

# **A Survey of Non-Game Grassland Birds Conducted on Randomly Selected Waterfowl Production Areas in the Devils Lake Wetland Management District, North Dakota**

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August, 2003



# **A Survey of Non-Game Grassland Birds Conducted at Randomly Selected Waterfowl Production Areas in the Devils Lake Wetland Management District, North Dakota (2003)**

## **Introduction**

A non-game Grassland Survey was performed in the summer of 2003 on 42 Waterfowl Production Areas (WPAs) in the Devils Lake Wildlife Management District (DLWMD) in Northeastern North Dakota (Figure 1). The purpose of this survey was to investigate both diversity and the overall abundance of the grassland bird species that inhabit these WPA's.

## **Methods**

— reference ?? methodology used? one hundred meter fixed point radius, ten minute radius

A single surveyor recorded all grassland birds at specific points (weather permitting) in the morning hours from one half hour before sunrise until 1130 hours. Using a hand held GPS unit, the worker conducting the survey was able to navigate to specific UTM coordinates within the WPA's, which a computer selected randomly before fieldwork began. The surveyor traveled to and between survey points on foot to reduce disturbance to the birds in the survey area. Even with this precaution, an additional two-minute cool down period was given at each point before the data was recorded so that birds could settle back to a normal state. At each point, data was recorded from all birds within a one hundred meter fixed-point radius. Along with species and sex (determined by sight or sound) the observer would record the time elapsed when individual birds were detected, how that bird was detected (visual, song, or call), and the distance to the bird (~ 5 meters). Space was also provided on data sheets for non-focal bird species, birds

flying overhead, and birds outside the one hundred meter fixed radius survey area. Each count was taken for duration of ten-minutes. Information recorded included: Location, Beaufort wind force scale, precipitation (if any more than a drizzle), temperature, and percentage of cloud cover. All environmental factors besides wind speed were estimates made by the observer. Environmental factors were gathered either before, or after the ten-minute recording time so that all attention could be focused on identification of species during the actual data-collecting period. All WPA's and their call points were visited once to provide a data set specifically for the summer of 2003. This data will be replicated with data collected in subsequent years. Once all WPA data were collected, analysis of data using Refuge Lands Geographical Information Systems (RLGIS-Arc View) and Microsoft Excel spreadsheets were used to tease out patterns of the overall species diversity at all WPA's under investigation.

## Results

To come up with an accurate tally of the grassland bird species in the district, it was necessary to compare the individual WPAs to each other in terms of both species diversity and abundance (Table 1). True estimates of abundance could not be obtained with this survey design due to the insufficient number of "call points" at each WPA. A total of 33 grassland bird species were detected on the 42 WPAs under investigation (Table 2). Of the species recorded, red-winged blackbirds were found to be the most common, while savannah sparrow, bobolink, and clay-colored sparrows also exhibited high frequency of occurrence (Table 3). Using Refuge Lands GIS data, a comparison of wetland versus upland habitat acreage was investigated in attempt to identify patterns with respect to species diversity and habitat structure (Table 4). Habitat structure did not

Not sure what this is meant to accomplish. Don't think it is necessary to compare to come up with accurate tally. Just list the species.

a description of RLGIS is necessary to put in perspective the comparison and understand the habitat of the sp. used.



appear to influence diversity, but the level of investigation in this study was not sufficient to tease out potential patterns related to habitat type and species diversity. Species diversity found at the various WPA's varied from a high of 16 species at Gunder WPA (Ramsey Co.) to a low of 6 species in both Ullyot (Cavalier Co.) and Benson WPA's (Benson Co.). Individual results including number of species and a diversity ranking of all 42 WPA's examined was presented in Table 5.

Although the birds surveyed were generally upland/grassland species, the best recording areas seemed to be around small potholes where birds had access to wetlands. This was especially true in the case of both the red-winged and yellow-headed blackbirds, both of which use the wetland vegetation as nesting habitat.

### **Conclusions and Recommendations**

The surveying protocol established for people recording the data worked very well. This method allowed for the best surveying results with the least amount of stress on the birds. The use of both songs and calls, in addition to visual recognition of bird species was better suited to get an accurate count of birds rather than relying on only one criterion. The other data recorded (weather, time, etc.) was also useful in trying to discover patterns or factors that may have influenced the results. Habitat type (% upland vs. % wetland) was also considered in the final results since theoretically it would seem that there would be more grassland bird diversity in areas with more grassland habitat. In the future, this study could be intensified with higher levels of statistical analysis, particularly with comparison of habitat type/management and species diversity/abundance. If abundance estimates are required, many more surveys or "call points" would be required to make a more realistic estimate, including re-visiting those

points at least 3-4 times per summer. As it were, the number of points used per WPA in this study was insufficient to extrapolate estimates of abundance. Finally, using random points chosen by a computer eliminates the potential bias that a human may have when choosing specific points for the fixed point count surveys; the computer does not look for "prime" spots, but instead selects actual random points.

