

**Pacific Flyway Council
Recommendations, Informational Notes
and Subcommittee Reports**



A product of the early fall 2016
meetings of the:

**Pacific Flyway Nongame
Technical Committee**
September 26th to 29th, 2016
Sun Valley, Idaho

Pacific Flyway Study Committee
September 26th to 29th, 2016
Sun Valley, Idaho

Pacific Flyway Council
September 30th, 2016
Sun Valley, Idaho

Distributed at September 30, 2016 Council Meeting

Preface

The Migratory Bird Treaty Act implemented multiple international treaties addressing migratory bird management and conservation, and established federal authority over migratory birds. The Secretary of the Interior, acting under the authority of the Migratory Bird Treaty Act, is authorized to determine when hunting of migratory game birds can take place in the United States and to adopt regulations for this purpose. This responsibility has been delegated to the U.S. Fish and Wildlife Service (Service). Similarly, the Secretary of the Interior's authority to regulate the take, use, and conservation of nongame migratory birds has been delegated to the Service. The Pacific Flyway Council (Council) cooperates with the Service to develop regulations for migratory birds in the United States west of the Continental Divide. Both organizations consider the welfare of migratory bird populations first, and then public demands for recreation and subsistence harvest, and other uses.

The Service sets migratory game bird hunting regulations by establishing frameworks, or outside limits, for season lengths, bag limits, and areas for migratory game bird hunting. The Alaska framework is presented as a distinct recommendation inclusive of all species. Season frameworks for individual guilds or species do not apply to Alaska. Members of Council and its technical advisory group, the Pacific Flyway Study Committee (SC), meet in late summer/early fall to disseminate information, share data, review the status of populations and propose annual hunting regulations. They meet again in late winter to develop cooperative management programs, and coordinate research and management for the protection and conservation of migratory game birds. Council typically forwards season framework recommendations to the Service in October.

In 2006, the Flyway system was expanded to provide a consolidated forum for the Service and State fish and wildlife agencies to discuss, plan, and coordinate actions to address nongame migratory bird regulatory issues. To facilitate technical review of nongame regulations and associated issues, a Nongame Technical Committee was created within each flyway.

Recommendations, informational notes, and subcommittee reports are typically prepared by the Study Committee and Nongame Technical Committee (hereafter collectively referred to as Committee[s]), and forwarded to Council for adoption or consideration. The Committees are scientific fact finding bodies whereas Council is an administrative and policy setting body. Council may develop recommendations or modify Committee recommendations to meet Council needs. In cases where a Committee recommendation is forwarded to Council for consideration of adoption, the recommendation is written on behalf of Council. Committee specific recommendations do not need to be adopted by Council. These are formal actions taken by either Committee and forwarded to Council for review. Council has a policy of considering management plans for adoption only after having received the management plan for review at least 45 days prior to their next business meeting. To expedite Council business, all Council recommendations are listed first followed by Committee recommendations, informational notes, and subcommittee reports. Council recommendations are generally ordered with routine frameworks first, special season frameworks second, and other recommendations last. Finally, the Service assumes Council support for continuation of the previous year's frameworks for which no recommendation is received.

Each recommendation and informational note identifies a contact person. The contact person does not necessarily endorse, but rather volunteers to write the recommendations or informational notes that represent the position of the Committee or Council. The contact person is usually knowledgeable on the subject matter and serves as a contact if there are any questions. If either Committee establishes a subcommittee to address specific actions, the subcommittee is identified on recommendation or informational notes they initiate. The Chair of each subcommittee prepares the subcommittee's report and is identified on that report.

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Members, Officers, and Representatives

Pacific Flyway Council

Members

Bruce Dale, Alaska Department of Fish and Game
Josh Avey, Arizona Game and Fish Department
Stafford Lehr, California Department of Fish and Wildlife
Craig McLaughlin, Colorado Parks and Wildlife
Jeff Gould, Idaho Department of Fish and Game
Ken McDonald, Montana Fish, Wildlife and Parks
Tony Wasley, Nevada Department of Wildlife
Ron Anglin, Oregon Department of Fish and Wildlife
Mike Fowlks, Utah Division of Wildlife Resources
Eric Gardner, Washington Department of Fish and Wildlife

Officers

Chair, Jeff Gould, Idaho
Vice-chair, Eric Gardner, Washington
Secretary, Brandon Reishus, Oregon
Treasurer, Jeff Knetter, Idaho

Consultants to U.S. Fish and Wildlife Service Migratory Bird Regulation Committee

Ron Anglin, Oregon
Mike Fowlks, Utah

Representative on the AFWA Migratory Wildlife Committee

As appointed

Representative on the Arctic Goose Joint Venture Management Board

Bruce Dale, Alaska

Representative on the Cooperative North American Shotgun Education Program

Vacant

Representative on the Hunter Recruitment and Retention Strategy Team

Vacant

Representative on the National Flyway Council

Mike Fowlks, Utah

Representative on the North American Waterfowl Management Plan Committee

Dan Yparraguirre, California

Representative on the North American Wetlands Conservation Council

Ken McDonald, Montana

Representative on the Sea Duck Joint Venture Management Board

Eric Gardner, Washington

Representative to the Alaska Migratory Bird Co-management Council

Ron Anglin, Oregon

Pacific Flyway Study Committee

Members

Jason Schamber, Alaska

Johnathan O'Dell, Arizona

Melanie Weaver, California

Jeff Yost, Colorado

Jeff Knetter, Idaho

Claire Gower, Montana

Russell Woolstenhulme, Nevada

Brandon Reishus, Oregon

Blair Stringham, Utah

Kyle Spragens, Washington

Officers

Chair, Jeff Knetter, Idaho

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Subcommittees

Aleutian Canada Goose

Banding

Cackling Canada Goose

Dusky Canada Goose

Emperor Goose

Interior Population Band-tailed Pigeon

Lesser, Taverner's, and Vancouver Canada Goose

Lower Colorado River Valley Population Sandhill Crane

Mourning and White-winged Dove

Pacific Brant

Pacific Coast and Central Valley Population Sandhill Crane

Pacific Coast Population Band-tailed Pigeon

Pacific Population Trumpeter Swan

Rocky Mountain Population Sandhill Crane

Rocky Mountain Population Trumpeter Swan

Western Canada Goose

Western and Eastern Population Tundra Swan

White Geese

White-Fronted Goose

Pacific Flyway Nongame Technical Committee

Members

Travis Booms, Alaska
James Driscoll, Arizona
Carie Battistone, California
Colleen Moulton, Idaho
Allison Begley, Montana
Cris Tomlinson, Nevada
Andrea Hanson, Oregon
Russell Norvell, Utah
Joseph Buchanan, Washington

Officers

Chair, Colleen Moulton, Idaho
Vice-chair, Joseph Buchanan, Washington

Subcommittees

Eagle
Cormorant
Pelican

Representatives to the Pacific Flyway Council and Technical Committees

U.S. Fish and Wildlife Service

Todd Sanders, DMBM, Vancouver
Steve Olson, DMBM, Vancouver
Guthrie Zimmerman, DMBM, Sacramento
Michael Green, Region 1, Portland
Joe Sands, Region 1, Portland
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André Breault, British Columbia
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Alaska Migratory Bird Co-management Council

Patty Brown-Schwalenberg

Recommendations

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Recommendation 1 – Coot and Moorhen Season Framework

Recommendation

The Pacific Flyway Council recommends no change in season framework for coots and moorhens. The daily bag limit is 25, singularly or in the aggregate. Outside dates and season length are the same as the duck season framework.

Justification

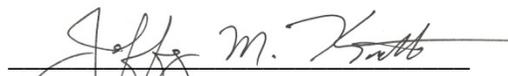
Results from the 2016 winter waterfowl surveys in California, Montana, Nevada, and Washington for coots was approximately 675,000; a 33% increase from 2015. The estimated continental breeding population was 2.8 million in 2016, which is 8% lower than the 2015 estimate and 47% above the long-term (1955-2015) average.

Current regulations have resulted in modest harvest, while providing additional opportunity to hunters. Approximately 31,300 coots were harvested in the Pacific Flyway in 2015, a 41% decrease from the reported 2014 harvest.

Adoption

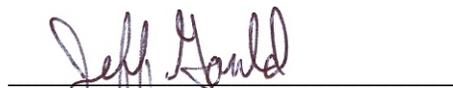
Pacific Flyway Study Committee
September 28, 2016

Contact: Melanie Weaver



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 2 – Interior Band-tailed Pigeon Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in the season framework for interior band-tailed pigeon.

Council recommends a framework in the Pacific Flyway portion of Arizona, Colorado, New Mexico, and Utah with outside dates between September 1 and November 30, season length of 14 days, and daily bag limit of 2. New Mexico may select hunting seasons in two zones: North and South Zones. The North Zone consists of the area north of a line following U.S. Highway 60 from the Arizona State line east to Interstate 25 at Socorro and south along Interstate 25 from Socorro to the Texas state line. The South Zone includes the remainder of the State. The South Zone season may not open until October 1.

Justification

Total harvest estimates, obtained from the Harvest Information Program (HIP), for the Interior population of band-tailed pigeons were 800 ± 172 birds in 2015, which were down from $1,500 \pm 390$ in 2014. State harvest surveys in Arizona and Colorado were discontinued when HIP was implemented; however, the harvest survey was maintained in Utah and estimated harvest was 54 in 2013, 22 in 2014, and zero in 2015.

There is considerable uncertainty in harvest estimates from the federal harvest survey. Harvest estimates have large confidence intervals and state biologists consider harvest estimates too variable. Examination of the HIP hunter diary information indicates there may be errors in the data. For example, harvest is reported in counties where the species is unlikely to occur. Furthermore, during 1999-2013, hunter diary information was only reported during 1999, 2000, and 2013, in Arizona.

All states are working to refine harvest surveys to improve harvest estimates. In 2015, Arizona created a free online HIP registration. In 2016 Colorado implemented a paid permit system and New Mexico started a free HIP permit. If these programs are successful, states could then provide hunter contact information to the Service, which could improve band-tailed pigeon parts collection survey.

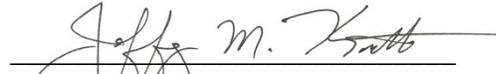
Utah continues to explore options to increase Breeding Bird Survey (BBS) routes in areas where band-tailed pigeons are present. Current BBS routes rarely detect pigeons, so additional routes in band-tailed pigeon habitat will provide a better estimate of overall band-tailed pigeon population trends. Arizona, Colorado, and New Mexico started putting leg bands and Passive Integrated Transponder (PIT) tags on pigeons at feeders in 2015 to measure annual survival and harvest.

Passive Integrated Transponder tag antennae arrays were deployed in Arizona and New Mexico in 2016.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Johnathan O'Dell



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 3 – Pacific Coast Band-tailed Pigeon Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in the season framework for Pacific Coast band-tailed pigeon.

Council recommends a framework in California, Nevada, Oregon and Washington, with outside dates between September 15, 2017 and January 1, 2018, season length of nine days, daily bag limit of two, and possession limit of six. California may select a nine-day season in the North Zone and the South Zone. The North Zone includes Alpine, Butte, Del Norte, Glenn, Humboldt, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama, and Trinity counties. The season in the North Zone must close by October 3. The South Zone includes the remainder of the State.

Justification

Based on the current harvest strategy assessment described in the Pacific Coast Band-tailed Pigeon Management Plan, the prescribed regulatory alternative for Pacific Coast band-tailed pigeons during the 2017 hunting season is the restrictive regulatory alternative, which represents no change from 2016.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Joseph Sands



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 4 – Rail Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in season framework for sora and Virginia rail.

Council recommends a framework including sora and Virginia rail in the Pacific Flyway portions of Colorado, Montana, New Mexico, and Wyoming, with outside dates between September 1 and January 20, season length of 70 days, and daily bag and possession limits of 25 sora and Virginia rail in the aggregate. Season length may be split into two segments. The season shall be closed in the remainder of the Pacific Flyway.

Justification

There is little or no evidence to suggest sora and Virginia rail populations are not stable in the Western Breeding Bird Survey (BBS) Region according to the North American BBS; however, data (i.e., sample size, abundance, and precision) to detect population trends may be inadequate for this species.

The estimated annual change in the Virginia rail population in the Western Region was -0.34% over the long-term (1966–2013), and 2.99% over the short-term (2003–2013). Hunter participation and harvest estimates for rails are obtained from the Service’s Mail Questionnaire Survey and the Migratory Bird Harvest Information Program. However, essentially no harvest information on rails in the Pacific Flyway exists, because the Pacific Flyway does not have open seasons on rails, except for the western portions of Colorado, Montana, New Mexico, and Wyoming.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Russell Woolstenhulme



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 5 – Special Early Canada Goose Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change to the framework for special early Canada goose seasons.

A Canada goose season of up to 15 days during September 1–20 may be selected. The daily bag limit may not exceed 5 Canada geese, except in Pacific County, Washington where the daily bag limit may not exceed 15 Canada geese. Areas open to hunting of Canada geese in each state must be described, delineated, and designated as such in each State’s hunting regulations.

Justification

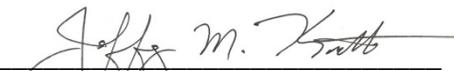
The special early Canada goose hunting season is generally designed to reduce or control overabundant resident Canada goose populations. The current management plan population objective and harvest strategies are based on the Breeding Population Index for both the Pacific Population (PP) and Rocky Mountain Population (RMP) of Canada geese. The 2016 breeding population index for PP Canada geese is 247,037, a 3.2% decrease from last year’s index of 255,289. The 3-year average (2014–2016) is 221,680, up from the previous 3-year average of 214,628 (2013-2015).

The breeding population index for RMP Canada geese in 2016 is 274,501, a 50.6% increase over the 2015 index of 182,250. The 3-year average (2014–2016) is 195,320, up from the previous 3-year average of 158,784 (2013–2015). The management plan objective is a breeding population index of 117,000.

Adoption

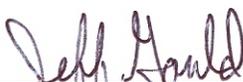
Pacific Flyway Study Committee
September 28, 2016

Contact: Russell Woolstenhulme



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 6 – Snipe Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in the season framework for snipe.

Council recommends a framework with outside dates between September 1 and February 28, season length of 107 days, daily bag limit of eight, and possession limit of 24. Season length may be split into two segments. Seasons may be selected by zones established for duck hunting.

Justification

There is little or no evidence to suggest the snipe population is other than stable in the Western Region according to the North American Breeding Bird Survey (BBS). Estimated annual change in the snipe population in the Western Region was -0.6% (± 0.5) over the long-term (1966–2013), and -1.0% (± 1.2) over the short-term (2003–2013).

Hunter participation and harvest estimates for snipe are obtained from the U.S. Fish and Wildlife Service Mail Questionnaire Survey and the Migratory Bird Harvest Information Program. In 2014 and 2015, the snipe harvest estimate in the Pacific Flyway was 23,300 and 5,300, respectively.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Russell Woolstenhulme



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 7 – Special Falconry Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in the special season framework for extended falconry seasons.

Falconry is a permitted means of taking migratory game birds in any state meeting federal falconry standards in 50 CFR 21.29(k). Council recommends these states may select an extended season for taking migratory game birds in accordance with the following:

For all hunting methods combined, length of extended, regular, and any special or experimental seasons shall be a maximum of 107 days for any species or group of species in a geographical area. Each extended season may be divided into 3 segments. Outside dates shall be between September 1 and March 10. The falconry daily bag limit for all permitted migratory game birds shall be 3 singly or in the aggregate, during extended falconry seasons, any special or experimental seasons, and regular hunting seasons in all states, including those that do not select an extended falconry season. General hunting regulations, including seasons and hunting hours, shall apply to falconry in each state listed in 50 CFR 21.29(k). Regular season bag and possession limits shall not apply to falconry. The falconry bag limit shall not be in addition to gun limits.

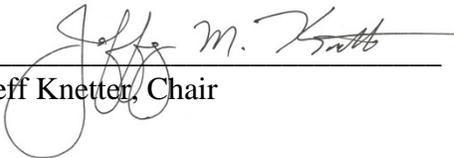
Justification

Impacts of falconry harvest on migratory bird populations are inconsequential. Most states select a 107 day season when available. If states select a 107 day waterfowl season when offered, no additional days remain for an extended falconry season. During moderate and more restrictive waterfowl season frameworks of less than 107 days, additional days will be available for extended falconry seasons and states may wish to consider extended falconry seasons at that time.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Blair Stringham



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016

A handwritten signature in dark ink, appearing to read "Jeff Gould", written over a horizontal line.

Jeff Gould, Chair

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Recommendation 8 – Special Youth Waterfowl Hunting Days Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in the special season framework for youth waterfowl hunting days.

Council recommends that states may select 2 days per duck-hunting zone to designate as “Youth Waterfowl Hunting Days,” in addition to their regular duck seasons. The days must be held outside any regular duck season on a weekend, holidays, or other non-school days when youth hunters would have the maximum opportunity to participate. The days may be held up to 14 days before or after any regular duck season frameworks or within any split of a regular duck season, or within any other open season on migratory birds. Daily bag limits may include ducks, geese, tundra swans, mergansers, coots, moorhens, and gallinules and would be the same as those allowed in the regular season. Flyway species and area restrictions would remain in effect.

States may use their established definition of age for youth hunters. However, youth hunters may not be over the age of 17. In addition, an adult at least 18 years of age must accompany the youth hunter into the field. This adult may not hunt ducks but may participate in other seasons that are open on the special youth day. Youth hunters 16 years of age and older must possess a Federal Migratory Bird Hunting and Conservation Stamp (also known as Federal Duck Stamp). Tundra swans may only be taken by participants possessing applicable tundra swan permits.

Justification

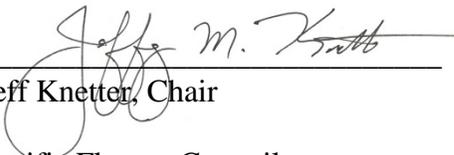
Council supports special opportunities for youth to learn about waterfowl hunting, and waterfowl and wetland conservation. The original intent of this special season was to “introduce youth to the concepts of ethical utilization and stewardship of waterfowl and other natural resources, encourage youth and adults to experience the outdoors together, contribute toward the long-term conservation of the migratory bird resource,” and “provide the best and safest learning environment for our youth who are interested in hunting.”

The special youth season may help recruit non-hunters and novice hunters. In the long-term, participation of youth in this special season may result in support for waterfowl and wetland conservation by fostering a more knowledgeable public, continued support for waterfowl hunting, and continued support for the protection and enhancement of wetland ecosystems.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Jeff Knetter



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 9 – Swan Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in season framework for swans in the Pacific Flyway.

Council recommends a season framework as described in the U.S. Fish and Wildlife Service (Service) Environmental Assessment titled Proposal to Establish Operational General Swan Hunting Seasons in the Pacific Flyway in 2005.

Outside dates:

Montana	First Saturday in October (Oct 7) to December 1
Utah	First Saturday in October (Oct 7) to the 2nd Sunday (Dec 10) in December
Nevada	First Saturday in October (Oct 7) to the Sunday following January 1 (Jan 7)

Open areas:

Montana: All of Cascade, Chouteau, Hill, Liberty, and Toole counties and those portions of Pondera and Teton counties lying east of U.S. Highways 287 and 89.

Utah: Those portions of Box Elder, Weber, Davis, Salt Lake, and Tooele counties lying west of I-15, north of I-80, and south of a line beginning from the Forest Street exit to the Bear River Migratory Bird Refuge boundary to the westernmost boundary of the Refuge, then west along a line to Promontory Road, then north on Promontory Road to the intersection of SR-83, then north on SR-83 to I-84, then north and west on I-84 to State Hwy 30, then west on State Hwy 30 to the Nevada-Utah state line, then south on the Nevada-Utah state line to I-80.

Nevada: Churchill, Lyon, and Pershing counties.

Permit allocations and trumpeter swan quotas:

Montana: 500 permits, with no established trumpeter swan harvest quota. Voluntary bill measurement card program will be maintained.

Utah: 2,000 permits, with a harvest quota of 10 trumpeter swans. If Utah reaches its quota, the season will be immediately closed. All harvested swans, or their species-determinant parts, must be examined by either State or Federal personnel for the purpose of species classification.

Nevada: 650 permits, with a quota of five trumpeter swans. If Nevada reaches its quota, the season will be immediately closed. All harvested swans or their species-determinant parts must be examined by either State or Federal personnel for the purpose of species classification. Persons hunting in Nevada may obtain up to two permits to hunt swans in an open season. The daily bag limit shall be one swan per day.

States must provide a report to the Service by June 30, 2018, which details harvest, hunter participation, reporting compliance, and swan population monitoring in designated hunt areas.

Justification

The status of Western Population (WP) of Tundra Swans is measured using winter survey data. The 2015 index of swans was 68,204, according to winter survey data collected during 2014–15. This count was similar to the 2013–2014 index of 68,235, and slightly below the three-year average of 70,586. The winter survey was conducted in Utah, Oregon, and an adjacent area in Washington. Although, California supports the majority of wintering Tundra Swan population, California was not surveyed in January 2016. Consequently, the 2016 survey is considered incomplete and the previous 3-year (2013–2015) average (70,586) will be used for the 2017–2018 framework. The swan population (70,586) is above the plan objective of 60,000 tundra swans as measured by a 3-year average winter index and the closure threshold of 40,000 tundra swans.

Detected incidental take of trumpeter swans within those states participating in a tundra swan hunt (Montana, Nevada, and Utah) has been minimal. Less than 2% have been classified as trumpeters. During the 2015–2016 swan seasons, four trumpeter swans were harvested in Utah, zero in Nevada, and 14 in Montana.

Adoption

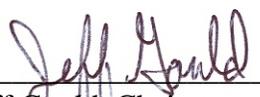
Pacific Flyway Study Committee
September 28, 2016

Contact: Claire Gower



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 10 – Emperor Goose Management Plan

Recommendation

The Pacific Flyway Council (Council) endorses the final revision of the Management Plan for Emperor Geese.

Justification

The 2006 Emperor Goose Management Plan (Plan) has been reviewed and revised as scheduled. The revision process included consultation with the Alaska Migratory Bird Co-Management Council (AMBCC). A final draft was distributed for technical review by the Pacific Flyway Study Committee on August 26, 2016. Council received the Plan on September 20, 2016, with the intent to seek Council adoption at the September 2016 meeting. Council is engaged with this Plan on behalf of Alaska, the only Pacific Flyway state that hosts this population.

This Plan is a companion to the 2016 AMBCC Emperor Goose Management Plan, which specifies regulations for spring/summer subsistence harvest of emperor geese. The two plans complement one another and contain identical population assessment methods, population objectives and regulatory harvest thresholds. Together they address the Management Plan provisions expressed by the Service Regulations Committee at their July 2015 meeting. The AMBCC Emperor Goose Management Plan was adopted by the AMBCC on September 1, 2016.

The revision to the 2006 Plan was prompted by a recent change in population status. In 1986, the 3-year average of the spring survey count (Pacific Flyway management index) dropped below the 60,000 bird threshold to allow harvest. The fall/winter harvest was closed to emperor geese in 1986, and in 1987 a cessation of subsistence harvest was agreed to under terms of the Yukon-Kuskokwim Delta Goose Management Plan. The resumption of harvest could be considered when the 3-year average count reached 80,000 birds, as it did in 2015. In 2015, the annual survey count was 98,155 birds, which resulted in a 3-year average count of 81,875 birds. The most recent 3-year average count of 85,795 birds (2014–2016) was the highest recorded since 1983.

The 2016 Plan includes significant changes from the 2006 Plan and represents a major shift in emperor goose management. From 1985–2016, the 3-year average count from the spring migration survey in southwestern Alaska was the basis for emperor goose management. The population objective was an index of 150,000 birds, based on the spring survey (index), and harvest closed when the 3-year average index was below 60,000 birds; however, harvest could be reconsidered once the 3-year average index exceeded 80,000 birds. In this version of the Plan, the spring survey index has been replaced by a summer survey index of indicated total birds (hereafter; total bird index) derived from aerial surveys of emperor goose abundance on the Yukon-Kuskokwim Delta (YKD) Coastal Zone Survey. An analysis by the U.S. Fish and Wildlife Service concluded the total bird index is less biased and more precise than the spring

survey index; and is based on statistical sampling theory. This Plan also includes a new population objective, established as the 2016 total bird index of 34,000 from the YKD Coastal Zone Survey. The total bird index and population objective are viewed as interim strategies that will be reevaluated after three years of Plan implementation, while other population assessment methods are further refined.

Additionally, this Plan includes a fall/winter harvest strategy that specifies a regulatory framework, provided the emperor goose population is currently of sufficient size to resume harvest. The harvest strategy is based on using the total bird index to assess population status relative to a regulatory harvest threshold.

Based on the total bird index, the harvest strategy defines a regulatory harvest closure threshold of 23,000 birds. This represents approximately 120,000 emperor geese based on a theta-logistic population model decision rule currently in development. The most recent 3-year average population index (2014–2016) is 30,965 birds; equivalent to approximately 161,000 emperor geese. The theta-logistic model and associated analysis was used to derive optimal harvest thresholds, which helped guide the selection of the harvest closure threshold.

The harvest strategy seeks to maintain a population of emperor geese above an index of 23,000 birds based on the most recent total bird index. If the total bird index from the previous year is greater than 23,000 birds, then fall/winter harvest will be open with an annual 1000 bird quota. If the population index drops from the 2016 index to below 28,000 birds, but above 23,000, a restrictive quota of 500 birds will be considered. Fall/winter harvest will be closed if the total bird index from the previous year is less than 23,000 birds.

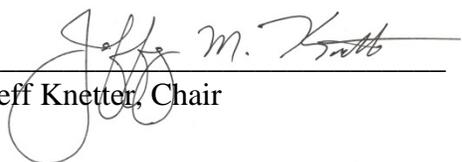
The term of this Management Plan is for five years following approval. However, because the changes to this version of the Management Plan are a significant departure from past management, Council agrees to evaluate the emperor goose population response for the three-year period following approval. The Subcommittee in cooperation with the AMBCC will annually review available data (i.e., population status, harvest survey data, and other relevant information) and will reevaluate the population objective, population assessment method and harvest strategy after the initial three-year implementation period.

Council accepts and adopts the 2016 Plan primarily on behalf of the State of Alaska where the whole of the North America population occurs.

Adoption

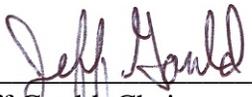
Pacific Flyway Study Committee
September 28, 2016

Contact: Jason Schamber



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 11 – Alaska Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in the Alaska frameworks for 2017, except for the following:

- Open the fall harvest of emperor geese with a quota of 1,000 birds allotted to the State of Alaska.

Justification

Ducks: Council recommends retention of the current framework for Alaska in 2017 (107 day seasons, basic daily limits ranging from 7–10 over five zones,). An adaptive regulatory regime guides Pacific Flyway duck regulations based on the Western Mallard Model, which is defined by two substocks: (1) those birds breeding in the Alaska-Yukon Territory and (2) those birds breeding in California-Oregon-Washington-British Columbia. The 2016 estimated total breeding population size of western mallards was 1,069,059; the combined totals of the Alaska-Yukon Territory (584,200) and California-Oregon-Washington-British Columbia (484,859); a 19% increase from 900,000 in 2015. Based on these results, the prescribed regulatory alternative is liberal. Alaska accounts for ~2% of the Pacific Flyway (PF) annual duck harvest. These provisions also recognize the seasonally limited opportunity for duck harvest in Alaska, as well as the difficulty many hunters have in identifying eclipse plumage ducks to species and sex.

Canvasbacks: Council recommends retention of the current bag/possession limit of 2/6 canvasbacks for Alaska in 2017 as prescribed by the harvest strategy. The 2016 breeding population estimate was 736,000, a 3% decrease from 757,000 in 2015, and 26% above the 1955–2015 long-term average. Since 2008, the harvest strategy has provided the option for a 2 bird daily bag limit when the predicted breeding population exceeds 725,000 birds. However, the revised regulatory cycle has required a reevaluation of the harvest strategy. In the interim, the Service Regulations Committee approved the Liberal-2 bird regulatory alternative for the 2016–2017 season. Given the predicted 2016 canvasback population is greater than 725,000, and because the recommended duck season under Adaptive Harvest Management is liberal, a full canvasback season with a 2-bird bag for the 2017–2018 season is recommended. Canvasback harvest in Alaska is small (mean <200, Harvest Information Program [HIP] 1999–2015; <1% of Pacific Flyway total harvest).

