



Inland Regional News

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Abstracts of Papers Given at 2003 Annual Meeting

Papers:

Recoveries of Red-tailed Hawks banded at Sand Bluff Bird Observatory, 1967 - 2002. Lee Johnson, Sand Bluff Bird Observatory, Rockton, IL (lynlee@world.com).

The presentation discussed the total number of hawks banded during the 35-yr period; the foreign recoveries each year and percent of recoveries each year; the states in which recoveries occurred and the number of recoveries within each state; and longevity data.

Midwestern raptor population trends as determined by 40 years of Christmas Bird Count data. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com).

We have conducted and compiled five Christmas Bird Counts (CBC) along the Mississippi River in east-central Iowa and northwest Illinois since the mid 1950s. Long-term information concerning regional raptor populations is minimal. Therefore, we decided to use this CBC data set, generated from a relatively small geographic area, to examine the observed changes in midwestern raptor populations over this 40-yr period. During our analysis, we added the total number of individuals for each species from all five CBCs each year. Furthermore, we combined the data into five-year increments. Six species have been characterized by populations which have been

steadily increasing since the mid 1970s to 1980s. These species include the Sharp-shinned Hawk, Cooper's Hawk, Red-tailed Hawk, American Kestrel, Bald Eagle, and Barred Owl. The population trend of the Eastern Screech-Owl was similar, except it has been increasing since the early 1970s. The Red-shouldered Hawk, Long-eared Owl, and Short-eared Owl were characterized by populations which have declined severely and never recovered. Populations of Northern Harrier and Rough-legged Hawk have fluctuated since the mid-1950s, while the Great Horned Owl has increased steadily. Although our project included data from a relatively small geographic area, we believe that the long-term data generated by the CBC Program can be used to monitor regional raptor population trends over time and across North America.

Movement of ducks banded in northwestern Louisiana – preliminary data. Jim Ingold, Dept. Biol. Sci., Louisiana State Univ. in Shreveport, Shreveport, LA (jingold@pilot.lsus.edu).

I report on recoveries of ducks banded in northwestern Louisiana and shot by hunters away from the banding area. This study was started in January 2001 and continued in the winters of 2002 and 2003. One hundred and fifty-five ducks of five species have been banded in three banding seasons. In 2001, only traps were used but flooding made them ineffective; in 2002 and 2003, we employed both traps and cannon nets. Louisiana Fish & Wildlife personnel that were trained in their use manned the cannon nets. Only five Gadwall were trapped in 2001; Mallard (3), Wood Duck (22)

and Blue-winged Teal (5) were banded in 2002. In 2003, 32 Green-winged Teal were banded along with the same number of Mallard, 22 Gadwall, and 25 Wood Ducks. We have had six of our banded ducks shot by hunters. Two of the Gadwall from the first season were shot during the fall of 2001 for a 14% recovery rate. The overall recovery rate is 3.9%. Most of the recoveries have been of birds near the banding area, but two Wood Ducks hold the record for distance: one was shot in Brinson, GA, 874 km distant and the other was shot in Dousman, WI, 1260 km distant. We also had one foreign retrapped Wood Duck in 2003.

Dispersal and habitat selection in Yellow-headed Blackbirds. Michael P. Ward, Dept. Animal Biol., Univ. Illinois, Champaign, IL (mpward@students.uiuc.edu).

Between-year dispersal and habitat selection was investigated in two Yellow-headed Blackbird populations with different densities in northern Illinois. Individuals in the low-density population exhibited low site fidelity, but high population fidelity (return rate to Illinois; site fidelity: males 19% [n = 146], females 10% [n = 181]; population fidelity: males 52% [n = 146], females 40% [n = 181]); whereas, in the high-density population, individuals exhibited both high site and population fidelity (site fidelity: males 71% [n = 14], females 48% [n = 25]; population fidelity: males 86% [n = 14], females 64% [n = 25]). The differences in dispersal may be due to reduced competition for territories in the low-density population. I also investigated what cues and experiences individuals used when determining whether to disperse and where to settle. These included habitat features, nestling food availability, and individual reproductive success. In addition, the Public Information Hypothesis (individuals use the reproductive success of conspecifics when assessing habitats) was evaluated as a potential factor in dispersal and settlement. Both males and females did not use habitat features to determine whether to disperse or where to settle; and even though nestling food availability was correlated with the number of young fledged, they did not or were unable to use cues predictive of nestling food availability. Individuals that were reproductively successful tended to be more likely to return to their previous site. Although, the strongest predictor of dispersal and settlement was public information.