Few problems arose in the surveying process. Wind was probably the biggest factor while gathering data in the field. Because the Great Plains ecosystem is subject to frequently windy conditions, some leeway was given to the Beaufort wind scale when estimating the effect of wind speeds on grassland birds. Another issue that arose was that actual bird numbers might have been an unimportant variable in the data collection. Data showed that some birds were more distributed than others, which did not necessarily mean that their populations were larger. For example, Savannah Sparrow were second on the list of diversity, but other species, such as the Yellow-headed Blackbird showed comparable, or even greater numbers when they were found to be present. This is a fairly minor problem, since the goal of this survey was focused more towards the diversity and distribution rather than the density of bird species at WPA's surveyed.

Overall, WPA's located within the Devils Lake Drift Prairie seem to be well-suited to support a wide range of bird species. With the diversity and interspersed of habitats found throughout the DLWMD, the district has many of the ingredients important for upland bird diversity.

pl

see pl.  
Introduction,  
Problem is/  
purpose, doesn't  
match here.

# 2003 Non-game Bird Survey

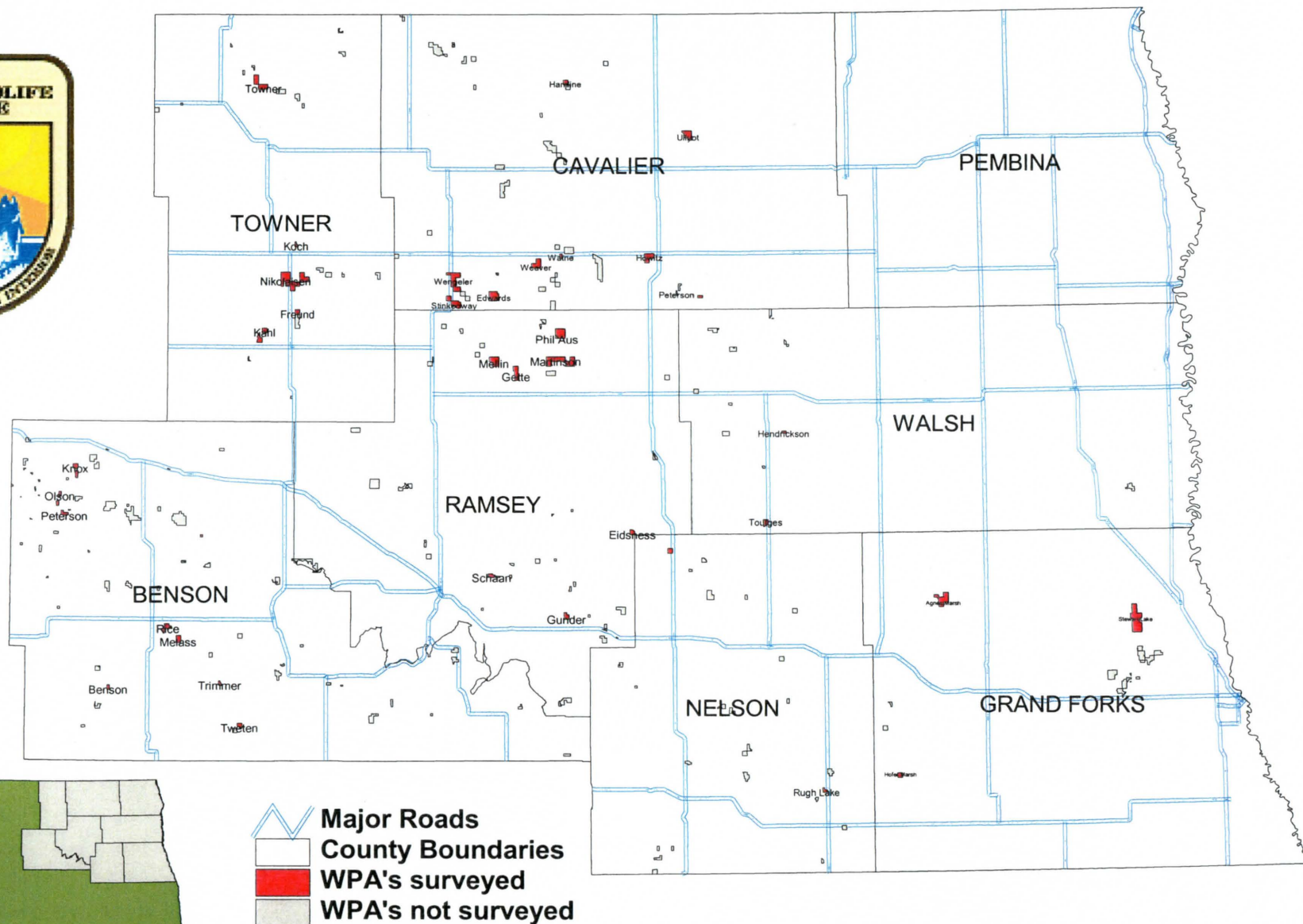


Figure 1 - WPA's surveyed in the DLWMD

Prepared by: Matt VanThuyne  
 Biological Technician 2003



**Table 1. Grassland bird species detected at 42 Waterfowl Production Areas during the 2003 grassland bird survey, Devils Lake Wetland Management District, Devils Lake, North Dakota, 2003.**

