APPENDIX A
BIRD SGCN SPECIES ACCOUNTS

Contents

Table 1. Bird SGCN and SGIN categories.

	Species of Greatest Conservation Need			Species of Greatest Information Need			
Common Name	**SGCN a. Regionally or globally imperiled**	**SGCN b. At-risk or declining, ND important**	**SGCN c. At-risk, expert review**	**SGIN d. Scientific knowledge deficient**	**SGIN e. Potentially stable in ND, declining in range**	**SGIN f. Potentially stable but life history trait vulnerability**	**SGIN g. Declining, ND significance uncertain**
American Avocet		X					
American Bittern		X					
American Golden-Plover	X		X				
American Kestrel			X				
Baird's Sparrow	X	X					
Black Tern	X	X					
Black-billed Cuckoo			X				
Bobolink	X	X					
Brewer's Sparrow			X				
Brown Thrasher			X				
Buff-breasted Sandpiper	X		X				
Burrowing Owl			X				
Canvasback		X					
Chestnut-collared Longspur	X	X					
Dunlin	X		X				
Ferruginous Hawk		X					
Franklin's Gull		X					
Golden Eagle			X				
Grasshopper Sparrow	X	X					
Greater Prairie-Chicken	X						
Greater Sage-Grouse	X						
Harris's Sparrow		X	X				
Horned Grebe	X	X					
Horned Lark			X				
Hudsonian Godwit	X	X					
Lark Bunting	X	X					
Least Tern (Interior)	X						
LeConte's Sparrow	X	X					
Lesser Scaup		X					
Lesser Yellowlegs	X	X					
Loggerhead Shrike	X						
Long-billed Curlew			X				
Long-billed Dowitcher	X	X					
Marbled Godwit	X	X					
Nelson’s Sparrow		X					
Northern Harrier		X					
Northern Pintail	X	X					
Pectoral Sandpiper	X	X					
Piping Plover	X	X					
Prairie Falcon			X				
Red-headed Woodpecker			X				
Ruddy Turnstone	X	X					
Ruffed Grouse			X				
Semipalmated Sandpiper	X	X					
Sharp-tailed Grouse		X					
Short-billed Dowitcher	X						
Short-eared Owl	X		X				
Sprague's Pipit	X	X					
Stilt Sandpiper	X	X					

	Species of Greatest Conservation Need			Species of Greatest Information Need			
Common Name	**SGCN a. Regionally or globally imperiled**	**SGCN b. At-risk or declining, ND important**	**SGCN c. At-risk, expert review**	**SGIN d. Scientific knowledge deficient**	**SGIN e. Potentially stable in ND, declining in range**	**SGIN f. Potentially stable but life history trait vulnerability**	**SGIN g. Declining, ND significance uncertain**
Thick-billed Longspur	X						
Upland Sandpiper		X					
Western Grebe		X					
Western Meadowlark		X					
Whooping Crane	X						
Willet		X					
Wilson's Phalarope		X	X				
Yellow Rail		X	X				
American White Pelican						X	
Black-billed Magpie					X	X	
Chimney Swift							X
Common Nighthawk				X		X	
Eastern Screech-Owl				X			X
Northern Flicker							X
Peregrine Falcon						X	
Red Knot (Rufa)							X
Smith's Longspur				X			
Snowy Owl				X			
Western Kingbird							X

Bird SGCN includes species which are one or more of the following:

a. Regionally or globally imperiled.
   - G1, G2 or G3
   - R2R Tipping Point 2024 = red or orange
   - IUCN = vulnerable or endangered
   - BBS survey-wide trend ≥ -2.0
   - PIF Pop change ≥ -70%
   - Shorebird change ≥ -70%

b. At-risk or experiencing declines either regionally or globally and North Dakota represents an important portion of their remaining range.
   - eBird % breeding pop ND ≥ 5
   - Max week % pop in ND ≥ 10
   - ACAD = RS

c. At-risk based on expert review or recent regional or global assessments.

SGIN includes species which are one or more of the following:

a. Potentially vulnerable but current scientific knowledge and expert understanding is lacking.
b. Potentially stable in North Dakota but may be experiencing declines in a substantial portion of their range.
c. Potentially stable but uncertainty about life history traits may make them at-risk.
d. Declining regionally or globally but uncertainty regarding the significance of North Dakota to its survival.

Table 2. Partner and bird conservation lists for bird SGCNs.

Common Name	USFWS BCC Continental	USFWS BCC BCR 11	USFWS BCC BCR17	PPJV Priority	NGPJV Priority	Midwest RSGCN	R2R Tipping Point	ACAD BCR 11	ACAD BCR 17	Nature Serve	IUCN Red List	COSEWIC
American Avocet				X				RS		G5	LC	
American Bittern								RC		G5	LC	
American Golden-Plover	X	nb					Orange	WL		G5	LC	
American Kestrel								CBSD		G5	LC	
Baird's Sparrow	X	X	X	X	X	Watchlist	Red	WL, RS	WL, RC	G4	LC	SC
Black Tern	X	X	X			RSGCN		CBSD, RC, RS		G4	LC	NAR
Black-billed Cuckoo	X	X	X		X	RSGCN		CBSD, RC		G5	LC	
Bobolink	X	X	X	X		RSGCN	Orange	WL, RS	WL	G5	LC	SC
Brewer's Sparrow					X			CBSD	CBSD, RC	G5/S3	LC	
Brown Thrasher								RC		G5	LC	
Buff-breasted Sandpiper	X	nb		X		RSGCN	Orange			G4	VU	SC
Burrowing Owl			X		X				CBSD	G4	LC	E
Canvasback				X				RS		G5	LC	
Chestnut-collared Longspur	X	X	X	X	X	Watchlist	Red	WL, RC, RS	WL, RC, RS	G5	VU	E
Dunlin		nb		X				CBSD*		G5	NT	
Ferruginous Hawk			X		X			RS	RC	G4	LC	SC
Franklin's Gull	X	X	X					RC, RS	CBSD	G5	LC	
Golden Eagle										G5/S3	LC	NAR
Grasshopper Sparrow		X	X	X	X	RSGCN		CBSD, RC	CBSD, RC, RS	G5	LC	
Greater Prairie-Chicken				X		RSGCN	Red	WL, RC	WL, RC	G4	NT	EXT
Greater Sage-Grouse				X	X		Red	WL, RC	WL, RC	G3	NT	E
Harris's Sparrow							Yellow	WL	WL	G5	NT	SC
Horned Grebe							Yellow	WL, RC		G5	VU	SC
Horned Lark								CBSD	CBSD	G5	LC	
Hudsonian Godwit	X	nb		X			Red	WL, RS		G4	VU	T
Lark Bunting			X	X	X	Watchlist		CBSD, RC	CBSD, RC, RS	G5	LC	T
Least Tern (Interior)	X					RSGCN	Orange			G4/S1	LC	
LeConte's Sparrow	X	X				RSGCN	Orange	WL, RC		G5	LC	
Lesser Scaup				X				RS		G5	LC	
Lesser Yellowlegs	X	nb		X			Orange	WL		G5	VU	T
Loggerhead Shrike					X			CBSD, RC	CBSD	G4	NT	T

Common Name	USFWS BCC Continental	USFWS BCC BCR 11	USFWS BCC BCR17	PPJV Priority	NGPJV Priority	Midwest RSGCN	R2R Tipping Point	ACAD BCR 11	ACAD BCR 17	Nature Serve	IUCN Red List	COSEWIC
Long-billed Curlew		X		X	X			RC	RC	G5/S2	LC	SC
Long-billed Dowitcher				X			Orange	WL, RS	WL	G5	NT	
Marbled Godwit	X	X	X	X	X	RSGCN		WL, RC, RS	WL, RC	G5	VU	
Nelson's Sparrow						RSGCN		WL, RS	WL	G5	LC	NAR
Northern Harrier			X					RC	RC	G5	LC	NAR
Northern Pintail				X	X		Yellow	WL, RC		G5	LC	
Pectoral Sandpiper	X	nb		X			Orange	WL, RC		G5	LC	
Piping Plover				X		RSGCN	Orange	WL, RC, RS	WL, RC	G3/S1	NT	E
Prairie Falcon			X							G5/S3	LC	NAR
Red-headed Woodpecker	X	X	X		X	RSGCN		CBSD, RC	CBSD	G5	LC	E
Ruddy Turnstone							Orange			G5	NT	
Ruffed Grouse										G5	LC	
Semipalmated Sandpiper						Watchlist	Orange	WL, RC		G5	NT	
Sharp-tailed Grouse				X	X	Watchlist		RS	RS	G5	LC	
Short-billed Dowitcher	X	nb		X			Orange	WL		G5	VU	
Short-eared Owl	X	X	X		X	RSGCN		CBSD, RC	CBSD, RC	G5	LC	T
Sprague's Pipit	X	X	X	X	X	RSGCN	Orange	WL, RC, RS	WL, RC, RS	G3/S3	VU	T
Stilt Sandpiper				X			Orange	WL, RC	WL	G5	NT	
Thick-billed Longspur	X	X	X	X	X		Red	WL, RC, RS	WL, RC, RS	G4/S3	LC	T
Upland Sandpiper				X	X	RSGCN		RC, RS	RS	G5	LC	
Western Grebe	X	X	X					RS		G5	LC	SC
Western Meadowlark				X		RSGCN		CBSD	RS	G5	LC	
Whooping Crane						RSGCN	Orange	WL, RS	WL	G1/SX	EN	E
Willet	X	X	X	X		Watchlist		WL, RC, RS	WL, RC	G5	LC	
Wilson's Phalarope				X	X					G5	LC	
Yellow Rail	X	X				RSGCN	Yellow	WL, RC		G4/S2	LC	SC

Table 3. Descriptions for partner and bird conservation lists.

	Description	Categories	Reference
USFWS BCC Continental 2021 List	Birds at the Continental scale likely to become candidates for Listing under the Endangered Species Act without additional conservation action.	X = on list nb = nonbreeding	https://www.fws.gov/sites/default/files/documents/birds-of-conservation-concern-2021.pdf
USFWS BCC BCR 11 2021 List	Birds in BCR 11 (i.e. Prairie Pothole region) likely to become candidates for listing under the Endangered Species Act without additional conservation action.	X = on list nb = nonbreeding	https://www.fws.gov/sites/default/files/documents/birds-of-conservation-concern-2021.pdf
USFWS BCC BCR 17 2021 List	Birds in BCR 17 (i.e. Northern Great Plains region) likely to become candidates for listing under the Endangered Species Act without additional conservation action.	X = on list nb = nonbreeding	https://www.fws.gov/sites/default/files/documents/birds-of-conservation-concern-2021.pdf
PPJV Priority Species	Priority species identified in the 2017 Prairie Pothole Joint Venture Implementation Plan.	X = on list	https://ppjv.org/resources/
NGPJV Priority Species	Northern Great Plains Joint Venture Priority Species Table 2021.	X = on list	https://ngpjv.org/resources/
Midwest RSGCN	The Midwest Landscape Initiative (MLI) developed a Regional Species of Greatest Conservation Need (RSGCN) List to provide an effective, collaborative focus and approach for regional wildlife diversity conservation in the Midwest.	RSGCN = Regional Species of Greatest Conservation Need Watchlist: high concern, but insufficient information or the region had low regional responsibility	https://www.mlimidwest.org/midwest-regional-species-of-greatest-conservation-need/
Road to Recovery (R2R) Tipping Point Species 2024 List	In 2020, a new collaborative effort was formed to address the loss of 3 billion birds. Road to Recovery (R2R) is a conservation science initiative to recover species identified as "Tipping Point" species and avoid listing status.	Red = Red Watch List: highest urgency based on multiple high vulnerability scores, usually including perilously low population size and steeply declining or unknown population trend. Orange = Orange Watch List: species with very large long-term population loss (> 75%); OR species with large long-term loss (>50%) and with continued or accelerated recent declines resulting in a loss ≥ 30% over the most recent 3 generations or a half-life < 30 years. Yellow = Yellow Watch List: species experienced large long-term population loss (≥ 50%), but now show relatively stable or even increasing populations over the most recent 3-generation period.	https://r2rbirds.org/tipping-point-species/
Avian Conservation Assessment Database **ACAD BCR 11** **ACAD BCR 17**	The Avian Conservation Assessment Database (ACAD) provides conservation assessment data and rankings for all North American bird species at multiple geographic scales. Species of Regional Importance designations for BCR 11 and BCR 17.	WL = WatchList: species that meet a minimum threshold of overall vulnerability based on a combination of small and declining populations, limited distributions, and high threats throughout their ranges. CBSD = Common Bird in Stee Decline: species that occur regularly in significant numbers during the breeding season, but long-term regional decline of at least 50%. RC = Regional Concern: species that occur regularly in significant numbers in the BCR, but high regional threats or moderate regional threats with moderate to large population declines. RS = Regional Stewardship: high importance of the BCR to the species, >25% of the population.	https://pif.birdconservancy.org/ https://pif.birdconservancy.org/avian-conservation-assessment-database/

	Description	Categories	Reference
IUCN Red List	The International Union for Conservation of Nature (IUCN) Red List is an indicator of the health of the world's biodiversity.	LC = Least Concern: not high risk NT = Near Threatened: close or likely to qualifying as high risk VU = Vulnerable: high risk of extinction in the wild EN = Endangered: very high risk of extinction in the wild	https://www.iucnredlist.org/
NatureServe	NatureServe is a compilation of data on the location and ecological condition of species and ecosystems.	G = Global ranking; S =State ranking 1 = Critically Imperiled 2 = Imperiled 3 = Vulnerable 4 = Apparently Secure 5 = Secure	https://explorer.natureserve.org/
COSEWIC	Committee on the Status of Endangered Wildlife in Canada, national status of wild species that are considered to be at risk in Canada under the Species at Risk Act (SARA).	Ext = Extirpated: no longer existing in the wild in Canada, but occurring elsewhere. E = Endangered: facing imminent extirpation or extinction. T = Threatened: likely to become endangered if limiting factors are not reversed. SC = Special Concern: may become threatened or endangered wildlife species because of a combination of biological characteristics and identified threats. NAR = Not at Risk: has been evaluated and found to be not at risk of extinction given the current circumstances.	https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry.html

Table 4. Population trends for bird SGCNs.

Common Name	Global Population	% Global Pop in BCR 11	% Global Pop in BCR 17	eBird % Pop Breeding ND	eBird State Rank	Max Week Abundance in ND	Max Week % Pop in ND	BBS Trend Survey-wide	BBS Trend ND	eBird Trend Range-wide	eBird Trend ND	Population Change	Urgency /Half-life
American Avocet	460,000	30.37	2.03	3.46	5 of 22	17-May	5.25	0.4	0.70			-40%	
American Bittern	2,500,000	23.42	1.11	9.62	1 of 26	20-Sep	19.84	-0.9	0.00	-32.4	-39.5		
American Golden-Plover	500,000					4-Oct	16.62					-70%	14
American Kestrel	9,200,000	1.72	2.23	0.35	18 of 44	26-Apr	1.16	-1.4	-1.00	-20.3	-21.4	-48%	>50
Baird's Sparrow	3,400,000	74.02	24.81	10.01	2 of 5	30-Aug	56.63	-2.3	-4.00			-71%	>50
Black Tern	5,100,000	27.71	0.89	8.19	1 of 23	17-May	16.25	-2.6	-1.80	-33.7	-3.1		
Black-billed Cuckoo	880,000	6.58	0.46	1.26	7 of 26	5-July	3.30	-1.5	-3.90	-4.7	-28.1	-68%	37
Bobolink	10,000,000	46.73	11.91	19.32	1 of 32	12-July	21.19	-1.7	0.00	-21.7	-19.8	-60%	48
Brewer's Sparrow	17,000,000	2.21	10.8	0.06	14 of 14	7-June	0.12	-1.5		-12.2	-32.5	-35%	>50
Brown Thrasher	6,200,000	10.62	9.28	3.39	7 of 39	23-Aug	6.24	-1.00	-1.00	-10	-21.8	-37%	>50
Buff-breasted Sandpiper	56,000					26-July	48.31					-60%	
Burrowing Owl	18,000,000	0.54	2.06	0.1	14 of 18	19-July	0.20	-1.2	-4.30	-27.5	-36.9	-35%	
Canvasback	690,000	68.64	4.33	18.03	1 of 14	11-Oct	38.43	-0.7	1.60	-26.7			
Chestnut-collared Longspur	3,100,000	57.3	40.78	18.93	2 of 6	23-Aug	32.47	-2.3	-2.90			-85%	21
Dunlin	5,500,000	0.61				24-May	3.15			-32		-80%	18
Ferruginous Hawk	110,000	51.53	14.6	3.41	7 of 16	1-Nov	5.73	1.1	0.20			39%	>50
Franklin's Gull	830,000	54.25	1.34	8.2	2 of 13	20-Sep	27.68	-0.6	-2.00	6.7	23.5		
Golden Eagle	130,000	0.51	1.65	0.09	15 of 16	11-Jan	1.46	0.2	0.40	-18.5	18.5	6%	>50
Grasshopper Sparrow	34,000,000	20.38	31.42	14.99	3 of 40	2-Aug	17.20	-2.8	-4.50	-15.6	-12.9	-68%	15
Greater Prairie-Chicken	360,000	5.09	9.61	0.11	7 of 11			1.6				>50%	
Greater Sage-Grouse	430,000	5.48	20.08					-2.2		-15.2	53.5	-67%	>40
Harris's Sparrow	2,000,000					27-Sep	25.11			-15.3		-63%	
Horned Grebe	620,000	9.55	0.15	0.76	2 of 4	26-Apr	11.43	-1.9	-2.00	-30.2			
Horned Lark	140,000,000	7.7	4.15	1.02	12 of 37	8-Mar	7.07	-1.7	-1.90	-14.2	-5.4	-65%	25
Hudsonian Godwit	77,000					17-May	15.29					-90%	6
Lark Bunting	12,000,000	8.27	41.59	3.78	6 of 10	21-June	4.10	-4.2	-7.00	-55.7	-51.9	-86%	12
Least Tern (Interior)	120,000	0.19	0.2	0.04	27 of 31	19-July	0.05			-8.4	-12.7		20
LeConte's Sparrow	5,100,000	24.12	0.09	4.47	1 of 6	6-Sep	42.68	-1.6	-2.90	-23.4	-60.7	-61%	43
Lesser Scaup	3,700,000	25.89	0.93	3.95	2 of 14	1-Nov	35.03	-1.1	1.40	-20.6	-2.2		
Lesser Yellowlegs	660,000	3.69				26-July	12.35	-2.4		-12.7	0.7	-70%	9
Loggerhead Shrike	7,000,000	4.96	6.34	0.77	17 of 31	19-July	1.21	-2.8	-2.30	-26.1	1.1	-74%	24

Common Name	Global Population	% Global Pop in BCR 11	% Global Pop in BCR 17	eBird % Pop Breeding ND	eBird State Rank	Max Week Abundance in ND	Max Week % Pop in ND	BBS Trend Survey-wide	BBS Trend ND	eBird Trend Range-wide	eBird Trend ND	Population Change	Urgency /Half-life
Long-billed Curlew	140,000	23.91	19.78	0.8	13 of 17	31-May	1.04	0.00	0.50	-9.9	14		
Long-billed Dowitcher	650,000	1.02				26-July	21.13			-18.8		-70%	
Marbled Godwit	170,000	56.64	11.74	15.26	1 of 15	14-June	19.08	-0.6	-0.10			10%	
Nelson's Sparrow	1,000,000	65.06	2.13	19.49	1 of 6	24-May	36.05	0.9	1.90				>50
Northern Harrier	820,000	20.07	6.65	6.45	3 of 24	21-June	7.28	-1.00	0.20	-23.8	-33.6	-37%	>50
Northern Pintail	5,100,000	4.91	0.84	2.55	2 of 15	29-Mar	9.60	-2.9	-0.30	-10.5	-28.7		
Pectoral Sandpiper	1,600,000	2.57				26-July	18.99					-60%	16
Piping Plover	8,400	50.29	12.51	9.73	3 of 20	28-June	15.94			-7.2	-25.1	-40%	
Prairie Falcon	110,000	4.53	7.94	0.61	14 of 16	6-Sep	3.35	1.00	-0.30	-23.3	32.5	41%	>50
Red-headed Woodpecker	1,800,000	6.26	4.58	0.18	30 of 35	6-Sep	0.71	-1.2	-1.90	22	42.6	-67%	>50
Ruddy Turnstone	600,000	0.37				24-May	10.88			-10.8		-70%	21
Ruffed Grouse	18,000,000	0.46	0.03	0.01	23 of 23			0.4		4.3	-11	31%	>50
Semipalmated Sandpiper	2,300,000	3.74	0.09			31-May	12.21					-60%	
Sharp-tailed Grouse	760,000	49.49	30.75	17.78	2 of 14			0.9	1.80	14.5	10.2	19%	>50
Short-billed Dowitcher	150,000	1.23				17-May	5.68			-20.5		-80%	9
Short-eared Owl	2,300,000	0.77	1.38	0.19	9 of 12	19-Apr	6.10	-3.5	-3.00	-3.8	11.2	-65%	
Sprague's Pipit	1,400,000	80.89	17.49	7.65	2 of 3	26-Apr	16.06	-4.3	-3.40			-75%	10
Stilt Sandpiper	1,200,000	8.06				26-July	40.09					-70%	
Thick-billed Longspur	840,000	35.31	40.36					-2.0	-4.50			-94%	>50
Upland Sandpiper	750,000	39.8	34.91	15.5	2 of 22	17-May	19.36	0.5	0.40	-8.6	-5.1		
Western Grebe	1,000,000	43.01	6.53	24.72	1 of 16	12-July	29.95	-0.1	4.80	-15.6	-14.4		
Western Meadowlark	100,000,000	23.75	30.62	7.3	6 of 22	2-Aug	9.06	-1.0	-1.00	-8.1	-14	-42%	50
Whooping Crane	500*	0.6											
Willet	250,000	55.45	4.02	6.47	4 of 30	17-May	7.65	-0.7	-0.80	-3.7	12.6	20%	
Wilson's Phalarope	1,500,000	16.72	3.23	1.71	2 of 18	31-May	15.86	-0.5	0.20			-60%	
Yellow Rail	12,000	7.78	0	1.45	1 of 4	24-Aug	7.46	0.4	0.70				

Table 5. Descriptions of bird population trends.