Individuals at sites where the average number of young per nest was greater than the average for the entire population were more likely to stay; whereas, individuals at sites where the average number of young per nest was lower were more likely to disperse to sites with a greater average number of young per nest the previous year.

Tenth primary length as a character for age determination for the Black-capped Vireo.

David Cimprich, The Nature Conservancy of Texas, Fort Hood Project, Fort Hood, TX (dcimprich@tnc.org).

Pyle suggests in his *Identification Guide to North American Birds* that the extension of the tenth primary (P10) beyond the primary coverts might differ between age groups in several species of vireos. I investigated the usefulness of this measurement in the Black-capped Vireo. I found that Black-capped Vireos, like many other North American passerines (e.g., Gray Catbird, Red-eyed Vireo, White-eyed Vireo), differ in wing chord by age. Older birds (AHY/ASY) have longer wings than younger birds (HY/SY). However, I found that the opposite was true for the extension of the tenth primary beyond the primary coverts. I detected no differences in the P10 measurement by sex within age classes, so I pooled the sexes for further analysis. Although the P10 measurement was longer for young birds than for older birds ($P < 0.001$), the overlap between the two groups was great. The range for the HY/SY group was 6.0 to 11.0 mm (n = 34); whereas, the range for AHY/ASY birds was 5.0 to 9.5 mm (n = 24). Consequently, this character alone has limited utility for age determination in Black-capped Vireos, though it can provide useful information when combined with other characters such as primary covert – greater covert contrast, rectrix shape, and cap color. I also investigated whether the ratio of P10 extension to wing chord would provide greater discrimination between age groups but found no improvement over P10 extension alone.

USDA-ARS Avian Research – past, present and future. Andrew A. Radomski, USDA-ARS, Stuttgart, AR (aradomski@spa.ars.usda.gov).

One of the objectives of the USDA-ARS HKD Stuttgart National Aquaculture Research Center is to develop methods to minimize effects of fish-eating birds at aquaculture facilities. Our

approach has been to develop, modify, and evaluate nonlethal techniques that meet this objective. Aside from monitoring colonial waterbirds (specifically Double-crested Cormorants, American White Pelicans, Great Blue Herons, and Great Egrets) over the past four years, we have completed numerous research projects with varying degrees of success as it relates to our overall objective. This presentation will highlight those projects and discuss future research needs.

Some observations of Neotropical migrants utilizing an urban woodlot in central Illinois during a fall migration. Vernon Kleen, Springfield, IL (kleen@quixnet.net).

This project was undertaken to demonstrate the use of an isolated urban woodlot as a possible stopover site for migrating fall birds. Of the 2064 birds (of 72 species) captured and banded in 4246 standard net-hr on 44 mornings of operation between 22 Aug and 3 Nov 1989, 903 (29%) of the birds and 43 (60%) of the species were Neotropical migrants. In addition, seven (50%) of the 14 species with a banding total of 50 or more birds were also Neotropical migrants. The average number of birds caught per standard net-hr was 0.49. Data collected also relate to the mesh-size of the nets, which side of the net the birds entered, and where in the woodlot the birds were caught.

Posters:

Lacking scientific data for Double-crested Cormorants – the need to revitalize a banding program. Andrew A. Radomski, USDA, Agricultural Research Service, H.K. Dupree Stuttgart National Aquaculture Research Center, Stuttgart, AR (aradomski@spa.ars.usda.gov).