***Cavalier County***

**Edwards WPA**

Bobolink (3)  
Clay-Colored Sparrow (4)  
Common Yellowthroat (2)  
Northern Harrier (1)  
Red-winged Blackbird (3)  
Savannah Sparrow (11)  
Swamp Sparrow (2)  
Unknown Sparrow (1)  
Yellow-headed Blackbird (2)  
**Total = 9 species (29)**

**Hamline WPA**

Bobolink (7)  
Brown-headed Cowbird (2)  
Clay-colored Sparrow (2)  
Common Yellowthroat (1)  
Eastern Kingbird (2)  
Field Sparrow (1)  
Mourning Dove (2)  
Nelson's Sharp-tailed Sparrow (1)  
Red-winged Blackbird (8)  
Savannah Sparrow (2)  
Western Meadowlark (1)  
Yellow-headed Blackbird (5)  
**Total = 12 species (34)**

**Howitz WPA**

American Goldfinch (1)  
Bobolink (9)  
B. headed Cowbird (2)  
C. Yellowthroat (1)  
Grasshopper Sparrow (1)  
LeConte's Sparrow (1)  
Northern Harrier (1)  
R. winged Blackbird (7)  
Savannah Sparrow (8)  
Song Sparrow (1)  
Tree Swallow (1)  
Y. headed Blackbird (2)  
**Total = 12 species (37)**

**Peterson (Cav.) WPA**

Bobolink (5)  
Brown-headed Cowbird (1)  
Common Yellowthroat (1)  
Grasshopper Sparrow (1)  
Mourning Dove (1)  
Red-winged Blackbird (8)  
Savannah Sparrow (4)  
Yellow-headed Blackbird (1)  
**Total = 8 species (22)**

**Sunderland WPA**

Bobolink (5)  
Brown-headed Cowbird (1)  
Common Yellowthroat (3)  
Grasshopper Sparrow (4)  
Savannah Sparrow (6)  
Song Sparrow (2)  
Yellow-headed Blackbird (2)  
**Total = 7 species (24)**

**Stinkeoway WPA**

Bobolink (8)  
Clay-colored Sparrow (7)  
Common Grackle (1)  
C. Yellowthroat (1)  
Grasshopper Sparrow (1)  
Marsh Wren (2)  
Mourning Dove (1)  
Red-winged Blackbird (4)  
Savannah Sparrow (1)  
Unknown Sparrow (4)  
Yellow-headed Blackbird (1)  
**Total = 11 species (31)**

**Ulliyot WPA**

Bobolink (10+)  
Clay-colored Sparrow (2)  
Red-tailed Hawk (1)  
Savannah Sparrow (9)  
Unknown Sparrow (3)  
Yellow-headed Blackbird (5)  
**Total = 6 species (30+)**

**Watne WPA**

Baltimore Oriole (1)  
Bobolink (5)  
Brown-headed Cowbird (2)  
Clay-colored Sparrow (1)  
Common Yellowthroat (1)  
Eastern Kingbird (1)  
Red-tailed Hawk (2)  
Red-winged Blackbird (15)  
Savannah Sparrow (4)  
Yellow Warbler (1)  
Yellow-headed Blackbird (2)  
**Total = 11 species (35)**

**Weaver WPA**

Bobolink (6)  
Clay-colored Sparrow (6)  
Common Yellowthroat (4)  
Eastern Kingbird (1)  
Grasshopper Sparrow (2)  
Mourning Dove (1)  
Red-winged Blackbird (11)  
Savannah Sparrow (6)  
Sedge Wren (2)  
Unknown Sparrow (2)  
**Total = 10 species (41)**

**Table 1 (Cont.)**

***Cavalier County Cont.***

**Wengeler WPA**

American Robin (1)	Savannah Sparrow (7)
Bobolink (3)	Song Sparrow (5)
Clay-colored Sparrow (4)	Unknown Sparrow (1)
Eastern Kingbird (1)	Vesper Sparrow (2)
Grasshopper Sparrow (6)	Western Kingbird (1)
Northern Harrier (1)	Western Meadowlark (1)
Red-winged Blackbird (2)	Yellow-headed Blackbird (1)
<b>Total = 14 species (36)</b>	