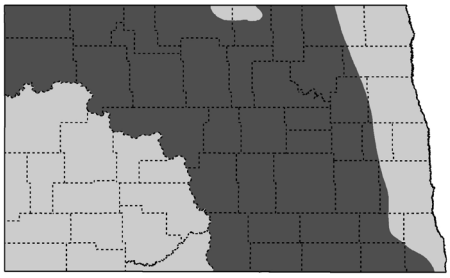
	Description	Reference
Global Population	An estimate of the global population size (breeding-aged individuals). The PIF Population Estimates Database provides breeding population estimates for all landbird species in the continental USA and Canada at various spatial scales. For waterfowl, the estimate is from NAWMP. If asterisk, other source.	https://pif.birdconservancy.org/avian-conservation-assessment-database/
% Global Pop in BCR 11 **BCR 17**	Percent of the global population in region during breeding season.	https://pif.birdconservancy.org/avian-conservation-assessment-database/
eBird % Pop in ND	Percent of the global population that occurs in the state.	https://www.birds.cornell.edu/home/us-state-level-conservation-data-summaries/
eBird State Rank	Rank of the percent breeding population. The first number is North Dakota's rank out of total number of states with non-zero breeding percentage.	https://www.birds.cornell.edu/home/us-state-level-conservation-data-summaries/
Max Week Abundance in ND	The maximum week mid-point date where abundance is greatest in ND (during any season), calculated using weekly percent of population estimates.	https://www.birds.cornell.edu/home/us-state-level-conservation-data-summaries/
Max Week % Pop in ND	The maximum percent of the global population that occurs in ND during the Max Week.	https://www.birds.cornell.edu/home/us-state-level-conservation-data-summaries/
BBS Trend Survey-wide **BBS Trend ND**	North American Breeding Bird Survey 1966 - 2022 trend analysis.	https://eesc.usgs.gov/MBR/
eBird Trend Range-wide **eBird Trend ND**	Cumulative change in estimated relative abundance from 2012 through 2022. Median value is provided.	https://science.ebird.org/en
Population Change	For landbirds, estimate from Partners in Flight Landbird Conservation Plan (2016) percent change in population from 1970-2014. For shorebirds, estimated total percent change in abundance during fall migration across North America from 1980-2019 (Smith et al. 2023).	https://partnersinflight.org/resources/the-plan/ https://academic.oup.com/condor/article/125/2/duad003/7031074
Half-Life	Partners in Flight Landbird Conservation Plan (2016) prediction of how many years in the future until a population size that is half of the current abundance is expected to be observed. Includes June 2024 ACAD updates.	https://partnersinflight.org/resources/the-plan/

American Avocet *Recurvirostra americana*

Description/Identification: L 18”, WS 31”, 11 oz. Body is black and white with a striking orange-cinnamon head and neck, thin up-curved bill, and blue legs.

Status: Occurs in North Dakota from April to October. Peak breeding season mid-May to early July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 5th out of 22 states for highest percent of the global population (3.46%) during the breeding season (eBird). The American Avocet is not experiencing severe declines and has a large population and large geographic range. ND has high stewardship responsibility for this species.



American Avocet primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: American Avocets use exposed, sparsely vegetated salt flats, sandbars, peninsulas, mudflats, or islands with beaches. Shallow water (<1m) in tilled, alkali, ephemeral, temporary, seasonal, semi-permanent, permanent wetlands, or lakes. Islands appear to host higher breeding densities than along shorelines. In North Dakota, avocets favor large islands with beaches, located in shallow water, and islands constructed in wetlands. Nest on unvegetated ground or in areas with short, sparse vegetation. Nests may be slightly elevated, within about 60 m of water, and often near a clump of vegetation or debris. Most often nest in loose colonies, sometimes in association with terns, but never with gulls, pelicans, or cormorants. Foraging usually takes place in shallow water <20 cm deep for aquatic invertebrates, small fish, seeds, or terrestrial vertebrates on land.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Classified as climate-endangered, American Avocet is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Breeding density may be determined by availability of suitable islands. High water years can limit nesting substrate. Nest losses attributed to flooding and predation. Avocets are outcompeted by gulls, pelicans and cormorants for nesting sites. More frequent or intense harmful algal blooms. Possible impacts to American Avocet and their prey from exposure to and accumulation of agrochemicals in wetlands, particularly cropland ponds. Human presence at nesting site during early laying stages can cause abandonment. Collisions with human-made structures (e.g. power lines, wind turbines).

Research and Monitoring: Habitat requirements and demographics have been broadly researched. Little known about reproductive success, annual adult survival, or fledgling survival. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends. The USFWS coordinated a breeding shorebird survey from 2004 to 2018. A colonial waterbird inventory in ND was conducted in 2014-2015 and American Avocets were incidentally observed and recorded. Nine colonies were discovered, and 48 breeding pairs were estimated (mean colony size 6, range 1-30 pairs).

Management Recommendations:

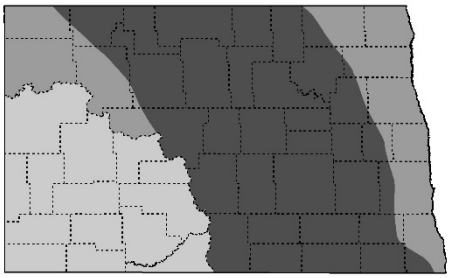
- Preserve and maintain wetland complexes.
- Restore hydrology and vegetation to degraded wetlands.
- Manage vegetation on the periphery of islands for sparseness.
- Leave grassed buffer strips around wetlands and waterways to prevent erosion and runoff into wetlands.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

American Bittern *Botaurus lentiginosus*

Description/Identification: L 28", WS 42", 1.5 lb. Long, boldly striped neck with a pointed bill and greenish legs.

Status: Occurs in North Dakota from mid-April to late October. Peak breeding season early June to late July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 26 states for highest percent of the global population (9.62%) during the breeding season (eBird). The American Bittern is declining, and ND has high stewardship responsibility for this species in the Prairie Pothole Region.



American Bittern primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: American Bitterns use a variety of freshwater wetlands including seasonal, semi-permanent, temporary, permanent, fens or restored wetlands. They prefer wetlands which are > 3 ha (~7 acres), average 13.5 ha (~33 acres), with a large amount of tall, emergent vegetation present such as rushes, sedges, cattails, or common reed. Use wetland complexes with adjacent uplands of hayland, CRP, or idle grasslands. Most commonly nest among dense emergent vegetation over shallow water, 5-20 cm deep. Bitterns will also nest in adjacent uplands of mid to tall (over 30 cm), dense, native or tame grasslands with moderate litter. Avoids heavily grazed grasslands and tilled land. The bittern's cryptic color helps it blend into surrounding habitat where it patiently waits for prey species of insects, amphibians, small fish, mammals, or crayfish.

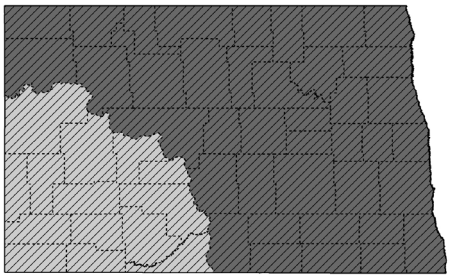
Threats: Loss of grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, American Bittern is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Migration routes of American Bitterns using satellite telemetry data found that many birds (63%) breeding in the central part of North America wintered in the Everglades of Florida, an area impacted by a variety of threats. Decline in the southern portion of the species range may be linked to declining amphibian populations. The American Bittern is at the top of the food chain, and its presence is a good indicator of environmental quality. Some mortality with communication towers.

Research and Monitoring: Habitat requirements and demographics have been extensively researched. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve areas where complexes of high-density, medium to large wetlands and large blocks of grassland remain intact.
- Use tall, dense native grasses and sedges when replanting or restoring grassland along wetland edges.
- Maintain a wide vegetative margin around wetlands.
- Delay mowing, haying or burning grasslands until after August 1.
- Mow, hay or burn every 2-5 years to maintain residual vegetation.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

American Golden-Plover *Pluvialis dominica*



American Golden-Plover primary (dark gray/hatch) and possible/uncommon (light gray/hatch) migration range. Photo Credit: Adobe Stock

Description/Identification: L 10.5", WS 26", 5 oz. Breeding/spring plumage: black breast and belly, golden yellow spots on back. Fall/nonbreeding plumage: lack black breast and belly, yellow spots fade to white.

Status: Migrates through North Dakota in mid-April to late May and early August to early November.

Reason for SGCN Designation: Regionally or globally imperiled, at-risk based on expert review (SGCN a., c.). The peak week for American Golden-Plover migration in ND (~4-Oct) hosts >15% (16.62) of the global population.

Habitat: American Golden-Plovers breed in the far northern tundra of North America and winter in the grasslands and coastline of southern South America. This shorebird is one of the longest-distance migrants in the Western hemisphere. Historically, during migration golden-plovers would stopover in the natural grassland and wetland habitat of the Midwest, including North Dakota. Presently, much of the traditional stopover habitat has been converted to other uses, mostly tilled agriculture. Golden-plovers now use tilled cropland, untilled harvested fields, short grasslands and native prairie, cropland ponds, mudflats, and shallow water or exposed shorelines of wetlands. More likely to be find in crop fields with standing water than fields that are wet or dry. Feed on earthworms and a variety of terrestrial invertebrates, some aquatic invertebrates, and seeds.

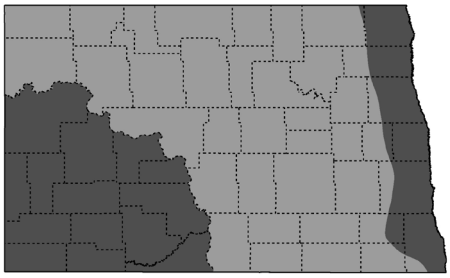
Threats: Loss and degradation of grasslands. Loss of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic habitats. Classified as climate-threatened, American Golden-Plover is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. American Golden-Plover may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Protect and conserve intact tracks of native prairie/unbroken grassland and maintain grazing operations.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Burn, mow, and graze grasslands to provide areas of shorter, sparser vegetation.
- Conscientious and appropriate application of agrochemicals.

American Kestrel *Falco sparverius*



American Kestrel primary (dark gray) and secondary (medium gray) breeding range. Photo Credit: NDGF

Description/Identification: L 9", WS 22", 4.1 oz. Small falcon, males have blue-gray wings, rust-colored back and tail, and double black stripes on face. Females are heavily barred.

Status: Occurs in North Dakota primarily from mid-March to October. Rare in other months. Peak breeding season mid-April to June.

Reason for SGCN Designation: At-risk based on expert review and recent regional assessments (SGCN c.). ND ranks 18th out of 44 states for highest percent of the global population during the breeding season (eBird). The American Kestrel is declining, and the population decreased 48% since 1970.

Habitat: American Kestrels use open to semi-open grasslands, agricultural land, badlands, and brushy margins of open woodland. Kestrels are cavity nesters and will nest in natural holes, tree crevices, or man-made nest boxes. They frequently perch on utility lines and poles. Primary prey includes large insects such as grasshoppers, beetles, dragonflies and butterflies, and in the winter will prey on mice and small birds.

Threats: Loss of grassland. Removal of trees with nest cavities. Kestrels are secondary cavity nesters, and the loss of woodpecker-excavated cavities or other natural cavities limits the availability of nesting sites. West Nile virus, increasing competition/depredation from Cooper's Hawks, environmental contaminates, and pesticides have been suggested as possible reasons for the kestrel's population declines. Nest abandonment is greater in higher human disturbance areas. Classified as climate-threatened, American Kestrel is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon).

Research and Monitoring: Habitat requirements and demographic studies have been well researched but little effort in North Dakota. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

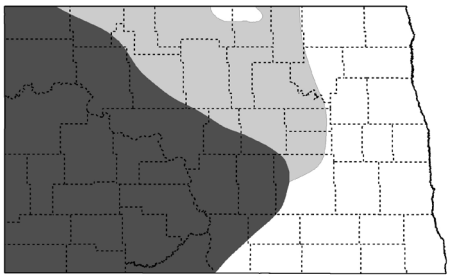
- Protect and conserve large tracts of grasslands.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Maintain open areas with large live and dead trees.
- When converting tree communities to grassland, leave a few individual trees or mosaic of trees.
- Construct kestrel nest boxes and place them in low human disturbance areas.
- Conscientious and appropriate application of agrochemicals.

Baird's Sparrow *Centronyx bairdii*

Description/Identification: L 5.5", WS 8.75", 0.6 oz. Brownish overall except for yellow-orange color on a flat head. Narrow band of fine dark streaks on the breast.

Status: Occurs in North Dakota from early May to early September. Peak breeding season early June to late July.

Reason for SGCN Designation: Regionally and globally imperiled, ND range important (SGCN a., b.). ND ranks 2nd out of 5 states for highest percent of the global population (10.01%) during the breeding season (eBird). The Baird's Sparrow is declining precipitously, and the population has decreased 71% since 1970. ND has high stewardship responsibility for this species.



Baird's Sparrow primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: Baird's Sparrows prefer idle native mixed-grass prairie, lightly to moderately grazed pastures, and tame grasslands. CRP, wet meadows, or dense grass within hayland and cropland is utilized to a lesser extent. Vegetative structure may influence use more than vegetative species composition. Stands of grasses with narrow leaves are readily used whereas stands with broad-leaved grasses or abundant low-growing shrubs such as snowberry are often avoided. Native plant communities with needlegrass, grama, Junegrass, and bluestem species are correlated with high Baird's Sparrow abundance in North Dakota. The percentage of club moss cover also is positively correlated to high abundance. Minimum area requirements for Baird's Sparrows are unknown, but it is presumed large, contiguous tracts of native prairie are required to maintain populations. Nest on the ground. Forages on the ground for insects and seeds.

Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Particularly, invasion of yellow sweetclover causes a decrease in occurrence. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Loss of grassland on the wintering grounds in the Chihuahuan Desert. Classified as climate-endangered, Baird's Sparrow is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Parasitism by Brown-headed Cowbirds may be greater than for other grassland birds.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

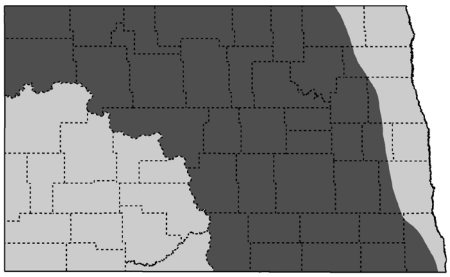
- Protect and conserve large, intact tracks of native prairie/unbroken grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Delay mowing or haying until August 1.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in native prairie/unbroken grassland.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Black Tern *Childonias niger*

Description/Identification: L 9.75", WS 24", 2.2 oz. Nearly all black except for gray wings and white undertail.

Status: Occurs in North Dakota from early May to mid-September. Peak breeding season early June to mid-July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 23 states for highest percent of the global population (8.19%) during the breeding season (eBird). Holarctic, large population and large geographic range. The Black Tern is declining, and ND has high stewardship responsibility for this species.



Black Tern primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: Black Terns use wetland complexes of shallow wetlands, with an equal amount of open water and emergent vegetation. Sometimes brackish or alkaline, semi-permanent, marshes and wetlands, lake margins, edges of islands or slow-moving rivers, wet meadows, restored wetlands, and occasionally stock ponds are used. Stable water levels throughout breeding season and abundant nest substrate are important. Large areas of open water used for foraging. Prefers wetlands surrounded by grassland rather than agricultural fields. Nests singly or semi-colonially, usually less than 20 pairs, on a floating mat of residual vegetation in sparse to moderately dense emergent vegetation. The nest is 2-20 cm above water that is 0.05-1.2 meters deep. Occasionally nest on abandoned muskrat houses, deserted nests of other wetland birds, mudflats, sandbars, or artificial platforms. Forages for insects over both land and water. Small fish are also consumed.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-threatened, Black Tern is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Woody vegetation around wetlands negatively affects tern presence. Black Terns may be tolerant of human activity near nesting colonies, but colony should not be entered. Collisions with human-made structures (e.g. power lines, wind turbines).

Research and Monitoring: Habitat requirements and demographics have been researched. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends. The most recent colonial waterbird inventory in ND was conducted in 2014-2015. Eighteen colonies were discovered, and 107 breeding pairs were estimated (mean colony size 6, range 1-20 pairs) but the survey may have missed nesting birds.

Management Recommendations:

- Preserve and maintain wetland complexes.
- Restore hydrology and vegetation to degraded wetlands.
- Prevent encroachment of woody vegetation around wetlands.
- Conduct management to open cattail-choked wetlands.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

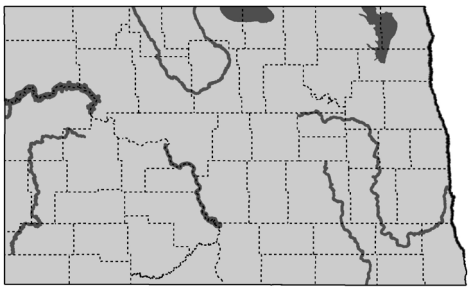
Black-billed Cuckoo *Coccyzus erythropthalmus*

Description/Identification: L 12”, WS 17.5”, 1.8 oz. Slender, long-tailed, brown upperside, and off-white underneath. The black bill and red eye ring distinguish it from the yellow-billed cuckoo.

Status: Occurs in North Dakota from mid-May to late-September. Peak breeding season mid-June to late July.

Reason for SGCN Designation: At-risk based on recent regional assessments (SGCN c.). ND ranks 7th out of 26 states for highest percent of the global population (1.26%) during the breeding season (eBird). The Black-billed Cuckoo is declining, and the population decreased 68% since 1970.

Habitat: Black-billed Cuckoos prefer brushy margins or openings of woodlands, and thickets of small trees or shrubs on the prairie. Also uses riparian areas, shelterbelts, and wooded areas of towns and farmsteads. Nest in trees or thick brush usually 1-2 meters above the ground. Primarily insectivorous, feeding on large caterpillars, beetles, grasshoppers, crickets, butterflies, and occasionally fruits. Cuckoos will even readily consume noxious species such as tent caterpillars. May be area sensitive, requiring larger tracts (at least 1 ha) of forest habitat.



Black-billed Cuckoo primary (dark gray) and possible (light gray) breeding range. Photo Credit: Adobe Stock

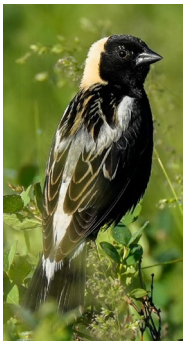
Threats: Loss and degradation of native riparian habitat. Development in wooded areas along major rivers may reduce cuckoo nesting habitat. Overgrazing of woody draws and other woodlands affects the vegetative structure and composition. Black-billed Cuckoos rely heavily on caterpillars for food and can be especially gregarious during caterpillar outbreaks. Pesticide use may reduce prey availability. Classified as climate-threatened, Black-billed Cuckoo is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Some mortality from collisions with structures and communication towers, probably in part due to nocturnal migration behavior.

