



STATE WILDLIFE ACTION PLAN REVISION

Species of Greatest Conservation Need

Draft Fact Sheets

BIRDS

Conservation Status and Concern

Biology and Life History

Distribution and Abundance

Habitat Needs

Stressors

Conservation Actions Needed

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BACKGROUND AND OVERVIEW

Introduction

This document is a draft, interim product of the Washington State Wildlife Action Plan (SWAP) Revision. It is one component of the draft SWAP, and contains information about birds included in our Species of Greatest Conservation Need (SGCN) list for 2015. The Washington State Department of Fish and Wildlife (WDFW) is required to revise and update its SWAP every ten years, and the next revision is due by October 2015. The SWAP must include eight essential elements, as described by the US Fish and Wildlife Service, including the identification of Species of Greatest Conservation Need.

The final SWAP Revision will include other chapters, including an overview of the process, a discussion of methodology, descriptions of habitats of greatest conservation need, implementation considerations and other topics. For more information about the SWAP and required elements, please visit <http://wdfw.wa.gov/conservation/cwcs/>. A complete public review draft of the State Wildlife Action Plan is scheduled to be available by July 2015.

What is included in this document

The list of SGCN serves in many ways as the heart of the State Wildlife Action Plan, and in part because of its central role, WDFW is providing an early release of SGCN products to invite comment before we complete our draft. Included in this document are one page fact sheets for each of the birds proposed to be included as Species of Greatest Conservation Need in the 2015 SWAP. Information provided includes a summary of the conservation concern and conservation status, description of distribution and habitat, and an overview of key threats and conservation actions needed.

Separate books are provided with similar information for mammals, reptiles, amphibians, fish, and invertebrates. Range and distribution maps for many of our SGCN are still in preparation and will be included in the public review draft of the SWAP. Similarly, we are preparing information on climate change sensitivity for many of our SGCN, to be included as part of the fact sheets and integrated into recommended actions. This information will be included in the public review draft due out in July.

What it means to be an SGCN

The SGCN list includes both animals that have some form of official protection status and those which may be in decline, but are not yet listed as part of either the Federal or State Endangered Species program. One of the purposes of the SWAP is to direct conservation attention to species and habitats *before* they become imperiled and recovery becomes more difficult and costly. Presence on this list does not necessarily mean that conservation attention will be directed towards the animal; rather, that conservation actions for the species are *eligible* for State Wildlife Grants funding, and may be more competitive for other grant programs. It also raises the profile of an animal to a wide audience of conservation partners and may encourage other organizations to initiate projects that may benefit the species.

About the SGCN list: criteria and numbers

The process to develop the revised SGCN list began with a review of the 2005 list for new information and updates to species conservation status. We also revised the criteria to clarify that biological factors are the primary consideration in determining whether or not a species was a candidate for the SGCN list; management considerations or other factors would be applied later in prioritization and in determining appropriate use of the list.

The criteria include (1), official listing status, through either the State or Federal Endangered Species Act, or (2), a high conservation concern, as determined through national rankings (conducted by NatureServe) and state assessments. The list was further refined by eliminating species which were only occasional visitors to Washington, or where the range in Washington represents only the periphery or an insignificant part of their range. Species experts outside the agency were consulted as needed to acquire more information about the species.

There are currently 268 species on the SGCN list. Of these, approximately 150 species were also on the 2005 list. One hundred and eighteen species are new to the list this year, including 60 invertebrates, 19 fish, 3 amphibians, 7 reptiles, 11 birds and 18 mammals. Thirty-two species fall off the list from 2005, in many cases because of either improved conservation status or an improved understanding of the animal's conservation status. For more detail on the criteria and the lists of species, please visit our website: dfw.wa.gov/conservation/cwcs.

How to provide comments

Reviewers are welcome to comment on any information they find in this document, but are especially encouraged to focus on the key threats and conservation actions identified for each animal. Comments will be most useful if received by April 30th, 2015. Any comments received after May 15th will likely not be included as part of the first full draft of the SWAP, although they will be addressed as part of the final document. This is an informal review process and comments can be sent by email directly to Lynn Helbrecht, SWAP Coordinator, at lynn.helbrecht@dfw.wa.gov. For questions, please contact Lynn by email or by phone at (360) 902-2238.

Explanation of terms used in the document

Please see Appendix B for a description of terms and abbreviations used in this document.

SGCN birds overview and summary

The next section includes an overview of all the birds proposed to be included as SGCN. Individual fact sheets follow, organized by taxonomic groupings. For an alphabetical list of all the birds included, please see Appendix A.

SUMMARY OF SGCN BIRD SPECIES

Overview

The Species of Greatest Conservation Need list for Washington includes 51 avian taxa. This diverse group of species includes waterfowl, upland game birds, marine birds and waterbirds, diurnal raptors (i.e., falcons, hawks and eagles), cranes, shorebirds, pigeons, cuckoos, owls, woodpeckers and perching birds. These species occupy a variety of habitats across the state, include year-round residents and migrants, have limited to widespread distributions in Washington, and are of concern for various reasons, as summarized below.

Residents and Migrants

Because of the strong tendency for migration (or other seasonal movements) in birds it is not surprising that about one-half of the species are not present in Washington throughout the year. Eight species reside in Washington during winter after migrating here from breeding areas elsewhere (i.e., six waterfowl species, two shorebird species), two species occur only as migrants (i.e., Short-tailed Albatross, Red Knot), one species (Brown Pelican) breeds to the south and migrates north to spend the post-breeding season along the Washington coast, and a dozen species overwinter to the south, including the neotropics, and migrate north to breed in areas that include Washington (e.g. American White Pelican, Ferruginous Hawk, Flammulated Owl, Sage Thrasher). Some species have both resident and migrant individuals in the population (e.g. Burrowing Owl, Ferruginous Hawk, Snowy Plover).

Distribution

SGCN birds have varying distributions across the state and use a variety of habitats. Of the 51 taxa, 22 are found only or largely in western Washington (e.g. Surf Scoter, Marbled Murrelet), 21 in eastern Washington (e.g. Greater Sage-grouse, Pygmy Nuthatch) and 8 are found in both western and eastern Washington (e.g. Peregrine Falcon, Bald Eagle, Golden Eagle). Some species have fairly large distributions; an example is the Northern Spotted Owl which is found on both slopes of the Cascade Range and the Olympic Peninsula, but which is now essentially extirpated from southwestern Washington and the Puget Trough. Other species with large distributions include Peregrine Falcon, Bald Eagle, and Western Screech-Owl. Conversely, a number of taxa (Marbled Godwit, Red Knot, Rock Sandpiper, Sandhill Crane, Slender-billed White-breasted Nuthatch, Snowy Plover, Tufted Puffin, Upland Sandpiper, and Oregon Vesper Sparrow) have extremely limited ranges that are less than 5% of the land area of Washington. Nearly two-thirds of the taxa are commonly associated with three general ecosystems: 15 species in marine ecosystems, including marine waters (seabirds, waterbirds) and estuaries and beaches (shorebirds); 9 species in conifer forest ecosystems (e.g. Spruce Grouse, Band-tailed Pigeon), and 9 species in shrub-steppe ecosystems (e.g. Columbian Sharp-tailed Grouse, Burrowing Owl, Sage Thrasher). Other ecosystems include grasslands, freshwater, alpine, wetlands, and riparian.

Some birds on the SGCN list are uncommon or rare subspecies or are represented by very small populations. Examples of uncommon or rare subspecies (overall, or the portion of the population that occurs in Washington) include Marbled Godwit, Oregon Vesper Sparrow, Sandhill Crane, Slender-billed White-breasted Nuthatch, and Streaked Horned Lark. Some of these and other taxa populations are very small and may number fewer than 100 individuals in Washington including Great Gray Owl, Oregon Vesper Sparrow, Rock Sandpiper, Sandhill Crane (breeding population), Short-tailed Albatross, Snowy Plover, Upland Sandpiper, and Yellow-billed Cuckoo. The latter two species have probably been extirpated from the state and neither has been documented breeding in the state for several decades.

Conservation Concern

Reasons for concern about the taxa are varied and most taxa are either of concern due to a factor related to habitat or for an unknown reason. Consequently, for a number of species there exists a need to gather basic information that may clarify the cause for concern. One reason for concern for several taxa is their small population size that makes the taxon vulnerable to environmental impacts. Other factors that affect bird populations are varied and include human disturbance, effects of oil spills, water management, fire suppression effects, and even volcanic activity.

Population Trends

Population trends of 41 of the 51 avian taxa are either declining (19) or unknown (22). Four species are thought to have stable populations and six are increasing. Some of the increasing populations are species that are recovering strongly and will likely be delisted in the future. Other increasing populations are very small and the perceived increase may in fact reflect influence of other subspecies present in the state (e.g. Marbled Godwit). Some landbirds impacted by conversion of shrub-steppe exhibited declining trends from 1966 to 2013, although recent trends (2003 to 2013) for some were stable. For these species stability is obviously at a new, lower level of abundance given the reduced carrying capacity of the remaining habitat, and future management will be directed at increasing populations to make them more robust to environmental change.

Conservation Success

Lastly, it is appropriate to mention the species that are doing well. These taxa are still identified as SGCN because listing status was a criterion used to identify species for the list. The following species will have status reviews conducted and if they are formally delisted as expected, they will be removed from the SGCN list: Bald Eagle, Brown Pelican, and Peregrine Falcon. Other species may be doing well, but not enough is known about them (or risks remain) to justify removing them from the list of SGCN taxa. For example, winter abundance of Marbled Godwit has increased in Washington but the subspecies identity of Washington birds is uncertain (one subspecies totals only 2000 globally) and requires clarification. Similarly, the risk to Short-tailed Albatross, which has begun to recover and again use coastal waters of Washington, is that the primary nesting area is a small active volcano off the coast of Japan.

WATERFOWL

BARROW'S GOLDENEYE (*Bucephala islandica*)

Conservation Status and Concern

This sea duck species breeds in Washington and has low population numbers and has been declining on the Puget Sound. Sources of impacts have not been clearly identified.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
No	No	Yes	Low/declining	G5	S3B, S4N

Biology and Life History

Like other sea ducks, Barrow's Goldeneye adults are more site faithful to use areas, breed at an older age, and have lower recruitment compared to other waterfowl. WDFW surveys in 2010 on Puget Sound recorded only 9.7% juveniles in the population. Both male and female Barrow's goldeneyes are territorial during the breeding season. Females nest in tree cavities, including those excavated by Pileated Woodpeckers, or in artificial nest boxes. Animal matter can comprise over 75% of the diets of breeding Barrow's Goldeneyes, including aquatic insects, mollusks, crustaceans, and small fish. During winter they feed in shallow water, primarily on mussels but also clams, crustaceans, and fish eggs. Most wintering birds depart for breeding areas from mid-March to early April.



Photo: R. LeValley

Distribution and Abundance

The breeding population of Barrow's Goldeneye is thought to be widespread within the Cascades and between Okanogan and Pend Oreille Counties. A unique population nests in cavities within the talus slopes and basalt cliffs surrounding Lake Lenore and Alkali Lake in central Washington. Most Barrow's goldeneyes wintering in Washington occur on Puget Sound bays, inlets, harbors, and rocky shores, and some use ice-free inland lakes, ponds, and rivers. Approximately 22% of goldeneyes on Puget Sound are Barrow's. The average population of Barrow's Goldeneye on Puget Sound was estimated at 5,297 during 2012 to 2014. Winter counts of both goldeneye species (combined) on Puget Sound declined 44% to 24,077 from 1994-96 to 2012-14. The statewide breeding population of goldeneye (both species) averaged 858 in 2012 to 14.

Habitat

Barrow's goldeneyes nest primarily in mature and late successional forests and riparian areas adjacent to low gradient rivers, sloughs, lakes, and beaver ponds. Availability of suitable cavity nest sites may affect population size. Logging activities may remove older trees and snags that provide most of the nest cavities and may increase predation at remaining cavities. Increasing development in the Puget Sound region has led to more disturbance, pollution, and degradation of foraging areas used by sea ducks. Aquaculture may impact foraging areas through exclusion of sea ducks.

References

WDFW Sea Duck Management Strategies: <http://wdfw.wa.gov/publications/pub.php?id=01007>
Sea Duck Joint Venture Species Fact Sheet – Barrow's goldeneye:
<http://seaduckjv.org/meetseaduck/bge.html>

Barrow's Goldeneye: Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Lack of information on status and distribution	Conduct annual winter inventory	Current insufficient	Both
2	Resource information collection needs	Lack of information on population demography	Conduct periodic recruitment and species composition surveys	Current insufficient	Both
3	Resource information collection needs	Rangewide delineation of Puget Sound winter population	Develop satellite telemetry study to document use areas	Current insufficient	Both
4	Fish and wildlife habitat loss or degradation	Development impacts on breeding and wintering habitat.	Document and address limiting factors	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

BLACK SCOTER (*Melanitta nigra*)

Conservation Status and Concern

This species has undergone significant population declines on Puget Sound. Sources of impacts have not been clearly identified.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Moderate/declining	G5	S3N

Biology and Life History

Like other sea ducks, Black Scoters are believed to reach sexual maturity when they are two or three years old. Courting begins in spring, and they arrive paired on the breeding grounds. Black Scoters are long-lived, nest later than most ducks, and on average have low reproductive output. Birds depart coastal molting areas from late August through November and then spend most of their annual cycle on wintering areas in Puget Sound.



Photo: P. Massas

Distribution and Abundance

The western population of Black Scoters breeds on tundra of north-central Alaska Peninsula, Alaska's Bristol Bay lowlands, Yukon-Kuskokwim Delta, and to a lesser extent in Kotzebue Sound and the Alaska North Slope. Currently, there are believed to be about 200,000 Black Scoters in Alaska. Their population in western Alaska has declined by about 50% since aerial surveys were begun in the 1950's, although recent trends appear to be stable. In winter, Black Scoters are found as far south as Baja California and west into the Aleutian Islands. The Black Scoter is the least numerous scoter species on Puget Sound. Wintering numbers of all scoters on Puget Sound total approximately 50,000, and only about 1% are Black Scoters. The total scoter population index (three year average) for Puget Sound has declined over 50% since 1994-96, and may have declined as much as 78% since 1978-79. WDFW has implemented progressively restrictive hunting regulations for scoters since 1998 in response to population declines.

Habitat

Black Scoters breed near shallow tundra lakes in Alaska. The diet of Black Scoters in Washington is predominantly mollusks (e.g., mussels and clams), but also crustaceans (e.g., snails, periwinkles), limpets, barnacles, and vegetation. Ducks usually feed in depths less than 33 feet, diving to take prey which they then swallow whole; powerful muscles of the gizzard crush the prey, shell and all. Commercial shellfish beds are often covered by netting to exclude foraging birds including black scoters. Increasing development in the Puget Sound region has led to more disturbance, pollution, and degradation of foraging areas used by sea ducks. Reduction of marine forage (primarily herring spawn) may be reducing populations in some areas. Aquaculture can impact foraging areas through exclusion of sea ducks.

References

Sea Duck Joint Venture Species Fact Sheet - Black Scoter: <http://seaduckjv.org/meetseaduck/bs.html>
WDFW Sea Duck Management Strategies: <http://wdfw.wa.gov/publications/pub.php?id=01007>

Black Scoter: Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Puget Sound development impacts on marine environment	Document and address limiting factors	Current insufficient	Both
2	Resource information collection needs	Lack of information on status and distribution	Conduct annual winter inventory	Current insufficient	Both
3	Resource information collection needs	Lack of information on population demography	Conduct periodic recruitment and species composition surveys	Current insufficient	Both
4	Resource information collection needs	Rangewide delineation of Puget Sound winter population	Develop satellite telemetry study to document use areas	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

CINNAMON TEAL (*Anas cyanoptera septentrionalum*)

Conservation Status and Concern

Cinnamon teal is a once fairly common breeding species in Washington that has declined significantly in the past 40 years.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	No	Moderate/declining	G5	S5B

Biology and Life History

Cinnamon Teal are primarily found in Washington during the breeding season, and one of the last dabbling ducks to arrive on the breeding areas in early May. The peak of nesting occurs in mid-May to mid-June. Food habits of adults during the nesting season appear to be equally comprised of plant and animal food items. As the season progresses and fall migration grows closer, their food preference shifts toward plants. Cinnamon Teal depart Washington breeding areas for southern wintering areas in late summer, usually before most other dabbling duck species.



Photo: R. LeValley

Distribution and Abundance

Of the three North American teal species, Cinnamon Teal are the least widely distributed, and much less is known of their population dynamics than blue- or green-winged teal. Cinnamon teal occur in Washington during the breeding season mainly in eastern Washington, in the Columbia Basin and channeled scablands. Cinnamon Teal are rarely encountered in Washington during winter, and migrate south as far as northern South America. Recent WDFW aerial surveys indicate an average breeding population of approximately 7,000 in Washington during 2009 to 2014. Breeding Bird Survey estimates for Cinnamon Teal in Washington have declined significantly from 1968 to 2012 (-3.3% annually), and causes are unknown.

Habitat

Cinnamon Teal breeding areas typically contain dense upland vegetation near freshwater ponds and lakes, usually with dense aquatic vegetation. Where preferred upland plant cover is poor, they are known to nest over water in emergent vegetation. Breeding areas in eastern Washington have been affected by wetland succession, exotic and invasive vegetation such as loosestrife and *Phragmites*, grazing, development, and hydroelectric dam impacts to freshwater wetlands.

