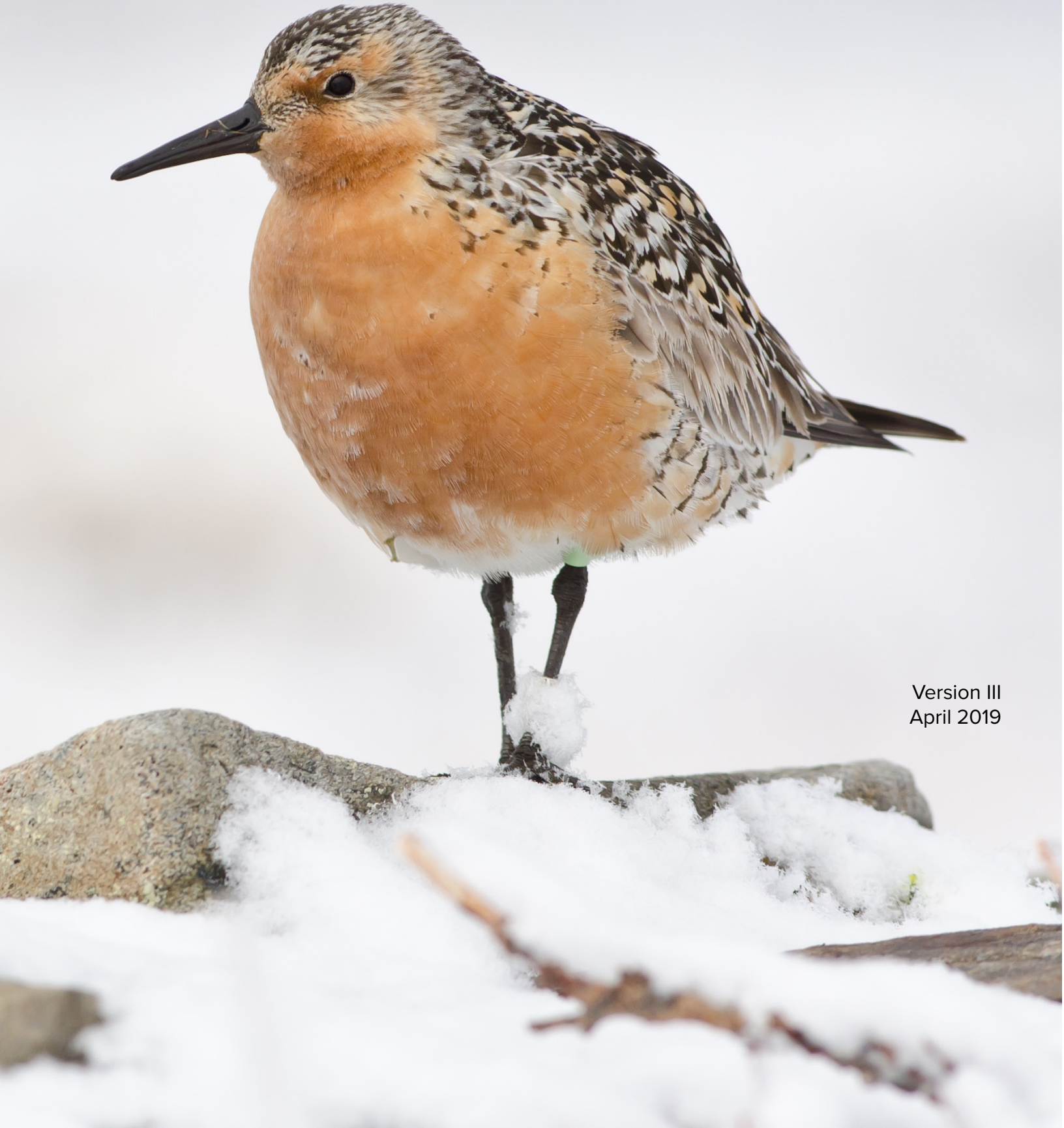
Alaska Shorebird Conservation Plan:
Executive Summary



