	2.4	17	0	0.7	2.42
06 Mar 04	2223	41.389	-91.051	1	06 Mar 04	8.4	11.1	8.1	17	0	0.0	5.29
08 Mar 04	0322	41.405	-91.069	1	07 Mar 04	8.8	3.1	-2.6	17	0	0.7	5.39
10 Mar 04	1951	41.372	-91.059	2	10 Mar 04	5.1	9.2	6.6	17	0	0.0	7.22
11 Mar 04	2053	41.335	-90.905	0	11 Mar 04	9.0	-4.3	-12.3	17	0	9.1	13.35
12 Mar 04	2329	41.426	-90.843	2	12 Mar 04	1.6	1.4	-0.3	16	0	1.3	13.86
14 Mar 04	0418	41.372	-91.078	1	13 Mar 04	5.7	6.8	3.3	17	0	0.9	8.21
17 Mar 04	2132	41.372	-91.017	1	17 Mar 04	3.4	2.4	-0.9	17	0	2.5	5.99

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2004-2005												
19 Mar 04	0116	41.389	-91.077	1	18 Mar 04	5.6	5.9	2.2	17	0	1.8	6.88
22 Mar 04	2121	41.371	-91.052	1	22 Mar 04	3.2	5.1	2.5	17	0	0.0	7.00
15 Dec 04	1858	40.640	-91.784	0	15 Dec 04	6.3	2.3	-2.7	19	0	30.7	44.52
16 Dec 04	2242	40.760	-91.144	1	16 Dec 04	5.4	7.2	3.9	19	0	2.3	16.86
18 Dec 04	0430	40.583	-91.414	2	17 Dec 04	3.0	1.6	-1.5	19	0	0.0	21.12
19 Dec 04	0415	40.594	-91.250	0	18 Dec 04	9.8	4.0	-1.7	19	0	3.7	23.90
21 Dec 04	2045	40.937	-91.453	0	21 Dec 04	5.6	-5.7	-12.5	18	100	30.6	36.17
22 Dec 04	2051	40.508	-91.520	0	22 Dec 04	5.8	-11.1	-19.4	19	10	8.9	18.02
25 Dec 04	0449	41.597	-91.063	0	24 Dec 04	6.7	-8.5	-16.7	14	10	18.1	19.71
27 Dec 04	1741	41.182	-91.043	2	27 Dec 04	6.2	1.0	-4.3	18	0	0.2	1.71
28 Dec 04	2129	41.113	-91.061	1	28 Dec 04	3.1	7.8	5.8	18	100	0.1	8.58
30 Dec 04	0207	41.273	-91.088	0	29 Dec 04	0.7	5.3	5.6	17	80	0.0	9.61
31 Dec 04	0602	41.165	-91.153	0	30 Dec 04	8.7	16.1	14.5	18	100	4.8	8.15
03 Jan 05	2230	41.123	-91.026	0	03 Jan 05	2.9	0.9	-2.3	18	100	1.5	8.00
07 Jan 05	1905	41.173	-90.934	0	07 Jan 05	0.8	-2.5	-3.0	18	0	3.5	10.72
08 Jan 05	2217	41.373	-91.039	1	08 Jan 05	2.3	-2.3	-5.6	17	80	0.7	6.33
10 Jan 05	0326	41.397	-90.997	0	09 Jan 05	4.5	1.9	-2.2	17	90	3.0	3.35
13 Jan 05	2202	41.425	-90.892	0	13 Jan 05	7.7	-7.2	-15.5	17	0	0.0	9.80

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2004-2005 (Continued)												
15 Jan 05	0227	41.500	-90.714	0	14 Jan 05	3.0	-15.4	-22.0	16	40	4.8	12.28
16 Jan 05	0445	41.143	-91.004	0	15 Jan 05	3.1	-11.6	-17.6	18	0	0.8	7.04
18 Jan 05	1839	41.178	-91.053	1	18 Jan 05	8.7	-3.5	-11.2	18	100	0.0	1.45
19 Jan 05	1948	41.155	-91.025	0	19 Jan 05	5.6	-2.3	-8.1	18	100	0.0	4.89
23 Jan 05	1821	41.343	-91.147	0	23 Jan 05	5.2	-4.3	-10.5	17	100	5.9	14.63
24 Jan 05	2027	41.379	-91.047	1	24 Jan 05	2.5	2.3	-0.3	17	100	0.1	6.02
25 Jan 05	2015	41.315	-91.065	2	25 Jan 05	3.8	8.4	6.2	17	100	0.0	13.16
30 Jan 05	1911	41.133	-91.200	1	30 Jan 05	1.5	1.7	0.2	18	100	10.0	13.21
31 Jan 05	2334	40.930	-90.983	0	31 Jan 05	1.8	1.3	-0.6	18	100	0.0	6.46
02 Feb 05	0443	40.664	-91.453	0	01 Feb 05	1.8	2.3	0.4	19	80	7.4	30.70
03 Feb 05	1818	40.639	-91.267	2	03 Feb 05	2.9	7.2	5.2	19	90	0.0	28.15
04 Feb 05	1836	40.638	-91.267	3	04 Feb 05	3.1	10.6	9.1	19	80	0.0	28.04
05 Feb 05	2318	40.636	-91.232	1	05 Feb 05	4.4	10.3	8.2	19	70	0.0	28.82
10 Feb 05	2304	40.733	-90.950	2	10 Feb 05	3.4	-3.8	-8.4	19	20	9.6	17.90
12 Feb 05	0546	41.423	-90.996	1	11 Feb 05	2.1	6.0	4.4	17	90	0.3	1.20
13 Feb 05	0455	41.431	-90.998	2	12 Feb 05	1.4	7.0	6.3	16	0	0.0	1.19
15 Feb 05	1919	41.400	-90.501	0	15 Feb 05	3.7	1.9	-1.8	17	0	11.3	14.20
16 Feb 05	2227	41.330	-90.362	0	16 Feb 05	7.9	0.7	-5.4	17	0	22.6	26.99

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2004-2005 (Continued)												
18 Feb 05	0238	41.422	-90.785	0	17 Feb 05	4.2	0.9	-3.3	17	0	2.0	18.67
21 Feb 05	2034	41.481	-90.380	1	21 Feb 05	2.8	0.8	-2.4	16	0	7.1	10.20
23 Feb 05	0141	41.466	-90.237	1	22 Feb 05	4.4	1.0	-3.3	16	0	15.8	17.78
24 Feb 05	0525	41.480	-90.334	1	23 Feb 05	2.3	1.5	-1.0	16	0	9.8	11.49
26 Feb 05	2158	41.523	-90.401	0	26 Feb 05	5.0	3.1	-1.0	15	0	2.5	5.40
27 Feb 05	1956	41.529	-90.548	1	27 Feb 05	4.9	7.7	4.7	15	0	0.2	2.11
01 Mar 05	0211	41.562	-90.211	0	28 Feb 05	7.8	-2.8	-9.9	15	0	10.8	15.50
02 Mar 05	0521	41.443	-90.365	0	01 Mar 05	7.7	-1.9	-8.6	16	0	11.4	14.60
04 Mar 05	2122	41.388	-91.075	1	04 Mar 05	8.0	12.9	10.4	17	0	1.7	6.81
05 Mar 05	2238	41.401	-91.035	2	05 Mar 05	5.0	10.9	8.7	17	0	0.9	3.42
07 Mar 05	0247	41.425	-91.150	0	06 Mar 05	8.1	18.2	17.3	17	0	7.7	11.60
10 Mar 05	2056	41.366	-91.049	1	10 Mar 05	9.6	5.1	-0.2	17	0	0.2	7.38
12 Mar 05	0147	41.255	-90.298	0	11 Mar 05	4.5	3.3	-0.5	17	0	32.4	36.35
13 Mar 05	0457	41.392	-91.054	1	12 Mar 05	3.5	-2.2	-6.6	17	0	0.0	5.21
15 Mar 05	2031	41.379	-91.067	1	15 Mar 05	1.1	7.0	6.7	17	0	0.5	7.01
16 Mar 05	2146	41.370	-91.065	2	16 Mar 05	2.3	9.2	8.0	17	0	0.0	7.69
17 Mar 05	2305	41.317	-91.015	0	17 Mar 05	5.9	8.9	5.9	17	0	3.9	12.13
19 Mar 05	0347	41.400	-91.085	0	18 Mar 05	3.2	9.7	8.1	17	0	2.1	6.83

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2004-2005 (Continued)												
21 Mar 05	1914	41.415	-91.096	1	21 Mar 05	6.2	9.5	6.5	17	0	3.1	7.22
22 Mar 05	2252	41.399	-91.055	1	22 Mar 05	8.4	2.9	-2.7	17	0	0.0	4.75
24 Mar 05	0250	41.388	-91.082	0	23 Mar 05	1.1	6.5	6.2	17	0	2.1	7.28
25 Mar 05	0418	41.426	-91.041	1	24 Mar 05	2.8	4.3	1.8	16	0	0.4	2.56
27 Mar 05	2035	41.392	-91.054	3	27 Mar 05	2.4	11.3	10.4	17	0	0.0	5.21
28 Mar 05	2211	41.396	-91.037	2	28 Mar 05	3.1	16.5	16.3	17	0	0.7	3.97
Winter of 2005-2006												
18 Jan 06	1855	42.018	-90.328	0	18 Jan 06	4.0	1.7	-2.2	13	40	12.7	19.43
19 Jan 06	2019	41.775	-90.940	0	19 Jan 06	1.9	10.8	10.2	14	10	36.3	39.56
22 Jan 06	0359	41.489	-90.604	1	21 Jan 06	4.9	-1.6	-6.8	16	0	0.0	4.34
31 Jan 06	2240	41.393	-91.042	2	31 Jan 06	5.1	7.1	3.9	17	0	0.3	4.48
02 Feb 06	0526	41.382	-91.044	2	01 Feb 06	2.1	6.1	4.5	17	0	0.2	5.60
05 Feb 06	2225	41.396	-91.103	1	05 Feb 06	4.7	0.1	-4.6	17	0	3.6	8.38
07 Feb 06	0323	41.413	-91.138	0	06 Feb 06	5.4	1.3	-3.4	17	0	6.5	10.70
09 Feb 06	1912	41.416	-90.993	0	09 Feb 06	3.1	-1.0	-4.8	17	0	1.0	1.76
10 Feb 06	1857	41.374	-91.015	1	10 Feb 06	2.7	2.2	-0.6	17	0	2.7	5.76
13 Feb 06	0348	41.386	-90.986	0	12 Feb 06	5.0	-1.2	-6.4	17	0	3.7	4.83
19 Feb 06	0237	41.461	-91.012	0	18 Feb 06	3.1	-13.2	-19.5	16	0	2.4	4.00

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2005-2006 (Continued)												
21 Feb 06	1957	41.390	-91.057	3	21 Feb 06	2.0	3.3	1.4	17	100	0.2	5.55
22 Feb 06	1945	41.394	-91.050	2	22 Feb 06	3.3	7.2	4.9	17	100	0.0	4.82
24 Feb 06	0206	41.408	-91.147	0	23 Feb 06	5.0	3.1	-1.0	17	100	7.2	11.52
25 Feb 06	0459	41.397	-91.039	1	24 Feb 06	6.0	11.3	8.9	17	100	0.5	3.97
27 Feb 06	2042	41.400	-91.084	1	27 Feb 06	4.8	9.8	7.4	17	0	2.0	6.75
28 Feb 06	2016	41.377	-91.068	1	28 Feb 06	3.0	8.0	6.1	17	0	0.4	7.23
02 Mar 06	0351	41.390	-91.029	1	01 Mar 06	3.3	13.3	12.3	17	0	1.4	4.25
03 Mar 06	0516	41.215	-90.988	0	02 Mar 06	5.8	2.6	-2.0	17	0	2.8	6.69
06 Mar 06	2120	41.397	-91.043	2	06 Mar 06	4.3	2.5	-1.5	17	0	0.2	4.18
08 Mar 06	0242	41.400	-91.029	2	07 Mar 06	6.6	5.0	0.7	17	0	1.4	3.24
09 Mar 06	0636	41.426	-91.168	0	08 Mar 06	4.7	9.0	6.5	16	0	9.2	13.10
10 Mar 06	1949	41.396	-91.040	1	10 Mar 06	3.1	11.9	10.8	17	0	0.4	4.11
11 Mar 06	2106	41.401	-91.044	3	11 Mar 06	4.2	18.1	17.9	17	0	0.2	3.91
12 Mar 06	2222	41.394	-91.105	0	12 Mar 06	7.1	8.2	4.6	17	0	3.8	8.62
16 Mar 06	2051	41.388	-91.080	1	16 Mar 06	6.5	2.4	-2.6	17	0	2.0	7.15
17 Mar 06	1948	41.392	-91.035	1	17 Mar 06	3.8	5.1	2.1	17	0	0.8	4.26