References

Gammonley, James H. 2012. Cinnamon Teal (*Anas cyanoptera*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/209>

Cinnamon Teal: Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Wetland losses and degradation due to irrigation management	Restore freshwater wetlands	Current insufficient	Both
2	Agriculture and aquaculture side effects	Grazing impacts on freshwater wetlands	Mitigate grazing impacts on nesting and brood cover	Current insufficient	Both
3	Fish and wildlife habitat loss or degradation	Wetland losses and degradation due to hydrologic impacts from development	Acquire important breeding habitat and manage nesting cover through prescribed grazing and other methods	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

DUSKY CANADA GOOSE (*Branta canadensis occidentalis*)

Conservation Status and Concern

Habitat changes on the Dusky Canada Goose breeding grounds on the Copper River Delta, Alaska have led to high predation pressure; combined with losses of wintering habitat in western Washington, these factors are responsible for a long-term population decline for this subspecies.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	No	Low/stable	G5T3	None

Biology and Life History

The primary nesting area for Dusky Canada Geese is the Copper River Delta, near Cordova, Alaska, although a small part of the population nests on Middleton Island in the Gulf of Alaska. The 1964 earthquake uplifted the Copper River Delta by 2 to 6 feet, drastically altering the frequency of tidal inundation and promoting drying of slough banks and meadows. As a result, the number and species composition of predators on the delta changed, and nest predation increased from less than 6 percent in 1959 to an average of over 60 percent from the 1990s to present. Recent work suggested that Bald Eagles might account for as much as 80 percent of nest predation, with another 15 percent attributable to brown bears.



Photo: WDFW

Distribution and Abundance

Most Dusky Canada Geese in Washington occur in Clark, Cowlitz, Pacific, and Wahkiakum Counties, where they use agricultural areas (mostly pasture and grain crops). Wintering numbers rangewide were relatively high between 1975 and 1981, from 23,000 to 26,500. Since that time, numbers decreased to 6,700 in 2009, and were estimated at approximately 14,000 birds in 2014 (three-year average) due to good production beginning in 2010. Due to an extensive hunter training program and restrictive hunting seasons since 1984, winter survival of dusky is very high (approximately 80 percent) compared to other most other goose populations.

Habitat

Changes in nesting habitat caused by the Alaska earthquake resulted in drier conditions and invasion of alder, willow, cottonwood, and Sitka spruce. Between 1974 and 1984, shrub cover increased nine fold on the coastal delta. Since 1983, a total of 861 artificial nest islands of six different designs have been installed on the Copper River Delta by the U.S. Forest Service to deter nest predation. Several National Wildlife Refuges were created in the Pacific Northwest during the 1960's to conserve habitat for Dusky Canada Geese. However, continued conversion of bottomland pastures and other agricultural lands along the Columbia River to other uses, including commercial and residential development and crops that are not beneficial to wintering geese, have reduced goose winter foraging habitat. Loss of wintering habitat concentrates geese on remaining lands, increasing agricultural crop depredation concerns.

References

Pacific Flyway Council. 2014. Draft Pacific Flyway management plan for the dusky Canada goose. Dusky Canada Goose Subcomm., Pacific Flyway Study Comm. [c/o USFWS], Portland, OR. Unpubl. rep.

Dusky Canada Goose: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Loss of foraging habitat on public lands	Maintain adequate foraging habitat on public lands	Current insufficient	Both
2	Agriculture and aquaculture side effects	Conversion of agricultural use areas to crops not utilized for forage	Acquire fee-title or easements to conserve adequate winter habitat	Current insufficient	Both
3	Fish and wildlife habitat loss or degradation	Loss of wintering habitat to residential development	Acquire fee-title or easements to conserve adequate winter habitat	Current insufficient	Both
4	Resource information collection needs	Lack of information on status and distribution	Conduct annual distribution surveys	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

HARLEQUIN DUCK (*Histrionicus histrionicus*)

Conservation Status and Concern

Declines in wintering numbers of Harlequin Ducks have occurred on Puget Sound. Sources of impacts have not been clearly identified.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/declining	G4	S2B, S3N

Biology and Life History

The species is found on fast-flowing streams in riparian, subalpine, and coastal habitats during the breeding season. Similar to other sea duck species, annual recruitment is low due to delayed maturity, variable breeding propensity, small clutch size, relatively low numbers of successful breeders, and other factors related to productivity and brood survival. Natural events, particularly flooding, have the potential to negatively impact prey populations (e.g. caddisfly larvae), which have been associated with decreased reproductive efforts for Harlequin Ducks.

WDFW surveys documented an average of approximately 10% young in the winter population during 2008 to 2010. Breeding males and subadults move to the coast to molt during June-July, with females and broods arriving during August-September. These same molting areas are important wintering areas for Harlequin Ducks from several western states and provinces. Adult Harlequin Ducks exhibit a substantial degree of faithfulness to wintering areas.



Photo: S. Fitkin

Distribution and Abundance

Surveys in 1996 documented approximately 400 breeding pairs on Washington streams, primarily in the Cascade and Olympic mountains. An average of approximately 3,000 harlequins wintered on Puget Sound during 2012 to 2014, a reduction of 15 percent since 1994 to 1996. Hunting seasons have been restricted for harlequin ducks since 1998, and the current bag limit is one per hunter each season.

Habitat

On the breeding grounds, conservation concerns have focused on habitat loss and disturbance from recreational activity such as hiking, rafting, fishing, and degradation of stream habitat from past and current logging operations. Conservation concerns on the wintering grounds include the effects of human disturbance and degradation of coastal habitats (e.g. shoreline development, aquaculture, recreational activities) but they also include pollutant discharge (including oil spills), and reduction of marine forage (primarily herring spawn). Increasing development in the Puget Sound region has led to more disturbance, pollution, and degradation of foraging areas used by sea ducks.

References

Pacific Harlequin Duck Management: Recommendations for Rocky Mountain-Northwest Coast Segment.

July 23, 2004. Pacific Flyway Study Comm. [c/o USFWS], Portland, OR.

WDFW Sea Duck Management Strategies: <http://wdfw.wa.gov/publications/pub.php?id=01007>

Harlequin Duck: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Lack of information on population demography	Conduct periodic recruitment surveys	Current insufficient	Both
2	Resource information collection needs	Rangewide delineation of Puget Sound winter population	Develop satellite telemetry study to document use areas	Current insufficient	Both
4	Fish and wildlife habitat loss or degradation	Puget Sound development impacts	Research/surveys to document and address limiting factors	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

LONG-TAILED DUCK (*Clangula hyemalis*)

Conservation Status and Concern

This species has undergone significant population declines on Puget Sound. Sources of impacts have not been clearly identified.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	No	Moderate/declining	G5	S3S4N

Biology and Life History

Like other sea ducks, Long-tailed Ducks are believed to reach sexual maturity when they are two or three years old, are long-lived, nest later than most ducks, and on average have low reproductive output. Birds depart coastal molting areas from late August through November and then spend most of their annual cycle on wintering areas in the Puget Sound area.



Photo: T. Bowman

Distribution and Abundance

Long-tailed Ducks breed in arctic and subarctic wetlands from the west coast of Alaska across most of northern Canada. Approximately 200,000 Long-tailed Ducks are thought to breed in Alaska. Population numbers have declined about 80 percent in Alaska since surveys began in 1957, although numbers have recently stabilized. Long-tailed Ducks winter along the Pacific coast from the Bering Sea to California. Some birds from Alaska may winter in the northern Bering Sea and across to Russia. The current Puget Sound population is estimated at approximately 5,200 Long-tailed Ducks. Puget Sound populations have declined 39 percent since 1994 to 1996, and as much as 94 percent since 1978 to 1979. WDFW implemented restrictive hunting regulations for Long-tailed Ducks in 2010 in response to population declines.

Habitat

The Long-tailed Duck spends most of the year (approximately nine months) primarily in coastal marine waters. Only during the breeding season does it frequent shallow wetlands of low-lying tundra, ranging southward to the northern edge of the boreal forest. Non-breeding and molting birds tend to use deeper ponds and lakes and nearshore marine areas. Their winter diet is varied but chiefly animal matter, including bottom-dwelling crustaceans, clams, mussels, small fish, and snails. Most feeding is in water less than 30 feet deep, but the Long-tailed Duck has been documented to dive more than 200 feet, deeper than any other duck. Increasing development in the Puget Sound region has led to more disturbance, pollution, and degradation of foraging areas used by sea ducks. Reduction of marine forage (primarily herring spawn) may be reducing populations in some areas.

References

Sea Duck Joint Venture Species Fact Sheet – Long-tailed Duck: <http://seaduckjv.org/meetseaduck/ltd.html>
WDFW Sea Duck Management Strategies: <http://wdfw.wa.gov/publications/pub.php?id=0100>

Long-Tailed Duck: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Lack of information on status and distribution	Conduct annual winter inventory	Current insufficient	Both
2	Resource information collection needs	Lack of information on population demography	Conduct periodic recruitment and species composition surveys	Current insufficient	Both
3	habitat loss or degradation	Puget Sound development impacts on marine environment	Document and address limiting factors	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

SURF SCOTER (*Melanitta perspicillata*)

Conservation Status and Concern

This species has undergone significant population declines on Puget Sound. Sources of impacts have not been clearly identified.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Moderate/declining	G5	S3N

Biology and Life History

The Surf Scoter is one of the least studied ducks in North America. Surf Scoters do not breed until two to three years old, and are believed to be long-lived but on average have low reproductive output (e.g. an average of approximately eight percent young in Puget Sound wintering flocks during 2008 to 2010). Nests are well concealed and the few that have been found are typically near shallow lakes within the boreal forest of Northwest Territories and Nunavut, an area threatened by energy development and climate change effects.



Photo: R. LeValley

Males and nonbreeding females often undertake extensive molt migrations to coastal areas (e.g. Padilla Bay) that are hundreds of miles from breeding areas. Molting flocks may number in the hundreds to thousands, although the location and characteristics of molting areas has not been well documented. Birds depart coastal molting areas from late August through November and move to wintering areas, primarily in Puget Sound. Adults are site-faithful to wintering sites.

Distribution and Abundance

Although Surf Scoters are found in many marine coastal areas, they are most numerous on Puget Sound. Wintering numbers of all scoters on Puget Sound total approximately 50,000, and most (80 percent) are surf scoters. The total scoter population index (three-year average) for Puget Sound has declined over 50 percent since 1994 to 1996, and may have declined as much as 78 percent since 1978 to 1979. WDFW has implemented progressively restrictive hunting regulations for scoters since 1998 in response to population declines.

Habitat

Wintering Surf Scoters feed mostly on mussels and clams at up to 20m depth, before switching to herring eggs or other seasonally abundant prey during spring migration. Increasing development in the Puget Sound region has led to more disturbance, pollution, and degradation of foraging areas used by sea ducks. Reduction of marine forage (primarily herring spawn) may be reducing populations in some areas. Aquaculture can impact foraging areas through exclusion of sea ducks.

References

Sea Duck Joint Venture Species Fact Sheet - Surf Scoter: <http://seaduckjv.org/meetseaduck/ss.html>
WDFW Sea Duck Management Strategies: <http://wdfw.wa.gov/publications/pub.php?id=01007>

Surf Scoter: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
2	Resource information collection needs	Lack of information on status and distribution	Conduct annual winter inventory	Current insufficient	Both
3	Resource information collection needs	Lack of information on population demography	Conduct periodic recruitment and species composition surveys	Current insufficient	Both
4	Agriculture and aquaculture side effects	Development of commercial shellfish beds and screening to exclude sea ducks	Identify and protect important foraging areas	Current insufficient	Both
6	Fish and wildlife habitat loss or degradation	Puget Sound development impacts on marine environment	Document and address limiting factors	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

WHITE-WINGED SCOTER (*Melanitta fusca*)

Conservation Status and Concern

This species has undergone significant population declines on Puget Sound. Sources of impacts have not been clearly identified.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/declining	G5	S3N

Biology and Life History

The White-winged Scoter is the largest scoter species in Washington. White-winged Scoters first breed at two to three years old, and are believed to be long-lived and have low recruitment in most years. In spring, White-winged Scoters move from saltwater wintering habitats to inland breeding areas in the boreal forests of northern Alberta and Northwest Territories. Many of their breeding areas are threatened by resource extraction and climate change effects. In some areas, White-winged Scoters nest predominantly on islands, although gulls, ravens, and crows often destroy 10 to 30 percent of nests and a large number of ducklings. Birds depart coastal molting areas from late August through November. In Washington, White-winged Scoters spend most of their annual cycle on wintering areas in the Puget Sound area. Based on satellite telemetry studies by WDFW, adults have a high degree of site-fidelity to wintering sites.



Photo: R. Gilbert

Distribution and Abundance

White-winged Scoters have virtually disappeared from the more southern reaches of their breeding range in the prairie/parkland region of Canada and the U.S. Most White-winged Scoters in Washington are found on Puget Sound during winter. Wintering numbers of all scoters on Puget Sound total approximately 50,000 and approximately 20 percent are White-winged Scoters. The total scoter population index (three-year average) for Puget Sound has declined over 50 percent since 1994 to 1996, and may have declined as much as 78 percent since 1978 to 1979. WDFW has implemented progressively restrictive hunting regulations for scoters since 1998 in response to population declines.

Habitat

Wintering White-winged Scoters feed mostly on bottom-dwelling animals such as mollusks (clams, mussels, snails) and crustaceans (crabs, shrimp) at up to 66 feet in depth, before switching to herring eggs or other seasonally abundant prey during spring migration. Increasing development in the Puget Sound has led to more disturbance, pollution, and degradation of foraging areas used by sea ducks. Reduction of marine forage (primarily herring spawn) may be reducing populations in some areas. Aquaculture can impact foraging areas through exclusion of sea ducks.

References

Sea Duck Joint Venture Species Fact Sheet – White-winged Scoter:

<http://seaduckjv.org/meetseaduck/www.html>

WDFW Sea Duck Management Strategies: <http://wdfw.wa.gov/publications/pub.php?id=01007>

White-winged Scoter: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Lack of information on status and distribution	Conduct annual winter inventory	Current insufficient	Both
2	Resource information collection needs	Lack of information on population demography	Conduct periodic recruitment and species composition surveys	Current insufficient	Both
3	Agriculture and aquaculture side effects	Development of commercial shellfish beds and screening to exclude sea ducks	Identify and protect important foraging areas	Current insufficient	Both
4	Fish and wildlife habitat loss or degradation	Puget Sound development impacts on marine environment	Document and address limiting factors	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

WESTERN HIGH ARCTIC BRANT (*Branta bernicla*)

Conservation Status and Concern

Western High Arctic Brant include a small population which has experienced a long-term decline in numbers. Factors affecting population status and distribution are currently unknown.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/stable	G5	S3N

Biology and Life History

This is one of two stocks of Brant that occur in Washington during winter, and is not currently recognized as a distinct subspecies separate from Black Brant. They breed in Canada on the Parry Islands, located in Northwest Territories and Nunavut. These Brant exhibit breast color plumage characteristics closer to the pale gray of Brant on the Atlantic coast, in contrast to typical Black Brant with dark breast plumage in the Pacific Flyway. In their high latitude nesting area, extreme weather conditions during summer can lead to total breeding failures in some years.



Photo: Maynard Axelson

Distribution and Abundance

Status and trends of this Brant are less clear than those for Black Brant. In 1993, there were 500 nesting birds on Prince Patrick Island and 1,500 on Melville Island. Only two percent of the area of Melville, Prince Patrick, and Eglinton Islands, and associated smaller islands in the Parry group are suitable for nesting, and the scarcity of vegetation likely limits abundance and distribution. Following the breeding season, these Brant migrate to the Izembek National Wildlife Refuge area in Alaska and stage for up to 6 weeks in the fall. Marking information indicates the north Puget Sound area is the major wintering area for this stock, although Brant populations wintering in Alaska have been growing recently and may contain brant from this same population. The percentage of these Brant in north Puget Sound during winter averaged 48 percent (4,248) in 2007 to 2013.

Habitat

On breeding areas in the Parry Islands, Brant nest as widely dispersed solitary pairs, often well away from water. Some nesting and much available feeding habitat is susceptible to inundation by storm tides, and is susceptible to spills by petroleum exploration and development. Brant utilizing north Puget Sound use coastal estuaries with sufficient quantities of eelgrass and sea lettuce, as well as adequate haul-out and grit access sites. Numbers of Brant utilizing migration and wintering habitats in Washington have been related to trends in the size of eelgrass beds that have been reduced in some areas. Several major oil refineries in north Puget Sound are located in key wintering areas, including Padilla Bay. Disturbance factors include increased recreation (e.g. boating, wind surfers, pedestrians), commercial and residential development, shellfish harvest, and fishing.

References

Pacific Flyway Council. 2014. Draft Pacific Flyway Management Plan for Pacific Brant. U.S. Fish and Wildlife Service, Portland, Oregon.

