

Shorebirds of Conservation Concern in the United States of America – 2015

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BACKGROUND

The most recent assessments of the conservation status of shorebirds that occur regularly in the USA were conducted by the U.S. Shorebird Conservation Plan (USSCP) partners in 2004 and the U.S. Fish and Wildlife Service as part of the 2008 Birds of Conservation Concern (BCC). To contribute to the upcoming revision of the Birds of Conservation Concern and recent update of the “Watch List” (Rosenberg *et al.* 2014), USSCP partners undertook a re-assessment of the conservation status of shorebirds occurring in the USA. The current assessment incorporates: 1) new information on shorebird population sizes and trends, 2) a GIS computation of breeding and nonbreeding range sizes, 3) a revised threats assessment, and 4) climate change vulnerability. An additional, major change from past conservation assessments is the adoption of the Partners in Flight (PIF) assessment scoring process to evaluate shorebird populations. The PIF process was adopted to create a more unified approach to conservation assessment of landbirds, shorebirds, and waterbirds.

ASSESSMENT CRITERIA

Elements and criteria developed by Partners in Flight (Panjabi *et al.* 2012) were used to assess shorebird populations. Although the five main assessment elements remain the same as those used in previous shorebird assessments, the scoring criteria differ. Scores (from 1 to 5) and their criteria are presented below for each assessment element. Shorebird populations were assessed and scored at three levels: 1) entire, global populations; 2) populations occurring (generally breeding) in Canada and the USA; and 3) specific, recognizable subspecies or populations occurring in the USA or Canada. Species level taxonomy follows the American Ornithologists’ Union Checklist of North American Birds (1998) and supplements through the 55th in 2014. Designation of shorebird subspecies and populations follow the recommendations of Brown *et al.* (2000) and those reported in Andres *et al.* 2012.

POPULATION SIZE (PS)

Andres *et al.* (2012) was used as the source of data for scoring USA/Canada shorebird population sizes. Global populations were scored based on data compiled by Wetlands International (2012). When minimums and maximums were reported, the midpoint was used to score the population. Population sizes were assessed and scored at the global, USA/Canada (occasionally including the Caribbean, Russia, and Mexico), and subspecies/population levels.

Score	Criteria
1	$\geq 50,000,000$ individuals
2	$< 50,000,000$ and $\geq 5,000,000$ individuals
3	$< 5,000,000$ and $\geq 500,000$ individuals
4	$< 500,000$ and $\geq 50,000$ individuals
5	$< 50,000$ individuals

BREEDING DISTRIBUTION (BD) AND NONBREEDING DISTRIBUTION (ND)

Breeding and non-breeding distribution range sizes were calculated from BirdLife International and NatureServe maps (2012) in AcrMap[®] 10.1 using the Eckert IV projection. Two-dimensional polygons were used for all ranges. Range sizes were assessed and scored at the global, USA/Canada, and subspecies/population levels.

Score	Criteria
1	$\geq 4,000,000$ km ²
2	$\geq 1,000,000$ and $< 4,000,000$ km ²
3	$\geq 300,000$ and $< 1,000,000$ km ²
4	$\geq 80,000$ and $< 300,000$ km ²
5	$< 80,000$ km ²

BREEDING THREATS (TB) AND NONBREEDING THREATS (TN)

The complete set of threats identified by Salafsky *et al.* (2008) was narrowed and combined for relevancy to shorebirds and scored based on their combined severity and scope within shorebird breeding and nonbreeding (including migration) ranges. Threats were assessed and scored only at the USA/Canada and subspecies/population levels.

Score	Criteria
1	will not impair the population in the future
2	will slightly to moderately degrade the population but are localized in scope
3	will seriously degrade or eliminate the population over some portion of its range
4	will moderately degrade the population over most of its range
5	will seriously degrade or eliminate the population over much of its range

POPULATION TREND (PT)

The long-term (30-year) qualitative or quantitative population trend reported in Andres *et al.* (2012) was used in this assessment. Reliable, quantitative information on trends is lacking for many shorebirds, and Breeding Bird Survey, on which the Partners in Flight assessment relies on for many species, provides information on only a few shorebird species. Accordingly, a more qualitative set of criteria was used to score population trend. Trends were assessed and scored at the USA/Canada and subspecies/population levels.