Sea ducks: Council recommends no change to sea duck frameworks. In addition to the basic duck limits, Alaska may select sea duck limits of 10 daily, 20 in possession, singly or in the aggregate, including no more than 6 each of either harlequin or long-tailed ducks. Lower limits are required for nonresident hunters. Sea ducks include scoters, common and king eiders, harlequin ducks, long-tailed ducks, and common and red-breasted mergansers. The season is

closed for Steller's and spectacled eiders. Harvest averages ~7,000 sea ducks annually in Alaska (HIP). Sea ducks are also an important subsistence resource in all seasons. Fall and winter harvest for the Alaska Peninsula, Kodiak, Southcentral, and Southeast Alaska is managed under the existing framework.

Greater white-fronted geese: Council recommends no change to the current framework. The 2016 fall population estimate of greater white-fronted geese (685,469 birds) and the most recent 3-year average (600,592; 2014–2016) were well above the population objective of 300,000 birds. The 2016 fall estimate and the 3-year average were 43.1% and 6.2% higher than the 2015 estimates, respectively. The Yukon-Kuskokwim Delta ([YKD] Unit 18) supports over 98% of the breeding population. Fall migration begins in late-August and most birds have departed by October 1. Alaska sport harvest averaged fewer than 1,000 birds annually from 2005–2015. The 2009 revised harvest strategy for the Management Plan states, “When the 3-year average index is above 450,000, the harvest rate should not exceed 25% of the most recent 3-year average fall index.” Regulations are justified based on population size and harvest while minimizing additional harvest in units where Tule white-fronted geese occur.

The Management Plan for Midcontinent greater white-fronted geese identifies the fall staging survey in Prairie Canada as the primary tool to assess population status. The 2015 fall aerial survey index in Canada is 977,090; a 3% decrease from the 2014 index of 1,006,000, but well above the population objective of 650,000 birds. The 3-year average is 991,341 (based on 2014 and 2015 surveys; no survey was conducted in 2013), 11% greater than the previous 3-year average of 891,700.

The Alaska component of the midcontinent white-fronted goose breeds on the Arctic Coastal Plain (ACP) and interior Alaska. The 2016 ACP Breeding Pair Survey reported indicated total bird and indicated breeding bird indices of 403,110 and 161,421, respectively. Long-term trends in indicated total and indicated breeding bird indices indicate increases of 4.6% per year and 7.5% per year (1986–2016), respectively. Interior breeding populations are best tracked by the indicated breeding pair index in Strata 3–6, 10, and 11 on the Waterfowl Breeding Population and Habitat Survey. The 2016 indicated total bird and indicated breeding bird indices from interior Alaska were 36,353 and 12,065, respectively, compared with 61,513 and 6,550, in 2014. The average long-term trend (1964–2016) in the indicated total and indicated breeding bird indices are 1.023 and 1.022, respectively.

Canada geese: Council recommends no change the current framework. The 2016 cackler fall population index is $327,453 \pm 21,104$ (SE) and the 3-year (2014–2016) average is 320,658 birds, well above the 250,000 population objective. These estimates are 5.7% below the 2015 index and 0.9% above the previous 3-year average. Population estimates are derived by applying an index ratio of 3.42 (calculated from mark-resight data) to the indicated total bird index from the Yukon-Kuskokwim Delta Coastal Zone Survey (YKDCZS). The long-term (1985–2016) average annual growth rates for indicated total birds and indicated breeding birds from the YKDCZS are 1.048 ± 0.007 (SE) and 1.047 ± 0.006 (SE), respectively. Most cackling geese depart the YKD by the end of September and most depart Alaska Peninsula staging areas by mid-October, which likely limits harvest. Fall surveys indicate over 90% of cackling geese stage around Izembek Lagoon.

Lesser and Taverner's geese: Lesser Canada geese are found in boreal forest habitat within the Alaska-Yukon region. Population indices for this region are based on the sum of strata-specific indices (Strata 1–4 and 12) from the Waterfowl Breeding Population and Habitat Survey. In addition, a small but unknown proportion of Canada geese on the ACP may belong to this subspecies but are not included in the Alaska-Yukon index. The 2016 indicated total and breeding birds indices for boreal forest habitats are 6,623 and 4,577, respectively; both indices are significantly greater than 2015 indices. The current 3-year average of total birds (2014–2016) is 4,319, and is 24% higher than the previous average (3,484; 2013–2015). The long-term (1964–2015) average annual growth rate for indicated total birds is 0.999.

Taverner's geese are found in coastal areas of western and northern Alaska. Population indices are based on the sum of expanded counts of Canada geese from breeding population surveys on the ACP, YKD, and the Waterfowl Breeding Population and Habitat Survey: inland portions of the YKD (part of stratum 9), the Seward Peninsula (stratum 10), and Kotzebue Sound (stratum 11). The 2016 ACP Survey indicated total bird index of 17,613 was 61% higher than the 2015 index (10,665) with a 3-year average (2014–2016) of 11,846 birds. The 2016 YKDCZS indicated total bird index of (8,255) was 24% lower than in 2015. The combined statewide 2016 indicated total bird index was 48,391, 37% higher than the 2015 index (35,353) and the 3-year (2014–2016) average was 42,514, 19% higher than the 2013–2015 average (35,619). The long-term (1964–2016) and short-term (2007–2016) estimated average annual growth rates of indicated total birds were 0.987 (95% CI=0.980–0.995) and 0.957 (95% CI=0.908–1.010).

Aleutian geese: The winter 2016 abundance estimate was 156,030 (SE = 13,711, 95% CI = 129,157–182,904), a decrease from 189,110 (SE = 17,925, 95% CI = 153,977–224,243) in 2015. The 2016 estimate is well above the Management Plan objective of 60,000 birds. The annual population growth rate since 1996 (estimated via exponential regression) was 1.11 ($R^2 = 0.86$, $P < 0.01$). Harvest in Alaska is minimal.

Dusky Canada geese: The 2016 estimated population was 13,230 birds, 25% lower than the reported 17,699 birds in 2015, but among the highest recorded estimate since 1994. The Copper River Delta (CRD) estimate was 12,201 birds, 23% below 2015 (15,919 birds). The 2016 biennial MI survey reported 1,029 adults, 42% below the 2014 survey (1,780 birds; record high), and the lowest count since 1994. The low count at MI was due, in part, to poor visibility during the 2016 survey.

Emperor geese: Council recommends opening a limited fall hunt with a harvest quota of 1,000 birds. Emperor geese have been closed to fall harvest since 1986, due to decline in population size. A resumption of harvest could be considered when the 3-year average of the spring population index exceeded 80,000 birds. In 2015 the spring index was 98,155 birds, resulting in a 3-year (2012, 2014–2015 [no survey in 2013]) average index of 81,875 birds that was above the 80,000 bird threshold. The 2016 spring index of 79,348 birds was 19.2% below the 2015 index, but the 3-year average (2014–2016) of 85,795 birds was 4.8% higher than in 2015. The long-term trend (1981–2016) indicates an average annual growth rate of 1.007 ± 0.004 (SE). The 2006 Management Plan has been updated and revised to include harvest guidelines that allow for this hunt.

Pacific brant: Council recommends no change to the current framework. The 2016 Pacific Flyway Midwinter Waterfowl Survey (MWS) estimate was 140,025; 2.5% above the 2014 estimate (136,482) while the most recent 3-year average (2014–2016) is 149,941, below the population objective of 162,000. The fall 2015 population on the Alaska Peninsula was 132,942 brant, a 23% decrease from 2014 of 171,720 brant. The 2015–2016 mid-winter population estimate at the Izembek National Wildlife Refuge (Izembek and Sanak Islands) was 46,772 brant. The 1981–2016 average annual growth rate of over-wintering brant in Alaska is 8.5% per year, with a slightly higher growth rate of 8.8% per year in the past decade (2007–2016). However, the population appears to have stabilized in the most recent five year period (2011–2016) at a growth rate of 3% per year.

The YKDCZS was not designed to assess the population of colonial nesting brant; however this survey provides information on brant nesting outside of the major colonies, which in recent years, accounts for greater than 50% of nesting brant on the Yukon-Kuskokwim Delta. The 2016 indicated total birds (29,986) and indicated breeding birds (13,460) indices were 27.4% and 29.6% higher, respectively than the average of these indices over the last 10 years. Average annual growth rates for indicated total and breeding birds over the last 32 years (1985–2016) were 1.008 ± 0.007 (SE) and 1.043 ± 0.009 (SE), respectively. The 2015 and 2016 YKD colony survey data are not available. Alaska sport harvest averaged 1,484 birds for the past 10 years (2006–2015), accounting for about 6% of the Flyway sport and subsistence harvest.

Light geese: Council recommends no change to the current framework. In 2016, colony surveys estimated the Wrangel Island population at 300,000, a 25% increase from the 2011 estimate of 240,000. The population estimate is well above the population objective (120,000) in the Management Plan. Western Arctic Lesser Snow Geese also nest on the ACP where the breeding population has been growing rapidly. The 2016 Arctic Coastal Plain Breeding Pair Survey estimates of total and breeding birds were $26,016 \pm 11,215$ (SE) and $7,184 \pm 4,123$ (SE), respectively. The long-term (1986–2016) average annual growth rates for total and breeding birds were 1.379 ± 0.084 (SE) and 1.428 ± 0.084 (SE), respectively. HIP reported a snow goose harvest in Alaska in only one of the past 10 years (46 birds in 2005).

Tundra swans: Council recommends no change to the current framework. The status of the western population (WP) is measured during the annual MWS. The 2015 MWS index of swans was 67,745 (data collected winter 2014–15). The 2016 MWS was an incomplete survey; therefore, a population estimate was not reported. The most recent 3-year (2013–15) average is 70,433 swans which is above the Management Plan objective of 60,000 tundra swans. Annually, the index is highly variable. The YKD coastal zone is the core breeding area for WP tundra swans. The 2016 YKD indices of total and indicated breeding birds were 31,251 and 20,060 swans, respectively; 36% and 81% higher than 2015 indices. Long-term (1985–2016) average annual growth rates for total birds and for singles plus pairs were 1.007 ± 0.004 (SE) and 1.015 ± 0.004 (SE), respectively. Alaska has successfully operated swan hunts in Unit 22 since 1988, Unit 18 since 1993, Unit 23 since 1997, and Unit 17 since 2001. This primarily includes birds in the WP. Permit issuance and harvest reporting have followed Management Plan procedures. The 2015 fall harvest was 70 birds, up from 47 in 2014 and above the long-term harvest of 56. Only 127 of 1300 allowable permits were issued.

Tundra swans breeding east of Point Hope, across the Arctic Coastal Plain (ACP) belong to the eastern population (EP) that winters primarily in the Atlantic Flyway. The population objective and harvest strategy for the EP are based on the 3-year average index of the midwinter survey (MWS). The 2016 MWS index was 113,413 and the 3-year average was 111,832, well above the population objective of 80,000 swans. The 2016 indicated total bird and indicated breeding bird indices from the ACP Breeding Pair Survey were 13,764 and 12,295 swans, respectively. The long-term (1986–2016) average annual growth rate in total indicated birds was 1.045 ± 0.004 (SE).

Mid-continent sandhill cranes: Council recommends no change to the current framework. The population is well above management thresholds. The current 3-year average (2014–2016), based on photo-corrected Nebraska aerial surveys is 567,400, well above the established population objective range of 349,000–472,000. Annual indices have been relatively stable since the early 1980s and the trend has slightly increased the past few years. Harvest estimates are coordinated with the Central Flyway. The 2016 harvest data was unavailable. An average of 794 MCP cranes were harvested annually from 2005–2014. The Alaska harvest accounted for about 6% of the North American harvest during that period.

Pacific Population lesser sandhill cranes: Council recommends no change to the current framework. Alaska is the only state that harvests this population. The 2016 harvest data are unavailable. In 2014–2015, 232 cranes were harvested (HIP). Annual harvest estimates are highly variable. The 10-year average (2007–2015) and long-term average (1971–2015) sport harvest were 353 and 279 cranes, respectively.

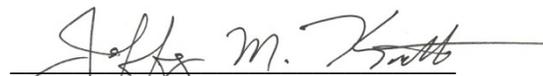
Snipe: Council recommends no change to the current framework. Recent harvest estimates are about 600 ($\pm 143\%$) birds per year, less than 5% of the total Pacific Flyway harvest.

Falconry: Council recommends no change to the current framework. There are currently 47 registered falconers in Alaska. Of these, 20 falconers have a total of 27 falconry birds in possession. Falconry opportunity is limited and harvest is insignificant.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Jason Schamber



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 12 – Duck and Merganser Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends a 107-day season with outside dates between the Saturday closest to September 24 and the last Sunday in January (liberal regulatory alternative) for the duck and merganser season framework in the Pacific Flyway. In addition, Council recommends a daily bag limit of 7 ducks that include no more than 2 hen mallard, 1 northern pintail (liberal 1), 2 canvasback (liberal 2) and 2 redhead. For scaup, Council recommends an 86-day season with a daily bag limit of 3 scaup (moderate). This represents no change from the previous season except for a reduction in the pintail daily bag limit from 2 to 1.

Justification

Council remains committed to the Adaptive Harvest Management (AHM) process that was initiated in 1995. Through 2007, duck seasons in the four flyways were based upon the status of eastern and mid-continent mallard stocks. The latter influenced Pacific Flyway harvest regulations as mid-continent mallards accounted for approximately 40% of Pacific Flyway mallard harvest. In 2008, a western mallard stock was recognized to inform duck harvest management decisions in the Pacific Flyway and is currently defined by two substocks: (1) those mallards breeding in Alaska-Yukon Territory and (2) those mallards breeding in British Columbia, Washington, Oregon, and California.

The 2017 regulatory process implements the recommendations specified in the Final Supplemental Environmental Impact Statement on the Issuance of Annual Regulations Permitting the Hunting of Migratory Birds (SEIS). As a result, revised AHM protocols include a shift in decision timing where the regulations for the 2017 hunting season will be determined in fall 2016. Adjustments to optimization methods and AHM decision frameworks were developed to inform duck hunting regulations based on the breeding populations and habitat conditions observed in 2016 and the regulatory alternatives selected for the 2016 hunting season.

Duck and merganser: In 2008, Council and the U.S. Fish and Wildlife Service (Service) adopted the western mallard adaptive harvest management protocol to inform harvest management decisions for ducks and mergansers in the Pacific Flyway. Regulatory alternatives were described in the proposed 2017–2018 migratory game bird hunting regulations published in the Federal Register on 10 June 2016. The optimal regulatory alternative for the 2017 duck and merganser hunting season was calculated using: (1) the harvest-management objective for western mallards; (2) current regulatory alternatives; and (3) current population models. Based on the liberal regulatory alternative selected for the 2016 hunting season, the 2016 survey results of 1.07 million mallards observed in

Alaska (0.58 million) and the southern Pacific Flyway (0.48 million), the optimal choice for the 2017 hunting season is the liberal regulatory alternative.

More restrictive regulations for some species (i.e., pintails, scaup, canvasbacks, and redheads) are established within the context of the general duck season, and each based on a separate harvest strategy protocol after the general duck seasons length is determined.

Northern pintail: In 2010, the Service and Flyway councils adopted the adaptive harvest management protocol to inform harvest management decisions for northern pintails in all four flyways. For pintails, optimal regulatory alternatives for the 2017 hunting season in each flyway were calculated using: (1) an objective of maximizing long-term cumulative harvest, including a closed-season constraint of 1.75 million birds; (2) current pintail regulatory alternatives; and (3) current population models and their relative weights. Based on a liberal regulatory alternative with a 2 bird daily bag limit selected in 2016, the 2016 survey results of 2.62 million pintails observed at a mean latitude of 58.6 degrees, the optimal regulatory choice for the 2017 hunting season for all four flyways is the liberal regulatory alternative with a 1 bird daily bag limit.

Scaup: In 2008, the Service and Flyway councils adopted the adaptive harvest management protocol to inform harvest management decisions for scaup in all four flyways. For scaup, optimal regulatory alternatives for the 2017 hunting season were calculated using: (1) an objective to achieve 95% of long term cumulative harvest; (2) current scaup regulatory alternatives; and (3) updated model parameters and weights. Based on a moderate regulatory alternative selected in 2016, the 2016 survey results of 4.99 million scaup, the optimal regulatory choice for the 2017 hunting season for all four flyways is the moderate regulatory alternative.

Canvasback: In 2008, the Service and Flyway councils adopted a protocol to inform harvest management decisions for canvasbacks in all four flyways; it was most recently revised in 2008. Between 1994 and 2015, hunting regulations for canvasbacks were based on a prescriptive strategy that predicted the breeding population (BPOP) in year $t+1$ as a function of the BPOP and Canadian ponds in year t , and the harvest expected under each of five regulatory alternatives. This framework does not work under the new SEIS schedule because the decision has to be made in fall 2016, prior to obtaining updated 2017 breeding population and Canadian pond estimates.

At the October 2015 Service Regulatory Committee (SRC) meeting, the SRC requested a group be convened to develop a decision support tool (DST) to deliver canvasback framework recommendations for the 2017–2018 hunting season. A group of Service and state biologists was formed to develop the DST. At the November 2015 Harvest Management Working Group meeting, this group established criteria for developing the DST, which consisted of the following: (1) it needed to be biologically-based, (2) must use data that is currently available, (3) must be simple (i.e., could not require lengthy, intensive analyses), and (4) would be used as a short-term approach for developing harvest recommendations, preferably only for the next one to two hunting seasons. The group agreed that an “assessment of harvest potential” analysis, that

used fixed values for demographic variables estimated for canvasbacks, would likely be sufficient to use as the framework for the DST. Results from the analysis recommend canvasback seasons open, with a 1 bird daily bag, provided the most recent breeding population estimate is above 460,000. Moreover, the daily bag limit can increase to 2 birds per day when the most recent population estimate is above 480,000. The committee recognizes that this analysis used maximum sustained yield as a harvest objective and thus may not be fully reflective of the long-term canvasback population and harvest objectives of the flyways. Given the short-term use of the tool and that the flyways will be addressing long-term canvasback objectives as part of the process of revisiting overall duck harvest objectives, the committee was comfortable moving forward with the DST.

Based on the 2016 survey results of 0.7 million canvasbacks, the regulatory choice defined by the DST, for the 2017 hunting season for all four flyways is the liberal regulatory alternative with a 2 bird daily bag limit. It is important to emphasize the DST is intended to be used in the short-term while the Service and the flyways continue to address long-term canvasback objectives.

Redhead: The 2 bird daily bag limit on redheads has primarily been based on concern for canvasback populations. Because redheads resemble canvasbacks, managers tend to agree any increase in the redhead bag limit would likely translate to an increased canvasback harvest. Redhead regulations have been tied to canvasback regulations as far back as 1972, when the Secretary of the Interior formed a working group to investigate the status of these two species. At that time, there was a discussion of a season closure for both species. A 2 bird daily bag limit for redheads has been in place since at least 1973 in the Pacific Flyway.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Jeff Knetter



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Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 13 – Goose Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends the following changes to goose season frameworks for the Pacific Flyway (see attached proposed framework):

In Wyoming and New Mexico, modify frameworks to:

- increase the bag limit for Canada geese and brant from 3 to 4.

In Washington, modify frameworks to:

- remove the daily bag limit restriction of not more than 4 geese, and add a daily bag limit of 6 for light geese.

In Idaho, modify the frameworks to:

- eliminate the requirement that Idaho monitor the snow goose hunt occurring after the last Sunday in January in the American Reservoir/Fort Hall Bottoms area.

In California, modify frameworks to:

- split the season for white-fronted geese in the Northeast zone into three segments.

Goose status overview: Monitoring activities over the last year indicated many goose stocks increased or were near their long-term averages and/or management plan goals. See the table below for specific information.

Current Population Status and Objectives for Pacific Flyway Goose Populations

	Most Recent Population Indices	Most Recent 3-Year Average	10-year Trend	Population Objective	Status Relative to Objective
Cackling Canada Geese	327,453 (2016)	320,658 (2014 - 2016)	+3%	250,000	Above
Dusky Canada Geese	13,230 (2016)	15,436 (2014-2016)	+8%	20,000	Below
Vancouver Canada Geese	Unknown	NA	NA	None	NA
Aleutian Canada Geese	156,030 (2016)	164,290 (2014 - 2016)	+6%	60,000	Above
Taverner's Canada Geese	48,391 (2016)	42,514 (2014 - 2016)	-3%	None	NA
Lesser Canada Geese	6,623 (2016)	4,319 (2014 - 2016)	-5%	None	NA
Pacific Western Canada Geese	247,037 (2016)	221,680 (2014 - 2016)	+2%	None	NA
Rocky Mountain Western Canada Geese	274,501 (2016)	195,320 (2014 - 2016)	+2%	87,825 - 146,375	Above
Brant	140,025 (2016)	149,941 (2014 - 2016)	0%	162,000	Below
Pacific Greater White-fronted Geese	685,466 (2016)	600,591 (2014 - 2016)	0%	300,000	Above
Tule White-fronted Geese	7,253 (2015)	9,763 (2012 - 2013, 2015)	NA	10,000	Below
Wrangel Island Snow Geese	300,000 (2016)	231,667 (2011, 2015 - 2016)	+8%	120,000	Above
Western Canadian Arctic Snow Geese	451,000 (2013)	NA	NA	200,000	Above
Ross' Geese @ Karrak Lake Only	625,100 (2015)	607,700 (2013 - 2015)	-1%	100,000	Above
Emperor Geese	79,348 (2016)	85,795 (2014 - 2016)	+2%	150,000	Below

Justification to increase the Canada goose and brant bag limit in Wyoming and New Mexico:

The Rocky Mountain Population (RMP) of Canada geese continues to be at or above population objectives. The estimate for 2016 increased more than 54% to 262,000. This is well above the management goal of 117,000.

Currently, New Mexico and Wyoming are the only states within the RMP range of Canada geese that cannot set daily bag limits higher than 3 Canada geese per day. This recommendation would move the allowable daily bag limits for Canada geese to mimic those of other states within the RMP range. The proposed changes would allow managers to provide additional recreational opportunity as well as address depredation issues caused by Canada geese.

Justification to increase the overall goose bag limit in Washington:

Washington has long maintained an overall bag limit restriction for geese of not more than 4 per day while goose bag limits in other states in the flyway have increased, and specified by species (separate bag limits for Canada geese – 4, white-fronted geese – 10, and light geese – 20). Washington generally has a less diverse wintering population of geese than other coastal states, and the restriction of not more than 4 geese per day likely did not limit overall harvest to any large degree (i.e., unlikely to harvest lesser snow geese and Canada geese in the same day, and white-fronted geese are not common in Washington during the goose season). However, Wrangel Island Population (WIP) lesser snow geese have increased to allow additional harvest opportunity.

Based on band recoveries, Washington's light goose harvest is composed almost entirely of WIP lesser snow geese. The 2016 population estimate for WIP lesser snow geese was 300,000, over two times higher than the population objective of 120,000. Washington does not expect a significant increase in harvest because few hunters will attain higher bag limits. Additional protections for this population remain in place through existing framework dates that end in January throughout most areas in Washington. This change will also simplify frameworks by aligning the light goose bag limit in Oregon and Washington relative to WIP lesser snow goose occurrence. The framework wording change would default Washington to the same daily Canada goose limit (4) and white-fronted goose limit (10) as the rest of the Pacific Flyway. If these changes are approved, Washington could establish the 2017-2018 bag limits for concurrent seasons at 6 geese, to include not more than 4 Canada geese, to minimize regulation complexity.

Justification to remove the monitoring requirement for light goose seasons in the American Reservoir/Fort Hall Bottoms region of Idaho after the last Sunday in January:

Distribution and abundance of trumpeter swans have been monitored since the establishment of the Spring Light Goose Hunt in 2010. Despite annual increases of swans, the Service and The Trumpeter Swan Society (TTSS) remain concerned of potential impacts of the spring light goose hunt on trumpeter swan conservation. The potential impacts include disturbance and displacement of swans in the Hunt Area near American Falls Reservoir/Fort Hall Bottoms. To address this concern, the Idaho Department of Fish and Game has conducted monitoring efforts in 2010, 2011, 2012, and 2015 to determine if spring light goose hunt activities resulted in the disturbance and displacement of trumpeter swans from the American Falls Reservoir area. In general, the distribution of swans feeding in fields has been similar during the pre-hunt, hunt, and post-hunt survey periods for the hunt area and the Fort Hall Reservation.

A comparison of swan distribution during surveys conducted in 2010, 2011, 2012, and 2015 show generally similar distribution patterns both in the hunt area and on the Fort Hall Reservation (2011 and 2012 only) between years. In 2015, we observed new swan use in fields along the northern shore of American Falls Reservoir, which could reflect a change in conditions or agricultural practices at those fields.

While swan numbers fluctuated considerably during individual survey periods in all years, our monitoring efforts illustrate continued use of the hunt area during the pre-hunt, hunt, and post-hunt. Our monitoring efforts show that the average number of field-feeding swans per survey during the hunt fluctuated in the hunt area during all four years of surveys and on the Fort Hall Reservation in 2011 and 2012. While the number of swans observed using the survey area on the northwest side of the reservoir declined from 2011 to 2012, the numbers in 2012 were similar to those in 2010 when much of the survey area was excluded from the Spring Light Goose Hunt. Further, the area was used by greater numbers of swans during 2015 than in either of three previous survey years. The difference in abundance may be related to environmental factors, such as weather and/or field conditions. Other monitoring efforts illustrate continued and increasing use of the area as well. Aerial midwinter trumpeter swan counts have been conducted annually in Idaho since 1972 and show an increasing trend. The aerial count in the areas surrounding Fort Hall and American Falls Reservoir show a similar positive trend in recent years.

While there have been seasonal and annual differences in observed swan abundance and distribution using fields in the hunt area and on the Fort Hall Reservation, changes in environmental and agricultural factors make it difficult to determine if these differences are hunting season-related. Without marked birds, we cannot determine if movement out of the expansion area is occurring or if birds are simply moving between the hunt area, the Fort Hall Reservation, and the river/reservoir. However, Service midwinter aerial surveys provide additional data that could help ascertain if winter swan use of the Fort Hall Bottoms/American Falls Reservoir area changes over time.

The importance of the Fort Hall Reservation for field-feeding swans was unknown prior to the surveys conducted in 2011 and 2012. It was expected that the majority of the field-feeding

occurred on the northwest side of the American Falls Reservoir. However, surveys indicate that the Fort Hall Reservation is an important and viable site for field-feeding swans in late winter. While there is no definitive evidence indicating that swans are disturbed and displaced by hunting pressure, if negative interactions between hunting activities and swan behavior are occurring, the Fort Hall Reservation provides apparent ample field-feeding opportunities where hunting is prohibited.

The IDFG is committed to wintering trumpeter swan conservation and management. Currently, no obvious negative trends in trumpeter swan use, distribution, or abundance have been documented. Given no compelling concerns or issues associated with trumpeter swans wintering in eastern Idaho, the IDFG would like to remove the requirement to monitor the snow goose hunt from the Federal Framework.

Justification to split the season for white-fronted geese in California's Northeastern Zone into three segments:

The federal frameworks allow for a three-way split for Canada geese and white-fronted geese; however, it requires Council and Service approval and a 3-year evaluation.

