PACIFIC FLYWAY

Status Review: Pacific Coast Population of Sandhill Cranes

Adopted August 2020

Cover photograph: Sandhill crane, © 2011 Doug Ridgway.

This review was cooperatively developed for the Pacific Coast Population of sandhill cranes. Please direct inquiries to member States of the Pacific Flyway Council or to the Pacific Flyway Representative, U.S. Fish and Wildlife Service, Division of Migratory Bird Management, 1211 SE Cardinal Court, Suite 100, Vancouver, WA 98683-9684. Information regarding the Pacific Flyway Council and associated documents can be found at PacificFlyway.gov.

Suggested Citation:
Pacific Flyway Council. 2020. Status Review for the Pacific Coast Population of Sandhill Cranes. Pacific Flyway Council, care of U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Vancouver, Washington.

STATUS REVIEW

FOR THE

PACIFIC COAST POPULATION OF SANDHILL CRANES

Prepared for the

Pacific Flyway Council
U.S. Fish and Wildlife Service
Canadian Wildlife Service
Direccion General de Conservacion Ecologica de Recursos Naturales

by the

Pacific Coast Sandhill Crane Subcommittee
of the
Pacific Flyway Study Committee

August 2020
(Replaces the 1983 Management Plan)

Approved by 

Chairperson, Pacific Flyway Council

August 28, 2020

Date

ACKNOWLEDGEMENTS

This status review was prepared by Pacific Coast Sandhill Crane Subcommittee of the Pacific Flyway Study Committee. During the process of preparing this status review, those persons belonging to the Subcommittee and/or those that contributed significantly to its development include:

Jason Schamber, Alaska Department of Fish and Game
Melanie Weaver, California Department of Fish and Wildlife
Esther Burkett, California Department of Fish and Wildlife
Jeff Knetter, Idaho Department of Fish and Game
Brandon Reishus, Oregon Department of Fish and Wildlife
Joe Buchanan, Washington Department of Fish and Wildlife
Kyle Spragens, Washington Department of Fish and Wildlife
Joseph Sands, U.S. Fish and Wildlife Service, Interior Region 9 and 12
David Safine, U.S. Fish and Wildlife Service, Interior Region 11
Todd Sanders, U.S. Fish and Wildlife Service, Headquarters
Steve Olson, U.S. Fish and Wildlife Service, Headquarters
André Breault, Canadian Wildlife Service, Environment and Climate Change Canada
Gary Ivey, International Crane Foundation

TABLE OF CONTENTS

LIST OF FIGURES

PREFACE

The Pacific Flyway Council (Council) is an administrative body that forges cooperation among public wildlife agencies to protect and conserve migratory game birds in western North America. The Council is composed of the director or an appointee from the public wildlife agency in each state, province, and territory in the western United States, Canada, and Mexico. Migratory birds use four major migratory routes (Pacific, Central, Mississippi, and Atlantic flyways) in North America. Because of the unique biological characteristics and relative number of hunters in these regions, state and federal wildlife agencies adopted the flyway structure for administering migratory bird resources within the United States. Each flyway has its own Council.

Management plans and status reviews are developed by Council technical committees comprised of biologists from state, federal, and provincial wildlife and land-management agencies, universities, and others. These documents typically focus on populations, which are the primary unit of management, but may be specific to species or subspecies.

Management plans identify issues, goals, and actions for the cooperative management of migratory birds among State and Federal agencies to protect and conserve these birds in North America. Management of some migratory birds requires coordinated action by more than one flyway. Management plans identify common goals and objectives, establish priority of management actions and responsibility for them, coordinate collection and analysis of biological data, foster collaborative efforts across geo-political boundaries, document agreements on harvest strategies, and emphasize research needed to improve conservation and management. Population sustainability is the first consideration, followed by equitable recreational and subsistence harvest opportunities. Management plans generally have a 5-year planning horizon, with revisions as necessary to provide current guidance on coordinated management. Management strategies are recommendations and do not commit agencies to specific actions or schedules. Fiscal, legislative, and priority constraints influence the level and timing of management activities.

Status reviews are similar to, but simpler than management plans. Both review what is known about the status of a migratory bird population, and associated management concerns and activities. However, status reviews do not specify a desired future condition via goals and objectives, establish priority of management actions and responsibility for them, include harvest strategies, or emphasize research needed to improve conservation and management. Status reviews may be appropriate for populations that are generally not exposed to harvest, have few identified threats to their status, are lower in management priority relative to other migratory bird populations, and have few practical management options to affect population status. Status reviews may be revised and or updated as necessary should a major change occur.