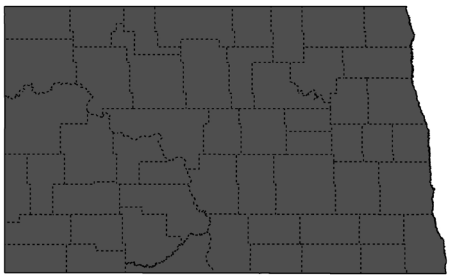
Research and Monitoring: Habitat requirements are generally known. Little known about reproductive success, annual adult survival, or fledgling survival. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends. Monitoring could involve targeted call-response surveys.

Management Recommendations:

- Protect and restore native riparian habitats.
- Limit or exclude grazing in riparian areas.
- Choose pesticides with the lowest toxicity to non-target organisms, or use biological insecticides such as B.t.
- Prune tent caterpillar masses from trees.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Bobolink *Dolichonyx oryzivorus*





Bobolink primary (dark gray) breeding range. Photo Credit: NDGF

Description/Identification: L 7", WS 11.5", 1.5 oz. Males sport a black belly, white rump and back, white patch on wings, and yellow hind neck. The female is yellowish-buff overall.

Status: Occurs in North Dakota from early May to late September. Peak breeding season early June to late August.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 32 states for highest percent of the global population (19.32%) during the breeding season (eBird). The Bobolink is declining, and the population decreased 60% since 1970. ND has high stewardship responsibility for this species.

Habitat: Bobolinks prefer habitats of moderately tall, dense vegetation and will readily use planted grasslands. Vegetation structure is more important than vegetation composition. Native and tame grasslands, hayland, light to moderately grazed pasture, no-till cropland, small-grain fields, old fields, wet meadows, CRP, and DNC habitats are all utilized if the cover is tall and relatively dense. Positively associated with the area of emergent herbaceous wetlands within the surrounding landscape. Abundance is negatively correlated with percent clubmoss, bare ground, and communities dominated solely by native grass. Typically avoid areas with woody vegetation and woodland edges. Nest on the ground, often beneath a large forb. Forages on a variety of seeds and insects. Frequently uses stiff vegetation or heavy-stemmed forbs as perches and singing substrate.

Threats: Loss of grassland, especially the loss of CRP. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Classified as climate-threatened, Bobolink is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Moderate to heavy Brown-headed Cowbird parasitism. Direct and indirect impacts from energy development, Bobolinks exhibit displacement from areas within and surrounding wind turbines.

Research and Monitoring: Habitat requirements and effects of management practices such as grazing, burning and haying have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

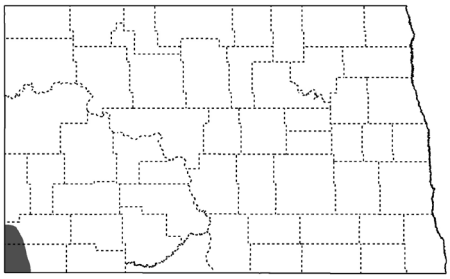
- Protect and conserve large, intact tracks of native prairie/unbroken grassland and tame grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Graze or hay expired CRP. The density of Bobolinks is 94% lower in CRP fields converted to cropland, but effects are less if expired CRP is converted to grazed grassland (-58%) or hayland (-32%).
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Delay mowing or haying until August 1. Provide hayland areas and mow as late as possible. High densities of Bobolinks have been found using hayland mowed the previous year.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in native prairie/unbroken grassland and tame grasslands.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Brewer's Sparrow *Spizella breweri*

Description/Identification: L 5.5", WS 7.5", 0.37 oz. Gray-brown overall, unstreaked breast, white eye ring, and small bill.

Status: Occurs in North Dakota from early May to mid-August. Peak breeding season mid-May to late July.

Reason for SGCN Designation: Regionally or globally imperiled (SGCN a.). ND ranks 14th out of 14 states for highest percent of the global population (0.06%) during the breeding season (eBird). The Brewer's Sparrow is slowly declining, and the population has decreased 35% since 1970. Limited range in ND, at-risk of being extirpated from the state.



Brewer's Sparrow primary (dark gray) breeding range. Photo Credit: Adobe Stock

Habitat: A sagebrush-obligate, Brewer's Sparrows are closely associated with shrub communities dominated by big sagebrush (*Artemisia tridenta*). Sagebrush grasslands with >10% average shrub cover and average shrub height of 0.5-1.5 m are preferred. Abundance decreases where shrub cover falls below 10-13 percent. Occasionally use CRP grasslands or shortgrass prairies. Prefer nesting in medium-sized, alive or mostly alive shrubs of 50-90 cm tall with the nest located from 7-104 cm off the ground. Forage in tall, live shrubs or on ground for alfalfa weevils, aphids, caterpillars, beetles, or seeds.

Threats: Loss and degradation of big sagebrush habitat. Fire can destroy sagebrush and can take many years for the community to recover. Invasion of non-native grass or forb species (e.g. clubmoss) could negatively affect the sagebrush community. Brewer's Sparrow abundance decreased significantly with increasing well density/km² in Wyoming. Classified as climate-threatened, Brewer's Sparrow is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon).

Research and Monitoring: Habitat requirements are generally known. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve intact tracts of sagebrush, especially those dominated by big sagebrush.
- Remove encroaching conifer trees from big sagebrush habitat.
- Avoid frequent burning. Historically, sagebrush (a slow regenerator) burned only every 60-100 years.
- Promote well-managed grazing lands and working sagebrush for biodiversity, sustainability, and resiliency.
- Avoid pesticide use in sagebrush habitats, or delay spraying until September.
- Greater Sage-Grouse may be a useful umbrella species and management actions targeted at sage-grouse will be beneficial for Brewer's Sparrow.

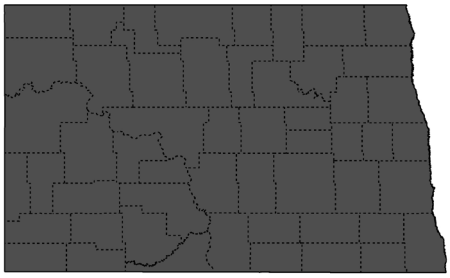
Brown Thrasher *Toxostoma rufum*

Description/Identification: L 11.5”, WS 13”, 2.4 oz. Rufous upperparts, whitish underparts with coarse dark streaks, and long tail.

Status: Occurs in North Dakota from mid-April to early October. Peak breeding season late May to early July.

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). ND ranks 7th out of 39 states for highest percent of the global population (3.39%) during the breeding season (eBird). The Brown Thrasher is declining, and the population decreased 37% since 1970.

Habitat: Brown Thrashers prefer open brushy woods, riparian woodlands, woody draws and thickets of small trees or shrubs. Also uses shelterbelts and wooded areas of cities/towns, parks and farmsteads. Nest in dense shrubs or trees, 1-2 meters above the ground. Forages on the ground for a variety of insects, especially beetles, and occasionally fruits, nuts and seeds or grain.



Brown Thrasher primary (dark gray) breeding range. Photo Credit: NDGF

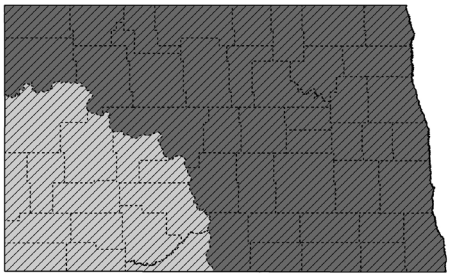
Threats: Loss and degradation of native riparian habitat. Loss of shelterbelts. Overgrazing of woody draws and other woodlands affects the vegetative structure and composition. Pesticide use may reduce prey availability. Frequent host of Brown-headed Cowbirds but

Research and Monitoring: Habitat requirements are generally known. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and restore native riparian habitats.
- Limit or exclude grazing in riparian areas.
- Rejuvenate and plant new shelterbelts, but do not plant shelterbelts in native prairie.
- Choose pesticides with the lowest toxicity to non-target organisms, or use biological insecticides such as B.t
- Prune tent caterpillar masses from trees.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Buff-breasted Sandpiper *Calidris subruficollis*



Buff-breasted Sandpiper primary (dark gray/hatch) and possible/uncommon (light gray/hatch) migration range. Photo Credit: Adobe Stock

Description/Identification: L 8.5", WS 18", 2.2 oz. Slender, plain buffy face, pale buffy breast with spotting on sides, bright yellow legs and short dark bill.

Status: Migrates through North Dakota in May, and late July to early October.

Reason for SGCN Designation: Regionally or globally imperiled, at-risk based on expert review (SGCN a., c.). The Buff-breasted Sandpiper is declining precipitously. Small and declining population, limited breeding and nonbreeding range. Migrates primarily through Central Flyway. The peak week for Buff-breasted Sandpiper migration in ND (~26-July) hosts >45% (48.31) of the global population.

Habitat: Buff-breasted Sandpipers breed along the Arctic coastlines of Alaska and Canada, and winter in the Pampas of southeastern South America. This shorebird is one of the longest-distance migrants in the Western hemisphere. Historically, during migration they would stopover in short-stature grasslands in the Central Flyway and the Midwest, including North Dakota. Presently, much of the traditional stopover habitat has been converted to other uses, mostly tilled agriculture. Buff-breasted Sandpipers now use tilled cropland (often with emerging crops), untilled harvested fields, short-stature grasslands, and wetland habitats to a lesser degree. Feed on earthworms and a variety of terrestrial invertebrates such as beetles, spiders, ants, and seeds.

Threats: Loss and degradation of grasslands. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic habitats. Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Loss and degradation of migratory stopover habitat and human activity impacts at important stopover areas such as the Texas Coastal Plain. Increasing applications of agrochemicals.

Research and Monitoring: Demographic studies are limited. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

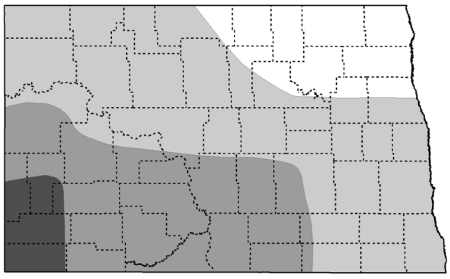
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Burn, mow, and graze grasslands to provide areas of shorter, sparser vegetation.
- Conscientious and appropriate application of agrochemicals.

Burrowing Owl *Athene cunicularia*

Description/Identification: L 9.5”, WS 21”, 5 oz. A small owl with long legs, a spotted dark brown and buffy breast, white throat, and large yellow eyes.

Status: Occurs in North Dakota from April to September. Peak breeding season early May to mid-August.

Reason for SGCN Designation: At-risk based on expert review and recent regional and global assessments (SGCN c.). ND ranks 14th out of 18 states for highest percent of the global population during the breeding season (eBird). The Burrowing Owl is declining, and the population has decreased 35% since 1970.



Burrowing Owl primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: Burrowing Owls are found in open grasslands of sparse, short vegetation (<10 cm) and bare ground such as in moderately or heavily grazed pasture. Native prairie, tame pasture, hayland, fallow fields, road and railway rights-of-way are used. Rely exclusively on burrowing mammals to create burrows for nest sites. Most often use abandoned Black-tailed Prairie Dog and Richardson’s Ground Squirrel burrows within active colonies, may use badger, woodchuck, skunk, fox, and coyote burrows. Sometimes concentrate nests at the edge of colonies, presumably because of increased perch availability, high insect populations, and proximity to foraging areas. Availability of perches such as fence posts, dirt mounds, large rocks, or utility poles may be an important characteristic of territories. Feed primarily on arthropods and small mammals such as voles.

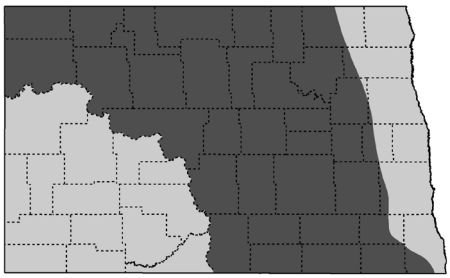
Threats: Loss of grassland. Removal of prairie dogs or ground squirrels from colonies causes a deterioration of burrows and denser, taller vegetation, and owls may discontinue use of those sites. Pesticides reduce prey availability and improper pesticide use may be directly harmful to Burrowing Owls. Classified as climate-endangered, Burrowing Owl is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Known to be at-risk of collisions with wind turbines.

Research and Monitoring: Habitat requirements are generally known. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Preserve traditional nesting sites. Burrowing Owls often reuse nesting sites from previous years.
- Maintain large, contiguous areas of native grassland and treeless plains.
- Provide a mosaic of tall grass for foraging, short grass for nesting and roosting.
- Artificial nest structures may be used where burrows are scarce.
- Allow moderate to intense grazing in areas that support tall vegetation.
- Refrain from lethal control of burrowing mammals during the period when Burrowing Owls are nesting.
- Maintain abandoned prairie dog colonies at short vegetation <8 cm with mowing or grazing.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Conscientious and appropriate application of agrochemicals.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Canvasback *Aythya valisineria*



Canvasback primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Description/Identification: L 21", WS 29", 2.7 lb. Long, pointed, black bill on a sloping, dark red head (male), red eye, gray and white pattern on back and sides.

Status: Occurs in North Dakota from mid-March to mid-December. Peak breeding season from mid-May to mid-August.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 14 states for highest percent of the global population (18.03%) during the breeding season (eBird). ND has high stewardship responsibility for this species.

Habitat: Canvasbacks use semi-permanent wetlands, small lakes, or deep water marshes containing emergent cover such as bulrush and cattails. Occasionally use shallow river impoundments managed for waterfowl. Canvasbacks are an ecological specialist and rely heavily on deep, more stable wetlands for breeding. Feed primarily on wild celery and pondweeds, but also on roots, tubers, grass seeds, and some aquatic invertebrates such as mollusks. Nest over water in fairly dense stands of emergent vegetation of bulrush, reeds, and cattails. Nests are typically located within 1-20 yards from the edge of open water. Shallow wetlands with beds of sago pondweed or widgeongrass are especially important as migration stopover sites in North Dakota.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Human disturbance, such as by recreational boaters, at staging and stopover sites. Collisions with human-made structures (e.g. power lines, wind turbines).

Research and Monitoring: Habitat requirements and demographics have been extensively researched on the breeding grounds. The Waterfowl Breeding Population and Habitat Survey (May Survey) is a long-standing survey conducted in the U.S. and Canada and provides annual breeding population estimates for most ducks in North America. The NDGF has also conducted an annual spring breeding duck survey since 1948.

Management Recommendations:

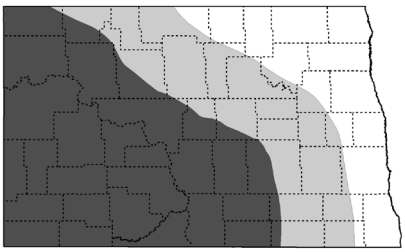
- Preserve and conserve semi-permanent wetlands and wetland complexes.
- Restore hydrology and vegetation to degraded wetlands.
- Leave or plant grassed buffer strips around wetlands and waterways to prevent erosion and runoff into wetlands.
- Conduct management to open cattail-choked wetlands.
- Stocking fish in shallow wetlands can be detrimental to waterfowl production.
- Conscientious and appropriate application of agrochemicals.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Chestnut-collared Longspur *Calcarius ornatus*

Description/Identification: L 6”, WS 10.5”, .67 oz. Males have a chestnut collar, black belly, yellowish cheek and upper throat, and white outer tail feathers on a black tail. Females are grayish-buff overall with some streaking.

Status: Occurs in North Dakota from late March to mid-October. Peak breeding season early May to early August.

Reason for SGCN Designation: Regionally and globally imperiled, ND range important (SGCN a., b.). ND ranks 2nd out of 6 states for highest percent of the global population (18.93%) during the breeding season (eBird). The Chestnut-collared Longspur is declining precipitously, and the population has decreased 85% since 1970. ND has high stewardship responsibility for this species.



Chestnut-collared Longspur primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: Chestnut-collared Longspurs prefer large (>250 acres) native prairie pastures. Level to rolling, open, arid, mixed-grass and shortgrass prairie with 20-30 cm vegetation height is preferred but will use habitats of 10-77 cm. Uncommon in other grazed grasslands, hayland, undisturbed CRP, and cropland. Positively associated with percent clubmoss cover, percent bare ground, and plant communities dominated by native grass. Negatively associated with vegetation height-density, higher litter depth, density of low-growing shrubs, and plant communities dominated by shrubs and introduced grasses. Nest on the ground, often by a cowpie or under a clump of grass. Forages on the ground for seeds, insects and spiders. Frequently perches on rocks, fences, or stiff vegetation.

Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Particularly, invasion of yellow sweetclover causes a decrease in occurrence. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Loss of grassland on the wintering grounds in the Chihuahuan Desert. Classified as climate-endangered, Chestnut-collared Longspur is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Direct and indirect impacts from energy development, Chestnut-collared Longspurs exhibit displacement from areas within and surrounding wind turbines.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

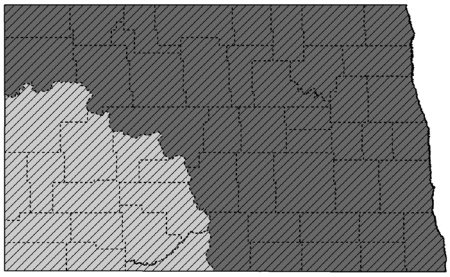
- Protect and conserve large, intact tracks of native prairie/unbroken grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Delay mowing or haying until August 1.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in native prairie/unbroken grassland.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Dunlin *Calidris alpina*

Description/Identification: L 8.5”, WS 17”, 2.1 oz. Breeding/spring plumage: stocky body, black belly, slightly drooping bill. Fall/nonbreeding plumage: drab gray and brownish.

Status: Migrates through North Dakota primarily in the spring, mid-April to early June. Limited occurrence in the fall.

Reason for SGCN Designation: Regionally or globally imperiled, at-risk based on expert review (SGCN a., c.). Common bird in steep decline. Holarctic, large population and distribution but experts suspect the population of all North American subspecies are declining. The peak week for Dunlin migration in ND (~24-May) hosts >3% (3.15) of the global population.



Dunlin primary (dark gray/hatch) and possible/uncommon (light gray/hatch) migration range. Photo Credit: NDGF

Habitat: In the Western Hemisphere, Dunlins breed in the far northern coastal tundra of North America and winter along the Pacific, Atlantic and Gulf coasts of the U.S. and northern Mexico. This shorebird is an intermediate to short-distance migrant. The interior population, *C. a. hudsonia*, may migrate directly from the Gulf Coast of Texas to North Dakota, before their final flight to breeding grounds along the Hudson Bay. The eastern Prairie Pothole region of the Dakotas, Minnesota and Manitoba is important spring stopover habitat, peaking in late May (~May 24-25). Dunlins primarily use a variety of shallow water wetlands and lakes, mudflats, and sandy, rocky or exposed shorelines. Forage in shallow water for a variety of invertebrates, earthworms, amphipods, or seeds.

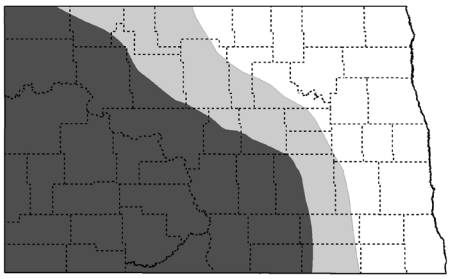
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Classified as climate-endangered, Dunlin is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Loss and degradation of migratory stopover habitat and human activity impacts at important stopover areas such as the Lower Mississippi Alluvial Valley and Texas Gulf Coast. Coastal development (urban and industry sprawl), coastal erosion, storm surges, oil or industrial effluent spills, impaired water quality and microplastics are threats to wintering habitat. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

Ferruginous Hawk *Buteo regalis*



Ferruginous Hawk primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Description/Identification: L 23", WS 56", 3.5 lb. The largest hawk in North Dakota, it varies in coloration from almost completely white with a trace of reddish-brown, to nearly all dark brown.

Status: Occurs in North Dakota from mid-March to October. Peak breeding season late April to early July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). Global population breeding in ND: PIF estimate 3.83%, eBird estimate 3.41%. ND ranks 7th out of 16 states for highest percent of the global population (3.41%) during the breeding season (eBird). The Ferruginous Hawk is stable to increasing in some parts of its range but has declined in ND. Once the most common hawk in North Dakota, the Ferruginous Hawk has all but disappeared from many historical nesting areas.

Habitat: Ferruginous Hawks inhabit a variety of open grasslands and shrub communities. Cultivated fields, high elevations, and forest interiors are avoided. Both native and tame grasslands are utilized, as well as hayland, and pastures. Most nests are in solitary trees, but may nest on or near the ground, in large shrubs, on utility structures, or hay bales. Will nest on hills <10 meters above the surrounding area and facing south or west. Primary prey includes prairie dogs, ground squirrels and jackrabbits Birds are a small percentage of their diet and are fed mostly to fledglings.