The 2016 projected fall population estimate is 685,469 and the current 3-year average is 600,592, which is substantially above the Flyway population objective of 350,000. Agricultural complaints have increased in the Northeastern Zone and there have been requests from local county fish and game commissions to allow a longer late goose season, in addition to hunting opportunity during the general season. White-fronted geese use the Northeastern Zone as a fall and spring staging area and the Sacramento Valley as their wintering area. A three-way split allows the establishment of hunting seasons to coincide with white-fronted goose occurrence in this zone. In addition, the three-way split would mimic the current light goose season in the same zone. The Pacific Flyway's harvest strategy allows a total harvest of not more than 25% of the estimated fall population when >450,000. During the previous five seasons the estimated harvest rate (estimated harvest/projected fall population), has ranged from 7%-14%, well under the allowance in the harvest strategy.

The evaluation will consist of monitoring the harvest of tule white-fronted geese that are known to occur in California's Northeastern Zone in late winter and early spring. Morphometric measurements will be obtained from hunters who allow their harvested birds to be measured. In addition, band recovery data will also be reviewed.

Proposed changes to goose hunting zones in the Pacific Flyway: (Zone changes only require concurrence of the Flyway Representative)

In Washington:

- Modify the Puget Sound brant zone to include Clallam and Whatcom counties.

In Utah:

- Modify goose zones in Utah to merge the Washington County Zone with the Balance of State Zone.

Justification to expand the Puget Sound brant zone in Washington:

Skagit County is the only county currently open to brant hunting in the Puget Sound Zone. This county is the primary wintering area for Western High Arctic (WHA) brant. Numbers of brant in the nearby counties of Clallam and Whatcom have increased over the last 25 years, and few WHA are known to winter in these counties. Washington intends to open these counties to a limited season (3-5 days). Harvest is expected to be less than 200 birds for the two new counties in the zone. Harvest will be monitored through Washington’s mandatory permit and harvest reporting system.

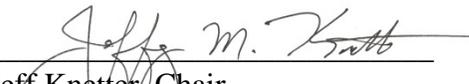
Justification to modify goose zones in Utah:

Utah currently has four goose zones; the Northern, Wasatch Front, Washington County, and Balance of State. This change will merge the Washington County Zone with the Balance of State Zone.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Brandon Reishus



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

2016/17 Federal Register

Note: These are the current (2016/17) regular goose season frameworks in the Pacific Flyway

Pacific Flyway

Geese

Regular Goose Seasons

Season Lengths, Outside Dates, and Limits

Canada geese and brant: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 24) and the last Sunday in January (January 29). In Arizona, Colorado, Idaho, Montana, Nevada, and Utah, the daily bag limit is 4 Canada geese and brant in the aggregate. In New Mexico and Wyoming, the daily bag limit is 3 Canada geese and brant in the aggregate. In California, Oregon, and Washington, the daily bag limit is 4 Canada geese. For brant, Oregon and Washington may select a 16-day season and California a 37-day season. Days must be consecutive. Washington and California may select hunting seasons for up to two zones. The daily bag limit is 2 brant and is in addition to other goose limits. In Oregon and California, the brant season must end no later than December 15.

White-fronted geese: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 24) and March 10. The daily bag limit is 10.

Light geese: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 24) and March 10. The daily bag limit is 20.

Split Seasons: Unless otherwise specified, seasons for geese may be split into up to 3 segments. Three-way split seasons for Canada geese and white-fronted geese require Pacific Flyway Council and U.S. Fish and Wildlife Service approval and a 3-year evaluation by each participating State.

California: The daily bag limit for Canada geese is 10.

Balance of State Zone: A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 24) and March 10. In the Sacramento Valley Special Management Area, the season on white-fronted geese must end on or before December 28, and the daily bag limit is 3 white-fronted geese. In the North Coast Special Management Area, hunting days that occur after the last Sunday in January (January 29) should be concurrent with Oregon's South Coast Zone.

Idaho:

Zone 2: Idaho will continue to monitor the snow goose hunt that occurs after the last Sunday in January (January 29) in the American Falls Reservoir/Fort Hall Bottoms and surrounding areas at 3-year intervals.

Oregon: The daily bag limit for light geese is 6 on or before the last Sunday in January (January 29).

Harney and Lake County Zone: For Lake County only, the daily white-fronted goose bag limit is 1.

Northwest Permit Zone: A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 24) and March 10. Goose seasons may be split into 3 segments. The daily bag limit of light geese is 6. In the Tillamook County Management Area, the hunting season is closed on geese.

South Coast Zone: A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 24) and March 10. The daily bag limit of Canada geese is 6. Hunting days that occur after the last Sunday in January (January 29) should be concurrent with California's North Coast Special Management Area. Goose seasons may be split into 3 segments.

Utah: A Canada goose and brant season may be selected in the Wasatch Front Zone with outside dates between the Saturday nearest September 24 (September 24) and the first Sunday in February (February 5).

Washington: The daily bag limit is 4 geese.

Area 1: Goose season outside dates are between the Saturday nearest September 24 (September 24) and the last Sunday in January (January 29).

Areas 2A and 2B (Southwest Permit Zone): A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 24) and March 10. Goose seasons may be split into 3 segments.

Area 4: Goose seasons may be split into 3 segments.

Permit Zones

In Oregon and Washington permit zones, the hunting season is closed on dusky Canada geese. A dusky Canada goose is any dark-breasted Canada goose (Munsell 10 YR color value five or less) with a bill length between 40 and 50 millimeters. Hunting of geese will only be by hunters possessing a State-issued permit authorizing them to do so. Shooting hours for geese may begin no earlier than sunrise. Regular Canada goose seasons in the permit zones of Oregon and Washington remain subject to the Memorandum of Understanding entered into with the Service regarding monitoring the impacts of take during the regular Canada goose season on the dusky Canada goose population.

Proposed 2017/18 Federal Register changes

Note: This is a mark-up of the 2016/17 Federal Register showing proposed changes for the 2017/18 regular goose seasons in the Pacific Flyway

Pacific Flyway

Geese

Regular Goose Seasons

Season Lengths, Outside Dates, and Limits

Canada geese and brant: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 23) and the last Sunday in January (January 28). In Arizona, Colorado, Idaho, Montana, Nevada, **New Mexico**, and Utah, **and Wyoming** the daily bag limit is 4 Canada geese and brant in the aggregate. ~~In New Mexico and Wyoming, the daily bag limit is 3 Canada geese and brant in the aggregate.~~ In California, Oregon, and Washington, the daily bag limit is 4 Canada geese. For brant, Oregon and Washington may select a 16-day season and California a 37-day season. Days must be consecutive. Washington and California may select hunting seasons for up to two zones. The daily bag limit is 2 brant and is in addition to other goose limits. In Oregon and California, the brant season must end no later than December 15.

White-fronted geese: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 23) and March 10. The daily bag limit is 10.

Light geese: Except as subsequently noted, 107-day seasons may be selected with outside dates between the Saturday nearest September 24 (September 23) and March 10. The daily bag limit is 20.

Split Seasons: Unless otherwise specified, seasons for geese may be split into up to 3 segments. Three-way split seasons for Canada geese and white-fronted geese require Pacific Flyway Council and U.S. Fish and Wildlife Service approval and a 3-year evaluation by each participating State.

California: The daily bag limit for Canada geese is 10.

Balance of State Zone: A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 23) and March 10. In the Sacramento Valley Special Management Area, the season on white-fronted geese must end on or before December 28, and the daily bag limit is 3 white-fronted geese. In the North Coast Special Management Area, hunting days that occur after the last Sunday in January (January 28) should be concurrent with Oregon's South Coast Zone.

Northeast Zone: White-fronted goose seasons may be split into 3 segments.

Idaho:

~~Zone 2: Idaho will continue to monitor the snow goose hunt that occurs after the last Sunday in January (January 29) in the American Falls Reservoir/Fort Hall Bottoms and surrounding areas at 3-year intervals.~~

Oregon: The daily bag limit for light geese is 6 on or before the last Sunday in January (January 28).

Harney and Lake County Zone: For Lake County only, the daily white-fronted goose bag limit is 1.

Northwest Permit Zone: A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 23) and March 10. Goose seasons may be split into 3

segments. The daily bag limit of light geese is 6. In the Tillamook County Management Area, the hunting season is closed on geese.

South Coast Zone: A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 23) and March 10. The daily bag limit of Canada geese is 6. Hunting days that occur after the last Sunday in January (January 28) should be concurrent with California's North Coast Special Management Area. Goose seasons may be split into 3 segments.

Utah: A Canada goose and brant season may be selected in the Wasatch Front ~~and Washington County~~ Zones with outside dates between the Saturday nearest September 24 (September 23) and the first Sunday in February (February 4).

Washington: The daily bag limit for light geese is 4 geese ~~6~~.

Area 1: Goose season outside dates are between the Saturday nearest September 24 (September 23) and the last Sunday in January (January 28).

Areas 2A and 2B (Southwest Permit Zone): A Canada goose season may be selected with outside dates between the Saturday nearest September 24 (September 23) and March 10. Goose seasons may be split into 3 segments.

Area 4: Goose seasons may be split into 3 segments.

Permit Zones

In Oregon and Washington permit zones, the hunting season is closed on dusky Canada geese. A dusky Canada goose is any dark-breasted Canada goose (Munsell 10 YR color value five or less) with a bill length between 40 and 50 millimeters. Hunting of geese will only be by hunters possessing a State-issued permit authorizing them to do so. Shooting hours for geese may begin no earlier than sunrise. Regular Canada goose seasons in the permit zones of Oregon and Washington remain subject to the Memorandum of Understanding entered into with the Service regarding monitoring the impacts of take during the regular Canada goose season on the dusky Canada goose population.

PACIFIC FLYWAY COUNCIL

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Recommendation 14 – Mourning and White-winged Dove Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends the “Standard” regulatory alternative as prescribed by the mourning dove harvest strategy for doves in the Western Management Unit (WMU), which is no change from 2015.

Council also recommends a modification to the framework to allow split seasons in Idaho, Nevada, Oregon, Utah, and Washington.

Council recommends a framework with outside dates between September 1 and January 15 with state-specific season lengths and bag limits as follow.

In Idaho, Nevada, Oregon, Utah, and Washington, the season length shall be not more than 60 days, which may be split between two periods. The daily bag limit is 15 mourning and white-winged doves in the aggregate.

In Arizona and California, the season length shall be not more than 60 consecutive days, which may be split between two periods, September 1–15 and November 1–January 15. In Arizona, during the first segment of the season, the daily bag limit is 15 mourning and white-winged doves in the aggregate; of which no more than 10 may be white-winged doves. During the remainder of the season, the daily bag limit is 15 mourning doves. In California, the daily bag limit is 15 mourning and white-winged doves in the aggregate; of which no more than 10 may be white-winged doves.

Justification

A new mourning dove harvest strategy was endorsed by the Flyway councils and Service Regulations Committee in 2013 for the Eastern, Central, and Western Management Units, with implementation beginning in 2014.

The harvest strategies for each Management Unit share a common assessment framework:

- Discrete logistic model to estimate population parameters (intrinsic rate of growth, carrying capacity) and predict population abundance in the year subsequent to the data time series,
- Critical abundance thresholds based on 30% and 50% of approximated maximum sustained yield,
- 85% confidence the predicted abundance exceeds the critical threshold that would trigger that regulatory change,
- Standard, restrictive, and closed regulatory alternatives consistent in daily bag limit.

The predicted abundance of mourning doves and respective credible intervals (in millions) for September 2016 in the WMU were 37.04 million. The predicted abundance results in a “Standard” regulatory alternative as prescribed by the harvest strategy.

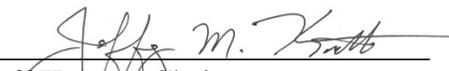
The framework change to introduce a split season in Idaho, Nevada, Oregon, Utah, and Washington would allow northern states in the WMU to hold a split dove season, but would not increase season length or bag limits. Currently, all states in the Eastern Management Unit, the Central Management Unit, and southern states in the WMU are allowed to split their dove seasons into two or three segments. Mourning dove harvest could increase with this change. For example, some hunting effort could shift from a time period when little harvest occurs (i.e., October), to a period when mourning doves may be more abundant (i.e. November-January). Currently, every other state where doves are hunted is allowed at least one season split.

Mourning Dove harvest may increase under this proposal; however, any increase is expected to constitute a small percentage of the overall mourning dove harvest in the northern states in the WMU. Harvest Information Program (HIP) data indicates 85% of the mourning dove harvest in the northern states of the WMU occurs during the first two weeks of September, a pattern which is similar to most other states in the U.S. Effort and harvest during any later season period would be assessed through the existing HIP.

Adoption

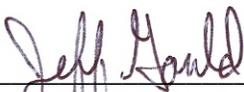
Pacific Flyway Study Committee
September 28, 2016

Contact: Melanie Weaver



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

PACIFIC FLYWAY COUNCIL

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Recommendation 15– Rocky Mountain Population Sandhill Crane Season Framework

Recommendation

The Pacific Flyway Council (Council) recommends no change in the season framework for the Rocky Mountain Population (RMP) of sandhill crane, except:

Council recommends expansion of the existing RMP sandhill crane hunting unit in southwestern Montana (Gallatin and Madison counties and the Dillon/Twin Bridges/Cardwell hunt area (HD 380-01)) to include ALL of Beaverhead and Jefferson counties. The new unit description, beginning in 2017, would be: "all of Beaverhead, Gallatin, Jefferson, and Madison counties."

Justification

Pacific Flyway framework justification: The Pacific and Central Flyway RMP sandhill crane Management Plan allows harvest of RMP sandhill cranes when the population index exceeds 15,000, based on the mean of the three most recent reliable surveys conducted on September pre-migration staging areas. The 2015 September pre-migration survey counted 24,330 cranes, and resulted in a 3-year average of 21,453 cranes, which is near the population objective range of 17,000 to 21,000 cranes.

When the fall population survey and recruitment survey become available in 2016 (by December 1), the Service Pacific Flyway Representative will use the available data and the harvest formula to calculate the overall allowable harvest and state harvest allocations for hunting seasons in the following year. By December 10, the Pacific Flyway Representative will notify the Pacific and Central Flyway subcommittees and the Central Flyway Representative with the harvest allocations results and will also notify the Service Regulations Specialist with the harvest allocation results, to update the federal register.

Montana expanded hunt area justification: Montana Fish, Wildlife, and Parks (MFWP) proposes to expand hunt area HD 380-01, which is located in the Pacific Flyway portion of Montana, and allow crane hunting within Montana's annual harvest allocation. Expanding the hunting district boundaries to the county level will simplify boundary definitions. Also, landowners in currently closed parts of Beaverhead and Jefferson counties have reported agricultural damage related to cranes on their grain fields and this change will provide a tool for additional landowners to address crop damage. Enlarging the hunt area should also distribute hunting pressure and increase hunter opportunity.

Harvest allocation among the states for RMP greater sandhill cranes is determined by a formula prescribed in the management plan approved for this population by the Pacific and Central flyways. Crane harvest will continue to be monitored through questionnaires, and MFWP

believes harvest will remain within the proposed harvest allocation. The current quota for this hunt unit is 120 permitted hunters (2 crane licenses per permitted hunter).

Sufficient data for the proposed expansion area have been collected from fall staging counts for 15 years; over the past five years, approximately 3,000 cranes, on average, have been observed in this expansion area during September pre-migration surveys. The majority of these cranes are counted in the Dillon-Twin Bridges area; however, an average of 700 cranes has been counted in adjoining areas.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Blair Stringham



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 16 – Subsistence Season Framework

Recommendation

The Pacific Flyway Council (Council) endorses the regulations for spring and summer subsistence harvest of migratory birds and their eggs in Alaska (50 CFR 92) for 2017 with the following four changes recommended by the Alaska Migratory Bird Co-Management Council (AMBCC): (1) Open the emperor goose season to allow for a customary and traditional bird harvest; (2) Allow subsistence egg harvest of Cackling Canada geese in the Yukon-Kuskokwim Delta (YKD) region of Alaska; (3) Allow permanent residents of the villages of Tatitlek and Chenega Bay to participate in the Cordova spring/summer subsistence hunt; and (4) Amend harvest season dates for egg gathering and waterfowl harvest in the Northwest Arctic region.

Council appreciates the efforts of the partners in the AMBCC to implement the newly designed subsistence harvest survey to maintain reliable and comparable annual harvest estimates. Council recommends the Service fund the new harvest survey schedule as proposed by the AMBCC.

Justification

Regulations allow for continuation of customary and traditional subsistence uses of migratory birds in Alaska. Regulations were developed by the AMBCC, which consists of the Service, the Alaska Department of Fish and Game, and 11 Native Regional Management bodies. The AMBCC has proposed to maintain the 2016 spring/summer subsistence harvest regulations with the amendments above pertaining to migratory birds for 2017.

Emperor goose hunt: Emperor geese have been closed to spring/summer subsistence harvest since 1987, due to a decline in population size. The status of the emperor goose population is measured by annual aerial survey counts of spring migrants in southwest Alaska; a 3-year running average of this count is recognized by Council as the management index to guide harvest (Pacific Flyway Council 2006). The 2006 Emperor Goose Management Plan (2006 Plan), developed in conjunction with the AMBCC, specifies that hunting may be considered when the 3-year running average of the spring index reaches 80,000 geese. In 2015, the spring index was 98,155 geese, resulting in a 3-year average of 81,875. In 2016, the 3-year average (85,795) continued above the harvest threshold.

In July 2015, the Service Regulations Committee (SRC) supported a limited harvest of emperor geese for the 2016 spring/summer subsistence season conditioned on the following: (1) a limited harvest of 3,500 geese; (2) a harvest allocation system (quota, permit) to provide the ability to quantify the harvest; (3) a population monitoring program; and (4) a revised Management Plan that included harvest allocation, population objective, population monitoring, and harvest thresholds. In response, the AMBCC opted to delay a hunt until 2017 to allow additional time to adequately address these conditions placed on the harvest.

These conditions have been addressed through the AMBCC and Pacific Flyway Emperor Goose Management Plans. The AMBCC developed a separate AMBCC Emperor Goose Management Plan in conjunction with a revision of the Pacific Flyway Emperor Goose Management Plan. The AMBCC Plan specifies regulations for the spring/summer subsistence harvest, while the Pacific Flyway Plan specifies regulations for the fall/winter harvest. The AMBCC adopted the AMBCC Emperor Goose Management Plan at their regulatory meeting on September 1, 2016. The two Management Plans contain identical population assessment methods, population objectives and regulatory harvest thresholds; and together address the Management Plan conditions expressed by the SRC.

Population models were developed as part of the planning process. Models estimated the emperor goose population size at between 150,000 and 170,000 geese; a population size sufficient to allow opening a customary and traditional hunt.

Subsistence harvest surveys were redesigned with planned implementation in fall 2016, providing a potential method to monitor the subsistence harvest of emperor geese.

The Service recently conducted a comprehensive survey data evaluation, which guided the decision to replace the spring survey index with a summer survey index derived from aerial surveys of emperor goose abundance on the YKD breeding area. The summer survey index is less biased and more precise than the spring survey index, and is based on statistical sampling theory.

Cackling Canada goose egg gathering: Subsistence harvest and egg gathering of cackling Canada geese on the YKD is closed from the period when egg laying begins until young birds are fledged. This regulation was agreed to in 1984, under terms of the Yukon-Kuskokwim Delta Goose Management Plan, to help grow a severely diminished population. Since then, the cackling Canada goose population has increased and is currently well above the population objective of 250,000; the most recent 3-year (2014–2016) average is 320,658 birds. The population objective of 250,000 was a compromise among stakeholders to balance the subsistence needs of Alaska natives and the ecology of the YKD breeding ground with a reduction of crop damage by geese in Oregon and Washington. This regulation would allow the subsistence harvest of cackling Canada geese eggs to be similar with other species, where subsistence egg gathering and harvest are open from April 2–August 31, except during the 30-day closure period. Subsistence harvest of cackling Canada geese eggs is consistent with recent increases to sport harvest bag limits in the Pacific Flyway. Given cackling Canada geese are above population objective and subsistence harvest is not expected to significantly increase, the population can sustain the regulation changes in this proposal.

Cordova hunt: Permanent residents of the “included” areas of Tatitlek and Chenega Bay are eligible to harvest migratory birds and eggs for subsistence purposes in Prince William Sound. In 2012, the SRC added Cordova in east Prince William Sound as an “included area,” eligible for spring/summer subsistence harvest. The approved regulation allowed only residents of Cordova to hunt by special registration permit, restricted to barrier islands in the Copper River Delta. The hunt is open only to ducks, white-fronted and snow geese, and sandhill cranes; egg gathering is open only to glaucous-winged, herring, and mew gulls. Because this regulation is restricted to Cordova residents only, the residents of Tatitlek and Chenega Bay are ineligible to participate in

this hunt. The purpose of the current proposal is to expand the registration permit hunt in Cordova to include the residents of Tatitlek and Chenega Bay, allowing them to continue sharing their traditional subsistence use areas. The change in regulation would likely result in a small increase in the number of eligible hunters, and would likely have minimal impact on healthy bird populations open to harvest. The estimated subsistence harvest in 2014 was 32 ducks, 10 geese, and 131 gull eggs. Outreach efforts are planned to ensure hunters from Tatitlek and Chenega Bay are aware of the list of harvestable species and are provided with identification materials.

Northwest Arctic hunt dates: An amendment to the dates for egg gathering and bird harvest in the Northwest Arctic region was proposed to better align the open season dates with the presence of eggs, and hunter access to waterfowl, specifically for residents of coastal areas. The current open season dates are timed early relative to arrival and nesting of most waterfowl in the coastal zone of the region. Service surveys indicate the laying period for waterfowl in the Kotzebue Sound region generally occurs during the last week of May to the first week of June, with birds nesting later along the coast than farther inland. The proposal changes open season dates for hunting and egg gathering from April 2–June 9 to April 2–June 14; and the dates for hunting only from August 15–August 31 to July 16–August 31. The new dates balance the opportunity for hunters in coastal areas to harvest birds and eggs with respect to the 30-day closure period (June 15–July 15). The proposal also lists an adjustment to dates for hunting molting/non-nesting waterfowl from July 1–July 31 to July 1–July 15. These dates are better aligned with the molt period.

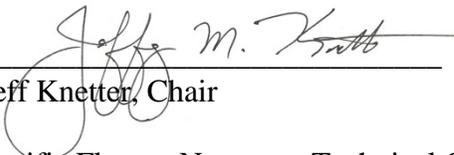
Harvest surveys: Harvest monitoring is a necessary part of the co-management process, which strives to maintain healthy migratory bird populations, create sustainable hunting opportunities, and improve confidence among management agencies and the public in the co-management process. Council recognizes and appreciates the substantial progress made by the partners of the AMBCC in establishing statewide subsistence harvest surveys in 2004, revisions incorporated in 2010, and the 2016 revisions designed by the AMBCC Native Caucus in cooperation with Colorado State University.

Council recognizes the sustainability of the customary and traditional harvest in Alaska requires the benefit of reliable harvest surveys focused, at minimum, on the most commonly harvested species. Improved harvest estimates of all commonly harvested subsistence species will result in improved confidence among management agencies and the public in the co-management process. Harvest surveys also improve opportunities for increased outreach and education to share biological observations, traditional ecological knowledge, and management ideas between partners. Outreach and education are also excellent tools to improve local cooperation. Survey continuity is an important element of this process and is crucial to the success of this program.

Adoption

Pacific Flyway Study Committee
September 28, 2016

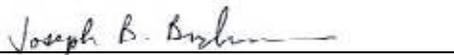
Contact: Jason Schamber



Jeff Knetter, Chair

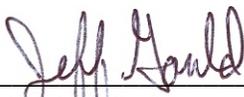
Pacific Flyway Nongame Technical Committee
September 28, 2016

Contact: Travis Booms



Joseph Buchanan, Acting Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 17 – Cackling Canada Goose Management Plan

Recommendation

The Pacific Flyway Council (Council) endorses the final revision of the Management Plan for Cackling Canada Geese:

Justification

The Pacific Flyway Management Plan for Cackling Canada geese (Plan) has been reviewed and revised by the Cackling Canada Goose Subcommittee. The last revision of this plan occurred in 1999. The 2016 revision process included consultation with stakeholders in Alaska, Oregon, and Washington. Council was presented with the revised Plan for review in early July 2016, with intention to seek Council adoption at the September 2016 meeting.

The purpose of this Plan is to provide guidance for management of cackling Canada geese. Specific management actions are to maintain a population index of 250,000 geese based on biological, economic, and social factors; and historical population estimates.

Management is challenging on wintering areas in Oregon and Washington because this population largely mixes with other populations of Canada geese, including dusky Canada geese, whose small population calls for harvest restrictions. Cackling geese feed in agricultural fields in this region from late September to early May, damaging crops and creating an economic burden for farmers. In Alaska, these geese are an important subsistence resource for people living in western Alaska, especially Alaska Natives on the Yukon-Kuskokwim Delta.

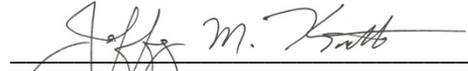
The Plan provides updates to information presented in the 1999 Plan. A major change to the current Plan is a revised harvest strategy that seeks to maintain the population at about 250,000 geese. Specifically, if the 3-year average population is below 225,000 or above 275,000 geese, harvest restrictions or liberalizations would be implemented in an attempt to move the population back towards the goal of 250,000

The Plan was developed with substantial input from groups who interact with cackling geese throughout their annual cycle. Multiple meetings were held with representatives from the agricultural community in Oregon and Washington, as well as with representatives of the Association of Village Council Presidents in Alaska. Additionally, Council funded a working group of stakeholders (Alaska Natives, Yukon Delta NWR staff, Oregon landowners, and Oregon sport hunters) that met twice during 2015 to provide input for managers to consider when revising the plan.

Adoption

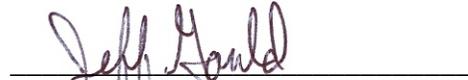
Pacific Flyway Study Committee
September 28, 2016

Contact: Brandon Reishus



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 18 – Eastern Population Tundra Swan Hunting Permits.

Recommendation

The Pacific Flyway Council supports increasing the number of Eastern Population (EP) Tundra Swan hunting permits by 25%.

Justification

The 2016 combined Atlantic and Mississippi Flyway EP tundra swan count is 113,593 swans with a 3-year average of 111,892 swans. The Eastern Tundra Swan Population has increased in recent years and is currently 40% above the population objective of 80,000 swans.

The approved joint Management Plan for Eastern Population Tundra Swans allows for a 25% increase in hunting permits when the 3-year average of the combined Atlantic and Mississippi Flyway mid-winter surveys exceeds 110,000 swans. The proposed 2,400 permit increase will be added to the current allocation of 9,600 permits. The total permits allowed for each state represents an increase of 25% for each hunt state. The 2,400 permits shall be apportioned to Eastern Tundra Swan tundra swan hunting states as follows.

State	No. of additional permits	Total permits
Montana (central flyway portion)	125	625
North Dakota	550	2,750
South Dakota	325	1,625
Virginia	150	750
North Carolina	1,250	6,250
Total	2,400	12,000

Alaska is the only Pacific Flyway state that has breeding Eastern Tundra Swans. Alaska is not apportioned hunting permits for Eastern Tundra Swans.

All four flyways are signatories to the Management Plan. The Atlantic Flyway requested our support.

Adoption

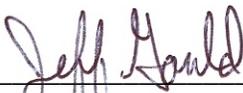
Pacific Flyway Study Committee
September 28, 2016

Contact: Jason Schamber



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 19 – Letter of Appreciation to Bill Long

Recommendation

The Pacific Flyway Council (Council) recommends sending the attached letter of appreciation to Bill Long, founder and director of the Wyoming Wetlands Society.

Justification

Bill Long founded the Wyoming Wetlands Society (WWS) in 1986, and has since served as the organization's director. The WWS, is a 501 (C) (3) non-profit organization based in Jackson, Wyoming. Bill Long, through WWS, has cooperated with the Council to help restore RMP trumpeter swans. A Council management strategy is to release captive-reared swan cygnets or yearlings during summer into suitable habitats to establish new breeding flocks that winter outside the core Tri-state Area (Idaho and Pacific Flyway portions of Montana and Wyoming), while maintaining connectivity to established flocks. The WWS is the primary source of RMP trumpeter swans for release in the Pacific Flyway. The RMP trumpeter swans have recovered from a few hundred swans in the early 1900s to over 17,000 swans in 2015, most of which breed in Canada. The U.S. breeding segment population objective is 718 adults and subadults (165 nesting pairs) based on the 2012 Council management plan for this population. The fall 2015 U.S. breeding population size was estimated to be 718 swans.