Version III
April 2019

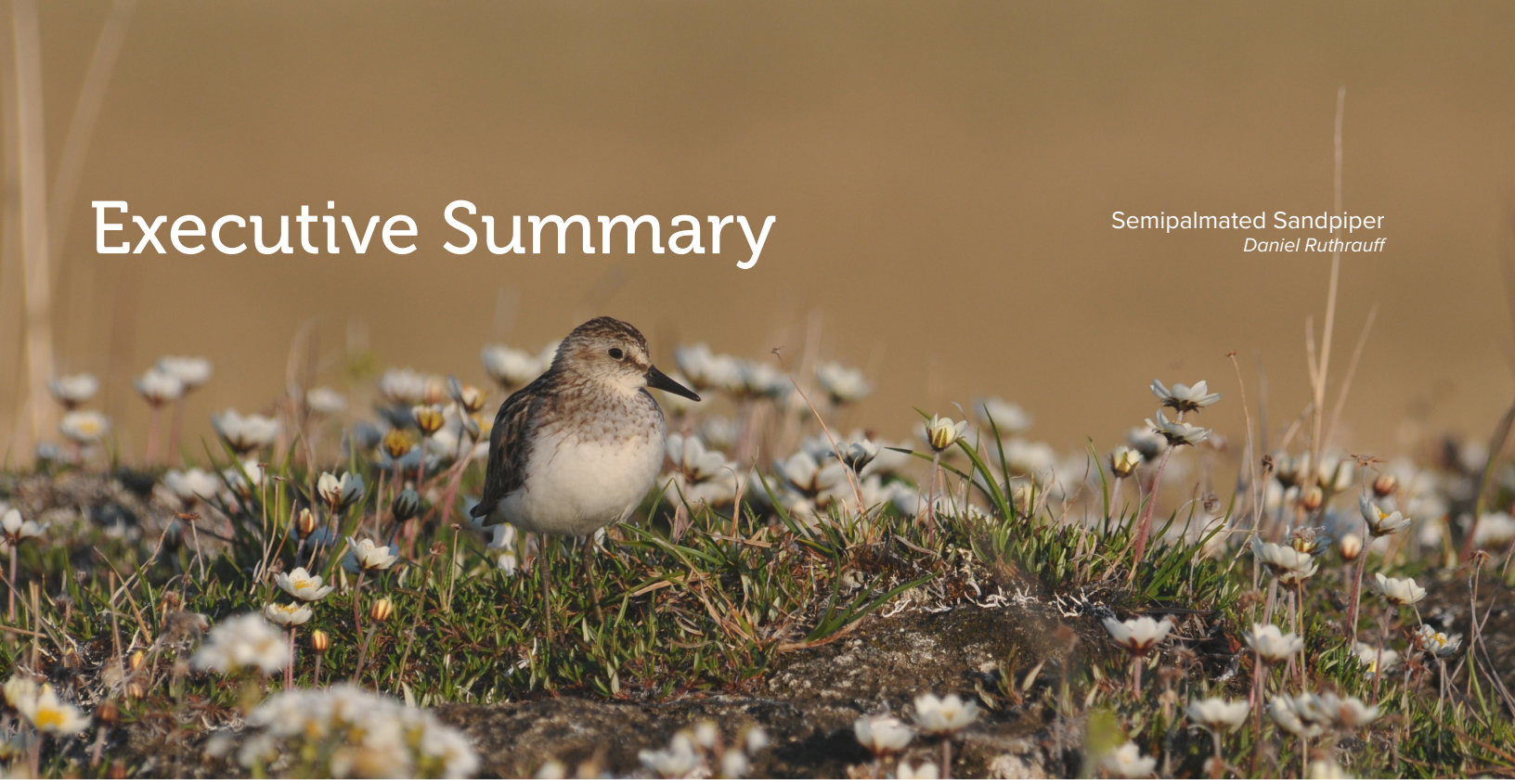
Alaska Shorebird Conservation Plan:
Executive Summary
Version III

Suggested Citation:
Alaska Shorebird Group. 2019. Alaska Shorebird Conservation Plan: Executive Summary. Version III. Alaska Shorebird Group, Anchorage, AK.