Increasing numbers of Double-crested Cormorants at commercial aquaculture production facilities have resulted in biological, economical, and social conflicts. This is one of the arguments made by the U.S. Fish and Wildlife Service for the creation of a National Management Plan for this species. However, only a few states census cormorants and fewer states are banding. This may lead to inaccurate assessments of an implemented plan. Therefore, the USDA-ARS has initiated and conducted aerial surveys by fixed-wing aircraft to monitor and quantify the wintering

cormorant numbers from 1999 - 2003 and has plans to initiate a banding program. Aerial surveys were conducted during the last three hours of sunlight and encompassed the primary catfish production areas in Arkansas. Aerial counts were validated with ground observations the following morning at specific roosts for accuracy. A minimum of 16,000 cormorants was observed during each survey, with the exception of early Jan 2000 and 2001. Cormorant numbers peaked (> 26,000) in early Feb 2001 and a total of 12 to 15 night roost sites were monitored during 1999 - 2003. Cormorants roosted in bald cypress trees almost exclusively. Some roosts were protected from human disturbances, but some were adjacent to highways or adjacent to high recreational areas. Similarities in numbers of cormorants counted in the evening by aircraft and the following morning by ground observers at the same roost allows for increased confidence that the estimates are reasonably accurate. It is important to monitor cormorants and reestablish a banding program to better understand the population trends, movements during the winter, roost site selection, roosting behavior, and changes that may occur with a national management plan.

Summary of Red-shouldered Hawk reproductive success along the Upper Mississippi River Valley, 1983 - 1997. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com); Jon W. Stravers, Midwest Raptor Research Fund; Gary V. Swenson, Casey J. Kohrt and Joseph S. Lundh, U.S. Army Corps of Engineers.

Red-shouldered Hawks (RSHA) are listed as state endangered in Iowa, threatened in Illinois and Wisconsin, and a species of special concern in Minnesota. When this project began in 1983, little information was available regarding the overall number and density of active RSHA nesting territories along the Upper Mississippi River Valley. In fact, we knew of only five documented active territories along the Mississippi River from Wabasha, MN, to Burlington, IA. Between 1983 and 1997, we identified and confirmed RSHA presence or nesting activity at 37 sites along this approximately 650 km stretch of river. During these 15 years, we were able to document the results from 80 separate nesting attempts. Of these, 54 (67.5%) were successful. A total of 117

fledglings have been produced from these sites (2.17 per successful nest and 1.46 per nesting attempt). Over the years, we have observed a substantial variation in RSHA reproductive success, ranging from a low of 38% in 1993 to a high of 88% in 1984. Low rates of reproductive success appear to be linked directly to either persistent adverse weather conditions or extended periods of high water. Additionally, RSHA seem to be impacted negatively by human activity and extensive alteration of mature floodplain forest habitat. During this project, we also documented the fact that RSHA demonstrate a high degree of territory reoccupation. Our results indicate that indeed the overall number of RSHA nesting along the Upper Mississippi River is relatively low, and their reproductive success is quite variable.

Altering forest management plans to accommodate rare or endangered species – a positive example and approach. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com); Jon W. Stravers, Midwest Raptor Research Fund; and Gary V. Swenson, U.S. Army Corps of Engineers.

We have documented Red-shouldered Hawk (RSHA) nesting activity within 45 locations along a 650 km stretch of the Mississippi River from Wabasha, MN, to Keokuk, IA. Only five territories have been found in the 293 km stretch south of Savanna, IL. Of these, three are located in the Milan Bottoms Complex (river mile [RM] 475.0 – 478.5). RSHAs are classified as endangered in Iowa and threatened in Illinois. Due to the presence of breeding RSHA, the Natural Resource Management Section of the U.S. Army Corps of Engineers canceled two of the four timber harvests (12.5 ha) scheduled for Milan Bottoms. Instead, two altered cuts of 4.4 and 2.8 ha were completed during the 1994-1995 winter. To better understand RSHA responses to small clear-cuts near their nesting territory, we monitored RSHA reproductive success and foraging habits during the 1995 and 1996 breeding seasons. Three active nests have been located within the Milan Bottoms study area. RSHA have been observed foraging throughout the study area, including in and near the clear-cut site. In 1995, three RSHA fledged from the Mill Creek nest, and two fledged from the Long Pond nest. This nest site was located within one of the originally proposed but canceled cuts. The Power-