This status review replaces the 1983 Pacific Flyway Management Plan for the Pacific Coast Population of Sandhill Cranes. The plan identified three management objectives:

1. Maintain abundance of the Pacific Coast population of sandhill cranes in California during winter at the current level of about 20,000–25,000 cranes.
2. Maintain production, migration, and wintering habitat in adequate quantity and quality to maintain population abundance and distribution.
3. Maintain consumptive and non-consumptive uses of this population.

The objectives from the 1983 plan have largely been achieved. The Pacific Coast Population of sandhill cranes has benefited from general conservation measures (e.g., habitat protection and hunting restrictions) and increased cereal grain production. Their breeding range has expanded, migration and staging areas are well identified, spring and fall harvest estimates in Alaska are similar to those in 1983, habitat protection initiatives have taken place range-wide, and viewing opportunities are available throughout breeding, migrating, and wintering areas. Although there are no known immediate threats to the status of Pacific Coast population of sandhill cranes, habitat losses, land use changes, human population growth and water management issues have the potential to impact wintering and staging areas.

STATUS REVIEW
FOR THE
PACIFIC COAST POPULATION OF SANDHILL CRANES

INTRODUCTION

The Pacific Coast Population of sandhill cranes (hereafter PCP cranes) breeds in southern Alaska and western British Columbia. These cranes are associated with two geographically separated areas: a more northern area in Bristol Bay and Cook Inlet of southcentral Alaska, and a more southern area in British Columbia and southeast Alaska (Figure 1). Cranes from both breeding areas winter in the Central Valley of California (Littlefield and Thompson 1982), although a small number, ostensibly linked to cranes breeding in the more southern area, winter in southwest Washington and northwest Oregon (Ivey et al. 2005).

The PCP cranes breeding in southcentral Alaska are recognized as lesser sandhill cranes (*Antigone canadensis canadensis*; Petrula and Rothe 2005), but the taxonomy of those breeding in southeast Alaska and British Columbia is undetermined. A study (Ivey et al. 2005) suggested these cranes may be a different subspecies however the taxonomic designation was inconclusive as the reported morphometrics ranged within those for both lesser and greater sandhill cranes. Further study is needed to discern the taxonomy of PCP cranes.

The PCP cranes share a common wintering area in the Central Valley of California with the Central Valley Population of sandhill cranes (CVP cranes). The Central Valley Population of cranes have a separate management plan (Pacific Flyway Council 1997) that provides management and conservation guidelines. The status of both PCP cranes and CVP cranes are monitored during winter when concentrated in wintering areas in the Central Valley of California. Unfortunately, subspecies (or population association) cannot be easily identified for this amalgamation of wintering sandhill cranes, from aerial surveys. In addition, there are no standard surveys conducted by wildlife management agencies in the Lower Columbia Basin.

Coordinated management of PCP cranes among Pacific Flyway states and provinces is challenging due to varying administrative jurisdiction within game and nongame programs, and varying conservation concern listings, taxonomic classifications and management scales. In addition, sandhill cranes are listed as endangered in Washington while only greater sandhill cranes are listed as threatened in California. Management of PCP cranes is generally limited to maintenance and protection of sandhill crane habitat. Fall-winter hunting of PCP cranes is limited to Alaska in addition to spring-summer subsistence harvest.