Score	Criteria
1	substantial increase
2	small increase or increase suspected
3	stable or unknown
4	moderate decrease or decrease suspected
5	substantial decrease

CLIMATE CHANGE VULNERABILITY

Galbraith *et al.* (2014) used six climate change related factors to evaluate the vulnerability of USA/Canada shorebirds: 1) changes in breeding habitat, 2) changes in migration habitat, 3) changes in wintering habitat, 4) dependence on ecological synchronicities, 5) migration distance, and 6) habitat specialization. Numerical scores were extracted from Galbraith *et al.* (2014) and expanded to cover all taxa in this assessment. Total scores in their system ranged from -14 (major habitat gains) to 30 (major effects on all factors).

CONSERVATION CATEGORIES

The following combinations of assessment elements, based primarily on Panjabi *et al.* (2012) for the Watch List 2014 and the U.S. Fish and Wildlife Service (2008) for the Birds of Conservation Concern, were used to assign shorebird populations to categories of conservation concern.

ESA LISTED (ESA)

A shorebird population that is listed under the U.S. Endangered Species Act (ESA). Recovery plans are developed and actions are being implemented. Includes one species (Eskimo Curlew) that is likely extinct.

WATCH LIST (WL)

A shorebird is included on the overall Watch List 2014 if either CCS(B) or CCS(N) ≥ 14 , or either CCS(B) or CCS(N) = 13 and PT = 5, where CCS(B) is Combined Continental Score (Breeding) = PS + BD + TB + PT and CCS(N) is Combined Continental Score (Nonbreeding) = PS + ND + TN + PT. For a species with a broad global distribution, the USA/Canada population is included if it met the criteria above. If only a single subspecies or population met the criteria above, it is designated as a “taxa below species” on the Watch List 2014 and is included here.

Within the Watch List 2014, species were grouped into *Red* and *Yellow Lists*. Criteria for the *Red List* follow the definition of *Immediate Management Action* below, and the *Yellow List* was divided into species or population needing *Management Attention* or *Long-term Planning and Responsibility* (also defined below). Based on past definitions, the categories of *Immediate Management Action* and *Management Attention* constitute criteria for the revised U.S. Fish and Wildlife Service's Birds of Conservation Concern (BCC).

Immediate Management Action (IM)

On the Watch List 2014 and $CCS(B)$ or $CCS(N) > 16$, or either $CCS(B)$ or $CCS(N) = 16$ and $(PT + PS) > 8$. Immediate conservation actions should be taken.

Management Attention (MA)

On the Watch List 2014 but not in the Immediate Action category; include if $PT + TB > 6$ or $PT + TN > 6$. Specific management attention is needed for this shorebird.

Long-term Planning & Responsibility (PR)

On the Watch List 2014 but neither IM nor MA and does not meet Birds of Conservation Concern criteria. The shorebird population warrants periodic monitoring and evaluation.

CLIMATE CHANGE VULNERABILITY (CC)

For a species already meeting Watch List 2014 criteria, a total score of ≥ 26 from Galbraith *et al.* (2014) is considered extremely vulnerable to climate change and requires immediate management action. A score between 23 and 25 from Galbraith *et al.* (2014) is considered highly vulnerable to climate change and triggers management attention. A taxon not included on the Watch List 2014 but had scores from Galbraith *et al.* (2014) between 20 and 22 is designated as having moderate climate change vulnerability and warrants periodic monitoring and evaluation.

COMMON SHOREBIRDS IN DECLINE (CSD)

Populations that do not meet Watch List 2014 or climate change vulnerability criteria but have substantial population declines ($PT = 5$).

LEAST CONCERN (LC)

A shorebird population that does not meet the criteria for Watch List 2014 or increased climate change vulnerability.