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Bald Eagle 219												
Winter of 1999-2000												
16 Dec 99	2221	42.348	-90.369	0	16 Dec 99	3.0	-6.9	-11.7	12	0	2.9	10.62
18 Dec 99	0337	42.222	-90.358	1	17 Dec 99	3.6	-6.4	-11.8	13	0	0.0	6.71
23 Dec 99	0241	41.672	-90.262	0	22 Dec 99	2.9	-11.4	-17.2	14	50	4.7	15.92
26 Dec 99	2003	41.435	-90.813	1	26 Dec 99	8.1	-3.8	-11.3	16	100	0.7	16.38
27 Dec 99	1940	40.641	-91.164	1	27 Dec 99	7.0	-6.1	-13.7	19	10	0.0	29.38
28 Dec 99	2127	40.699	-91.046	0	28 Dec 99	6.1	4.6	0.3	19	10	3.0	20.59
01 Jan 00	1751	40.672	-91.157	2	01 Jan 00	4.4	9.4	7.1	19	0	0.9	25.97
11 Jan 00	0406	41.368	-91.585	0	10 Jan 00	4.7	7.7	4.9	17	0	40.2	47.93
14 Jan 00	1801	41.368	-91.022	0	14 Jan 00	5.2	0.1	-4.9	17	0	2.2	6.49
23 Jan 00	0328	41.351	-90.989	0	22 Jan 00	0.4	-3.8	-2.8	17	100	5.4	8.50
26 Jan 00	2015	41.113	-91.016	2	26 Jan 00	2.8	-10.9	-16.4	18	100	2.4	9.35
27 Jan 00	2146	41.127	-91.082	1	27 Jan 00	2.0	-6.5	-10.1	18	100	2.0	7.23
01 Feb 00	1939	40.875	-91.055	1	01 Feb 00	5.2	-3.2	-9.1	19	100	0.0	2.53
02 Feb 00	2211	41.346	-91.017	1	02 Feb 00	6.3	0.1	-5.5	17	100	3.1	8.89
04 Feb 00	0251	41.320	-91.023	0	03 Feb 00	10.7	-0.9	-8.4	17	100	3.1	11.84
08 Feb 00	1845	41.371	-91.133	1	08 Feb 00	5.5	0.9	-4.1	17	80	5.2	11.87

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Bald Eagle 220												
Winter of 1999-2000												
20 Dec 00	1858	41.702	-91.267	0	20 Dec 99	7.4	-11.6	-21.1	14	0	36.2	37.57
21 Dec 99	1836	41.941	-90.031	0	21 Dec 99	1.3	-13.4	-16.6	13	90	6.5	11.47
23 Dec 99	0239	42.183	-90.936	0	22 Dec 99	3.5	-11.7	-18.1	13	90	39.6	43.17
24 Dec 99	0549	41.935	-90.126	1	23 Dec 99	4.1	-8.4	-14.7	13	90	0.0	4.89
26 Dec 99	1823	41.877	-90.152	1	26 Dec 99	8.1	-4.9	-12.8	14	30	0.8	2.38
27 Dec 99	1943	42.017	-90.014	0	27 Dec 99	4.6	-9.0	-15.8	13	90	8.5	17.80
01 Jan 00	1759	42.003	-90.239	1	01 Jan 00	3.3	2.9	-0.2	13	100	5.6	13.54
07 Jan 00	2240	42.025	-90.243	2	07 Jan 00	3.7	-4.6	-9.7	13	100	6.2	15.87
24 Jan 00	0500	42.007	-90.141	1	23 Jan 00	6.7	-14.1	-23.8	13	100	0.0	12.28
27 Jan 00	1814	42.021	-90.222	1	27 Jan 00	1.2	-6.7	-8.8	13	100	4.8	14.76
28 Jan 00	2134	42.008	-90.139	2	28 Jan 00	2.9	-6.1	-10.7	13	100	0.0	12.41
05 Feb 00	2133	42.010	-90.153	3	05 Feb 00	4.1	-3.0	-8.0	13	0	0.0	12.55
08 Feb 00	0349	42.004	-90.153	3	07 Feb 00	2.5	-1.8	-5.1	13	80	0.0	11.87
10 Feb 00	1940	42.010	-90.142	2	10 Feb 00	5.8	0.4	-4.9	13	80	0.0	12.60
11 Feb 00	2156	42.010	-90.155	2	11 Feb 00	2.2	-4.4	-7.9	13	80	0.0	12.54
12 Feb 00	2144	42.010	-90.140	3	12 Feb 00	3.1	0.2	-3.3	13	90	0.0	12.62
16 Feb 00	1906	42.011	-90.128	1	16 Feb 00	2.5	-1.5	-4.8	13	90	0.0	12.88

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 1999-2000 (Continued)												
17 Feb 00	1843	42.004	-90.154	1	17 Feb 00	5.4	-1.3	-6.8	13	90	0.0	11.87
18 Feb 00	2003	42.005	-90.144	2	18 Feb 00	8.0	-2.2	-9.2	13	90	0.0	12.03
Bald Eagle 365												
Winter of 2000-2001												
15 Dec 00	2051	42.806	-90.964	2	15 Dec 00	4.5	-8.2	-14.8	10	100	8.9	10.76
20 Dec 00	2127	42.790	-91.931	1	20 Dec 00	2.9	-11.2	-16.8	10	100	63.4	68.16
23 Dec 00	0630	42.847	-91.050	1	22 Dec 00	2.4	-16.9	-22.9	10	100	1.8	7.76
25 Dec 00	1833	42.815	-90.957	2	25 Dec 00	1.7	-15.0	-19.4	10	100	9.7	11.56
28 Dec 00	0610	42.843	-91.050	2	27 Dec 00	2.1	-9.3	-13.4	10	100	1.8	7.37
05 Jan 01	0122	42.805	-90.968	3	04 Jan 01	6.2	-0.5	-6.1	10	100	8.5	10.42
12 Jan 01	1826	42.848	-91.025	2	12 Jan 01	2.9	2.1	-0.9	10	100	3.8	8.96
20 Jan 01	0350	42.994	-91.150	1	19 Jan 01	3.2	-7.1	-12.2	10	100	0.0	23.80
27 Jan 01	2313	43.187	-91.118	0	27 Jan 01	3.4	-6.8	-12.1	10	100	0.3	3.07
Winter of 2001-2002												
12 Dec 01	1811	42.829	-90.986	2	12 Dec 01	0.7	6.5	7.1	10	0	7.1	10.00
15 Dec 01	0454	42.844	-91.062	2	14 Dec 01	1.9	2.1	0.0	10	0	0.8	7.06
17 Dec 01	1757	42.843	-91.045	3	17 Dec 01	2.4	4.3	2.2	10	0	2.2	7.57
20 Dec 01	0617	42.836	-91.039	3	19 Dec 01	6.9	3.0	-2.0	10	0	2.7	7.20

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2001-2002 (Continued)												
22 Dec 01	1741	42.838	-91.050	2	22 Dec 01	7.0	7.7	4.0	10	0	1.8	6.88
25 Dec 01	0137	42.840	-91.055	1	24 Dec 01	5.7	-7.2	-14.4	10	0	1.4	6.88
29 Dec 01	2102	42.847	-91.047	2	29 Dec 01	5.4	-10.2	-17.9	10	100	2.0	7.88
03 Jan 02	1944	42.801	-91.009	1	03 Jan 02	4.1	-3.5	-8.7	10	100	5.2	7.07
06 Jan 02	0511	42.803	-90.973	1	05 Jan 02	2.6	2.9	0.3	10	100	8.1	9.97
08 Jan 02	1750	42.800	-90.959	2	08 Jan 02	3.5	9.5	7.6	10	100	8.9	11.03
11 Jan 02	0550	42.796	-90.975	1	10 Jan 02	6.1	4.2	-0.1	10	100	7.6	9.68
13 Jan 02	2102	42.806	-90.960	2	13 Jan 02	5.5	5.8	2.1	10	100	9.2	11.08
16 Jan 02	0101	42.772	-90.974	1	15 Jan 02	4.8	-1.4	-6.5	11	100	5.8	9.80
03 Feb 02	0250	42.890	-91.122	0	02 Feb 02	4.2	2.0	-2.0	10	80	0.0	11.97
10 Feb 02	2124	42.857	-91.042	2	10 Feb 02	6.3	2.1	-2.9	10	80	2.4	9.05
Winter of 2002-2003												
22 Nov 02	2156	42.785	-90.938	1	22 Nov 02	1.7	2.5	0.9	11	0	8.7	12.62
27 Nov 02	1923	42.808	-90.981	1	27 Nov 02	2.3	-3.2	-6.6	10	0	7.6	9.47
30 Nov 02	0318	42.764	-91.037	1	29 Nov 02	7.5	7.6	3.7	11	0	1.5	5.13
02 Dec 02	1905	42.988	-91.155	1	02 Dec 02	4.4	-5.7	-11.7	10	40	0.0	23.23
05 Dec 02	0449	42.843	-91.070	1	04 Dec 02	1.0	-3.9	-5.0	10	70	0.2	6.75
07 Dec 02	1740	42.844	-91.026	2	07 Dec 02	3.3	2.4	-0.9	10	80	3.7	8.56

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
09 Dec 02	2252	42.808	-90.966	3	09 Dec 02	4.1	0.8	-3.3	10	80	8.8	10.65
14 Dec 02	2332	42.856	-91.038	1	14 Dec 02	3.4	6.6	4.2	10	80	2.7	9.11
19 Dec 02	2229	42.805	-90.972	3	19 Dec 02	5.5	2.2	-2.4	10	0	8.2	10.10
22 Dec 02	0620	42.765	-91.104	0	21 Dec 02	5.3	-1.5	-7.0	11	100	0.5	2.40
24 Dec 02	2255	42.788	-90.986	1	24 Dec 02	4.9	-4.6	-10.6	10	0	6.4	8.72
27 Dec 02	0320	42.820	-90.930	2	26 Dec 02	1.8	1.9	0.0	10	100	11.8	13.83
29 Dec 02	2022	42.837	-91.041	2	29 Dec 02	6.0	4.8	0.6	10	100	2.6	7.19
01 Jan 03	0221	42.799	-90.976	1	31 Dec 02	1.3	0.8	-0.6	10	100	7.7	9.65
03 Jan 03	2011	42.800	-91.002	0	03 Jan 03	1.5	0.4	-1.4	10	100	5.7	7.60
06 Jan 03	0124	42.830	-91.061	1	05 Jan 03	5.1	-0.5	-5.7	10	100	1.2	5.67
08 Jan 03	1800	42.788	-90.936	1	08 Jan 03	6.7	11.7	9.1	10	100	9.0	12.78
11 Jan 03	0456	42.788	-90.944	1	10 Jan 03	7.2	-8.2	-16.6	10	50	8.7	12.13
15 Jan 03	2112	42.789	-90.945	1	15 Jan 03	2.5	-7.7	-12.2	10	100	8.7	12.05
20 Jan 03	2207	42.804	-90.982	2	20 Jan 03	3.1	-9.1	-14.5	10	100	7.4	9.28
23 Jan 03	0626	42.750	-90.580	0	22 Jan 03	6.3	-14.7	-24.3	11	100	14.5	24.00
25 Jan 03	1802	42.786	-90.927	1	25 Jan 03	6.2	-6.4	-13.7	10	100	9.3	13.51
28 Jan 03	0441	42.785	-90.951	1	27 Jan 03	5.2	-7.5	-14.4	11	100	8.1	11.56
30 Jan 03	2144	42.898	-90.736	0	30 Jan 03	5.2	-0.6	-5.7	10	100	24.6	31.65