line nest, which was nearest the 4.4-ha cut, failed to produce any young. In 1996, two nestlings at the Mill Creek site reached the age of 10 - 14 d, but apparently died before fledging. The Powerline nest again failed to produce young. Due to the extended period of high water in 1996, we were unable to determine the outcome at the Long Pond site. Our results are preliminary and more research is necessary before definitive conclusions can be stated regarding the influence of small clear-cuts on RSHA reproductive success.

Red-shouldered Hawk nesting activity and floodplain forest timber harvesting – are they compatible? Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com); Jon W. Stravers, Midwest Raptor Research Fund; Gary V. Swenson, Casey J. Kohrt, and Joseph S. Lundh, U.S. Army Corps of Engineers.

Red-shouldered Hawks (RSHA) are listed as an endangered species in Iowa and threatened in Illinois. Limited information is available regarding the response of this forest raptor to specific forest management techniques. We monitored RSHA nesting response to different timber harvesting methods at two locations along the Upper Mississippi River (Yellow River study site near Marquette, IA, and the Milan Bottoms study site near the Quad Cities, IL). The privately owned Yellow River site employed a multiple series of selective cuts during the winter in which all trees exceeding 20 cm dbh were harvested over a three-year period (approximately 344 ha). The Milan Bottoms site, owned by the U.S. Army Corps of Engineers, utilized a single clear-cut over one winter (approximately 4.4 ha). The Yellow River site had been occupied by nesting RSHA for 24 years. Prior to the harvest (1993), this site supported two active nesting territories. After the first winter of timber harvesting (1993 - 1994), one of the territories became unoccupied and was presumed abandoned. The second territory remained active during the three-year harvest. However, this nest failed immediately following the harvest (1996) and was unoccupied in 1997. In comparison, Milan Bottoms also supported two active territories prior to the 4.4-ha cut. The number of active territories remained the same or increased to three during the three years following harvest (1995 - 1997). Although our investigations

into RSHA response to timber harvesting is preliminary, it appears that larger-scale, longer-term cuts negatively impact RSHA breeding activity more than smaller-scale, shorter-term harvests.

Influence of foraging-perch habitat on Bald Eagles in west-central Illinois. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com); Gregory M. Quartucci, SmithGroup JJR; and Thomas W. McClenahan, Niabi Zoo.

This project examined population characteristics and distributional patterns of Bald Eagles wintering along the Upper Mississippi River. We documented Bald Eagle population size, age ratios, and seasonal population fluctuations along the Upper Mississippi River in west-central Illinois and east-central Iowa during two winters (1988 - 1989 and 1989 - 1990). Additionally, the influence of foraging-perch habitat (FPH) on Bald Eagle distribution was examined. The total number of eagles censused was nearly identical each year (1,214 and 1,216, respectively). Adults were more numerous both years, with age ratios of 1.32 (1988-1989) and 1.26 (1989 - 1990). The population experienced bimodal seasonal peaks each year. The major peak (middle December through early January) was followed by a smaller peak (middle February through early March). Throughout the study area, the observed Bald Eagle distribution was "clumped" into two sections (upriver and downriver) based on eagle numbers present, and the amount and quality of FPH available. Areas of tree-based FPH were identified and classified as minimally adequate, adequate, or more than adequate, depending on the number and arrangement of large trees along the shoreline and the distance from established human activity. More abundant and higher quality FPH along with greater eagle numbers were located in the upriver section, as compared to the downriver portion of the study area. The influence of FPH on distribution was examined as the relationship between tree-perched eagles and use of areas containing at least minimally adequate habitat. This research indicated that FPH quality and abundance did indeed influence Bald Eagle distribution along the Upper Mississippi River.