ASSESSMENT RESULTS

Seventy-four shorebird taxa occurring regularly in the USA were evaluated; three North American shorebird taxa that breed in the northern Canadian Arctic and winter in Europe were excluded (Common Ringed Plover, *interpres* Ruddy Turnstone, and *islandica* Red Knot). To present the most parsimonious list of shorebirds of conservation concern, some taxa within a species were pooled by similar scores; also some taxa had to be combined because they could not be uniquely scored. Thus, conservation statuses of 59 shorebirds species, subspecies, or populations were generated. Of these, 17 global species and eight USA/Canada populations met Watch List 2014 criteria. This number is a 14% increase over the 22 shorebirds listed on the 2007 Watch List (Butcher *et al.* 2007). An additional four taxa below the species or USA/Canada population level also met Watch List 2014 criteria. Six taxa of four shorebird species were listed under the ESA in 2007, and one additional taxon was added in 2014.

Not considering taxa listed under the ESA, eight species or populations require Immediate Management Action, and 15 species or populations need Management Attention. Although not on the Watch List 2014, the Sanderling needs Management Attention because of high climate change vulnerability. Excluding the sport-hunted American Woodcock, these 22 shorebird species or populations meet criteria for inclusion on the U.S. Fish and Wildlife Service's list of Birds of Conservation Concern; 21 shorebird taxa were included in the last BCC (U.S. Fish and Wildlife Service 2008). Two USA/Canada populations of common shorebirds show substantial declines. Only 17 shorebirds taxa (23% of all taxa) are considered of least concern.

Twenty-nine taxa were considered as either "Highly Imperiled" or of "High Concern" in the last conservation assessment by the U.S. Shorebird Conservation Plan partners in 2004. In the 2014 assessment, a similar number of taxa (28) are listed under the ESA, require Immediate Management Action, or need Management Attention. However, conservation concern increased or decreased for 7-8 taxa between the two assessments. In general, the conservation landscape has not improved much for shorebirds during the last decade.

Below are listed all evaluated shorebird taxa grouped by their conservation status. Additional details on Watch List 2014 and climate change vulnerable taxa are provided in Appendix 1.

ESA LISTED

- Black-necked Stilt (Hawaiian)
- Snowy Plover (Pacific Coast)
- Piping Plover
- Eskimo Curlew
- Red Knot (Canada breeding)

WATCH LIST

Immediate Management Action (BCC)

Snowy Plover (Interior USA, Gulf of Mexico, Caribbean breeding)
Mountain Plover
American Oystercatcher (USA/Canada breeding)
Whimbrel (Canada breeding)
Bristle-thighed Curlew
Bar-tailed Godwit (Alaska breeding)
Ruddy Turnstone (Canada breeding)
Red Knot (Western Alaska/Russia breeding)

Management Attention (BCC)

American Golden-Plover
Wilson's Plover (USA breeding)
Willet
Lesser Yellowlegs
Whimbrel (Alaska breeding)
Long-billed Curlew
Hudsonian Godwit
Marbled Godwit
Sanderling (USA/Canada non-breeding)
Dunlin (Northern Alaska breeding)
Buff-breasted Sandpiper
Pectoral Sandpiper
Semipalmated Sandpiper
Short-billed Dowitcher (Central and Eastern Canada breeding)
American Woodcock

Long-term Planning and Responsibility

Pacific Golden-Plover (Alaska breeding)
Black Oystercatcher
Black Turnstone
Dunlin (Western Alaska and Canada breeding)
Rock Sandpiper (Bering Sea Islands breeding)
Purple Sandpiper (Canada breeding)
Short-billed Dowitcher (Alaska/Western Canada breeding)

MODERATE CLIMATE CHANGE VULNERABILITY

American Avocet (USA/Canada breeding)
Black-bellied Plover (Alaska/Canada breeding)
Ruddy Turnstone (Alaska breeding)
Surfbird
Western Sandpiper

COMMON SHOREBIRDS IN DECLINE

Killdeer (USA/Canada breeding)
Red-necked Phalarope (Alaska/Canada breeding)

LEAST CONCERN

Black-necked Stilt (USA/Canada breeding)
Semipalmated Plover
Spotted Sandpiper
Solitary Sandpiper
Wandering Tattler
Greater Yellowlegs
Upland Sandpiper
Sharp-tailed Sandpiper (Alaska migrants)
Stilt Sandpiper
Rock Sandpiper (Aleutians breeding; mainland Alaska/Russia breeding)
Baird's Sandpiper
Least Sandpiper
White-rumped Sandpiper
Long-billed Dowitcher
Wilson's Snipe
Wilson's Phalarope
Red Phalarope (Alaska/Canada breeding)

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Appendix 1. The conservation status of shorebird species, subspecies, and populations occurring regularly in the USA – 2015.