In addition to Bill's substantial contributions to help achieve the population objective for RMP trumpeter swans, this year represents the 30th anniversary of the WWS. Bill has made many significant contributions during his 30-year tenure as the director of the WWS to protect, preserve, restore and enhance the wetlands upon which RMP trumpeter swans depend.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Claire Gower



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Mr. Bill Long, Program Director
Wyoming Wetlands Society
P.O. Box 3216
Jackson, Wyoming 83001

Dear Bill:

The Pacific Flyway Council (Council) would like to recognize your partnership and contributions to trumpeter swan conservation in the Pacific Flyway. As we celebrate achieving our initial population objective for the Rocky Mountain Population (RMP) of trumpeter swans, we recognize the many significant contributions during your 30-year tenure as the director of the Wyoming Wetlands Society (WWS) to protect, preserve, restore and enhance the wetlands on which RMP trumpeter swans depend.

Council appreciates that you founded WWS in 1986 as a 501 (C) (3) non-profit organization, and have since served as the organizations program director. Council also appreciates that the primary objectives of WWS are to aid in the restoration of the Rocky Mountain Population (RMP) of trumpeter swans. All of this has been accomplished through partnerships with private landowners, state and federal agencies, and other non-profit organizations. While this in itself is an outstanding contribution and a full time effort, it must be noted that for almost the entire time that you were founder and director of WWS, it was in addition to your full time work as a conservation officer with the Wyoming Game and Fish Department.

You, and WWS, have cooperated with the Pacific Flyway Council to help restore RMP trumpeter swans. One of Council's management strategies is to release captive-reared swan cygnets or yearlings during summer into suitable habitats to establish new breeding flocks that winter outside the core Tri-state Area (Idaho and Pacific Flyway portions of Montana and Wyoming), while maintaining connectivity to established flocks. The WWS is the primary source of RMP trumpeter swans for release in the Pacific Flyway (about 35 annually). The RMP trumpeter swan has recovered from a few hundred swans in the early 1900s to about 17,178 swans in 2015, most of which breed in Canada. The US breeding segment population objective is 718 adults and subadults (165 nesting pairs) based on Council's management plan (2012) for this population. The fall 2015 U.S. breeding population size was estimated to be 718 swans.

In addition to your substantial contributions to help achieve the population objective for RMP trumpeter swans, this year represents the 30th anniversary of the WWS. You have made many significant contributions to trumpeter swan and wetland habitat conservation during your 30-year tenure as the director of the WWS. Below are some examples of your outstanding contributions.

- Provided daily care for captive trumpeter swans and maintained holding facilities operated by WWS near Jackson, Wyoming, and opportunistically enhanced and

expanded captive trumpeter swan rearing ponds and wetlands, and hand-reared cygnets when necessary. About 700 trumpeter swans have been produced and released in the western United States to help restore trumpeter swan populations.

- Worked with State agencies in Wyoming, Montana, Idaho, and Oregon, to restore trumpeter swans to their historic breeding range and to promote partnerships between state agencies to encourage connectivity within the Tri-state area.
- Played a major role in an egg collection project where, during a three-year period about 150 cygnets were successfully hatched and raised.
- Created and managed several wetland complexes near Jackson, Wyoming for captive swan production.
- Funded a beaver translocation project where more than 150 beavers were released between 2004–2016 to enhance wetlands near Jackson, Wyoming.
- Banded swans for 30 years as part of the WWS captive breeding program. Recent banding data and blood samples have been used for disease work and to define DNA of resident and migrant swans primarily from summer nesting areas in the Greater Yellowstone area and in nesting areas from British Columbia and Alberta, Canada
- Worked with the Pacific Flyway Council and the U.S. Fish and Wildlife Service to develop a protocol and best management practices for release or transport of trumpeter swans, and also a protocol for allocation of captive-reared trumpeter swans for release in the Pacific Flyway.
- Regularly attended meetings of the Pacific Flyway Council’s technical committees and the Greater Yellowstone Trumpeter Swan Working Group to answer questions, provide recommendations, coordinate, and provide other support for trumpeter swan restoration and management in the Pacific Flyway.
- Developed a shallow wetland for canvasback nesting near Elk Mountain, Wyoming.
- Created an island and peninsula to enhance waterfowl nesting at a wetland complex near Elk Mountain, Wyoming.
- Initiated a captive trumpeter swan breeding program at a wetland complex near Elk Mountain, Wyoming.
- Worked with the Wyoming Game and Fish Department to allow free-flying trumpeter swans in the Platte Valley near Saratoga, Wyoming.
- Worked with Tom Thorne and Wyoming of Game and Fish Department to study and minimize disease transmission in wild swans.
- Captured and banded swans at Red Rock Lakes National Wildlife Refuge in Montana and areas near Jackson, Wyoming.
- Developed a program to use hay stubble and field flooding to enhance breeding habitat for pintail and mallards in the North Platte River Valley of Wyoming.
- Worked with John Squires during his doctoral research on energetics of nesting swans in the Jackson area, and provided the captive flock to test plant digestibility, digestion rates, and nutrient quality.
- Evaluated disease and food resource issues at Rock Lake on the Targhee National Forest for two cygnets from a nest that traditionally produced cygnets that starved before fledging. Cygnets were raised in captivity and released on the Salt River in western Wyoming

- Partnered with the Wyoming Game and Fish Department's Nongame Program, the Bureau of Land Management, and U.S. Fish and Wildlife Service to provide captive-reared swans for release in the Green River drainage which resulted in more than doubling the number and overall distribution of the wild nesting population of trumpeter swans in Wyoming.
- Released swans at Seedskaadee National Wildlife Refuge along the Green River in Wyoming to help establish breeding pairs on the refuge as part of the overall Green River Range expansion project
- Created Wilson wetland by restoring a privately owned gravel pit near Jackson, Wyoming.
- Repaired the water control structure at Wilson wetland near Jackson, Wyoming.
- Designed and installed a water control structure at the Pinto Ranch wetland complex near Moran, Wyoming, which is one of the most productive swan nesting habitats in the area.
- Worked with Ducks Unlimited, Inc. and Wyoming Game and Fish Department on the Lily Lake wetland project on the Bridger-Teton National Forest in Wyoming to install a water control structure and enhance wetland habitat for waterfowl and other migratory birds.
- Developed the Dew Place ephemeral wetlands in the Gros Ventre drainage near Jackson, Wyoming.
- Developed the Upper Gros Ventre River oxbow and ephemeral wetlands near Jackson, Wyoming through a grant from the Wyoming Wildlife and Natural Resource Trust.
- Cooperated with the U.S. Forest Service to restore and enhance wetlands by installing a water control structure, cleaning and restoring ditches, developing islands, and establishing wetland plants.
- Made numerous private landowner contacts and conducted numerous public outreach and education events near Jackson, Wyoming to increase the capacity for trumpeter swan and wetland habitat conservation.
- Cooperated with the U.S. Fish and Wildlife Service and the Wyoming Wildlife and Natural Resource Trust to convert gravel pits into the functioning Valley Springs wetland complex.
- Cooperated in the trumpeter swan restoration projects of the Confederated Salish and Kootenai Tribes, Flathead Indian Reservation, Pablo, Montana and the Shoshone-Bannock Tribes, Fort Hall Indian Reservation, Idaho.
- Cooperated in a trumpeter swan egg collection program in Alberta and British Columbia, Canada during 2007–2009 where 60 eggs were gathered, hatched, and maintained in a captive-rearing facility to provide offspring to be used in trumpeter swan restoration programs in the western United States.
- Cooperated on a trumpeter swan restoration program at Grays Lake National Wildlife Refuge in Idaho, where eggs were removed from nests with a history of failure and where fledging was compromised and hatched in captivity. These cygnets were subsequently released at Grays Lake National Wildlife Refuge.
- Developed a technique for grafting 1-day old cygnets to active nests to help restore trumpeter swan populations.
- Cooperated in the Blackfoot Challenge to restore breeding trumpeter swans to the Blackfoot River Valley near Ovando, Montana; a collaborative effort of private

landowners, local schools, U.S Fish and Wildlife Service, and Montana Fish, Wildlife and Parks.

- Worked with Doug Smith at Yellowstone National Park to restore a trumpeter swan breeding population to the Park, and study swan use of available habitats and the cause of habitat loss.
- Conducted research with Jeff Snyder (Oregon and Idaho State universities) using underwater temperature loggers to determine incubation patterns and nest attendance in order to evaluate trumpeter swan nesting success.

On behalf of the Pacific Flyway Council, we thank you for all your efforts.

Sincerely,

A handwritten signature in dark ink that reads "Jeff Gould". The signature is written in a cursive, slightly slanted style.

Jeff Gould, Chair
Pacific Flyway Council

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Recommendation 20 – Letter to U.S. Fish and Wildlife Service Regarding Analysis of Peregrine Falcon Take Authorization

Recommendation

The Pacific Flyway Council (Council) endorses sending the attached letter to the U.S. Fish and Wildlife Service (Service) regarding an analysis of Peregrine Falcon take authorization.

Justification

Council previously requested that the Service reevaluate the alternatives to authorize harvest levels of migrant Peregrine Falcons (letter dated February 8, 2008). The final rule (August 2008) did not consider Council's recommendation. Recently, a new analysis (Franke 2015) identified opportunities for sustainable Peregrine Falcon harvest at higher take levels than currently authorized. We therefore ask the Service to conduct a new analysis, incorporating new scientific information where applicable, to determine if there is a potential to increase harvest opportunities of Peregrine Falcons.

Adoption

Pacific Flyway Nongame Technical Committee
September 28, 2016

Contact: Joe Buchanan



Joe Buchanan, Acting Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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September 30, 2016

Brad Bortner, Chief
U.S. Fish and Wildlife Service
Division of Migratory Birds
5275 Leesburg Pike, MS: MB
Falls Church, VA 22041-3803

Re: Analysis of Peregrine Falcon Take Authorization

Dear Mr. Bortner:

It has been more than a decade since Peregrine Falcon take was first authorized for falconry harvest following its Endangered Species Act delisting. The Pacific Flyway Council (Council) previously requested that the U.S. Fish and Wildlife Service (Service) reevaluate the alternatives to authorize harvest levels of migrant Peregrine Falcons (letter dated February 8, 2008). The final rule did not consider Council's recommendation. Recently, a new analysis (Franke 2015) identified opportunities for sustainable Peregrine Falcon harvest at higher take levels than currently authorized.

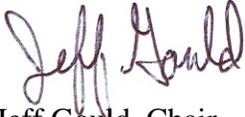
We therefore ask the Service to conduct a new analysis, incorporating new scientific information (e.g., Franke 2015) where applicable, to determine if there is a potential to increase harvest opportunities of Peregrine Falcons. This new analysis would include:

1. A reassessment of the potential impacts of Peregrine Falcon harvest across the continent within multiple management units (i.e., more than three) that reflect patterns of movement by Peregrine Falcons within flyways of North America and areas of management concern.
2. A comprehensive assessment of the sustainable harvest for both nestling and migrant Peregrine Falcons. This new analysis should be used to inform harvest authorizations under each category.
3. A new assessment of migrant harvest under an extended federal harvest season. The current harvest season precludes harvest of migrant Peregrine Falcons, as in some states migrants typically become available for harvest only after the federal season has closed (i.e., August 31).

Although the falconers are a small stakeholder community, they were key partners in the recovery of the Peregrine Falcon population and remain dedicated partners today. Current scientific information is available and should be used to inform policy decisions relating to Peregrine Falcon harvest. While we understand there are many tasks that require the attention of

Service staff, we ask that new analyses regarding Peregrine Falcon take be conducted to address the interests of the falconry community in the United States. Please advise us when such an analysis can be completed.

Sincerely,

A handwritten signature in dark ink that reads "Jeff Gould". The signature is written in a cursive, flowing style.

Jeff Gould, Chair
Pacific Flyway Council
Cc: Nongame Technical Committee

Reference:

Franke, A. 2015. Population estimates of northern juvenile Peregrine Falcons with implications for harvest levels in North America. *Journal of Fish and Wildlife Management* 7[1]:36-45.

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Recommendation 21 – Letter to U.S. Fish and Wildlife Service Regarding Concerns with the Federal Falconry Database and Request for Coordination

Recommendation

The Pacific Flyway Council endorses sending the attached letter to the U.S. Fish and Wildlife Service (Service) outlining concerns with the Service's federal falconry database.

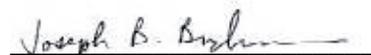
Justification

The Pacific Flyway states have concerns with the maintenance and functionality of the federal falconry database. Nearly all 50 states have been certified by the Service to permit falconry take under the federal regulatory framework. Therefore, current issues with the federal falconry database are limiting the states' ability to enforce falconry regulations.

Adoption

Pacific Flyway Nongame Technical Committee
September 28, 2016

Contact: James Driscoll



Joe Buchanan, Acting Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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September 30, 2016

Brad Bortner, Chief
U.S. Fish and Wildlife Service
Division of Migratory Birds
5275 Leesburg Pike, MS: MB
Falls Church, VA 22041-3803

Re: Concerns with the U.S. Fish and Wildlife Service's Federal Falconry Database and Request for Coordination with the States.

Dear Mr. Bortner:

The Pacific Flyway states have concerns with the maintenance and functionality of the federal falconry database. Nearly all 50 states have been certified by the U.S. Fish and Wildlife Service (Service) to permit falconry take under the federal regulatory framework. Within that framework, the Service mandated that most state wildlife agencies and all falconers use the federal falconry database to report falconry activities such as acquisitions, transfers and releases. Problems have surfaced because the Service limits access of state permit administrators to only the falconer entries within their state, instead of the national database. Our concerns include:

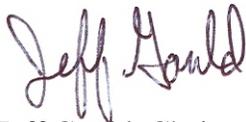
1. The federal database produces unreliable and inconsistent results when queried by state permit administrators. For example, searches for acquisitions by 'FEDID,' 'StatePermitID,' 'Full Falconer Name,' and 'Last Name' return different information on the same falconer. As the names and state permit ID's change over time, we recommend the revised database use 'FEDID,' as the preferred reference field; this ID should not change throughout a falconer's lifetime.
2. When state permit administrators query for transfer of birds, the "sender" information is switched with the "recipient." However, the information is correct when accessed by the falconer.
3. Management of falconry take at the flyway level (e.g. Peregrine Falcon) is severely complicated by the limited access allowed to state falconry administrators. Modifying access permissions to state falconry administrators to include queries on harvest, transfer and disposition of raptor species and individuals nationwide would help state agencies manage harvest rates on a flyway level. For example, state permit administrators have access only to data associated with their state's falconers. Although these queries are useful, the output remains misleading and inadequate. To illustrate this point, a query for

Harris' Hawks captured in Arizona yields a list of Arizona falconers that captured Harris' Hawks regardless of the state in which the bird was captured. However, it does not include out-of-state falconers that captured Harris' Hawks in Arizona. This leads to inaccurate reporting of take and difficulties in regulating harvest.

4. The federal falconry database has been unavailable since July 6, 2016. Since this time, state administrators have been unable to obtain data on acquisition, transfer and release information on falconer's activities. Without these data, administrators cannot adequately enforce state regulations and subsequent compliance with falconry regulations (e.g., possession limits and species, number of wild caught raptors per year, timely reporting). Further, lack of data has prevented states from meeting certain standards of their certification. While a prompt repair of the Federal Falconry Database is ideal, an interim option would be to transfer a state's 3-186a data to the interested states to maintain regulatory compliance until the federal falconry database is restored.

Each of the issues identified above creates real difficulties for the states to enforce falconry regulations. State permit administrators would appreciate an opportunity within the next three months (i.e., in-person meetings or workshops) to work with the Service to resolve data management issues associated with the on-line federal falconry database. We understand the falconry database is be repaired and improved, and we look forward to working with the Service to evaluate the database for its utility and function.

Sincerely,

A handwritten signature in blue ink that reads "Jeff Gould". The signature is written in a cursive, flowing style.

Jeff Gould, Chair
Pacific Flyway Council

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Recommendation 22 – Letter to U.S. Fish and Wildlife Service Regarding Improving Flyway Review of Proposed Products on Nongame Migratory Bird Species

Recommendation

The Pacific Flyway Council (Council) endorses sending the attached letter to the U.S. Fish and Wildlife Service (Service) regarding the development of a process for Council and Nongame Technical Committee (NTC) review of regulatory or other public documents relating to management of nongame migratory bird species.

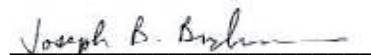
Justification

On several occasions, the Council has expressed a need to improve the schedule used by the Service to review products (e.g., proposed strategies and regulations) for nongame migratory bird species. The Council recommends the Service work with a group of representatives from the four NTCs to develop a strategy to improve the review of products.

Adoption

Pacific Flyway Nongame Technical Committee
September 28, 2016

Contact: James Driscoll



Joe Buchanan, Acting Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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September 30, 2016

Dan Ashe, Director
U.S. Fish and Wildlife Service
1849 C Street NW, Room 3331
Washington, D.C. 20240

Re: Improving Flyway Review of Proposed Products from the U.S. Fish and Wildlife Service on Nongame Migratory Bird Species.

Dear Mr. Ashe:

On several occasions, the Pacific Flyway Council has expressed a need to improve the schedule used by the U.S. Fish and Wildlife Service (Service) to review products (e.g., proposed strategies and regulations) for nongame migratory bird species. We have two concerns relating to the schedule and the length of comment periods sometimes used by the Service. First, when the release of products do not coincide with council meetings, the councils and their respective nongame technical committees (NTCs) must interact by email or telephone to draft a response. Such interactions are ineffective because comprehensive discussions are difficult to conduct across the flyway states. Second, the length of time to review products has been too short, especially when not timed to coincide with council meetings. For these reasons, we request that the forthcoming review and comment period for the migratory bird incidental take rulemaking be coordinated with the upcoming flyway council meetings in March 2017 and at a minimum we request a 90-day review period. The two public review factors make comprehensive reviews problematic and may ultimately lead to less constructive comments or separate letters from each state.

Thus, Pacific Flyway Council recommends the Service work with a group of representatives from the four NTCs to develop a strategy to improve the review of products. We recognize that it is impractical to release products on a schedule reflecting only the interests of the flyway councils. However, we think there is an ability to develop a process that promotes quality engagement by the NTCs and the flyway councils in commenting upon Service products.

Sincerely,

Jeff Gould, Chair
Pacific Flyway Council

Cc: Jerome Ford
Brad Bortner

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Recommendation 23 – Amendments to the 2016 Budget

Recommendation

Council approves an amendment to the 2016 budget for an additional \$4,500: \$2,500 to support the waterfowl hunter recruitment, retention, and reactivation workshop and \$2,000 to support the 6th International Sea Duck Conference.

Justification

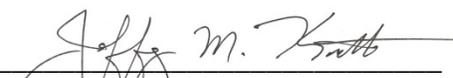
An additional \$4,500 is required to support the following one-time activities captured in section F of the budget:

1. Waterfowl hunter recruitment, retention, and reactivation workshop in Sun Valley, ID. This change will add an additional \$2,500 to the approved budget.
2. The 6th International Sea Duck Conference in San Francisco, California. Council has supported previous Sea Duck conferences. This change will add an additional \$2,000 to the approved budget.

Adoption

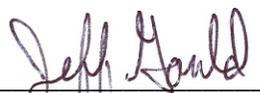
Pacific Flyway Study Committee
September 28, 2016

Contact: Jeff Knetter



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 24 – Amendment of the Pacific Flyway Council Funding Agreements with the Canadian Wildlife Service

Recommendation

The Pacific Flyway Council (Council) recommends the Bird Banding Agreement and the Interior British Columbia Breeding Waterfowl Survey Agreement, signed with the Canadian Wildlife Service (Pacific and Yukon Region), be amended to extend the duration of each agreement by five more years, to January 2022.

Justification

To address data needs for the Western Mallard Model, the Council signed two agreements with the Canadian Wildlife Service that commit an annual contribution of \$5,000.00 towards mallard banding efforts, and \$10,000.00 towards delivery of May aerial breeding waterfowl surveys in British Columbia. The agreements lapse in 2017 and termination dates must be amended for current support to continue.

Adoption

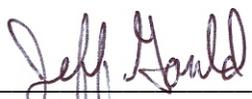
Pacific Flyway Study Committee
September 28, 2016

Contact: André Breault and Jeff Knetter



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

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Recommendation 25 – Budget

Recommendation

The Pacific Flyway Council (Council) adopts the attached budget authorizing Council expenditures in calendar year 2017.

Justification

The Pacific Flyway Study Committee and Nongame Technical Committee (NTC) are charged with preparing a calendar year budget for Council consideration. The budget includes administrative expenses, travel expenses for Flyway representation, and special project expenses.

The proposed 2017 budget includes \$60,633 in anticipated expenses, and exceeds the expected income of \$57,508 from member assessments (10 states; \$4,500 each), NABCI assessments (9 states; \$600 each), and Human Dimensions Stakeholder Survey assessments (8 states; \$7,108 allocated based on number of hunters). This does not result in a deficit because the estimated carry-forward from Fiscal Year 2016 is \$17,000.

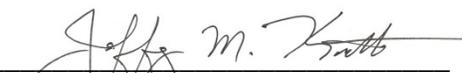
Since 2013, member assessments of \$4,500 have provided a base budget. This budget does not require an increase in the base assessment in 2017.

Changes to the 2017 budget include: removal of travel support to the USFWS Eagle Assessment Team, modification to the “NTC SRC” travel line item to allow for travel to the Service Regulations Committee or Association of Fish and Wildlife Agencies Bird Conservation Committee meetings, an increase of \$500 for the fall Rocky Mountain Population sandhill crane recruitment survey, and support for The North American Arctic Goose Conference.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Jeff Knetter



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

Pacific Flyway Council Budget - Calendar Year 2017			
Function	Attendance	Notes	Projected Amount
A. Council, SC/NTC, and Regulatory Functions			
National Flyway Council dues		1	\$ 2,000
Pacific Flyway Council March			
PFC Secretary (OR)	1 meeting, 1 person		\$ 1,200
SC and NTC Chairs (ID)	1 meeting, 2 person		\$ 2,400
SRC Fall (SC support; ID)	1 meetings, 1 person		\$ 1,200
AHM Working Group (ID, OR)	1 meeting, 2 persons		\$ 2,400
NTC - SRC/AFWA BCC (NTC support; ID)	1 meeting, 1 person		\$ 1,200
	Subtotal		\$ 10,400
B. North American Waterfowl Management Plan			
NAWMP Science Support Team (UT)	2 meetings, 1 person		\$ 2,400
Arctic Goose Joint Venture			
Management Board (AK)	1 meeting, 1 person		\$ 1,200
Technical Committee (ID)	1 meeting, 1 person		\$ 1,200
Sea Duck Joint Venture			
Cont. Technical Team (WA)	1 meeting, 1 person		\$ 1,200
	Subtotal		\$ 6,000
C. Other Flyway Representation			
Special Projects as Needed	1 meeting, 2 persons		\$ 2,400
Mourning Dove Task Force (AZ, NV)	1 meeting, 2 persons		\$ 2,400
Human Dimensions Working Group (UT, WA)	1 meeting, 2 persons		\$ 2,400
Avian Knowledge Network Steering Committee	1 meeting, 1 person		\$ 1,200
Council Travel Support Vasily Baranyuk March Meeting	1 meeting, 1 person		\$ 500
	Subtotal		\$ 8,900
D. Operational Surveys and Projects			
PF Duck BPOP Survey Expansion		2	\$ 10,000
PF Supplemental Duck Banding			\$ 5,000
Fall RMP Crane Recruitment Survey			\$ 4,000
	Subtotal		\$ 19,000
E. Administrative Costs			
Misc. expenses including production of minutes, etc.		3	\$ 500
PFC Website domain name registration			\$ 125
PFC Website maintenance			\$ 200
	Subtotal		\$ 825
F. One-Time or Time-Limited Special Projects			
NAAG Conference Support			\$ 3,000
NABCI Coordination through Special Assessment - 9 states		4	\$ 5,400
Human Dimensions Stakeholder Survey through Special Assessment - 8 states		5	\$ 7,108
	Subtotal		\$ 15,508
BASE BUDGET			
Re-occurring annual costs Sections A-E			\$ 45,125
Time limited special project cost, Section F			\$ 15,508
		TOTAL	\$ 60,633
REVENUE			
Estimated carry-forward from 2016			\$ 17,000
Council assessments 2016			\$ 45,000
Special NABCI Assessment			\$ 5,400
Human Dimensions Stakeholder Survey Assessment			\$ 7,108
		TOTAL	\$ 74,508
Pacific Flyway Council assessments to the 10 member states are based on projected expenses for flyway representation in Sections A - C, plus costs of operational PF-sponsored duck and crane surveys and duck banding in Section D and administrative costs in Section E. This provides for base budgeting at \$45,000 per year (10 states @ \$4,500).			
CY 2015 NOTES:			
1. NFC assessment of all fly ways for Secretary travel and other expenses.			
2. PF-sponsored surveys and banding included in base budget and assessment assumptions.			
3. No expenses are budgeted for facilities and services for regular meetings; costs recovered in registration fees.			
4. NABCI special assessment will be evaluated after 3 year trial period ending in 2017.			
5. HD Stakeholder Survey support will continue through 2017			

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Recommendation 26 – Chair Rotation

Recommendation

The Pacific Flyway Council (Council) approves the attached September 2016 rotation schedule for chair and consultant responsibilities. At this time, it is unknown whether Colorado will designate a Nongame Technical Committee representative. This will impact Chair rotation schedules and lead to potential discrepancies between Pacific Flyway Study Committee and Nongame Technical Committee assignments.

Justification

Colorado is now participating as an active member of the Pacific Flyway Study Committee and Council. Consequently, it is necessary to update Flyway chair, consultant, and subcommittee assignments.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Melanie Weaver



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

Pacific Flyway schedule of council, committee, and subcommittee chair responsibilities; council representatives to the Service Regulations Committee (SRC) and National Flyway Council (NFC); and list of management plans, approval dates, and keepers of the plans.