***Ramsey County***

**Eidsness WPA**

Bobolink (9)  
Brown-headed Cowbird (3)  
Clay-colored Sparrow (1)  
Grasshopper Sparrow (2)  
LeConte's Sparrow (3)  
Marsh Wren (1)  
Red-winged Blackbird (20+)  
Savannah Sparrow (3)  
Song Sparrow (1)  
Vesper Sparrow (2)  
**Total = 10 species (45)**

**Gette WPA**

Bobolink (7)  
Clay-colored Sparrow (6)  
Common Yellowthroat (1)  
Grasshopper Sparrow (3)  
Red-tailed Hawk (1)  
Red-winged Blackbird (3)  
Savannah Sparrow (9)  
Song Sparrow (1)  
Yellow-headed Blackbird (5)  
**Total = 9 species (36)**

**Gunder WPA**

Bobolink (8)  
Brown-headed Cowbird (5)  
Clay-colored Sparrow (3)  
Common Yellowthroat (1)  
Eastern Kingbird (1)  
Grasshopper Sparrow (1)  
Killdeer (1)  
LeConte's Sparrow (1)  
Marsh Wren (1)  
Nelson's Sharp-tailed Sparrow (1)  
Red-winged Blackbird (8)  
Savannah Sparrow (3)  
Sedge Wren (1)  
Unknown Sparrow (1)  
Vesper Sparrow (1)  
Yellow-headed Blackbird (5)  
**Total = 16 species (42)**

**Martinson WPA**

Bobolink (11)  
Brown-headed Cowbird (7)  
Clay-colored Sparrow (2)  
Common Yellowthroat (2)  
Eastern Kingbird (3)  
Grasshopper Sparrow (1)  
LeConte's Sparrow (4)  
Marsh Wren (3)  
Red-winged Blackbird (13)  
Savannah Sparrow (8)  
Song Sparrow (1)  
Vesper Sparrow (1)  
Western Meadowlark (2)  
Yellow-headed Blackbird (6)  
**Total = 14 species (64)**

**Mellin WPA**

Bobolink (5)  
Brown-headed Cowbird (1)  
Clay-colored Sparrow (4)  
Eastern Kingbird (1)  
Grasshopper Sparrow (1)  
LeConte's Sparrow (4)  
Red-winged Blackbird (4)  
Savannah Sparrow (5)  
Sedge Wren (1)  
Song Sparrow (1)  
Unknown Sparrow (1)  
Vesper Sparrow (4)  
**Total = 12 species (32)**

**Phil Aus WPA**

Bobolink (2)  
Brown-headed Cowbird (6)  
Clay-colored Sparrow (5)  
Common Yellowthroat (4)  
Grasshopper Sparrow (4)  
LeConte's Sparrow (1)  
Marsh Wren (3)  
Red-winged Blackbird (12)  
Savannah Sparrow (2)  
Sedge Wren (5)  
Song Sparrow (2)  
Yellow-headed Blackbird (11)  
**Total = 12 species (57)**



**Table 1 (Cont.)**

***Ramsey County Cont.***

**Schaan WPA**

American Goldfinch (2)	Killdeer (1)
Bobolink (11)	Marsh Wren (1)
Brown-headed Cowbird (1)	Red-winged Blackbird (9)
Clay-colored Sparrow (4)	Savannah Sparrow (1)
Eastern Kingbird (2)	Sedge Wren (2)
Grasshopper Sparrow (2)	Unknown Sparrow (1)
<b>Total = 12 species (37)</b>	

***Towner County***

**Freund WPA**

Bobolink (6)
Brown-headed Cowbird (1)
Grasshopper Sparrow (2)
LeConte's Sparrow (2)
Marsh Wren (3)
Nelson's Sharp-tailed Sparrow (1)
Red-winged Blackbird (8)
Savannah Sparrow (2)
Tree Swallow (1)
<u>Yellow-headed Blackbird (5)</u>
<b>Total = 10 species (31)</b>

**Halverson WPA**

Bobolink (10)
Brown-headed Cowbird (3)
Clay-colored Sparrow (3)
Cliff Swallow (2)
Grasshopper Sparrow (6)
LeConte's Sparrow (1)
Marsh Wren (1)
Red-winged Blackbird (17)
Savannah Sparrow (1)
Sedge Wren (8)
<u>Yellow-headed Blackbird (1)</u>
<b>Total = 11 species (53)</b>

**Johnson WPA**

Bobolink (8)
Brown-headed Cowbird (2)
Grasshopper Sparrow (2)
LeConte's Sparrow (1)
Red-winged Blackbird (3)
Savannah Sparrow (7)
Sedge Wren (1)
Song Sparrow (1)
Western Meadowlark (2)
<u>Yellow-headed Blackbird (2)</u>
<b>Total = 10 species (29)</b>