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
02 Feb 03	0307	42.862	-91.052	1	01 Feb 03	2.5	2.2	-0.5	10	100	1.7	9.23
04 Feb 03	1907	43.015	-91.113	1	04 Feb 03	5.9	-11.9	-20.4	10	100	0.6	22.00
07 Feb 03	0349	42.842	-91.018	2	06 Feb 03	5.3	-10.0	-17.6	10	100	4.4	8.82
17 Feb 03	0457	42.776	-90.950	1	16 Feb 03	4.2	-3.5	-8.7	11	100	7.3	11.68
Winter of 2003-2004												
27 Oct 03	1845	42.751	-91.045	3	27 Oct 03	3.4	7.2	4.9	11	0	0.1	5.45
12 Nov 03	0343	42.827	-91.050	3	11 Nov 03	2.2	11.8	11.2	10	0	2.1	5.86
27 Nov 03	1825	44.137	-91.704	0	27 Nov 03	5.3	1.9	-2.7	5a	0	1.3	6.12
07 Dec 03	2307	44.307	-91.930	2	07 Dec 03	4.4	4.4	0.9	5	0	0.0	2.05
10 Dec 03	0444	44.287	-92.001	0	09 Dec 03	4.1	0.7	-3.5	5	0	3.6	7.54
12 Dec 03	2143	44.309	-91.925	1	12 Dec 03	1.3	-8.0	-10.5	5	100	0.0	1.74
15 Dec 03	0625	44.318	-91.925	2	14 Dec 03	3.7	-2.3	-6.8	5	100	0.0	0.76
17 Dec 03	1841	44.305	-91.936	1	17 Dec 03	1.0	-6.3	-7.8	5	80	0.0	2.44
20 Dec 03	0607	44.326	-91.923	1	19 Dec 03	4.9	-4.4	-10.4	4	100	0.0	0.18
22 Dec 03	1809	44.309	-91.922	2	22 Dec 03	3.1	4.2	1.5	5	100	0.0	1.73
25 Dec 03	0216	44.299	-91.925	2	24 Dec 03	0.8	-0.7	-1.1	5	100	0.0	2.85
29 Dec 03	2127	44.315	-91.940	1	29 Dec 03	4.8	-1.0	-6.0	5	100	0.0	1.77
03 Jan 04	2319	44.304	-91.910	1	03 Jan 04	4.0	-6.1	-11.8	5	60	0.1	2.48

Appendix A. Continued

Location Data					Night Roost Attributes							
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2003-2004 (Continued)												
06 Jan 04	0608	44.151	-91.843	2	05 Jan 04	6.5	-15.8	-25.9	5a	60	2.2	2.92
08 Jan 04	2240	44.164	-91.786	1	08 Jan 04	3.1	-4.4	-8.8	5	100	0.0	1.91
11 Jan 04	0500	44.161	-91.828	0	10 Jan 04	3.9	-0.3	-4.6	5a	80	0.6	1.45
13 Jan 04	2225	44.157	-91.791	1	13 Jan 04	2.6	-1.6	-5.1	5a	70	0.0	1.62
16 Jan 04	0441	43.787	-91.283	1	15 Jan 04	4.4	-3.6	-9.0	8	100	0.0	9.10
18 Jan 04	2033	42.762	-91.067	0	18 Jan 04	6.1	-11.2	-19.7	11	100	0.0	3.33
21 Jan 04	0354	42.795	-91.050	0	20 Jan 04	1.5	-7.3	-10.0	10	100	1.8	3.68
23 Jan 04	1906	42.819	-91.157	1	23 Jan 04	4.1	-4.2	-9.6	10	100	4.0	6.44
26 Jan 04	0534	42.747	-91.056	0	25 Jan 04	7.4	-5.3	-13.0	11	100	0.0	5.21
31 Jan 04	0340	42.752	-91.068	2	30 Jan 04	3.7	-18.4	-26.6	11	100	0.0	4.22
04 Feb 04	2048	42.793	-91.031	1	04 Feb 04	1.9	-7.4	-10.8	10	100	3.2	5.13
09 Feb 04	2304	42.791	-90.950	1	09 Feb 04	6.2	-2.5	-8.7	10	100	8.6	11.66
14 Feb 04	1851	42.841	-91.039	1	14 Feb 04	5.2	-2.9	-8.6	10	100	2.7	7.65
17 Feb 04	0347	42.848	-91.063	2	16 Feb 04	2.4	-4.5	-8.2	10	100	0.7	7.45
19 Feb 04	1833	42.844	-91.054	2	19 Feb 04	4.2	4.5	1.1	10	100	1.4	7.32
22 Feb 04	0432	42.851	-91.067	2	21 Feb 04	3.7	1.1	-2.7	10	100	0.5	7.67

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Bald Eagle 288												
Winter of 2000-2001												
13 Jan 01	1942	42.795	-90.943	2	13 Jan 01	5.0	1.1	-3.6	10	100	9.3	12.26
16 Jan 01	0550	42.809	-91.002	1	15 Jan 01	7.1	-0.6	-6.7	10	100	6.0	7.88
18 Jan 01	1929	42.809	-90.930	1	18 Jan 01	2.9	-2.0	-5.8	10	100	11.2	13.53
21 Jan 01	0339	42.761	-91.047	2	20 Jan 01	1.9	-11.2	-15.3	11	100	0.6	4.61
Winter of 2001-2002												
02 Jan 02	2151	42.804	-90.970	1	02 Jan 02	2.8	-4.1	-8.1	10	100	8.3	10.23
05 Jan 02	0522	42.808	-90.916	2	04 Jan 02	3.8	2.2	-1.4	10	100	11.8	14.63
10 Jan 02	0205	42.809	-91.018	0	09 Jan 02	3.6	9.5	7.6	10	100	4.7	6.67
12 Jan 02	0538	42.782	-91.271	0	11 Jan 02	3.8	9.8	7.9	11	100	13.5	14.48
14 Jan 02	2227	42.912	-91.098	2	14 Jan 02	5.0	2.8	-1.4	10	100	0.9	14.20
17 Jan 02	0513	42.838	-90.090	0	16 Jan 02	3.9	-2.7	-7.6	10	100	51.3	56.01
19 Jan 02	1838	42.797	-90.906	1	19 Jan 02	5.5	-1.7	-7.3	10	100	11.1	15.28
22 Jan 02	0137	42.901	-91.074	1	21 Jan 02	3.0	6.0	3.7	10	100	1.8	13.05
Winter of 2002-2003												
09 Jan 03	0604	42.849	-91.087	2	08 Jan 03	7.1	11.5	8.9	10	100	0.0	7.17
11 Jan 03	1846	42.798	-90.973	2	11 Jan 03	5.9	-7.2	-14.5	10	80	7.9	9.88

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2002-2003 (Continued)												
14 Jan 03	0341	42.845	-90.931	1	13 Jan 03	2.9	-8.0	-13.0	10	100	11.4	14.79
18 Jan 03	2114	42.795	-90.995	1	18 Jan 03	6.3	-9.5	-17.7	10	100	6.1	8.06
Bald Eagle 614												
Winter of 2004-2005												
29 Dec 04	1812	42.844	-91.048	3	29 Dec 04	0.8	-1.3	-1.8	10	90	1.9	7.54
30 Dec 04	1911	42.836	-91.066	1	30 Dec 04	4.6	12.7	11.1	10	90	0.7	6.11
31 Dec 04	1909	42.806	-90.964	3	31 Dec 04	5.7	2.1	-2.7	10	90	8.9	10.76
01 Jan 05	2318	42.811	-90.991	3	01 Jan 05	5.1	-1.0	-6.2	10	90	6.9	8.80
02 Jan 05	2255	42.783	-91.062	2	02 Jan 05	2.5	-1.0	-4.2	11	100	0.5	2.54
03 Jan 05	2230	42.785	-90.942	3	03 Jan 05	3.4	-3.4	-8.0	11	100	8.5	12.29
05 Jan 05	0421	42.789	-90.937	3	04 Jan 05	4.9	-2.9	-8.5	10	60	9.1	12.71
06 Jan 05	0230	42.785	-90.934	3	05 Jan 05	5.8	-7.5	-14.8	11	100	8.9	12.94
07 Jan 05	0358	42.803	-90.966	3	06 Jan 05	2.4	-8.6	-13.1	10	80	8.6	10.53
08 Jan 05	0441	42.829	-90.990	3	07 Jan 05	1.7	-7.0	-10.0	10	100	6.8	9.72
12 Jan 05	1926	42.838	-91.077	1	12 Jan 05	3.2	1.0	-2.4	10	100	0.0	6.07
13 Jan 05	2024	42.805	-90.960	1	13 Jan 05	7.8	-9.0	-17.9	10	100	9.2	11.05
14 Jan 05	2139	42.805	-90.969	3	14 Jan 05	2.6	-17.0	-23.3	10	100	8.5	10.34
15 Jan 05	2118	42.773	-90.937	3	15 Jan 05	3.2	-14.9	-21.7	11	100	7.7	12.77

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2004-2005 (Continued)												
17 Jan 05	0202	42.780	-91.067	3	16 Jan 05	5.1	-13.0	-21.3	11	100	0.1	2.20
18 Jan 05	0356	42.841	-91.053	3	17 Jan 05	2.4	-14.4	-19.9	10	100	1.5	7.06
19 Jan 05	0140	42.810	-90.962	2	18 Jan 05	8.1	-7.1	-15.6	10	100	9.2	11.02
20 Jan 05	0448	42.790	-90.973	1	19 Jan 05	4.6	-3.9	-9.5	10	100	7.4	9.78
21 Jan 05	0601	42.785	-90.946	2	20 Jan 05	3.8	-4.1	-9.2	11	100	8.3	11.97
24 Jan 05	1846	42.784	-90.944	3	24 Jan 05	1.7	-0.6	-2.7	11	100	8.3	12.13
25 Jan 05	1836	42.788	-90.947	3	25 Jan 05	4.1	3.9	0.5	10	100	8.5	11.89
26 Jan 05	2026	42.787	-90.948	3	26 Jan 05	3.9	-2.3	-7.1	10	100	8.4	11.80
27 Jan 05	1952	42.786	-90.948	2	27 Jan 05	3.2	-7.4	-12.5	10	100	8.3	11.80
28 Jan 05	2259	42.797	-90.940	3	28 Jan 05	3.4	-4.2	-8.9	10	100	9.7	12.52
29 Jan 05	2100	42.842	-91.050	3	29 Jan 05	1.9	-0.6	-3.0	10	100	1.8	7.27
31 Jan 05	0531	42.844	-91.052	3	30 Jan 05	2.0	0.9	-1.5	10	100	1.6	7.39
01 Feb 05	0231	42.806	-90.970	3	31 Jan 05	0.4	0.7	1.8	10	100	8.4	10.28
02 Feb 05	0425	42.808	-90.977	3	01 Feb 05	0.8	1.4	1.1	10	100	7.9	9.79
03 Feb 05	0545	42.803	-90.970	2	02 Feb 05	1.5	1.9	0.3	10	100	8.3	10.21
07 Feb 05	2053	42.792	-90.946	3	07 Feb 05	4.0	-2.0	-6.7	10	100	9.0	11.99
08 Feb 05	2209	42.803	-90.969	3	08 Feb 05	2.8	-2.9	-6.8	10	80	8.4	10.29
09 Feb 05	2328	42.792	-90.931	2	09 Feb 05	3.6	-4.3	-9.2	10	80	9.7	13.21

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2004-2005 (Continued)												
11 Feb 05	0216	42.785	-90.944	3	10 Feb 05	3.7	3.8	0.6	11	100	8.4	12.13
11 Feb 05	2241	42.804	-90.967	3	11 Feb 05	3.7	-4.5	-9.6	10	100	8.6	10.47
13 Feb 05	0335	42.804	-90.967	3	12 Feb 05	1.9	5.9	4.6	10	100	8.6	10.47
16 Feb 05	0522	42.810	-91.071	0	15 Feb 05	4.2	0.9	-3.3	10	90	0.4	3.32
22 Feb 05	2149	42.803	-90.976	2	22 Feb 05	3.6	0.8	-3.0	10	90	7.8	9.73
23 Feb 05	2128	42.787	-90.943	3	23 Feb 05	2.3	0.3	-2.5	10	90	8.6	12.21
24 Feb 05	2243	42.756	-91.072	3	24 Feb 05	1.4	1.7	0.4	11	100	0.0	3.67
26 Feb 05	0247	42.787	-90.946	3	25 Feb 05	4.2	3.3	-0.4	10	90	8.5	11.97
27 Feb 05	0236	42.790	-90.945	3	26 Feb 05	4.6	0.8	-3.7	10	90	8.8	12.06
04 Mar 05	1917	42.793	-90.946	2	04 Mar 05	5.9	7.6	4.2	10	100	9.0	12.00
05 Mar 05	2100	42.786	-90.946	3	05 Mar 05	4.8	6.3	3.1	10	100	8.4	11.97
Winter of 2005-2006												
01 Dec 05	2059	42.778	-91.066	3	01 Dec 05	5.9	-6.7	-13.9	11	0	0.1	2.34
02 Dec 05	1858	42.754	-91.074	3	02 Dec 05	0.4	-8.9	-8.1	11	0	0.0	3.80
03 Dec 05	1917	42.758	-91.017	1	03 Dec 05	2.6	-6.7	-11.1	11	20	2.3	6.89
04 Dec 05	2311	42.786	-90.946	3	04 Dec 05	3.7	-9.3	-15.5	10	100	8.4	11.97
06 Dec 05	0505	42.736	-91.028	2	05 Dec 05	2.1	-13.9	-18.9	11	100	0.0	7.62
07 Dec 05	0349	42.740	-91.050	3	06 Dec 05	3.7	-15.3	-22.7	11	100	0.0	6.13