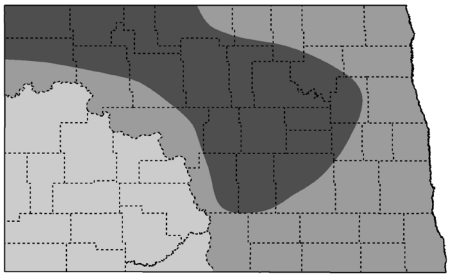
Threats: Loss of grassland. Degradation of grasslands from invasive plants, succession, and loss of diversity. The destruction of Black-tailed Prairie Dogs towns in southwestern North Dakota and Richardson's Ground Squirrel colonies east of the Missouri River due to poisoning, conversion to cropland, and other factors may also negatively affect hawk populations. Pesticides reduce prey availability and improper pesticide use may be directly harmful. This species is extremely sensitive to human disturbance, will avoid nesting within 0.7 km of occupied buildings. Disturbance of nest sites near energy development actives may lower reproductive success, cause nest abandonment, or reduce territory reoccupancy in subsequent years. Some mortality from collisions with power lines or wind turbines, or electrocution.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve intact tracks of native prairie/unbroken grassland.
- When converting tree communities to grassland, leave a few individual trees or mosaic of trees.
- Minimize activity within 1 mile of active nests from late March to mid-August.
- Conscientious and appropriate application of agrochemicals.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).
- Use avian protection plans or guidance documents to minimize bird/powerline interactions.

Franklin's Gull *Leucophaeus pipixcan*



Franklin's Gull primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Description/Identification: L 14.5", WS 36", 10 oz. Black head, large white spots on black wing tips, breeding adults have red bill.

Status: Occurs in North Dakota from early April to mid-November. Peak breeding season late May to mid-July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 2nd out of 13 states for highest percent of the global population (8.2%) during the breeding season (eBird). Large population and large geographic range. The Franklin's Gull is stable to increasing but ND has high stewardship responsibility for this species in the Prairie Pothole Region. ND has several large nesting colonies and is important stopover habitat for migrating gulls.

Habitat: Nesting colonies occur in extensive prairie wetlands with cattail, bulrush, or other emergent vegetation. Number of nests in a colony may number in the hundreds or thousands. Nests built of floating mats of vegetation, on muskrat houses, or other debris. Water depth at nest varies from 15-180 cm. During the nesting period, individuals stay generally within 30km of colony. Several large, established colonies in North Dakota but readily shift sites due to climate, drought and fluctuating water levels. Forage over water or in agricultural fields for flying insects, grains/seeds, dragonflies, earthworms, grasshoppers, and other matter.

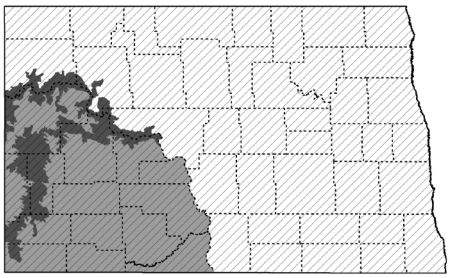
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-threatened, Franklin's Gull is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Colonial waterbirds are highly susceptible to disease such as botulism or avian influenza. The Franklin's Gull is sensitive to human disturbance and could abandon a colony if excessive disturbance occurs, particularly during the pre-nesting period. Mortality from collisions with power lines.

Research and Monitoring: Habitat requirements and demographics have been researched. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends. The most recent colonial waterbird inventory in ND was conducted in 2014-2015. Eight colonies were discovered and ~20,690 breeding pairs were estimated (mean colony size 2,586, range 17-10,000 pairs).

Management Recommendations:

- Protect and conserve wetland complexes.
- Identify and target high priority landscapes, habitats, and staging areas for protection.
- Conserve shallow, working wetlands in cropland.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Golden Eagle *Aquila chrysaetos*



Golden Eagle primary (dark gray) and secondary (medium gray) breeding range. Winter and migration range (hatch). Photo Credit: NDGF

Description/Identification: L 30", WS 79", 10 lb. Dark brown overall, feathered legs, brown eyes, and black beak. The head turns golden as an adult.

Status: Year-round and migratory. Peak breeding season early April to July.

Reason for SGCN Designation: Regionally or globally imperiled (SGCN a.). ND ranks 15th out of 16 states for highest percent of the global population during the breeding season (eBird). Although Golden Eagles are stable to slightly declining, they are susceptible to increasing incidental take and disturbance due to changes on the landscape at both state and national levels.

Habitat: Golden Eagles use open shrubland and grasslands of shortgrass, mixed-grass, and xeric grasslands. Avoids heavily forested areas but will use riparian or woodland/brushland habitat. Typically nest on cliffs but also in trees such as cottonwood and green ash, or even on or near the ground. Nests on cliffs generally face southerly. Nests will be reused by returning eagles or a new pair. Some are associated with black-tailed prairie dog towns. Primary prey includes ground squirrels and jackrabbits; however, eagles are opportunistic and other prey include wild turkey, coyote, big game young, porcupine, striped skunk, great-horned owl, and waterfowl.

Threats: Loss of grasslands and shrubland, habitat modification. Eagles may be limited by the abundance of their primary prey, rabbits and ground squirrels. Pesticides reduce prey availability and improper pesticide use may be directly harmful. Human activity such as recreational viewing, research activities, noise, agricultural or energy development activities, or the mere presence of humans may agitate nesting eagles if the disturbance is close (<330 ft.) and/or persistent. Disturbance of nest sites may lower reproductive success, cause nest abandonment, or reduce territory reoccupancy in subsequent years. Classified as climate-endangered, Golden Eagle is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Collisions with vehicles, power lines, wind turbines or other structures, electrocution, and lead poisoning. Poaching is rare but is a senseless cause of mortality.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve intact tracks of native prairie/unbroken grassland.
- Maintain a 0.5-mile buffer zone of minimal surface occupancy within 0.5 mile of nests (i.e. roads, mining operations, energy development, etc.).
- Minimize activity within 0.5 mile of active nests from February to mid-September.
- Conscientious and appropriate application of agrochemicals.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).
- Use avian protection plans or guidance documents to minimize bird/powerline interactions.
- Encourage non-toxic ammunition use.

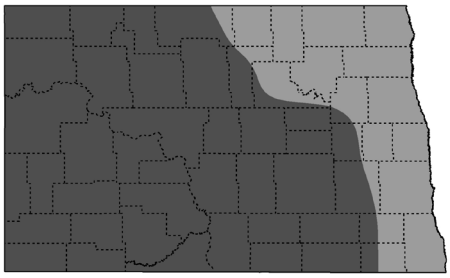
Grasshopper Sparrow *Ammodramus savannarum*

Description/Identification: L 5”, WS 7.75”, 0.6 oz. Short-tailed, flat-headed, yellowish with unmarked breast. Yellow spot between the eyes and bill.

Status: Occurs in North Dakota from late April to early October. Peak breeding season late May to late July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 3rd out of 40 states for highest percent of the global population (14.99%) during the breeding season (eBird). The Grasshopper Sparrow is declining, and the population has decreased 68% since 1970.

Habitat: Grasslands of intermediate height, clumped vegetation, patches of bare ground, moderate litter depth, and sparse woody vegetation are preferred. Uses native and tame grasslands, CRP, hayland, and occasionally cropland. Avoids tall, dense grasslands and excessively shrubby habitats. Nest on the ground and well concealed by overhanging grasses. Area sensitive and require large grasslands although territory size is small <2 ha. Forages on the ground for insects, primarily grasshoppers.



Grasshopper Sparrow primary (dark gray) and secondary (medium gray) breeding range. Photo Credit: NDGF

Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Brown-headed Cowbird parasitism is generally low but may be moderate to high in some regions. Direct and indirect impacts from energy development, Grasshopper Sparrows exhibit displacement from areas within and surrounding wind turbines.

Research and Monitoring: Habitat requirements, demographic studies, and effects of management practices such as grazing, burning and haying have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

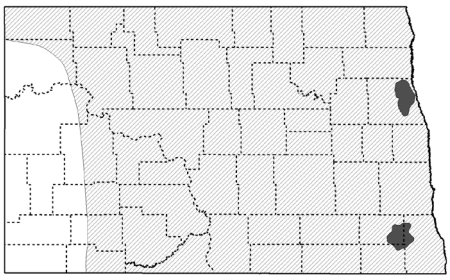
- Protect and conserve large, intact tracks of native prairie/unbroken grassland and tame grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Graze or hay expired CRP. The density of Grasshopper Sparrows is 82% lower in CRP fields converted to cropland, but density will increase if expired CRP is converted to grazed grassland (+8%) or hayland (+40%).
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Delay mowing or haying until August 1.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in native prairie/unbroken grassland.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Greater Prairie-Chicken *Tympanuchus cupido*

Description/Identification: L 17", WS 28", 2.0 lb. A short, rounded tail and completely barred body. Males have long tufts of feathers and orange air sacs on the sides of the neck.

Status: Year-round resident. Peak breeding season late April to late June.

Reason for SGCN Designation: Regionally and globally imperiled, ND range important (SGCN a., b.). ND ranks 7th out of 11 states for highest percent of the global population during the breeding season (eBird). Following European settlement, populations were documented to have increased from 1880 to 1930, but current populations have declined >50% since 1970 (PIF). At-risk of extirpation from North Dakota.



Greater Prairie-Chicken current primary (dark gray) and historical (black hatch) breeding range. Photo Credit: NDGF

Habitat: Historically, the Greater Prairie-Chicken was dependent upon tallgrass prairie oak woodland in central North America. As the birds moved into North Dakota, tallgrass prairie interspersed with cropland became the preferred habitat. Today, the presence of woody vegetation may reduce nest success. The amount of grassland and wetland in the landscape may positively influence prairie chickens while forest cover and distance from nearest lek are negative influences. Leks are located in areas of bare ground or short cover. Females nest reasonably close to the lek site, 2-5 km, and in relatively dense vegetation. Broods use habitat >25 cm tall, particularly lowlands or areas that contain sedges and usually are wet in the spring. Winter roosting habitat occurs in areas of switchgrass, shelterbelts, or the woody vegetation along cropland edges. Food items include leaves, seeds, buds, and insects but rely primarily on agricultural crops for food through the winter.

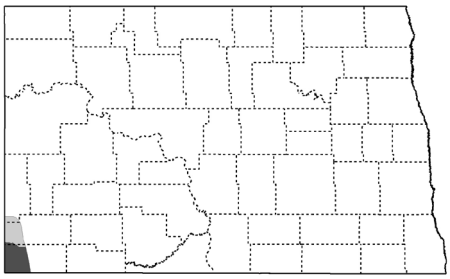
Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. A lack of habitat corridors between outlying populations prevents interconnectivity among populations. Nests may be parasitized by Ring-necked Pheasants, or pheasants may be the source of interspecific competition. Hybridization with Sharp-tailed Grouse. Increasing applications of agrochemicals and possible impacts to food availability for broods. Mortality from collisions with fences, utility wires, and vehicles.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. The North Dakota Game and Fish Department and cooperators conduct ground counts on prairie chicken leks in Grand Forks County and the Sheyenne National Grasslands.

Management Recommendations:

- Protect remaining tallgrass prairie remnants, particularly where leks have been identified.
- Use native grasses and forbs when replanting or restoring grassland.
- Use rotational disturbance every 3-5 years, with prescribed burning as the preferred method.
- Minimize woody encroachment in priority management areas.
- Create habitat corridors to connect isolated populations.
- Do not mow or hay from April 15 – August 1. When cutting, leave the highest possible height (12-24 inches).
- Conscientious and appropriate application of agrochemicals.
- Avoid constructing fences through or near leks and install visibility markers to existing fences.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Greater Sage-Grouse *Centrocercus urophasianus*



Greater Sage-Grouse primary (dark gray) and possible/uncommon (light gray) range. Photo Credit: NDGF

Description/Identification: L 28", WS 38", 6.3 lb. The largest of North American grouse species, males are dark brown overall with white breast, pointed tail, and yellow above eye.

Status: Year-round resident. Peak breeding season early April to early July.

Reason for SGCN Designation: Regionally and globally imperiled (SGCN a.). The Greater Sage-Grouse is declining precipitously, and the population has decreased 67% since 1970. The sage-grouse range has contracted substantially in North Dakota and in 2024 there were two remaining active leks. This species is at imminent risk of extirpation from North Dakota.

Habitat: Greater Sage-Grouse is a sagebrush-obligate, particularly big sagebrush. Silver sagebrush and rabbitbrush is utilized to a lesser extent. Riparian, upland meadows, irrigated and non-irrigated croplands and pasturelands are also used, especially for brood-rearing habitat. Leks may be natural openings within a sagebrush community or created by disturbance such as dry stream bed channels, ridges, grassy meadows, burned areas, gravel pits, plowed fields, and roads. Nest under larger bushes generally within 1.5-3 km of the lek. Brood-rearing habitat should contain succulent herbaceous vegetation such as false dandelion, hawksbeard, milk-vetch, and insects such as grasshoppers. Rely nearly exclusively on big sagebrush for food during winter.

Threats: Loss and degradation of big sagebrush habitat. The quality of remaining sagebrush has declined due to overgrazing, fire suppression or excessive fire, invasion of exotic plants, and fragmentation. Classified as climate-endangered, Greater Sage-Grouse is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Disturbance to leks and nesting sites from direct and indirect human activity. Sage-grouse may lack resistance to West Nile virus. Hybridization with Sharp-tailed Grouse. Mortality from collisions with fences, utility wires, and vehicles. Direct and indirect impacts from energy development, sage-grouse exhibit displacement from areas within and surrounding wind turbines and oil/gas development.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Recent translocation of sage-grouse from Wyoming to ND to augment the population was mostly unsuccessful. The North Dakota Game and Fish Department and cooperators conduct ground counts on sage-grouse leks that have been active in the past 10 years.

Management Recommendations:

- Protect existing big sagebrush stands through easements or land acquisition.
- Include big sagebrush when reclaiming croplands and grassland restoration.
- Do not burn big sagebrush habitat and rehabilitate previously burned sites.
- Promote well-managed grazing lands and working sagebrush for biodiversity, sustainability, and resiliency.
- Avoid constructing fences through or near leks and install visibility markers to existing fences.
- Remove single trees that serve as raptor perches.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in sagebrush.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

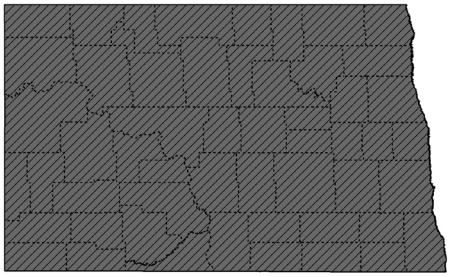
Harris's Sparrow *Zonotrichia querula*

Description/Identification: L 7.5", WS 10.5", 1.3 oz. Males and females similar, pink bill, dark crown, black face and bib in breeding plumage. The largest sparrow in North America.

Status: Spring and fall migrant, some overwinter. Occurs in ND from late April to late May, mid-September to mid-November, and occasionally from mid-November thru April.

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). The Harris's Sparrow is declining, and the population decreased 63% since 1970. North Dakota and the Central Flyway has high stewardship responsibility for this species.

Habitat: In North Dakota, Harris's Sparrows are common in backyards and frequent bird feeders during the spring and fall migration. They forage in the open on the ground, often with other migrant sparrows. Harris's Sparrows breed in a small area between the boreal forest and tundra of northern Canada. They nest on the ground, often under small shrubs. They overwinter in the southern Great Plains, primarily Nebraska to Texas.



Harris's Sparrow primary (dark gray/hatch) migration range. Photo Credit: NDGF

Threats: Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in artic habitats. Harri's Sparrows are common at backyard bird feeders during migration and winter. Bird feeders attract predators that feed on Harris's Sparrows and other songbirds, and experience higher levels of disease threats when congregated at feeding sites.

Research and Monitoring: Additional information is needed on migration and wintering behaviors.

Management Recommendations:

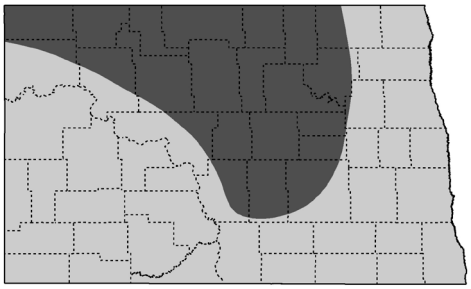
- Create a bird-friendly backyard, with native grasses and wildflowers, shrubs and trees.
- Clean bird feeders weekly with a 10% bleach solution.

Horned Grebe *Podiceps auritus*

Description/Identification: L 14”, WS 18”, 1 lb. A straight black bill with a white tip, black head with solid yellow patch, reddish neck, and scaly gray back.

Status: Occurs in North Dakota from early April to mid-November. Peak breeding season June to early August.

Reason for SGCN Designation: Globally imperiled (SGCN a.). ND ranks 2nd out of 4 states for highest percent of the global population during the breeding season (eBird). Holarctic, large population and large geographic range. The Horned Grebe is thought to be declining precipitously in North America and Europe. ND has high stewardship responsibility for this species. The peak week for Horned Grebe migration in ND (~26-April) hosts >10% (11.43) of the global population.



Horned Grebe primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: Horned Grebes use small to moderate-sized (1-10 ha), shallow freshwater or slightly brackish/alkaline wetlands and marshes with beds of emergent vegetation, particularly sedges, rushes, and cattails, and substantial areas of open water. Nest either singly or in small loose congregations. Nests are typically built over water on a floating platform or anchored to emergent vegetation. Diet consists of primarily small fish (e.g. carp, darters, perch, and sticklebacks), but also aquatic invertebrates.

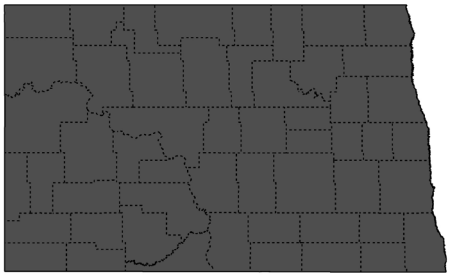
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Horned Grebe is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Collisions with human-made structures (e.g. power lines, wind turbines).

Research and Monitoring: Habitat requirements and demographics have been broadly researched but little effort in North Dakota. Additional information is needed on migration and wintering behaviors. eBird and Partners in Flight Databases are key sources of information on distribution and population trends. Poor detection on the Breeding Bird Survey. The most recent colonial waterbird inventory in ND was conducted in 2014-2015. Six single nesting pairs were counted but the survey may have missed nesting birds.

Management Recommendations:

- Maintain wetland complexes.
- Identify and target high priority landscapes, habitats, and staging areas for protection.
- Prevent and remove encroachment of woody vegetation around wetlands.
- Discourage wetland tillage and protect from drainage.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Horned Lark *Eremophila alpestris*



Horned Lark primary (dark gray) breeding and year-round range. Photo Credit: NDGF

Description/Identification: L 7.25", WS 12", 1.1 oz. Pale brown upperparts, white belly, dark breastband and dark feather tufts or "horns" that can be raised or lowered.

Status: Year-round, some migratory. Peak breeding season late March to mid-July.

Reason for SGCN Designation: At-risk based on expert review and recent global assessments (SGCN c.). ND ranks 12th out of 37 states for highest percent of the global population (1.02%) during the breeding season (eBird). The Horned Lark is declining, and the population has decreased 65% since 1970.

Habitat: Horned Larks prefer short-stature grasslands, sparse vegetation and bare ground, with little or no woody vegetation. Use native, restored or tame grasslands that have been recently burned, hayed, or grazed. Commonly use cropland such as wheat and small grains, or other agriculture fields early in the growing season. Avoids tall, dense grasslands with high litter and excessively shrubby habitats. Nest on bare or sparsely vegetated ground, near tufts of grass, rocks, manure or other objects. Forages on the ground primarily for seeds. Insects consumed in spring and fall and fed to young.

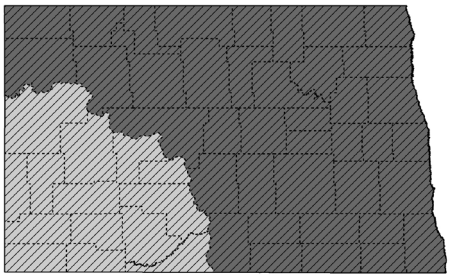
Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Woodland encroachment and planting trees in or near edges of grasslands. Increasing applications of agrochemicals and possible exposure causing pesticide acute toxicity. Mortality from collisions with wind turbines and other tall structures.