Group/Management Plan	Approvals	Keeper of the Plan	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Council, SC, and NTC Chair			NV	ID	WA	AZ	OR	CA	MT	AK	CO*	UT	NV	ID
SRC Consultants:														
Coastal			WA	OR	OR	OR	OR	AK	AK	AK	AK	CA	CA	CA
Inland			UT	UT	UT	ID	ID	ID	ID	NV	NV	NV	NV	MT
NFC Representative			OR	OR	OR	OR	OR	ID	ID	AK	AK	NV	NV	CA
Geese:														
Aleutian Canada	Jul 99, Jul 06	CA	R-1	AK	AK	WA	WA	OR	OR	R-7	R-7	CA	CA	R-1
Cackling Canada	Jul 86, Jul 99	WA	WA	OR	OR	AK	AK	R-7	R-7	R-1	R-1	WA	WA	OR
Dusky Canada	Jul 85, Jul 92, Aug 97, Mar 08, Jul 15	R-1	AK	R-1	R-1	WA	WA	R-7	R-7	OR	OR	AK	AK	R-1
Lesser Canada (Tav/Parv)	Drafts 80, Jul 94	WA												
Vancouver Canada	Draft Sep 79	AK	ID	NV	NV	R-7	R-7	OR	OR	MT	MT	AK	AK	ID
Pacific Canada	Jun 89, Jul 00													
Rocky Mountain Canada	Mar 83, Mar 92, Jul 01	NV	MT	NV	NV	CO	CO	ID	ID	UT	UT	MT	MT	OR
Pacific White-fronted	Mar 87, Jul 03	OR												
Tule White-fronted	Jul 91	CA	CA	R-7	R-7	R-1	R-1	AK	AK	WA	WA	OR	OR	CA
Midcontinent White-fronted	Aug 15	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK	AK
Pacific Brant	Jul 81, Jul 92, Jul 02	CA	R-7	R-7	R-7	CA	CA	AK	AK	WA	WA	R-7	R-7	OR
Wrangel Island Snow	Mar 92, Jul 06	WA												
Western Can. Arctic Snow	Jul 92, Jul 13	AK	R-1	UT	UT	MT	MT	CA	CA	CO	CO	AZ	AZ	NV
Ross's	Jul 92	AK												
Emperor	May 88, Jul 94, Jul 06	R-7	AK	R-7	R-7	AK	AK	R-7	R-7	AK	AK	R-7	R-7	AK
Swans:														
Pacific Coast Trumpeter	Jul 86, Mar 93, Jul 06, Mar 08	OR	OR	AK	AK	R-7	R-7	WA	WA	R-1	R-1	OR	OR	AK
Rocky Mountain Trumpeter	Jul 84, Jul 92, Jul 98, Jul 08, Jul 12	ID	MT	MT	MT	ID	ID	UT	UT	NV	NV	MT	MT	ID
Western Tundra	Mar 83, Apr 89, Jul 01	UT	UT	MT	MT	R-1	R-1	NV	NV	ID	ID	UT	UT	MT
Eastern Tundra	Jun 82, May 88, Jul 98, Jul 07	--	AK											
Sandhill Cranes:														
Pacific Coast	Mar 83													
Central Valley	Mar 83, Jul 95, Jul 97	R-1	R-7	OR	OR	AK	AK	R-1	R-1	CA	CA	R-7	R-7	WA
Rocky Mountain	Mar 87, Mar 91, Jul 97, Mar 07		AZ	UT	UT	MT	MT	CO	CO	AZ	AZ	ID	ID	R-2
Lower Colorado River	Mar 83, May 89, Mar 95	AZ	AZ	R-2	R-2	NV	NV	ID	ID	CA	CA	R-2	R-2	AZ
Midcontinent	Mar 06													
Doves and Pigeons														
PC Band-tailed Pigeon	Mar 83, Mar 94, Jul 10	DMBM	OR	R-1	R-1	CA	CA	WA	WA	OR	OR	R-1	R-1	CA
Interior Band-tailed Pigeon	Mar 01		UT	AZ	AZ	UT	UT	R-2	R-2	AZ	AZ	UT	UT	R-2
WMU Mourning Dove	Mar 92	MT	ID	CA	CA	NV	NV	AZ	AZ	R-2	R-2	WA	WA	ID
White-winged Dove	Jul 93, Mar 04	AZ												
Other:														
American White Pelican	Jul 12	ID	ID	ID	UT	UT	NV	NV	ID	ID	UT	UT	NV	NV
Double-Crested Cormorant	Jul 12	OR	OR	OR	ID	ID	WA	WA	OR	OR	ID	ID	WA	WA
Eagle			AZ	AZ	MT	MT	AK	AK	NV	NV	CA	CA	AZ	AZ

Abbreviations: R-1 is FWS Region 1, R-6 is FWS Region 6, R-7 is FWS Region 7, R-8 is FWS Region 8, and DMBM is FWS Division of Migratory Bird Management.

CO=Colorado currently only has a SC member participating at the tech level; NTC representation may change in the future and this will need to be addressed to resolve Chair duties.

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Recommendation 27 – Study Committee Representation Assignments

Recommendation

The Pacific Flyway Council (Council) approves the following changes to Study Committee representation to joint venture technical committees and the Mourning Dove Task Force.

- Arctic Goose Joint Venture–Jeff Knetter (Idaho) will serve as an interim replacement for Dan Rosenberg (Alaska).
- Sea Duck Joint Venture–Kyle Spragens (Washington) will replace Don Kraege (Washington).
- Mourning Dove Task Force–Johnathan O’Dell (Arizona) will replace Anis Aoude (Arizona).

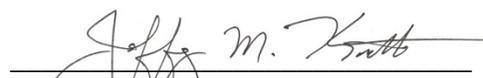
Justification

The Study Committee assigns Study Committee representation based on interest and expertise. Rotation of these duties is necessary to balance workload among members and satisfy requests for Pacific Flyway representation. The above assignments for Pacific Flyway representation are necessary due to personnel changes. Travel expenses for representation to each of these groups are covered by Council funds.

Adoption

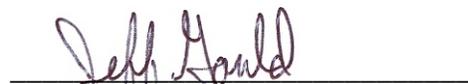
Pacific Flyway Study Committee
September 28, 2016

Contact: Jeff Knetter



Jeff Knetter, Chair

Pacific Flyway Council
September 30, 2016



Jeff Gould, Chair

Informational Notes

PACIFIC FLYWAY COUNCIL

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Informational Note 1 – Association of Fish and Wildlife Agencies Harvest Information Program Working Group Update

The Harvest Information Program (HIP) was fully implemented in 1998 as a cooperative State-Federal program to obtain a national list of migratory bird hunters annually. The list provides the sampling frame for estimating harvest of ducks, geese, mourning doves, band-tailed pigeons, woodcock, snipe, coots, rails, gallinules, and sandhill cranes across the United States. All State fish and wildlife agencies (except Hawaii) collect HIP registration information from each migratory bird hunter, compile all registrations, and forward them to the U.S. Fish and Wildlife Service (Service) throughout the hunting season. The Service uses this sample frame to conduct annual surveys and provide estimates of hunting activity and harvest.

In 1999, the Migratory Shore and Upland Game Bird Working Group (MSUGBWG) assembled an *ad hoc* committee and charged it with conducting a complete review of HIP to determine whether the program was functioning as intended, and to make recommendations for improvements where necessary. The committee concluded that HIP was necessary to provide annual harvest estimates for all migratory game birds, and it recommended several actions to improve the quality of the sample frame, increase compliance (both hunter and vendor), and simplify HIP registration. Several, but not all of these recommendations were implemented. Changes such as charging a fee for HIP, implementing methods to increase vendor compliance, and enforcing hunter compliance were not made because of difficulty or cost. Recent concerns about the quality of dove harvest estimates used to make regulatory decisions has prompted the MSUGBWG to call for another review of HIP.

Surveys estimate approximately 2.5 million active migratory bird hunters in the United States. However, States submit HIP registrations from ~4 million hunters each year. Thus, people randomly selected for the surveys from the inflated HIP sample frame are not migratory bird hunters. We estimate that the inclusion of those people increases survey costs by \$50,000–75,000/year for unnecessary printing, postage, and staff time. Furthermore, biased sample frames decrease the quality of harvest estimates, thus eroding faith in the survey by managers and hunters.

In March 2016, the Pacific Flyway Council (Council) recommended the Association of Fish and Wildlife Agencies (AFWA) Bird Conservation Committee charter a Task Group to review current HIP procedures at both state and federal levels.

Council suggested the Task Group review the following issues:

- consistent administration of HIP across all States (e.g., all migratory bird hunters register online or by phone);

- issuance of HIP registrations for migratory bird hunting seasons (i.e., September 1 to March 10), rather than by calendar year or flexible 365-day periods;
- issuance of HIP registration independently of all other hunting privileges;
- only require participants seeking migratory bird hunting privileges to register for HIP (i.e., people buying migratory bird stamps, migratory bird licenses/permits, etc.);
- simplification of the registration process by streamlining/reducing the number of questions;
- timely submission of HIP sample frame data to the Service; and
- identify and clarify specific objectives of HIP surveys (e.g., required precision levels needed for decision-making purposes)

In August, 2016, an AFWA HIP Working Group met via conference call. They created the following problem statement: “HIP survey costs are increased and utility of estimates are decreased by problems with current sampling methods.” Furthermore, they identified four major problems which decrease the utility of harvest estimates and increase survey costs. They include:

- people who do not hunt migratory birds are being registered for HIP;
- vendors do not ask hunters about their hunting activity when they register for HIP;
- late, inaccurate, or incomplete data provided by a State or its contractor; and
- not all migratory bird hunters are registered for HIP.

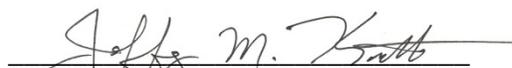
The Working Group also met in person at the September 2016 AFWA meeting. They continue to finalize their charge and reviewed previous HIP reports (2002 and 2004). They also reviewed the recently completed “Evaluation of stratification efficiency and sample allocation in the Harvest Information Program design” conducted by Dave Otis, Colorado State University. This evaluation suggests HIP is currently providing accurate information at a Flyway level. It is important to determine if states and flyways desire data at a finer scale and how much it will cost to attain that level of refinement. Lastly, the Working Group discussed federal versus state issuance of HIP registration. In general, there was support to move to federal administration with less inter-state variability.

Currently, Dave Morrison, Texas Parks and Wildlife, is reviewing existing data sets in an effort to further refine HIP issues. The Working Group will review this information via conference calls over the next few months. There will be another in-person meeting at the March AFWA meeting. A final report will be provided to the AFWA Bird Conservation Committee in September 2017. Jeff Knetter (Idaho) and Josh Avey (Arizona) are currently members of this Working Group.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Jeff Knetter



Jeff Knetter, Chair

PACIFIC FLYWAY COUNCIL

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Informational Note 2 – Canadian Wildlife Service Briefing to the Pacific Flyway

The Canadian election held in November 2015 resulted in a change in government and in a Liberal majority government. The new government changed Environment Canada’s name to “*Environment and Climate Change Canada*” (ECCC) to raise the profile of Climate Change in Canada. Departmental priorities now include taking action on climate change, restoring credibility to environmental assessments, preserving and promoting natural areas and enhancing protection of species at risk. The mandate of the Canadian Wildlife Service (CWS) remains unchanged. To better address northern issues, CWS created a new Northern administrative region comprised of the Yukon, Nunavut and the Northwest Territories.

The July 2016 report entitled “*Migratory Bird Regulations in Canada July 2016*” (distributed electronically to Pacific Flyway Study Committee [PFSC] members) identifies the Migratory Bird Hunting Regulations in effect for the 2016–2017 and 2017–2018 seasons. Two new regulations were brought to the attention of the PFSC: (1) the establishment of a spring conservation season for Snow and Ross’s Goose in the Yukon, to be held from 1 to 28 May, and (2) an increase of the daily bag limit to 50 and the removal of the possession limit for Snow and Ross’s Goose (combined) in the Yukon. No changes were made to British Columbia, Alberta, Northwest Territories, and Nunavut regulations.

The overhaul of the Canadian Federal Hunting Regulations continues. The Canadian Wildlife Service completed the review of the regulatory wording associated with hunting permit, possession, abandonment and wastage, legal ownership, non-toxic shot approval process, donation of harvested birds, etc. Proposed changes were provided to the Department of Justice in spring 2016. A legal drafting team has been tasked to produce a draft Order for the new regulations and the target implementation date for the revised Regulations is fall 2018.

Environment and Climate Change Canada introduced the sale of electronic hunting permits (e-permits) on a trial basis in 2014. The option to buy a hunting permit online became available to all Canadian and international hunters in 2015. A total of 9,151 e-permits were sold for 2016–2017, more than double the 3,952 e-permits sold for 2015–2016. E-permit sales account for about 5% of the total Canadian hunting permit sales for 2016–2017. The highest e-permit participation rate is with U.S. Hunters (~25% of total 2016 permit sales).

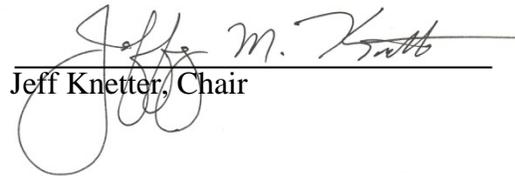
The Pacific Flyway Council (Council) and the Canadian Wildlife Service currently have two funding Agreements that support Western Mallard Model data collection projects in British Columbia. Under the Agreements, Council commits an annual contribution of \$5,000.00 USD towards mallard banding efforts and \$10,000.00 USD towards delivery of May aerial breeding waterfowl surveys in British Columbia. The activities, budget, results and uses of the PFC

contribution were presented to the PFSC. Both agreements lapse in 2017 and termination dates must be amended for current support to continue.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: André Breault



Jeff M. Knetter

Jeff Knetter, Chair

PACIFIC FLYWAY COUNCIL

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Informational Note 3 – Continued Implementation of Double-crested Cormorant and American White Pelican Monitoring Strategies in 2017

In March 2013, the Pacific Flyway Council (Council) approved and adopted two monitoring strategies for fish-eating birds: *A Monitoring Strategy for the Western Population of Double-crested Cormorants within the Pacific Flyway* and *A Monitoring Strategy for the Western Population of American White Pelicans within the Pacific Flyway* (Pacific Flyway Council 2013). The goal of the strategies is to establish a coordinated, long-term monitoring effort to estimate the breeding population size, trend, and distribution for both species. This information is fundamental for developing effective management recommendations, and for guiding and assessing management actions pertaining to avian depredation on fish resources.

Monitoring for cormorants and pelicans began in 2014 and is scheduled to occur every third year (i.e., 2014, 2017, 2020, 2023) thereafter for at least 10 years to meet the monitoring objective. Surveys will consist of a combination of existing monitoring, typically funded by ongoing efforts, as well as sites that will require additional funding.

All selected colonies must be surveyed in order to meet the monitoring objective established in the monitoring strategies. States are responsible for: (1) survey coordination; (2) assimilation of data; (3) reporting information back to the Pacific Flyway Nongame Technical Committee and the Council; and (4) sharing data with the U.S. Fish and Wildlife Service, who will manage and maintain the database.

Double-crested Cormorants

Cormorant surveys in 2017 will consist of monitoring 46 colonies throughout seven states and one province. Estimated total cost to implement the cormorant monitoring strategy in 2017 is \$65,419, much of which is covered under ongoing monitoring efforts. Estimated new costs in 2017 are \$29,175 as summarized in the following table:

State/Province	Total Number of Colonies	Estimated Cost Covered Under Existing Programs	Estimated New Additional Cost
British Columbia	2	\$2,500	\$0
California	16	\$1,500	\$16,125
Idaho	3	\$500	\$1,300
Montana	1	\$500	\$0
Nevada	1	\$500	\$0
Oregon	16	\$25,744	\$6,250
Utah	2	\$3,000	\$0
Washington	5	\$2,000	\$5,500
Total	46	\$36,244	\$29,175

American White Pelicans

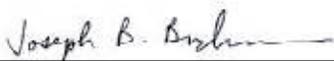
Pelican surveys in 2017 will consist of monitoring 18 colonies throughout eight states and one province. Estimated total cost to implement the pelican monitoring strategy in 2017 is \$21,400, much of which is covered under ongoing monitoring efforts. Estimated new costs in 2017 are \$11,150 as summarized in the following table:

State/Province	Total Number of Colonies	Estimated Cost Covered Under Existing Programs	Estimated New Additional Cost
British Columbia	1	\$500	\$0
California	2	\$0	\$2,400
Idaho	3	\$1,500	\$0
Montana	2	\$1,500	\$0
Nevada	2	\$3,250	\$0
Oregon	5	\$0	\$6,000
Utah	1	\$2,500	\$1,250
Washington	1	\$0	\$1,500
Wyoming	1	\$1,000	\$0
Total	18	\$10,250	\$11,150

Adoption

Pacific Flyway Nongame Technical Committee
September 28, 2016

Contact: Andrea Hanson



Joe Buchanan, Acting Chair

PACIFIC FLYWAY COUNCIL

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Informational Note 4 – Human Dimensions Working Group Stakeholder Survey Update

In 2015, the Pacific Flyway Council (Council) approved funding to support development and implementation of the Human Dimensions Working Group’s proposed survey, “Assessing the Preferences of Stakeholders and Waterfowl Management Professionals to Inform the Implementation of the North American Waterfowl Management Plan (NAWMP) Action Plan.” The survey is designed to assess preferences of waterfowl hunters, viewers, the general public, and waterfowl professionals concerning waterfowl and wetlands conservation. Survey results will provide quantitative measures of stakeholder preferences, and form the foundation to develop objectives and select management alternatives related to the 3rd NAWMP goal for “Growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation.” Specific survey objectives include:

- Assess what waterfowl hunters and other conservationists (i.e., members of organizations supporting migratory bird conservation, including viewers) most desire from their natural resource-based management and social settings to inform NAWMP objectives and select habitat and population management alternatives.
- Establish baseline measures that can be repeated to inform the development of a Public Engagement Strategy and monitor trends in achieving the NAWMP goal of “growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation.”
- Assess waterfowl hunter knowledge, preferences, levels of use, and support for waterfowl and wetlands conservation.
- Assess other conservationist knowledge, preferences, levels of use and support for waterfowl and wetlands conservation.
- Assess general public awareness and perceptions regarding the importance of the benefits and values (i.e., ecological goods and services) provided by waterfowl and wetlands conservation.
- Assess the general public participation in waterfowl-associated recreation and how much they support waterfowl and wetlands conservation.
- Assess waterfowl professional perspectives on the levels of waterfowl populations and habitats needed to support hunter and viewer use opportunities.

Significant progress has been made in preparation for conducting this survey. Thirty-four workshops have been conducted in 17 locations with hunter and wildlife viewer groups to aid in question development. Final revisions of the survey are now being conducted in preparation for survey implementation in the coming months. In addition, the Pacific Flyway hunter survey will include specific questions about hunter preference for variations in scaup and pintail regulations.

The following table identifies work that has been completed, as well as a proposed timeline and future work items.

Work Items	Year 1 (FY15) 10/1/14-9/30/15)				Year 2(FY16) 10/1/15-9/30/16				Year 3 (FY17) 10/1/16-9/30/17			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Develop draft measurable objectives associated with fundamental objectives												
Focus groups												
Design and implement general public survey												
Identify sample frame and develop sampling design												
Design Decision-Maker and Stakeholder Choice Experiments& Surveys												
Pre-test surveys												
Conduct professional choice experiment workshops												
Conduct web-based surveys												
Data Analysis												
Report Writing												
Translate results into recommendations for population, habitat, and people objectives												
Adjust habitat, population, and people objectives based on survey outcomes												

Adoption

Pacific Flyway Nongame Technical Committee
September 28, 2016

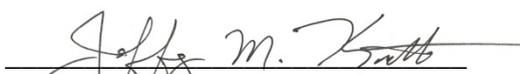
Contact: Joseph Buchanan



Joseph Buchanan, Acting Chair

Pacific Flyway Study Committee
September 28, 2016

Contact: Blair Stringham



Jeff Knetter, Chair

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Informational Note 4 – January 31 Season Framework Extension Discussion

In October 2015, the California Waterfowl Association (CWA) sent a letter to the California Pacific Flyway Council (Council) member and Council Chair Tony Wasley (NV), to recommend extending the duck season framework closing date to January 31. Council did not take action on this item. The Mississippi Flyway Council passed a similar recommendation and presented the proposal to the Service Regulation Committee (SRC) at their meeting in October 2015; however, the Central Flyway Council was not in favor of this recommendation because of the midcontinent mallard double-looping process, which does not account for this potential modification. The SRC did not support the Mississippi Flyway recommendation to extend the duck season framework closing date, because there was no consensus among all four flyways. Further, they felt season closing dates should remain unchanged until revisions to the AHM protocols have been completed and a more comprehensive approach to revising regulatory packages rather than incremental changes.

A similar letter was sent September 7, 2016, to the current Council Chair, Jeff Gould (ID), recommending the January 31 closing date. The Study Committee (SC) discussed the recommendation and agreed that closing on January 31 is biologically insignificant. However, several points were raised, and the SC did not pursue the recommendation further. They include:

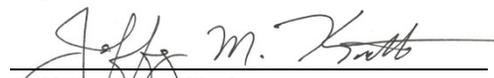
- Pintail and Western Mallard Model reviews still need to occur and remain the SC's priorities;
- Human dimensions data is lacking that could provide hunter opinions to closing on a non-weekend in order to hunt, on average, three days later annually;
- Closing/opening on non-weekend may reduce hunter participation, which could cause economic hardship for those communities that depend upon waterfowl hunting;
- The SRC has already gone on record indicating no support for this proposal until consensus is reached among all four flyways and the mallard AHM revisions were completed.

Concluding model revisions, a January 31 closing date could be something all Flyways may consider.

Adoption

Pacific Flyway Study Committee
September 28,, 2016

Contact: Melanie Weaver



Jeff Knetter, Chair

PACIFIC FLYWAY COUNCIL

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Informational Note 5 – Mallard Reward Banding and Bird Banding Laboratory: Upcoming Changes

The Bird Banding Laboratory (BBL) has asked for Pacific Flyway consideration of two proposed issues:

- At what scale should the BBL make banding data available for migratory game birds through the BISON online data query application?

Migratory game bird managers have long had concerns about publicizing migratory game bird banding locations due to the potential of increasing harvest pressure on banded segments of the population by hunters targeting waterfowl at banding areas, specifically to collect banded birds. The BISON application is a USGS product aimed at making data available to the public through an online data retrieval system. The BBL has asked the Pacific Flyway Study Committee (PFSC) at what scale we would like to see migratory bird banding data displayed. The PFSC recommends banding location data be scaled up to degree block (one degree latitude x one degree longitude) and that band encounter data be scaled up to the 10 minute block (10 minutes of latitude x 10 minutes of longitude). In addition, where bird banding data are readily available to the public (e.g. flyway.us), we recommend that the same spatial scale be applied.

- Should the BBL seek a new call center contract in 2018?

Increasing costs and decreasing quality of service has caused the BBL to consider eliminating or modifying call center contracts in the future. Recently, the BBL formed a working group of representatives from the flyways to discuss the issue and possible solutions. The group concluded the quality of service received from call centers was likely compromising banding data and because the majority of band encounter reports were now submitted online, the BBL could consider terminating the call center contract in the future. To account for the possibility, the BBL will cease distributing bands with the 1-800-327-BAND telephone number after 2017 and bands will only have the web reporting address after that time. If the call center contract is not renewed, callers to the 1-800 line would either be answered at the BBL or be encouraged to report their band at www.reportband.gov. While the PFSC is concerned about possible changes to reporting rates with moving to online reporting only, we would support the BBL if they choose not to seek a new call center contract as early as 2018.

Because the format of BBL bands will be changing to display only the web reporting address beginning with the 2018 pre-season banding effort, it is likely band reporting rates may change in the future. In the past, reward banding projects have been used to estimate banding reporting rates so band encounter rates could be converted into harvest rates. These harvest rates are currently used to inform many aspects of migratory game bird harvest management, especially as it relates to mourning doves and mallards. The PFSC is aware the Central and Mississippi flyways are beginning a 5-year reward banding study to assess possible reporting rate changes

for mallard bands with the upcoming change in band design. At this time, we are not planning to recommend reward banding studies in the near term; however, we will continue to evaluate and discuss how the upcoming changes may affect harvest management. It is possible that studies, such as reward banding for Western Mallards and Western Management Unit Mourning Doves may become necessary in the future. If so, a funding commitment from the Pacific Flyway Council would likely be necessary.

Adoption

Pacific Flyway Study Committee
September 28, 2016

Contact: Brandon Reishus



Jeff M. Knetter

Jeff Knetter, Chair

PACIFIC FLYWAY COUNCIL

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Informational Note 6 – Status of Pacific Flyway Council Products and Actions

Migratory Pathways National Conservation Need

In February 2016, the Pacific Flyway Nongame Technical Committee (PFNTC) developed and submitted to the Association of Fish and Wildlife Agencies Bird Conservation Committee, a National Conservation Need (NCN) proposal formally entitled *Migration, Stopover, and Site Use Assessment to Determine Important Migratory Bird Use Areas for Informing Proposed Renewable Energy Projects Site Selection*. Although well received, the NCN failed to make the final approved list of projects in March 2016. The PFNTC anticipates resubmitting this NCN proposal during the 2017 cycle.

Competitive State Wildlife Grant Proposals

The PFNTC developed and submitted two Competitive State Wildlife Grant (CSWG) proposals in support of two of the PFNTC's top five priorities approved by Pacific Flyway Council (Council) in September 2015. The first, entitled *Western Yellow-billed Cuckoo Range-wide Occupancy Assessment and Habitat Restoration*, was developed in collaboration with the Western Working Group of Partners in Flight and several non-governmental organizations. The second proposal, entitled *Estimating Short-eared Owl Population Size and Habitat Needs Across the Pacific Flyway to Identify Areas for Land Conservation* was developed in collaboration with the Western Association of Fish and Wildlife Agencies and several non-governmental organizations. The PFNTC was notified in July 2016 that neither application would receive funding as this particular funding cycle emphasized projects related to pollinators. If the CSWG emphasis becomes more favorable to monitoring projects, we will resubmit these proposals during the 2017 application period. In the meantime, PFNTC is exploring other avenues of funding.

Expanding the U.S. Fish and Wildlife Service Representation to the Pacific Flyway Nongame Technical Committee

Council sent a letter to Jerome Ford, U.S. Fish and Wildlife Service (Service) requesting additional regional Service representation at future PFNTC meetings preferably from all five regions within the Pacific Flyway, and ensuring a minimum tenure of three years for the Service Liaison on a rotational basis among affected Service regions. The PFNTC received assurances from the Service that a rotation approach will be utilized, with Rick Lanctot, Region 7, as the next representative to the PFNTC from 2017 to 2019. At the September 2016 meeting, Rick attended in conjunction with Mike Green (from Region 1, attending his last meeting as liaison), as well as representatives from two additional regions (2 and 8).

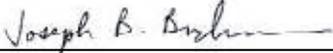
Pacific Flyway Council Appointment – National Eagle Trust Fund Panel

In May 2014, Council nominated Jamey Driscoll, Arizona PFNTC, as the AFWA representative to the Service National Eagle Trust Fund Panel. The panel was established to facilitate collaboration on eagle research and distribute funds from the trust. In September 2016, the National Fish and Wildlife Foundation disbanded the panel as other avenues evolved to distribute the funds.

Adoption

Pacific Flyway Nongame Technical Committee
September 28, 2016

Contact: Colleen Moulton



Joe Buchanan, Acting Chair

PACIFIC FLYWAY COUNCIL

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Informational Note 7 – Western Mallard Model Revisions

Western mallard adaptive harvest management (AHM) is based on breeding population and banding data from two stocks of mallards in western North America: Alaska (the Alaska stock), and British Columbia, California, Oregon, and Washington (the southern stock). Idaho has been consistently banding mallards during the pre-hunting season period; however, these banding data has not been included in the southern stock of western mallard AHM. Idaho and the U.S. Fish and Wildlife Service (Service) conducted an assessment to determine the effect of including Idaho banding data on the current western mallard AHM framework. The primary assumption of including Idaho bands with western mallard AHM is that the population dynamics and harvest rates in Idaho are similar to the dynamics in the rest of the southern stock. Violation of this assumption could bias estimates of overall harvest rates and population parameter estimates (maximum intrinsic growth rate [r_{max}], carrying capacity [K], and the scaling parameter [d] for harvest rate). Although we could not directly assess breeding population dynamics of Idaho mallards, the specific objectives of the assessment were to explore how including banding data from Idaho in the southern stock could potentially influence (1) annual harvest rate estimates, (2) expected regulation-specific harvest rate distributions, (3) estimates of r_{max} , K, and d, and (4) the western mallard AHM policy.

Annual harvest rate estimates were slightly higher when Idaho banding data were included in the southern stock. However, these differences were not significant given the 95% credible intervals overlapped each year (Figure 1), which also resulted in almost no change in estimates of r_{max} , K, and d (Figure 2). Similarly, expected harvest rate distributions were almost identical when Idaho bands were included (Figure 3). Given the similar expected harvest rate distributions and estimated demographic rates, we observed only minor differences in the overall policy (Figure 4). A few cells (4) became more conservative, which was expected given the slight increase in harvest rates, but changes in policy were very minor.

Inclusion of Idaho bands in western mallard AHM had only a minimal influence on the framework. However, including Idaho bands in western mallard AHM improves spatial coverage of at least some of the western mallard monitoring data and helps justify the Idaho banding program, which will provide valuable monitoring data on harvest rates and survival, which could be valuable in future updates to the western mallard AHM process.