Western High Arctic Brant: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Lack of information on status and distribution	Conduct annual winter inventory	Current insufficient	Both
2	Resource information collection needs	Lack of information on population demography	Conduct annual recruitment and stock assessments	Current insufficient	Both
3	Fish and wildlife habitat loss or degradation	Puget Sound development impacts on marine environment	Acquire critical shoreline use areas	Current insufficient	Both
4	Fish and wildlife habitat loss or degradation	Disturbance and direct habitat impacts at important use areas on Padilla, Samish, and Fidalgo Bays	Acquire and enhance critical shoreline use areas	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

UPLAND GAME BIRDS

COLUMBIAN SHARP-TAILED GROUSE (*Tympanuchus phasianellus columbianus*)

Conservation Status and Concern

The statewide population of Columbian Sharp-tailed Grouse is distributed in seven subpopulations that are not sustainable. Maintaining the species in Washington will require restoring habitat and increasing populations.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Threatened	Yes	Low/declining	G5	S1S2

Biology and Life History

Sharp-tailed Grouse inhabit grassland and shrublands, and feed on plant material and insects. Males gather at traditional sites in spring to perform elaborate dances on leks to attract females for mating. Females nest under a grass clump or shrub and incubate a clutch of approximately 10 to 14 eggs. The precocial chicks feed on insects, gradually shifting to more plant material. Young chicks are particularly vulnerable to predators. Maturing broods aggregate into flocks in late summer. During late fall and winter, particularly after snow covers the ground, Sharp-tailed Grouse will move to areas with riparian deciduous cover where they often eat buds and fruits of deciduous trees and shrubs, such as water birch, serviceberry, hawthorn, and aspen. Annual adult survival of non-hunted populations ranges from 30 to 60percent; maximum life span reported is 7.5 years.



Photo: B. Griffith

Distribution and Abundance

The subspecies in Washington, is the Columbian (*T. p. columbianus*), the rarest subspecies. Seven remnant populations remain in Douglas, Lincoln, and Okanogan Counties. Washington populations may have once numbered in the hundreds of thousands (Stinson and Schroeder 2012). The total population now numbers fewer than 1,000 birds, and they occupy less than five percent of their historical range (Stinson and Schroeder 2012).

Habitat

Sharp-tailed Grouse are a grassland and steppe species, and the Palouse prairie probably once supported the highest numbers in Washington. Diverse native grassland with sparse shrubs provides the best nesting habitat, but deciduous riparian habitat must be available in the area for overwintering. Sharp-tailed Grouse will also use cropland near native habitat, such as wheat stubble and alfalfa, and have benefitted from the Conservation Reserve Program.

References

Stinson, D.W., and M.A. Schroeder. 2012. Washington state recovery plan for the Columbian sharp-tailed grouse. Washington Department of Fish and Wildlife, Olympia, Washington.

Columbian Sharp-Tailed Grouse: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Habitat converted to cropland (loss and fragmentation); lack of connectivity	Acquire lands in strategic locations and restore habitat; translocations may be needed in some cases.	Current insufficient	WDFW
2	Agriculture and aquaculture side effects	Habitat converted to cropland	Sage and Sharp-tailed Grouse SAFE contracts	Current insufficient	Both
3		Small populations, potential declining genetic health	Population augmentation	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

GREATER SAGE-GROUSE (*Centrocercus urophasianus*)

Conservation Status and Concern

Greater Sage-grouse require landscapes of sagebrush steppe, much of which has been converted to cropland or degraded. Remaining populations are small and unlikely to persist at their current size. The US Fish and Wildlife Service (2001) found that listing of the Columbia Basin Distinct Population Segment under the Endangered Species Act was “warranted but precluded” by higher priority listing actions.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Candidate	Threatened	Yes	Low/stable	G3G4	S1

Biology and Life History

Sage-grouse are closely tied to sagebrush. Mating occurs at leks where males display to attract females. Females incubate a clutch of six to nine eggs in a nest on the ground. Males and females gather into flocks in winter, as do broodless hens in early summer. During the winter, sage-grouse feed almost exclusively on sagebrush; at other times they also feed on forbs. They also eat insects including ants and grasshoppers, which are essential in the diet of growing chicks. Birds generally move between winter and summer ranges returning to traditional lek sites in February. Annual adult survival averages 50 to 75 percent, and females may live 8 years or more.



Photo: WDFW

Distribution and Abundance

The Washington population in 2014 totaled less than 1,000 birds. There are two remnant populations: one in Douglas and Grant Counties, and one on the Yakima Training Center in Yakima and Kittitas Counties; small reintroduced populations also exist in Lincoln County and on the Yakama Indian Reservation.

Habitat

This species requires large areas of shrub-steppe habitat dominated by sagebrush. Productive breeding habitat is sagebrush steppe with a diverse herbaceous understory, and springs or wet areas that retain green vegetation in late summer. Nest predation rates are affected by habitat quality, because residual grasses help conceal hide nests. Some degraded habitat that lacks the grass and forb understory needed for nesting and brood rearing is nonetheless suitable for wintering grouse. Sage-grouse will also use edges of wheat and alfalfa fields near shrub-steppe habitat.

References

- Stinson, D.W., D.W. Hays, and M.A. Schroeder. 2004. Washington State recovery plan for the greater sage-grouse. Washington Department of Fish and Wildlife, Olympia, Washington.
- U.S. Fish and Wildlife Service. 2001. 12-month finding for a petition to list the Washington population of western sage grouse (*Centrocercus urophasianus phaios*). Federal Register 66:22984-22994.

Greater Sage Grouse: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Habitat converted to cropland	Acquire lands in strategic locations and restore habitat	Current insufficient	Both
2	Agriculture and aquaculture side effects	Habitat converted to cropland	Sage and Sharp-tailed Grouse SAFE contracts	Current insufficient	Both
3	Habitat loss or degradation	Wildfire impacts to sagebrush	Sagebrush replanting	Current insufficient	Both
4		Small populations, potential declining genetic health	Population reintroductions, augmentations	Current insufficient	Both
5	Agriculture and aquaculture side effects	Wire fences pose collision hazard	Attach markers to improve visibility to fences in breeding habitat	Current insufficient	External
NOTE: Numbers are for reference only and do not reflect priority.					

MOUNTAIN QUAIL (*Oreortyx pictus*)

Conservation Status and Concern

Mountain Quail populations have declined to very low levels within their native range in Washington and were (or continue to be) absent in some areas. The decline is thought to be due to loss or degradation of dense shrub communities resulting from cattle grazing practices and hydroelectric and other development in riparian zones.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/unknown	G5	S1

Biology and Life History

Mountain Quail nest on the ground in dense cover, usually sheltered by a shrub, log, or clump of grass. Like other quail, their nests are shallow depressions lined with grass, needles, leaves, and feathers. Diet varies with the season but consists primarily of seeds, bulbs, leaves, berries, and some insects. One of the most important foods is sumac. Insect and other animal matter are a minor source of food, comprising less than five percent of the diet overall. Females lay 9 to 10 eggs, which both parents incubate. Shortly after hatching, the young leave the nest. Both parents incubate their own nest and then tend and actively defend the young and lead them to food sources, where they feed themselves.



Photo: K. Chou

Distribution and Abundance

Although the species has been introduced to parts of western Washington, where it is somewhat common, Asotin, Garfield, and Columbia Counties are the Mountain Quail's native range. The species was once abundant in Klickitat County and may have been native there historically. After being extirpated from portions of the historical distribution, 309 mountain quail were released in the Asotin Creek watershed between 2005 and 2013. Survival of released birds to six months post-release has ranged between 18 and 34 percent. It is not clear whether these attempts have established populations that will become self-sustaining. While incidental observations of Mountain Quail continue to occur in the area, deriving a population estimate for this small, widely dispersed population in remote habitat is not currently practical.

Habitat

This species requires dense shrub cover, brushy, riparian habitat in dry areas, and brushy slopes. They are found in dense cover with scattered open areas on slopes in foothills and mountains. They use dense thickets resulting from fires or clearcuts, and they are seldom found far from this cover. In summer, the quail require a source of water, which may limit their nesting range.

References

- Washington Department of Fish and Wildlife. 2015. Game Management Plan July 2015 - June 2021. Washington Department of Fish and Wildlife, Olympia, Washington.
- Washington Department of Fish and Wildlife. 2014. 2014 Game status and trend report. Washington Department of Fish and Wildlife, Olympia, Washington.

Mountain Quail: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Energy development and distribution	Hydroelectric development along the Snake River has resulted in the loss of key riparian habitat.	Protect as-yet undeveloped habitat along tributaries	Nothing current - new action needed	Both
2	Agriculture and aquaculture side effects	Mountain Quail require dense shrub cover and brushy areas. Use of herbicides kills shrubs and plants required for cover and forage, particularly sumac.	Work with landowners to use best management practices.	Current insufficient	WDFW
3	Agriculture and aquaculture side effects	Mountain Quail require dense shrub cover and brushy areas. Past grazing practices have damaged habitat required for cover and forage.	Protect as-yet undeveloped habitat along tributaries	Current insufficient	Both
4	Resource information collection needs	Success of translocation efforts is not clear and trend data are lacking.	Evaluate results from translocations to assess effectiveness of release strategies.	Current insufficient	WDFW
NOTE: Numbers are for reference only and do not reflect priority.					

SPRUCE GROUSE (*Falciennis canadensis*)

Conservation Status and Concern

Although a gamebird, the indirect effects of climate change including disease of trees and wildfire, the direct effects of timber harvest (clear-cutting), and the uncertainty about taxonomy mean that the Spruce Grouse conservation status is uncertain.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	No	Declining	G5	S4

Biology and Life History

Spruce Grouse dwell mostly in trees from late autumn through early spring and on the ground from late spring through early autumn. Both males and females are territorial during the spring. Females generally produce a clutch of five to six eggs. Nest and brood success are usually not very high, but are compensated for with relatively high adult survival.



Photo: Mike Schroeder

Distribution and Abundance

These grouse are distributed throughout the boreal forest of Canada and Alaska and small portions of other northern states. Most evidence suggests that this grouse consists of types that are genetically, phenotypically, and behaviorally distinct, and taxonomic reclassification may occur at some point in the future. In Washington, they are primarily found on the east slope of the Cascades from the U.S.-Canada border south to Yakima County and in Okanogan, Ferry, Stevens, and Pend Oreille Counties. Cascade populations are believed to be relatively sparse and discontinuous while populations in the Okanogan highlands have historically been abundant and continuous. Spruce Grouse have declined in many portions of northern Washington due to wildfires between 1994 and 2014. The Washington population is approximately 5000 individuals.

Habitat

Spruce Grouse depend on conifer forests, especially fire-adapted lodgepole pine, but also spruce and fir. Greatest densities appear to be in young successional stands of dense lodgepole pine, with a well-developed middle and understory of spruce, fir, and/or deciduous shrubs. Populations close to the crest of the Cascades live in habitats with greater tree diversity, but these populations are poorly understood. Grouse forage in winter primarily on lodgepole pine needles, and secondarily on spruce needles. Nesting and brood-rearing females often use small riparian meadows and forest openings. Spruce Grouse living in fragmented habitats have lower survival. Habitat loss due to fire is likely an indirect result of tree damage and death due to mountain pine beetle and western spruce budworm, both likely exacerbated by climate change, as well as the effects of fire suppression in some areas.

References

- Boag, D. A., and M. A. Schroeder. 1987. Population fluctuations in spruce grouse: what determines their numbers in spring? *Canadian Journal of Zoology* 65:2430-2435.
- Boag, D. A., and M. A. Schroeder. 1991. Spruce grouse (*Falciennis canadensis*). *Birds of North America* 5: 1-28.

Spruce Grouse: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Invasive and other problematic species and genes	Increased fire size resulting from beetle infestations.	Fire management	Current insufficient	Both
2	Agriculture and aquaculture side effects	Clearcutting response to beetle infestations	Minimize unnecessary timber harvest.	Current insufficient	Both
3	Climate change and severe weather	Beetle infestations due to climate temperature change killing lodgepole pine, spruce and fir		Current insufficient	External
4	Resource information collection needs	Lack of population data poses risk of over-harvesting	Monitor annual harvest	Current insufficient	WDFW
NOTE: Numbers are for reference only and do not reflect priority.					

WHITE-TAILED PTARMIGAN (*Lagopus leucura*)

Conservation Status and Concern

The greatest threat to the long-term survival of White-tailed Ptarmigan populations appears to be global climate change, which may lead to a gradual loss of alpine habitats as the tree line moves upward.

Consequently, they have been petitioned for listing under the Endangered Species Act and the U.S. Fish and Wildlife Service decided that the petition was valid and worthy of consideration.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Petitioned	No	No	Low	G5	S3

Biology and Life History

White-tailed Ptarmigan dwell mostly on the ground in alpine tundra habitats. They are generally resident in the same general habitats throughout the year but some birds may migrate more than 6 miles. They are monogamous and the breeding pair defends a territory during the breeding and nesting seasons. Females generally produce a clutch of five to seven eggs. Nest and brood success are usually not very high, but are compensated for with relatively high survival.



Photo: Mike Schroeder

Distribution and Abundance

White-tailed Ptarmigan are distributed in alpine tundra habitats of western North America. In Washington they are found in the Cascades from Mt Adams north to the U.S.-Canada border. There has been little work on ptarmigan, but birds are believed to be relatively rare on Mt. Adams, uncommon on Mt. Rainier, and common in areas further north, such as the Pasayten Wilderness. There is an apparent gap of about 31 miles in occupancy between Mount Rainier and the Alpine Lakes Wilderness to the north. The Washington population may be about 1000 individuals.

Habitat

White-tailed Ptarmigan depend on alpine tundra habitats that are forb-rich with occasional shrubs such as willow. During winter they may spend time feeding on vegetation in wind-exposed areas, avalanche chutes, and riparian areas with exposed shrubs. Habitats used by White-tailed Ptarmigan are believed to be susceptible to the effects of climate change.

References

Braun, C. E., K. Martin, and L. A. Robb. 1993. White-tailed Ptarmigan (*Lagopus leucurus*). *Birds of North America* 68: 1-24.

U.S. Fish and Wildlife Service. 2012. Endangered and threatened wildlife and plants; 90-day finding on a petition to list the southern white-tailed ptarmigan and the Mt. Rainier white-tailed ptarmigan as threatened with critical habitat. *Federal Register* 77:33143–33155.

White-Tailed Ptarmigan: Key Conservation Threats and Actions

STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
Climate change and severe weather	Low elevation habitats influenced by indirect impacts of climate change due to drier conditions, longer growing seasons, and encroachment by trees.	Continue to minimize human disturbance (direct and indirect) in ptarmigan habitats.	Current insufficient	WDFW
Education Needs	Outreach for the general public to educate them about ptarmigan and the risks they face.	Improved outreach	Current insufficient	WDFW
Resource information collection needs	Little known about abundance, distribution, and connectivity in Washington.	Surveys needed to make management effective.	Current insufficient	WDFW
NOTE: Numbers are for reference only and do not reflect priority.				

MARINE BIRDS AND WATERBIRDS

AMERICAN WHITE PELICAN (*Pelecanus erythrorhynchos*)

Conservation Status and Concern

American White Pelicans nest in only one place in Washington.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Endangered	Yes	Low/increasing	G4	S1B

Biology and Life History

American White Pelicans are large, highly gregarious, migratory birds that nest in colonies. Breeding sites include isolated islands in freshwater lakes and rivers. Females typically breed at age three and lay an average of two eggs; most pairs fledge only one young. Nesting pelicans are highly susceptible to disturbance and females rarely lay a second clutch if the first clutch is lost. Young are cared for by both parents for three to four weeks, then join other young within the colony and fledge at 9 - 10 weeks of age. Adult life span is 12 to 14 years. Natural predators of eggs and chicks include gulls, Coyotes, large corvids and other mammals. Foraging areas may be 30 miles or more from breeding sites and include the shallows of lakes, rivers and marshes; prey includes fish (including, in some areas, commercially important species), amphibians, and crustaceans.



Photo: R. LeValley

Distribution and Abundance

American White Pelicans breed in the western and central Canadian provinces and in the north-central and western United States. They overwinter from central California to southern Arizona, Mexico and northern Central America, as well as Texas to Florida. In Washington, they are a locally uncommon to common visitor and migrant, as a very local breeder in the eastern part of state and a rare visitor in western Washington. Pelicans did not breed in Washington from about 1930 to 1995. The only known breeding colony of around 1000 pairs occurs at Badger Island in the Columbia River in Walla Walla County.

Habitat

American White Pelicans nest on isolated islands in freshwater systems. These islands can be permanent or ephemeral. Most pelicans spend the winter along coastal areas in bays, inlets and estuaries that contain exposed places, such as sand islands, for loafing and roosting, with nearby foraging sites, and on inland freshwater reservoirs, lakes, or rivers.

Reference

- Evans, R.M., and F.L. Knopf. 1993. American white pelican (*Pelecanus erythrorhynchos*). Birds of North America 57: 1-24.
- Washington Department of Fish and Wildlife. 2013. Threatened and Endangered Wildlife in Washington: 2012 Annual Report. Listing and Recovery Section, Wildlife Program, Washington Department of Fish and Wildlife, Olympia.

American White Pelican

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Dredging and deposition of dredged materials may impact nesting and roosting sites	Work with COE on Columbia River to avoid impacts to potential nest sites	Current insufficient	Both
2	Resource information collection needs	Monitor for impacts from contaminants and prey resource declines	Monitor local breeding sites	Nothing current - new action needed	Both
NOTE: Numbers are for reference only and do not reflect priority.					

BROWN PELICAN (*Pelecanus occidentalis*)

Conservation Status and Concern

This species has recovered from its previous population decline and has been delisted by the U.S. Fish and Wildlife Service.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Endangered	Yes	7,000-10,000/increasing	G4	S3N

Biology and Life History

This Brown Pelican does not breed in Washington, although a few nests have recently been found along the lower Columbia River. They breed in colonies on small offshore islands. Nesting can occur from December to August, and in the Gulf of California generally occurs from November to May. Brown Pelicans are slow to mature and reach sexual maturity at three to five years of age. The oldest individual lived 43 years. Reproductive success varies with level of disturbance by humans, starvation of young, and/or flooding of nests, but typically the number of young fledged per nest averages one or less. Brown Pelicans feed primarily on small marine fishes such as northern anchovy, Pacific sardine, and Pacific mackerel.