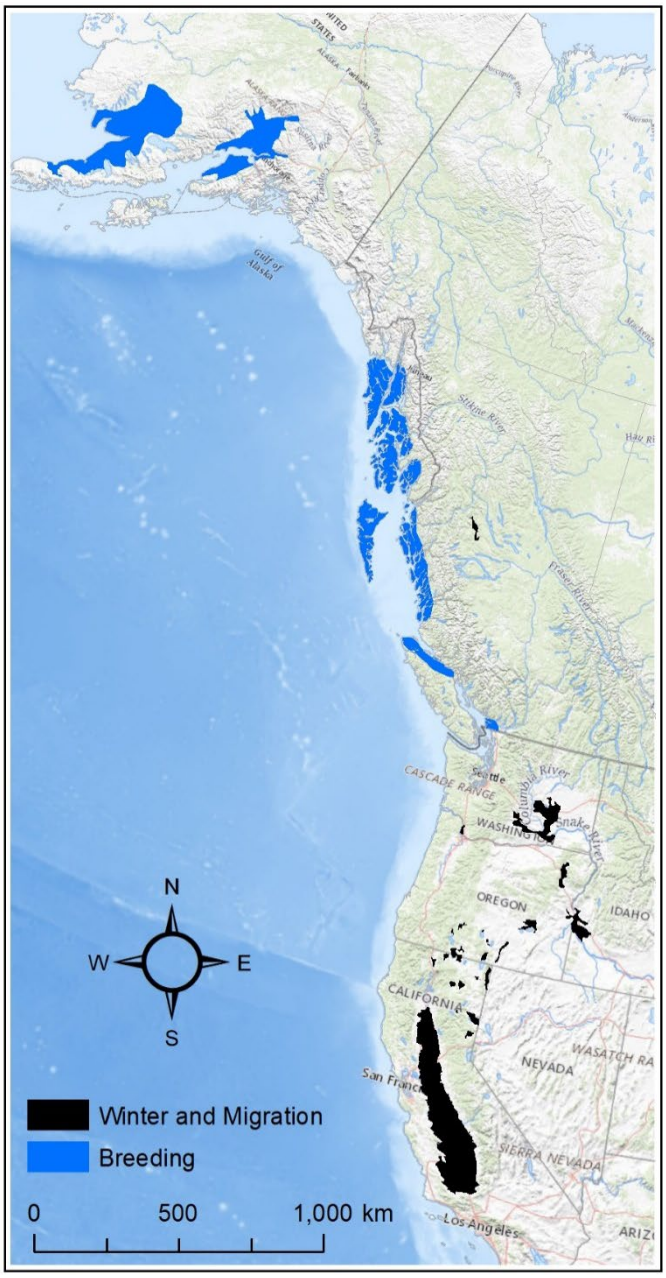

Figure 1. Breeding, wintering, and staging areas of the Pacific Coast population of sandhill cranes.

STATUS

Abundance

Sandhill crane abundance declined precipitously between the early 1880s and 1940s, primarily due to habitat loss and market hunting (Littlefield and Ivey 2002). Since then, abundance of PCP cranes has increased, likely due to hunting restrictions, availability of agricultural crops, and habitat conservation efforts (e.g., establishment of National

Wildlife Refuges (NWR), state wildlife areas) and private land initiatives).

The most recent population index for sandhill cranes wintering in California was approximately 41,788 birds and the current 3-year average is 39,233 (California Department of Fish and Wildlife, 2018 Midwinter Survey, unpublished report). The Midwinter Survey has been conducted in California since 1955; however, in 2015 the survey was redesigned and results before and after the redesign are not comparable. Prior to 2015, the population index was based on an aerial-cruise survey (non-transect based) focused only on wetland habitats, largely excluding upland habitats used by cranes. The redesigned survey includes both wetland and upland habitats, and uses survey transects within strata covering all possible crane use areas in the Central Valley. As a result, the population index post 2015 is substantially higher than previous surveys and not comparable (Figure 2).