The Alaska Shorebird Conservation Plan and updates can be viewed and downloaded at:
https://www.fws.gov/alaska/mbsp/mbm/shorebirds/plans.htm

Cover: Male Red Knot on breeding territory, Seward Peninsula, Alaska. *Photo by Lucas DeCicco.*

Executive Summary



Semipalmated Sandpiper
Daniel Ruthrauff

Alaska's immense size, diverse habitats, and position at the terminus of several migratory flyways make it a critical region for breeding and migrating shorebirds. Seventy-seven species of shorebirds have been recorded in Alaska—over one-third of the world's species. Of these, 37 are regular breeders and 17 irregular. About one-third of the world's 100 million shorebirds reside in Alaska, and individual species' populations range in size from a few thousand to several million. Three species and seven subspecies breed nowhere else. Seven species are year-round residents of Alaska, but most shorebird species are migratory. These migratory species connect Alaska to sites in North, Central, and South America, Asia, and locations throughout Oceania. During migration, shorebirds concentrate in huge numbers at many coastal staging and migratory stopover sites throughout Alaska. Of particular note are the Copper River Delta and the Yukon-Kuskokwim Delta, sites that support millions of migrant shorebirds during spring and fall migration, respectively.

Shorebird populations in North America suffered dramatic population declines at the turn of the 20th century and many continue to decline. Of the 41 shorebird populations known to breed in Alaska, 7 have experienced a substantial decrease in population size and 12 a moderate decrease or suspected decrease. Many of these declines can be attributed to habitat loss and degradation, although climate change and other factors are also responsible. Shorebirds face threats throughout their annual cycles, and these threats have the potential to carry over and compound, complicating the conservation of the species group.

While shorebird habitats in Alaska are still relatively intact and conservation threats are mostly limited to local areas, concerns nevertheless exist here, especially for our highest priority species. To address ongoing and heightened concerns about Alaska's shorebirds and to take advantage of new knowledge gained over the last decade, the Alaska Shorebird Group (ASG) completed this revision of the 2008 version of the Alaska Shorebird Conservation Plan. This version has two sections. Part I presents an overview of shorebirds occurring within Alaska, describes the priority species, discusses real and potential conservation issues facing shorebirds throughout Alaska, and presents a conservation strategy focused on six major themes. Part II describes the priority species, important shorebird areas, and conservation issues and actions pertinent to each of Alaska's five Bird Conservation Regions (BCRs). We also have added an "emerging conservation issues" section within each BCR that describes threats that have the potential to negatively affect shorebirds in the near future. Anticipation of these looming threats to shorebirds should facilitate the implementation of conservation efforts that are more effective through time. Finally, we evaluated recent conservation progress in

each BCR to inform the reader of studies conducted since the last version of the plan was written.

We identified 17 shorebird taxa of greatest (3) or high (14) conservation concern and 12 "Alaska Stewardship" taxa. The categories of conservation concern were based on the species prioritization process developed by the U.S. National Shorebird Conservation Partnership. In this process, species considered of greatest and high priority tend to have small or declining global populations, imminent threats or limited distributions during some phase of their annual cycle, and are thought to be vulnerable to climate change. The Alaska Stewardship taxa have lower conservation priority scores nationally, but ≥50% of their North American populations occur in Alaska during their annual cycles. Across Alaska, each BCR hosts about 16 (range: 11–20) priority taxa, nearly all of which are recognized as such by more than one BCR. To better describe the conservation issues facing these species, we prepared species accounts detailing the natural history of each of these taxa (see Appendix 8).