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2005-2006 (Continued)												
08 Dec 05	0548	42.735	-91.045	3	07 Dec 05	1.5	-13.1	-16.6	11	100	0.0	6.82
09 Dec 05	0532	42.734	-91.043	3	08 Dec 05	2.5	-7.7	-12.1	11	100	0.0	7.01
13 Dec 05	1841	42.772	-91.059	3	13 Dec 05	5.2	-1.2	-6.5	11	100	0.3	3.13
14 Dec 05	2243	42.768	-91.075	3	14 Dec 05	3.8	1.0	-2.9	11	100	0.0	2.40
15 Dec 05	2111	42.780	-91.066	3	15 Dec 05	4.0	-3.5	-8.6	11	100	0.2	2.27
16 Dec 05	2057	42.803	-90.971	3	16 Dec 05	5.7	-7.7	-15.1	10	100	8.3	10.13
17 Dec 05	2131	42.804	-90.970	3	17 Dec 05	4.3	-11.8	-19.0	10	100	8.3	10.23
19 Dec 05	0146	42.827	-90.989	3	18 Dec 05	4.2	-13.3	-20.8	10	100	6.9	9.68
20 Dec 05	0238	42.806	-90.969	3	19 Dec 05	2.5	-12.7	-18.1	10	100	8.5	10.36
21 Dec 05	0408	42.757	-91.066	3	20 Dec 05	2.4	-8.1	-12.4	11	100	0.0	3.83
22 Dec 05	0525	42.758	-91.070	3	21 Dec 05	0.8	-9.5	-10.7	11	100	0.0	3.55
25 Dec 05	1902	42.851	-91.036	1	25 Dec 05	3.4	1.9	-1.6	10	100	2.9	8.71
26 Dec 05	2028	42.844	-91.037	2	26 Dec 05	4.4	0.6	-3.8	10	100	2.8	8.02
27 Dec 05	2244	42.844	-91.048	3	27 Dec 05	3.3	0.7	-2.9	10	100	1.9	7.54
28 Dec 05	2219	42.758	-91.072	3	28 Dec 05	4.2	0.4	-3.9	11	100	0.0	3.47
29 Dec 05	2018	42.779	-91.063	3	29 Dec 05	1.2	0.8	-0.3	11	100	0.3	2.54
30 Dec 05	2133	42.758	-91.069	3	30 Dec 05	3.5	1.0	-2.7	11	100	0.0	3.60
02 Jan 06	0330	42.804	-90.969	3	01 Jan 06	4.5	2.1	-1.9	10	90	8.4	10.31

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2005-2006 (Continued)												
03 Jan 06	0505	42.798	-90.957	2	02 Jan 06	4.9	3.9	0.0	10	80	8.9	11.16
07 Jan 06	1848	42.760	-91.072	2	07 Jan 06	1.6	3.5	2.1	11	100	0.0	3.28
08 Jan 06	1922	42.765	-91.075	3	08 Jan 06	4.0	3.8	0.3	11	100	0.0	2.68
09 Jan 06	1758	42.757	-91.070	3	09 Jan 06	3.9	0.6	-3.5	11	100	0.0	3.65
10 Jan 06	2222	42.767	-91.074	2	10 Jan 06	1.6	2.1	0.5	11	100	0.0	2.54
12 Jan 06	0103	42.759	-91.072	3	11 Jan 06	4.4	2.3	-1.7	11	100	0.0	3.37
12 Jan 06	2315	42.755	-91.069	3	12 Jan 06	2.4	9.3	8.1	11	100	0.0	3.88
14 Jan 06	0617	42.758	-91.071	3	13 Jan 06	8.7	0.8	-5.6	11	100	0.0	3.51
15 Jan 06	0421	42.759	-91.073	3	14 Jan 06	1.5	3.2	1.9	11	100	0.0	3.33
16 Jan 06	0445	42.758	-91.070	3	15 Jan 06	5.5	5.1	1.3	11	100	0.0	3.55
17 Jan 06	0600	42.760	-91.074	2	16 Jan 06	2.3	5.2	3.3	11	100	0.0	3.20
20 Jan 06	1838	42.759	-91.071	3	20 Jan 06	2.7	-1.6	-5.2	11	100	0.0	3.42
21 Jan 06	2129	42.779	-91.064	3	21 Jan 06	5.0	-2.3	-7.8	11	0	0.3	2.46
22 Jan 06	2246	42.768	-91.072	2	22 Jan 06	2.9	-1.5	-5.3	11	0	0.0	2.56
04 Feb 06	2016	42.779	-91.060	3	04 Feb 06	6.0	-6.3	-13.4	11	0	0.6	2.77
05 Feb 06	2046	42.779	-91.062	3	05 Feb 06	4.6	-1.0	-5.9	11	0	0.4	2.62
06 Feb 06	2129	42.777	-91.065	3	06 Feb 06	4.7	-0.3	-5.2	11	0	0.2	2.45
07 Feb 06	2322	42.778	-91.072	3	07 Feb 06	1.3	0.3	-1.0	11	0	0.0	1.89

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2005-2006 (Continued)												
09 Feb 06	0253	42.804	-90.967	3	08 Feb 06	3.7	-2.3	-6.9	10	20	8.6	10.47
10 Feb 06	0420	42.842	-91.050	3	09 Feb 06	4.8	-1.9	-7.1	10	50	1.8	7.27
11 Feb 06	0542	42.766	-91.064	2	10 Feb 06	3.0	1.0	-2.3	11	50	0.0	3.18
15 Feb 06	1933	42.846	-91.051	2	15 Feb 06	4.6	-0.6	-5.4	10	100	1.7	7.63
16 Feb 06	2131	42.845	-91.049	3	16 Feb 06	7.3	-5.0	-12.5	10	0	1.8	7.60
17 Feb 06	2110	42.782	-91.063	3	17 Feb 06	7.5	-17.8	-29.1	11	100	0.4	2.47
18 Feb 06	2228	42.781	-91.066	3	18 Feb 06	4.1	-15.6	-23.6	11	70	0.2	2.25
20 Feb 06	0107	42.846	-91.049	3	19 Feb 06	5.2	-9.1	-16.5	10	100	1.8	7.70
21 Feb 06	0238	42.844	-91.057	3	20 Feb 06	5.7	-2.0	-7.9	10	100	1.2	7.22
22 Feb 06	0431	42.844	-91.050	3	21 Feb 06	3.4	-1.2	-5.3	10	100	1.8	7.47
23 Feb 06	0528	42.844	-91.051	3	22 Feb 06	3.2	4.2	1.3	10	100	1.7	7.43
24 Feb 06	0501	42.776	-91.068	3	23 Feb 06	5.2	-1.4	-6.8	11	100	0.0	2.28
Bald Eagle 615												
Winter of 2004-2005												
10 Feb 05	1937	42.596	-90.826	2	10 Feb 05	3.7	-5.2	-10.5	11	100	6.3	16.16
23 Feb 05	1948	42.594	-90.931	2	23 Feb 05	2.4	0.4	-2.5	11	100	8.6	24.24

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Bald Eagle 945												
Winter of 2005-2006												
23 Feb 06	0256	40.926	-90.977	GPS	22 Feb 06	3.3	8.1	6.1	18	100	0.0	6.35
24 Feb 06	0304	40.910	-90.976	GPS	23 Feb 06	4.6	4.8	1.3	18	100	0.1	5.22
25 Feb 06	0313	40.910	-90.977	GPS	24 Feb 06	5.9	13.0	11.1	18	100	0.0	5.17
26 Feb 06	0322	40.910	-90.976	GPS	25 Feb 06	7.0	2.8	-2.4	18	100	0.1	5.19
27 Feb 06	0332	40.910	-90.977	GPS	26 Feb 06	3.5	3.9	0.8	18	100	0.0	5.18
28 Feb 06	0341	40.910	-90.977	GPS	27 Feb 06	4.2	10.3	8.3	18	60	0.0	5.15
01 Mar 06	0350	40.861	-91.058	GPS	28 Feb 06	2.8	9.2	7.7	19	70	0.0	3.53
02 Mar 06	0400	40.836	-91.081	GPS	01 Mar 06	2.8	16.8	16.8	19	0	0.0	6.91
03 Mar 06	0410	40.692	-91.099	GPS	02 Mar 06	6.8	4.1	-0.6	19	0	0.0	22.16
04 Mar 06	0512	40.697	-91.098	3	03 Mar 06	2.0	7.5	6.3	19	0	0.0	21.60
Bald Eagle 944												
Winter of 2005-2006												
26 Feb 06	1849	42.849	-91.079	GPS	26 Feb 06	3.2	0.8	-2.7	10	90	0.0	7.29
27 Feb 06	1857	42.849	-91.079	GPS	27 Feb 06	4.9	1.1	-3.4	10	90	0.0	7.27
28 Feb 06	1906	42.849	-91.078	GPS	28 Feb 06	2.6	3.6	1.1	10	90	0.0	7.25
01 Mar 06	1915	42.843	-91.081	GPS	01 Mar 06	5.2	4.6	0.7	10	80	0.0	6.56
03 Mar 06	1930	42.854	-91.091	GPS	03 Mar 06	2.0	4.3	2.6	10	80	0.0	7.67

Appendix A. Continued

Location Data						Night Roost Attributes						
Date (CST)	Time (CST)	Latitude	Longitude	Location Class	Adjusted Date [1]	Wind Speed (mps)	Temperature (°C)	Wind Chill (°C)	River Pool	Percent Ice-cover	Distance to River (km)	Distance to Dam (km)
Winter of 2005-2006 (Continued)												
04 Mar 06	1938	42.854	-91.092	GPS	04 Mar 06	2.8	4.9	2.5	10	80	0.0	7.72
05 Mar 06	1945	42.860	-91.092	GPS	05 Mar 06	2.4	0.7	-2.2	10	60	0.0	8.35
06 Mar 06	1954	42.849	-91.079	GPS	06 Mar 06	3.0	2.0	-1.0	10	0	0.0	7.26
08 Mar 06	2001	42.845	-91.082	3	08 Mar 06	3.5	4.7	1.8	10	0	0.0	6.76
11 Mar 06	0400	42.850	-91.079	GPS	10 Mar 06	3.0	10.2	8.7	10	0	0.0	7.37
13 Mar 06	0232	42.869	-91.090	1	12 Mar 06	6.4	3.5	-1.2	10	0	0.0	9.39

Appendix B. Area of habitat within a 1000 m buffered region of each winter night roost location of the 13 Bald Eagle individuals captured near Glen Haven, Wisconsin and tracked between 1999-2006.