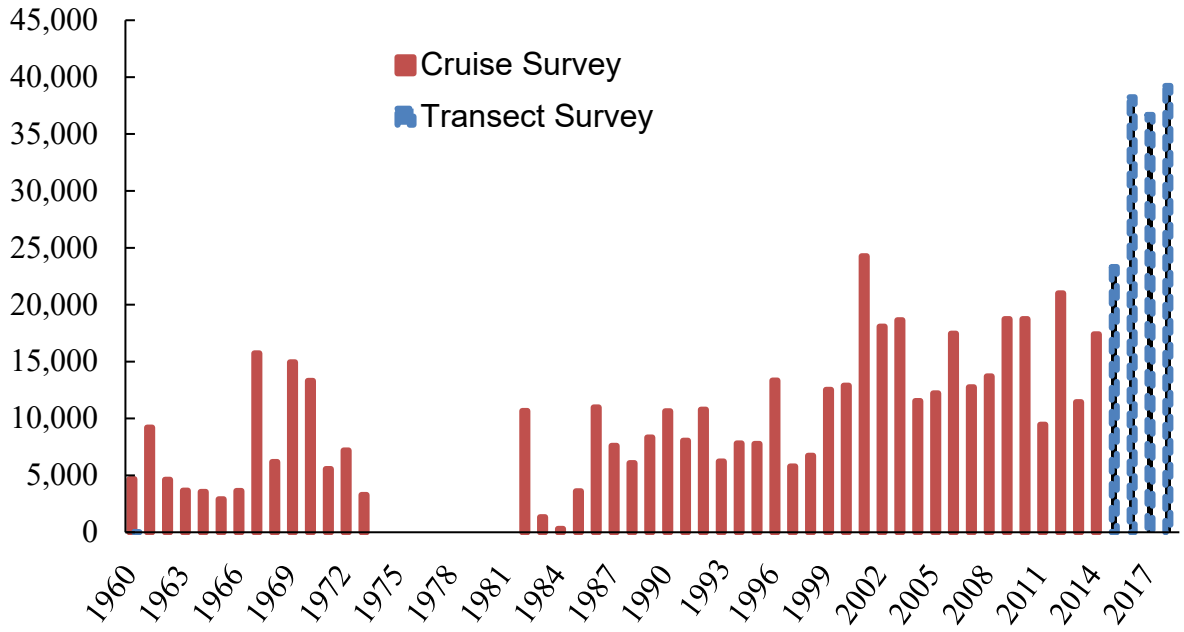

Figure 2. Abundance indices of sandhill cranes from the Midwinter Survey in California, 1955–2018.

Distribution and Migration

Breeding Distribution

Known nesting areas of PCP cranes in Alaska include the Alaska Peninsula, Bristol Bay, upper Cook Inlet, Kenai Peninsula, and along the southeast coast from the Gustavus Forelands to the border with British Columbia. In British Columbia, breeding areas include islands of the central and northern coast, Haida Gwaii, and the Georgia Basin in the Vancouver area (Petrula and Rothe 2005, Ivey et al. 2005, Roessingh 2012).

Wintering Distribution
Major Central Valley wintering areas include the Sacramento River Delta, Sacramento, and San Joaquin valleys. Locations supporting roost sites include: Stone Lakes, San Joaquin River, Merced, San Luis, Arena Plains and Pixley NWRs, Cosumnes River Preserve, and Isenberg Crane Reserve. Additional wintering areas occur in the Lower Columbia River region of Oregon and Washington, including Sauvie Island, Oregon, and the Vancouver Lowlands, Woodland Bottoms, and Ridgefield NWR in Washington.

Migration Timing
In fall, most PCP cranes gather at pre-migration staging areas in September and generally begin to arrive in the Lower Columbia River region in late September and the Central Valley in early October. In spring, most PCP cranes depart the Central Valley in late February and early March and the Lower Columbia River region in early to mid-April. Cranes return to breeding areas in mid-April (Petrula and Rothe 2005, Ivey et al. 2014).

Fall Migration Routes and Staging Areas
Migration routes are based on observations of banded birds (Herter 1982, Pogson et al. 1988) and satellite and radio telemetry data (Petrula and Rothe 2005, Ivey et al. 2005). During fall migration, PCP cranes from Alaska generally follow the coast southward, stopping at several locations before crossing into British Columbia. They follow an interior route through central British Columbia and the Okanogan Valley into eastern Washington, Oregon, and northeastern California before arriving in the Central Valley.

Fall staging and stopover areas along the coast of Alaska include Chickaloon Bay area, Portage Valley, Prince William Sound, Copper River Delta (Herter 1982), Bering River Delta, Cape Suckling, Cape Yakataga, Icy Bay, Yakutat Forelands, Lituya Bay, Cape Spencer, Gustavus Lowlands (Streveler et al. 2004), and Stikine River Delta. Interior British Columbia staging areas include areas near Smithers, Francois Lake, Prince George, Williams Lake, and Kamloops. Washington fall staging areas include areas near Bridgeport and Othello. Fall staging areas in Oregon include Crooked River, Harney (including Malheur NWR), Catlow, and Warner basins.

Spring Migration Routes and Staging Areas
In spring, most PCP cranes leave the Central Valley by crossing the Sierra Nevada mountains near Placerville and staging near Sierra Valley, Honey Lake Basin, Upper Pitt River Basin (including Modoc NWR), and Surprise Valley. In Idaho cranes stage in the Treasure Valley near Wilder and in the Payette River Valley near Letha. In eastern Washington, cranes stage near the confluence of the Yakima River (near West Richland), Lower Crab Creek drainage (near Othello), and Okanogan River (near Bridgeport) with the Columbia River and Banks Lake. In interior British Columbia, cranes stage near Douglas Lake, Kamloops, Clinton, Alexis Creek, Burns Lake, and Smithers. Coastal Alaska staging areas include Stikine River Delta, Gustavus Forelands, Cape Spencer, and Copper River Delta.