Photo: R. LeValley

Distribution and Abundance

Brown Pelicans are common to abundant in Washington's outer coastal waters from spring through autumn. Up to 16,000 have been reported roosting at East Sand Island in the Columbia River estuary. Brown Pelicans in Washington belong to the subspecies *P. o. californicus*. These birds nest in the Gulf of California and along the coast of Baja California in Mexico north to Channel Islands in southern California. After breeding, California Brown Pelicans disperse north along the coast as far as southern British Columbia. The origin of birds that occur in Washington is uncertain.

Habitat

Brown Pelicans inhabit mainly coastal waters and rarely are seen inland or far out at sea. They feed mostly in shallow estuarine waters, less often up to 40 miles from shore. They use sand spits, offshore sand bars, and islets for nocturnal roosting and daily loafing, especially nonbreeders and during the non-nesting season. Dry roosting sites are essential. Pelicans that roost on beaches can be disturbed by humans, including pedestrians and motorists.

References

- Shields, M. 2002. Brown Pelican (*Pelecanus occidentalis*). Birds of North America 609: 1-36.
- Stinson, D.W. 2015. Periodic status review for the Brown Pelican. Washington Department of Fish and Wildlife, Olympia, Washington.
- U.S, Fish and Wildlife Service. 2009. Removal of the Brown Pelican (*Pelecanus occidentalis*) from the federal list of endangered and threatened wildlife: Final Rule. Federal Register 74:59444-59472.

Brown Pelican

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Potential oil spills	Plan to minimize risks during oil and other toxic spills	Current sufficient	Both
2	Invasive and other problematic species and genes	Harmful algae blooms, fluctuations in prey populations-natural oscillations	Monitor; particularly the roost sites.	Current sufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

CLARK'S GREBE (*Aechmophorus clarkii*)

Conservation Status and Concern

The small breeding population of this species in Washington, which occurs at a small number of Columbia Basin lakes and reservoirs, is strongly impacted by various threats relating to water drawdowns and recreational boating activity.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/declining	G5	S2B

Biology and Life History

This species is gregarious and nests in colonies. Clutch size usually numbers two to four eggs and brood size is usually one to three chicks which depart nests soon after hatching. Nesting and brood rearing extend from early June to late August. Spring migration is mainly from late April to early May; fall migration extends from mid-September to November. Clark's Grebes will flock with Western Grebes. Wintering birds can occur in daytime flocks, but disperse at night to forage. Diet is mainly fishes, and aquatic invertebrates are also consumed; considered opportunistic as to the species eaten. Prey are caught underwater by diving.



Photo: R. LeValley

Distribution and Abundance

Clark's Grebes are a rare nester in Washington and the size of the state's breeding population is not well known, but may number only 75 to 150 birds. All known nesting localities are in Grant County except for one site in Adams County. The species occurs more widely in the state during migration, including rarely in western Washington; it is rare during winter.

Habitat

Large freshwater lakes, reservoirs, and marshes are used during the summer breeding season. These habitats as well as sheltered coastal marine areas are occupied during migration and winter. Nesting sites usually contain at least several square kilometers of open water and areas of emergent vegetation. Nests are built in emergent vegetation.

References

Storer, R. W. and G. L. Nuechterlein. 1992. Western and Clark's Grebes. *Birds of North America* 26: 1-24.
Wahl, T.R. 2005. Clark's Grebe. Page 83 *In* T.R. Wahl, B. Tweit, and S.G. Mlodinow (eds.). *Birds of Washington: Status and Distribution*. Oregon State University Press, Corvallis, Oregon.

Clark's Grebe: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Major water drawdowns at reservoirs used by nesting colonies	Devise effective floating nest platforms; work with irrigation authorities to manage water levels to reduce impacts to grebes	Current insufficient	Both
2	Fish and wildlife habitat loss or degradation	Boater activity and boat wakes at nesting colonies can destroy nests, spill eggs, or cause gull predation	Identify wake-free zones near breeding colonies	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

COMMON LOON (*Gavia immer*)

Conservation Status and Concern

This species has a small breeding population in Washington. Its overall range has contracted northward. Due to life history and a small population in Washington it is highly vulnerable to impacts if not monitored and managed where appropriate.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Sensitive	Yes	Low/stable	G5	S2B, S4N

Biology and Life History

Nests are built at the water's edge and egg-laying generally begins between mid-May and mid-July. Chicks leave the nest within 24 hours of hatching and are soon moved to nursery areas. Chicks may be carried on their parents' backs until they reach three weeks of age. Most juveniles are capable of flight at 11 to 12 weeks, and some leave their small, natal lakes or parental territories shortly afterward. Non-breeders aggregate in marine waters, but also inland freshwater bodies.



Photo: J. Picken

Distribution and Abundance

Common Loons breed in freshwater habitats of northern North America including much of Canada, Alaska, northern portions of the contiguous United States, and southern Greenland. It also breeds in Iceland. The southern portion of its historical breeding range has contracted. These birds spend winters on inland larger freshwater bodies and marine environments from Alaska to northern Mexico in the American west. In Washington, breeding areas are freshwater lakes and reservoirs, mainly in remote areas of northeastern and northwestern parts of the state. Common Loons spend the winter in almost all nearshore marine and larger freshwater bodies of western Washington. They are uncommon and irregular in winter in eastern Washington where they are found in large water bodies and Columbia Basin impoundments. The size of Washington's breeding population is unknown.

Habitat

In winter and during migration, Common Loons use inland lakes and rivers and marine and estuarine coastal waters. Breeding habitat includes usually clear lakes containing both shallow and deep water areas. Nest sites are on small islands, quiet backwaters, or mainland shores. Loons have been found nesting in marshy portions of lakes in water depths no greater than 1.6 feet. Optimal nest sites, as measured by degree of success, include overhead cover to conceal eggs from predators, protection from wind and waves, good visibility by incubating adults, and a steep slope adjacent to the nest for adequate underwater approaches and exits. Brood-rearing areas are typically located in shallow coves of fairly uniform depth, sheltered from prevailing winds and wave action, and are independent of nest site location.

References

- Evers, D.C., J.D. Paruk, J.W. McIntyre and J.F. Barr. 2010. Common loon (*Gavia immer*). Birds of North America 313: 1-32.
- Wahl, T. R. and S. Richardson. 2005. Common Loon (*Gavia immer*). Pp 76 – 77 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.

Common Loon: Key Conservation Threats and Actions

STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD	
1	Fish and wildlife habitat loss or degradation	Shoreline and adjacent upland development, use and degradation by various land use change actions (e.g. development, timber harvest, stormwater runoff impacts increase pollutant exposure).	Work with private land owners and public land owners to support and sustain suitable habitat and support healthy ecosystem processes.	Current sufficient	Both
2	Fish and wildlife habitat loss or degradation	Human consumptive and non-consumptive recreational intrusion on breeding lakes; lead tackle impacts; direct disturbance of nesting and brooding by recreation activities.	Provide outreach to educate constituents regarding curbing recreation impacts.	Current insufficient	Both
3	Outreach Needs	Lead tackle use, gear entanglement, oil spill, commercial fish bycatch impacts require more outreach (and perhaps regulation) leading to increased support to curb effects.	Enforce existing protective regulations regarding bans and direct take.	Current sufficient	Both
4	Coordination/Administration Needs	Maintain and increase collaboration with landowners and constituents to manage hydroelectric sites used for breeding by providing platforms.	Emphasize need for platforms on managed waters that have flux and resident loons.	Current sufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

MARbled MURRELET (*Brachyramphus marmoratus*)

Conservation Status and Concern

Because of its breeding association with old forests, Marbled Murrelet populations have been severely affected by loss mature and old forest habitat.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Threatened	Threatened	Yes	Low/declining	G3G4	S2

Biology and Life History

Marbled Murrelets forage in marine waters and nest inland in mature and old-growth conifer forests. Small schooling fish (e.g. anchovy, herring, candlefish) and sand lance make up most of the diet, which may include small crustaceans when fish are not abundant. Marbled Murrelets appear to establish long-term pair bonds and fidelity to nesting areas and nest trees.



Photo: USFWS

Distribution and Abundance

This species is an uncommon resident in marine waters in general proximity to nesting habitat; it is most abundant in northern Puget Sound and the Strait of Juan de Fuca, and least abundant along the coast of southwestern Washington. Surveys indicate highest nesting presence on the Olympic Peninsula, the northern Cascades and in limited remaining habitat in southwest Washington. Population estimate for 2013 in Puget Sound and Strait of Juan de Fuca was 4,395 birds, and on the Washington coast was 1,257 birds. The overall estimate of rate of annual decline in Marbled Murrelet density for Washington was -4.65 percent for the period from 2001 through 2013.

Habitat

In Washington, Marbled Murrelets nest in mature and old-growth conifer forests, and sometimes in comparatively younger forests with residual old-growth trees. The nest is located in a depression on a mat of moss, lichen or debris accumulations on large branches. The primary factor influencing breeding distribution is likely the availability of suitable nesting platforms within close proximity to marine water foraging areas. Marine foraging areas are usually within 1.2 to 3 miles of shore, typically in waters less than 100 feet deep.

References

- Ralph, C.J., G.L. Hunt, M.G. Raphael, and J.F. Piatt (technical editors). 1995. Ecology and conservation of the Marbled Murrelet. Gen. Tech. Rep. PSW-GTR-152. Albany, California.
- Raphael, M.G., A. Shirk, G.A. Falxa, S.F. Pearson. 2014. Habitat associations of marbled murrelets during the nesting season in nearshore waters along the Washington to California coast. Journal of Marine Systems. DOI: 10.1016/j.jmarsys.2014.06.010

Marbled Murrelet: Key Conservation Threats and Actions

STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD	
1	Fish and wildlife habitat loss or degradation	Conversion of old forest nesting habitat to commercial forestry. Fragmentation of nesting habitat isolates remaining breeding areas, increases hard edge (attracting predators), decreases nest success, and may hinder dispersal of future generations.	Use land acquisitions, conservation easements and landowner agreements to protect nesting habitat and create larger contiguous forest blocks	Current insufficient	Both
2	Management Decision Needs	Conversion of old forest nesting habitat to commercial forestry. Fragmentation of nesting habitat isolates remaining breeding areas, increases hard edge (attracting predators) decreases nest success, and may hinder breeding dispersal.	Identify and retain future potential recruitment habitat near and adjacent to currently occupied sites. Block and connect forests to reduce edge with "security forest" goal of >40 years old adjacent to nesting habitat. Increase nearshore terrestrial habitat	Current insufficient	Both
3	Resource information collection needs	Chronic low juvenile recruitment in a declining population	Collect data needed for comprehensive understanding of demography	Current insufficient	Both
4	Fish and wildlife habitat loss or degradation	Campgrounds/recreation sites in and near habitat can attract avian predators (corvids) and human disturbance to nesting birds	Research foraging habitats and nutritional needs and forage-fish population management. Increase nearshore terrestrial habitat	Current insufficient	Both
5	Energy development and distribution	Environmental contamination in marine habitat; very vulnerable to periodic and chronic spills that may have lethal and sub-lethal effects that affect populations	Control, monitor, and timely response to contaminant (oil) spills. Identify important nearshore foraging areas and include in spill response team's maps/databases.	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

RED-NECKED GREBE (*Podiceps grisegena*)

Conservation Status and Concern

Status of this species is not clear. Wintering populations in Washington exhibit ecological traits identified as risk factors for marine birds that occur in the Salish Sea and are declining.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Monitor	Yes	Unknown/unknown	G5	S3B,S5N

Biology and Life History

Red-necked Grebes nest on freshwater lakes, reservoirs and sloughs where marsh vegetation is present and overwinter in marine bays, estuaries and protected shorelines. By May, they have usually arrived at their breeding sites where they remain until fall. By mid-November, most have returned to their wintering areas. Breeding pairs typically nest solitarily and both members of the pair incubate one brood/year. Red-necked Grebes dive for their prey and feed on fish and insects, as well as crustaceans, mollusks, amphibian eggs and larvae, and some vegetation.



Photo: R. LeValley

Distribution and Abundance

The Red-necked Grebe overwinters along the Pacific coast from Alaska to southern California. In western Washington, it is a fairly common to common migrant and winter visitor; it rarely occurs in summer in marine waters and on freshwater lakes west of the Cascades. East of the Cascades, the Red-necked Grebe is a local, fairly common breeder in northeastern Washington, but is a rare to uncommon winter visitor. The size of Washington's breeding population is unknown.

Habitat

Winter habitats include saltwater bays and estuaries, and other protected locations. In migration, they are found on lakes, ponds, and rivers. Nesting occurs on shallow, freshwater lakes, as well as shallow protected marsh areas and secluded bays of larger lakes. Nests are constructed in reeds along lake margins and are raised slightly above the surface of the water. Nest sites are selected based on a combination of attributes including shelter from wind and waves, availability of nest materials and anchorage, easy swimming access, proximity to open water, and distance from terrestrial predators.

References

- Stout, B.E., and G.L Nuechterlein. 1999. Red-necked Grebe (*Podiceps grisegena*). Birds of North America 465: 1-32.
- Vischis, L.I., C.K. Johnson, J.R. Evenson, S.F. Pearson, K.L. Barry, P.D. Davidson, M. G. Raphael and J.K. Gaydos. 2014. Assessing ecological correlates of marine bird declines to inform marine conservation. Conservation Biology: doi: 10.1111/cobi.12378.
- Wahl, T. R. 2005. Red-necked grebe (*Podiceps grisegena*). Pp 79 – 80 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.

Red-Necked Grebe: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
	Resource information collection needs	Determine population trend for both winter and breeding populations	Conduct surveys to understand species trend and distribution	Current insufficient	Both

SHORT-TAILED ALBATROSS (*Phoebastria albatrus*)

Conservation Status and Concern

The Short-tailed Albatross main population is vulnerable to extreme reduction and breeding capacity due to about 90% of nesting pairs located in one colony (Torishima Island, Japan). Fishing vessels and fishing tactics are a mortality threat.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Endangered	Candidate	Yes	Rare/increasing	G1	SNA

Biology and Life History

The Short-tailed Albatross is the largest pelagic seabird in the North Pacific Ocean with a wingspan of 7 to 7.5 feet. It first breeds at 5 to 9 years of age with most beginning at 6 years; pairs mate for life and lifespan is about 45 years. They are ocean surface feeders, relying primarily on squid, flying fish and fish eggs and crustacea; they also follow fishing vessels for bait lines and processing scraps.



Photo: J.L. Place

Distribution and Abundance

Once thought to be the most abundant albatross species in the North Pacific, this species was hunted to near-extinction by 1949. Exact populations were not known; between 1885 and 1903 it is estimated that more than 5 million birds were harvested from one island colony alone (Torishima, Japan). The 2014 estimate is 661 breeding pairs among all locales and the total population estimate is 4,354 individuals, of which 1,928 are estimated to be of breeding age. Recolonization efforts began in the late 1970s, and the population is now growing at an average rate of 7.5 percent/year (USFWS 2014). However, they are still vulnerable to extreme population reduction and breeding capacity because the main breeding colony which supports about 90 percent of nesting pairs is located on an unstable volcanic island. This species was known to have occurred offshore of Washington and British Columbia, where they were considered common, in the mid-19th to early 20th century.

Habitat

During breeding, adults forage primarily in the upwelling zones off northern Japan. During northern summers, mostly adult birds follow trade winds to the edges of the continental shelves from China north to the Aleutian Islands and Bering Strait. Immature birds (less than 3 years) largely occur at the eastern Pacific continental shelf from the Alaskan gulf south to southern California.

References

- Campbell R.W., N.K. Dawe, I. McTaggart-Cowan, J.M. Cooper, G. Kaiser, A.C. Stewart, and M.C.E. McNall. 1990. Birds of British Columbia, Vol. 1. University of British Columbia Press, Vancouver, British Columbia.
- Jewett S.G., W.P. Taylor, W.T. Shaw, and J.W. Aldrich. 1953. Pp 67-68 in Birds of Washington. University of Washington Press, Seattle, Washington. 767 pp.
- U.S. Fish and Wildlife Service. 2008. Short-tailed Albatross recovery plan. Region 7, Anchorage, Alaska.
- U.S. Fish and Wildlife Service. 2014. Short-tailed Albatross 5-year review: summary and evaluation. Region 7, Anchorage, Alaska.

Short-Tailed Albatross: Key Conservation Threats and Actions

STRESSOR	THREAT DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Habitat loss or degradation	Natural volcanic disturbance on main breeding island could decimate recovering populations. Eroding soils at site cause nest failure	Use land acquisitions, conservation easements and landowner agreements to protect significant colonies; reintroduce on former breeding sites; translocation of chicks	Current sufficient External
2	Overharvesting of biological resources	Bycatch from commercial longline fisheries; wire/cable strikes from trawlers.	Enforce North Pacific protective fishing equipment regulations. Increase on-board vessel observer efforts. Formal take limits in place and consultation with USFWS.	Current sufficient External
3	Habitat degradation	Chronic pelagic pollution: plastic debris, chemical and petroleum contaminants and toxic metals	monitor and conduct research of short/long-term effects on chicks and adults	Current sufficient External
NOTE: Numbers are for reference only and do not reflect priority.				