	Habitat Type (km^2)														
Date (CST)	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Bald Eagle 838															
Winter of 1999-2000															
10 Jan 00	0.33	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.31	0.04
14 Jan 00	0.31	0.01	0.04	0.00	0.00	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.35	0.01
18 Jan 00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.02
27 Jan 00	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
01 Feb 00	0.18	0.01	0.07	0.01	0.00	0.00	0.15	0.02	0.00	0.02	0.00	0.00	0.00	0.31	0.01
05 Feb 00	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.08
09 Feb 00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.15	0.36	0.10	0.00	0.00
Bald Eagle 832															
Winter of 1999-2000															
28 Dec 99	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31 Dec 99	0.49	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00
02 Jan 00	0.27	0.00	0.00	0.00	0.01	0.00	0.11	0.00	0.00	0.00	0.00	0.06	0.13	0.20	0.00
04 Jan 00	0.23	0.05	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.14	0.30	0.03
11 Jan 00	0.00	0.00	0.03	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.14	0.17	0.00	0.00
14 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00
16 Jan 00	0.00	0.06	0.06	0.01	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.17	0.12	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
18 Jan 00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.11	0.26	0.09
21 Jan 00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.21	0.31	0.00
23 Jan 00	0.00	0.01	0.05	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.50	0.21	0.00
Bald Eagle 221															
Winter of 1999-2000															
27 Dec 99	0.00	0.02	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.18	0.17	0.00	0.00
31 Dec 99	0.00	0.05	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.68	0.04	0.00
03 Jan 00	0.04	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.22	0.00	0.04	0.42
05 Jan 00	0.00	0.04	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.18	0.36	0.00	0.00
07 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.20	0.43	0.00	0.00
10 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.62	0.03	0.00	0.00
12 Jan 00	0.00	0.01	0.03	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.18	0.50	0.00	0.00
14 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00
16 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00
19 Jan 00	0.00	0.03	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	0.00
21 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.10	0.32	0.00	0.00
23 Jan 00	0.00	0.03	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.68	0.02	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
26 Jan 00	0.00	0.00	0.01	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00
Winter of 2000-2001															
14 Dec 01	0.03	0.03	0.00	0.00	0.00	0.00	0.35	0.01	0.00	0.00	0.03	0.00	0.30	0.02	0.02
18 Dec 01	0.03	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.12	0.00	0.44	0.06	0.05
20 Dec 01	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.12	0.43	0.00	0.00
25 Dec 01	0.00	0.03	0.00	0.00	0.00	0.01	0.10	0.00	0.00	0.00	0.07	0.27	0.30	0.00	0.00
27 Dec 01	0.00	0.03	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.15	0.47	0.03	0.00	0.00
30 Dec 01	0.00	0.04	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.17	0.16	0.07	0.00	0.00
01 Jan 02	0.06	0.13	0.11	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
03 Jan 02	0.05	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.06	0.13	0.04	0.33	0.02
06 Jan 02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.61	0.00	0.00
10 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.07	0.14	0.13	0.03	0.01
13 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.11	0.52	0.14	0.00	0.00
17 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.01	0.00	0.00	0.03	0.11	0.00	0.00	0.00
20 Jan 02	0.05	0.08	0.06	0.00	0.00	0.00	0.23	0.00	0.01	0.00	0.00	0.12	0.22	0.02	0.00
24 Jan 02	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.02
27 Jan 02	0.00	0.05	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.14	0.19	0.12	0.00	0.00
08 Feb 02	0.00	0.02	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.03	0.20	0.36	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
18 Nov 02	0.00	0.02	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.03	0.34	0.30	0.00	0.00
21 Nov 02	0.00	0.03	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.07	0.07	0.59	0.00	0.00
25 Nov 02	0.00	0.02	0.01	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.17	0.38	0.05	0.00	0.00
28 Nov 02	0.00	0.02	0.00	0.00	0.00	0.00	0.09	0.02	0.00	0.00	0.07	0.15	0.43	0.00	0.00
02 Dec 02	0.00	0.02	0.01	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.18	0.44	0.07	0.00	0.00
05 Dec 02	0.00	0.04	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.10	0.40	0.17	0.00	0.00
09 Dec 02	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.15	0.24	0.14	0.00	0.00
12 Dec 02	0.00	0.03	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.09	0.34	0.13	0.01	0.00
16 Dec 02	0.00	0.05	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.12	0.00	0.58	0.00	0.00
19 Dec 02	0.00	0.11	0.14	0.08	0.01	0.00	0.01	0.00	0.00	0.00	0.04	0.19	0.22	0.00	0.00
23 Dec 02	0.00	0.02	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.31	0.03	0.28	0.00	0.00
26 Dec 02	0.00	0.01	0.02	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.04	0.59	0.00	0.00	0.00
30 Dec 02	0.01	0.05	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.09	0.05	0.52	0.01	0.01
02 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.17	0.15	0.30	0.00	0.00
06 Jan 03	0.00	0.03	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.10	0.08	0.24	0.00	0.03
09 Jan 03	0.00	0.04	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.10	0.36	0.04	0.00	0.00
13 Jan 03	0.00	0.04	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.04	0.02	0.66	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
16 Jan 03	0.00	0.01	0.03	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.24	0.49	0.00	0.00
20 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.01	0.00	0.24	0.36	0.06
23 Jan 03	0.00	0.01	0.05	0.02	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.13	0.44	0.00	0.00
27 Jan 03	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
07 Feb 03	0.00	0.05	0.03	0.00	0.00	0.00	0.45	0.00	0.00	0.01	0.04	0.19	0.02	0.00	0.00
Bald Eagle 216															
Winter of 1999-2000															
18 Dec 99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.70	0.02	0.00
20 Dec 99	0.37	0.02	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.08	0.21	0.00
22 Dec 99	0.00	0.01	0.03	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.12	0.59	0.00	0.00
25 Dec 99	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.29	0.06
27 Dec 99	0.57	0.04	0.01	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.05	0.01
28 Dec 99	0.00	0.03	0.05	0.00	0.00	0.00	0.44	0.00	0.00	0.01	0.08	0.02	0.17	0.00	0.00
02 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00
05 Jan 00	0.00	0.01	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.02	0.03	0.19	0.23	0.00	0.00
07 Jan 00	0.18	0.01	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.14	0.36	0.05
10 Jan 00	0.00	0.06	0.46	0.26	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
12 Jan 00	0.35	0.10	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.01
13 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.04	0.00	0.00	0.03	0.02	0.12	0.00	0.00
15 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.05	0.22	0.48	0.00	0.00
16 Jan 00	0.00	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00
19 Jan 00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
21 Jan 00	0.00	0.12	0.15	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.39	0.00	0.00
24 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.05	0.71	0.00	0.00
26 Jan 00	0.00	0.00	0.02	0.00	0.00	0.00	0.11	0.01	0.01	0.00	0.00	0.15	0.48	0.00	0.00
28 Jan 00	0.34	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.07	0.32	0.02
01 Feb 00	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.72	0.00	0.00
02 Feb 00	0.48	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.25	0.00
05 Feb 00	0.00	0.01	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.02	0.00	0.11	0.27	0.01	0.00
07 Feb 00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.02	0.01	0.08	0.34	0.00	0.00
10 Feb 00	0.00	0.00	0.02	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00
12 Feb 00	0.00	0.39	0.02	0.00	0.00	0.00	0.11	0.01	0.01	0.00	0.04	0.06	0.13	0.01	0.01
18 Feb 00	0.00	0.01	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00
21 Feb 00	0.00	0.00	0.06	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.02	0.42	0.00	0.00
22 Feb 00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.36	0.05

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
24 Feb 00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00
Winter of 2000-2001															
09 Dec 00	0.00	0.04	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.16	0.41	0.11	0.00
14 Dec 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
16 Dec 00	0.22	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.29	0.07	0.07
18 Dec 00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
19 Dec 00	0.00	0.09	0.05	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.05	0.10	0.00	0.01
21 Dec 00	0.10	0.01	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.03	0.01	0.26	0.22	0.07	0.05
24 Dec 00	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
27 Dec 00	0.00	0.20	0.23	0.14	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.09	0.00	0.00
30 Dec 00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.13	0.00	0.09	0.00	0.00
02 Jan 01	0.00	0.05	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.04	0.66	0.00	0.00
04 Jan 01	0.61	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.13	0.01
05 Jan 01	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.30	0.00
08 Jan 01	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.04	0.00	0.00	0.02	0.03	0.00	0.00	0.00
10 Jan 01	0.00	0.02	0.01	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.28	0.34	0.00	0.00
13 Jan 01	0.00	0.01	0.02	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.32	0.37	0.00	0.00
17 Jan 01	0.00	0.06	0.08	0.06	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.19	0.33	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2000-2001 (Continued)															
18 Jan 01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.75	0.00	0.00
21 Jan 01	0.01	0.06	0.01	0.00	0.00	0.00	0.09	0.00	0.00	0.01	0.02	0.12	0.12	0.36	0.00
23 Jan 01	0.00	0.07	0.00	0.00	0.00	0.00	0.23	0.01	0.00	0.00	0.21	0.21	0.07	0.00	0.00
24 Jan 01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.14	0.24	0.04
26 Jan 01	0.05	0.01	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.01	0.20	0.15	0.00
27 Jan 01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.71	0.00	0.00
30 Jan 01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
01 Feb 01	0.00	0.05	0.13	0.00	0.00	0.00	0.46	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04 Feb 01	0.00	0.05	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.08	0.63	0.00	0.00
12 Feb 01	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.17	0.02
15 Feb 01	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.00
17 Feb 01	0.00	0.00	0.03	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.30	0.27	0.00	0.00
20 Feb 01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
21 Feb 01	0.00	0.01	0.02	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.13	0.12	0.00	0.00
25 Feb 01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
26 Feb 01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.75	0.00	0.00
03 Mar 01	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.18	0.01

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2000-2001 (Continued)															
06 Mar 01	0.01	0.01	0.03	0.01	0.00	0.00	0.29	0.00	0.00	0.00	0.01	0.08	0.30	0.05	0.00
09 Mar 01	0.01	0.03	0.01	0.00	0.00	0.00	0.15	0.02	0.00	0.02	0.04	0.30	0.19	0.01	0.00
11 Mar 01	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00
Bald Eagle 217															
Winter of 1999-2000															
14 Dec 99	0.52	0.04	0.06	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.07	0.02	0.00	0.00	0.04
20 Dec 99	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00
22 Dec 99	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
25 Dec 99	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.06	0.62	0.00	0.00
26 Dec 99	0.74	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
27 Dec 99	0.00	0.02	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.19	0.16	0.00	0.00
31 Dec 99	0.00	0.10	0.02	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00
01 Jan 00	0.06	0.14	0.34	0.12	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
03 Jan 00	0.01	0.06	0.02	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.12	0.18	0.00	0.00
06 Jan 00	0.00	0.20	0.15	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00
08 Jan 00	0.00	0.27	0.15	0.05	0.01	0.00	0.10	0.00	0.00	0.00	0.01	0.05	0.03	0.11	0.01
09 Jan 00	0.26	0.08	0.06	0.05	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00
12 Jan 00	0.01	0.02	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
14 Jan 00	0.15	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.09	0.28	0.21	0.00
18 Jan 00	0.00	0.06	0.20	0.12	0.01	0.00	0.07	0.00	0.00	0.00	0.02	0.09	0.11	0.10	0.00
21 Jan 00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.05	0.73	0.00	0.00
22 Jan 00	0.07	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.03	0.06	0.00	0.04
23 Jan 00	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00
24 Jan 00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
26 Jan 00	0.00	0.12	0.01	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.07	0.02	0.38	0.00	0.00
27 Jan 00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
31 Jan 00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
02 Feb 00	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.02
05 Feb 00	0.13	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.28	0.03
06 Feb 00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00
08 Feb 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
10 Feb 00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.28	0.32	0.06
11 Feb 00	0.00	0.03	0.02	0.00	0.00	0.00	0.40	0.00	0.01	0.02	0.05	0.06	0.19	0.00	0.00
13 Feb 00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.02	0.00	0.24	0.25	0.00	0.00
14 Feb 00	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
16 Feb 00	0.00	0.15	0.37	0.03	0.00	0.00	0.18	0.00	0.00	0.00	0.02	0.04	0.00	0.00	0.00
17 Feb 00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.27	0.00
22 Feb 00	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.02
23 Feb 00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.05
27 Feb 00	0.45	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.05	0.18	0.00
28 Feb 00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.77	0.01	0.00
Winter of 2000-2001															
15 Dec 00	0.00	0.01	0.01	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.10	0.34	0.00	0.00
17 Dec 00	0.00	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.43	0.15	0.00	0.00
18 Dec 00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.00
20 Dec 00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00
21 Dec 00	0.00	0.03	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.10	0.10	0.47	0.00	0.01
22 Dec 00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.74	0.00	0.00
24 Dec 00	0.00	0.04	0.01	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.14	0.48	0.02	0.00
29 Dec 00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.18	0.23	0.00	0.00
30 Dec 00	0.00	0.03	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.04	0.69	0.00	0.00
31 Dec 00	0.00	0.05	0.01	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2000-2001 (Continued)															
03 Jan 01	0.30	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.01	0.00	0.01	0.27	0.08
05 Jan 01	0.00	0.00	0.04	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00
08 Jan 01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.77	0.01	0.00
09 Jan 01	0.56	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00
11 Jan 01	0.48	0.07	0.07	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.09	0.00	0.00	0.01	0.00
16 Jan 01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
17 Jan 01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00
19 Jan 01	0.00	0.04	0.09	0.00	0.00	0.01	0.16	0.00	0.00	0.00	0.07	0.41	0.00	0.00	0.00
21 Jan 01	0.00	0.04	0.02	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.29	0.38	0.00	0.00
22 Jan 01	0.09	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.45	0.13	0.00
23 Jan 01	0.00	0.12	0.22	0.29	0.14	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25 Jan 01	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.38	0.01	0.00
26 Jan 01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.72	0.04	0.00
28 Jan 01	0.00	0.42	0.08	0.01	0.02	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.14	0.02	0.00
31 Jan 01	0.00	0.02	0.07	0.01	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00
01 Feb 01	0.00	0.02	0.05	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00
03 Feb 01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00
04 Feb 01	0.37	0.01	0.05	0.04	0.01	0.01	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.10	0.03