**Kahl WPA**

Bobolink (4)
Brown-headed Cowbird (1)
Clay-colored Sparrow (1)
Grasshopper Sparrow (1)
Marsh Wren (1)
Red-winged Blackbird (1)
Savannah Sparrow (1)
<u>Yellow-headed Blackbird (3)</u>
<b>Total = 8 species (13)</b>

**Koch WPA**

Brown-headed Cowbird (2)
Clay-colored Sparrow (1)
Common Yellowthroat (2)
Eastern Kingbird (1)
Grasshopper Sparrow (1)
LeConte's Sparrow (1)
Marsh Wren (3)
Red-tailed Hawk (2)
Red-winged Blackbird (24)
Savannah Sparrow (5)
Sedge Wren (2)
Song Sparrow (1)
Vesper Sparrow (1)
<u>Western Kingbird (1)</u>
<b>Total = 14 species (47)</b>

**Nikolaisen WPA**

Bobolink (5)
Brown-headed Cowbird (4)
Clay-colored Sparrow (5)
Cliff Swallow (2)
Common Grackle (2)
Common Yellowthroat (2)
Eastern Kingbird (2)
Grasshopper Sparrow (4)
LeConte's Sparrow (1)
Marsh Wren (1)
Red-winged Blackbird (14)
Savannah Sparrow (9)
Western Meadowlark (2)
<u>Yellow-headed Blackbird (6)</u>
<b>Total = 14 species (59)</b>

**Towner (SBA) WPA**

Bobolink (8)	Mourning Dove (2)
Brown-headed Cowbird (6)	Nelson's Sharp-tailed Sparrow (1)
Clay-colored Sparrow (11)	Red-winged Blackbird (5)
Eastern Kingbird (1)	Savannah Sparrow (14)
Grasshopper Sparrow (4)	Upland Sandpiper (5)
Marsh Wren (3)	Western Meadowlark (3)
<b>Total = 12 species (63)</b>	

**Table 1 (Cont.)**

***Benson County***

**Benson WPA**

Brown-headed Cowbird (1)  
Marsh Wren (2)  
Red-winged Blackbird (13+)  
Savannah Sparrow (1)  
Swamp Sparrow (1)  
Yellow-headed Blackbird (35+)  
**Total = 6 species (53+)**

**Carr WPA**

Bobolink (3)  
Brown-headed Cowbird (4)  
Clay-colored Sparrow (1)  
Grasshopper Sparrow (2)  
Marsh Wren (2)  
Red-winged Blackbird (13)  
Savannah Sparrow (4)  
Sedge Wren (2)  
Western Meadowlark (1)  
Yellow-headed Blackbird (1)  
**Total = 10 species (33)**

**Knox WPA**

Bobolink (1)  
Brown-headed Cowbird (2)  
Clay-colored Sparrow (6)  
Grasshopper Sparrow (1)  
LeConte's Sparrow (1)  
Marsh Wren (6)  
Red-winged Blackbird (8)  
Western Meadowlark (2)  
Yellow-headed Blackbird (4)  
**Total = 9 species (31)**

**Melass WPA**

Brown-headed Cowbird (3)  
Clay-colored Sparrow (2)  
Cliff Swallow (2)  
Grasshopper Sparrow (1)  
Killdeer (2)  
Marsh Wren (1)  
Red-winged Blackbird (7)  
Savannah Sparrow (3)  
Western Meadowlark (1)  
Yellow-headed Blackbird (7)  
**Total = 10 species (29)**

**Olson WPA**

Brown-headed Cowbird (1)  
Clay-colored Sparrow (1)  
Killdeer (3)  
Mourning Dove (2)  
Red-winged Blackbird (10+)  
Sedge Wren (2)  
Vesper Sparrow (1)  
Yellow-headed Blackbird (25+)  
**Total = 8 species (45+)**

**Peterson (Ben. N) WPA**

American Goldfinch (1)  
Baltimore Oriole (1)  
Bobolink (1)  
Brown-headed Cowbird (2)  
Clay-colored Sparrow (3)  
Eastern Kingbird (1)  
Grasshopper Sparrow (2)  
LeConte's Sparrow (1)  
Red-winged Blackbird (1)  
Savannah Sparrow (1)  
Upland Sandpiper (1)  
Western Meadowlark (1)  
**Total = 12 species (16)**

**Peterson (Ben. S) WPA**

Brown-headed Cowbird (3)  
Clay-colored Sparrow (4)  
Eastern Kingbird (2)  
Marsh Wren (1)  
Red-tailed Hawk (2)  
Red-winged Blackbird (9)  
Yellow-headed Blackbird (4)  
**Total = 7 species (25)**