TUFTED PUFFIN (*Fratercula cirrhata*)

Conservation Status and Concern

In Washington, this species has experienced an order-of-magnitude population decline in recent decades and has disappeared from more than half of its historical breeding sites.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Rankin
Species of Concern	Candidate	Yes	Low/declining	G5	S3S4B, S4N

Biology and Life History

Tufted Puffins gather in colonies on islands and headlands during spring and summer to breed and rear young. Breeding extends from mid-April to early September in Washington. Nesting occurs in burrows, where a single egg is laid. Incubation is by both members of the breeding pair and usually lasts 43 to 46 days. Rates of chick growth and survival depend on prey availability and quality. Nesting adults forage up to 38 miles from their colonies to catch prey for nestlings. Chicks are fully independent upon fledging. The species feeds on fishes, crustaceans, and cephalopods, which are caught underwater. Puffins at colonies experience predation by bald eagles and other predators, and kleptoparasitism by gulls. Birds winter alone or in small groups at sea.



Photo: R. LeValley

Distribution and Abundance

In Washington, breeding occurs on islands along the northern outer coast and in the Strait of Juan de Fuca. The population has been declining since at least the 1980s, with minimum population estimates falling from 23,342 birds in 1978 to 1982 to 2,958 birds in 2009, and only 19 of 44 historical breeding sites remaining occupied. Nearly all breeding now occurs along the outer coast. The species is very rare during winter.

Habitat

Nesting takes place on isolated offshore islands and inaccessible headlands. Preferred nesting habitat includes grassy slopes, bluffs, and plateaus with soil deep enough for burrowing in locations free of introduced predators and human disturbance. Rocky areas and thickets are sometimes used for nesting. Foraging occurs from nearshore waters to open sea during the breeding season. The species is pelagic during the non-breeding season.

References

Piatt, J.F., and A.S. Kitaysky. 2002. Tufted Puffin (*Fratercula cirrhata*). Birds of North America 708: 1-31.
Hanson, T. and G.J. Wiles. 2015. Washington state status report for the Tufted Puffin. Washington Department of Fish and Wildlife, Olympia, Washington.

Tufted Puffin: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	The cause(s) of population declines in Washington are unknown.	Conduct research to determine causes of population declines.	Current insufficient	Both
2	Climate change and severe weather	Reduced prey availability can result from changing ocean conditions (including climate change), overharvest, shoreline habitat loss, and other factors	Determine causes of declining prey availability; manage causes of forage fish decline to enhance prey populations	Current insufficient	Both
3	Overharvesting of biological resources	Entrapment in fishing nets	Determine ongoing sources of bycatch and manage those fisheries to reduce bycatch	Current insufficient	Both
4	Energy development and distribution	Mortality from oil spills	Expand safeguards to prevent oil spills	Current insufficient	Both

NOTE: Numbers are for reference only and do not reflect priority.

WESTERN GREBE (*Aechmophorus occidentalis*)

Conservation Status and Concern

The breeding and wintering populations of this species in Washington, which occur in freshwater and marine habitats, respectively, are strongly impacted by different groups of threats.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/declining	G5	S3B, S3N

Biology and Life History

Western Grebes are gregarious throughout the year. They nest in colonies that usually contain tens or hundreds of nests. Nesting and brood rearing extend from early June to late August. Brood size is usually one to three young. Chicks depart nests soon after hatching. Spring migration is mainly from late April to early May; fall migration extends from mid-September to November. Wintering birds occur in daytime flocks of up to hundreds or thousands of birds. Diet is mainly fishes and is opportunistic as to the species eaten. Aquatic invertebrates are also eaten. Prey are captured underwater by diving.



Photo: R. Gilbert

Distribution and Abundance

Nesting in Washington mainly occurs at several locations in Grant County, with single sites also known from Adams, Spokane, Okanogan, Lincoln, and possibly Ferry Counties. Overwintering birds are distributed throughout the Salish Sea, along the outer coast, and in nearby freshwater lakes. Size of the state's nesting population is not well known, but may number 1,000-2,000 adults, with most nesting at Potholes Reservoir. The wintering population in the state's inner marine waters has declined 99 percent since 1978 to 1979, with the population index from the 2014 annual winter survey being the lowest ($9,100 \pm 4,343$ birds) since surveys began.

Habitat

Large freshwater lakes, reservoirs, and marshes are inhabited during the summer breeding season, whereas primarily coastal marine areas with relatively sheltered waters are used in winter. Both types of habitats are occupied during spring and fall migration. Nesting sites usually contain at least several square kilometers of open water and areas of emergent vegetation. Nests are built in emergent vegetation.

References

- Storer, R.W. and G.L. Nuechterlein. 1992. Western and Clark's Grebes. *Birds of North America* 26: 1-24.
- Wahl, T.R. 2005. Western Grebe (*Aechmophorus occidentalis*). Pp 81-82 in T.R. Wahl, B. Tweit, and S.G. Mlodinow (eds.). *Birds of Washington: status and distribution*. Oregon State University Press, Corvallis, OR. 436 pp.

Western Grebe: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Major water drawdowns at reservoirs used by nesting colonies	Devise effective floating nest platforms; work with irrigation authorities to manage water levels to reduce impacts to grebes	Current insufficient	Both
2	Fish and wildlife habitat loss or degradation	Boater activity and boat wakes at nesting colonies can destroy nests, spill eggs, or cause gull predation	Identify wake-free zones near breeding colonies	Current insufficient	Both
3		Prey base appears to have declined in the Salish Sea.	Determine causes of declining forage fish availability; manage causes of forage fish decline to enhance prey populations	Current insufficient	Both
4	Energy development and distribution	Oil spills in the wintering range	Expand safeguards to prevent oil spills	Current insufficient	External
5	Overharvesting of biological resources	Bycatch in gillnet fisheries in the wintering range	Determine ongoing sources of bycatch and manage those fisheries to reduce bycatch	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

FALCONS, HAWKS, EAGLES

BALD EAGLE (*Haliaeetus leucocephalus*)

Conservation Status and Concern

This species has experienced recovery as a result of removal of DDT from most of its range.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Sensitive	Yes	Medium/increasing	G5	S4B, S4N

Biology and Life History

Bald Eagles nest in large trees, usually near marine shorelines, large lakes or rivers. They prey on fish, waterfowl, and small mammals, or scavenge. Many birds that nest in Canada and Alaska migrate south to overwinter in Washington concentrating on rivers with spawned-out salmon, especially chum. Bald Eagles generally first breed at about five to six years of age, and adults may not lay eggs every year. They commonly roost communally, especially in winter.



Photo: R. LeValley

Distribution and Abundance

The resident population was about 1500 breeding pairs as of the last comprehensive census conducted in 2005; up to 4,000 individuals overwinter in Washington. Bald Eagles nest primarily along marine shorelines and major rivers of western and northeastern Washington. Nests are rare or absent from the Columbia Basin and southeastern Washington, but overwintering birds can be locally common.

Habitat

Breeding habitat most commonly includes areas close to coastal areas, bays, rivers, lakes, reservoirs, or other bodies of water that reflect the general availability of primary food sources including fish, waterfowl, or seabirds. Nests are usually constructed in large trees. Tree species used for nesting vary and may include conifers and hardwoods. Bald Eagles return to their breeding territories year after year and may repair and use the same nest for many successive years or may construct alternate nests within the territory. Territories also typically contain large perch trees. In winter, Bald Eagles may roost at night in communal groups. Winter roosts are usually located in uneven-aged patches of trees in locations that are protected from wind and inclement weather.

References

- Seavey, J. R. 2005. Bald Eagle (*Haliaeetus leucocephalus*). Pp 111-112 in T.R. Wahl, B. Tweit, and S.G. Mlodinow (eds.). Birds of Washington: status and distribution. Oregon State University Press, Corvallis, OR. 436 pp.
- Stinson, D. W., J. W. Watson, and Kelly R. McAllister. 2007. Washington State Status Report for the Bald Eagle. Washington Department of Fish and Wildlife, Olympia. 86 + viii pp.

Bald Eagle: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Management decision needs	Improve federal rules to maintain more trees in various size and age classes within Bald eagle habitat	Provide landowners with incentives to maintain trees on their property	Current insufficient	External
2	Resource information collection needs	Location and site status data are not current	Participate in development of strategy to gather information that can be used to update the database	Nothing current - new action needed	Both
NOTE: Numbers are for reference only and do not reflect priority.					

FERRUGINOUS HAWK (*Buteo regalis*)

Conservation Status and Concern

This species is impacted by the loss and fragmentation of shrub-steppe and grasslands from agriculture and residential development and associated declines in distribution and abundance of its primary prey, jackrabbits and ground squirrels. In addition, direct sources of mortality include shooting, electrocution, and collision with wind turbines.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Threatened	Yes	Low/declining	G4	S2B

Biology and Life History

This species is migratory and arrives on the breeding areas from late April through July. Nests occur on small rock outcrops on the slope of steep hillsides or canyons or in isolated trees, such as junipers. Prey species include primarily jackrabbits and ground squirrels historically, with a recent shift to pocket gophers, reptiles, and insects. Following nesting, Ferruginous Hawks typically migrate to the eastern front of the Rocky Mountains to exploit abundant ground squirrels, followed by a subsequent migration to central California.



Photo: Bureau of Land Management

Distribution and Abundance

Washington State is on the northwestern edge of the species breeding range. Over 200 territories have been documented in Washington; Franklin and Benton Counties together host about 60 percent of the Ferruginous Hawk territories, and Grant, Walla Walla, Adams, and Yakima Counties have had 13 or more territories each. In 2002, only 20 percent of historical Ferruginous Hawk nesting territories in Washington were occupied, with many vacant for years. The current population size is unknown, but likely is very small.

Habitat

Integrity of shrub-steppe and grassland ecosystems in supporting abundant and diverse populations of ground squirrels and jackrabbits is critical to the recovery of this hawk.

References

- Bechard, M. J. and J. K. Schmutz. 1995. Ferruginous Hawk (*Buteo regalis*). Birds of North America. 172: 1-20.
- Richardson, S. A., A. E. Potter, K. L. Lehmkuhl, R. Mazaika, M. E. McFadzen, and R. Estes. 2001. Prey of ferruginous hawks breeding in Washington. Northwestern Naturalist 82:58–64.
- Watson, J. W. 2003. Migration and winter ranges of ferruginous hawks from Washington. Final Report. Washington Department of Fish and Wildlife, Olympia, Washington, USA.
<http://wdfw.wa.gov/publications/00131/>

Ferruginous Hawk: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Loss, degradation, and fragmentation of shrub-steppe foraging habitat and associated declines in distribution and abundance of major prey species, especially jackrabbits and ground squirrels.	Protect and restore shrub-steppe habitat	Current insufficient	Both
2	Fish and wildlife habitat loss or degradation	Human disturbance may cause nesting failure and nest abandonment	Protect nest sites from disturbance	Current insufficient	Both
3	Overharvesting of biological resources	Poisoning of ground squirrels, low prey prevents reproduction	Facilitate restoration projects; consider reclassifying some ground squirrels as Protected Wildlife	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

GOLDEN EAGLE (*Aquila chrysaetos*)

Conservation Status and Concern

This species is of concern due to declines in the distribution and abundance of its primary prey species, jackrabbits and ground squirrels; additional mortality factors include continued exposure to lead in the environment and collisions at wind energy facilities.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/unknown	G5	S3

Biology and Life History

The same nest sites are typically used year after year and the pair maintains one or more alternate nests. Preferred prey include medium to large-sized mammals and birds, including hares, rabbits, ground squirrels, and marmots with mountain beaver being an important prey source in western Washington. Nesting success varies by year and region.



Photo: J. Watson

Distribution and Abundance

Golden Eagles have a broad distribution throughout the mountainous areas of the state, especially in eastern Washington. Breeding is limited primarily to the Okanogan highlands, rainshadows of the Olympics and Cascades, the Blue Mountains along the Snake and Grande Ronde rivers, and the San Juan Islands. The resident population occurs at low densities in areas where suitable nest sites (cliffs and trees) are found in proximity to abundant prey. There are over 300 documented breeding territories in Washington, of which over 80 percent are in eastern Washington. Occupancy of these sites is not well understood and information on the number of sites occupied in a given year, as well as an estimate of abundance, are currently lacking.

Habitat

This species is found mostly in dry open forests of eastern Washington, shrub-steppe, canyonlands, in high-elevation alpine zones of all regions, and sparingly in clearcut areas in western Washington. It is associated with steep terrain, which often includes cliffs where nests occur. Nests are situated on cliff ledges, rocky outcrops, large trees, or human made structures, such as power poles and transmission towers. Most eastside nests are on cliffs; westside nests are above timberline or in very large trees that border on extensive clearcuts. Shrublands and grasslands, open meadows, avalanche chutes, talus fields and rock outcrops, bogs, recently burned areas, and clearcuts are used as hunting sites. Foraging habitat in shrub-steppe and grasslands have declined due to loss and degradation of these habitats from agriculture, human development, and overgrazing.

References

- Bosakowski, T. 2005. Golden eagle (*Aquila chrysaetos*). Pp 121 – 122 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Kochert, M.N., K. Steenhof, C.L. McIntyre, and E.H. Craig. 2002. Golden eagle (*Aquila chrysaetos*). Birds of North America 684: 1-44.

Golden Eagle: Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Loss, degradation, and fragmentation of shrub-steppe foraging habitat and associated declines in distribution and abundance of major prey species, especially jackrabbits and ground squirrels.	Protect and restore habitat; prey populations should be conserved by reducing control programs.	Current insufficient	Both
2	Energy development and distribution	Collisions at wind energy facilities	Implement measures to minimize mortality risks at wind energy facilities.	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

PEREGRINE FALCON (*Falco peregrinus*)

Conservation Status and Concern

This species has experienced a remarkable recovery and the population continues to increase across Washington.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Sensitive	Yes	Low/increasing	G4	S2B, S3N

Biology and Life History

Peregrine Falcons are predators of other birds ranging in size up to waterfowl and gulls. Peregrine Falcons are generally monogamous, and may form long-term pair bonds. They usually nest on a cliff near water, but as the species recovers and its range expands, they can also be found nesting on human-built structures (e.g. tall buildings, bridges).



Photo: R. LeValley

Distribution and Abundance

Breeds up to about 3000 feet elevation (sometimes higher) in nearly all parts of the state; highest densities are along the northern outer coast and San Juan Islands. Also found in Cascade Range foothills, along the Columbia River and associated with other water bodies in the Columbia Basin. Over 170 breeding territories have been documented as of 2014. This is an uncommon resident, migrant, and wintering species in western lowlands, and rare to uncommon summer resident and migrant in the mountains and eastern lowlands.

Habitat

Peregrine Falcons breed on cliffs, and occasionally tall buildings, bridges and other locations that offer security and a vantage point above surrounding terrain. They hunt primarily in areas of open cover types that include estuaries, agricultural fields, coastal beaches, water bodies, and in some urban areas.

References

- Anderson, C.M. and S.G. Herman. 2005. Peregrine Falcon (*Falco peregrinus*). Pp 126-127 in Wahl, T.R., B. Tweit, and S.G. Mlodinow (Eds.), Birds of Washington: status and distribution. Oregon State University, Corvallis, OR, USA. 436 pp.
- White, C.M., N.J. Clum, T.J. Cade, and G. Hunt. 2002. Peregrine Falcon (*Falco peregrinus*). The Birds of North America 660: 1-48.

Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Management decision needs	Need to down-list species	Status review	Current insufficient	WDFW

CRANES

SANDHILL CRANE (GREATER) (*Grus canadensis tabida*)

Conservation Status and Concern

The Washington population of Greater Sandhill Cranes numbers about 80 adult and sub-adult birds, with about 30 breeding pairs. Sandhill Cranes are long-lived, but have a low reproductive rate, and nests are vulnerable to predators, disturbance, and fluctuating water levels.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Endangered	Yes	Critical/increasing	G5, T4	S1B, S3N

Biology and Life History

Sandhill Cranes eat insects, rodents, snails, small reptiles and amphibians, nestling birds, the roots of aquatic plants, tubers, berries, seeds, and grains. The courtship of cranes includes elaborate rituals. Pairs return to the same nesting territories year after year and sometimes use the same nest repeatedly. Nests, which are built in emergent vegetation in shallow water or close to water, are a mound of plant material pulled up from around the site and anchored to surrounding vegetation. The young learn migratory routes from adults, and Washington birds migrate to the Central Valley of California. Reproductive rates are low and birds often mate for life.



Photo: R. LeValley

Distribution and Abundance

This species formerly nested at numerous sites throughout eastern Washington, and was extirpated for about 30 years; they currently breed at about six locations in Klickitat and Yakima Counties. The breeding population in Washington numbers only about 30 pairs, but has been slowly increasing.

Habitat

Sandhill Cranes live in wet meadows and grasslands, and they feed in grain fields and pastures. Breeding territories contain wetlands, grassy uplands, partially forested uplands, and wet meadows, and are sometimes surrounded by forest. Emergent vegetation is a key component of their preferred nesting areas. During migration and in winter they live in more open grassland, agricultural fields, and river valleys. Sandhill Cranes typically use habitats where they have clear views of their surroundings.