Common name	Scientific name	Conservation Concern ¹							Population or subspecies
		ESA	IM	MA	PR	CC	WL	LC	
Black-necked Stilt	<i>Himantopus mexicanus</i>							X	USA/Canada breeding <i>mexicanus</i> subspecies
Black-necked Stilt	<i>Himantopus mexicanus</i>	X					X		Hawaiian <i>knudseni</i> subspecies
American Avocet	<i>Recurvirostra americana</i>					X			Global
Black-bellied Plover	<i>Pluvialis squatarola</i>					X			Alaska breeding <i>squatarola</i> and Canada breeding <i>cynosurae</i> subspecies
American Golden-Plover	<i>Pluvialis dominica</i>			X			X		Global
Pacific Golden-Plover	<i>Pluvialis fulva</i>				X		X		Alaska breeding population
Snowy Plover	<i>Charadrius nivosus</i>	X						X	Pacific Coast <i>nivosus</i> subspecies; includes Mexico breeders
			X						Interior USA/Mexico and Gulf of Mexico <i>nivosus</i> subspecies; <i>tenuirostris</i> subspecies in Caribbean
Wilson's Plover	<i>Charadrius wilsonia</i>			X			X		USA breeding <i>wilsonia</i> subspecies
Semipalmated Plover	<i>Charadrius semipalmatus</i>							X	Global; includes a small number of Russia breeders
Piping Plover	<i>Charadrius melodus</i>	X					X		All populations (<i>melodus</i> , <i>circumcinctus</i> [Great Lakes breeding], <i>circumcinctus</i> [Great Plains breeding]); SARA ³
Killdeer	<i>Charadrius vociferous</i>							D ²	USA/Canada breeding <i>vociferous</i> subspecies
Mountain Plover	<i>Charadrius montanus</i>		X				X		Global; includes Mexico breeders; SARA
American Oystercatcher	<i>Haematopus palliatus</i>		X				X		USA/Canada breeding <i>palliatus</i> subspecies
Black Oystercatcher	<i>Haematopus bachmani</i>				X		X		Global; includes a small number of Mexico breeders
Spotted Sandpiper	<i>Actitis macularius</i>							X	Global
Solitary Sandpiper	<i>Tringa solitaria</i>							X	Global; <i>solitaria</i> and <i>cinnamomea</i> subspecies
Wandering Tattler	<i>Tringa incana</i>							X	Global; includes a small number of Russia breeders
Greater Yellowlegs	<i>Tringa melanoleuca</i>							X	Global
Willet	<i>Tringa semipalmata</i>			X			X		Global; <i>semipalmata</i> and <i>inornata</i> subspecies
Lesser Yellowlegs	<i>Tringa flavipes</i>			X			X		Global
Upland Sandpiper	<i>Batramia longicauda</i>							X	Global
Eskimo Curlew	<i>Numenius borealis</i>	X					X		Presumed extinct; SARA