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2000-2001 (Continued)															
06 Feb 01	0.02	0.01	0.04	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.68	0.00	0.00
07 Feb 01	0.45	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00
09 Feb 01	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.59	0.00	0.00
10 Feb 01	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.71	0.00	0.00
12 Feb 01	0.00	0.04	0.10	0.01	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00
13 Feb 01	0.16	0.02	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.02	0.44	0.10	0.00
15 Feb 01	0.00	0.02	0.02	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00
16 Feb 01	0.00	0.03	0.02	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.01	0.63	0.00	0.00
19 Feb 01	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
20 Feb 01	0.22	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.51	0.00
22 Feb 01	0.00	0.01	0.01	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.07	0.49	0.00	0.00
23 Feb 01	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.58	0.11	0.02
25 Feb 01	0.16	0.01	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.07	0.28	0.20	0.00
26 Feb 01	0.00	0.05	0.03	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.12	0.41	0.00	0.00
28 Feb 01	0.00	0.06	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.02	0.00	0.46	0.01	0.00
03 Mar 01	0.54	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.18	0.02
04 Mar 01	0.00	0.01	0.12	0.01	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.51	0.01	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2000-2001 (Continued)															
06 Mar 01	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.71	0.00	0.00
07 Mar 01	0.20	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.01	0.02
10 Mar 01	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
13 Mar 01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
15 Mar 01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.00
17 Mar 01	0.26	0.01	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.46	0.00
19 Mar 01	0.02	0.02	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.21	0.00	0.05	0.29	0.09
21 Mar 01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.73	0.03	0.00
22 Mar 01	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.69	0.04	0.00
23 Mar 01	0.00	0.00	0.05	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.60	0.04	0.00
25 Mar 01	0.00	0.02	0.07	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.62	0.00	0.00
Winter of 2001-2002															
02 Dec 01	0.03	0.08	0.02	0.00	0.00	0.02	0.22	0.01	0.00	0.00	0.07	0.26	0.00	0.00	0.07
05 Dec 01	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00
07 Dec 01	0.00	0.00	0.01	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.10	0.29	0.00	0.00
08 Dec 01	0.25	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.37	0.11	0.00
09 Dec 01	0.10	0.02	0.13	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.39	0.00	0.07	0.05	0.01
10 Dec 01	0.38	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.19	0.16	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2001-2002 (Continued)															
11 Dec 01	0.16	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.40	0.11	0.00
14 Dec 01	0.00	0.04	0.03	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.04	0.31	0.00	0.00
16 Dec 01	0.18	0.05	0.04	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.31	0.00	0.12	0.03	0.01
18 Dec 01	0.03	0.01	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.10	0.46	0.10	0.00
20 Dec 01	0.05	0.17	0.08	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.31	0.00	0.01
22 Dec 01	0.39	0.11	0.13	0.09	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
24 Dec 01	0.00	0.00	0.10	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.50	0.14	0.00
26 Dec 01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.17	0.61	0.00	0.00
27 Dec 01	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
28 Dec 01	0.19	0.02	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.07	0.18	0.27	0.00
30 Dec 01	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.48	0.02
02 Jan 02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
04 Jan 02	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
05 Jan 02	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.26	0.00
08 Jan 02	0.00	0.13	0.04	0.01	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.30	0.04	0.00	0.00
10 Jan 02	0.00	0.10	0.12	0.06	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.13	0.33	0.00	0.00
11 Jan 02	0.00	0.19	0.07	0.05	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2001-2002 (Continued)															
12 Jan 02	0.00	0.05	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.13	0.00	0.54	0.05	0.00
13 Jan 02	0.20	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.05	0.35	0.06
16 Jan 02	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.68	0.02	0.00
19 Jan 02	0.00	0.05	0.01	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.11	0.16	0.35	0.00	0.05
22 Jan 02	0.23	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.05	0.39	0.01
24 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.02	0.00	0.24	0.27	0.02
25 Jan 02	0.46	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.28	0.01
27 Jan 02	0.15	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.21	0.31	0.03
28 Jan 02	0.00	0.01	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.06	0.11	0.41	0.00	0.00
05 Feb 02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
07 Feb 02	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
10 Feb 02	0.18	0.08	0.08	0.07	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00
12 Feb 02	0.00	0.06	0.02	0.00	0.00	0.00	0.49	0.00	0.00	0.00	0.00	0.06	0.15	0.00	0.00
14 Feb 02	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
16 Feb 02	0.15	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.18	0.00	0.00	0.36	0.07
19 Feb 02	0.00	0.02	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.12	0.05	0.20	0.00	0.00
20 Feb 02	0.08	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.25

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2001-2002 (Continued)															
24 Feb 02	0.25	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.08	0.02	0.00	0.10	0.00
25 Feb 02	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.28
01 Mar 02	0.23	0.01	0.02	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.23	0.25	0.00
03 Mar 02	0.00	0.07	0.12	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.01
06 Mar 02	0.00	0.38	0.20	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.02	0.01	0.00
07 Mar 02	0.00	0.00	0.03	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00
09 Mar 02	0.14	0.09	0.05	0.02	0.01	0.03	0.00	0.00	0.00	0.00	0.19	0.00	0.23	0.02	0.01
12 Mar 02	0.22	0.09	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.09	0.05	0.02
13 Mar 02	0.31	0.10	0.08	0.05	0.00	0.02	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.05	0.04
15 Mar 02	0.40	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.15	0.01	0.01
18 Mar 02	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.14	0.59	0.02	0.00
19 Mar 02	0.31	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.02	0.02
21 Mar 02	0.42	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.01	0.23	0.00
23 Mar 02	0.53	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.21	0.00
26 Mar 02	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.34	0.16	0.00	0.00
27 Mar 02	0.20	0.02	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.02	0.19	0.32	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003															
25 Nov 02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.07	0.71	0.00	0.00
27 Nov 02	0.53	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.01
28 Nov 02	0.60	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.02
30 Nov 02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.77	0.00	0.00
01 Dec 02	0.06	0.04	0.03	0.00	0.00	0.00	0.50	0.00	0.00	0.01	0.13	0.01	0.00	0.00	0.00
03 Dec 02	0.00	0.00	0.03	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.05	0.34	0.00	0.00
04 Dec 02	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.54	0.02
06 Dec 02	0.35	0.01	0.01	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.06	0.31	0.00
07 Dec 02	0.22	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.27	0.20
08 Dec 02	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
09 Dec 02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.75	0.00	0.00
12 Dec 02	0.08	0.01	0.01	0.00	0.00	0.05	0.29	0.00	0.01	0.00	0.03	0.01	0.08	0.21	0.01
14 Dec 02	0.48	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.03	0.15	0.09	0.00
15 Dec 02	0.43	0.00	0.01	0.02	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00
17 Dec 02	0.75	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19 Dec 02	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.16	0.01
20 Dec 02	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.30	0.02
21 Dec 02	0.00	0.05	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.21	0.48	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
23 Dec 02	0.00	0.01	0.03	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.24	0.44	0.00	0.00
26 Dec 02	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
27 Dec 02	0.00	0.18	0.21	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00
29 Dec 02	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
30 Dec 02	0.25	0.01	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.32	0.12
31 Dec 02	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.54	0.05
02 Jan 03	0.66	0.00	0.03	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
03 Jan 03	0.05	0.01	0.04	0.05	0.00	0.00	0.01	0.01	0.00	0.02	0.00	0.03	0.55	0.01	0.01
06 Jan 03	0.01	0.02	0.11	0.02	0.00	0.06	0.40	0.00	0.00	0.00	0.00	0.07	0.11	0.00	0.00
08 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
09 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.12	0.66	0.00	0.00
11 Jan 03	0.15	0.15	0.04	0.05	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.07	0.00	0.24	0.00
12 Jan 03	0.00	0.10	0.05	0.01	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.00
14 Jan 03	0.00	0.19	0.48	0.09	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15 Jan 03	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.07
17 Jan 03	0.41	0.02	0.01	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00
18 Jan 03	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
20 Jan 03	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.37	0.02
21 Jan 03	0.64	0.00	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
24 Jan 03	0.67	0.00	0.00	0.03	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00
25 Jan 03	0.04	0.03	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.01	0.38	0.17	0.00
27 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
29 Jan 03	0.00	0.00	0.04	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.00
30 Jan 03	0.51	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00
01 Feb 03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.60	0.12	0.00
02 Feb 03	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.32	0.07
04 Feb 03	0.53	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.23	0.00
05 Feb 03	0.59	0.11	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
07 Feb 03	0.00	0.15	0.04	0.01	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.03	0.25	0.00	0.00
10 Feb 03	0.00	0.11	0.30	0.31	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11 Feb 03	0.21	0.09	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.02	0.16	0.15	0.00
13 Feb 03	0.65	0.01	0.09	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
14 Feb 03	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00
16 Feb 03	0.47	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.27	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
18 Feb 03	0.52	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00
19 Feb 03	0.34	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00
20 Feb 03	0.08	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.39	0.00	0.22	0.01	0.04
21 Feb 03	0.00	0.02	0.01	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.05	0.19	0.00	0.00
22 Feb 03	0.20	0.02	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.02	0.25	0.24	0.00
23 Feb 03	0.28	0.01	0.03	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.25	0.15	0.00
28 Feb 03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
01 Mar 03	0.29	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00
03 Mar 03	0.10	0.04	0.20	0.29	0.14	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
06 Mar 03	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.55	0.08	0.00
07 Mar 03	0.17	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.23	0.02	0.02
09 Mar 03	0.00	0.03	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.04	0.00	0.61	0.00	0.00
10 Mar 03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.14	0.56	0.01	0.00
12 Mar 03	0.42	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.24	0.00
13 Mar 03	0.44	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00
15 Mar 03	0.61	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.09	0.01	0.01
16 Mar 03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.65	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
18 Mar 03	0.00	0.01	0.04	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.11	0.37	0.00	0.00
19 Mar 03	0.00	0.02	0.05	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.03	0.66	0.00	0.00
21 Mar 03	0.17	0.14	0.05	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.17	0.05
24 Mar 03	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
Winter of 2003-2004															
06 Dec 03	0.37	0.05	0.11	0.00	0.00	0.00	0.14	0.01	0.00	0.00	0.03	0.07	0.00	0.00	0.00
08 Dec 03	0.00	0.02	0.07	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.26	0.38	0.00	0.00
11 Dec 03	0.02	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.44	0.09	0.06
12 Dec 03	0.00	0.03	0.00	0.00	0.00	0.00	0.39	0.01	0.00	0.03	0.06	0.03	0.24	0.00	0.00
13 Dec 03	0.23	0.17	0.09	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.08	0.21	0.00	0.00
18 Dec 03	0.09	0.05	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.05
20 Dec 03	0.00	0.03	0.00	0.00	0.00	0.00	0.45	0.00	0.01	0.00	0.00	0.16	0.14	0.00	0.00
21 Dec 03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.70	0.05
24 Dec 03	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.44	0.00	0.00
26 Dec 03	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.37	0.03
28 Dec 03	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.30	0.05
29 Dec 03	0.70	0.00	0.01	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2003-2004 (Continued)															
01 Jan 04	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.28	0.04
06 Jan 04	0.02	0.04	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.02	0.09	0.16	0.12	0.00	0.00
08 Jan 04	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00
09 Jan 04	0.40	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.35	0.00
11 Jan 04	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.01
13 Jan 04	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.47	0.06
15 Jan 04	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.23	0.02
19 Jan 04	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.46	0.14	0.00
20 Jan 04	0.02	0.08	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.01	0.00	0.00	0.48	0.05
23 Jan 04	0.00	0.06	0.02	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.24	0.39	0.00	0.00
25 Jan 04	0.00	0.07	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.06	0.00	0.58	0.00	0.00
26 Jan 04	0.00	0.18	0.41	0.03	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28 Jan 04	0.00	0.06	0.00	0.00	0.00	0.00	0.15	0.01	0.00	0.00	0.15	0.38	0.04	0.00	0.00
30 Jan 04	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.32	0.03	0.25	0.01	0.01
31 Jan 04	0.19	0.01	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.05	0.08	0.40	0.00
01 Feb 04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
03 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.78	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2003-2004 (Continued)															
05 Feb 04	0.00	0.06	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.03	0.00	0.23	0.00	0.00
06 Feb 04	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
08 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
09 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00
11 Feb 04	0.00	0.02	0.01	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.08	0.44	0.05	0.01	0.00
12 Feb 04	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.18	0.22	0.06
14 Feb 04	0.50	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.11	0.16	0.01
15 Feb 04	0.00	0.03	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.10	0.62	0.00	0.00
18 Feb 04	0.36	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00
20 Feb 04	0.17	0.14	0.03	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.02	0.17	0.05
21 Feb 04	0.00	0.02	0.03	0.13	0.24	0.01	0.00	0.00	0.00	0.00	0.28	0.00	0.08	0.00	0.00
23 Feb 04	0.43	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00
26 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
27 Feb 04	0.34	0.07	0.04	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.03	0.03
01 Mar 04	0.29	0.05	0.03	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.00	0.16	0.02
03 Mar 04	0.00	0.00	0.05	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.67	0.04	0.00
06 Mar 04	0.59	0.02	0.05	0.01	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2003-2004 (Continued)															
08 Mar 04	0.00	0.07	0.20	0.27	0.07	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.13	0.01	0.00
10 Mar 04	0.51	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00
11 Mar 04	0.00	0.01	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.25	0.46	0.00	0.00
12 Mar 04	0.00	0.02	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14 Mar 04	0.33	0.05	0.05	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.22	0.00	0.00	0.04	0.04
17 Mar 04	0.00	0.01	0.06	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.06	0.59	0.00	0.00
19 Mar 04	0.04	0.03	0.14	0.08	0.02	0.01	0.00	0.00	0.00	0.00	0.30	0.00	0.11	0.05	0.01
22 Mar 04	0.23	0.02	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.09	0.39	0.00
Winter of 2004-2005															
15 Dec 04	0.00	0.04	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.07	0.11	0.18	0.05	0.02	0.00
16 Dec 04	0.00	0.75	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18 Dec 04	0.12	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.07	0.04	0.42	0.11
19 Dec 04	0.00	0.00	0.04	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.15	0.45	0.00	0.00
21 Dec 04	0.00	0.06	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.26	0.00	0.00
22 Dec 04	0.01	0.03	0.01	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.03	0.08	0.32	0.00	0.00
25 Dec 04	0.00	0.04	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.15	0.00	0.39	0.02	0.01
27 Dec 04	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.43	0.31	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2004-2005 (Continued)															
28 Dec 04	0.00	0.08	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.07	0.00	0.26	0.30	0.00
30 Dec 04	0.29	0.02	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.02	0.00	0.07	0.31	0.00
31 Dec 04	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.21	0.20	0.03
03 Jan 05	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.71	0.00	0.00
07 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00
08 Jan 05	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.00
10 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00	0.05	0.07	0.00	0.00
13 Jan 05	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.48	0.00
15 Jan 05	0.00	0.02	0.05	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.06	0.01	0.53	0.00	0.00
16 Jan 05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.59	0.04	0.05
18 Jan 05	0.48	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.16	0.12
19 Jan 05	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.17	0.23	0.06
23 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.63	0.00	0.00
24 Jan 05	0.32	0.03	0.02	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.28	0.03	0.00
25 Jan 05	0.24	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.36	0.16	0.01
30 Jan 05	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.58	0.00	0.00
31 Jan 05	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.26	0.00	0.02