References

- Littlefield, C.D., and G.L. Ivey. 2002. Washington State Recovery Plan for the Sandhill Crane. Washington Department of Fish and Wildlife, Olympia, Washington.
- Tacha, T.C., S.A. Nesbitt, and P.A. Vohs. 1992. Sandhill crane (*Grus canadensis tabida*). *Birds of North America* 31: 1-24.

Sandhill Crane (Greater): Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Inadequate real-time information needed to manage small population	Aerial surveys of nesting territories	Current insufficient	Both
2	Resource information collection needs	Assess survival, recruitment	Analysis of banding data to assess recruitment/survival	Current insufficient	External
3	Agriculture and aquaculture side effects	Nests vulnerable to water-level changes	Enhance effectiveness of water management	Current insufficient	External
NOTE: Numbers are for reference only and do not reflect priority.					

SHOREBIRDS

MARBLED GODWIT (*Limosa fedoa*)

Conservation Status and Concern

Due to the extremely small size of the *beringiae* subspecies population and the localized area of foraging and roosting in coastal Washington, this species is vulnerable to oil spills or other actions that would degrade or impact its habitat. Human disturbance does not appear to be a concern.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/increasing	G5	S3N

Biology and Life History

The Marbled Godwit is one of the largest shorebirds in the world. In coastal areas, they use a variety of intertidal invertebrates that are extracted from mudflats. They nest in native prairie grasslands, wet meadows and similar cover types.

Distribution and Abundance

Three separate breeding regions are known in North America and both *fedoa* and *beringiae* subspecies likely occur in Washington. The *beringiae* subspecies breeds in a small area of the Alaska Peninsula. The estimated global population is 140,000 to 200,000, and this includes the *beringiae* population of about 2000. The latter subspecies is thought to overwinter between Washington and California, whereas the *fedoa* population from the northern Great Plains overwinters between central California and coastal Mexico. This species occurs primarily at Willapa Bay and Grays Harbor. The primary area for the species is northern Willapa Bay (they roost at the Tokeland Marina) and southern Grays Harbor (they roost at Westport). Considered a very rare visitor several decades ago, Marbled Godwit abundance has increased steadily and some recent counts have exceeded 1500 birds.



Photo: R. LeValley

Habitat

Typically associated with tidal mudflats and sandflats, but small numbers at times also use coastal beaches. In the Columbia Basin, where it is very uncommon, short grass areas, shorelines are used.

References

Buchanan, J.B. 2005. Marbled Godwit (*Limosa fedoa*). Page 149 in T. R. Wahl, B. Tweit, and S.G. Mlodinow (Eds.), Birds of Washington: status and distribution. Oregon State University, Corvallis, OR, USA. 436 pp.
Gratto-Trevor, C.L. 2000. Marbled Godwit (*Limosa fedoa*). The Birds of North America 492: 1-24.

Marbled Godwit: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1		Oil spill that impacts foraging area and fouls foraging birds	Maintain spill response effectiveness		Both
2	Resource information collection needs	Small population size	Clarify subspecies occurrence in Washington	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

RED KNOT (*Calidris canutus roselaari*)

Conservation Status and Concern

Limited information suggests the population has declined; its localized use of food resources in tidal areas along the flyway suggests it will be sensitive to climate change effects.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/declining	G4	S3N

Biology and Life History

Red Knots of the subspecies *roselaari* are found in Washington and occur primarily during spring migration. Spring migration occurs primarily in May. Red Knots are known to consume a variety of invertebrates, but they are considered bivalve specialists. Red Knots nest in Arctic and sub-arctic tundra where nests are situated on the ground.



Photo: J. Buchanan

Distribution and Abundance

The species is very local in its distribution, both in Washington and elsewhere along the flyway. It is found on the outer coast, almost exclusively in Willapa Bay and Grays Harbor; these sites are major stopovers along the Pacific Flyway and likely support a large proportion of the population. The population estimate in coastal Washington is about 17,000, making *roselaari* the least common of six global subspecies and one of the least common sandpipers to use the Pacific Flyway as its primary flyway. This subspecies breeds in northwestern Alaska and Wrangel Island, Russia and overwinters primarily at coastal locations in northwestern Mexico. Limited information suggests a decline in abundance in the last 35 years. Most autumn migrants bypass Washington; very rare in summer and winter, and in any season away from the outer coast.

Habitat

Primary foraging habitats include estuarine intertidal mud and sand flats; they will occasionally forage in pastures adjacent to estuaries during high tide. Red Knots roost primarily on sand islands and low marsh shorelines, but they also use sand spits, and rarely sandy beaches or pastures in or near estuaries.

References

- Chappell, C.B. 2005. Red Knot (*Calidris canutus*). Pp 152-153 in Wahl, T.R., B. Tweit, and S.G. Mlodinow (Eds.), Birds of Washington: status and distribution. Oregon State University, Corvallis, OR, USA. 436 pp.
- Harrington, B.A. 2001. Red Knot (*Calidris canutus*). The Birds of North America 563:1-32.

Red Knot: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Population appears to have declined; more information needed to assess risks, vulnerability, population status	Collect information to address threats	Current insufficient	Both
2		Oil spill that impacts foraging area and fouls foraging birds	Spill response effectiveness		Both
3	Invasive and other problematic species and genes	Spartina removal has been successful, but tideflat elevation has increased due to trapped sediments. This may have altered food resources.	Conduct experiments to restore tideflats to former elevation.	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

ROCK SANDPIPER (*Calidris ptilocnemis*)

Conservation Status and Concern

Studies predicting vulnerabilities of Rock Sandpipers to climate change indicate no change in risk associated with wintering and migration habitats; all breeding habitat exists outside Washington State, and does have expected increased risk associated with climate change.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/unknown	G5	S3N

Biology and Life History

Washington has migratory and wintering populations of Rock Sandpipers. Rock Sandpipers in Washington migrate to breeding sites on Pribilof and St. Matthew islands. In Washington, Rock Sandpipers usually aggregate in small flocks (or as singles), although in Alaska they aggregate in flocks of hundreds or even thousands. As might be indicated by the size and shape of their bill, Rock Sandpipers probe into rocky crevices and do not chip or pry prey from the surface of the rocks.



Photo: A.D. Wilson

Distribution and Abundance

Most Rock Sandpipers spend the winter in Alaska and British Columbia, and comparatively small numbers migrate as far south as California. The species is almost completely limited to outer coastal areas. Perhaps fewer than 100 to 200 birds overwinter in Washington, although survey efforts along coastal areas are impractical in many areas, so this estimate is uncertain. The abundance of Rock Sandpipers at Christmas Bird Count locations south of southern British Columbia declined beginning in the early 1980s, and this coincided with increases in abundance in Alaska which suggested a range contraction.

Habitat

The Rock Sandpiper is almost exclusively associated with rocky shoreline habitats. These areas include rock shorelines and rock jetties. They are sometimes found on sand beaches in very small numbers. Large numbers of Rock Sandpipers use mudflats in Alaska and also roost on floating ice there.

References

- Andres, B.A., P.A. Smith, R.I.G. Morrison, C.L. Gratto-Trevor, S.C. Brown, and C.A. Friis. 2012. Population estimates of North American shorebirds, 2012. Wader Study Group Bull. 119: 178-194.
- Galbraith, H., D.W. DesRochers, S. Brown, J.M. Reed. 2014. Predicting vulnerabilities of North American shorebirds to climate change. PLoS ONE 9(9):e108899. Doi:10.1371/journal.pone.0108899
- Ruthrauff, D.R. 2014. On the frozen edge: environmental and physiological constraints in the life history of a northerly-wintering shorebird. PhD Thesis, University of Groningen, Groningen, The Netherlands.

Rock Sandpiper: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Lack of information about abundance in Washington	Work with partners on surveys to understand species distribution and abundance	Current insufficient	Both
2	Resource information collection needs	Trends in populations are unknown	Conduct monitoring and demographic studies on the breeding grounds to understand population trend	Unknown	External
NOTE: Numbers are for reference only and do not reflect priority.					

UPLAND SANDPIPER (*Bartramia longicauda*)

Conservation Status and Concern

Habitat loss most likely contributed to population decline of this species in Washington. Incomplete information on distribution prevents meaningful protection should there be other small populations of breeding birds in the state. Lack of records suggests it no longer breeds in Washington.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Endangered	Yes	Critical/unknown	G5	SHB

Biology and Life History

The nest is situated on the ground in wet meadow vegetation where the loosely woven cup of grasses is well concealed. This species is inconspicuous, and is typically detected when giving courtship calls in flight or while on a perch such as a wooden fence post. Upland Sandpipers feed almost exclusively on insects, especially grasshoppers and crickets, weevils, and other small invertebrates gathered from or close to the ground. Occasional seeds of weeds, grasses and waste grains, including wheat, are also consumed.



Photo: G. Lasley

Distribution and Abundance

This species may be extirpated as a breeder in the state, although comprehensive surveys in potential habitat away from documented historical breeding area have not been conducted. Found as a breeder in eastern Washington, the Upland Sandpiper's known distribution in the state has always been very limited. Breeding was documented at Turnbull NWR and in the Spokane Valley. Regular observations were made in this area from the mid-1950s into the late-1980s. Virtually all habitat in the Spokane Valley has been converted. Migrants are rare in Washington.

Habitat

This species nests in wet meadows with relatively tall grasses. During migration, it is found in a variety of open habitats with relatively short or sparse vegetation such as plowed fields, airports, golf courses, beach dunes, and sod farms.

References

- Houston, C.S. and D.E. Bowen, Jr. 2001. Upland Sandpiper (*Bartramia longicauda*). The Birds of North America 580:1-32.
- Mlodinow, S.G. 2005. Upland Sandpiper (*Bartramia longicauda*). Page 145 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.

Upland Sandpiper: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Need to assess current occurrence; this was never done comprehensively	Need to assess current occurrence; this was never done comprehensively	Current insufficient	Both
2	Resource information collection needs	Need to assess current distribution and protection status of habitat.	Need to assess current distribution and protection status of habitat.	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

WESTERN SNOWY PLOVER (*Charadrius alexandrinus nivosus*)

Conservation Status and Concern

Washington's population is very small and vulnerable to a variety of impacts such as predation, adverse weather, shoreline modification, dune stabilization, and recreational activities.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Threatened	Endangered	Yes	Low/increasing	G3	S1

Biology and Life History

Snowy Plovers nest on the ground in nest scrapes they create. Clutch size is usually three. Young are precocial and leave the nest soon after hatching; they are tended by both sexes (or male only), and the female often then abandons its first mate and brood within a few days to renest with a new mate. Predation by gulls, Common Raven, Red Fox, skunk, Raccoon, and/or Coyote may result in a high rate of clutch loss in some areas.



Photo: C. Bowdish

Distribution and Abundance

The Pacific coast breeding population extends from Washington to northwestern Mexico; some are found farther south during winter. In Washington, Snowy Plovers are found only in Pacific and Grays Harbor Counties. The Washington population consists of less than 50 adult birds, and is dependent on immigration from Oregon. Populations are responding to intensive conservation efforts, but viability analysis indicates that the Pacific coast population is unlikely to reach the federal recovery objective of 3,000 birds.

Habitat

In Washington, Snowy Plovers are found (in any season) primarily above the high tide line on coastal beaches, sand spits, dune-backed beaches, and sparsely vegetated dunes. Nests are on the ground on broad open beaches or salt or dry mud flats, where vegetation is sparse or absent (small clumps of vegetation are used for cover by chicks).

References

- Pearson, S.F., C. Sundstrom, B. Hoenes, and W. Ritchie. 2014. Washington State Snowy Plover Population Monitoring, Research, and Management: 2013 Nesting Season Research Progress Report. Washington Department of Fish and Wildlife, Olympia, Washington.
- U.S. Fish and Wildlife Service (USFWS). 2007. Recovery plan for the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*). U.S. Fish and Wildlife Service, Sacramento, California.
- Washington Department of Fish and Wildlife. 1995. Washington State recovery plan for the Snowy Plover. Olympia, Washington.

Western Snowy Plover: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Human disturbance; beach walkers, pets, cars	Expand efforts to reduce disturbance by limiting human access to areas used by plover, restrict pets from breeding areas, limit vehicle traffic along beaches used by birds	Current insufficient	Both
2	Invasive and other problematic species and genes	Nest predation by corvids	Control nest predation; use nest exclosures and other measures	Current sufficient	Both
3	Fish and wildlife habitat loss or degradation	Dune stabilization and shoreline modification contributes to reduced nest success	Land use should be suitable for shorelines to avoid the need to secure infrastructure from natural processes	Current insufficient	Both
4	Resource information collection needs	Ongoing surveys and nesting protection measures every year	Annual surveys, both breeding and winter.	Current sufficient	Both

PIGEONS

BAND-TAILED PIGEON (*Patagioenas fasciata*)

Conservation Status and Concern

The band-tailed Pigeon population, which is reliant on upland forests and limited mineral sources in western Washington, has declined due to a combination of factors.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/declining	G4	S3S4B, S4N

Biology and Life History

Band-tailed Pigeons in Washington are presumably monogamous, and most clutches have one egg; however, some pairs may nest up to three times a year depending on weather conditions. In some years, the protozoan *Trichomoniasis gallinae* contributes to increased mortality of Band-tailed Pigeons, and is passed directly from one bird to another through food, water, and other means. Band-tailed Pigeons seek a mineral supplement to their diet of berries, which contains few minerals. Mineral sites are important for band-tailed Pigeons, by providing needed sodium (and possibly calcium) during the nesting season. They are site-faithful to breeding areas, which are usually in proximity to mineral sources, but flocks can be nomadic depending on food availability.



Photo: R. LeValley

Distribution and Abundance

Band-tailed Pigeons in Washington are found primarily west of the Cascades during spring and summer. Direct population estimates of Pacific Coast Band-tailed Pigeons are extremely difficult to obtain because of poor visibility and inaccessibility at use sites. Breeding Bird Survey results indicate that the trend since 1968 has decreased two percent per year; results of a mineral site survey since 2003 have been inconclusive. Population declines have led to very restrictive hunting regulations since 1990 in the Pacific Coast states, and the season was closed in Washington from 1991 to 2001. The size of Washington's breeding population is unknown.

Habitat

Band-tailed Pigeons nest primarily in conifers, occasionally in hardwoods and shrubs, within closed canopy conifer, or mixed hardwood and conifer forests. Food resources include berry- and nut-producing trees and shrubs such as cascara, elderberry, wild cherry, huckleberry, and madrone. Habitats for Band-tailed Pigeons have been influenced by timber harvest and management of clear cuts to reduce forage species. Less than 40 mineral sites used by Band-tailed Pigeons have been identified in Washington, and many are in private ownership without protection from loss or degradation.

References

Pacific Flyway Council 2010. Pacific Flyway management plan for the Pacific Coast population of band-tailed pigeons. Pacific Coast Band-tailed Pigeon Subcommittee, Pacific Flyway Study Committee [c/o USFWS], Portland, Oregon.

Band-Tailed Pigeon: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Management Decision needs	Detrimental impacts of timber management	Provide PHS band-tailed pigeon habitat management guidelines to timber companies	Current insufficient	Both
2	Resource information collection needs	Unknown use of alternate mineral sites	Develop telemetry study to document new mineral sites	Current insufficient	Both
3	Agriculture and aquaculture side effects	Loss of foraging habitat due to broadleaf / shrub suppression in managed forests	Research to quantify forage distribution, abundance, and trends	Current insufficient	Both
4	Fish and wildlife habitat loss or degradation	Loss of mineral sites due to development	Acquire / protect existing mineral sites	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

CUCKOOS

YELLOW-BILLED CUCKOO (*Coccyzus americanus*)

Conservation Status and Concern

This species hasn't bred in Washington since about 1940 and has been a very rare migrant and summer resident since then. Recovery efforts are probably best directed at remnant nesting habitats still occupied in the southwest U.S.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Candidate	Candidate	Yes	Extirpated except as a rare migrant/declining	G5	SH

Biology and Life History

A migratory species, Yellow-billed Cuckoos begin arriving in western North America in mid- to late May. Most nesting occurs between June and early August, but can extend from late May until late September. This species usually builds its own nests and cares for its own young. In the west, nests are often placed in willows, cottonwoods, and shrubs. Two clutches may be laid in years of good food supply. Females occasionally lay their eggs in the nests of other birds. Diet consists mainly of large insects such as caterpillars, grasshoppers, katydids, beetles, and crickets, with small vertebrate prey also taken.



Photo: US Forest Service

Distribution and Abundance

Yellow-billed Cuckoos nest across much of the eastern and central U.S. and parts of Canada, Mexico, and the Caribbean, and overwinter in the northern three-quarters of South America. Breeding also once occurred over much of the western U.S., but is now largely restricted to a few areas of the southwest after major population declines. The species formerly bred uncommonly in parts of western Washington, but is now a very rare migrant statewide, with single records in 4 years between 2000 and 2014. Breeding probably ended in the state by about 1940.

Habitat

Yellow-billed Cuckoos display a strong preference for large continuous riparian zones with cottonwoods and willows. In Washington, nesting also took place in fir woodlands and open brushy hillsides.

References

- Tweit, B. 2005. Yellow-billed cuckoo (*Coccyzus americanus*). Page 210 in T.R. Wahl, B. Tweit, and S.G. Mlodinow(eds.). Birds of Washington: status and distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- U.S. Fish and Wildlife Service. 2013. Endangered and threatened wildlife and plants; proposed threatened status for the western distinct population segment of the yellow-billed cuckoo (*Coccyzus americanus*). Federal Register 78:61622-61666.