**Rice WPA**

Bobolink (5)  
Brown-headed Cowbird (8)  
Clay-colored Sparrow (3)  
Grasshopper Sparrow (1)  
Red-winged Blackbird (4)  
Savannah Sparrow (6)  
Western Meadowlark (2)  
Willow Flycatcher (1)  
Yellow-headed Blackbird (3)  
**Total = 9 species (33)**

**Slater WPA**

Clay-colored Sparrow (1)  
Grasshopper Sparrow (1)  
Red-tailed Hawk (1)  
Red-winged Blackbird (4)  
Savannah Sparrow (4)  
Sedge Wren (2)  
Yellow-headed Blackbird (3)  
**Total = 7 species (16)**

## **Table 1 (Cont.)**

### ***Benson County Cont.***

#### **Trimmer WPA**

Bobolink (4)  
Brown-headed Cowbird (1)  
Clay-colored Sparrow (3)  
Marsh Wren (1)  
Mourning Dove (2)  
Nelson's Sharp-tailed Sparrow (1)  
Red-winged Blackbird (5)  
Western Meadowlark (1)  
**Total = 8 species (18)**

#### **Tweten WPA**

American Goldfinch (1)  
Bobolink (3)  
Brown-headed Cowbird (3)  
Clay-colored Sparrow (5)  
Eastern Kingbird (1)  
Grasshopper Sparrow (1)  
Marsh Wren (4)  
Mourning Dove (1)  
Red-winged Blackbird (9)  
Savannah Sparrow (8)  
Sedge Wren (1)  
Western Kingbird (2)  
Western Meadowlark (2)  
**Total = 13 species (41)**

### ***Walsh County***

#### **Hendrickson WPA**

Bobolink (6)  
Brown-headed Cowbird (1)  
Common Yellowthroat (1)  
Grasshopper Sparrow (1)  
Marsh Wren (1)  
Savannah Sparrow (1)  
Vesper Sparrow (1)  
Western Meadowlark (1)  
Yellow-headed Blackbird (25+)  
**Total = 9 species (38+)**

#### **Toutges WPA**

Bobolink (6)  
Brown-headed Cowbird (4)  
Clay-colored Sparrow (3)  
Red-winged Blackbird (4)  
Savannah Sparrow (6)  
Sedge Wren (2)  
Song Sparrow (1)  
Western Meadowlark (2)  
Yellow-headed Blackbird (5)  
**Total = 9 species (33)**

### ***Nelson County***

#### **Rugh Lake WPA**

Bobolink (7)  
Clay-colored Sparrow (1)  
Common Yellowthroat (2)  
Grasshopper Sparrow (1)  
Marsh Wren (3)  
Mourning Dove (1)  
Nelson's Sharp-tailed Sparrow (1)  
Red-winged Blackbird (8)  
Savannah Sparrow (5)  
Sedge Wren (2)  
Western Meadowlark (1)  
Yellow-headed Blackbird (2)  
**Total = 12 species (34)**

#### **Sahl WPA**

Brown-headed Cowbird (1)  
Clay-colored Sparrow (2)  
Eastern Kingbird (2)  
Grasshopper Sparrow (2)  
LeConte's Sparrow (2)  
Marsh Wren (3)  
Red-tailed Hawk (1)  
Red-winged Blackbird (3)  
Savannah Sparrow (5)  
Song Sparrow (1)  
Western Meadowlark (1)  
**Total = 11 species (23)**

**Table 1 (Cont.)**

***Grand Forks County***

**Agnes Marsh WPA**

Bobolink (1)  
Brown-headed Cowbird (1)  
Clay-colored Sparrow (6)  
Common Yellowthroat (2)  
Eastern Kingbird (1)  
Grasshopper Sparrow (4)  
Least Flycatcher (2)  
Mourning Dove (1)  
Red-winged Blackbird (3)  
Savannah Sparrow (1)  
Song Sparrow (2)  
**Total = 11 species (24)**

**Hofer Marsh WPA**

Bobolink (10)  
Clay-colored Sparrow (4)  
Cliff Swallow (2)  
Grasshopper Sparrow (3)  
Marsh Wren (1)  
Red-winged Blackbird (5)  
Savannah Sparrow (3)  
Sedge Wren (1)  
Yellow-headed Blackbird (2)  
**Total = 9 species (31)**

**Stewart Lake WPA**

Bobolink (8)  
Brown-headed Cowbird (7)  
Clay-colored Sparrow (6)  
Common Yellowthroat (2)  
Eastern Kingbird (4)  
Grasshopper Sparrow (5)  
LeConte's Sparrow (3)  
Nelson's Sharp-tailed Sparrow (1)  
Red-winged Blackbird (15)  
Savannah Sparrow (6)  
Sedge Wren (4)  
Tree Swallow (1)  
Unknown Sparrow (1)  
Yellow-headed Blackbird (1)  
**Total = 14 species (64)**