We identified three major conservation issues facing shorebirds in Alaska: climate change and severe weather, pollution, and actions related to energy production and mining. Other issues may negatively affect particular shorebird species, but currently tend to be of less significance in geographic scope or severity. These include residential and commercial development; agriculture and aquaculture; transportation and service corridors; biological resource use; human intrusions and disturbance; and invasive and problematic species, pathogens, and genes. In Alaska, these threats affect species in different ways depending on where and when shorebirds breed, migrate, or spend the winter. Unfortunately, logistical and financial constraints that limit data collection frequently make it difficult to estimate what effect these threats are having on local shorebird populations, let alone if there is a population-level effect. However, it is clearly important to continue evaluating the cumulative impacts of conservation threats to shorebirds both within Alaska and across their annual cycle.

We also developed a conservation strategy that focuses on a combination of research, population monitoring and inventory, habitat management and protection, education and outreach, international collaborations, and new to this version, an evaluation of conservation progress. The ASG suggests the most crucial need for research is to identify the predominant factor(s) limiting shorebird populations so the most effective conservation actions are implemented to stop and reverse population declines. This may require studies exploring effects of climate change, legal and illegal harvest, macro- and micro-scale habitat selection, and the adaptability to naturally occurring or human-induced changes on the landscape. Especially needed is a better understanding of the relative importance of each of these factors in limiting shorebird populations within Alaska and throughout their annual cycle. The ASG also recommends implementing rigorously designed protocols for monitoring the status and trends of shorebird populations in Alaska, with a focus on priority species with small or declining populations, or in regions or habitats where collecting accurate and precise trend information is possible. Particularly lacking is information for species residing in alpine and boreal biomes, areas where few surveys have been conducted to date. To better prioritize the management and protection of habitats, the ASG recommends collecting additional information on the abundance and distribution of shorebirds so that bird-habitat models can be developed that identify high-quality areas for protection. Education and outreach may be the most important thing Alaskans can do to conserve shorebirds. The ASG encourages efforts to raise the profile of shorebirds through public presentations, media outreach, support of shorebird festivals, and collaboration with education programs. In the international and national arenas, we must integrate the management, research, and conservation efforts throughout a species' annual cycle. This will require us to join, cooperate with, and actively participate in national and international research and monitoring efforts, partnerships, and planning efforts. Finally, we encourage research and conservation efforts that focus on the topics of high priority identified in this plan, and ask that interested parties update the objectives and action items as conservation issues change through time. This plan is intended to be dynamic and reflect current priorities as well as past achievements. The usefulness of this document relies upon the continued participation and commitment of the greater shorebird community.

Part II of the plan includes information on each of the five BCRs within Alaska. Below, we provide a short synopsis of the most relevant information for each BCR.

Rock Sandpipers feeding in the shadow
of Mt. Redoubt during winter
Kasilof River, Cook Inlet
Daniel Ruthrauff

The Aleutian/Bering Sea Islands BCR (1) is composed of hundreds of low-elevation islands in the Bering Sea, most of which are administered by the Alaska Maritime National Wildlife Refuge. This BCR is small in area (18,000 km^2) but covers a vast region of the northern Pacific Ocean, and includes the St. Lawrence, St. Matthew, Pribilof, and Aleutian island groups. Primarily noted for the abundance and diversity of its seabird avifauna, the region nonetheless supports several important breeding populations of shorebirds. The entire *ptilocnemis* subspecies of Rock Sandpipers breeds in the BCR, as well as significant numbers of the *couesi* subspecies of Rock Sandpipers, and Black Oystercatchers. In total, 11 priority species either breed, migrate through, or winter in the BCR in significant numbers. This region is very remote and has a small human population, and so the greatest potential threats to shorebirds arise from the relatively large effect that marine-derived pollution and invasive and problematic species can have on island ecosystems.