Yellow-Billed Cuckoo: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Continue to document records of Cuckoos in Washington	Work with the birdwatching community to continue documenting sightings of cuckoos in Washington	Current insufficient	Both
2	Fish and wildlife habitat loss or degradation	Loss and degradation of riparian forests are a broad problem across the west	No management activities targeting this species are currently conducted due to its scarcity in the state, although broader efforts to protect and restore riparian forests would perhaps be beneficial	Nothing current - new action needed	Both
NOTE: Numbers are for reference only and do not reflect priority.					

OWLS

BURROWING OWL (*Athene cunicularia*)

Conservation Status and Concern

This species is associated with shrub-steppe and grassland habitats and has experienced a contraction of its range and decline in numbers due to loss of habitat and persecution of mammalian species that provide earthen burrows that owls use.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Candidate	Yes	Low/declining	G4	S2B

Biology and Life History

Burrowing Owls are dependent upon abandoned burrows created by mammals for nesting, food caching and roosting in shrub-steppe and grasslands. Each spring, pairs return to the same burrows they inhabited previously, if still available, and defend the immediate area around the burrow entrance from other Burrowing Owls. Perches are important for the early detection of predators and potential prey. The diet includes small mammals and insects.



Photo: R. LeValley

Distribution and Abundance

This species uses shrub-steppe and grassland habitats in eastern Washington where it is an uncommon breeder; it is extremely rare during migration in western Washington. Burrowing Owl declines in Washington (based on Breeding Bird Survey data for 1968 through 2005) are probably due to loss of native grassland and shrub-steppe and eradication of burrowing mammals such as ground squirrels, Yellow-bellied Marmots, and American Badgers. Burrowing Owls are migratory, although some regularly overwinter in Washington. The size of Washington's breeding population is unknown.

Habitat

Burrowing Owls are inhabitants of shrub-steppe and steppe and use abandoned mammal burrows for nesting. Habitats include open grasslands, especially prairie, plains, and savanna, sometimes other open areas such as vacant lots near human habitation or airports. This owl spends much time on the ground or on low perches such as fence posts or dirt mounds.

References

- Haug, E. A., B. A. Millsap, and M. S. Martell. 1993. Burrowing owl (*Speotyto cunicularia*). Birds of North America 61: 1-20.
- Washington Department of Fish and Wildlife. 2013. Threatened and Endangered Wildlife in Washington: 2012 Annual Report. Washington Department of Fish and Wildlife, Olympia.

Burrowing Owl: Key Conservation Threats and Actions

STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD	
1	Agriculture and aquaculture side effects	Cultivation of grasslands and native prairies destroys nesting burrows and foraging habitat, degrades habitat quality, and may increase vulnerability to predators	Work with land owners to restore native vegetation and conserve local populations of burrowing mammals around breeding colonies of owls. Implement voluntary agreements and conservation easements to conserve habitat.	Current insufficient	Both
2	Overharvesting of biological resources	Decline in burrowing mammals due to poisoning, trapping, shooting.	Reduce persecution of burrowing mammals through regulation, outreach and education.	Current insufficient	Both
3	Resource information collection needs	Conduct systematic, periodic surveys	Conduct periodic, systematic surveys of populations to determine status and trends.	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

FLAMMULATED OWL (*Otus flammeolus*)

Conservation Status and Concern

Flammulated Owls are probably impacted by habitat loss (and degradation) and fire suppression in dry forest landscapes.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/unknown	G4	S3B

Biology and Life History

The Flammulated Owl is the only Neotropical migrant owl in North America. It breeds in western North America and migrates to Mexico and Guatemala. In Washington, it is found in dry forests where pairs occupy small territories. Prey items are generally dominated by insects, including moths. The maximum recorded longevity of a Flammulated Owl in the wild is about 7 to 8 years. Rates of nest success and productivity in Washington are not known.



Photo: J. Patterson

Distribution and Abundance

This species appears to be uncommon and is found in ponderosa pine and other dry forest regions on the eastern slope of the Cascade Range, the Kettle Range, Selkirk Mountains, and Blue Mountains. Surveys conducted in Washington found the species most often in ponderosa pine and dry Douglas-fir forests, but also in other forest types. Studies from other parts of the species' range have concluded the species may be somewhat more common than originally thought. The size of Washington's breeding population is unknown.

Habitat

Most strongly associated with mid- and late-seral ponderosa pine forests with an open canopy cover, a presence of cavity trees or snags, and at least some areas of dense foliage (perhaps used as protective cover) within an otherwise generally open understory.

References

- Buchanan, J.B. 2005. Flammulated Owl (*Otus flammeolus*). Pp 211-212 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- McCallum, D.A. 1994. Flammulated Owl (*Otus flammeolus*). The Birds of North America 93:1-24.

Flammulated Owl: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Effects of fire suppression	Forest restoration	Current insufficient	Both
2	Agriculture and aquaculture side effects	Loss of ponderosa pine forest	Habitat protection	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

GREAT GRAY OWL (*Strix nebulosa*)

Conservation Status and Concern

Little is known about this species, and although impacts and range contraction may have occurred over the last century, current threats and impacts are not understood.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Monitor	No	Low/unknown	G5	S2B

Biology and Life History

This is one of the least-studied owl species in Washington. Research in other regions indicates that the diet of this forest-dwelling owl is dominated by voles and pocket gophers. Most Great Gray Owls breed by 3 years of age, although some pairs may not breed in years of low prey abundance.



Photo: A. List

Distribution and Abundance

This is a rare local breeder in parts of northern Washington such as the Okanogan Highlands (and perhaps elsewhere), and a rare winter visitor elsewhere in the state, occasionally including lowland areas. Records from one century ago suggest the species formerly nested at low elevations in western Washington. The population in Washington is very small (likely fewer than 20 to 40 territories) and is thought to be stable.

Habitat

Mature conifer forests of Douglas-fir, western larch, ponderosa pine, Engelmann spruce, subalpine fir, and lodgepole pine adjacent to foraging areas in openings and wet meadows, sometimes in association with quaking aspen are cover types used by this species. Great Gray Owls nest in broken-topped snags, clusters of mistletoe-infected branches, and nests built by other species (for example, Northern Goshawk).

References

- Anderson, C.M. and K. Woodruff. 2005. Great Gray Owl (*Strix nebulosa*). Pp 219-220 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Bull, E.L. and J.R. Duncan. 1993. Great Gray Owl (*Strix nebulosa*). The Birds of North America 41:1-16.

Key Conservation Threats and Actions

STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Recent threats not clear	Conduct surveys of habitat and owls to increase knowledge	External

NORTHERN SPOTTED OWL (*Strix occidentalis caurina*)

Conservation Status and Concern

Impacts from habitat loss are now exacerbated by effects of competition with Barred Owls for prey and habitat. As the population declines and becomes even smaller, other threat factors may become more relevant.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Threatened	Endangered	Yes	Low/declining	G3T3	S1

Biology and Life History

The Spotted Owl is relatively long-lived, has a long reproductive life span, invests significantly in parental care, and exhibits high adult survivorship. The majority of pairs do not breed every year. Courtship usually begins in February or March, and females typically lay eggs in late March or April. Spotted Owls have large home ranges and in those areas use a number of prey species, chief among them the Northern Flying Squirrel, but also Wood Rats, Snowshoe Hares and other small mammals. Spotted Owls are at a competitive disadvantage to the more generalist Barred Owl which has expanded its range to now include the entire distribution of the northern spotted owl.



Photo: R. LeValley

Distribution and Abundance

Formerly a widespread and uncommon resident of coniferous forests in western Washington and the east slope of the Cascade Range, the Spotted Owl is now rare throughout Washington. It has been very rare in southwestern Washington for several decades and no longer breeds in the Puget Lowlands. The population of Spotted Owls in Washington continues to decline, and some landscapes where long-term monitoring has been conducted now support several or fewer pairs. About 1200 territories have been documented in Washington; trend data suggest that perhaps 25 percent or less of these remain occupied.

Habitat

The Spotted Owl inhabits mid- and late-seral coniferous forests. Typical habitat characteristics include: generally high canopy closure; complex canopy structure involving trees of multiple age or size classes; large decaying trees and/or snags; and, in most forest areas, a high volume of downed wood. The presence of mistletoe infection is important in the eastern Cascade Range. The species occurs up to about 5000 feet in elevation.

References

- Buchanan, J.B. 2005. Spotted Owl (*Strix occidentalis*). Pp 217-218 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Gutiérrez, R.J., A.B. Franklin, and W.S. LaHaye. 1995. Spotted Owl (*Strix occidentalis*). The Birds of North America 179:1-28.

Northern Spotted Owl: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Invasive and other problematic species and genes	Competition with Barred Owls	Management of Barred Owl population to reduce competition	Current insufficient	External
2	Fish and wildlife habitat loss or degradation	Loss of habitat	Habitat protection		External
NOTE: Numbers are for reference only and do not reflect priority.					

SHORT-EARED OWL (*Asio flammeus*)

Conservation Status and Concern

This species is thought to be experiencing a range-wide, long-term decline in North America. The primary threat is habitat loss, fragmentation and degradation.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	Yes	Low/unknown	G5	S2S3B, S3N

Biology and Life History

These are probably the most diurnal of owls and may be active from late afternoon until nightfall, or at dawn, also hunting at night. When Short-eared Owls find areas of especially abundant resources they may breed in large numbers and produce super-normal clutches.

Distribution and Abundance

This is an uncommon winter visitor, migrant, and summer resident in open lowland habitats in eastern Washington, with a much more restricted distribution in western

Washington where breeding is considered rare. In western Washington, they are now scarce or absent in many areas where formerly encountered (e.g. estuaries, prairies, coastal dunes). Similarly, in eastern Washington they are uncommon, although comprehensive trend data are lacking. Populations of Short-eared Owls are naturally irruptive and nomadic, compounding the difficulty in detecting population changes. There is no population estimate for this species in Washington.



Photo by S. Garvie

Habitat

Short-eared Owls breed in landscapes with extensive areas of open land with low vegetation. Cover types used include fresh and saltwater marshes, dunes, prairies, grassy plains, old fields, and meadows. Breeding habitat may also be occupied by wintering birds. Short-eared Owls tend to congregate and roost communally in the winter often in sheltered sites near hunting areas.

References

- Booms, T.L., G.L. Holroyd, M.A. Gahbauer, H.E. Trefry, D.A. Wiggins, D.W. Holt, J.A. Johnson, S.B. Lewis, M.D. Larson, K.L. Keyes, and S. Swengel. 2014. Assessing the status and conservation priorities of the short-eared owl in North America. *Journal of Wildlife Management* 78: 772-778.
- Wahl, T.R. 2005. Short-eared Owl (*Asio flammeus*). Pp 221-222 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) *Birds of Washington: Status and Distribution*. Oregon State University Press, Corvallis, OR, USA. 436 pp.

Short-Eared Owl: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Habitat is converted, degraded or fragmented.	Evaluate and determine the need to actively manage for Short-eared Owls.	Current insufficient	WDFW
2	Resource information collection needs	Assess the need for more rigorous inventory and monitoring.	Establish and implement methods to monitor populations, determine seasonal and annual movements.	Current insufficient	WDFW
NOTE: Numbers are for reference only and do not reflect priority.					

WESTERN SCREECH OWL (*Otus kennicottii macfarlanei*)

Conservation Status and Concern

This species appears to have been impacted by the presence of Barred Owls in western Washington. More information is needed to assess whether its population has declined or if suspected changes reflect only behavioral response to Barred Owls.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	None	No	Unknown	G5	S4

Biology and Life History

This small resident owl is strongly associated with coniferous forests although other forest types are also used. It preys mainly on small mammals (mice and shrews), birds and insects. Clutch size averages three to four eggs. Incubation is about 26 days.

Distribution and Abundance

This owl was formerly a fairly common resident statewide except in the Columbia Basin. There are no population estimates, but this species' population likely ranged to tens of thousands as recently as the 1980s.

Recent surveys in southwestern Washington and published information from Bainbridge Island and British Columbia indicate it has either experienced a substantial population decline or has changed its vocalization behavior (i.e., reducing its detectability), likely due to increased predation risk by Barred Owls. Other information regarding the abundance or distribution of this species is lacking and population status is unknown.



Photo: R. Magnuson

Habitat

This species is found in many forest types, from urban to rural and including riparian zones and forests dominated by Douglas-fir, western hemlock, Sitka spruce and grand fir. They are virtually absent from the Columbia Basin but should be expected to occur there if suitable conditions develop along riparian zones or in small woodlots near human dwellings.

References

- Buchanan, J.B. 2005. Western Screech Owl (*Otus kennicottii*). Pp 212-213 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Cannings, R.J. and T. Angell. 2001. Western Screech Owl (*Otus kennicottii*). The Birds of North America 597:1-20.
- Elliott, K. 2006. Declining numbers of Western Screech-owl in the lower mainland of British Columbia. British Columbia Birds 14: 2-11.

Western Screech Owl: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Invasive and other problematic species and genes	Potential impacts from Barred Owls	Management of Barred Owl population to reduce predation risk	Nothing current - new action needed	External
2	Invasive and other problematic species and genes	Potential impacts from Barred Owls	Conduct surveys to evaluate species response to Barred Owl presence or removal	Nothing current - new action needed	Both
NOTE: Numbers are for reference only and do not reflect priority.					

WOODPECKERS

LEWIS' WOODPECKER (*Melanerpes lewis*)

Conservation Status and Concern

This species may be impacted by habitat loss and effects of fire suppression practices. Salvage harvest of trees in recently-burned forest may preclude or limit breeding in such areas. Historically, breeding records included many areas in western Washington, but there have been no records for decades.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/declining	G4	S2S3

Biology and Life History

Lewis' Woodpecker prefers snags of advanced decay and softer woods (e.g., cottonwood, aspen) for nesting. This species rarely drills bark, as it lacks the physical structural integrity to excavate or forage in harder woods. Its main diet is insects in spring and summer, fruit and berries in late summer/fall, and conifer seeds and acorns in winter. They are strongly site-faithful, and a life-long pair bond is suspected.

Distribution and Abundance

This species is uncommon in summer and generally rare in winter in eastern Washington. It is rare in western Washington. Many individuals from Washington appear to move southward for the winter. Breeding Bird Survey data indicate only a slight decline between 1999 and 2009. Breeding season territories reported to vary between 2.5 to 15 acres in the Blue Mountains. Foraging ranges broadly overlap and large numbers may forage together where there is a local abundance of food. The size of Washington's breeding population is unknown.



Photo: Wikimedia Commons

Habitat

Lewis' Woodpecker is typically restricted to lower elevation forests. Breeds in tree cavities in ponderosa pine forests and oak woodlands with open canopy (e.g. less than 30 percent canopy cover), as well as riparian cottonwood with a brushy undergrowth (e.g., sage brush, bitterbrush) with larger (greater than 20 inches dbh) snags of later decay stages. In addition, it often nests in burned forest. Birds that overwinter in eastern Washington often associated with oak woodlands and commercial orchards. During winter, food supply is the most important aspect of habitat selection, and is dependent on conifer seed, mast and nut production.

References

- Lewis, J.C., M. Whalen, and E.A. Rodrick. 2002. Lewis' Woodpecker. Priority Habitats and Species, Vol. IV: Birds. Washington Dept. of Fish and Wildlife, Olympia, Washington.
- Tobalske, B.W. 1997. Lewis' Woodpecker. Birds of North America 284: 1-28.
- Zhu, X., D.S. Srivastava, J.N.M. Smith, and K. Martin. 2012. Habitat selection and reproductive success of Lewis' woodpecker (*Melanerpes lewis*) at its northern limit. PLoS ONE 7(9): e44346. DOI: 10.1371/journal.pone.0044346

Lewis' Woodpecker: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Conversion to agriculture and development. Habitat fragmentation may isolate remaining populations. Urban-wildland interface and clearing of forest habitats (cottonwood, low elevation ponderosa pine) in/near human habitation	Use land acquisitions, conservation easements and landowner agreements to protect significant forest. Work with county planners to establish buffers from habitat. Work with landowners to thin dense ponderosa pine stands to release, while enhancing oak stands	Nothing current - new action needed	Both
2	Fish and wildlife habitat loss or degradation	unknown population size and extent	Understand and map forest burned areas, low elevation open pine stands and cottonwoods to determine source habitats and landscapes	Current insufficient	Both
3	Agriculture and aquaculture side effects	Loss of mature and old trees with cavities harvested and snag habitat felled for safety reasons	Restore: open ponderosa pine conditions; natural fire regimes; maintain and recruit larger diameter snags; snag distribution should be small clumps; retain large live cottonwoods	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

WHITE-HEADED WOODPECKER (*Picoides albolarvatus*)

Conservation Status and Concern

White-headed Woodpeckers are probably impacted by habitat loss (and degradation) and fire suppression in dry forest landscapes.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/declining	G4	S2S3

Biology and Life History

This species has been considered by some to be an obligate of ponderosa pine (or other long-needle pine) forests, but in some cases it has been reported associated with other forest types. Pine seeds are a major part of its diet, especially in fall and winter. They also consume a variety of insects and other invertebrates. White-headed Woodpeckers use both live and dead trees for foraging and nesting. In some areas, individuals may descend to lower elevations during winter, and this is reflected in annual home range estimates some of which exceed several hundred acres.



Photo: R. Gilbert

Distribution and Abundance

Occupies dry forests in the eastern Cascade Range; also found east of the Okanogan River and in the Blue Mountains. Except for a small area in southern British Columbia, northern Washington represents the northwestern extent of the species' range. It is uncommon, and a population estimate is not available.