While presenting the assessment of including Idaho banding data on western mallard AHM, Nevada expressed interest in including their breeding population survey data and banding data in western mallard AHM. The Service agreed to review their survey design and protocol. If the survey design is adequate, the current assessment will be revised to include Nevada survey and banding data in western mallard AHM. Results will be presented at the December 2016 Harvest Management Working Group meeting and the March 2017 Pacific Flyway study committee

meeting to discuss officially including Idaho banding data and Nevada survey and banding data in western mallard AHM. Implementation would begin with the 2017 regulations cycle (to inform the 2018-2019 harvest regulations).

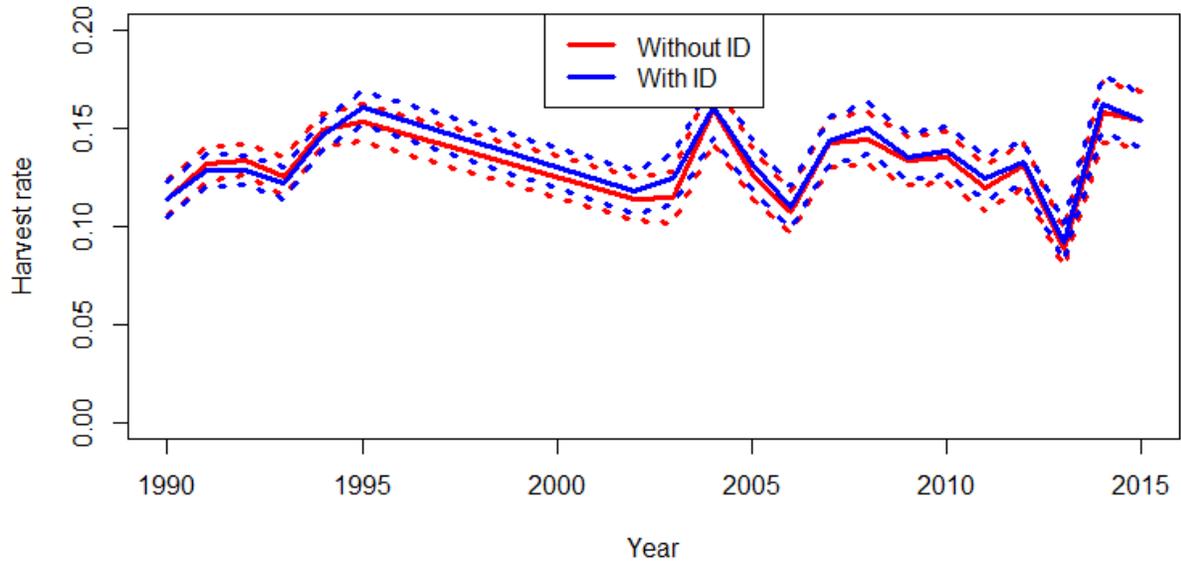


Figure 1. Estimated harvest rates with and without Idaho banding data in the southern stock for western mallard adaptive harvest management.

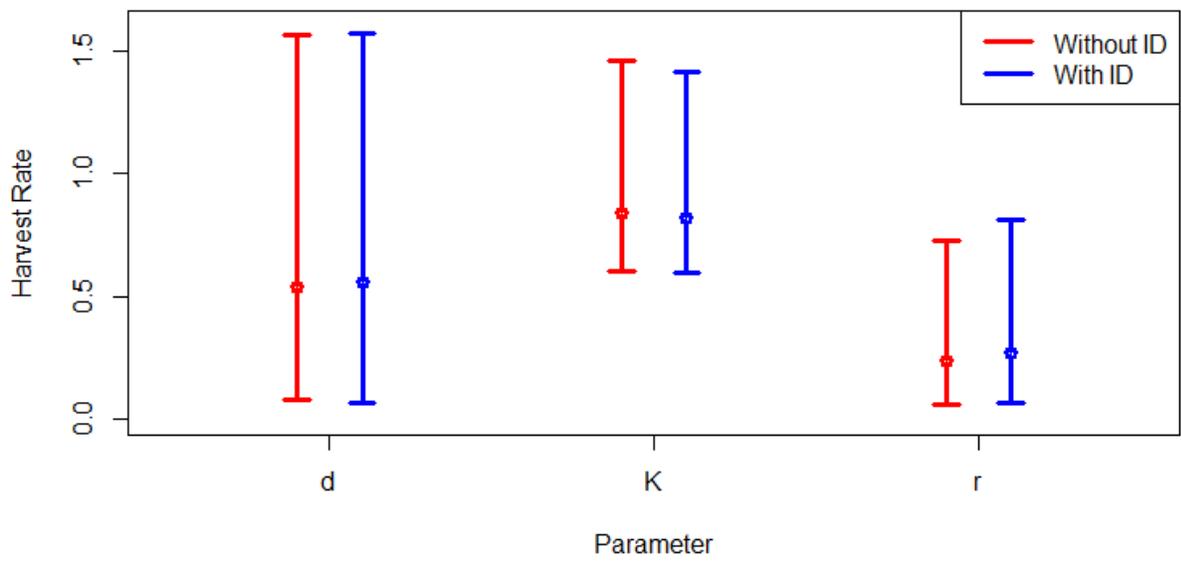


Figure 2. Estimated population parameters with and without Idaho banding data in western mallard adaptive harvest management.

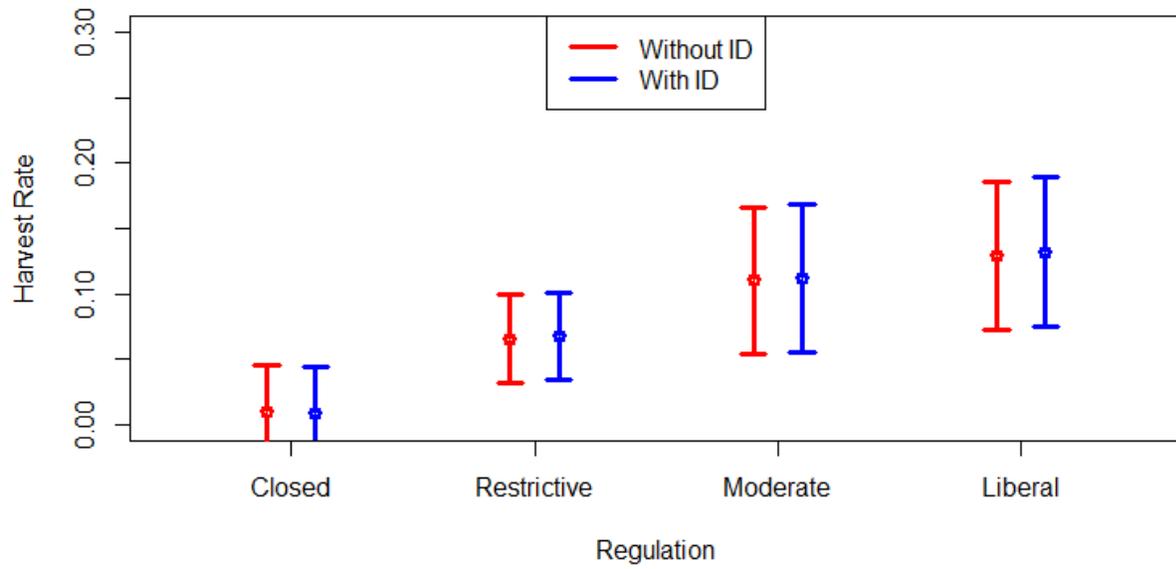


Figure 3. Expected harvest rate distributions with and without Idaho banding data.

Without ID Bands

With ID Bands

		AK BPOP														
		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75
South BPOP	0.05	C	C	C	C	C	C	C	C	C	C	C	C	R	R	L
	0.10	C	C	C	C	C	C	C	C	C	C	R	R	L	L	L
	0.15	C	C	C	C	C	C	C	C	R	R	L	L	L	L	L
	0.20	C	C	C	C	C	C	R	R	M	L	L	L	L	L	L
	0.25	C	C	C	C	C	R	M	L	L	L	L	L	L	L	L
	0.30	C	C	C	R	R	L	L	L	L	L	L	L	L	L	L
	0.35	C	C	C	R	L	L	L	L	L	L	L	L	L	L	L
	0.40	C	C	R	L	L	L	L	L	L	L	L	L	L	L	L
	0.45	C	R	L	L	L	L	L	L	L	L	L	L	L	L	L
	0.50	R	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	0.55	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
0.60	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	

		AK BPOP														
		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75
South BPOP	0.05	C	C	C	C	C	C	C	C	C	C	C	C	R	R	L
	0.10	C	C	C	C	C	C	C	C	C	C	R	R	R	L	L
	0.15	C	C	C	C	C	C	C	C	R	R	M	L	L	L	L
	0.20	C	C	C	C	C	C	R	R	M	L	L	L	L	L	L
	0.25	C	C	C	C	C	R	M	L	L	L	L	L	L	L	L
	0.30	C	C	C	C	C	R	M	L	L	L	L	L	L	L	L
	0.35	C	C	C	R	L	L	L	L	L	L	L	L	L	L	L
	0.40	C	C	R	L	L	L	L	L	L	L	L	L	L	L	L
	0.45	C	R	L	L	L	L	L	L	L	L	L	L	L	L	L
	0.50	R	L	L	L	L	L	L	L	L	L	L	L	L	L	L
	0.55	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
0.60	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	

Figure 4. Western mallard adaptive harvest management policies with and without Idaho banding data.

Adoption
 Pacific Flyway Study Committee
 September 28, 2016

Contact: Jeff Knetter and Guthrie Zimmerman



 Jeff Knetter, Chair

Subcommittee Reports

Aleutian Canada Goose Subcommittee

Jason Schamber, Alaska Department of Fish and Game

Population Status. The 2016 population estimate is 156,030 (95% CI = 129,157–182,904) based on indirect estimates from mark-resight data. This represents a 17.5% decrease from 2015 (95% CI = 153,977–224,243). The annual population growth rate since 1996 estimated via exponential regression is 1.11 ($R^2 = 0.86$, $P < 0.01$).

Harvest Information. There is no efficient method for indexing Aleutian Canada goose harvest in the Pacific Flyway. Therefore, reported harvest is a minimum.

Brandon Reishus (Oregon) reported a harvest of 40 geese in the 2015/2016 season based on data from a random telephone survey. The harvest was approximately half of the average annual harvest reported from check stations while they were in operation.

Melanie Weaver (California) reported a harvest of 43 geese based on data from check stations at public hunt areas.

Management Activities. Annually, a sample of geese is marked with plastic neck collars during winter as part of a mark-resight program to estimate population abundance. California is committed to continue collaring geese during the first two weeks in November in the San Joaquin Valley area. Resight efforts will continue during January–March in California and Oregon.

Brandon Reishus (Oregon) reported difficulties helping collect resight data in 2016, but plans to participate in the 2017 season, particularly in the Tillamook area.

Research Activities. Dr. Jeff Black is advising a MS student investigating variation in bird quality indicated by Aleutian Canada goose achromatic ornaments (i.e., cheek patches and neck rings). Two other MS students are evaluating carrying capacity of California State, USFWS, and Arcata City lands to assess whether they are servicing the Flyway target of 60,000 birds. Another MS student is assessing breeding ground distribution of birds.

Recent Publications:

Cocke, J., S. Alton, and J.M. Black 2016. Observations of Aleutian Cackling Geese (*Branta hutchinsii leucopareia*) breeding on Buldir Island, Alaska: forty-seven years after the rediscovery of a remnant population. Wildfowl – In Press.

Recommendations. The subcommittee adopted one recommendation.

- The subcommittee recommends no change in regulations for Aleutian Canada geese.

Cackling Canada Goose Subcommittee

Brandon Reishus, Oregon Department of Fish and Wildlife

Population Status. In March 2011, the Pacific Flyway Council adopted a new method to determine the population index of cackling Canada geese. The method uses ratio estimation to establish the relationship between the indicated total bird index from the YKD Coastal Zone Survey and mark-resight

data from 1989–2003. In 2016, the index ratio was updated to incorporate additional mark-resight data from 2011–2013 (Pacific Flyway Council 2016). The fall population index for cackling Canada geese is now calculated by multiplying the indicated total bird index from the YKD Coastal Zone Survey by an index ratio of 3.42. The 2016 Cackling Canada Goose fall population is 327,453 birds and the 3-year (2014–2016) average is 320,650 birds. These estimates are -5.7% and +0.9% from indices reported in 2015 and the second highest since current survey methodology was initiated in 1985. Indices from the YKD survey in 2016, upon which the fall population index is based were 95,667 indicated total birds and 77,979 indicated breeding birds. These estimates are up 20% and 40% from the previous 10-year averages and the indicated breeding bird index is the highest recorded from this survey.

Harvest Information. Since 1986, cackling goose harvest in Oregon and Washington was indexed at goose check stations operated to monitor dusky Canada goose harvest. However, the check station program was discontinued in 2015. In 2015–2016 the Oregon Department of Fish & Wildlife initiated a random telephone harvest survey of hunters authorized to hunt geese in northwest Oregon. This survey estimated a 2015–2016 harvest of 13,592 cackling geese, higher than the 6,000 to 7,000 cackling geese usually indexed at goose check stations in this zone; however, the area encompassed by the Northwest Permit Zone expanded in the 2015 season and the previous index was likely biased low due to hunters who unlawfully failed to report to check stations. This new survey is intended to continue in subsequent years. California reported a harvest of 111 cacklers on public hunting areas and Alaska reported subsistence harvest of 23,050 in 2015, similar to previous years.

Management Activity. The subcommittee was notified that the U.S. Fish and Wildlife Service (Service; Region 7) hired Bryan Daniels as the new waterfowl biologist position at Yukon Delta NWR. The Refuge conducted a four day cackling Canada goose banding effort, targeting brood flocks; 288 cackling Canada geese were captured and banded in 2016. Staff from Oregon, Washington, and the Service Region 1 will capture and band cackling geese on the winter grounds during March 2017.

USFWS Region 1 provided an update on Migratory Game Bird Depredation Permits issued to agricultural producers in northwest Oregon last winter. Six permits were issued to landowners and 16 cackling geese were taken. To date, Region 1 has issued seven depredation permits for the 2016–2017 winter season.

The Alaska Migratory Bird Co-Management Council passed a regulation in 2016 permitting cackling Canada goose egg harvest during 2017 subsistence harvest seasons in Alaska. Harvest of cackling Canada goose eggs has been prohibited since implementation of the Yukon Delta Goose Management Plan in the 1980s.

In July 2016, the subcommittee submitted a revision of the Pacific Flyway Management Plan for Cackling Canada Goose to Council for approval at Council's September 2016 meeting. The plan updated information since the 1999 version of the plan as well as a revision of the harvest strategy which specified harvest regulations should be crafted to maintain the population within 10% of the of 250,000 bird objective.

A total of \$15,000 remained in the Council budget from special assessments for the 2011–2013 mark-resight project, which was allocated by the Council in March 2015 to fund a proposal from Dr. James Peterson with Oregon State University (OSU) to help structure and facilitate stakeholder meetings in 2015. Dr. Peterson collaborated with Dr. Bruce Dugger (OSU) as well as several subcommittee members (WA, OR, USFWS-R1) to determine project needs. Oregon State University held the first workshop in Vancouver, Washington during June, 2015 and the second in Seattle, Washington during

October 2015. These workshops were attended by stakeholder representatives (Yukon Delta NWR, Association of Village Council Presidents, Oregon Seed Council, Oregon Farm Bureau, and Ducks Unlimited), and technical representatives (cackler subcommittee members and other fish and wildlife agency staff). Participants discussed stakeholder viewpoints, developed a problem statement, evaluated management limitations, drafted management objectives and potential management actions, and developed tables to link actions to objectives. The Plan population objective (250,000) was discussed, and stakeholders had contrasting views. A final report titled “Developing a Structured Framework for Managing Cackling Canada Geese” was distributed to the subcommittee in February 2016.

Research Activity. Oregon State University graduate student Erin Harrington completed her Master’s thesis in July 2016, titled “A Comparative Study of Foraging Behavior and Disturbance Regimes in Urban Versus Agricultural Habitats used by Cackling Geese Wintering in the Willamette Valley, Oregon.” This study was partially funded by Oregon Department of Fish and Wildlife and can be accessed online at <https://ir.library.oregonstate.edu/xmlui/handle/1957/59701>.

Recommendations. The subcommittee adopted two recommendations.

- The subcommittee recommends no change to regular goose season frameworks related to cackling geese.
- The subcommittee recommends Council endorse the revision of the 2016 Pacific Flyway Management Plan for Cackling Canada Goose.

Dusky Canada Goose Subcommittee

Joe Sands, U.S. Fish and Wildlife Service, Region 1

Population Status. The 2016 aerial indicated breeding bird index (3,476), aerial indicated total birds index (4,062), and total breeding ground index (13,230) were lower than 2015, but are among the highest recorded since 1994. Sixty-three geese were recorded on small islands between Egg Island and the West Delta, but were not added to the breeding index. The total breeding ground index of 13,230 was 25% lower than the index reported in 2015. Lower dusky numbers in 2016 were partly due to a decrease in Middleton Island counts, which were the result of poor visibility (rain, fog, and tall vegetation). The recent (2014–2016) 3-year average was 15,436, and was 1% lower than the previous 3-year average (15,516). The 1986–2016 average annual growth rate was 0.9895 (SE=0.0047) and the most recent 10-year (2007–2016) average annual growth rate was 1.0786 (SE=0.0271). The recent 3-year (2014-16) population average of 15,436 was 54% above the 10,000 bird population index required to maintain management Action Level 1 as identified by the Dusky Canada Goose Management Plan (Plan).

Jason Schamber (Alaska) reported 5,616 geese and 96 goslings were counted during the 2016 Copper River Delta (CRD) Production Survey. Twenty-nine flocks were observed, yet the total number of adults was higher than average (4,709 adults; sd=1,091; range=2,361-6,701), which reflects the larger flock sizes of molting geese in 2016 (average 271 adults) with four flocks exceeding 500 adult geese (range 521-1,463 adults). Large numbers of molting adults were observed on the tidal flats between Mountain Slough and Alaganik Slough. Goslings were observed in only 10 flocks. Flocks considered family groups (at least one gosling present) averaged 10 goslings and 47 adults. A total of 192 goslings (number of goslings x 2) were estimated on the west CRD survey area in 2016. Annual production of young was very low. Goslings comprised only 3.3% of the total count; substantially lower than the 10-year average. However, high productivity in previous years resulted in meeting the Pacific Flyway Dusky Canada Goose Management Plan (Plan) objective of achieving annual production of 20% young (measured as the most recent 10-year average). Seven goslings and 376 adult geese in three flocks were observed on

Egg Island. Lack of dusky productivity in 2016 correlates with a below normal eulachon run and an above average proportion of depredated nests on sample plots.

Harvest Information. Brandon Reishus (Oregon) reported law enforcement activities did not record any dusky Canada goose violations in bag checks. No final report was available from Oregon State Police, and the number of individuals checked was unknown. Telephone surveys detected no self-reporting of dusky Canada goose taken, which could be expected.

Kyle Spragens (Washington) reported on law enforcement activities during 2015–2016. A total of 19 dusky Canada geese were checked in Goose Management Area 2 this season, which was lower than the 27 checked on average the previous three years; however, there were no formal goose check stations operated in Washington, so comparisons to previous years should be met with caution. In Area 2A, 8 dusky geese were checked by Ridgefield National Wildlife Refuge check station staff, three were checked during a normal goose hunter survey, four were checked during a waterfowl emphasis patrol, and one was checked during a law enforcement patrol.

Management Activity. Brandon Reishus (Oregon) and Todd Sanders (US Fish and Wildlife Service) participated in the 2016 banding effort coordinated by Alaska Department of Fish and Game (ADFG) and the U.S. Forest Service. In July 2016, 612 adult geese were captured in two molt drives. Flightless geese were herded into the capture pot with an R-44 helicopter. In total, 297 geese received a red neck collar (white code) and standard metal leg bands, three geese had their collar replaced, 228 geese received standard metal leg bands (no collar), 84 geese had been captured in previous years.

The subcommittee discussed the objective of only collaring 300 birds. Given the substantial efforts to collar birds on the Copper River Delta and resight collars in Oregon and Washington in the winter, the subcommittee agreed additional collaring of adult birds would have significant value. The subcommittee agreed to place neck collars on up to an additional 300 adult birds during the next capture effort in 2018.

In 2015–2016, there was a concerted effort in Oregon and Washington to resight collars on the wintering grounds. Brandon Reishus (OR) reported Oregon Department of Fish and Wildlife hired two seasonal employees as full time observers. Collar observers found a large number of unique collars on Sauvie Island, an observation supported by ADFG satellite telemetry data. Todd Sanders (USFWS) produced a preliminary estimate of adult survival. He will review banding records and produce a report for the spring meeting, noting that 2-3 year lag exists before survival estimates are sufficient.

The subcommittee discussed 2016–2017 resight survey logistics. Steve Olson (USFWS) will provide the information in the coming weeks. Washington is lobbying for time from regional district biologists and Oregon has two dedicated seasonal employees. Staff from USFWS Region 1 will also continue to assist in the resight effort.

Research Activity. Jason Schamber (Alaska) reported the Platform Terminal Transmitter (PTT) project data are being analyzed. Seventeen PTTs are currently transmitting; 14 deployed on the CRD in 2013 and three deployed on MI in 2014. Geese followed usual migration paths and settled in wintering and breeding areas used in previous years. Genetic samples were delivered to the Alaska Science Center for analysis in May. Final results, analysis, conclusions and management recommendations will be made available once when all PTTs cease transmitting information.

Recommendations. The subcommittee adopted one recommendation.

- The subcommittee recommends no change in management strategies for dusky Canada geese.

Emperor Goose Subcommittee

Jason Schamber, Alaska Department of Fish and Game

Population Status. The Pacific Flyway Council recognizes the 3-year average count from the emperor goose spring population survey on the Alaska Peninsula as the management index (Pacific Flyway Council 2006). The 2016 index was 79,348 birds, 19% below the 2015 index (98,155). The 3-year average (2014–2016) of 85,795 was 5% above the previous 3-year average of 81,875. The 2015 and 2016 3-year averages were above the threshold identified in the 2006 Pacific Flyway Emperor Goose Management Plan (2006 Plan) to consider opening a hunting season.

On the Yukon–Kuskokwim Delta (YKD) breeding grounds, the 2016 emperor goose indices for indicated total birds ($34,109 \pm 2,490$ [SE]) and indicated breeding birds ($27,051 \pm 1,341$ [SE]) were 30% and 85% higher than the respective 2015 indices ($26,235 \pm 1,581$ [SE]) and ($14,647 \pm 832$ [SE]). From 1985–2016, the average annual population growth rates for indicated total birds and indicated breeding birds were 1.020 ± 0.003 (SE) and 1.026 ± 0.003 (SE), respectively.

Fall distribution, abundance, and population trends of emperor geese at migratory staging areas throughout southwest Alaska have been annually monitored since 1979. The 2015 survey estimated a fall population index of 84,702 emperor geese, 6% below the 2014 estimate of 90,116 birds. The 3-year (2013–2015) average population estimate for the fall survey is 84,560 birds, an increase of 12% from the previous 3-year (2012–2014) average of 75,633 birds.

Harvest. Fall and subsistence harvest of emperor geese has been prohibited since 1986 and 1987, respectively. However, based on 2004–2014 subsistence harvest data reported by L. Naves Alaska Department of Fish and Game, the average annual statewide subsistence harvest of emperor geese in Alaska is 3,191 birds. The Bering Strait/Norton Sound and mid-coast sub-region of the YKD had the highest reported harvest of emperor geese. The YKD was the only region surveyed in 2015 (Naves 2015). The 2015 estimated subsistence harvest of emperor geese on the YKD was 558, the lowest reported harvest since introduction of this survey.

Management Activities. Since 2012, Alaska Native peoples from YKD, Bering Strait-Norton Sound, Sun’aq Tribe of Kodiak, the Aleutian/ Pribilof Islands Association, and the Kodiak Regional Advisory Council have expressed strong interest in opening emperor geese to spring/summer and fall/winter hunting based on observations of increasing numbers of birds. As a result, the Alaska Migratory Bird Co-Management Council (AMBCC) Emperor Goose Subcommittee (Subcommittee) convened a series of meetings since September 2013 to discuss the emperor goose population objective, harvest thresholds, and surveys used to derive population indices.

Goals and objectives of the 2006 Plan and 2005 YKD Goose Management Plan specify that hunting may be reconsidered when the 3-year average of the spring index reaches 80,000 geese as it did in April 2015 following the spring AMBCC regulatory meeting. As a result, in July 2015, Council supported AMBCC representatives working with representatives from the State of Alaska and the USFWS to develop harvest regulations and monitoring for a limited harvest in 2016 and then revising the Emperor Goose Management Plan to guide future harvest. On July 31, 2015, the Service Regulations Committee (SRC) supported a limited harvest of emperor geese for the 2016 spring/summer subsistence season.

The SRC approved a 2016 spring/summer emperor goose harvest with the following conditions: (1) a quota of 3,500 geese; (2) a harvest reporting requirement; (3) a population monitoring program; and (4) a revised Management Plan. The AMBCC met in August and September 2015 to discuss the options for meeting the conditions to open the hunt. The AMBCC ultimately decided to forego a 2016 emperor goose harvest to allow several population analyses to be completed and for additional discussion to occur regarding a

population objective, harvest strategy, and monitoring method. All partners agreed to postpone a harvest until 2017, develop a harvest framework, and work toward updating the 2006 Plan to satisfy the conditions of the SRC by fall 2016.

In April 2016, the AMBCC, agreed to produce a separate AMBCC Plan to guide emperor goose management for the spring/summer subsistence season. The AMBCC Plan would provide guidelines for spring/summer subsistence harvest of emperor geese while the 2016 Pacific Flyway Plan would provide guidelines for the fall/winter harvest. The two Plans contain identical population assessment methods, population objectives and regulatory harvest thresholds. Both Plans require adoption by their respective Councils for either to be implemented.

The AMBCC and Pacific Flyway Subcommittees met in July 2016 to receive updates on ongoing modeling efforts (see below) and reach consensus on key elements of both Plans that included a population assessment method and harvest strategy. The Subcommittees agreed that two population models (Bayesian State-space model and theta-logistic) proposed as population assessment methods had potential, but both models needed further refinement. It was decided that the interim population assessment methodology would be based on the index of total indicated birds (total bird index) from the YKD Coastal Zone Survey. In addition, the Subcommittees reached a compromise to allow both a spring/summer subsistence season and a fall season with opening and closing thresholds based on the total bird index. The Subcommittee agreed that the population objective would be the 2016 total bird index of 34,000. Seasons would be open when the index was at or above 23,000 total birds and closed when the index dropped below 23,000 total birds. Harvest restrictions would be considered if the index dropped from the 2016 index to below 28,000 total birds. The spring/summer subsistence harvest would be a customary and traditional hunt and the fall harvest would be limited to a 1,000 bird quota. The theta-logistic model was used to guide selection of the harvest closure threshold.

On 29 August, 2016, the Subcommittee met to discuss the population objective and finalize contents of the Plans. The Subcommittee agreed that the population objective would be the 2016 total bird index of 34,000. The population objective was intended to be a standard of measure for future population change. The Subcommittee agreed that all parties will annually review available data (e.g., population status, harvest survey data, and other relevant information) and in 2019 will reevaluate the population objective, population assessment method and harvest strategy.

The AMBCC Emperor Goose Management Plan was adopted on 1 September 2016. A recommendation that Council adopt the Pacific Flyway Emperor Goose Management Plan will be made at the fall regulatory meeting.