The Western Alaska BCR (2) extends across western and southwestern Alaska from Kotzebue Sound to Kodiak Island and includes coastal plains, mountains, and three of Alaska's largest islands. There are 20 priority shorebird populations in the BCR, 15 of which breed in the region, 15 that occur during migratory periods, and 1 that winters in the region. BCR 2 supports high densities of both breeding and migrating shorebirds. Key breeding areas include the vast Yukon-Kuskokwim Delta, the Alaska Peninsula, the Seward Peninsula, and the Kodiak Archipelago. Important migratory stopover areas include the immense intertidal flats, coastal meadows, and berry-rich tundra of the Yukon-Kuskokwim Delta; the lagoons, estuaries, intertidal habitats, and coastal meadows of Bristol Bay and the Alaska Peninsula; and coastal habitats from Cape Espenberg to eastern Norton Sound. Together these sites host a unique assemblage of shorebirds, including significant portions of the North American breeding populations of species such as Bristle-thighed Curlew, Bar-tailed Godwit (*baueri* subspecies), Marbled Godwit (*beringiae* subspecies), Black Turnstone, Red Knot (*roselaari* subspecies), and Western Sandpiper. The most significant conservation issues affecting BCR 2 include climate-moderated habitat changes and alteration of climatological patterns, pollution associated with increased shipping traffic and mineral extraction activities, and the potential effect of subsistence harvest activities. Priority actions in BCR 2 include developing habitat models that predict species distributions and future habitat changes, continued participation in planning for natural resource management and resource extraction, and developing ways to engage subsistence users in shorebird conservation efforts.

The Arctic Plains and Mountains BCR (3) includes the low-lying coastal tundra, drier uplands of the Arctic Foothills of the Brooks Range, and montane areas of the Brooks Range. There are 19 shorebird species identified as priority within the BCR, including 18 species that breed in the region and 11 that migrate through the region. The coastal tundra provides some of the world's best breeding habitat for many calidridine sandpipers, plovers, dowitchers, and phalaropes. Indeed, >6 million shorebirds are thought to breed across the Beaufort Coastal Plain. The river deltas and coastal lagoons are used extensively by hundreds of thousands of postbreeding shorebirds between July and September. Some of the most extensive research and monitoring work in Alaska has been conducted in this BCR, although little work has occurred in the Arctic Foothills and montane areas of the Brooks Range. Priority conservation issues include energy production and mining, development of new transportation and service corridors, changes in the distribution and abundance of predators, and climate change that is affecting habitats and phenology of shorebirds and their prey. Both local and atmospheric/oceanic pollution are real issues, although not well studied. Emerging issues include human population growth, expansion of wind turbines, and the development of hard rock and coal resources. Additional studies are warranted to mitigate potential effects on shorebirds from oil and gas development planned for the 1002 Area of the Arctic National Wildlife Refuge.

The Northwestern Interior Forest BCR (4) comprises Alaska's interior boreal forest and mountains, as well as the maritime-influenced Cook Inlet. There are 17 priority taxa within this region, 10 of which breed in the region, 10 that occur during migratory periods, and 2 that winter in the region. Breeding species tend to occur at low densities in the mountains (American Golden-Plover, Surfbird, Wandering Tattler), foothills and tundra-taiga interface (Bristle-thighed Curlew, Whimbrel, Hudsonian Godwit), and lowland forests and wetlands (Solitary Sandpiper, Lesser Yellowlegs). Cook Inlet is important to wintering Rock Sandpipers, but

also to multiple species during migration, especially in the spring. Priority conservation threats include potential point-source effects of energy production (e.g., oil well spills in Cook Inlet) and mining, and associated pollution during transportation of energy products by tankers, trucks, trains, and pipelines. Expected effects of climate change include alteration of habitats due to ecosystem encroachment (e.g., elevational and latitudinal advance of treeline) and changes in temperature, precipitation, or hydrological regimes (e.g., wetland drying; more frequent, severer, and larger wildfires). Although most of Alaska's human population resides in this BCR, the residential, commercial, and industrial footprints therein are arguably small currently, especially given the vastness of the region. Nevertheless, an emerging issue is the likely incremental human encroachment, especially on important shorebird migration stopover sites and breeding areas. Designing, assessing, and implementing approaches to inventory boreal shorebirds and identify or refine their habitat associations are necessary to develop models for predicting species distribution and likely habitat changes. Such information is especially important for effective engagement in the region's substantial ongoing and anticipated natural resource development planning.