**Table 2. Grassland bird species detected at 42 Waterfowl Production Areas surveyed within the Devils Lake Wetland Management District, Devils Lake, North Dakota, 2003.**

American Goldfinch (*Carduelis tristis*)  
American Robin (*Turdus migratorius*)  
Baltimore Oriole (*Icterus galbula*)  
Bobolink (*Dolichonyx oryzivorus*)  
Brown-headed Cowbird (*Molothrus ater*)  
Clay-colored Sparrow (*Spizella pallida*)  
Cliff Swallow (*Petrochelidon pyrrhonota*)  
Common Grackle (*Quiscalus quiscula*)  
Common Yellowthroat (*Geothlypis trichas*)  
Eastern Kingbird (*Tyrannus tyrannus*)  
Field Sparrow (*Spizella pusilla*)  
Grasshopper Sparrow (*Ammodramus savannarum*)  
Killdeer (*Charadrius vociferous*)  
Least Flycatcher (*Empidonax minimus*)  
LeConte's Sparrow (*Ammodramus leconteii*)  
Marsh Wren (*Cistothorus palustris*)  
Mourning Dove (*Zenaida macroura*)  
Nelson's Sharp-tailed Sparrow (*Ammodramus nelsoni*)  
Northern Harrier (*Circus cyaneus*)  
Red-tailed Hawk (*Buteo jamaicensis*)  
Red-winged Blackbird (*Agelaius phoeniceus*)  
Savannah Sparrow (*Passerculus sandwichensis*)  
Sedge Wren (*Cistothorus platensis*)  
Song Sparrow (*Melospiza melodia*)  
Swamp Sparrow (*Melospiza georgiana*)  
Tree Swallow (*Tachycineta bicolor*)  
Upland Sandpiper (*Bartramia longicauda*)  
Vesper Sparrow (*Pooecetes gramineus*)  
Western Kingbird (*Tyrannus verticalis*)  
Western Meadowlark (*Sturnella neglecta*)  
Willow Flycatcher (*Empidonax traillii*)  
Yellow Warbler (*Dendroica petechia*)  
Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)

**Table 3. Frequency of occurrence (in descending order) of grassland species detected at Waterfowl Production Areas within the DLWMD, Devils Lake, North Dakota, 2003.**

<u>Species</u>	<u># of WPAs Present</u>	<u>% Occurrence</u>
Red-winged Blackbird	39	92.9%
Savannah Sparrow	38	90.5%
Bobolink	35	83.3%
Clay-colored Sparrow	35	83.3%
Brown-headed Cowbird	33	78.6%
Grasshopper Sparrow	33	78.6%
Yellow-headed Blackbird	31	73.8%
Marsh Wren	23	54.8%
Common Yellowthroat	18	42.9%
Eastern Kingbird	17	40.5%
Western Meadowlark	17	40.5%
Sedge Wren	16	38.1%
LeConte's Sparrow	15	35.7%
Song Sparrow	13	31.0%
Mourning Dove	10	23.8%
Vesper Sparrow	8	19.0%
Nelson's Sharp-tailed Sparrow	7	16.7%
Red-tailed Hawk	7	16.7%
American Goldfinch	4	9.5%
Cliff Swallow	4	9.5%
Killdeer	4	9.5%
Northern Harrier	3	7.1%
Tree Swallow	3	7.1%
Baltimore Oriole	2	4.8%
Common Grackle	2	4.8%
Swamp Sparrow	2	4.8%
Upland Sandpiper	2	4.8%
Western Kingbird	2	4.8%
American Robin	1	2.4%
Field Sparrow	1	2.4%
Least Flycatcher	1	2.4%
Willow Flycatcher	1	2.4%
Yellow Warbler	1	2.4%

**Table 4. Habitat breakdowns of Waterfowl Production Areas surveyed during the 2003 Grassland Bird Survey, Devils Lake Wetland Management District, Devils Lake, North Dakota, 2003.**