Research and Monitoring: Habitat requirements, demographic studies, and effects of management practices such as grazing, burning and haying have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland and tame grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Graze or hay expired CRP. The density of Horned Larks is higher in cropland than CRP, but density will increase if expired CRP is converted to grazed grassland (+65%) or hayland (+67%).
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Burning has positive short-term (1-3 years post-burn) response by Horned Larks.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Delay mowing or haying until August 1.
- Conscientious and appropriate application of agrochemicals.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Hudsonian Godwit *Limosa haemastica*



Hudsonian Godwit primary (dark gray/hatch) and possible/uncommon (light gray) migration range. Photo Credit: NDGF

Description/Identification: L 15.5", WS 29", 11 oz. Breeding/spring plumage: dark rufous belly, dark back, white rump, slightly upturned orange bill. Fall/nonbreeding plumage: plain gray.

Status: Migrates through North Dakota in mid-April through early June, and late July through early September.

Reason for SGCN Designation: Regionally or globally imperiled, at-risk based on expert review (SGCN a., c.). Small population, limited breeding and nonbreeding range. The Hudsonian Godwit is declining precipitously. The peak week for Hudsonian Godwit migration in ND (~17-May) hosts >15% (15.29) of the global population.

Habitat: Hudsonian Godwits breed in wet-sedge meadows intermixed with forest in the arctic and subarctic regions of Alaska and Canada, and winter in coastal and inland wetland areas of southern South America. This shorebird is a long-distance migrant. During migration, they migrate from South America over the Pacific Ocean and through the Great Plains on the northbound route. On the southbound route, fewer stopover in the Great Plains, then over the Atlantic Coast and Ocean and south through central South America. Recent GPS tracking data indicates the Prairie Pothole Region is a high-density stopover area, particularly in the spring. Uses a variety of wetlands, lakes, and cropland ponds during migration. Forages in shallow wetlands for a variety of aquatic and terrestrial invertebrates such as amphipods, flies, beetles, small fish and seeds.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Loss and degradation of migratory stopover habitat and human activity impacts at important stopover areas. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Hudsonian Godwits may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Collisions with power lines.

Research and Monitoring: Habitat requirements and demographic studies have been researched on the breeding grounds. Some recent GPS tracking work on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

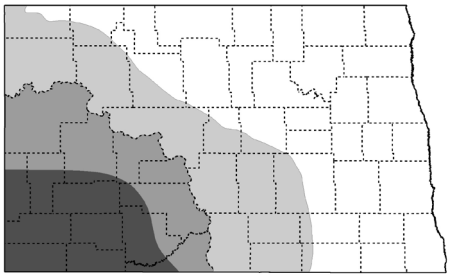
- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

Lark Bunting *Calamospiza melanocorys*

Description/Identification: **:** L 7”, WS 10.5”, 1.3 oz. Males all black except for broad patches of white on wings and tips of the tail. Females are gray-brown with dark streaks on a white breast.

Status: Occurs in North Dakota from early May to early September. Peak breeding season late May to early August.

Reason for SGCN Designation: Regionally and globally imperiled, ND range important (SGCN a., b.). ND ranks 6th out of 10 states for highest percent of the global population (3.78%) during the breeding season (eBird). The Lark Bunting is declining precipitously, and the population has decreased 86% since 1970.



Lark Bunting primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: Lark Buntings prefer grasslands of low to moderate height with a component of shrubs such as sagebrush, silverberry or Western wild rose bush. Cropland, CRP, hayland and roadsides also are used. Abundance may be positively correlated with coverage of shrubs, bare ground, and small clubmoss. Nests are built on the ground under forbs, low shrubs, cactus, yucca, or tall grass for protection. Lark Buntings may be area sensitive and require large tracts of contiguous grassland. Feed on a variety of insects and seeds. Lark Buntings were once abundant east of the Missouri River in the coteau and drift prairie. The breeding range has constricted substantially since 1970.

Threats: Loss of grassland and sagebrush. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Increasing applications of agrochemicals and possible exposure causing pesticide acute toxicity.

Research and Monitoring: Habitat requirements are generally known but the effects of management practices such as grazing, burning and haying have not been broadly researched on the breeding grounds. Little known about reproductive success, annual adult survival, or fledgling survival. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

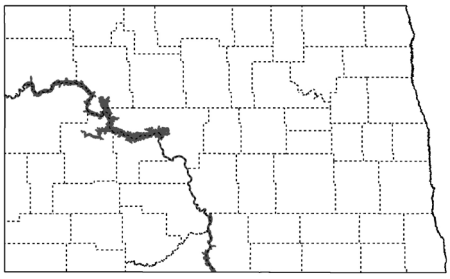
- Protect and conserve large, intact tracks of native prairie/unbroken grassland and sagebrush.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland and incorporate native shrubs.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Prevent tall woody vegetation in grasslands, either mechanically or by prescribed fire, but do not remove the shrub component (sagebrush, rabbitbrush).
- Delay mowing or haying until August 1.
- Install wildlife escape ladders in stock tanks.
- Conscientious and appropriate application of agrochemicals.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Least Tern (Interior) *Sterna antillarum athalassos*

Description/Identification: L 9", WS 20", 1.5 oz. The smallest tern species in North America. Bright yellow bill with a black tip, yellow legs and white forehead.

Status: Occurs in North Dakota from mid-May to early September. Peak breeding season mid-June to mid-July.

Reason for SGCN Designation: Regionally or globally imperiled (SGCN a.). The Interior Least Tern was listed as a Federal endangered species on 5/28/1985 and was delisted due to recovery on 1/13/2021. However, it remains a priority due to limited range and breeding habitat in North Dakota.



Least Tern (Interior) primary (dark gray) breeding range. Photo Credit: NDGF

Habitat: Least Terns use sparsely vegetated sandbars or shoreline salt flats of lakes along the Missouri River System (Lake Sakakawea, Missouri River, Lake Oahe and Yellowstone River) in North Dakota. Usually nests in small colonies (<20 nests) with nests spaced far apart. The nest is a hollow scrape, sometimes located among stones. The size of nesting areas is highly dependent on water levels. Forage primarily for small (2-9 cm), non-spiny fish but also shrimp and other invertebrates. Foraging takes place close to the nesting colony.

Threats: As a result of channelization, irrigation, and dam construction along the Missouri River, sandbar habitat for nesting has been drastically altered. Current river flows do not mimic natural river flows instrumental in forming sandbar habitat. High water releases during peak breeding season may flood nests. Environmental contaminants from oil/gas or other environmental spills may enter the Missouri River System. Encroachment of woody vegetation onto sandbars reduces nesting habitat availability. Nests may be destroyed by recreationists using sandbars or by the release of water during mid-summer when terns are still on the nest. Low water levels increase access of mammalian predators. Classified as climate-endangered, Least Tern is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Mortality from collisions with power lines and collisions with wind turbines is of increasing concern.

Research and Monitoring: Habitat requirements and demographics have been extensively researched on the breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. A draft post-delisting monitoring plan has been developed.

Management Recommendations:

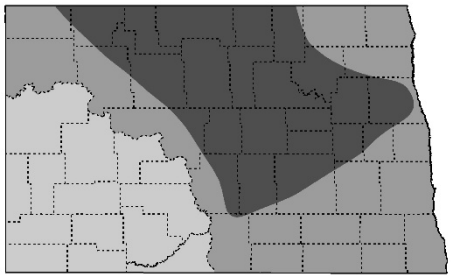
- Mimic natural flows on the Missouri River to create sandbar habitat.
- The creation of dredged islands or clearing of sandbar vegetation may provide new nesting habitat for terns, but the productivity is presumed to be much less than for natural sites.
- Use mechanical and chemical applications to remove vegetation.
- Raise awareness among boaters and outdoor enthusiasts to avoid approaching nesting sites, including keeping dogs on leashes, and limit human access to sandbars or sensitive areas where terns are nesting.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

LeConte's Sparrow *Ammospiza leconteii*

Description/Identification: L 5", WS 6.5", 0.46 oz. Pale, yellow-brown, fine streaks along the breast and sides, and a white stripe on crown.

Status: Occurs in North Dakota from mid-April to mid-October. Peak breeding season late May to mid-July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 6 states for highest percent of the global population (4.47%) during the breeding season (eBird). The LeConte's Sparrow is declining, and the population has decreased 61% since 1970. ND has high stewardship responsibility for this species.



LeConte's Sparrow primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: LeConte's Sparrows use open habitat of marshy or sedge meadows, moist areas of level uplands and lowlands, native or tame prairie, CRP, DNC, hayfields, and idle pasture. CRP is very important breeding habitat for this species under wet conditions. Occur in both natural and restored wetlands, with a higher proportion in alkali or permanent wetlands than temporary, seasonal, or semipermanent. Ares of tall, thick herbaceous vegetation and dense litter are used. Breed in hummocky alkali fens, tallgrass prairie, wet-meadow zones of wetlands, tame hayfields, and former cropland planted to tame grass. Tolerant of some shrubs, such as scattered willows. Nest on or just above the ground in dense vegetation. Usually forage on the ground for arthropods and seeds.

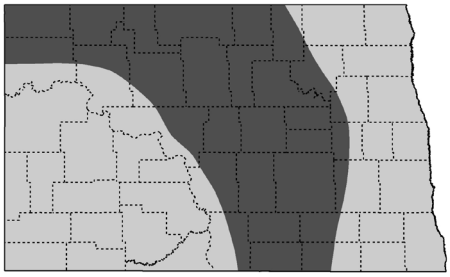
Threats: Loss of grassland and loss of grassland/wetland complexes Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Le Conte's Sparrow is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Presence is affected by the yearly moisture conditions. Increased woodland cover may negatively affects this species.

Research and Monitoring: Habitat requirements are generally known. Little known about reproductive success, annual adult survival, or fledgling survival. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland and tame grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Graze or hay expired CRP. The density of LeConte's Sparrows is 100% lower in CRP fields converted to cropland, but effects are less if expired CRP is converted to grazed grassland (-87%) or hayland (-75%).
- Grazing or burning is crucial to maintaining open, diverse grasslands.
- Delay mowing or haying until August 1.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in native prairie/unbroken grassland.
- Protect and restore wetlands, including the wetland margins, and within grassland landscapes.
- Use prairie cordgrass and other tall vegetation when restoring wetland buffers.
- Use fencing to exclude cattle from wetlands and wetland edges. Develop a livestock watering system instead of direct watering.

Lesser Scaup *Aythya affinis*



Lesser Scaup primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Description/Identification: L 16.5", WS 25", 1.8lb. Medium-sized diving duck, mostly black and white (male), with purple and green iridescence on the head, blue bill. Female brownish-gray with patches of white at the base of the bill.

Status: Occurs in North Dakota from early March to mid-December. Peak breeding season from mid-May to mid-August.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 2nd out of 14 states for highest percent of the global population (3.95%) during the breeding season (eBird). The peak week for Lesser Scaup migration in ND (~1-Nov) hosts >35% (35.03) of the global population. ND has high stewardship responsibility for this species.

Habitat: Medium-large semi-permanent wetlands in grassland dominated landscapes. Lesser Scaup use large seasonal and semi-permanent wetlands and lakes with emergent vegetation including bulrush, cattail, and sedges. Nest over water or on the ground near water, but also in the uplands and on islands. Lesser Scaup have increased in the Prairie Pothole Region over the past several decades, possibly in part due to CRP on the landscape. Feed on aquatic invertebrates, especially chironomids and amphipods, crustaceans and mollusks.

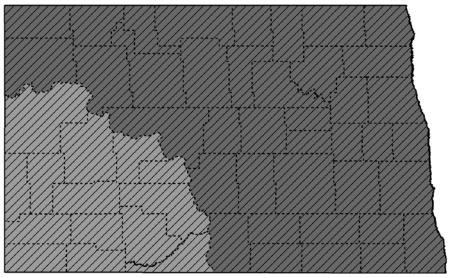
Threats: Loss of grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-threatened, Lesser Scaup is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Stocking or movement of fish into wetlands alters the aquatic invertebrate and plant community. Collisions with power lines and wind turbines.

Research and Monitoring: Habitat requirements and demographics have been extensively researched on the breeding grounds. The Waterfowl Breeding Population and Habitat Survey (May Survey) is a long-standing survey conducted in the U.S. and Canada and provides annual breeding population estimates for most ducks in North America. The NDGF has also conducted an annual spring breeding duck survey since 1948.

Management Recommendations:

- Preserve large tracts of grasslands and wetland complexes.
- Maintain a diversity of planted grassland on the landscape, including tame and multi-species native grassland restoration.
- Maintain grasslands free of or with little woody vegetation.
- Restore hydrology and vegetation to degraded wetlands.
- Leave grassed buffer strips around wetlands and waterways to prevent erosion and runoff into wetlands.
- Delay haying or mowing until after August 1.
- Stocking fish in shallow wetlands can be detrimental to waterfowl production.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Lesser Yellowlegs *Tringa flavipes*



Lesser Yellowlegs primary (dark gray/hatch) and secondary (medium gray/hatch) migration range. Photo Credit: NDGF

Description/Identification: L 10.5", WS 24", 2.8 oz. Upperparts gray-brown, underparts white with little barring on flanks, long yellow legs.

Status: Migrates through North Dakota in early April through late May, and mid-June through late October. Ubiquitous throughout the spring, summer and fall in ND.

Reason for SGCN Designation: Regionally or globally imperiled, at-risk based on expert review (SGCN a., c.). The Lesser Yellowlegs is declining precipitously. Concern for the species elevated in recent years. ND hosts nearly 5% (4.24) of global population in the post-breeding migration season. The peak week for Lesser Yellowlegs migration in ND (~26-July) hosts >10% (12.35) of the global population.

Habitat: Lesser Yellowlegs breed in the boreal forest and forest/tundra transition areas of Alaska and Canada, and winter in a variety of wetland types in the southern U.S., the Caribbean, Central and South America. This shorebird is an intermediate to long-distance migrant. During migration, they occur across North America, but the majority migrate through the Great Plains and Mississippi Flyway. Recent GPS tracking data indicates the Prairie Pothole Region, Mississippi Alluvial Plain, and Argentine Pampas are frequent and high-density stopover areas. Uses a variety of wetlands, lakes, and cropland ponds during migration. Forage in shallow wetlands for a variety of aquatic and terrestrial invertebrates such as amphipods, flies, beetles, small fish and seeds.

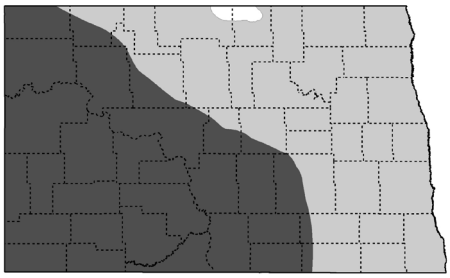
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Classified as climate-endangered, Lesser Yellowlegs is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Loss and degradation of migratory stopover habitat and human activity impacts at important stopover areas such as the Lower Mississippi Alluvial Valley and Texas Gulf Coast. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Lesser Yellowlegs may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Potentially unstainable levels of harvest of Lesser Yellowlegs in the Caribbean and northeastern South America. Collisions with human-made structures (e.g. power lines, wind turbines).

Research and Monitoring: Habitat and demographic studies have been conducted on breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in croplands.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

Loggerhead Shrike *Lanius ludovicianus*



Loggerhead Shrike primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Description/Identification: L 9", WS 12", 1.7 oz. Gray body, black wings, white wing patch, black eye mask and white throat.

Status: Occurs in North Dakota from mid-March to late September. Peak breeding season early May to mid-July.

Reason for SGCN Designation: Regionally or globally imperiled (SGCN a.). ND ranks 17th out of 31 states for highest percent of the global population during the breeding season (eBird). The Loggerhead Shrike is declining precipitously, and the population has decreased 74% since 1970.

Habitat: Loggerhead Shrikes use open grasslands with thickets of small trees or shrubs and interspersed with bare ground. They can be found using a variety of habitats including prairies, pastures, sagebrush, fencerows, shelterbelts, riparian areas, open woodlands, farmsteads, suburban areas, mowed road rights-of-way, and cemeteries. Grazed or ungrazed lands are used. Scattered thick or thorny shrubs and trees are used for nesting, hunting perches, and prey impalement locations. Often an isolated tree within these habitats is chosen for the nest site but also nest in linear tree habitats. Nests are well concealed and placed 1-2.5 meters above the ground. Forage over shorter grass for arthropods, mammals, birds, reptiles, amphibians, and sometimes carrion.

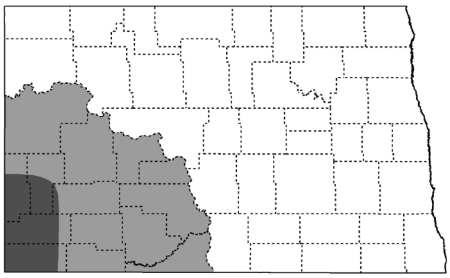
Threats: Loss of grassland. Degradation of grasslands from invasive plants, succession, and loss of diversity. Excessive tree encroachment into prairie can have negative impacts. However, removal of all small trees and shrubs will limit nesting sites. A number may be killed by automobiles when plucking injured or dead insects from roads. Increasing applications of agrochemicals and possibly limit prey abundance.

Research and Monitoring: Habitat requirements, demographic studies, and effects of management practices such as grazing, burning and haying have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Maintain low, thick shrubs and trees along fence lines and other areas in pasture.
- Diversify shelterbelts by incorporating thorny trees and bushes such as hawthorn, hedge rose, buffaloberry or willows.
- Conscientious and appropriate application of agrochemicals.

Long-billed Curlew *Numenius americanus*



Long-billed Curlew primary (dark gray) and secondary (medium gray) breeding range. Photo Credit: NDGF

Description/Identification: L 23", WS 35", 1.3 lb. Long, down-curved bill, buffy overall with pink-cinnamon underwings visible in flight.

Status: Occurs in North Dakota from mid-April to August. Peak breeding season late April to late June.

Reason for SGCN Designation: Regionally or globally imperiled (SGCN a.). ND ranks 13th out of 17 states for highest percent of the global population during the breeding season (eBird). The Long-billed Curlew is declining, and their range in ND has contracted substantially since European settlement.

Habitat: Long-billed Curlews use expansive, open, level to gently rolling or sloping grasslands of short vegetation such as short-grass and grazed mixed-grass prairie. Cropland and hayland are also commonly used. Areas where the vegetation height is <10 cm are preferred. Proximity to water is possibly an important factor in habitat selection. Nest in the dry uplands, in grassland or cropland. Nests are often located near cow dung or other conspicuous objects for concealment. Wet meadows are used for feeding, loafing, and by young fledglings. Forage in grassland, cultivated fields, stubble fields, and black-tailed prairie dog colonies for terrestrial invertebrates such as grasshoppers and beetles.

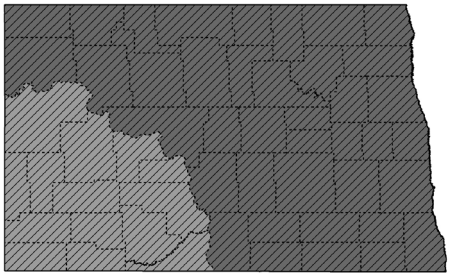
Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Grazing is beneficial to grassland health and diversity, but grazing during the nesting period may impact curlews by trampling or lower hatching success. Curlews have high site fidelity, and the modification of nesting habitat may cause disruptions in the life cycle. Classified as climate-endangered, Long-billed Curlew is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals. Early mowing and normal farming practices can destroy nests or kill the adult on the nest.

Research and Monitoring: Habitat requirements and demographics have been broadly researched on the breeding grounds. Little known about reproductive success, annual adult survival, or fledgling survival. Satellite and GPS transmitters deployed on 11 adult curlews in ND in 2022 and 2023 to identify migratory and wintering habitats. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends. Long-billed Curlews were surveyed on established routes in 2004-2005 and since 2018 in ND.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland and tame grasslands.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Avoid grazing until late May or late June, to allow birds time to settle and initiate nests.
- Remove tall, dense vegetation in the fall by using haying and grazing.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Do not drag hayfields to break up cowpies.
- Curlews have been documented successfully using fall-seed crops (i.e. winter wheat).
- Minimize pesticide and herbicide use on grasslands.

Long-billed Dowitcher *Limnodromus scolopaceus*



Long-billed Dowitcher primary (dark gray/hatch) and secondary (medium gray/hatch) migration range. Photo Credit: NDGF

Description/Identification: L 11.5", WS 19", 4 oz. Breeding/spring plumage: rufous neck and belly, dark barring on sides. Fall/nonbreeding plumage: drab gray, barring absent.

Status: Migrates through North Dakota in mid-April through late May, and early July through early November.

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). The Long-billed Dowitcher is declining precipitously. ND hosts > 5% (8.39) of global population in the post-breeding migration season. The peak week for Long-billed Dowitcher migration in ND (~26-July) hosts >20% (21.13) of the global population.