Influence of ice cover on Bald Eagle distribution within the Upper Mississippi River region. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay

@aol.com); Gregory M. Quartucci, SmithGroup JJR; and Thomas W. McClenahan, Niabi Zoo.

Bald Eagles winter sporadically along the Upper Mississippi River (UMR). The objective of this project was to examine the influence of ice cover on Bald Eagle distribution along the UMR in northwest Illinois and east-central Iowa, via weekly surveys, during the winters of 1988-1989 and 1989-1990. Ice cover was estimated over the entire study area during each survey. In 1988-1989, 53% of the surveys experienced significant amounts of ice cover (at least 25%). This cover averaged 46.4% over the entire study area. These particular surveys accounted for 79.3% of all eagle observations that year. In 1989-1990, only 25% of the surveys had significant amounts of ice cover present. This cover averaged 72.0% throughout the study area. Among these surveys, 69.3% of all eagle observations occurred. Consequently, eagle numbers appeared to increase when significant amounts of ice cover were present. However, we found that the river miles themselves, more than the amount of ice cover, influenced Bald Eagle distribution. This suggested that other environmental factors present at the various locations were also influencing the observed distribution pattern. Nevertheless, a large proportion of the total number of eagles encountered throughout the study area was during surveys when significant amounts of ice cover existed. Therefore, we believe that the ice cover factor is related directly to the distribution of Bald Eagles throughout the UMR region. However, more research is needed to better understand why and to what extent ice cover influences Bald Eagle distribution along the UMR.

Avian survey of the Savanna Ordnance Depot bottomlands, an Upper Mississippi River floodplain site. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com); Peter C. Petersen, Brian L. Blevins, Quad Cities Audubon, and Thomas W. McClenahan, Niabi Zoo.

In order to assess avian diversity and relative abundance on the Savanna Ordnance Depot floodplain forest, we conducted a point count survey project here during the fall migration of 1993 and the spring migration and summer breeding seasons of 1994. During this project, we identified 112 species, including 16 Permanent

Residents (RES), 38 North American Migrants (NAM), and 58 Neotropical Migrants (NTM). We identified 5,995 individual birds to species. Of these, 931 were RES, 3,160 were NAM, and 1,904 were NTM. During the migrational periods, 105 species were encountered, including 16 RES, 35 NAM, and 54 NTM. Most of these species (54%) exhibited a preference for utilizing the area during migration. In comparison, we observed 71 species during the breeding season which included 12 RES, 28 NAM, and 31 NTM. Only 38% of these species actually preferred using the study area during the breeding season. Among survey points located in forest edge habitat, we encountered 83 species (12 RES, 31 NAM, and 40 NTM). Of these, only 26% exhibited a preference for the forest edge. In contrast, 102 species were observed at points located within forest interior habitat (15 RES, 34 NAM, and 53 NTM). Among these species, 52% appeared to prefer the forest interior. During this project, we were especially interested in the diversity and abundance of NTM species. At total of 25 species of higher management concern were observed (572 individuals), while 30 species of lesser concern were identified (1,303 individuals). We encountered three species (29 individuals) which were not classified in this system of management concern. Overall, the primary importance of this floodplain forest appears to be as a migration corridor.

Avian monitoring and spring migration response to the 1993 flood on Mark Twain National Wildlife Refuge. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com); James P. Quinlivan, Michael S. Bornstein, U.S. Fish & Wildlife Service; and Thomas W. McClenahan, Niabi Zoo.