The Northern Pacific Rainforest BCR (5) encompasses the southeastern Alaska panhandle and portions of southcoastal Alaska. Of the 13 priority shorebird species that occur in the region, the majority (10 species) stop or stage there during spring migration, with fewer species remaining in the region during breeding (3 species) and wintering (3 species) periods. Key migratory sites such as the Copper River Delta, Controller Bay, Yakutat Forelands, Mendenhall Wetlands, and Stikine River Delta support millions of shorebirds, including globally significant numbers of Red Knots, Dunlin, and Western Sandpipers. Substantial numbers of Marbled Godwits, Black Turnstones, Surfbirds, Short-billed and Long-billed dowitchers, and Red-necked Phalaropes also migrate along the region's coast. Priority conservation issues include human intrusions (primarily in the form of recreational use) and disturbance, pollution (e.g., increased shipping traffic and coinciding risk of fuel and oil spills), and climate change. Emerging conservation issues include energy production and mining and introduction and expansion of non-native plants that can diminish and degrade intertidal habitats. Activities aimed at monitoring shorebird populations and describing habitat use at key sites used during spring migration are needed.

The overall goal of this plan is to keep shorebirds and their habitats well distributed not only across the Alaska landscape, but also throughout regions used by these populations during other phases of their annual cycle. Previous versions and updates of this plan can be found at https://www.fws.gov/alaska/mbsp/mbm/shorebirds/plans.htm

Cotton Grass near Prudhoe Bay
Zak Pohlen

Acknowledgments

EDITORS

Daniel R. Ruthrauff, USGS Alaska Science Center
H. River Gates, Pacifica Ecological Services
Christopher M. Harwood, U.S. Fish and Wildlife Service
James A. Johnson, U.S. Fish and Wildlife Service
Richard B. Lanctot, U.S. Fish and Wildlife Service

PART 1 CONTRIBUTORS

H. River Gates, Pacifica Ecological Services
Christopher M. Harwood, U.S. Fish and Wildlife Service
James A. Johnson, U.S. Fish and Wildlife Service
Richard B. Lanctot, U.S. Fish and Wildlife Service

PART 2 BIRD CONSERVATION REGION CONTRIBUTORS

BCR 1

Daniel R. Ruthrauff, USGS Alaska Science Center

BCR 2

Kristine M. Sowl (Chair), U.S. Fish and Wildlife Service
Melissa N. Cady, U.S. Fish and Wildlife Service
Liliana C. Naves, Alaska Department of Fish and Game
Susan E. Savage, U.S. Fish and Wildlife Service

BCR 3

Debora A. Nigro (Chair), Bureau of Land Management
Audrey R. Taylor, University of Alaska Anchorage
Richard B. Lanctot, U.S. Fish and Wildlife Service
Stephen C. Brown, Manomet
Roy Churchwell, U.S. Fish and Wildlife Service
Christopher J. Latty, U.S. Fish and Wildlife Service

BCR 4

Christopher M. Harwood (Chair), U.S. Fish and Wildlife Service
Jeff D. Mason, Salcha-Delta Soil and Water Conservation District

BCR 5

Cheryl A. Carrothers (Chair), U.S. Forest Service
Gwen S. Baluss, U.S. Forest Service
Christopher P. Barger, Alaska Department of Fish and Game
Mary Anne Bishop, Prince William Sound Science Center
James A. Johnson, U.S. Fish and Wildlife Service
Susan A. Oehlers, U.S. Forest Service
Erin E. Cooper, U.S. Forest Service
Melissa L. Gabrielson, U.S. Forest Service
Rob D. MacDonald, U.S. Forest Service

CONTRIBUTORS

John Brewer, U.S. Fish and Wildlife Service
Lucas H. DeCicco, U.S. Fish and Wildlife Service
Tom Rothe, Pacific Birds Habitat Joint Venture
Sarah T. Saalfeld, U.S. Fish and Wildlife Service