In 2015, a Bayesian state-space model was developed to integrate 30 years of data (1985–2014) from five annual emperor goose surveys (spring aerial index, YKD coastal zone, YKD nesting, fall aerial index, and the age ratio survey) to provide estimates of population size and trend. A preliminary report was available in February 2016 and updated model results were circulated in July 2016. The averaged median estimate of 30-year population growth in the June population was 1.010 (± 0.008) with a higher growth rate (1.028 ± 0.017) in the last 10 years. The posterior median estimates of population size in June averaged over 2007–2014 was 129,488 ($\pm 6,133$ SD) birds. Model estimate median June population size in 2014 was 148,010 birds.

In 2016, a theta-logistic population model and analysis were used to derive optimal harvest thresholds, given two statements of stakeholder values and considering uncertainty in goose population dynamics and future harvest. A preliminary report was available in June 2016. The harvest threshold is highly dependent on the shape of utility functions and reported harvest. The 2016 total bird index is 34,109 bird, equivalent to approximately 170,000 emperor geese.

Research Activities. Dr. Joel Schmutz, USGS-Alaska Science Center is continuing research in 2017 on breeding ecology, survival, fidelity of emperor geese on the YKD at the Manokinak River study site.

In 2015 Dr. Joel Schmutz initiated research entitled “Cross-seasonal effects and disease as constraints on numbers of emperor geese” was initiated in 2015 and designed to investigate how wintering environment may impact breeding success. A second and final winter field season will conclude in March, 2017.

An analysis of a 22-year adult survival study, from mark-resight work on the YKD, is nearly complete and should be publicly available in the next couple of months. Annual survival of adult emperor geese appears to be increasing. The best fitting model of emperor goose survival includes the covariate of greater white-fronted goose abundance at the YKD. Since abundance of greater white-fronted geese has increased dramatically over the last couple decades, white-fronted geese may now serve as "alternative prey" for hunters and/or arctic foxes which may minimize mortality of emperor geese.

Recent Publications:

Dooley, J., E. Osnas, and G. Zimmerman. 2016 Analyses of emperor goose survey data and harvest potential. Report to U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Region 7 and Alaska Migratory Bird Co-Management Council. Anchorage, Alaska. 92pp.

Naves, L. C. 2016. In Prep. Alaska subsistence harvest of birds and eggs, 2015, Alaska Migratory Bird Co-Management Council. Alaska Department of Fish and Game Division of Subsistence, Technical Paper Anchorage, Alaska.

Stehn, R.A. and S.J. Fleischman. 2016. In Prep. An integrated population model for Emperor Geese. Report to Alaska Department of Fish and Game, Anchorage, Alaska.

Recommendations: The subcommittee adopted three recommendations.

- The subcommittee recommends Council adopt the 2016 Pacific Flyway Management Plan for Emperor Geese.
- The subcommittee recommends regulations for spring/summer subsistence harvest of migratory birds and their eggs in Alaska for 2017. This includes opening the emperor goose season to allow for a customary and traditional bird harvest per guidelines in AMBCC Management Plan.
- The subcommittee recommends the Alaska season framework for 2017 to allow a fall harvest of emperor geese with a quota of 1,000 birds allotted to the State of Alaska.

Interior Band-tailed Pigeon Subcommittee

Jonathan O’Dell, Arizona Game and Fish Department

Population Status. The Interior population (IP) of band-tailed pigeons is monitored by the Breeding Bird Survey (BBS). Since 1968, the trend in the median annual count has declined 5.0% per year. Population trends in the most recent five and 10 year periods (-0.2% and -4.7%) are inconclusive due to low sample sizes. As a result, variances are high.

Harvest Information. Estimated harvest of the IP in 2015 was 800 birds, which is a 46.7% decline from an estimated 1,500 birds harvested in 2014. Utah reported no harvest from their state survey.

Management Activity. Arizona, Colorado, and New Mexico have implemented new Harvest Information Program registrations to accurately capture information on band-tailed pigeon hunters. The subcommittee believes additional years of data from state based harvest surveys and current research activities are necessary before revising the current Flyway management plan.

Research Activity Arizona, Colorado, and New Mexico began leg banding and deployed Passive Integrated Transponder (PIT) tags in 2015. Arizona and New Mexico have continued this effort for 2016. Antennae to read PIT tags were deployed in both Arizona and New Mexico in 2016 to begin collecting data on adult survival. Dr. Scott Carleton of the U.S. Geological Survey, New Mexico Cooperative Research Unit will complete analyses. Utah is exploring expansion of BBS routes to improve band-tailed pigeon monitoring.

Recommendations. The subcommittee adopted one recommendation.

- The subcommittee recommends no change in the season framework for interior band-tailed pigeons.

Lesser, Taverner's, and Vancouver Canada Goose Subcommittee

Russell Woolstenhulme, Nevada Department of Wildlife

Population Status. Statewide population indices for Taverner's Canada goose in Alaska are based on three breeding surveys: the Arctic Coastal Plain (ACP) Breeding Pair Survey, the Yukon Delta Coastal Zone Breeding Pair Survey, and the Waterfowl Breeding Population and Habitat Survey (WBPHS). The 2016 statewide indicated total and indicated breeding bird indices for Taverner's Canada geese are 48,391 and 36,137, respectively. The current 3-year average (2014–2016) of indicated total birds is 42,514, 19% higher than the previous 3-year average (2013–2015; 35,619). Estimated long-term average annual growth rate of indicated total Taverner's Canada geese is 0.987.

The Alaska-Yukon population index for lesser Canada geese is based on the sum of stratum-specific indices from the WBPHS (Stratum 1 [Kenai-Susitna], Stratum 2 [Nelchina], Stratum 3 [Tanana-Kuskokwim], Stratum 4 [Yukon Flats], and Stratum 12 [Old Crow Flats]). A small, but undetermined proportion of Canada geese on the ACP are also believed to be this subspecies; however, they are not included in the Alaska-Yukon index. The 2016 indicated total and indicated breeding bird indices are 6,623 and 4,577, respectively. The current 3-year average of indicated total birds (2014–2016) is 4,319, 24% higher than the previous 3-year average (3,484; 2013–2015). Long-term (1964–2016) average annual growth rate for indicated total lesser Canada geese is 0.999.

Harvest. No breakdown of harvest by species for Canada geese is available.

Management Activities. No activities were reported.

Research Activities. No activities were reported.

Recommendations. The subcommittee adopted one recommendation.

- The subcommittee recommends no change in frameworks for Lesser, Taverner's, Vancouver Canada geese to Alaska's early season framework for Canada geese.

Pacific Brant Subcommittee

Eric Taylor, U.S. Fish and Wildlife Service, Region 7

Population Status. As specified in the Pacific Flyway Brant Management Plan, the Pacific brant population objective is 162,000. The 2016 Pacific Flyway Midwinter Waterfowl Survey (MWS) estimate was 140,025; 2.6% above the 2015 estimate (136,482). The most recent 3-year (2014–2016) average is 149,941, 5.2% lower than the previous 3-year (2013–2015) average (157,699).

The 2016 mid-winter population survey at Izembek National Wildlife Refuge (Izembek and Sanak Islands) was conducted 22-23 January 2016. The estimated 46,772 brant was the third highest since the survey was started in 1981. The most recent 3-year (2014–2016) average number of brant counted during this survey is 48,409. The long-term (1981–2016) growth rate of over-wintering brant at Izembek is 8.5% per year. Currently, Alaska supports approximately 30% of the mid-winter population of Pacific brant.

The 2015 fall population index for brant on the Alaska Peninsula was 132,942, 23% lower than the 171,720 brant counted in fall 2014. The most recent 3-year (2014-2016) average fall population index is 154,148.

Since 1992, aerial photographic surveys have been conducted annually at five major black brant nesting colonies on the Yukon-Kuskokwim Delta (YKD) including Kokechik Bay, Tutakoke River, Baird Peninsula, Baird Island, and Kigigak Island. The 2015 and 2016 YKD colony survey data are currently being analyzed and will be reported later. The 2014 survey indicated a total of 9,251 nests, a 29% increase from 2013 (7,183) and 40% lower than the 1992–2013 average (15,273). The 2014 YKD colony nest population estimate of 9,251 was 47% of the 1993-2000 average (19,683 nests) and below the productivity benchmark outlined by the Pacific Flyway Brant Management Plan (>50% of 1993-2000 average of number of nests).

The YKD Aerial Coastal Zone Survey was not designed to assess the population of colonial nesting brant; however this survey provides information on brant nesting outside of major colonies, which in recent years accounts for greater than 50% of nesting brant on YKD. The 2016 indicated total birds index (29,986 +3,693 [SE]) and indicated breeding birds index (13,460 + 1,459 [SE]) were 27.4% higher and 29.6% higher than 2007–2016 means for these indices, respectively. Average (1985–2016) annual growth rates for indicated total birds and indicated breeding birds from 1985–2016 were 1.008 + 0.007 (SE) and 1.043 + 0.009 (SE), respectively.

Harvest. In 2015-2016, a total of 1,366 permits were issued in Washington. One hundred ninety-three successful hunters harvest of 199 birds; most brant were taken in Skagit County. Harvest Information Program (HIP) estimates in 2015-16 from California, Oregon, Washington and Alaska were 2,238, 0, 249, and 2,440; the four state total brant harvest was 4,927. A total of 162 brant were harvested in British Columbia, including one Western High Arctic Brant. Subsistence harvest of brant on the YKD in 2016 was 2,348; 62% lower than average (6,138) from 2004–2015.

Management Activities. The Pacific Flyway Brant Subcommittee continues to work on revising the Pacific Brant Management Plan; a final draft is expected to be distributed for review by 1 December 2016. Brant research and management biologists will meet 1-2 November 2016 in Anchorage, Alaska to address the following goals: (1) assess effectiveness of population surveys and demographic studies for monitoring the Pacific Flyway population of black brant; and (2) assess trends in global population and key breeding subpopulations to inform management decisions for the Pacific Flyway and the U.S. Fish and Wildlife Service. The underlying problem being addressed is apparent conflicting trajectories for the status of Pacific Flyway population of black brant. For the last 25 years, the Pacific Brant Mid-Winter Survey and Fall Izembek Survey, which are used to monitor the overall population, have indicated a stable and possibly increasing trend. However, fall age ratios at Izembek and adult/juvenile survival rates indicate a declining trend. Because the Pacific Brant Mid-Winter Survey informs management decisions, discrepancies between survey data and other demographic information indicate potential for incorrect management decisions. The list of invitees to the 1-2 November 2016 brant meeting include the Pacific Flyway Study Committee and approximately 30 other biologists from the USGS-ASC,

USFWS (MBM, Yukon Delta NWR), Alaska Department of Fish and Game, North Slope Borough, University of Alaska-Fairbanks, University of Nevada-Reno, Utah State University, and Environment and Climate Change Canada.

Research Activities. California Department of Fish and Wildlife provided funds to Morro Bay National Estuary Program to assess past eelgrass (*Zostera* species) transplant efforts and perform small-scale restoration using detailed information gathered from the assessment. Assessment over an extended time frame is required to confirm presence or absence of transplanted eel grass and develop a strategic plan for future efforts. Eelgrass distribution in Morro Bay is declining at an accelerated rate. From 2007-2013, eelgrass declined by approximately 97 percent resulting in ≤ 15 remaining acres. Areas that previously supported dense eelgrass beds have transitioned to either bare mudflats or dense mats of marine algae. The exact cause of eelgrass decline in Morro Bay is uncertain and likely a combination of factors including, but not limited to wasting disease, sedimentation and nutrient issues, and competition with algae. Eelgrass persistence in the Morro Bay estuary depends heavily on intensive monitoring restoration efforts.

Joe Evenson and Matt Wilson (Washington Department of Fish and Wildlife) instrumented two Western High Arctic Brant with implant Platform Transmitting Terminals (PTT), as part of a pilot study, to better understand Western High Arctic Brant fidelity in Puget Sound, and impacts of proposed inclusion of surrounding counties to the Washington state Puget Sound Zone.

The U.S. Geological Survey-Alaska Science Center studies of Pacific Brant in Alaska include:

Eelgrass Ecosystem Assessments in Alaska. Assessments have been conducted in southwest Alaska at four refuges (Yukon Delta, Togiak, Izembek and Alaska Peninsula NWR). An eelgrass monitoring plan has been developed to assess the abundance and distribution of this seagrass in Alaska and it is being implemented on an annual basis at Izembek Lagoon. Future eelgrass assessments are planned for Kodiak Island, Prince William Sound, and southeast Alaska.

Conservation Planning for Black Brant: Assessing Carrying Capacity Limits for Black Brant at Izembek Lagoon, Alaska and Bahia San Quintin, Baja California. This project will use an individual-based model to evaluate how current and future predicted changes in sea level rise, eelgrass abundance, and human disturbance may limit brant populations using these locations.

Assessing Demographic Rates of Survival and Productivity for Black Brant from the Yukon-Kuskokwim Delta and Arctic Breeding Areas. This study will provide insight into whether declines in the Yukon-Kuskokwim Delta (YKD) breeders can be offset by increases in the non-YKD breeders. The USGS-ASC will examine whether survival rates and productivity differ between breeding areas (YKD vs Arctic), assess impacts of past and current levels of sport and subsistence harvest on the brant population, and evaluate contribution of the YKD and Arctic sources to the annual fall production of brant at Izembek Lagoon.

Annual Monitoring of the Survival and Productivity of Black Brant Breeding on the Colville River Delta, 2016-2019. This project will continue studies initiated in 2011 to assess effects of changing phenology and interspecific competition with snow geese on the nesting success, juvenile growth rates, and annual survival of brant on the Arctic Coastal Plain of Alaska.

Assessments of the Nesting Population of Black Brant and their Brood-rearing Habitats on the Arctic Coastal Plain. This project will be repeat historic brant colony surveys on the Arctic Coastal Plain to

assess trends and patterns of breeding population change. This will provide comparable data on both high and low density nesting brant that are directly comparable to long term data on the YKD. The project will also assess spatial distribution and abundance of key brood-rearing habitat for Brant and forecast population trajectories for brant on the Arctic Coastal Plain.

Recommendations. The subcommittee adopted one recommendation.

- The subcommittee recommends no change in the seasons or bag limits for Pacific Brant with the following exception: Washington adds Clallam and Whatcom counties to the current Puget Sound Brant Zone.

Pacific Coast Band-tailed Pigeon Subcommittee

Joe Sands, U.S. Fish and Wildlife Service, Region 1

Population Status. Pacific Coast band-tailed pigeon population indices are monitored by the Breeding Bird Survey (BBS) and a mineral site survey (MSS). The BBS provided evidence that abundance of Pacific Coast band-tailed pigeons has decreased (−1.7% per year, credible interval = −3.1 to −0.5) from 1968 to 2015. Trends in abundance during recent five and 10-year periods were inconclusive for both BBS and MSS; however, the MSS index increased from 176.4 (CI: 133.7–240.7) in 2015 to 187.1 (CI: 139.6–257.2) in 2016.

Harvest Information. Harvest and hunter participation are estimated from the Migratory Bird Harvest Information Program. In 2015, estimates of total harvest, active hunters, and total hunter days afield were 7,300 (95% confidence interval = 2,400–12,200) pigeons, 2,500 hunters, and 6,200 (3,000–9,400) days afield. Harvest composition was 31% hatch year pigeons during the 2015 season. Washington issued 249 permits, and hunter surveys indicated a total of 96 days hunted, and a harvest estimate of 72 birds.

Management Activity. André Breault (CWS) presented results of a mineral site modeling and identification effort on east Vancouver Island. Five sites are surveyed annually, though two have recently had very little use. Given the necessity of surveying mineral sites to index populations, the Canadian Wildlife Service identified potential mineral sites on Vancouver Island by using Google Earth satellite imagery. Site visits were conducted thereafter and identified five new mineral sites, with suspected use at two more sites, and nearly doubled knowledge of mineral sites as well as the provincial breeding population estimate in four field days. Future plans for the effort are to apply the model to the southwest mainland coast and develop a model for inland areas based on different variables.

Research Activity. No research activity was discussed.

Recommendations. The subcommittee adopted one recommendation.

- The subcommittee recommends no change in the season framework for Pacific Coast band-tailed pigeons.

Pacific Coast Population Trumpeter Swan Subcommittee

Jason Schamber, Alaska Department of Fish and Game

Population Status. The North American trumpeter swan survey has been conducted approximately every 5 years since 1968 to assess the abundance, productivity, and distribution of trumpeter swans (*Cygnus buccinator*) in North America. The 2015 quinquennial survey was conducted by cooperators throughout Canada and the northern United States. In 2015, swan abundance for the Pacific Coast Population (PCP) was 31,642 ($SE=1,432$), an 18% increase from the 2010 estimate of 26,790 ($SE=1,060$); 32% of PCP swans were cygnets, higher than the 22% observed in 2010 and the 1968–2010 average of 25%. Mean brood size in 2015 was 3.02 cygnets, slightly higher than 2.85 cygnets per brood observed in 2010.

Harvest. The Pacific Coast Population of trumpeter swans is not subject to sport or subsistence harvest.

Management Activities. Since 1999, trumpeter and tundra swans wintering in northwestern Washington and southwestern British Columbia have experienced high rates of mortality. Most mortalities have been due to ingestion of lead shot pellets. Use of lead shot for waterfowl hunting has been banned in Whatcom County, Washington since 1989 and in Sumas Prairie, British Columbia since 1992. Lead shot is permitted on some upland hunting areas and for unregulated trap shooting on private lands.

Representatives from Environment and Climate Change Canada's Canadian Wildlife Service (CWS), Washington Department of Fish and Wildlife (WDFW), U.S. Fish and Wildlife Service (USFWS), Trumpeter Swan Society, Washington Cooperative Fish and Wildlife Research Unit at the University of Washington and various other organizations have been working together since 2001 to locate sources of lead shot and reduce swan mortalities. A total of 374 swan mortalities were recorded during winter 2015-16. Approximately 54% of mortalities were suspected lead poisoned and 21% were suspected powerline strikes.

Partners are considering altering the habitat at Judson Lake on the U.S./Canada border which is a primary source of lead poisoning. Joe Sands (USFWS R1) commented that this effort is logistically challenging, therefore, no viable solutions have been determined.

The Pacific Trumpeter Swan population as a whole does not appear to be at risk because of lead shot mortalities.

The 24th Conference of The Trumpeter Swan Society (TTSS) will be held in Duncan, BC, Canada, November 16-18, 2016. The conferences of TTSS, that were begun in 1969, provide the only public forum in North America that brings together private citizens, conservation groups, policy makers, swan managers, and researchers to examine the status and needs of trumpeter swans in the U.S. and Canada.

The 24th Conference will focus on both successes and challenges involved with long-term management of trumpeter swans. Special attention will also be given to be status, management, and conservation of trumpeter swans in the Pacific Flyway and potential conflicts between swans and agriculture during winter. Presentations will examine swan conservation accomplishments and lessons learned and discuss future challenges. In addition, the conference will include sessions on biology, habitat concerns, and management of trumpeter swan populations throughout North America. Papers and posters on biology and management of tundra swans and mute swans or their interactions with trumpeter swans are also invited. Proceedings of the Conference are intended for publication.

Research Activities. None reported.

Recommendations. The subcommittee did not propose any recommendations for the Pacific coast population of trumpeter swans.

Rocky Mountain Population Sandhill Crane Subcommittee

Blair Stringham, Utah Division of Wildlife Resources

Population Status. The September 2015 coordinated survey counted 24,330 Rocky Mountain Population (RMP) cranes, a 23.7% increase from 2014. The most recent three-year average (2013–2015) is 21,452. This average is within the population objective range of 17,000 – 21,000 cranes. Estimated recruitment increased from 10.3% in 2014 to 11.3% based on the October 2015 survey in the San Luis Valley, Colorado. The September 2016 survey was recently completed, but results are not yet available.

Harvest Information. The 2015 harvest estimate was 705 cranes (75% of harvest allocation). The reported harvest does not include crippling loss.

Management Activities. No management activities were reported.

Research Activities. Dan Collins (U.S. Fish and Wildlife Service-Region 2), has been marking RMP and Lower Colorado River Valley (LCRV) birds in multiple summering and wintering areas, and has observed mixing of both RMP and LCRV populations on staging and wintering grounds. Three colts were marked in Idaho in August and all have died for unknown causes.

The following paper was published in 2016:

Collins, D.P., B.A. Grisham, C.M. Conring, J.M. Knetter, W.C. Conway, S.A. Carleton, and M.A. Boggie. 2016. New summer areas and mixing of two greater sandhill crane populations in the Intermountain West. *Journal of Fish and Wildlife Management* 7: 141-152.

Brian Gerber has finished his work with Bill Kendall at Colorado State University. The following paper was published in 2015:

Gerber, B.D., W.L. Kendall, M.B. Hooten, J.A. Dubovsky, and R.C. Drewien. 2015. Optimal population prediction of sandhill crane recruitment based on climate-mediated habitat limitations. *Journal of Animal Ecology* 84:1299–1310.

Ruth Shea is currently storing a large amount of crane data from the 1960s, and is willing to share data as appropriate. There was discussion of converting the documents to a digital format.

Recommendations. The study committee adopted one recommendation.

- The subcommittee recommends no change in the season framework for RMP sandhill cranes, except:
 - expansion of the existing RMP sandhill crane hunting unit in southwestern Montana (Gallatin and Madison counties and the Dillon/Twin Bridges/Cardwell hunt area (HD 380-01)) to include ALL of Beaverhead and Jefferson counties. The new unit description, beginning in 2017, would be: "all of Beaverhead, Gallatin, Jefferson, and Madison counties."

Rocky Mountain Population Trumpeter Swan Subcommittee

Claire Gower, Montana Fish, Wildlife and Parks

Population status. Dave Olson (US Fish and Wildlife Service - Region 6) reported no winter survey was conducted during February 2016. Data for the Rocky Mountain Population (RMP) U.S. breeding

segment include data from the Tristate area (Montana, Idaho and Wyoming) and Restoration flocks (Oregon, Nevada, and Flathead Valley, Montana).

Data for the 2016 September survey are incomplete; however initial survey data indicate the number of white birds: Idaho 127, Wyoming (not including Yellowstone National Park [YNP]) 213, YNP 23, Montana Greater Yellowstone 195 (includes only Centennial Valley and Red Rocks Lakes NWR), Summer Lake, Oregon 13, and Ruby Lake NWR, Nevada 2. Currently no data are available for the Flathead Valley, Montana; 170 white birds were counted in the two restoration flocks in Montana, in 2015. Total white birds for the Tri-State Area and overall US breeding flock are not available at this time.

Initial survey data indicate the number of fledged trumpeter swans counted in the 2016 September survey: Idaho 28, Wyoming (not including YNP) 60, YNP 3, Montana Greater Yellowstone Flocks 46 (includes only Centennial Valley and Red Rocks Lakes NWR only), Summer Lake, Oregon 10, and Ruby Lake NWR Nevada 0. Currently no data are available for the Flathead Valley, Montana; 75 cygnets fledged from two restoration flocks in Montana in 2015. Total fledging for the Tri-State Area and overall US breeding flock are not available at this time. Numbers do not include captive-reared swans released in various areas during summer 2016. Wyoming reported the first successful nesting attempt by a pair of swans at a recently restored wetland areas in the city of Green River, making this the most southern nest in the RMP.

Harvest Information. In 2015–2016 Utah reported a harvest of 853 tundra swans and four trumpeter swans. Nevada harvested eight tundra swans. For the last three years, Nevada has harvested no trumpeter swans. Montana had a harvest estimate of 264 swans, including 14 trumpeter swans. Montana had an 87 % compliance rate for bill card measurements.

Management Activities. 2016 Reintroduction Programs – Restoration projects are ongoing in Montana, Wyoming, Oregon, and Idaho. In Montana, the Confederated Salish Kootenai Tribes Flathead Indian Reservation released six yearlings from the Montana Waterfowl Federation. The Blackfoot Valley and the Middle Madison released eight and five cygnets, respectively, from the Wyoming Wetlands Society (WWS). In Wyoming, five cygnets from the WWS were released to YNP. In Oregon, a total of 13 cygnets were translocated to Summer Lake Wildlife Area (SLWA), from the WWS (5), Alaska Zoo (4), Whatcom High School Wildlife Center WA (2), and from a captive pair in OR owned by The Trumpeter Swan Society (2). In spring 2016, four yearlings were released in the Teton Basin of Idaho. Idaho's 2016 allocation of four cygnets will be held over and released as yearlings in spring 2017.

Oregon has conducted powerline management; worked with electric companies to move a line underground near SLWA.

The Service recently completed the Idaho September swan flight. Idaho Department of Fish and Game will be working with the refuges to complete future surveys. Fall survey data are used to monitor total number of white birds and cygnets fledged in relation to Flyway management plan objectives.

Claire Gower (Montana) continues work on revision of the management plan, and the scheduled completion date is March 2017.

Research Activities. Greg Neudecker, Kevin Barnes, and Sean Fields (USFWS) continue to develop a habitat suitability model. This spatially explicit decision support tool may help determine suitable sites, and guide future trumpeter swan restoration in the greater-Tri State areas.

Jocelyn Aycrigg, Ruth Shea and Oz Garton continue work on the RMP U.S. segment Population Viability Analysis (PVA). This research will identify which population parameters are important for long-term viability. The concept of using the number of pairs that fledge broods in a given area as an important management objective, rather than focusing only on swan numbers and number of nest attempts as management plans have done in the past may have merit.

Bill Long (Wyoming Wetland Society) provided an annual update for 2016; 23 have been released and four will be overwintered and released in Teton Valley during spring 2017. In 2016, the third year of a winter banding project to monitor tarsal bands was conducted.

Gary Ivey (The Trumpeter Swan Society) announced The Trumpeter Swan Society's 24th Conference; November 16-18, 2016 in Duncan, British Columbia, Canada. Gary also discussed ideas regarding how to increase availability of restoration stock by relaxing genetic restrictions. Gary will work with Claire Gower to include these discussions in the plan revision process.

Northern Rockies Trumpeter Swan Stewards – During 2016, Ruth Shea and Drew Reed focused on monitoring nesting success and improving nesting islands and launch a beaver restoration program in Idaho with U.S. Forest Service and IDFG; reducing mortality by focusing on burial of power line segments that have long histories of swan kills; and providing technical assistance and/or volunteers to various Federal, state and non-profit entities.

The Greater Yellowstone Trumpeter Swan Working Group met in West Yellowstone, Montana. February 16-18, 2016. Thirty five people representing state, federal, and private organizations attended. The next GYTSWG meeting is planned for West Yellowstone during spring 2017

Susan Patla, Wyoming Game and Fish Department, reported that the Wild Red Wetland project pond designed to support nesting Trumpeter Swans in Daniel, Wyoming was filled this spring. Work should be completed by July 2017. Wyoming Game and Fish Department is working with the Service Partners for Fish and Wildlife Program (Dave Kimble) to develop proposals for wetland projects in the Green River basin for the Wyoming Landscape Conservation Initiative.

Recommendations. The study committee adopted one recommendation.

- The subcommittee recommends a letter of recognition to Bill Long, Director Wyoming Wetlands Society.

Western and Eastern Tundra Swan Subcommittee

Claire Gower, Montana Fish, Wildlife and Parks

Population Status. *Western Population:* Status of Western Population (WP) tundra swans is measured using winter survey data. The 2015 index of swans was 68,204. This count was similar to the 2013–2014 index of 68,235, and slightly below the 3-year average of 70,586. The Utah winter survey counted 14,035 swans. The Oregon survey was completed in January 2016 and a total of 9,315 swans were counted including an unknown number of trumpeter swans in NW Oregon, Klamath and Lake Counties and adjacent areas in Washington. California was not surveyed in January 2016. Consequently, the 2106 survey is considered incomplete and the previous 3-year average (70,586) will be used for the 2017–2018 framework. The swan population (70,586) is above the plan objective of 60,000 tundra swans as measured by a 3-year average winter index and closure threshold of 40,000 tundra swans.