Habitat: Long-billed Dowitchers breed in a small region of the tundra from northeast Russia, northern Alaska and northwest Canada, and winters in coastal areas of the southern U.S. and Central America. This shorebird is an intermediate-distance migrant. During migration, they use the Prairie Pothole Region extensively. Uses a variety of wetlands, lakes, and cropland ponds during migration. Prefers freshwater over brackish water. Feeds on a variety of aquatic and terrestrial invertebrates such as midges, beetles, but also seeds.

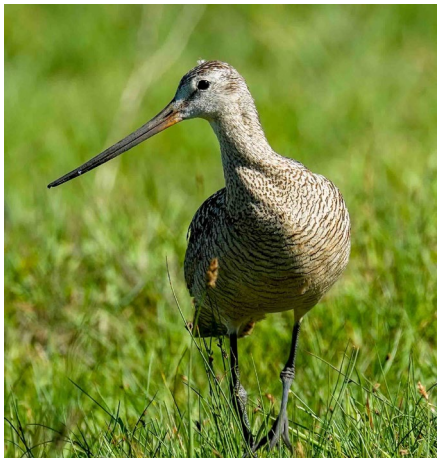
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Classified as climate-stable, Long-billed Dowitcher is projected to maintain more than half of its current distribution (Audubon). Loss and degradation of migratory stopover habitat and human activity impacts at important stopover areas. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Long-billed Dowitchers may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems.

Research and Monitoring: Demographic studies are limited. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

Marbled Godwit *Limosa fedoa*

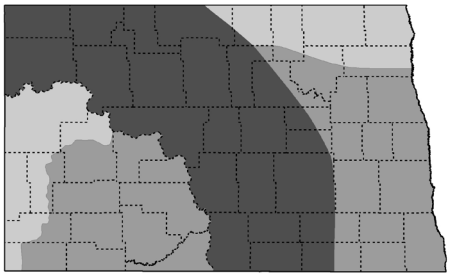


Description/Identification: L 18”, WS 30”, 13 oz. Buff-brown, barring underneath, long up-turned, flesh-colored bill with a dark tip, and orangish underwings visible in flight.

Status: Occurs in North Dakota from early April to early October. Peak breeding season mid-April to mid-June.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 15 states for highest percent of the global population (15.26%) during the breeding season (eBird). The Marbled Godwit is declining precipitously, and ND has high stewardship responsibility for this species.

Habitat: Marbled Godwits require large expanses of short, sparse to moderately vegetated uplands for nesting. A high percentage of grass cover and a high number of wetlands is needed for high nest success. Prefer native grassland over tame, but will also use pastures, idle grasslands, and hayland. Grazed or recently grazed and burned uplands are often more attractive. Nest on the ground, in dry uplands or wet meadow areas. Adults with broods will use taller, denser grass. Semi-permanent, seasonal, and temporary wetlands with shallow water and little dense emergent vegetation are used for foraging. Also forage in the uplands, wet meadows, and roadside ditches. Primary prey items include insects, aquatic tubers, leeches, and small fish.



Marbled Godwit primary (dark gray), secondary (medium gray), and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Threats: Loss of grassland and grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Marbled Godwit is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Early mowing can destroy nests or kill the adult on the nest. Collisions with power lines and wind turbines.

Research and Monitoring: Habitat requirements and demographics have been broadly researched on the breeding grounds. Little known about annual adult survival or fledgling survival. Information lacking on migration strategies, stopover sites, and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland and wetland complexes.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Restore hydrology and vegetation to degraded wetlands.
- Use native grasses when replanting or restoring grassland.
- Burn, mow, and graze grasslands to provide areas of shorter, sparser vegetation.
- Minimize pesticide and herbicide use on grasslands.
- Remove tall, dense vegetation in the fall by using haying and grazing.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

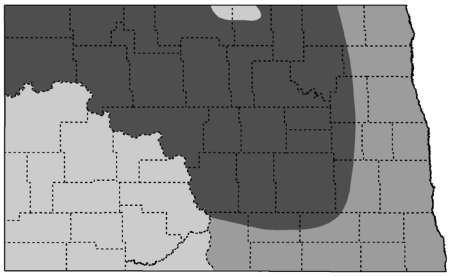
Nelson's Sparrow *Ammospiza nelsoni*

Description/Identification: L 5", WS 7", 0.6 oz. Yellow face and throat, finely-streaked breast, gray nape and crown, and pronounced white belly.

Status: Occurs in North Dakota from mid-May to mid-October. Peak breeding season mid-June to late July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 6 states for highest percent of the global population (19.49%) during the breeding season (eBird). The Nelson's Sparrow is generally stable, ND has high stewardship responsibility.

Habitat: Nelson's Sparrows prefer freshwater wetlands with dense, emergent vegetation as prairie cordgrass, cattails, bulrushes, sedges or common reed. Also use fens, wet meadows, lake margins, native grasslands with tall vegetation, CRP and DNC. Occur in both natural and restored wetlands, with a higher proportion in alkali or permanent wetlands than temporary, seasonal, or semipermanent. Tolerates some shrubby vegetation such as scattered willows. Nest on the ground or within the grass column, slightly above in shallow-marsh and deep-marsh zones of wetlands in dry years and the wet-meadow zone of wetlands in wet years. Deep litter level is preferred. Forage on the ground for insects and seeds.



Nelson's Sparrow primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Nelson's Sparrow is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Annual grazing, mowing, and haying of wetland edges is detrimental to their preferred habitat. Harmful concentrations of mercury have been reported in a breeding population of Nelson's Sparrows in northeastern North Dakota. For reasons that are unclear, this species is more prone to colliding with buildings than the average bird species.

Research and Monitoring: Habitat requirements are generally known. Little known about reproductive success, annual adult survival, or fledgling survival. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve wetlands, including the wetland margins.
- Restore hydrology and vegetation to degraded wetlands.
- Use prairie cordgrass and other tall vegetation when restoring wetland buffers.
- Use fencing to exclude cattle from wetlands and wetland edges. Develop a livestock watering system to reduce or eliminate direct watering.
- Follow bird-friendly building designs.
- Use flashing lights versus steady-burning lights on communication and other towers.

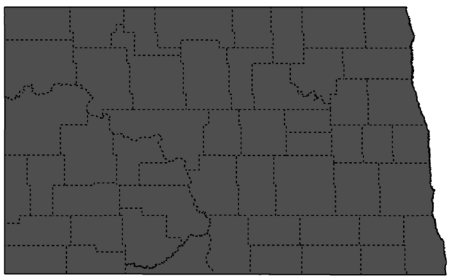
Northern Harrier *Circus cyaneus*

Description/Identification: L 18”, WS 43”, 15 oz. Both the pale gray male and slightly larger, brown female, sport an obvious white rump patch.

Status: Occurs in North Dakota from mid-February to mid-November. Peak breeding season late April to mid-July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 3rd out of 24 states for highest percent of the global population (6.45%) during the breeding season (eBird). The Northern Harrier is declining, and the population has decreased 37% since 1970 (PIF).

Habitat: Harriers use relatively open, tall, dense grasslands for nesting and wetlands of tall (>60 cm), dense vegetation with abundant residual vegetation for foraging. Native or tame vegetation in wet or dry grasslands, fresh to alkali wetlands, CRP, lightly grazed pastures, croplands, shrublands and fallow fields are utilized. Nest primarily on the ground in grassland or wet meadows but have been observed using platforms of vegetation over water. Nests are often placed in stands of western snowberry. Nesting sites selected may be dictated by microtine vole populations, their primary prey. In North Dakota, Northern Harriers have been found to be positively associated with the amount of grassland in a landscape and negatively associated with amount of forest cover.



Northern Harrier primary (dark gray) breeding, spring and fall range. Photo Credit: NDGF

Threats: Loss of grassland and loss of grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Classified as climate-endangered, Northern Harrier is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Early cutting/mowing may destroy nests or young. Changes in the harrier population size may be closely related to vole populations. The use of insecticides and rodenticides may reduce prey availability. Nest predation is a key source of mortality. May avoid wind facilities, exhibit behavioral responses and displacement from areas within and surrounding wind turbines.

Research and Monitoring: Habitat requirements and demographic studies have been researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

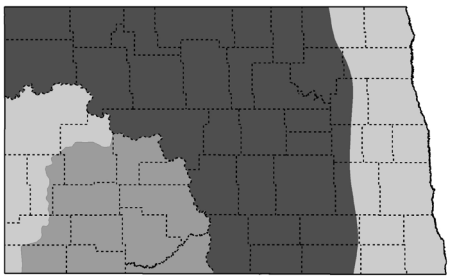
- Protect and conserve areas where complexes of high-density wetlands and large blocks of grassland remain intact.
- Reconstruct or restore grassland adjacent to existing tracts of grassland.
- Use tall, dense native grasses when replanting or restoring grassland.
- Graze or hay expired CRP. The density of Northern Harriers is 67% lower in CRP fields converted to cropland, but effects are less if expired CRP is converted to grazed grassland (-58%) or hayland (-29%).
- Delay mowing, haying or burning grasslands until after August 1.
- Periodically burn, mow, or graze to maintain an accumulation of residual vegetation.
- Minimize human disturbance near nests.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Northern Pintail *Anas acuta*

Description/Identification: L 21", WS 34", 1.8 lb. Long and slender throughout. Sports a distinctive pointed black tail, white breast, and brown head (male).

Status: Occurs in North Dakota from early March to mid-December. Peak breeding season early April to late May.

Reason for SGCN Designation: At-risk, ND range important (SGCN b. and c.). ND ranks 2nd out of 15 states for highest percent of the global population (2.55%) during the breeding season (eBird). The peak week for Northern Pintail migration in ND (~29-Mar) hosts nearly 10% (9.59) of the global population. Holarctic, large distribution. ND has high stewardship responsibility for this species.



Northern Pintail primary (dark gray), secondary (medium gray), and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Habitat: Native prairie of short or mid-height cover interspersed with seasonal or semi-permanent wetlands. CRP, hayfields, pastures, and weedy field borders are utilized. Temporary, seasonal, and semi-permanent wetlands, cropland ponds, shallow river impoundments, stock ponds, and dugouts are utilized for foraging. Feed on vegetation consisting of seeds of sedges, grasses, pondweeds, and smartweeds. Primarily feed on aquatic invertebrates during spring that are abundant in shallow temporary and seasonal ponds. Hens utilize aquatic invertebrates as an important food source during breeding, as well as ducklings until about 6 weeks of age.

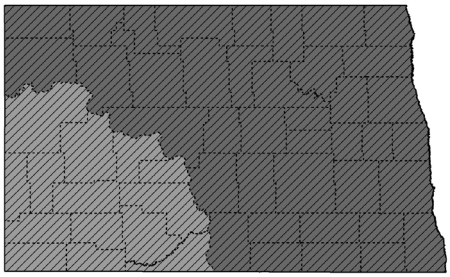
Threats: Loss of grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Stocking or movement of fish into wetlands alters the aquatic invertebrate and plant community. Nests initiated in cropland or previous year stubble fields often destroyed during regular farming operations. Collisions with power lines and wind turbines.

Research and Monitoring: Habitat requirements and demographics have been extensively researched on the breeding grounds. The Waterfowl Breeding Population and Habitat Survey (May Survey) is a long-standing survey conducted in the U.S. and Canada and provides annual breeding population estimates for most ducks in North America. The NDGF has also conducted an annual spring breeding duck survey since 1948.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland and wetland complexes.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Conserve shallow, working wetlands in cropland.
- Restore hydrology and vegetation to degraded wetlands.
- Maintain or plant buffer strips around wetlands and waterways to prevent erosion and runoff into wetlands.
- Delay mowing or haying until after August 1.
- Stocking fish in shallow wetlands can be detrimental to waterfowl production.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Pectoral Sandpiper *Calidris melanotos*



Pectoral Sandpiper primary (dark gray/hatch) and secondary (medium gray/hatch) migration range. Photo Credit: NDGF

Description/Identification: L 8.75", WS 18", 2.6 oz. Dense streaking on breast that abruptly ends at white belly, greenish legs, slightly decurved bill.

Status: Migrates through North Dakota in early April through early June, and early July through late October. Occurs in ND more frequently in late summer/fall stopover than spring.

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). The Pectoral Sandpiper trend is uncertain, but concern elevated for species in recent years. Holarctic, large population. ND hosts >5% (5.89) of global population in the post-breeding migration season. The peak week for Pectoral Sandpiper migration in ND (~26-July) hosts >15% (18.99) of the global population.

Habitat: In the Western Hemisphere, Pectoral Sandpipers breed in the Arctic tundra of Alaska and Canada, and winter in the Pampas of southern South America. This shorebird is one of the longest-distance migrants in the Western hemisphere. During migration, they occur across North America, but the majority migrate through the Great Plains and Mississippi Flyway. Uses a variety of wetlands, lakes, cropland ponds, and mesic grasslands during migration. Feeds on a variety of aquatic and terrestrial invertebrates such as amphipods, flies, spiders, but also seeds and algae.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Loss and degradation of migratory stopover habitat and human activity impacts at important stopover areas such as the Lower Mississippi Valley and Texas Gulf Coast. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Pectoral Sandpipers may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

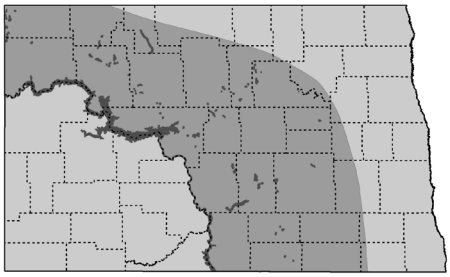
Piping Plover *Charadrius melodus*

Description/Identification: L 7.25", WS 19", 1.9 oz. White belly and single, narrow black breast band.

Status: Occurs in North Dakota from mid-April to August. Peak breeding season occurs from late May to mid-July.

Reason for SGCN Designation: Regionally and globally imperiled, ND range important (SGCN a., b.). ND ranks 3rd out of 20 states for highest percent of the global population (9.73%) during the breeding season (eBird). The Northern Great Plains population (*C. m. circumcinctus*) was listed as a Federal threatened species on 12/11/1985.

Habitat: Exposed, sparsely vegetated shores and islands of alkali lakes and rivers. Salt-encrusted, alkali, or sub-saline semi-permanent lakes, ponds, and rivers with wide shorelines of gravel, sand, or pebbles are preferred. Nest in slight hollow in the sand or shoreline, generally near an object such as a clump of grass, rock, or small log but never in heavy vegetation. Forage on fly larvae, beetles, crustaceans, mollusks, and other small animals near the shoreline or sometimes by the nest.



Piping Plover primary/critical habitat (dark gray), secondary (medium gray), and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Piping Plover is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Channelization, irrigation, and dam construction along the Missouri River. High water releases during peak breeding season may flood nests. Encroachment of woody vegetation onto sandbars reduces nesting habitat availability. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Environmental contaminants from oil/gas or other environmental spills may enter the Missouri River System or alkali lakes. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Nests may be destroyed by recreationists using sandbars or by the release of water during mid-summer when plovers are still on the nest. Mortality from collisions with power lines. Collisions or displacement from wind turbines is uncertain.

Research and Monitoring: Habitat requirements and demographics have been extensively researched on the breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. The USFWS is the lead agency to work with partners and researchers to develop and ensure a scientifically sound and long-term monitoring plan for Piping Plovers is implemented.

Management Recommendations:

- Mimic natural flows on the Missouri River to create sandbar habitat.
- The creation of dredged islands or clearing of sandbar vegetation may provide new nesting habitat for plovers, but the productivity is presumed to be much less than for natural sites.
- Use mechanical and chemical applications to remove vegetation.
- Bury rock piles and remove old buildings to reduce predators.
- Exclusion fences or cages may be erected around nests to reduce nest predation or to exclude cattle.
- Use wildlife-friendly fencing to keep cattle off shorelines or delay grazing until late August.
- Raise awareness among boaters and outdoor enthusiasts to avoid approaching nesting sites, including keeping dogs on leashes, and limit human access to sandbars or sensitive areas where plovers are nesting.
- Follow aquatic nuisance species rules and regulations.

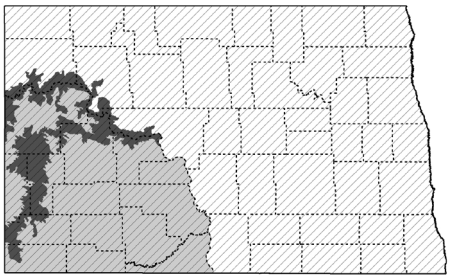
Prairie Falcon *Falco mexicanus*

Description/Identification: L 16”, WS 40”, 1.6lb. Brown overall, sports a thin dark “mustache” and a white breast speckled with brown spots.

Status: Year-round, some migratory. Peak breeding season April to July.

Reason for SGCN Designation: Regionally or globally imperiled (SGCN a.). ND ranks 14th out of 16 states for highest percent of the global population during the breeding season (eBird). The Prairie Falcon may be stable in ND but is slightly declining in other parts of the western range.

Habitat: Prairie Falcons use shortgrass prairie, shrub steppe, and agricultural habitats in generally arid landscapes. Nest primarily on cliffs, buttes, canyon walls, rock outcrops, and ridges. Aeries include depressions into the side of a cliff, horizontal ledges, or may use artificial cliff cavities created by humans. Aerie usually located in the top two-thirds of the cliff. Prairie Falcons may, although rarely, also nest in trees, transmission line towers, or in abandoned nests of other birds. Nest sites tend to face south. Home ranges average around 70 km². Primary prey items include ground squirrels, passerines, lizards, and other small rodents.



Prairie Falcon primary (dark gray) and possible/uncommon (light gray) breeding range. Winter and migration range (hatch). Photo Credit: Adobe Stock

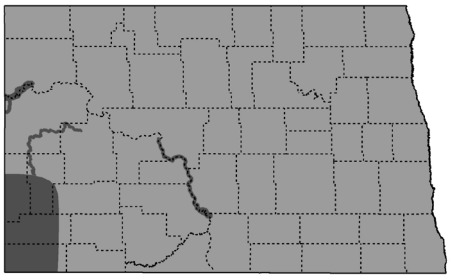
Threats: Loss of grasslands and shrubland, habitat modification.
Destruction or degradation of native prairie resulting in the loss of foraging habitat or prey species may impact populations. Human disturbance may be a potential factor resulting in nest failure. Nests closer to roads and easily accessed or disturbed by human activities have resulted in less success. Classified as climate-endangered, Prairie Falcon is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Collisions with vehicles, power lines, wind turbines or other structures, and electrocution. Poaching is rare but is a senseless cause of mortality.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve intact tracks of native prairie/unbroken grassland.
- Preserve ground squirrel colonies and habitats near falcon nest sites.
- Minimize activity within 0.5 mile of active aeries from April through August.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).
- Use avian protection plans or guidance documents to minimize bird/powerline interactions.

Red-headed Woodpecker *Melanerpes erythrocephalus*



Red-headed Woodpecker primary (dark gray) and secondary (medium gray) breeding range. Photo Credit: NDGF

Description/Identification: L 9.25", WS 17", 2.5 oz. Red head, black upper back and tail, white on rear of wings and upper rump.

Status: Occurs in North Dakota from mid-April to October. Peak breeding season early June to early August.

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). 67% loss of population since 1970 (PIF). ND ranks 30th out of 35 states for highest percent of the global population during the breeding season (eBird). The Red-headed Woodpecker is declining, and the population decreased 67% since 1970.

Habitat: Red-headed Woodpeckers can be found in deciduous woodland in the lowland or upland, along river bottoms, parks, shelterbelts, along roadsides, in open agricultural areas, or in cities. Some habitats it uses can be described as savannah-like. Nest 5-80 feet off the ground in the dead tops or stumps of oak, ash, maple, elm, cottonwood, willow or occasionally utility poles. Cavity is 8-24 inches deep. Breeding pairs may use the same nesting cavity for several years. Forages on the ground, in shrubs, or on mostly dead trees for insects such as ants, wasps, beetles; rarely drills into trees for insects. They will also feed on corn, nuts, berries, and eggs or young birds of passerines.

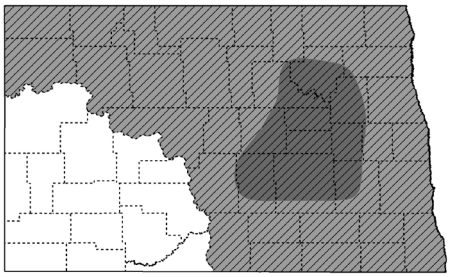
Threats: Loss and degradation of native riparian habitat and lack of riparian regeneration. Removal of dead trees or branches limits nest site availability. May be killed by automobiles while plucking injured or dead insects from roads. Some mortality from collisions with communication towers. Other birds may compete with Red-headed Woodpeckers for nesting cavities.