SPECIES ACCOUNT AUTHORS

Megan L. Boldenow: Semipalmated Sandpiper
Willow B. English: Red-necked Phalarope
H. River Gates: Wandering Tattler
Christopher M. Harwood: Whimbrel
James A. Johnson: Red Knot
Oscar W. Johnson: American and Pacific Golden-Plover
Richard B. Lanctot: Buff-breasted Sandpiper and Dunlin
Jeff D. Mason: Surfbird
Brian H. Robinson: Black Oystercatcher
Daniel R. Ruthrauff: Marbled Godwit and Rock Sandpiper
Sarah T. Saalfeld: Long-billed Dowitcher
Nathan R. Senner: Hudsonian Godwit
Kristine M. Sowl: Black-bellied Plover
Audrey R. Taylor: Black Turnstone
T. Lee Tibbitts: Bar-tailed Godwit, Bristle-thighed Curlew, and Lesser Yellowlegs
Nils Warnock: Pectoral, Sharp-tailed, Solitary, and Western Sandpipers; Short-billed Dowitcher; and Ruddy Turnstone

FIGURES

Daniel R. Ruthrauff, USGS Alaska Science Center
Sarah T. Saalfeld, U.S. Fish and Wildlife Service

LAYOUT AND DESIGN

Mary Whalen, USGS Alaska Science Center

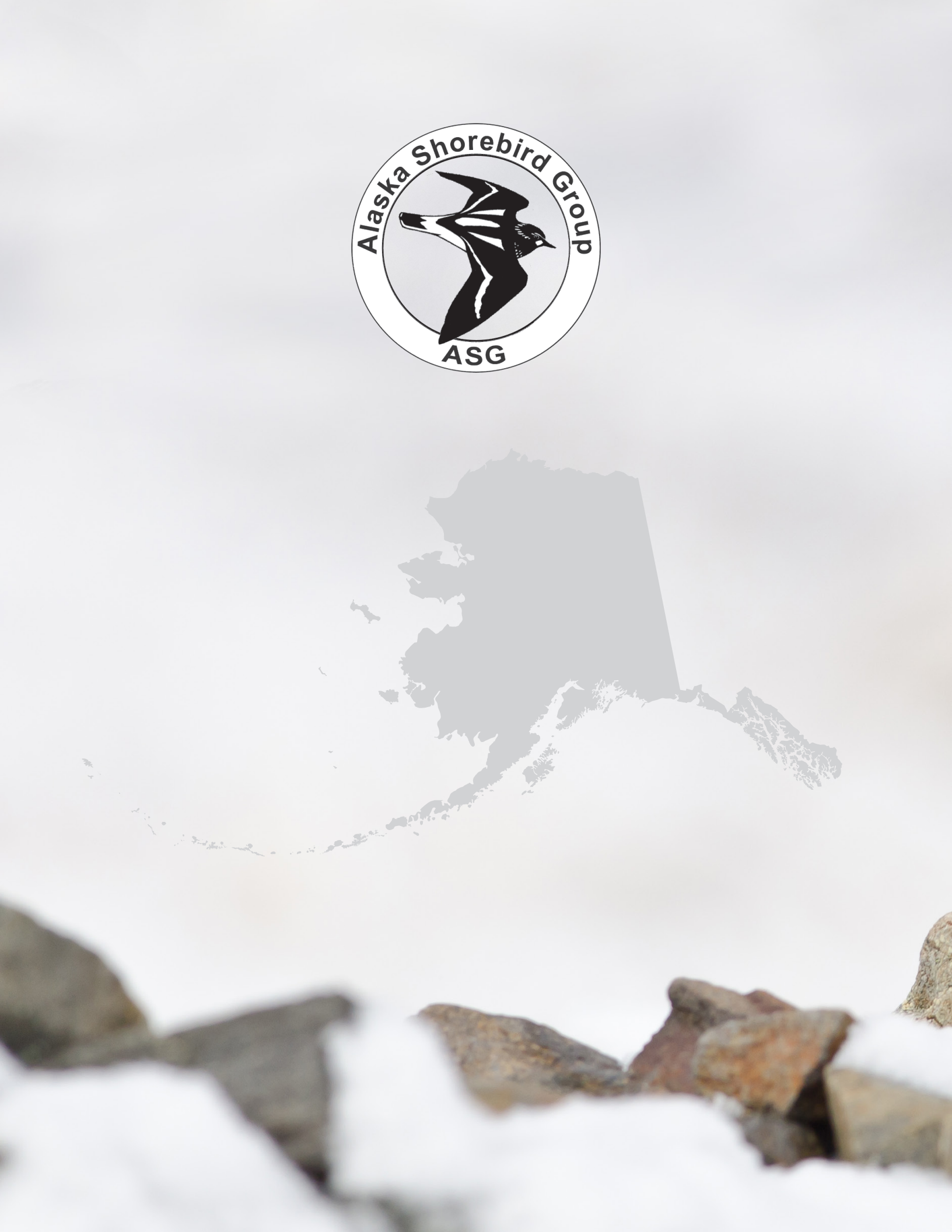
The revision of the plan was made possible by generous donations from the Alaska Department of Fish and Game, Threatened, Endangered and Diversity Program; Audubon Alaska; Bureau of Land Management; U.S. Fish and Wildlife Service, Division of Migratory Bird Management; U.S. Geological Survey Alaska Science Center; U.S. Forest Service, International Programs; and Manomet, Inc.