Common name	Scientific name	Conservation Concern ¹							Population or subspecies
		ESA	IM	MA	PR	CC	WL	LC	
Whimbrel	<i>Numenius phaeopus</i>		X				X		Canada breeding <i>hudsonicus</i> subspecies
				X					Alaska breeding <i>rufiventris</i> subspecies
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>		X				X		Global
Long-billed Curlew	<i>Numenius americanus</i>			X			X		Global; no subspecies recognized; SARA
Hudsonian Godwit	<i>Limosa haemastica</i>			X			X		Alaska/Mackenzie River breeding and Hudson Bay breeding populations
Bar-tailed Godwit	<i>Limosa lapponica</i>		X				X		Alaska breeding <i>baueri</i> subspecies; elevated due to extreme climate change vulnerability
Marbled Godwit	<i>Limosa fedoa</i>			X			X		All three populations/subspecies (<i>fedoa</i> [Great Plains breeding], <i>fedoa</i> [Hudson Bay breeding], <i>beringiae</i>)
Ruddy Turnstone	<i>Arenaria interpres</i>		X				X		Canada breeding <i>morinella</i> subspecies; elevated due to extreme climate change vulnerability
						X			Alaska breeding <i>interpres</i> subspecies
Black Turnstone	<i>Arenaria melancephala</i>				X		X		Global
Red Knot	<i>Calidris canutus</i>	X					X		Canada breeding <i>rufa</i> subspecies; SARA
			X						Alaska/Russia breeding <i>roselaari</i> subspecies; SARA
Surfbird	<i>Calidris virgata</i>					X			Global
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>							X	Alaska migrant juveniles
Stilt Sandpiper	<i>Calidris himantopus</i>							X	Global
Sanderling	<i>Calidris alba</i>			X					USA/Canada non-breeding population; elevated due to high climate change vulnerability
Dunlin	<i>Calidris alpina</i>			X			X		Northern Alaska breeding <i>arctica</i> subspecies; East Asian Australasian Flyway
					X				Canada breeding <i>hudsonia</i> and western Alaska breeding <i>pacifica</i> subspecies
Rock Sandpiper	<i>Calidris ptilocnemis</i>				X		X		Bering Sea Island breeding <i>ptilocnemis</i> subspecies
								X	Aleutian Island breeding <i>cousei</i> and Western Alaska/Russia breeding <i>tshuktschorum</i> subspecies
Purple Sandpiper	<i>Calidris maritima</i>				X		X		Canada breeding <i>maritima</i> and <i>belcheri</i> subspecies

Common name	Scientific name	Conservation Concern ¹							Population or subspecies
		ESA	IM	MA	PR	CC	WL	LC	
Baird's Sandpiper	<i>Calidris bairdii</i>							X	Global; includes a small number of Russia breeders
Least Sandpiper	<i>Calidris minutilla</i>							X	Global
White-rumped Sandpiper	<i>Calidris fuscicollis</i>							X	Global
Buff-breasted Sandpiper	<i>Calidris subruficollis</i>			X			X		Global; includes a small number of Russia breeders
Pectoral Sandpiper	<i>Calidris melanotos</i>			X			X		Global; includes Russia breeders
Semipalmated Sandpiper	<i>Calidris pusilla</i>			X			X		Global; eastern Canada breeding population most concern, but overlap of all populations in South American wintering areas
Western Sandpiper	<i>Calidris mauri</i>					X			Global; includes Russia breeders
Short-billed Dowitcher	<i>Limnodromus griseus</i>			X				X	Global; eastern Canada breeding <i>griseus</i> and central Canada breeding <i>hendersoni</i> subspecies
					X				Global; Alaska/Western Canada breeding <i>caurinus</i> subspecies
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>							X	Global; includes a small number of Russia breeders
Wilson's Snipe	<i>Gallinago delicata</i>							X	Global
American Woodcock	<i>Scolopax minor</i>			X			X		Global; eastern and central management units
Wilson's Phalarope	<i>Phalaropus tricolor</i>							X	Global
Red-necked Phalarope	<i>Phalaropus lobatus</i>							D ²	Alaska/Canada breeding; declines in eastern Canada
Red Phalarope	<i>Phalaropus fulicarius</i>							X	Alaska/Canada breeding
Totals		5	8	15	7	5	29	17	Watch List 2014 include 25 full species or entire Global or USA/Canada populations; two common shorebird species in decline

¹ Action categories: ESA – listed under the U.S. Endangered Species Act; IM – requires immediate conservation action, meets criteria for the Birds of Conservation Concern (BCC); MA – needs management attention, meets BCC criteria; PR – long-term planning and responsibility, on Watch List 2014 but not IM or MA; CC – increased climate change vulnerability but not otherwise on Watch List 2014; WL – meets Watch List 2014 criteria as a global species, USA/Canada population, or a taxa below these levels.

² D = common shorebird in decline

³ SARA = taxa listed under Canada's Species At Risk Act