During the 1970s and 1980s, the major spring staging area for PCP cranes was Harney Basin (Littlefield and Thompson 1982). Since then, the Othello, Washington area has become the most important staging area for PCP cranes along the interior migration

corridor. Petrula and Rothe (2005) reported satellite-marked birds from the breeding areas of Bristol Bay and Upper Cook Inlet of Alaska spent an average of 25 days in Washington during spring, and six days during fall. Marked birds spent more time in Washington (up to six weeks), than at other locations along the 4,000 km (~2,500 mi) migration corridor.

Public Use

Spring-summer Subsistence Hunting

Since 2003, subsistence harvest of cranes in Alaska has been allowed during spring and summer following an amendment to the Migratory Bird Treaty Act. Implementation of subsistence harvest (e.g., specific regions, dates of open harvest) is negotiated by the Alaska Migratory Bird Co-management Council (AMBCC), which consists of representatives from Alaska Native regions, the U.S. Fish and Wildlife Service, and the Alaska Department of Fish and Game. Since 2004, the Harvest Assessment Program of the AMBCC (AMBCC-HAP) has conducted annual subsistence harvest surveys in eligible regions of Alaska, including the breeding range of PCP cranes. However, the AMBCC-HAP has not surveyed all regions each year. The Bristol Bay region was surveyed in 2005, 2007, 2008, 2011, 2016, and 2017 with an average annual harvest of 486 birds. The Gulf of Alaska-Cook Inlet region was surveyed in 2004, with five cranes reported harvested (Naves and Keating 2019).

Fall-winter General Hunting

Fall-winter hunting of PCP cranes only occurs in Alaska. A 107-day season is authorized beginning September 1, though cranes generally migrate out of Alaska by early November. The daily bag and possession limits are 2 and 6, respectively. Average annual harvest of PCP cranes in Alaska during 2007–2018 was 391 cranes (Alaska Department of Fish and Game, unpublished data).

Viewing

Sandhill crane watching and photography are popular recreational activities throughout the Pacific Flyway. Several festivals highlight cranes including the Lodi Sandhill Crane Festival, Galt Winter Bird Festival, and Marysville Swan Festival in California; the Winter Wings Festival and Migratory Bird Festival in Oregon; the Ridgefield Bird Fest and Othello Sandhill Crane Festival in Washington; and Kachemak Bay Shorebird Festival in Alaska.

CONSERVATION CONCERNS

Population Assessment

1. There is currently no survey dedicated to estimating range-wide abundance of PCP cranes. An aerial transect survey has been conducted in the Central Valley of California where both PCP cranes and CVP cranes winter; however, subspecies (and population association) cannot be differentiated. No surveys are conducted for cranes wintering in the lower Columbia River Basin.

Habitat

1. Habitat loss and land use changes in staging and wintering areas (conversion to orchards or vineyards) may limit food available for sandhill cranes.
2. Water management issues in western states may influence availability and quality of wetland and agricultural habitats.
3. Availability, distribution and abundance of roost sites in staging and wintering areas.
4. Mortality associated with collisions with power lines
5. Regional or local crop damage.

MANAGEMENT ACTIONS

Population Management and Assessment

An aerial transect survey is conducted annually at sandhill crane wintering areas in California; however, it is not possible to differentiate subspecies during the survey. A ground survey conducted periodically to estimate the proportion of PCP cranes and CVP cranes in California would allow estimation of population-specific crane abundance.

Habitat Management

Breeding, migration, and wintering habitats are maintained on state, federal, and private lands. State and federal wildlife agency personnel review proposed projects that may affect PCP cranes and their habitats, and address crop damage complaints.

Harvest Assessment

Fall-winter and spring-summer sandhill crane harvest is monitored annually through State, Federal, and AMBCC cooperative surveys.

INFORMATION NEEDS

The effects of agricultural changes and competition for limited water resources in crane major use areas is unknown. Mapping of roost sites and key foraging locations and associated data (e.g., ownership status, land use) may be helpful to inform conservation planning.