This plan benefitted greatly from the primary contributors to previous editions of the Alaska Shorebird Conservation Plan: Brad Andres (U.S. Fish and Wildlife Service), Robert E. Gill, Jr. (USGS Alaska Science Center), Colleen M. Handel (USGS Alaska Science Center), Steve Kendall (U.S. Fish and Wildlife Service), Brian J. McCaffery (U.S. Fish and Wildlife Service), Julie A. Morse (The Nature Conservancy), Debora A. Nigro (Bureau of Land Management), Audrey Taylor (University of Alaska, Anchorage), T. Lee Tibbitts (USGS Alaska Science Center), and Pavel Tomkovich (University of Moscow, Russia). Beth Grassi diligently executed her duties as copy editor for this plan. Additionally, the contributed time and expertise of the following individuals helped improve this version of the plan: Stacia Backensto (National Park Service), Brad Bales (Pacific Birds Habitat Joint Venture), Bonnie Bennetsen (U.S. Forest Service), Rebecca McGuire (Wildlife Conser-

vation Society), Bret Christensen (U.S. Forest Service), Heather Coletti (National Park Service), Robin Corcoran (U.S. Fish and Wildlife Service), Gary Drew (USGS Alaska Science Center), Jessica Ilse (U.S. Forest Service), Kim Jochum (Colorado State University), Kim Kloecker (USGS Alaska Science Center), Chris Krenz (Alaska Department. Fish and Game), Joe Liebezeit (Audubon Society of Portland), Ellen Martin (Colorado State University), Phillip Martin (U.S. Fish and Wildlife Service), George Matz (Kachemak Bay Birders), Aaron Poe (Alaska Conservation Foundation), Heather Renner (U.S. Fish and Wildlife Service), Nora Rojek (U.S. Fish and Wildlife Service), Marc Romano (U.S. Fish and Wildlife Service), Terry Schick (ABR, Inc.), Benjamin Sullender (Audubon Alaska), and Denny Zwiefelhofer (U.S. Fish and Wildlife Service). Any use of trade, product or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

We also greatly appreciate the donations of images from photographers. Listed alphabetically.

- Mike Ausman
- Lucas DeCicco
- Samantha Franks
- Melissa Gabrielson
- Erica Gaeta
- Robert Gill, Jr.
- Christopher Harwood
- James Johnson
- Oscar Johnson
- Kevin Karlson
- Sean Meade
- Ken Plourde
- Zak Pohlen
- Matt Prinzing
- Rachel Richardson
- Danielle Rupp
- Daniel Ruthrauff
- Anne Schaefer
- Marian Snively
- Dena Strait
- Ted Swem


Alaska Shorebird Group
ASG