The Yukon-Kuskokwim Delta (YKD) is the core breeding area for the WP of tundra swans in Alaska. Commencement of the 2016 YKD Coastal Zone Survey occurred at the earliest date in the history of this survey due to exceptionally mild temperatures, which resulted in early snow melt, ice breakup, and nest initiation. All swan population indices were higher in 2016 compared to 2007–2016 means. Total birds (31,251) are 36% higher than 2015 (23,000) and 3.4% higher than 2007–2016 means. Singles and pairs (20,060) are 81% higher than 2015 (11,077) and 0.9% higher than 2007–2016 means. The nest index (5,081) was 45% higher than 2015 (3,448) and 16.6% higher than 2007–2016 means. Average (1985–2016) annual growth rates for total birds, singles and pairs, and nests were $1.007 + 0.004$ (SE), $1.015 + 0.004$ (SE), and $1.019 + 0.004$ (SE), respectively.

In March 2016, the Pacific Flyway Study Committee expressed an interest in exploring potential use of aerial survey data from breeding population surveys to derive annual abundance indices. It is proposed that these population abundance indices would include data from the Waterfowl Breeding Population and Habitat Survey strata 8 and 10 and some of stratum 9. It would also include the Yukon-Kuskokwim Delta Coastal Zone survey. The 2016 total bird index was 105,405 which was 1% higher than the 2015 index (104,359). The 3-year (2014–2016) average was 96,823. The 2016 singles and pairs index was 71,456, 15% higher than the 2015 index (62,072). The 3-year average was 67,177 (Groves, 2016)

Eastern Population: The status of Eastern Population (EP) of Tundra Swans is measured during the annual combined Mid-winter Waterfowl Survey in the Atlantic (AF) and Mississippi (MF) flyways. In 2016, a total of 113,593 swans were counted during the combined Mid-winter Survey compared to 117,096 swans reported in 2015. The EP is and well above the plan population objective of 80,000 tundra swans as measured by the 3-year average mid-winter index (111,892).

Tundra swans breeding east of Point Hope and across the Alaska Arctic Coastal Plain (ACP) belong to the Eastern Population because these birds winter principally in the Atlantic Flyway from New Jersey to South Carolina. Since 1986, tundra swans nesting on the ACP have been monitored aerially via the Waterfowl Breeding Populations and Habitat Survey on the ACP. Estimates of total bird and breeding bird indices on the ACP are 13,764 and 12,295 respectively. Estimated long-term average (1986–2016) annual growth rate in total and breeding bird indices are $1.045 + 1.001$ (SE) and $1.038 + 1.001$ (SE), respectively.

Harvest. *Western Population:* Hunting of the Western Population of Tundra Swans is regulated by state-issued permits, which allow for reliable estimates of hunter activity and harvest. Allocation and number of permits within the Pacific Flyway in 2015–2016 was as follows: Alaska – 1,300; Nevada – 650; Utah – 2,000; and Montana 500. Permits numbers for NV, UT, and MT will be the same 2016-2017.

In 2015, 39 tundra swans were harvested in western Alaska in Units 17 and 18 during the Alaska sport harvest season (21 were harvested in 2014). Eight tundra swans were harvested in Nevada, and 853 swans, including four trumpeter swans were harvested in Utah. Montana estimated a harvest of 264 swans that included 14 trumpeter swans. Montana had an 87 % compliance rates for bill card measurements.

Eastern Population: In Alaska, 31 swans were harvested in Units 22 and 23. The Atlantic Flyway is requesting a 25% increase in eastern tundra swan hunting permits for the 2017–2018 season. The Pacific Flyway supports that request.

Subsistence Harvest: Tundra swans harvested by subsistence hunters on the Yukon-Kuskokwim Delta (YKD) region in 2015 was estimated at 4,679 (CI=4,141–5,218), which is similar to the long term (2004–2015) average of 4,579. Subsistence harvest surveys conducted on the North Slope from 2005–2008 reported an average harvest of 46 swans. No subsistence harvest surveys have been conducted on the North Slope since

2009. Subsistence harvest data is sparse in other Alaska regions (e.g., Bristol Bay, Northwest Arctic), but taken together the average annual swan harvest in these regions was approximately 150 swans.

Management Activities. Blair Stringham (Utah) has been making progress on revising the Western Population of Tundra Swan plan. Work still needs to be done to finalize monitoring and harvest strategies prior to completing the plan. The plan will be discussed at the winter flyway meeting, with the goal of providing council with a final draft of the plan prior to the spring flyway meeting.

Research Activities. One recent publication was reported:

Ely, C.R. and Meixell, B.W. 2016. Demographic outcomes of diverse migration strategies assessed in a metapopulation of tundra swans. *Movement Ecology* 4.

Recommendations. The subcommittee adopted two recommendations.

- The subcommittee recommends no change in the frameworks related to western population tundra swans.
- The subcommittee recommends increasing eastern tundra swan hunting permits for the 2017–2018 season by 25%.

Literature Cited

Groves, D.J. 2016. A proposal to develop abundance indices for the western population of tundra swans using aerial waterfowl breeding population survey data. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Region 7.

Western Canada Goose Subcommittee

Russell Woolstenhulme, Nevada Department of Wildlife

Population Status. The 2016 breeding population index for Pacific Population (PP) Canada Geese is 247,037, a 3.2% decrease from the 2015 index of 255,289. The 3-year average (2014–2016) is 221,680, up from the previous 3-year average of 214,628 (2013–2015). The breeding population index for Rocky Mountain Population Canada Geese in 2016 is 274,501, a 50.6% increase from the 2015 index of 182,250. The 3-year average (2014–2016) is 195,320, up from the previous 3-year average of 158,784 (2013–2015). The management plan objective is a breeding population index of 117,000. The California breeding pair estimated 44,323 Canada geese in the Northeastern Stratum

Harvest. Washington reported 70,524 PP Canada geese harvested in 2014–2015. Oregon reported 5,733 PP Canada Geese were harvested in the Northwest Permit Zone. The Northwest zone survey protocol was modified this year by Oregon; the survey was conducted by phone and the survey area was enlarged to cover a broader area. Survey results are not comparable to previous years. British Columbia reported a harvest of 11,206 PP Canada Geese in 2015–2016, down from 13,144 in 2015. California reported a harvest of 490 from California public hunt area check stations. Canada goose harvest estimates for all states are available via the U.S. Fish and Wildlife Service Harvest Information Program; however, harvest is not segregated by population.

Management Activities. California banded 474 western Canada geese during summer 2016. Oregon did not conduct operational banding activities, but banded and translocate goslings (152) away from urban areas. Utah banded approximately 4,000 geese; about 1,000 were from urban areas. Idaho banded 326 Canada geese; most birds were urban geese trapped in Idaho Falls and translocated to Magic Reservoir.

Washington reported 1,250 geese were banded; half were wild, non-urban geese. Nevada banded 185 geese in the Reno and Carson City area. Urban banding projects are now conducted by Canadian provinces; consequently, no information on banding activities in British Columbia was available.

Utah presented proposed boundary changes to the Balance of State goose zone. This proposal was thoroughly discussed and Utah made modifications to align boundaries to duck zone boundaries.

No update was available on progress on a combined management plan for Rocky Mountain and Pacific Population Canada geese. Josh Dooley continues to engage in a new western Canada Goose index development process as the subcommittee works toward finding a new standardized monitoring approach.

Research Activities. Utah reported harvest rates between standard aluminum bands and black anodized leg bands resulted in nearly equal harvest return rates. In the Salt Lake area, hardened bands are being used on Canada geese as part of a band longevity study

Recommendations. The subcommittee adopted two recommendations:

- The subcommittee recommends no change in frameworks related to Pacific Population or Rocky Mountain Population Canada geese, except for removal of harvest restrictions on dark geese in Wyoming and New Mexico.
- The subcommittee recommends no change to the framework for Special Early Canada Goose Seasons.

Western Management Unit Mourning and White-winged Dove Subcommittee

Melanie Weaver, California Department of Fish and Wildlife

Population Status. Predicted abundance of mourning doves and respective credible intervals (in millions) for September 2015 in the Western Management Unit (WMU) were 45.22 million (70% Credible Interval = 37.38–54.26). This abundance results in a “Standard” regulatory alternative as prescribed by the harvest strategy.

White-winged dove abundance is assessed through two surveys: the North American Breeding Bird Survey (BBS) and a state-specific survey in Arizona. In Arizona, relative abundance data for white-winged doves is collected by call-count survey in May. Average annual count per route has remained stable or increasing, from 2007–2014:

Year	Index
2007	24.7
2008	26.9
2009	27.9
2010	23.6
2011	24.4
2012	26.1
2013	28.1
2014	35.2

The BBS indicates continental white-winged dove abundance has increased significantly during the most recent 10-year period (2003–2013); however, abundance has not changed significantly in Arizona,

California, or the Western BBS area during. White-winged doves continue to expand their range northward. The short term trend for the Western BBS was 1.34 (-.69 to 3.61).

Harvest information. The 2015 WMU Mourning dove harvest estimate was 1,332,200, up 5% from 2014. The 2015 white-winged dove harvest estimate was 120,000, down 13% from 2014.

Management Activities. Dove banding summaries for 2016:

California - 3,164 mourning doves and 483 white-winged doves; Idaho - 728 mourning doves; Nevada - 400 mourning doves; Arizona - 3,000 mourning doves and 400 white-winged doves; Utah - 300 mourning doves; WA - 750 mourning doves.

Research Activities. In 2014, the Webless Migratory Game Bird Program approved funding to conduct research to evaluate mourning dove call-count surveys using distance sampling. Principle investigator Shaun Oldenburger has been coordinating this research effort and continues to request state and federal cooperators in all dove management units conduct surveys. Most state representatives on the study committee in the WMU are willing to continue this cooperative effort.

Recommendations. The subcommittee adopted two recommendations

- The subcommittee recommends the “Standard” regulatory alternative as prescribed by the mourning dove harvest strategy, which is no change from 2016. The dove season framework includes mourning doves and white-winged doves in the aggregate.
- The subcommittee recommends the season framework be modified to allow split seasons in Idaho, Nevada, Oregon, Utah, and Washington.

White Goose Subcommittee

Blair Stringham, Utah Division of Wildlife Resources

Population Status. A total population estimate for Pacific Flyway white geese is not available because California was not able to conduct their annual winter survey. Total light geese counted in the Fraser-Skagit area was 66,501 in 2015. The majority of these geese are considered Wrangel Island Population (WIP) lesser snow geese. Based on aerial photo counts, 8.5% of these geese were juveniles.

Brandon Reishus (Oregon) reported a December white goose count of 7,930 birds on the middle Columbia River, and 11,892 birds on the lower Columbia River. Oregon intends to continue this survey in the future and will include these numbers in the winter light goose survey.

The summer 2016 population estimate of WIP lesser snow geese was 300,000 light geese. This is an increase from the 2015 estimate, which was 240,000.

Dave Safine (USFWS) reported a population estimate of 33,200 light geese on the Alaska Arctic Coastal Plain during 2016. The 2015 Teshekpuk Lake snow goose estimates from the traditional molt survey area were 6,595 adults and 2,018 goslings.

Harvest Information. Harvested Information Program Data estimated harvest of 65,100 geese in 2015–2016. California reported harvest of 6,450 white geese from public hunt areas in 2015–2016, a significant decrease from 2014–2015 (11,439). Oregon reported harvest of 899 white geese at Summer Lake Wildlife Area and less than 100 birds from Sauvie Island Wildlife Area. Southeast Oregon counties are open to late season snow goose harvest, but harvest estimates specific to these counties are unavailable. Washington reported a harvest of 3,446 white geese in 2015–2016. Jeff Knetter (Idaho)

reported late winter harvest of 9,100 birds during the 2015 late season in Idaho. Blair Stringham (Utah) reported the Utah harvest survey was reinstated and the late season harvest in 2016 was 1,930. Russell Woolstenhulme (Nevada) reported 124 birds harvested in 2015–2016. Jason Schamber (Alaska) reported subsistence harvest from the Yukon-Kuskokwim delta in 2015–2016 was 4,724; the long-term-average harvest is 1,820.

Management Activities. *Ross's Goose Management Plan:* Progress on the plan has been tabled for the time being. Currently it is not a high priority.

Joint Flyway Lesser Snow Goose Management Plan: Josh Dooley (USFWS) reported the Mississippi and Central flyways are considering a joint management plan for lesser snow geese. They have some concerns about combining plans with the Pacific Flyway (PF). Ultimately, the Central Flyway (CF) is sending a letter to the Arctic Goose Joint Venture (AGJV) to include this issue on the agenda at the upcoming AGJV meeting in November. Specifically, the CF wants clarification about data supporting current population delineations and pros/cons of a joint-flyway management plan.

Banks Island banding: The Canadian Wildlife Service (CWS) banded on Banks Island during July 2015. The project has been funded for five years (through 2019). During summer 2016, nearly 2,500 birds were banded.

Wrangel Island banding: Banding on Wrangel Island was approved through a cooperative agreement between the United States and Russia. The goal is to band 1,000 birds annually. In 2016, 1,218 geese were leg banded, and eight Global Systems for Mobile communications radios were deployed and about 200 geese were fit with neck collars.

North Slope: Banding continued on the North Slope in 2016. It is unknown how many birds were banded.

Depredation: Joe Sands (USFWS - Region 1) reported 11 depredation permits issued to farmers in the Klamath area for use after March 10, 2016, 31 light geese were reported taken. Two permits were issued in California (Merced County) with no activity reported.

Jeff Knetter (Idaho) reported the U.S. Department of Agriculture - Wildlife Services have coordinated 15 different work tasks in five counties across southern Idaho since 2010.

Overabundance Designation: Brandon Reishus (Oregon) and Jeff Knetter (Idaho) have been working with their council members to draft a letter requesting the U.S. Fish and Wildlife Service begin work to supplement the 2007 Environmental Impact Statement (EIS) and resulting *Conservation Order for Light Geese* to authorize a conservation order for light geese in the Pacific Flyway consistent with those in the Central and Mississippi flyways.

The U.S. Fish and Wildlife Service (Service) has concerns about this topic, which include: (1) Doesn't appear to be strong evidence for a growing population; (2) Injury or risk of injury to habitats, themselves, other species, and agricultural interest are not well demonstrated; (3) Effectiveness of a conservation order to increase harvest has not been well demonstrated in other flyways, and there is particular concern for the opportunity to increase harvest in the Pacific Flyway considering the need to minimize conservation order take of Wrangel Island Population of lesser snow geese; (4) Liberalization of hunting regulations for light geese in the Pacific Flyway is a fairly recent event, and there has not been adequate technical assessment of the resultant harvest or demonstration that additional harvest

cannot be achieved during the hunting season; (5) Issuance of a conservation order based on preemptive action to minimize the risk of injury may require specific criteria about when appropriate, and could apply to other populations beyond light geese; (6) Redefinition of criteria in the light goose EIS necessary to authorize a conservation order, including injury (reactive) or threat (proactive), will require a supplemental EIS, and necessitate an update of information on other light goose populations, and past concerns and challenges may resurface; (7) Perspectives, attitudes, and research have largely shifted away from concern about injury to habitat and light geese since the Ecosystems in Peril report.

Banks Island Photo Inventory Discussion: Photo inventories are not currently scheduled due to retirement of the person who analyzed photos. This photo inventory is critical because it is the primary tool for monitoring this breeding population. Andre Breault (CWS) will look into this and report back at the spring meeting.

Research Activities. The AGJV has approved the following projects:

- Project addressing management actions on lesser snow and Ross's geese
- Overabundant light geese effects on tundra nesting birds and habitat
- Harvest rates, survival and recruitment of lesser snow geese and Pacific brant in Northern Alaska. Vasiliy Baranyuk is working on Wrangel Island satellite imagery project. Field work has been completed and a final report should be released by the spring meeting.

Recommendations. The subcommittee adopted two recommendations.

- The subcommittee recommends a letter be sent to Jerome Ford requesting the U.S. Fish and Wildlife Service begin work to supplement the 2007 Environmental Impact Statement (EIS) and resulting *Conservation Order for Light Geese* to authorize a conservation order for light geese in the Pacific Flyway consistent with those in the Central and Mississippi flyways.
- The subcommittee recommends no change to season frameworks, except:
 - Increase Washington's white goose limit from 4 to 6.
 - Remove Idaho's monitoring requirement for trumpeter swans being potentially harvested during the light goose season near American Falls reservoir.

White-fronted Goose Subcommittee

Eric Taylor, U.S. Fish and Wildlife Service, Region 7

Population Status. As specified in the Pacific Flyway Management Plan for Greater White-fronted geese (Plan) the management index is the fall population estimate derived from surveys conducted on the Yukon Delta and Bristol Bay. The Plan specifies a population objective of 300,000. The 2016 fall estimate is 685,469 and 43% higher than the 2015 estimate (479,085). The most recent 3-year (2014–2016) average of Pacific Greater White-fronted geese is 600,592 and 6% higher than the previous 3-year (2013–2015) average (565,403).

In 2016, the coastal Yukon-Kuskokwim Delta, interior Yukon-Kuskokwim Delta, and Bristol Bay accounted for 86%, 13%, and 1%, respectively, of the total bird index. The 2016 Pacific Greater White-fronted goose indicated total bird index was $206,503 \pm 25,491$ (SE) and indicated breeding bird index was $135,637 \pm 14,009$ (SE). Average annual growth rates for indicated total and indicated breeding birds from 1985-2016 are $1.083 + 0.006$ (SE) and $1.091 + 0.005$ (SE), respectively.

The Alaska component of the mid-continent greater white-fronted goose population breeds in portions of interior and northwest Alaska, and on the Arctic Coastal Plain. The 2016 indicated total bird and indicated breeding bird indices from interior and northwest Alaska as measured by the Waterfowl Breeding Population and Habitat Survey (Stratum 3 [Tanana-Kuskokwim]), Stratum 4 [Yukon Flats], Stratum 5 [Innoko], Stratum 6 [Koyukuk], Stratum 10 [Seward Peninsula], and Stratum 11 [Kotzebue Sound]) are 36,353 and 12,065, respectively. Estimated long-term (1964–2016) average annual growth rates in indicated total and indicated breeding bird indices are 1.023 and 1.022, respectively. The 2016 estimates of indicated total bird and indicated breeding bird indices on the Arctic Coastal Plain as measured by the Arctic Coastal Plain Waterfowl Breeding Population Survey are 403,110 and 161,421. Estimated long-term (1986–2016) average annual trends in indicated total and indicated breeding bird indices for Mid-continent greater white-fronted on the Arctic Coastal Plain are 1.046 ± 0.006 (SE) and 1.075 ± 0.005 (SE), respectively.

The North American mid-continent greater white-fronted geese population objective is 650,000 – measured a survey of fall staging grounds in Saskatchewan, Canada where Alaska and Canada birds congregate during migration. The 2015 fall aerial survey index in Canada was 977,090. The index is 3% lower than the 2014 index of 1,005,591, but well above the population objective of 650,000 birds. The most recent 3-year (2012, 2014–2015) average is 920,184.

The 2015 tule greater white-fronted goose index in California was 7,253 down 26% relative to the 2014 index (9,763).

Harvest. In 2015–2016, a total of 2,228 Greater White-fronted Geese were harvested in California as reported by public hunt area check stations. Oregon reported 142 Greater White-fronted geese were harvested at Summer Lake State Wildlife Area, down 40% from the previous 5-year average. In 2015, Alaska subsistence hunters on the Yukon-Kuskokwim Delta harvested 19,703 Greater White-fronted geese, a 10% decline compared to the long term (2004–2015) average (21,931).

Management Activities. In 2016, California Department of Fish and Wildlife (CDFW) and Oregon Department of Fish and Wildlife installed a total of 22 VHF radios on tule greater white-fronted geese (the project update follows this Subcommittee Report). Dan Skalos and Melanie Weaver, provide a project update at the end of the subcommittee report. On 19 October, 2016, California (Melanie Weaver) will conduct an aerial survey over Central Valley California. Oregon and Alaska continue to partner with California to look for VHF Tule Greater White-fronted Geese outfitted with VHF radios in Lake County Oregon and Alaska use areas. The U.S. Geological Survey-Alaska Science Center is identifying genetic markers from Greater White-fronted Geese collected in Bristol Bay and Yukon-Kuskokwim Delta to determine if management agencies can use tail fans to identify the harvest of tule greater white-fronted geese vs other white-fronted geese. U.S. Fish and Wildlife Service (Region 1) reported that 128 greater white-fronted geese were taken in 2015-2016 via 11 depredation permits. In 2016, 6 depredation permits have been issued to date by U.S. Fish and Wildlife Service, Region 1.

Recommendations. The subcommittee adopted two recommendations.

- The subcommittee recommends no change in bag limits to white-fronted geese in Alaska.
- The subcommittee recommends no change to the framework for white-fronted goose seasons except a three-way split for white-fronted geese in the Northeastern Zone to address depredation and establish season timing that coincides with presence of geese in that zone.

**Project Update
Tule Greater White-fronted Geese
September 2016**

Dan Skalos and Melanie Weaver, California Department of Fish and Wildlife

Capture and marking

In September, 2015, 45 Tule geese were captured and 25 were marked with VHF radio collars at Summer Lake Wildlife Management Area (WMA), Oregon. Two individuals were killed in September during the Oregon Youth Hunt days making 23 radios available for detection.

Telemetry and mark: resight surveys

Searches for all 73 potentially available (radios believed to be functioning; 2012=8, 2013=14, 2014=27, 2015=23) radio-collared birds were conducted from the fall through spring via ground and aerial telemetry in the Summer Lake Basin, Klamath Basin, Sacramento Valley, and the Suisun Marsh. Radios from early years reached their life expectancy during this fall and winter. A total of 37 old radios were detected at least once between September 2015 and March 2016. In addition, five observers conducted ground surveys during two sampling periods for developing an indirect estimate of population size occurred in mid-November and mid-December 2015.

Radio-marked geese availability

Year Marked	Total Marked (Sept only)	Available for Winter	Available for AK (survive hunt season)	Detected AK	Detected Fall #2
2003	48	47	38	33	34
2004	26	23	17	14	12
2005	25	25	25	23	23
2006	51	44	39	31	33
2007	32	32	26	17	21
2008	24	24	20	13	9
2009	30	30	26	24	18
2010	32	31	30 (Feb 18)	25	22
2011	17	16	14 (Feb 17)	14	13
2012	21	21	20	15	11
2013	26	26	17	14	12
2014	30	30	23	17	20
2015	25	23	21	21	

Radio-marked birds from 2008 had the lowest proportion of detections (45%) in fall #2 compared to all other years ($\bar{x} = 77\%$). Of the 13 birds from the 2008 cohort detected in Alaska, 6 were either detected only once in the Sacramento Valley or disappeared after detections in Alaska. The majority of birds marked in 2008 were female (n=21). The second lowest year for returning radio marked birds was 2012 (65%) where 3 individuals were not detected again after spring surveys in 2013 and 3 were not detected again following summer surveys in Alaska. The third lowest year for returning radio marked birds was 2004 (71%) which can be contributed to radio failures.

Winter Distribution

Radio-marked geese used the traditional areas in the Sacramento Valley (Sacramento Complex NWRs) including flooded rice fields and private duck clubs adjacent to Sacramento, Delevan and Colusa NWRs as well as Suisun Marsh. The highest number of radio detections occurred on Delevan NWR in the Sacramento Valley. Many radios were also heard off-refuge in rice field later in December 2015 -February 2016. Twelve radio-marked Tule geese were detected in the Suisun Marsh between October and March. Telemetry searches in the Klamath Basin occurred mostly in late winter and early spring because weather prohibited aerial telemetry. A small number of Tule geese are suspected of wintering in the Klamath Basin based on past years data.

Migration Timing and departure of geese

Fall- The first detection of a radio at Summer Lake occurred on 14 September 2015 while the majority of previously marked birds arrived between 18 and 24 September 2015. In the Sacramento Valley the first radio-marked birds (n=2) were detected on 22 September 2015. These individuals were not detected at Summer Lake in fall. The earliest known departure from Summer Lake occurred 24 September when three individuals last heard at Summer Lake were detected in the SV on 28 September 2015. The last birds to leave Summer Lake arrived in the SV between 21 November 2015 and 11 December 2015. One individual last detected at Summer Lake (20 November 2015) was never detected in the SV during winter. This individual was detected during surveys over the Lower Chewaucan Marsh in Oregon on 1 April 2016 and at Beluga River, Alaska on 26 May 2016.

Spring- The earliest detected arrival to the Klamath Basin occurred 18 March 2016 and nine individuals were detected during the first spring survey in the Summer Lake region on 15 March 2016.

Detections as of most recent survey and known mortalities of radio-marked geese.

As of 7 July 2016, 43 radios have been detected after the hunt season (2012=1, 2013=4, 2014=16, 2015=21). Additional searches are anticipated in Alaska.

Twenty-seven recoveries were reported as shot or found dead as of 15 June 2016 including 15 band-only recoveries.

Location	Youth Hunt	Reported Shot/ Found Dead During Hunt Season	Other Mortality	Total Mortalities
Alaska	0	0	0	0
Alberta	0	0	0	0
Washington	0	0	0	0
Summer Lake, OR	1	3	3	7
Klamath Basin, CA	0	1	0	1
Sacramento Valley, CA	0	13	0	13
Adin, CA	0	0	0	0
Suisun Marsh, CA	6	0	0	6

Check Station measurement summary

Since 1999 CDFW check station staff has been measuring bills of white-fronts geese killed on public hunting areas in the wintering range of Tule geese. In 2015-16, 1,040 white-fronts geese were harvested on these areas (down from 1,779). Of these, 909 (87%) bills were measured. Using the established bill measurement criteria (Orthmeyer et al. 1996), 91 adult Tule geese were killed on the public hunting areas in the Tule goose winter range, up 17% from the 78 killed in 2014-15. Since the check station measurements began in 1996 the average number of adult Tule geese harvested on refuges in the winter range is 48. The range of adult Tule geese harvested on refuges in the wintering areas is low of 13 (2005-06) to a high of 91 (2015-16).

Alaska Detections

A total of 41 radios were presumably available for detection in Alaska during the summer of 2016. Twenty-one marked birds from the 2015 cohort have been detected in Alaska. Alaska Department of Fish and Game conducted

three aerial telemetry flights and the Fish and Wildlife Service conducted 1 telemetry flight at Innoko. The Alaska surveys detected: 34 radio-collared birds in May, 5 in June, 1 in July and twenty-two in August (35 unique detections).

Preliminary Population Estimate

The process used to estimate the population changed in 2014 from using NOREMARK to a ratio estimator similar to the Aleutian Canada Goose estimate. Rather than rely on the number of marked to unmarked birds observed, the estimate is using the ratio from each sampling occasion. The low estimate in 2014 is attributed to very few resights because of stormy weather for the entire observation period. This estimate is not considered valid for management purposes. The current 3-year average is 9,763 (excluding 2014-15). The following is a summary of population estimates using the ratio estimator approach:

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15*	2015-16
Sac Valley	17,659	11,866	8,657	18,688	11,757	8,607	11,348	13,123	11,457	12,807	9,229	3,801	7,253
All Periods													
95% CI	3,857- 31,462	5,940- 17,792	3,557- 13,756	11,045- 26,331	7,342- 16,172	1,887- 15,327	6,325- 16,370	4,788- 21,458	7,038- 15,875	5,935- 19,678	4,201- 14,256	1,782- 5,819	4262- 8,849

* Estimate not considered valid

Trapping and marking plans for 2016

Twenty-two radio collars were purchased by CDFW and ODFW and deployed in September 2016 at Summer Lake Wildlife Management Area (WMA), Oregon.

Telemetry and mark:resight surveys

Searches will continue in 2016/17 for radio-collared birds in the Summer Lake Basin (ODFW), Klamath Basin (USFWS), Sacramento Valley (SV), and the Suisun Marsh (CDFW, USFWS). Two sampling periods are planned to obtain ratios of marked to unmarked birds.

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California

John Beckstrand (USFWS), Mike Breiling (CDFW), Wayne Burnett (CDFW), Mike Carpenter (USFWS), Jennifer Isola (USFWS), Mike Peters (USFWS), Gavin Woelfel (CDFW)

Washington

Steve Olson (USFWS), Todd Sanders (USFWS)