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2004-2005 (Continued)															
02 Feb 05	0.01	0.01	0.01	0.00	0.00	0.00	0.61	0.00	0.01	0.00	0.13	0.00	0.00	0.00	0.00
03 Feb 05	0.47	0.00	0.00	0.00	0.00	0.04	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.21	0.00
04 Feb 05	0.54	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00
05 Feb 05	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
10 Feb 05	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.33	0.42	0.00	0.00
12 Feb 05	0.14	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00
13 Feb 05	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01
15 Feb 05	0.01	0.02	0.02	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.12	0.52	0.00	0.00
16 Feb 05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.48	0.00	0.00
18 Feb 05	0.01	0.08	0.02	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00
21 Feb 05	0.09	0.03	0.02	0.03	0.01	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00
23 Feb 05	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.56	0.00	0.00
24 Feb 05	0.11	0.06	0.02	0.04	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.08	0.21	0.00
26 Feb 05	0.00	0.30	0.29	0.08	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00
27 Feb 05	0.28	0.11	0.24	0.11	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01 Mar 05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00
02 Mar 05	0.00	0.09	0.01	0.04	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.11	0.27	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2004-2005 (Continued)															
04 Mar 05	0.09	0.01	0.13	0.07	0.01	0.01	0.00	0.00	0.00	0.00	0.34	0.00	0.08	0.05	0.01
05 Mar 05	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.00
07 Mar 05	0.00	0.01	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.04	0.27	0.31	0.00	0.00
10 Mar 05	0.14	0.02	0.01	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.05	0.42	0.07	0.00
12 Mar 05	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00
13 Mar 05	0.46	0.06	0.11	0.08	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
15 Mar 05	0.10	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.30	0.07	0.02
16 Mar 05	0.52	0.01	0.01	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.09	0.00	0.00	0.10	0.00
17 Mar 05	0.01	0.02	0.05	0.03	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00
19 Mar 05	0.00	0.15	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.53	0.01	0.00
21 Mar 05	0.00	0.08	0.03	0.02	0.01	0.00	0.04	0.00	0.00	0.00	0.10	0.04	0.47	0.00	0.00
22 Mar 05	0.50	0.02	0.02	0.01	0.10	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00
24 Mar 05	0.06	0.01	0.06	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.47	0.00	0.10	0.03	0.02
25 Mar 05	0.03	0.04	0.17	0.25	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27 Mar 05	0.46	0.06	0.11	0.08	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
28 Mar 05	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.76	0.02	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2005-2006															
18 Jan 06	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.72	0.00	0.00
19 Jan 06	0.00	0.06	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00
22 Jan 06	0.42	0.03	0.07	0.11	0.05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
31 Jan 06	0.09	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.55	0.07	0.00
02 Feb 06	0.16	0.03	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.51	0.01	0.00
05 Feb 06	0.00	0.11	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.63	0.01	0.00
07 Feb 06	0.00	0.14	0.03	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.07	0.00	0.25	0.00	0.00
09 Feb 06	0.00	0.02	0.01	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.03	0.46	0.00	0.00
10 Feb 06	0.00	0.02	0.07	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.03	0.57	0.00	0.00
13 Feb 06	0.00	0.05	0.01	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00
19 Feb 06	0.01	0.11	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.05	0.39	0.00	0.00
21 Feb 06	0.23	0.13	0.15	0.14	0.06	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.04	0.00	0.00
22 Feb 06	0.53	0.00	0.01	0.01	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00
24 Feb 06	0.00	0.03	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.04	0.00	0.58	0.02	0.01
25 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.73	0.03	0.00
27 Feb 06	0.00	0.15	0.03	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.54	0.01	0.00
28 Feb 06	0.12	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.18	0.14	0.02

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2005-2006 (Continued)															
02 Mar 06	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.00
03 Mar 06	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
06 Mar 06	0.09	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.45	0.13	0.00
08 Mar 06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
09 Mar 06	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00
10 Mar 06	0.03	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.67	0.03	0.00
11 Mar 06	0.20	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.43	0.08	0.00
12 Mar 06	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.65	0.00	0.00
16 Mar 06	0.07	0.02	0.11	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.38	0.00	0.12	0.04	0.01
17 Mar 06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
Bald Eagle 219															
Winter of 1999-2000															
16 Dec 99	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.04	0.00	0.16	0.06	0.00	0.00
18 Dec 99	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.22	0.01
23 Dec 99	0.00	0.02	0.02	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00
26 Dec 99	0.00	0.03	0.07	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.13	0.29	0.00	0.00
27 Dec 99	0.52	0.00	0.16	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
28 Dec 99	0.00	0.02	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.72	0.00	0.00
01 Jan 00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00
11 Jan 00	0.00	0.03	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.45	0.18	0.05	0.00	0.00
14 Jan 00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.71	0.00	0.00
23 Jan 00	0.00	0.02	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.05	0.25	0.00	0.00
26 Jan 00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00
27 Jan 00	0.00	0.02	0.02	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.12	0.27	0.12	0.00	0.01
01 Feb 00	0.33	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.09	0.09	0.08
02 Feb 00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
04 Feb 00	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
08 Feb 00	0.00	0.14	0.10	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.23	0.00	0.04
Bald Eagle 220															
Winter of 1999-2000															
20 Dec 00	0.01	0.04	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.25	0.44	0.00	0.00
21 Dec 99	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00
23 Dec 99	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00
24 Dec 99	0.49	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.01	0.00	0.00	0.15	0.07

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 1999-2000 (Continued)															
26 Dec 99	0.10	0.34	0.15	0.04	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00
27 Dec 99	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.71	0.02	0.00
01 Jan 00	0.00	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.71	0.00	0.00
07 Jan 00	0.00	0.05	0.02	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.02	0.09	0.50	0.01	0.00
24 Jan 00	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01
27 Jan 00	0.00	0.02	0.00	0.00	0.00	0.00	0.40	0.01	0.00	0.00	0.14	0.21	0.00	0.00	0.00
28 Jan 00	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
05 Feb 00	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.09	0.18
08 Feb 00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.18
10 Feb 00	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
11 Feb 00	0.52	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.04	0.17
12 Feb 00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05
16 Feb 00	0.44	0.00	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.10	0.08	0.00	0.00
17 Feb 00	0.54	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.16
18 Feb 00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.10