We have conducted avian point count surveys for several years at two Upper Mississippi River floodplain forest sites – the Big Timber (Pool 17) and Keithsburg (Pool 18) Divisions of the Mark Twain National Wildlife Refuge. The purpose of this project was to establish long-term monitoring of species composition and relative abundance of the avian community using the refuge. These surveys were conducted during spring and fall migration, as well as during the breeding season. In three years (1992 - 1994), we have identified 113 species at Big Timber, including 53 species of Neotropical Migrants (NTM). After two years at Keithsburg

(1993 - 1994), we had observed 124 species, including 48 NTM. The record flood of 1993 provided an opportunity to examine the immediate response of the avian community to a major flood event. Initially, we have analyzed only spring migration data from Big Timber during the pre-flood (1992), flood (1993), and post-flood (1994) years. Preliminary results indicate that a slightly greater number of individuals were encountered at the study sites following the flood, while species diversity declined. Additionally, habitat generalists and edge species seemed to increase, while habitat specialists and interior species were either maintaining stable populations or were decreasing. Although not statistically significant, we believe these differences may be biologically important. Our initial results and analyses are extremely limited and preliminary. However, they do suggest a possibly substantial and dynamic response by the avian community to major flooding events along the Upper Mississippi River.

A comparison of avifaunal monitoring using point count and random area search methods.

Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com); James P. Quinlivan, Michael S. Bornstein, U.S. Fish & Wildlife Service; and Thomas W. McClenahan, Niabi Zoo.

During 1994, we monitored avian diversity at two Mississippi River floodplain bottomland sites (Big Timber and Keithsburg Divisions of the Mark Twain National Wildlife Refuge), comparing two avifaunal survey methods—point counts and random area search. Both sites were surveyed twice during each sampling period (three spring migration, two breeding season, and three fall migration). One survey used a 10-min point count method at 10 permanently marked points. The second survey utilized a four-hr random area search technique. The total amount of search effort was 100 min for the point counts and 380 min for the area search. In order to compare the methods, we needed comparable amounts of search effort. We, therefore, decided to compare the data between the 100 min of point counts and the first 100 min of area search. Our analysis incorporated 16 sets of data (8 Big Timber and 8 Keithsburg). Overall, the avian diversity at Keithsburg was slightly higher than at Big Timber. Likewise, the diversities encountered on point

counts, the comparable 100-min area searches, as well as the full 380-min area searches were all higher at Keithsburg. The 380-min area search survey always resulted in the highest avian diversity. However, data from the point count and 100-min search comparison resulted in a greater diversity on 15 of the 16 point count surveys. The remaining survey had equal diversity. In conclusion, point counts appear to be the preferred method for sampling avifaunal diversity, since they produce similar results per search effort to random area search techniques. Additionally, point counts are repeatable and provide a basis for examining the influence of habitat on avian diversity over time.

Preliminary assessment of avian richness and relative abundance at Green Wing Environmental Laboratory, Amboy, Illinois. Kelly J. McKay, Niabi Zoo – Conservation Science Center, Coal Valley, IL (kellyjmckay@aol.com), and Steve B. Hager, Augustana College.

A preliminary assessment of avian richness and relative abundance was conducted at Green Wing Environmental Laboratory in northcentral Illinois, throughout all seasons, from early fall of 2001 through the breeding season of 2002. We conducted a total of six point count

survey routes (two fall migration, one winter, two spring migration, and one summer breeding season), three random area search waterfowl surveys, and two random area search nocturnal bird surveys. Additionally, we also recorded all birds identified between points (i.e. interpoint data). Overall, a cumulative total of 140 species was identified. This included 62 species of North American Migrants (NAM), 59 Neotropical Migrants (NTM), and 19 species of Permanent Residents (RES). A total of 4,440 birds were recorded during the entire project. Fall migration yielded 88 species (36 NAM, 37 NTM, 15 RES) and 1,954 individuals. During the winter season, 27 species were identified (13 NAM, 14 RES) including 332 individuals. We recorded 115 species during spring migration (52 NAM, 48 NTM, 15 RES) and tallied 1,572 individuals. During the breeding season, we encountered 55 species (20 NAM, 23 NTM, 12 RES) and recorded 582 individuals. Our sampling effort during this project was relatively small; nevertheless, a large diversity of avian species was recorded. This tends to suggest that the Green Wing Environmental Laboratory may be functioning as a "habitat island" within a Midwestern landscape matrix dominated by agricultural row crops.



Broad-winged Hawk
by George West