Research and Monitoring: Habitat requirements are generally known. Little known about reproductive success, annual adult survival, or fledgling survival. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and restore native riparian habitats.
- Limit or exclude grazing in riparian areas.
- Protect riparian corridors.
- Leave snags and dead trees.
- Plant mast producing trees such as oak.
- Remove starlings if competition is present.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Ruddy Turnstone *Arenaria interpres*



Ruddy Turnstone primary (dark gray/hatch) and secondary (medium gray/hatch) migration range. Photo Credit: NDGF

Description/Identification: L 9.5", WS 21", 3.9 oz. Breeding/spring plumage: stocky body, upperparts rufous with black patches, bright orange legs. Fall/nonbreeding plumage: duller brown, orange legs.

Status: Migrates through North Dakota primarily in the spring, early May to early June. Limited occurrence in the fall, mid-July through August.

Reason for SGCN Designation: Regionally or globally imperiled, at-risk based on expert review (SGCN a., c.). Holarctic, large population and wide distribution. Concern for the species has been elevated in recent years. The peak week for Ruddy Turnstone migration in ND (~24-May) hosts >10% (10.88) of the global population.

Habitat: In the Western Hemisphere, Ruddy Turnstones breed in high-arctic coastal areas and tundra of Alaska, Canada and Greenland, and winter along the Pacific and Atlantic coasts of the U.S., Central America and South America. This shorebird is an intermediate to long-distance migrant. The Prairie Pothole Region is important spring stopover habitat, peaking in late May (~May 24-28). In North Dakota, the Devils Lake Region is a high-use migratory stopover site. Ruddy Turnstones primarily use stony or rocky shorelines, but also mudflats, sand or gravel beaches. Forage in on prey on or near the surface for a variety of invertebrates, amphipods or mollusks.

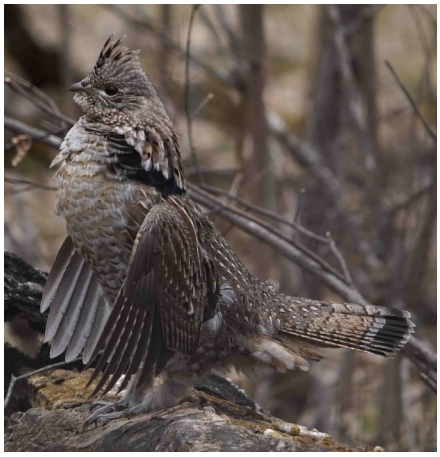
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Classified as climate-endangered, Ruddy Turnstone is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Coastal development (urban and industry sprawl), coastal erosion, storm surges, oil or industrial effluent spills, impaired water quality and microplastics are threats to wintering habitat. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.

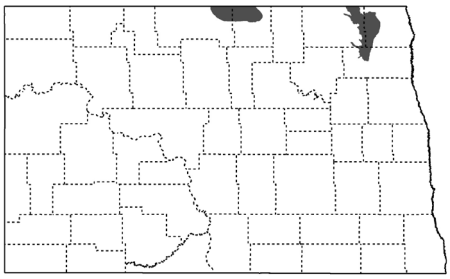
Ruffed Grouse *Bonasa umbellus*



Description/Identification: L 17", WS 22", 1.3 lb. Brownish-gray or reddish-brown, slightly rounded tail with a black or brown band.

Status: Year-round resident. Peak breeding season April to early July.

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). Range limited to the Turtle Mountains, Pembina Hills, and occasionally in the aspen sandhills of Towner County. Ruffed Grouse populations usually go through to 9 to 10-year cycles of increasing and decreasing numbers. Because the habitat in North Dakota is so fragmented, a 10-year peak has not occurred since the late 1990's; however, populations have been increasing slightly since 2019.



Ruffed Grouse primary (dark gray) breeding range. Photo Credit: NDGF

Habitat: Primarily associated with aspen forests in North Dakota, including quaking aspen, paper birch, green ash, bur oak and balsam poplar. ruffed grouse seem to be tied to large expanses (over 640 acres) of aspen woodlands for both food and cover. Young aspen trees up to 10 years of age are used by broods; in these young forests, ground cover and associated insects are found in abundance. Middle-aged aspen stands (10-25 years) are used for food and winter cover. Older trees (60 years or older) are needed for resting, drumming and feeding. In these older areas, brushy undergrowth and the aspen produce good quantities of buds and catkins used as food. Chicks require a diet high in insects and other invertebrates for the first 7-10 days, after which they gradually shift to an adult diet of buds, catkins, fruits and berries. Adults continue to feed on buds and fruit in winter. Nest on the ground at the base of a tree, log or brush pile in middle-aged aspen stands.

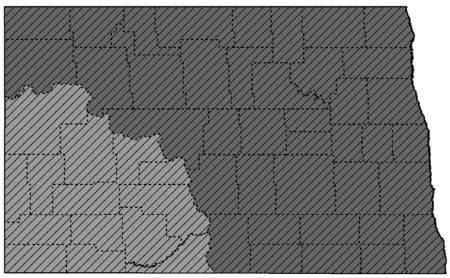
Threats: Loss of upland deciduous forest. Decadent aspen forest stands. Classified as climate-endangered, Ruffed Grouse is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon).

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds, but limited research efforts in North Dakota. The North Dakota Game and Fish Department conducts annual drumming surveys on long-term routes in the Turtle Mountains and Pembina Hills.

Management Recommendations:

- Protect and restore native aspen forests.
- Aspen stands should be managed to provide a diversity of age classes within the normal home range of ruffed grouse.
- Avoid grazing in clear cut/managed stands until new trees are established (10 years and older).
- If grazing woodlands, a grazing plan should be implemented to protect a diversity of aspen age classes.
- Rejuvenate decadent stands by bulldozing or logging old trees (60 years and older)
- Reduce cropping/tillage along woodland edges to allow suckering of aspen.
- Control tall woody vegetation, including single trees that act as raptor perches and raptor nest sites.

Semipalmated Sandpiper *Calidris pusilla*



Semipalmated Sandpiper primary (dark gray/hatch) and secondary (medium gray/hatch) migration range. Photo Credit: Adobe Stock

Description/Identification: L 6.5", WS 14", 0.88 oz. Breeding/spring plumage: Plain gray-brown, short straight dark bill, black legs
Fall/nonbreeding plumage: pale gray, white belly.

Status: Migrates through North Dakota in mid-April through early June, and early July through mid-October.

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). Substantial population-level declines in the eastern portion of the range, may be stable in the interior and western North America. The peak week for Semipalmated Sandpiper migration in ND (~31-May) hosts >10% (12.21) of the global population.

Habitat: Semipalmated Sandpipers breed in the low-arctic and subarctic areas of Alaska, northern Canada, and the Hudson Bay, and winter in coastal areas of Mexico, the Caribbean and South America. Central and western Arctic breeding birds primarily migrate through the interior of North America and use the Prairie Pothole Region extensively as stopover habitat. The eastern Arctic breeding birds primarily migrate along the U.S. Atlantic Coast, but some Semipalmated Sandpipers exhibit an elliptical migration, using both the Central Flyway and Atlantic Flyway. During migration, Semipalmated Sandpipers use a variety of shallow freshwater and brackish wetlands, typically with little vegetation, mudflats, and shorelines. Feed mostly on aquatic invertebrates such as amphipods and mollusks, but also terrestrial invertebrate such as insects and spiders.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds. Classified as climate-stable, Semipalmated Sandpiper is projected to maintain more than half of its current distribution (Audubon). Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Semipalmated Sandpipers may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems.

Research and Monitoring: Habitat and demographic studies have been conducted on breeding grounds. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

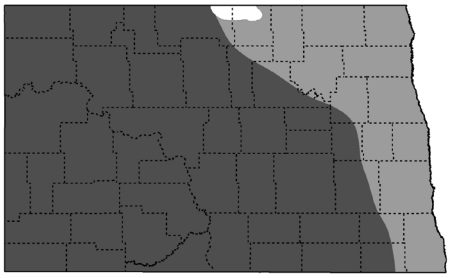
Sharp-tailed Grouse *Tympanuchus phasianellus*

Description/Identification: L 17", WS 25", 1.9lb. Light-colored overall with heavy dark barring on back, head, and wings. Pointed tail, yellow crest above the eye, and purple air sacs.

Status: Year-round resident. Peak breeding season late April to late July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 2nd out of 14 states for highest percent of the global population (17.78%) during the breeding season (eBird). ND has high stewardship responsibility for this species.

Habitat: Sharp-tailed Grouse are most often found in mixed-grass prairie with patches of small trees and shrubs. CRP grasslands are also very important habitat for this species. Leks, or the dancing grounds used during the breeding season to attract mates, are typically located on elevated areas and are often characterized by less vegetation than the surrounding area. Nests are located fairly close, often within 0.5 mile, to the lek. Nest in lightly grazed native prairie, hayland, CRP, and may be located close to the margin of a thicket of shrubs or small trees. During winter, grouse will use wooded habitats. Feed primarily on buds, seeds, insects, fruits, and forbs.



Sharp-tailed Grouse primary (dark gray) and secondary (medium gray) breeding range. Photo Credit: NDGF

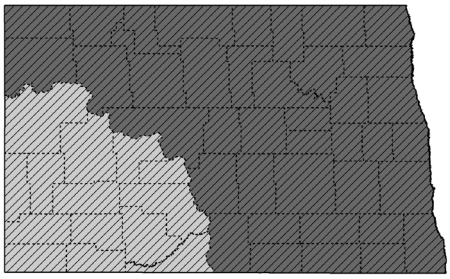
Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Classified as climate-endangered, Sharp-tailed Grouse is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and possible impacts to food availability for broods. Mortality from collisions with fences, utility wires, and vehicles. Viewing grouse dancing on leks during the spring is a popular activity but can cause disturbance. Males appear more tolerant of this disturbance than females.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. The NDGF and cooperators conduct a complete census on long-term blocks to provide an index of Sharp-tailed Grouse. Late summer roadside counts for broods are also conducted.

Management Recommendations:

- Protect and conserve intact tracks of native prairie/unbroken grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses and forbs when replanting or restoring grassland.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Protect leks and the surrounding habitat from loss or destruction.
- Use rotational disturbance every 3-5 years, with prescribed burning as the preferred method.
- Develop grazing plans that provide residual vegetation for the following spring and eliminate over-utilization of woody draws, mesic swales and riparian areas.
- Control tall woody vegetation.
- Do not mow or hay from April 15 – August 1.
- Conscientious and appropriate application of agrochemicals.
- Avoid constructing fences through or near leks and install visibility markers to existing fences.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Short-billed Dowitcher *Limnodromus griseus*



Short-billed Dowitcher primary (dark gray/hatch) and possible/uncommon (light gray) migration range. Photo Credit: NDGF

Description/Identification: L 11", WS 19", 3.9 oz. Breeding/spring plumage: rufous, white belly, heavy barring. Fall/nonbreeding plumage: drab gray, barring absent.

Status: Migrates through North Dakota in early May through late May, and early July through mid-September.

Reason for SGCN Designation: Regionally or globally imperiled, at-risk based on expert review (SGCN a., c.). The Short-billed Dowitcher is declining precipitously. Concern for species elevated in recent years. The peak week for Short-billed Dowitcher migration in ND (~26-July) hosts >5% (5.68) of the global population.

Habitat: Short-billed Dowitchers breed in the boreal and subarctic areas regions of southern Alaska and Canada, and winters in coastal mud flats areas of the southern U.S., Central America, and northern South America. This shorebird is an intermediate-distance migrant. During migration, they are found along the Atlantic and Pacific Coasts, the Midwest, and the Northern Great Plains. The Prairie Pothole Region is used extensively. Uses a variety of wetlands, lakes, and cropland ponds during migration. Prefers brackish water over freshwater. Feeds on a variety of aquatic and terrestrial invertebrates such as mollusks, spiders, insects, and occasionally seeds.

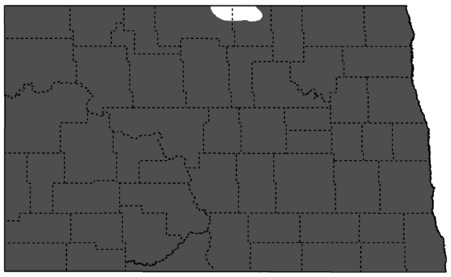
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Classified as climate-endangered, Short-billed Dowitcher is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Short-billed Dowitchers may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems.

Research and Monitoring: Demographic studies are limited. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

Short-eared Owl *Asio flammeus*



Short-eared Owl primary (dark gray) breeding, wintering, spring and fall migration range. Photo Credit: NDGF

Description/Identification: L 15", WS 38", 12 oz. Yellowish-brown, spotted back and subtle ear tufts on a large round head.

Status: Year-round. Some may be migratory or overwintering only. Peak breeding season early April to mid-August.

Reason for SGCN Designation: At-risk, recent regional or global assessments (SGCN c.). ND ranks 9th out of 12 states for highest percent of the global population (0.19%) during the breeding season (eBird). The peak week for Short-eared Owl migration in ND (~19-Apr) hosts >5% (6.1) of the global population. Holarctic, large distribution. The Short-eared Owl is declining, 65% population loss since 1970 (PIF).

Habitat: Short-eared Owls are found in large expanse of open grassland and wetlands. An area of >100 ha of grassland is likely required for successful production. Native prairie, hayland, retired cropland, small-grain stubble, shrub-steppe, mesic prairie, marshes and wet meadow zones of wetlands are utilized. CRP grassland is also important habitat for Short-eared Owls. Unlikely to use upland sites that are annually grazed, hayed or burned, but periodic disturbance is needed to maintain suitable nesting habitat. Nest on the ground in dry uplands. Nesting is in vegetation generally 30-60 cm high and has a deep litter layer. Populations fluctuate yearly due to variation in small mammal populations and the nomadic nature of the species. Primary prey includes small mammals, particularly *Microtus* voles.

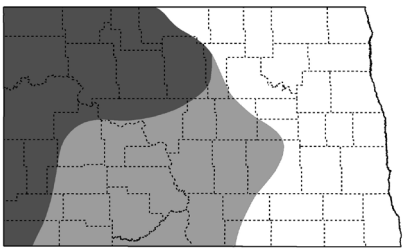
Threats: Loss of grassland and loss of grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Classified as climate-endangered, Short-eared Owl is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Early cutting/mowing may destroy nests or young. Changes in the population size may be closely related to vole populations. The use of insecticides and rodenticides may reduce prey availability. Collisions with man-made structures and vehicles occur.

Research and Monitoring: Habitat requirements have been researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. Monitoring the species population, habitat or response to management is challenging due to their nomadic nature and low site fidelity.

Management Recommendations:

- Protect areas where complexes of wetlands and large blocks of grassland remain intact.
- Reconstruct or restore grassland adjacent to existing tracts of grassland.
- Use tall, dense native grasses when replanting or restoring grassland.
- Periodically burn, mow, or graze to maintain an accumulation of residual vegetation.
- Delay mowing, haying or burning grasslands until after August 1.
- Minimize human disturbance near nests.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Sprague's Pipit *Anthus spragueii*



Sprague's Pipit primary (dark gray) and secondary (medium gray) breeding range. Photo Credit: NDGF

Description/Identification: L 6.5", WS 10", 0.88 oz. Slender, rather dull light brown, wears a "necklace" of fine streaks.

Status: Occurs in North Dakota from early April to mid-October. Two periods of breeding activity: 1) late April – early June; 2) mid-July to early September.

Reason for SGCN Designation: Regionally and globally imperiled, ND range important (SGCN a., b.). ND ranks 2nd out of 3 states for highest percent of population (7.65%) during the breeding season (eBird). The Sprague's Pipit is declining precipitously, and the population has decreased 75% since 1970. ND has high stewardship responsibility for this species.

Habitat: Sprague's Pipits require large (>470 acres) native prairie grasslands. Intermediate vegetation height (<49 cm) and sparse to intermediate vegetation density, low forb density, and little bare ground and low litter depth. Tame grasslands may be utilized, but to a much lesser extent. Hayland, undisturbed CRP, and cropland are rarely used. Sprague's Pipits are most abundant in idle grasslands but will use light to moderately grazed grasslands. Abundance positively correlated with percent clubmoss cover and dominated by native grass species. Negatively associated with vegetation height, high litter depth, low-growing shrubs, and plant communities dominated by shrubs and introduced grasses. Avoid areas with woody vegetation and deep litter. Nest on the ground in areas of taller and slightly denser vegetation. Forages on a wide variety of arthropods such as grasshoppers, crickets, beetles, ants, and caterpillars.

Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Loss of grassland on the wintering grounds in the Chihuahuan Desert. Classified as climate-endangered, Sprague's Pipit is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Direct and indirect impacts from energy development.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

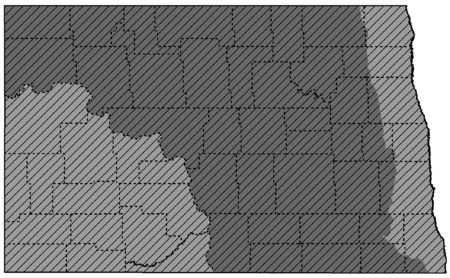
Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Delay mowing or haying until August 1.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in native prairie/unbroken grassland.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Stilt Sandpiper *Calidris himantopus*

Description/Identification: L 8.5”, WS 18”, 2 oz. Breeding/spring plumage: heavily barred chest and belly, long yellowish-green legs, heavy and slightly downcurved bill. Fall/nonbreeding plumage: pale gray, barring absent.

Status: Migrates through North Dakota in late April through early June, and early July through late October.



Stilt Sandpiper primary (dark gray/hatch) and secondary (medium gray/hatch) migration range. Photo Credit: NDGF

Reason for SGCN Designation: At-risk based on expert review (SGCN c.). The Stilt Sandpiper is declining precipitously. ND hosts >5% (20.75) of the global population in the post-breeding migration season and >5% (6.05) in the pre-breeding migration season. The peak week for Stilt Sandpiper migration in ND (~26-July) hosts >40% (40.09) of the global population.

Habitat: Stilt Sandpipers breed in the low-arctic and subarctic areas of Alaska, northern Canada, and Hudson Bay, and winters in freshwater wetlands, flooded fields and coastal areas of the southern U.S., Mexico and South America. During migration, they primarily migrate through the Central Flyway and use the Prairie Pothole Region extensively. Uses a variety of wetlands, lakes, and cropland ponds during migration. Feed on a variety of aquatic and terrestrial invertebrates such as midges, beetles, but also seeds.

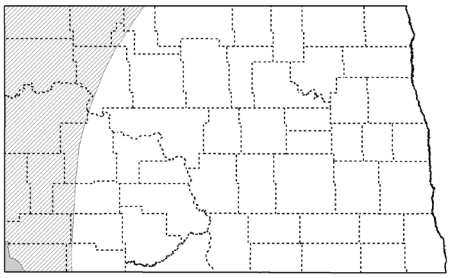
Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Loss of habitat on the breeding and wintering grounds and amplified effects of climate change in arctic and coastal habitats. Classified as climate-threatened, Stilt Sandpiper is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Hyperabundant geese populations alter tundra habitat and may limit the availability of nesting habitat for artic-breeding shorebirds. Loss and degradation of migratory stopover habitat and human activity impacts at important stopover areas such as the Texas Gulf Coast. Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Stilt Sandpiper may be exposed to high concentrations of synthetic insecticides in non-buffered cropland ponds during the spring migration. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Collisions with power lines and wind turbines.

Research and Monitoring: Demographic studies are limited. Information lacking on migration strategies, stopover sites, and wintering behaviors. Multiple large-scale shorebird monitoring programs are key sources of information on distribution and population trends. However, minimal focus has been directed at research or monitoring migrant shorebirds in ND.

Management Recommendations:

- Maintain wetland complexes.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Identify and target high priority landscapes, habitats, and stopover sites for protection.
- Conscientious and appropriate application of agrochemicals.

Thick-billed Longspur *Rhynchophanes mccownii*



Thick-billed Longspur possible/uncommon (light gray) and historical (black hatch) breeding range. Photo Credit: Adobe Stock

Description/Identification: L 6", WS 11", 0.81 oz. Male is gray overall with a white neck, crescent-shaped black patch on chest, and rufous shoulders. Female is light brown. Black "T" on white tail.

Status: Possibly extirpated. Occurs in North Dakota from mid-April to September. Peak breeding season late May to mid-July.

Reason for SGCN Designation: Regionally and globally imperiled (SGCN a.). The Thick-billed Longspur is declining precipitously, and the population has decreased 94% since 1970. Prior to major European settlement of North Dakota, Thick-billed Longspur was rather common over the western half of the state. From 1905-1930, the species declined rapidly, and the breeding range constricted substantially. This species is at imminent risk of extirpation from North Dakota.