PERIODIC REVIEW

The Pacific Coast Sandhill Crane Subcommittee shall meet annually or as needed, to review the status of PCP cranes and emerging issues. The Subcommittee shall be composed of representatives from the Canadian Wildlife Service, U.S. Fish and Wildlife Service, and State and Provincial agencies responsible for management of PCP cranes, including Alaska Department of Fish and Game, California Department of Fish and Wildlife, Idaho Department of Fish and Game, Oregon Department of Fish and Wildlife, Washington Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service regions and Headquarters. It is the responsibility of subcommittee members to coordinate and integrate the conservation and management of PCP cranes with plans and activities of the various wildlife and land management agencies and local planning systems within their agency's purview.

Subcommittee chairmanship will be appointed biennially and rotated among member agencies (except for Canadian agencies). The Subcommittee will exercise its prerogative to invite to attend and participate as an ex officio member at meetings any individual, group, agency, or representative whose expertise, counsel, or managerial capacity is beneficial in the coordination and implementation of management programs.

Schedule for rotation of chairmanship beginning January 1:

2020 – USFWS, Interior Region Columbia-Pacific Northwest
2022 – California
2024 – USFWS Alaska Region
2026 – Washington

LITERATURE CITED

Herter, D. R. 1982. Staging of Sandhill Cranes on the eastern Copper River Delta, Alaska. pp. 273–280 in Proceedings of the 1981 International Crane Workshop (J. C. Lewis, editor). Nat. Audubon Society, Tavernier, FL.

Ivey, G.L., C.P. Herziger, and T.J. Hoffmann. 2005. Annual movements of Pacific Coast Sandhill Cranes. Proceedings of the North American Crane Workshop 9:25–35.

Ivey, G.L., B.E. Dugger, C.P. Herziger, M.L. Casazza, and J.P. Fleskes**.** 2014. Distribution, abundance, and migration timing of greater and lesser sandhill cranes wintering in the Sacramento-San Joaquin River Delta region of California. Proceedings of the North American Crane Workshop 12:1–11.

Littlefield, C.D., and G.L. Ivey. 2002. Washington State Recovery Plan for the Sandhill Crane. Washington Department of Fish and Wildlife. Olympia, Washington. 71pp.

Littlefield, C. D., and S. P. Thompson. 1982. The Pacific Coast population of lesser sandhill cranes in the contiguous United States. Pages 288–294 *in* J. C. Lewis, editor, Proceedings 1981 Crane Workshop. National Audubon Society, Tavernier, Florida, USA.

Naves, L. C. and Keating J. M. 2019. Alaska subsistence harvest of birds and eggs, 2004–2017 data book, Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence, Special Publication No. 2019-04, Anchorage.

ODFW (Oregon Department of Fish and Wildlife). 2012. Sauvie Island Wildlife Management Area. Salem, Oregon. 23 pp.

Pacific Flyway Council. 1983. Pacific Flyway management plan for the Pacific Flyway Population of Lesser Sandhill Cranes. Pacific Flyway Study Committee (c/o Pacific Flyway Representative USFWS), Portland, Oregon, USA.

Pacific Flyway Council. 1997. Pacific Flyway management plan for the Central Valley Population of greater sandhill cranes. Pacific Flyway Study Committee (c/o Pacific Flyway Representative USFWS), Portland, Oregon, USA.

Petrula, M. J. and T. C. Rothe. 2005. Migration chronology, routes, and distribution of Pacific Flyway Population of Lesser Sandhill Cranes. Proceedings of the North American Crane Workshop 9:53–67.

Pogson, T.H., D.R. Herter, and R. W. Schlorff. 1988. Sightings of Lesser Sandhill Cranes Color-Marked in California. Journal of Field Ornithology 59:252–257.

Roessingh, K. 2012. Nesting habitat and diet studies of sandhill cranes (*Grus canadensis*) from the central and north coast of British Columbia. M.S. Thesis, University of

Victoria, BC.

Streveler, G. P., J. T. Brakel, D. B. Brown, J. Crapella, and R. E. Christensen. 2004. Sandhill Crane use of the Dude Creek Critical Habitat Area during fall migration. Unpublished report. Icy Strait Environmental Services. Gustavus, AK., USA.

Stinson, D. W. 2017. Periodic status review for the Sandhill Crane. Washington Department of Fish and Wildlife, Olympia, Washington. 22+ iii pp.