<u>WPA</u>	<u>% Upland</u>	<u>% Wetland</u>	<u>WPA</u>	<u>% Upland</u>	<u>% Wetland</u>
<b><i>Cavalier County</i></b>			<b><i>Grand Forks County</i></b>		
Edmunds	88%	12%	Agnes Marsh	61%	39%
Hamline	62%	38%	Hofer Marsh	79%	21%
Howitz	67%	33%	Stewart Lake	40%	60%
Peterson (Cav.)	48%	52%			
Sunderland	48%	52%			
Stinkeoway	87%	13%			
Ullyot	62%	38%			
Watne	79%	21%			
Weaver	80%	20%			
Wengeler	92%	8%			
<b><i>Ramsey County</i></b>					
Eidsness	72%	18%			
Gette	77%	23%			
Gunder	43%	57%			
Martinson	81%	19%			
Mellin	86%	14%			
Phil Aus	86%	14%			
Schaan	57%	43%			
<b><i>Towner County</i></b>					
Freund	53%	47%			
Halverson	84%	16%			
Johnson	82%	18%			
Kahl	83%	17%			
Koch	48%	52%			
Nikolaisen	87%	13%			
Towner (SBA)	80%	20%			
<b><i>Benson County</i></b>					
Benson	40%	60%			
Carr	55%	45%			
Knox	70%	30%			
Melass	57%	43%			
Olson	64%	36%			
Peterson (Ben. N.)	66%	34%			
Peterson (Ben S.)	84%	16%			
Rice	49%	51%			
Slater	82%	18%			
Trimmer	73%	27%			
Tweten	46%	54%			
<b><i>Walsh County</i></b>					
Hendrickson	59%	41%			
Toutges	53%	47%			
<b><i>Nelson County</i></b>					
Rugh Lake	69%	31%			
Sahl	69%	31%			
			<b><u>TOTALS</u></b>	72.8%	27.2%

**Table 5. Grassland Bird Species detected at 42 Waterfowl Production Areas in the Devils Lake Wetland Management District, 2003.**

WPA (n=42)	Bot. Species (n=33)	Diversity Ranking	WPA Acres	Upland Average	Data Collection Pts.
<b>Cavaller County</b>					
Edwards	9	7	620.37	548.27	3
Hermine	12	4	160	99.4	2
Howe	12	5	474.89	315.99	3
Telefon (Gay)	8	8	40	19.1	1
Sundaland	7	9	80	38.6	1
Stinkoway	11	5	542.7	474.4	3
Unyon	6	10	459.95	286.55	2
Waine	11	5	79.9	63.2	2
Waver	10	6	480	385.6	3
Wendler	14	2	944.54	865.64	4
County Average = 10	Average County Rank = 6.1	Total County Acres = 3,882.35	Upland County Acres = 3,096.75	County Call Points = 24	
<b>Ramsey County</b>					
Endness	10	6	160	114.8	2
Goffe	9	7	399.33	306.99	2
Gunder			200	85.7	2
Maripson	14	2	1,277.79	1,038.50	4
Mellin	12	4	560	479.1	2
Phil Aus	12	4	629.95	541.25	3
Schaan	12	4	200.24	114.24	2
County Average = 12.14	Average County Rank = 4	Total County Acres = 3,427.31	Upland County Acres = 2,680.58	County Call Points = 17	
<b>Towner County</b>					
Freund	10	6	150.58	79.78	2
Halverson	11	5	470.38	393.98	4
Johnson	10	6	230.51	188.91	2
Kahl	8	8	160	132.5	1
Koch	14	2	61.63	29.53	2
Nikolaisen	14	2	1,370.39	1,192.59	4
SBA	12	4	641.05	515.65	4
County Average = 11.29	Average County Rank = 4.71	Total County Acres = 3,084.54	Upland County Acres = 2,532.94	County Call Points = 19	
<b>Benson County</b>					
Benson	6	10	80	32	1
Carl	10	6	120	66.2	2
Knox	9	7	160	111.2	2
Malass	10	6	240.36	137.36	2
Olson	8	8	80	51	2
Peter (Ben. N.)	12	4	80	52.9	1
Peterson (Ben. S.)	7	9	160	135.9	2
Rice	9	7	294.98	144.98	2
Slater	7	9	39.7	32.6	1
Summer	8	8	80	58.5	1
Watson	13	3	130	59.7	2
County Average = 9	Average County Rank = 7	Total County Acres = 1,465.04	Upland County Acres = 882.34	County Call. Points = 18	
<b>Walsh County</b>					
Hendrickson	9	8	80	47.1	1
Touge	9	7	189.59	99.69	2
County Average = 9	Average County Rank = 7.5	Total County Acres = 269.59	Upland County Acres = 146.79	County Call Points = 3	
<b>Nelson County</b>					
Rugh Lake	12	4	107.2	74.1	2
Sahl	11	5	153.32	106.22	2
County Average = 11.5	Average County Rank = 4.5	Total County Acres = 260.52	Upland County Acres = 180.32	County Call Points = 4	
<b>Grand Forks County</b>					
Antes Marsh	11	5	738.09	450.49	2
Hotel Marsh	9	7	160	125.9	2
Shaw Lake	14	2	1,284.94	510.44	4
County Average = 11.33	Average County Rank = 4.67	Total County Acres = 2,183.03	Upland County Acres = 1,086.83	County Call Points = 8	
<b>TOTALS</b>	<b>Average</b>		<b>Total Acres</b>	<b>Upland Acres</b>	<b>Total Call Points</b>
	10.43		14,572.38	10,606.55	93