Habitat: Thick-billed Longspurs are found in open shortgrass or heavily grazed mixed-grass prairie with little litter and low vegetation cover. Small-grain stubble fields and summer fallow fields are occasionally used. Often breed on high, barren hillsides with a southern exposure. Associated vegetation includes blue grama and buffalo grass. Nests are often placed near a clump of grass, shrubs, plains prickly pear, or a cowpie. Pairs often nest near each other, and each territory requires 0.5-1.5 ha. Primary food includes seeds of grasses and forbs but also feed on insects and other arthropods.

Threats: Loss of grassland. Specifically, the loss of expansive, native shortgrass prairie habitat. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Classified as climate-endangered, Thick-billed Longspur is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon).

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve large, intact tracks of native shortgrass prairie/unbroken grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Use prescribed burns in areas where fire has been suppressed.
- Avoid and minimize placement of development (e.g. energy, housing, utility lines) or other human infrastructure in native prairie/unbroken grassland.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

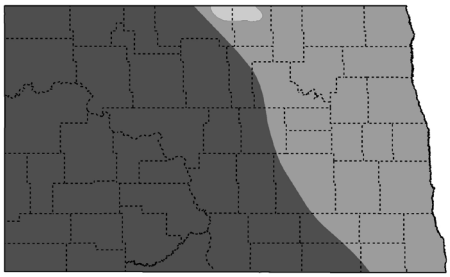
Upland Sandpiper *Bartramia longicauda*

Description/Identification: L 12”, WS 26”, 6 oz. A short yellow bill, long yellow legs, small head, slender neck, and a long tail.

Status: Occurs in North Dakota from mid-April to mid-September. Peak breeding season mid-May to mid-July.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 2nd out of 22 states for highest percent of the global population (15.5%) during the breeding season (eBird). The Upland Sandpiper is stable to declining, and ND has high stewardship responsibility for this species.

Habitat: Upland Sandpipers use native and tame grasslands, wet meadows, hayland, pastures, CRP, cropland, highway and railroad rights-of-way. Densities are highest in moderately grazed areas but will use shortgrass, mixed-grass and tall grass prairies that are idle, burned, hayed or grazed. Prefer grasslands with minimal woody vegetation, moderate litter cover, and little bare ground. Fence posts, rocks and other display perches are an important element. Forage in short vegetation (<10cm), including cropland, for small invertebrates which constitute over 95% of their diet. Nest and rear broods in taller vegetation (10 to 60 cm). Although the Upland Sandpiper is a shorebird, it is almost never seen by water.



Upland Sandpiper primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

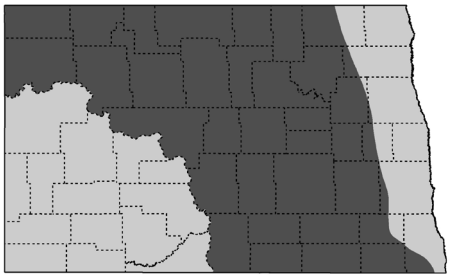
Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Lack of prescribed burns. Early mowing can destroy nests or kill the adult female on nest. Collisions with vehicles, power lines and other manmade structures occurs but is rare. Direct and indirect impacts from energy development, Upland Sandpipers exhibit displacement from areas within and surrounding wind turbines.

Research and Monitoring: Habitat requirements and effects of management practices such as grazing, burning and haying have been broadly researched on the breeding grounds. Little known about reproductive success, annual adult survival, or fledgling survival. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland and tame grasslands.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Burning is very beneficial. Upland Sandpipers forage in fields immediately following a burn and prefer nesting in fields 1 year after burning.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Provide display perches such as wooden fence posts and replace rocks in restored/tame grasslands.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Delay mowing or haying until August 1.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Western Grebe *Aechmophorus occidentalis*



Western Grebe primary (dark gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Description/Identification: L 25", WS 24", 3.3 lb. Long white neck with dark stripe on the back of the neck, straight yellowish bill, red eye.

Status: Occurs in North Dakota from early April to mid-December. Peak breeding season late May to late August.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 1st out of 16 states for highest percent of global population (24.72%) during the breeding season (eBird). The Western Grebe is stable to declining and ND has high stewardship responsibility for this species in the Prairie Pothole Region.

Habitat: Western Grebes prefer medium to large freshwater marshes or lakes with beds of emergent vegetation, particularly sedges, rushes, and cattails, and substantial areas of open water. Slightly brackish/alkaline water is also suitable. Nest in colonies either as a single species or in mixed-species colonies, primarily with Eared Grebe. Number of nests in a colony may number in the hundreds. Nests are typically built over water on a floating platform of emergent vegetation. Occasionally nests are on the dry shorelines of islands. The presence of this species varies greatly dependent on water availability. Diet consists almost exclusively of fish, but also aquatic invertebrates, salamanders or crustaceans.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Western Grebe is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. More frequent or intense harmful algal blooms. Aquatic nuisance species spreading and damaging wetland ecosystems. Colonial waterbirds are highly susceptible to disease such as botulism or avian influenza. Western Grebes are sensitive to human disturbance at nest sites. Recreational boating may destroy nests or entire colonies.

Research and Monitoring: Habitat requirements and demographics have been broadly researched. Additional information is needed on migration and wintering behaviors. eBird and Partners in Flight Databases are key sources of information on distribution and population trends. Poor detection on the Breeding Bird Survey. The most recent colonial waterbird inventory in ND was conducted in 2014-2015. Seventy-five colonies were discovered in 30 counties; ~2,556 breeding pairs were estimated (mean colony size 34, range 1-270 pairs).

Management Recommendations:

- Preserve wetlands and wetland complexes.
- Restore hydrology and vegetation to degraded wetlands.
- Identify and target high priority landscapes, habitats, and staging areas for protection.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).
- Raise awareness among boaters and outdoor enthusiasts to avoid approaching nesting sites.

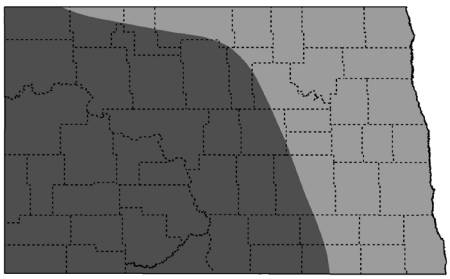
Western Meadowlark *Sturnella neglecta*

Description/Identification: L 9.5”, WS 14.5”, 3.4 oz. Medium-sized songbird, bright yellow belly and underparts with distinctive black “V”.

Status: Occurs in North Dakota primarily from March to early November. Rare in other months. Peak breeding season mid-April to late July.

Reason for SGCN Designation: Declining, ND range important (SGCN b.). ND ranks 6th out of 22 states for highest percent of the global population (7.3%) during the breeding season (eBird). The Western Meadowlark is declining, and the population decreased 42% since 1970. ND has high stewardship responsibility for this species.

Habitat: Western Meadowlarks utilize a variety of grassland habitats but are most common in grazed native grasslands. Planted or tame grasslands, CRP, hayland, and field edges are also utilized. Less abundant in very tall and dense vegetation, areas of sparse vegetation or bare ground. Fence posts, large rocks, scattered shrubs or small trees, and stiff vegetation are favored perches for singing. Will tolerate some shrubs but negatively influenced by amount of woody vegetation in the landscape. Forages on the ground for grain and weed seeds and insects.



Western Meadowlark primary (dark gray) and secondary (medium gray) breeding range. Photo Credit: NDGF

Threats: Loss of grassland. Degradation of grasslands from invasive plants, woody encroachment, succession, and loss of diversity. Loss of ranching heritage and grass-based operations, grazing is essential to grassland health and diversity. Loss of perches in grassland habitat may inhibit use of those areas (e.g. fencing, rocks). Increasing applications of agrochemicals and possible exposure causing pesticide acute toxicity. Direct and indirect impacts from energy development, Western Meadowlarks exhibit displacement from areas within and surrounding wind turbines.

Research and Monitoring: Habitat requirements and demographic studies have been broadly researched on the breeding grounds. Post-fledgling survival, breeding site fidelity, nest success and adult survival is needed for Western Meadowlark. Additional information is needed on migration and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve intact tracks of native prairie/unbroken grassland.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Use native grasses when replanting or restoring grassland.
- Promote well-managed grazing lands and working grasslands for biodiversity, sustainability, and resiliency.
- Graze or hay expired CRP. The density of Western Meadowlarks is 61% lower in CRP fields converted to cropland, but density will increase if expired CRP is converted to grazed grassland (+26%) or hayland (+22%).
- Prevent or remove tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Provide display perches such as wooden fence posts and replace rocks in restored/tame grasslands.
- Delay mowing or haying until August 1.
- Conscientious and appropriate application of agrochemicals.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

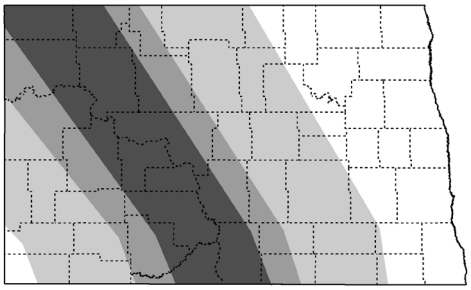
Whooping Crane *Grus americana*

Description/Identification: L 52", WS 87", 15 lb. All white except for black wing tips and a red crown, long black legs.

Status: Migrates through North Dakota in early April to mid-May and late September to mid-November.

Reason for SGCN Designation: Globally imperiled (SGCN a.). The Whooping Crane was listed as a Federal endangered species on 3/11/1967. The Whooping Crane population is increasing but it remains one of the rarest birds in the world.

Habitat: The only wild and self-sustaining Whooping Crane population migrates through North Dakota and nests in Wood Buffalo National Park in Northern Alberta and winters along the Gulf Coast and inland areas of Texas. During migration in North Dakota, Whooping Cranes feed primarily in croplands and roost in shallow, palustrine wetlands less than 4 ha (~10 acres). Seasonal, temporary and semi-permanent wetlands are the most used. Large, shallow wetlands are used for roosting and smaller wetlands for foraging. Forages for waste grains in harvested fields, frogs, fish, plant tubers, insects, and crayfish during migration.



Whooping Crane migration corridors: 50% core (dark gray), 75% core (medium gray) and 95% core (light gray). From Pearse et al. 2018 https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0192737
Photo Credit: NDGF

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Classified as climate-threatened, Whooping Crane is projected to lose more than half of its current distribution by 2080, with potential net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Aquatic nuisance species spreading and damaging wetland ecosystems. Human disturbance such as recreational boaters or birders at staging and stopover sites may disrupt normal behaviors or interrupt feeding. Potential disturbance from oil and gas development and impact of environmental incidents (e.g. oil, produced water/brine) on wetlands or oiled birds. Coastal development (urban and industry sprawl), coastal erosion, storm surges, oil or industrial effluent spills, impaired water quality and microplastics are threats to wintering habitat. Climate change impacts, environmental contaminants from oil sands, hydropower, and commercial logging are threats to breeding habitat. Telemetry studies indicate avoidance of wind-energy infrastructure, but the long-term or lag effects of habitat loss are unknown. High risk for collisions with transmission and distribution power lines. Poaching is rare but is a senseless cause of mortality.

Research and Monitoring: Habitat requirements and demographics have been extensively researched on the breeding grounds and throughout the full life cycle. Ongoing GPS telemetry projects to study migratory ecology, breeding and wintering behaviors. Continue outreach efforts to encourage the public to report Whooping Crane sightings in the spring and fall to appropriate key contacts. The winter survey, led by the U.S. Fish and Wildlife Service, is a crucial monitoring effort for the Aransas-Wood Buffalo population.

Management Recommendations:

- Refer to actions in the International Whooping Crane Recovery Plan.
- Protect and restore staging or stopover sites.
- Minimize or prevent human disturbance, such as educating the public about keeping safe distances.
- Use spatial models (e.g., Niemuth et al. 2018) to guide the siting of new wind, oil, and electrical transmission infrastructure to minimize potential conflicts with Whooping Cranes.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g., transmission lines, communication towers, wind turbines).

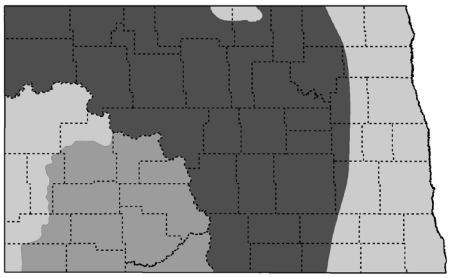
Willet *Tringa semipalmata*

Description/Identification: L 18”, WS 30”, 13 oz. L 15”, WS 26”, 8 oz. Gray overall except for striking black and white wings obvious in flight.

Status: Occurs in North Dakota from mid-April to late September. Peak breeding season mid-May to late June.

Reason for SGCN Designation: At-risk, ND range important (SGCN b.). ND ranks 4th out of 30 states for highest percent of the global population (6.47%) during the breeding season (eBird). The Willet is declining, and ND has high stewardship responsibility for the population breeding inland in the western states, *T. s. inornata.*

Habitat: Large expanses of short, sparse grasslands, particularly native grassland, are important for nesting and foraging. Prefer idle grassland during nesting over grazed pasture, compared to other land uses such as hayland and cropland. Nests in short grass, adults with broods will use taller, denser grass. A variety of wetland complexes of ephemeral, temporary, seasonal, semi-permanent, permanent wetlands, and intermittent streams used for foraging. Avoid wetlands with dense, emergent vegetation, and prefer shallow-water areas with sparse shoreline vegetation. Primary foods include insects, small crustaceans, mollusks, and occasionally small fish.



Willet primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

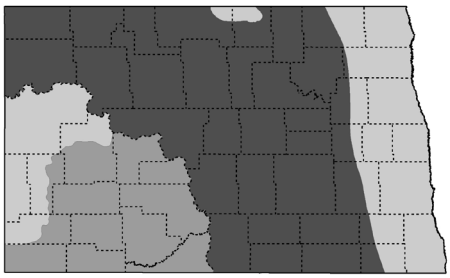
Threats: Loss of grassland and grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Willet is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Early mowing can destroy nests or kill the adult on the nest. Collisions with power lines and wind turbines.

Research and Monitoring: Habitat requirements and demographics have been broadly researched on the breeding grounds. Little known about annual adult survival or fledgling survival. Information lacking on migration strategies, stopover sites, and wintering behaviors. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

- Protect and conserve large, intact tracks of native prairie/unbroken grassland and wetland complexes.
- Reconstruct or restore grassland adjacent to existing tracts of native prairie/unbroken grassland.
- Restore hydrology and vegetation to degraded wetlands.
- Use native grasses when replanting or restoring grassland.
- Burn, mow, and graze grasslands to provide areas of shorter, sparser vegetation.
- Minimize pesticide and herbicide use on grasslands.
- Remove tall, dense vegetation in the fall by using haying and grazing.
- Prevent or remove shrubs and tall woody vegetation in grasslands, either mechanically or by prescribed fire.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Wilson's Phalarope *Phalaropus tricolor*



Wilson's Phalarope primary (dark gray), secondary (medium gray) and possible/uncommon (light gray) breeding range. Photo Credit: NDGF

Description/Identification: L 9.25", WS 17", 2.1 oz. Females sport a brown-red and gray back, cinnamon neck, white throat and belly. Males are light gray and white.

Status: Occurs in North Dakota from mid-April to mid-October. Peak breeding season occurs late May to early July.

Reason for SGCN Designation: Regionally or globally imperiled, ND range important (SGCN a., b.). ND ranks 2nd out of 18 states for highest percent of the global population (1.71%) during the breeding season (eBird). ND has high stewardship responsibility. Although Wilson's Phalarope population is generally stable, recent concerns about the desiccation of saline lakes in the Great Basin, a major stopover site, have led to a petition for its listing under the ESA (March 2024).

Habitat: Wilson's Phalaropes use fresh to alkaline wetlands with open water, emergent vegetation, and open shoreline for foraging, and wet meadows or upland grasslands for nesting. Typically, nest <100m from the shoreline, in the uplands early in the breeding season and in wet-meadow vegetation later in the season. Nests in grasses of various heights in idle, hayed, or grazed grasslands adjacent to wetlands. Also nest on islands. Cropped wetlands, temporary, seasonal, semi-permanent, fen, alkali, and permanent wetlands, in decreasing order, are utilized most frequently. Occur in the peripheral low-prairie and wet meadow areas of wetlands. Feeds on a variety of aquatic invertebrates.

Threats: Loss of grassland and grassland/wetland complexes. Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Wilson's Phalarope is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Nest mortality may be higher than species utilizing similar habitat, possibly because of the phalarope's tendency to place nests in the margins of wetlands where they are more easily flooded. Collisions with power lines and wind turbines.

Research and Monitoring: Habitat requirements and demographics have been broadly researched on the breeding grounds. Little known about annual adult survival or fledgling survival. Information lacking on migration strategies, stopover sites, and wintering behaviors. Identify if there is a migratory connection of the PPR breeding population with stopover sites in the Great Basin. The Breeding Bird Survey, eBird and Partners in Flight Databases are key sources of information on distribution and population trends.

Management Recommendations:

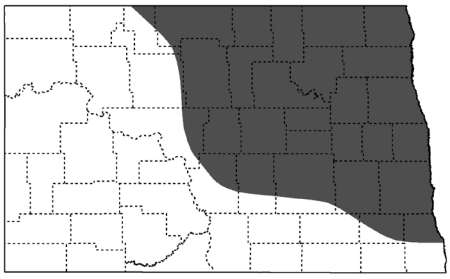
- Protect and conserve large, intact tracks of native prairie/unbroken grassland and wetland complexes.
- Restore hydrology and vegetation to degraded wetlands.
- Conserve shallow, working wetlands in cropland.
- Plant vegetative buffer strips around wetlands in cropland.
- Burn, mow, and graze grasslands to provide areas of shorter, sparser vegetation.
- Prevent or remove shrubs and tall woody vegetation in wetlands, either mechanically or by prescribed fire.
- Conscientious and appropriate application of agrochemicals.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).

Yellow Rail *Coturnicops noveboracensis*

need photo

Description/Identification: L 7.25", WS 11", 1.8 oz. A cryptic and secretive bird, it is yellow-buff overall, striped back, short tail and stubby yellow bill.

Status: Occurs in North Dakota from mid-May to mid-August. Peak breeding season early June to mid-July.



Yellow Rail primary (dark gray) breeding range.

Reason for SGCN Designation: Regionally or globally imperiled, ND range important (SGCN a., b.). ND ranks 1st out of 4 states for highest percent of population during the breeding season (eBird). Small population but large geographic range. The Yellow Rail is declining, and ND has high stewardship responsibility for this species in the Prairie Pothole Region.

Habitat: Yellow Rails prefer fens or wet meadows dominated by sedges, grasses, rushes, and bulrushes in fresh and brackish wetlands. Stands of common cattail may be present but will not use wetlands dominated by cattails. Uses small to large fens or ground water fed wetlands, with water depth of typically 0-46 cm. Rail presence is often associated with a high percentage of emergent vegetation. The presence of this species may vary greatly from year to year depending on water availability. Nest under a canopy of vegetation in areas with standing water or saturated ground. Primary food includes snails, aquatic insects, and seeds.

Threats: Loss and degradation of wetlands, drainage and wetland consolidation. Hydrologic shifts in wetlands of the PPR due to wetland consolidation and drainage, climate and land use changes (i.e. lakeification). Classified as climate-endangered, Yellow Rail is projected to lose more than half of its current distribution by 2050, with no net gains of new areas (Audubon). Increasing applications of agrochemicals and their impacts to water quality, the wetland vegetative community, and the aquatic invertebrate community. Aquatic nuisance species spreading and damaging wetland ecosystems. Yellow Rails use fens, which are rare and extremely vulnerable in North Dakota. Invasive hybrid cattails spread aggressively and can dominate sensitive fen habitats. Human disturbance from wildlife observers entering Yellow Rail habitat to view these difficult to observe birds could cause abandonment or destruction of nests. Yellow Rails may be killed from machinery during mowing or haying. Collisions with human-made structures (e.g. power lines).

Research and Monitoring: Habitat requirements and demographics have been researched, but little effort in North Dakota. Additional information is needed on breeding, migration and wintering behaviors. eBird and Partners in Flight Databases are key sources of information on distribution and population trends. Poor detection on the Breeding Bird Survey. Yellow Rails are secretive, and monitoring could involve targeted call-response surveys.

Management Recommendations:

- Preserve and maintain wetland complexes, particularly fen habitats.
- Restore hydrology and vegetation to degraded wetlands.
- Avoid water manipulation which creates a hemi-marsh or deep-water marsh.
- Prevent and remove encroachment of woody vegetation around wetlands.
- Conduct management to open cattail-choked wetlands.
- Delay haying or mowing until after August 1.
- Follow aquatic nuisance species rules and regulations.
- Follow beneficial or best practices during the design, siting, construction, operation, and maintenance of tall structures (e.g. transmission lines, communication towers, wind turbines).
- Raise awareness among wildlife observers to avoid approaching nesting sites.

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