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Bald Eagle 365															
Winter of 2000-2001															
15 Dec 00	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.01	0.00	0.00	0.00	0.24	0.45	0.00	0.00
20 Dec 00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00
23 Dec 00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.07	0.10	0.00	0.00
25 Dec 00	0.00	0.00	0.06	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.20	0.47	0.00	0.00
28 Dec 00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.02	0.06	0.00	0.00
05 Jan 01	0.00	0.01	0.01	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.13	0.49	0.00	0.00
12 Jan 01	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.67	0.00	0.00
20 Jan 01	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.03
27 Jan 01	0.08	0.03	0.05	0.00	0.00	0.00	0.54	0.00	0.00	0.01	0.00	0.03	0.05	0.01	0.00
Winter of 2001-2002															
12 Dec 01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.64	0.00	0.00
15 Dec 01	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00
17 Dec 01	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
20 Dec 01	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.07	0.48	0.00	0.00
22 Dec 01	0.00	0.01	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.19	0.21	0.00	0.00
25 Dec 01	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.13	0.32	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2001-2002 (Continued)															
29 Dec 01	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00
03 Jan 02	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.63	0.00	0.00
06 Jan 02	0.00	0.03	0.05	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.15	0.46	0.00	0.00
08 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.28	0.39	0.00	0.00
11 Jan 02	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.43	0.00	0.00
13 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01	0.00	0.00	0.00	0.31	0.39	0.00	0.00
16 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.26	0.47	0.00	0.00
03 Feb 02	0.48	0.00	0.00	0.03	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.04	0.01	0.03	0.00
10 Feb 02	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.02	0.38	0.00	0.00
Winter of 2002-2003															
22 Nov 02	0.00	0.02	0.02	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.31	0.15	0.00	0.00
27 Nov 02	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.21	0.54	0.00	0.00
30 Nov 02	0.00	0.04	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.06	0.17	0.00	0.00
02 Dec 02	0.37	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.01	0.00	0.28	0.03
05 Dec 02	0.07	0.05	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.04	0.15	0.01
07 Dec 02	0.00	0.02	0.03	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.09	0.62	0.00	0.00
09 Dec 02	0.00	0.01	0.00	0.00	0.00	0.01	0.07	0.01	0.00	0.00	0.00	0.18	0.51	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
14 Dec 02	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.13	0.41	0.00	0.00
19 Dec 02	0.00	0.02	0.04	0.00	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.14	0.46	0.00	0.00
22 Dec 02	0.00	0.03	0.05	0.00	0.00	0.01	0.31	0.02	0.00	0.00	0.00	0.09	0.27	0.00	0.01
24 Dec 02	0.00	0.00	0.02	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.43	0.25	0.00	0.00
27 Dec 02	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.69	0.00	0.00
29 Dec 02	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.07	0.32	0.00	0.00
01 Jan 03	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.45	0.00	0.00
03 Jan 03	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.54	0.00	0.00
06 Jan 03	0.00	0.02	0.01	0.00	0.00	0.00	0.60	0.01	0.00	0.00	0.00	0.11	0.04	0.00	0.00
08 Jan 03	0.00	0.01	0.00	0.00	0.00	0.00	0.45	0.01	0.00	0.00	0.00	0.20	0.12	0.00	0.00
11 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.01	0.00	0.00	0.00	0.36	0.21	0.00	0.00
15 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.01	0.00	0.00	0.00	0.31	0.25	0.00	0.00
20 Jan 03	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.61	0.00	0.00
23 Jan 03	0.00	0.01	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.45	0.05	0.00	0.00
25 Jan 03	0.00	0.00	0.02	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.23	0.29	0.00	0.00
28 Jan 03	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.24	0.43	0.00	0.00
30 Jan 03	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.10	0.42	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
02 Feb 03	0.00	0.03	0.01	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.04	0.13	0.00	0.00
04 Feb 03	0.00	0.17	0.11	0.02	0.01	0.00	0.06	0.00	0.00	0.00	0.01	0.03	0.37	0.00	0.00
07 Feb 03	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.28	0.45	0.00	0.00
17 Feb 03	0.00	0.02	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.17	0.53	0.00	0.00
Winter of 2003-2004															
27 Oct 03	0.05	0.02	0.03	0.01	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.01	0.02	0.22	0.02
12 Nov 03	0.00	0.05	0.02	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.18	0.44	0.00	0.00
27 Nov 03	0.00	0.10	0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.03	0.31	0.00	0.00
07 Dec 03	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.01
10 Dec 03	0.00	0.04	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.09	0.23	0.32	0.00	0.00
12 Dec 03	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.02
15 Dec 03	0.26	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00
17 Dec 03	0.05	0.01	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.67	0.00
20 Dec 03	0.62	0.01	0.02	0.05	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.05	0.01
22 Dec 03	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.02
25 Dec 03	0.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00
29 Dec 03	0.42	0.01	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.01	0.27	0.04

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2003-2004 (Continued)															
03 Jan 04	0.20	0.14	0.07	0.00	0.02	0.00	0.26	0.00	0.00	0.02	0.01	0.00	0.00	0.05	0.02
06 Jan 04	0.00	0.06	0.01	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.11	0.42	0.11	0.00	0.00
08 Jan 04	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00
11 Jan 04	0.00	0.01	0.00	0.00	0.00	0.00	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13 Jan 04	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.01
16 Jan 04	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.18	0.19
18 Jan 04	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.03
21 Jan 04	0.00	0.02	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.22	0.32	0.00	0.00
23 Jan 04	0.00	0.12	0.01	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.18	0.23	0.17	0.00	0.00
26 Jan 04	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.03
31 Jan 04	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.05
04 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.15	0.62	0.00	0.00
09 Feb 04	0.00	0.02	0.01	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.33	0.27	0.00	0.00
14 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.11	0.28	0.00	0.00
17 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.22	0.00	0.00
19 Feb 04	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00
22 Feb 04	0.01	0.02	0.00	0.00	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.26	0.05	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Bald Eagle 288															
Winter of 2000-2001															
13 Jan 01	0.00	0.02	0.03	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.21	0.41	0.00	0.00
16 Jan 01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.62	0.00	0.00
18 Jan 01	0.00	0.03	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.25	0.46	0.00	0.00
21 Jan 01	0.00	0.02	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00	0.01	0.23	0.00	0.00
Winter of 2001-2002															
02 Jan 02	0.00	0.01	0.04	0.00	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.09	0.50	0.00	0.00
05 Jan 02	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.38	0.39	0.00	0.00
10 Jan 02	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.65	0.00	0.00
12 Jan 02	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.22	0.30	0.23	0.00	0.00
14 Jan 02	0.00	0.00	0.03	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.08	0.09	0.00	0.00
17 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.23	0.51	0.00	0.00
19 Jan 02	0.00	0.02	0.03	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.31	0.34	0.00	0.00
22 Jan 02	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00
Winter of 2002-2003															
09 Jan 03	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.04
11 Jan 03	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.49	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2002-2003 (Continued)															
14 Jan 03	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.60	0.00	0.00
18 Jan 03	0.00	0.01	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.06	0.68	0.00	0.00
Bald Eagle 614															
Winter of 2004-2005															
29 Dec 04	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
30 Dec 04	0.00	0.03	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.05	0.03	0.00	0.00
31 Dec 04	0.00	0.00	0.00	0.00	0.00	0.01	0.08	0.01	0.00	0.00	0.00	0.24	0.45	0.00	0.00
01 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.59	0.00	0.00
02 Jan 05	0.00	0.01	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.01	0.02	0.08	0.00	0.00
03 Jan 05	0.00	0.02	0.01	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.34	0.16	0.00	0.00
05 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.01	0.00	0.00	0.00	0.20	0.13	0.00	0.00
06 Jan 05	0.00	0.02	0.03	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.22	0.21	0.00	0.00
07 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.11	0.55	0.00	0.00
08 Jan 05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.62	0.00	0.00
12 Jan 05	0.53	0.02	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.02	0.14	0.01
13 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.34	0.39	0.00	0.00
14 Jan 05	0.00	0.01	0.03	0.00	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.10	0.50	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2004-2005 (Continued)															
15 Jan 05	0.00	0.01	0.02	0.00	0.00	0.00	0.20	0.01	0.00	0.00	0.00	0.08	0.47	0.00	0.00
17 Jan 05	0.25	0.03	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.01	0.00	0.00	0.00	0.04	0.00
18 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.08	0.26	0.00	0.00
19 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01	0.00	0.00	0.00	0.23	0.47	0.00	0.00
20 Jan 05	0.00	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.46	0.00	0.00
21 Jan 05	0.00	0.01	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.35	0.25	0.00	0.00
24 Jan 05	0.00	0.02	0.02	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.36	0.17	0.00	0.00
25 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.34	0.28	0.00	0.00
26 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.34	0.27	0.00	0.00
27 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.33	0.29	0.00	0.00
28 Jan 05	0.00	0.01	0.04	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.25	0.35	0.00	0.00
29 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00	0.03	0.12	0.00	0.00
31 Jan 05	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.00
01 Feb 05	0.00	0.03	0.03	0.00	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.14	0.45	0.00	0.00
02 Feb 05	0.00	0.03	0.04	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.28	0.43	0.00	0.00
03 Feb 05	0.00	0.01	0.04	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.09	0.51	0.00	0.00
07 Feb 05	0.00	0.02	0.01	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.27	0.32	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2004-2005 (Continued)															
08 Feb 05	0.00	0.01	0.03	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.08	0.53	0.00	0.00
09 Feb 05	0.00	0.02	0.03	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.15	0.23	0.00	0.00
11 Feb 05	0.00	0.01	0.01	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.35	0.20	0.00	0.00
11 Feb 05	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.12	0.51	0.00	0.00
13 Feb 05	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.12	0.51	0.00	0.00
16 Feb 05	0.03	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.03	0.22	0.00	0.00
22 Feb 05	0.00	0.03	0.04	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.20	0.49	0.00	0.00
23 Feb 05	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.01	0.00	0.00	0.00	0.37	0.19	0.00	0.00
24 Feb 05	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.06
26 Feb 05	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.37	0.25	0.00	0.00
27 Feb 05	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.01	0.00	0.00	0.00	0.30	0.28	0.00	0.00
04 Mar 05	0.00	0.02	0.02	0.00	0.00	0.00	0.14	0.01	0.00	0.00	0.00	0.24	0.36	0.00	0.00
05 Mar 05	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.36	0.25	0.00	0.00
Winter of 2005-2006															
01 Dec 05	0.18	0.03	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.01	0.00	0.00	0.00	0.05	0.00
02 Dec 05	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.05
03 Dec 05	0.00	0.03	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.04	0.53	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2005-2006 (Continued)															
04 Dec 05	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.36	0.25	0.00	0.00
06 Dec 05	0.20	0.02	0.03	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.02
07 Dec 05	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.02
08 Dec 05	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.02
09 Dec 05	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.02
13 Dec 05	0.00	0.06	0.01	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.03
14 Dec 05	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.01
15 Dec 05	0.19	0.03	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00
16 Dec 05	0.00	0.02	0.04	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.10	0.50	0.00	0.00
17 Dec 05	0.00	0.01	0.04	0.00	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.09	0.50	0.00	0.00
19 Dec 05	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.60	0.00	0.00
20 Dec 05	0.00	0.03	0.03	0.00	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.13	0.47	0.00	0.00
21 Dec 05	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.05
22 Dec 05	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.07
25 Dec 05	0.00	0.00	0.01	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.15	0.36	0.00	0.00
26 Dec 05	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.12	0.16	0.00	0.00
27 Dec 05	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2005-2006 (Continued)															
28 Dec 05	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.06
29 Dec 05	0.02	0.03	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01
30 Dec 05	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.07
02 Jan 06	0.00	0.01	0.03	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.08	0.52	0.00	0.00
03 Jan 06	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.31	0.30	0.00	0.00
07 Jan 06	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.06
08 Jan 06	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.01
09 Jan 06	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.06
10 Jan 06	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.01
12 Jan 06	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.06
12 Jan 06	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.05
14 Jan 06	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.07
15 Jan 06	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.05
16 Jan 06	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.07
17 Jan 06	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.05
20 Jan 06	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.06
21 Jan 06	0.06	0.03	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Winter of 2005-2006 (Continued)															
22 Jan 06	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.01
04 Feb 06	0.00	0.01	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.03
05 Feb 06	0.00	0.02	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.03
06 Feb 06	0.11	0.03	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.01	0.00	0.00	0.00	0.06	0.00
07 Feb 06	0.48	0.01	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.00
09 Feb 06	0.00	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.12	0.51	0.00	0.00
10 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00	0.03	0.12	0.00	0.00
11 Feb 06	0.31	0.01	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.01	0.36	0.03
15 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.04	0.09	0.00	0.00
16 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.00	0.00	0.04	0.02	0.00	0.00
17 Feb 06	0.02	0.02	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.01	0.01	0.04	0.00	0.00
18 Feb 06	0.19	0.03	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
20 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	0.07	0.06	0.00	0.00
21 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00
22 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00
23 Feb 06	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00
24 Feb 06	0.29	0.03	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.01	0.00	0.00	0.00	0.14	0.00

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Bald Eagle 615															
Winter of 2004-2005															
10 Feb 05	0.00	0.04	0.00	0.00	0.00	0.00	0.39	0.04	0.00	0.00	0.02	0.11	0.19	0.00	0.00
23 Feb 05	0.00	0.06	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.15	0.32	0.21	0.00	0.00
Bald Eagle 945															
Winter of 2005-2006															
23 Feb 06	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.17
24 Feb 06	0.14	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.29	0.08	0.00
25 Feb 06	0.21	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.21	0.08	0.00
26 Feb 06	0.13	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.29	0.08	0.00
27 Feb 06	0.19	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.23	0.08	0.00
28 Feb 06	0.20	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.21	0.08	0.00
01 Mar 06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.09
02 Mar 06	0.32	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.02
03 Mar 06	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.36	0.09
04 Mar 06	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.49	0.03

Appendix B. Continued

Date (CST)	Habitat Type (km^2)														
	Open Water	Devel., Open	Devel., Low Inten.	Devel., Med. Inten.	Devel., High Inten.	Barren Land	Deciduous Forest	Evergreen Forest	Mixed Forest	Scrub/Shrub	Grassland/ Herbaceous	Pasture/Hay	Cultivated Crops	Woody Wetlands	Emerg. Herb. Wetlands
Bald Eagle 944															
Winter of 2005-2006															
26 Feb 06	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.04
27 Feb 06	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.04
28 Feb 06	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.04
01 Mar 06	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
03 Mar 06	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01
04 Mar 06	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01
05 Mar 06	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01
06 Mar 06	0.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.04
08 Mar 06	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
11 Mar 06	0.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.04
13 Mar 06	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.03