Habitat

This species uses conifer forests dominated by ponderosa pine, Douglas-fir, and occasionally other tree species such as aspen. Most areas are characterized by wide tree spacing which produces an open canopy. It was associated with large-diameter trees and snags in some studies, but recent work also indicates use (including nesting) of smaller trees and snags retained in clearcut harvest units.

References

- Garrett, K.L., M.G. Raphael, and R.D. Dixon. 1996. White-headed Woodpecker (*Picoides albolarvatus*). Birds of North America 252:1-24.
- Leach, R.H. 2005. White-headed Woodpecker (*Picoides albolarvatus*). Pp 239-240 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.

White-Headed Woodpecker: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Effects of fire suppression	Forest restoration	Current insufficient	Both
2	Resource information collection needs		Evaluate response of species to dry forest management and restoration efforts	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

PERCHING BIRDS

LOGGERHEAD SHRIKE (*Lanius ludovicianus*)

Conservation Status and Concern

This species is strongly associated with shrub-steppe in Washington and has likely experienced a population decline in accordance with loss and conversion of shrub-steppe habitat.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Candidate	Yes	Low/stable	G4	S3B

Biology and Life History

This passerine is a predator of lizards, small mammals, small birds, and insects. It impales prey on thorns; prey may be left at such sites for later consumption. Loggerhead Shrikes have small territories, but are generally found in low densities. They hunt by watching from high perches, then flying swiftly down after prey.

Distribution and Abundance

This is a local summer resident in eastern Washington; it is rare there during winter. There are no population estimates for the species in Washington. Breeding Bird Survey data indicate a slight but non-significant downward trend in Washington for the period 1966 to 2012.

Habitat

They breed in open country, including shrub-steppe and grasslands, where there are scattered tall shrubs, fence posts, utility wires, or other lookout posts. Loggerhead Shrikes generally nest in dense, thorny trees or shrubs. The size of Washington's breeding population is unknown.



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Photo: R. LeValley

References

- Wahl, T.R. 2005. Loggerhead Shrike (*Lanius ludovicianus*). Pp 254-255 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*). The Birds of North America 231:1-28.

Loggerhead Shrike: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	conversion of shrub-steppe habitat; most of impact has already occurred; amount of continuing impact uncertain	Restoration of degraded or lost habitat; protection of existing habitat	Current insufficient	Both
2		Loss of sagebrush from wildfire	Reduce wildfire risk and prevent establishment of exotic plant species after fires	Current insufficient	Both
3	Resource Information needs	Do BBS results accurately reflect actual Washington population	Conduct comprehensive surveys	Current insufficient	WDFW

NOTE: Numbers are for reference only and do not reflect priority.

OREGON VESPER SPARROW (*Pooecetes gramineus affinis*)

Conservation Status and Concern

Due to loss and degradation of habitat this subspecies is now in danger of extirpation in Washington.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Candidate	Yes	Low/declining	G5T3	S1B

Biology and Life History

This ground-dwelling species breeds in dry grassland and open habitats (e.g., lowland prairies, some airfields) in western Washington. They build a bulky, loose, cup-like nest of grasses and rootlets on the ground in a small depression, often near the base of a grass clump, weed, or shrub. The female typically lays three to five eggs in mid-May, and incubates them for 11 to 13 days. The young fledge in 7 to 12 days, and pairs commonly raise two broods per season. They are often seen in loose flocks before fall migration.



Photo: ODFW

Distribution and Abundance

The Oregon Vesper Sparrow subspecies (*P. g. affinis*) has a restricted breeding range that includes southwestern British Columbia, western Washington, western Oregon, and northwestern California. It is migratory and overwinters from central California west of the Sierra Nevadas to northwestern Baja California, Mexico. It is now limited in Washington to remnant prairies and grasslands in Pierce, Thurston, and Skagit Counties, with smaller numbers on islands in the lower Columbia River and grasslands on San Juan Island; a few may still breed in eastern Clallam County and near Shelton (Mason County). The size of Washington's breeding population is probably less than 500 individuals.

Habitat

Breeding territories at Joint Base Lewis-McChord were in areas of high quality prairie supporting intact Idaho fescue near prairie edge. Size of the prairie appears to be an important factor in site selection, with only large prairies occupied now. In western Oregon, they use areas with extensive grass and weed cover, or in lightly grazed pastures with scattered shrubs and grass heights of less than 1 to 2 feet tall.

References

- Altman, B. 2011. Historical and current distribution and populations of bird species in Prairie-Oak habitats in the Pacific Northwest. *Northwest Science* 85:194-222.
- Mlodinow, S.G. 2005. Vesper Sparrow *Pooecetes gramineus*. Pp 326-327 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) *Birds of Washington: Status and Distribution*. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Smith, M.R., P.W. Mattocks, Jr., and K.M. Cassidy. 1997. Breeding birds of Washington state: location data and predicted distribution. In Cassidy, K.M., C.E. Grue, M.R. Smith, and K.M. Dvornich (eds.). *Washington state GAP analysis- final report*. Vol. 4 Seattle Audubon Society Publications in Zoology No. 1, Seattle, Washington.

Oregon Vesper Sparrow: Key Conservation Threats and Actions

STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD	
1	Fish and wildlife habitat loss or degradation	Conversion to agriculture and development. Habitat loss isolates remaining populations	Use land acquisitions, conservation easements and landowner agreements to protect significant habitat	Current insufficient	Both
2	Fish and wildlife habitat loss or degradation	Conversion to agriculture and development. Habitat loss isolates remaining populations	Use land acquisitions, conservation easements and landowner agreements to protect significant habitat	Current insufficient	Both
3	Invasive and other problematic species and genes	Invasive Scot's broom and native conifer forest succession (due to alteration of prairie fire regime)	Restore and manage degraded habitat at prairies; includes prescribed fire and coordinating with airport vegetation management	Current insufficient	Both
4	War, civil unrest and military exercises	Military training exercises disturbs nesting and degrades/destroys habitat	Coordination with Joint Base Lewis-McChord; modify access to known breeding habitat.	Current insufficient	Both
5		Unauthorized/unregulated recreational use of prairies; unsupervised/untimely vegetation management (e.g. mowing airports)	Public outreach/education and coordination	Current insufficient	Both
6	Invasive and other problematic species and genes	Increased predation pressure from encroaching urbanization (domestic and feral cats).	Research/surveys to detect nesting occurrence and numbers	Current insufficient	Both
7	Agriculture and aquaculture side effects	Potential herbicide and pesticide effects	Education- outreach	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

PURPLE MARTIN (*Progne subis*)

Conservation Status and Concern

The population of Purples Martins in Washington is very small and is essentially dependent on humans to provide nest structures. Consequently, persistence of the population likely requires ongoing human intervention (e.g. erecting and maintaining nest structures).

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/stable	G5	S3B

Biology and Life History

Purple Martins are aerial insectivores and nest in cavities. Purple Martins nest almost exclusively in human-made nest structures (e.g. nest boxes and gourds). Females lay four to five eggs and incubation lasts for 15 to 18 days. The young leave the nest at 28 to 29 days, and are fed by the parents for several more days.



Photo: Wikimedia Commons

Distribution and Abundance

Purple Martins are found throughout much of eastern North America and along the Pacific coast. In Washington, they are found in much of the Puget Trough, Grays Harbor, Willapa Bay and the lower Columbia River; they are rare elsewhere. They migrate to the Neotropics for the winter. It is thought that their presence and abundance in Washington was facilitated by availability of nests associated with humans. The population is estimated at about 600, with 400 in the Puget Trough and 200 along the Columbia River; comprehensive monitoring is required to refine this population estimate.

Habitat

Purple Martins are secondary cavity users, as they don't create their own cavities. Most nests are situated in the marine environment (e.g. nest cavities in pilings or nest structures attached to pilings), and they nest less commonly at lakes and marshes. They rarely nest in snags or in uplands.

References

Brown, C.R. 1997. Purple Martin (*Progne subis*). The Birds of North America 287: 1-32.
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Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Population is small, so a monitoring program is needed to recognize a downward change.	Population is small, so a comprehensive monitoring program would be valuable.	Current insufficient	Both

PYGMY NUTHATCH (*Sitta pygmaea*)

Conservation Status and Concern

The Pygmy Nuthatch is a species of concern because of its dependence on old ponderosa pine forests to provide suitable nesting cavities in dead and decadent trees and a year round food source of pine seed. Logging and fire suppression have altered the structure and species composition of ponderosa pine forests.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Monitor	Yes	Low/unknown	G5	S3S4

Biology and Life History

Pygmy Nuthatches are one of only a few cooperatively breeding songbirds in North America. During the breeding season, about a third of the pairs have up to three helpers at the nest. These helpers are usually related males, often offspring from the previous year, and help defend the nest site and raise the young. Pairs form long-term bonds and remain paired year round. Pygmy Nuthatches are cavity-nesters. They nest and roost in natural cavities and woodpecker holes. Winter flocks roost together in cavities. Both members of the pair dig the nest hole in a dead branch or snag of a Ponderosa pine or aspen. The nest hole is lined with bark strips, plant down, moss, cocoons, fur, and feathers. Pygmy Nuthatches forage primarily on insects during the breeding season and on pine seed and insects in winter.



Photo: R. LeValley

Distribution and Abundance

This species is an uncommon resident in northeastern counties and along the east slope of Cascades, and in the Blue Mountains. Breeding Bird Survey data from 1966 to 2013 and from 2003 to 2013 indicate stable trends in the Great Basin province, all western USA routes combined, Washington, Oregon, California, and British Columbia; data confidence is high for California and western USA routes combined and moderate for all other areas. The size of Washington's breeding population is unknown.

Habitat

The pygmy nuthatch is restricted almost completely to ponderosa pine forests at low elevation in eastern Washington, and is rarely found in adjacent Douglas-fir forest.

References

Leach, R. H. 2005. Pygmy Nuthatch (*Sitta pygmaea*). Pp 281-282 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.

Pygmy Nuthatch: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Agriculture and aquaculture side effects	Logging, fire suppression and commercial and residential development that removes or degrades mature ponderosa pine habitat	Retain habitat. Restore degraded pine forests by thinning dense understory and maintaining snags.	Current insufficient	Both
2	Resource information collection needs	Better define the range of the species	Conduct standard surveys to better define range	Current insufficient	Both
3	Resource information collection needs	Information lacking for trends of population	Recruit volunteers to enable inclusion of additional BBS routes to increase reliability of data for Washington.	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

SAGE THRASHER (*Oreoscoptes montanus*)

Conservation Status and Concern

This sagebrush obligate is vulnerable to population declines and range contractions due to loss or degradation of shrub-steppe habitat.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/declining	G5	S2B

Biology and Life History

The Sage Thrasher is a short-distance migrant with individuals arriving in eastern Washington by late March. Builds nest mostly in big sagebrush or three-tip sagebrush below the densest part of the shrub to provide concealment from aerial predators. Sage Thrashers may raise a second brood.



Photo: M. VanderHaegen

Distribution and Abundance

This species is found throughout the Columbia Basin, primarily in areas with a substantial amount of sage. In those limited areas the species is a common breeder. Sage Thrashers are not present in Methow Valley and are locally distributed and uncommon in Okanogan Valley. Breeding Bird Survey data indicate downward trends at the scale of the Great Basin and individual states (Idaho, Nevada, Oregon and Utah) from 1966 to 2013, although the trend in Washington was stable, where reliability was moderate compared to high reliability in all other states and the province. In the period 2003 to 2013 the trend was stable in all states noted above and the Great Basin. The size of Washington's breeding population is unknown.

Habitat

Generally dependent on large patches and expanses of sagebrush for breeding, but will use small fragments of sagebrush among agricultural fields. This species does not use other habitats for foraging or nesting, but sometimes uses other habitats during dispersal and migration. Loss of shrub-steppe to agriculture, residential development and fire, and degradation of habitat due to cheatgrass invasion and livestock grazing are impacts.

References

- Reynolds, T.D., T.D. Rich, and D.A. Stephens. 1999. Sage Thrasher (*Oreoscoptes montanus*). *Birds of North America* 463: 1-24.
- Vander Hagen, W. M. 2005. Sage Thrasher (*Oreoscoptes montanus*). Pp 299 - 300 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) *Birds of Washington: Status and Distribution*. Oregon State University Press, Corvallis, OR, USA. 436 pp.

Sage Thrasher: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Habitat loss and fragmentation to residential development, burning, and herbicide and pesticide treatments	Protect habitat; control cheatgrass; identify degraded habitat for restoration; evaluate CRP leases to provide functional habitat on private lands	Current insufficient	Both
2	Agriculture and aquaculture side effects	Habitat loss and fragmentation to agricultural conversion, burning, herbicide and pesticide treatments	Protect habitat; identify degraded habitat for restoration; evaluate CRP leases to provide functional habitat on private lands	Current insufficient	Both
3	Agriculture and aquaculture side effects	Habitat degradation due to grazing by livestock	Protect habitat; control cheatgrass; identify degraded habitat for restoration; work to identify ways to reduce grazing pressure; evaluate CRP leases to provide functional habitat on private lands	Current insufficient	Both
4	Invasive and other problematic species and genes	Invasion by cheatgrass and other exotic plants degrades the ecological integrity of the habitat	Control cheatgrass; identify degraded habitat for restoration; evaluate CRP leases to provide functional habitat on private lands	Current insufficient	Both
5	Resource information collection needs	Studies needed to assess ecological integrity of existing shrub-steppe for sage thrasher	Conduct studies on use of sagebrush patches in landscapes of differing patchiness to design conservation strategy	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

SAGEBRUSH SPARROW (*Artemisiospiza nevadensis*)

Conservation Status and Concern

The Sagebrush Sparrow is a species of concern because large expanses of big sagebrush, its preferred habitat, have been lost or degraded.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Candidate	Yes	Low/declining	G5	S3B

Biology and Life History

This is a sagebrush obligate species, typically associated with big sagebrush in eastern Washington. Most males arrive on the breeding grounds already paired and begin singing from the tops of sagebrush to establish and defend a breeding territory. Nest building begins in mid-March, typically within or under a big sagebrush shrub. While the male sings to defend the territory, the female builds an open cup nest and lays three eggs that she will incubate for 10 to 16 days. After eggs hatch, the young usually leave the nest in 9 to 10 days. Most females raise two broods per year. Females that are successful at raising young typically return to the same site in successive years. During the breeding season, they forage on the ground for insects, spiders, small fruits and seeds. During the non-breeding season, diet includes seeds, plant material and insects.



Photo: M. VanderHaegen

Distribution and Abundance

This species prefers sagebrush/bunchgrass shrub-steppe landscapes of the Columbia Basin and is an uncommon migrant and summer resident in shrub-steppe of eastern Washington. This sparrow migrates to overwintering areas between central California and central Nevada, south to northern Mexico. Trends in the Great Basin and in individual states (Nevada, Utah) since 1966 are stable, as is the trend in Washington; however, the Washington trend is based on a small sample that may not be reliable. Declining trends have been reported in Idaho (moderate reliability) and Oregon (high reliability). There is no population estimate for Washington.

Habitat

Preferred habitat is big sagebrush. This species appears to be sensitive to patch size, and probability that Sagebrush Sparrows will use a site is higher in areas with large expanses of unconverted shrub-steppe, typically areas greater than 2,500 acres.

References

- Martin, J.W. and B.A. Carlson 1998. Sage Sparrow (*Amphispiza belli*). Birds of North America 326: 1-20.
- Vander Haegen, W. M. 2005. Sage Sparrow (*Amphispiza belli*). Pp 328 – 329 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.

Sagebrush Sparrow: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Habitat loss and fragmentation	Protect core areas of good habitat; identify degraded habitat for restoration and establish connectivity with core areas	Current insufficient	Both
2	Agriculture and aquaculture side effects	Habitat loss and fragmentation due to agricultural conversion	Protect and restore habitat; evaluate CRP leases to provide functional habitat on private lands	Current insufficient	Both
3	Agriculture and aquaculture side effects	Habitat loss to heavy grazing by livestock	Outreach; promote less-intensive grazing practices	Current insufficient	Both
4	Invasive and other problematic species and genes	Invasion by cheatgrass and other exotic plants degrades the ecological integrity of the habitat	Identify degraded habitat for restoration; control cheatgrass	Current insufficient	Both
5	Resource information collection needs	Insufficient knowledge of landscape-level use of habitat patches by this species	Conduct studies on use of sagebrush patches in landscapes of differing patchiness and connectivity	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

SLENDER-BILLED WHITE-BREASTED NUTHATCH (*Sitta carolinensis aculeata*)

Conservation Status and Concern

This species is of concern due to its dependence on large, mature oak trees to provide nest cavities and food (mast) and the fragmentation of oak trees from agriculture and residential development.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Species of Concern	Candidate	Yes	Critical/declining	G5TU	S1

Biology and Life History

This nuthatch often uses naturally occurring cavities, including those made by woodpeckers, in living trees for roosting and nesting. Individuals use multiple cavities during the year. Pairs establish territories of about 25 to 37 acres and occupy the same territories year-round. Foraging typically occurs on the trunk and larger limbs of trees. Weevils and earwigs are important parts of the diet during breeding and post-breeding periods; they also feed on acorns during winter.



Photo: WADNR

Distribution and Abundance

This subspecies formerly occurred from the Puget Trough south to Oregon. The northern extent of the distribution has contracted southward and the range is currently primarily limited to Clark and Cowlitz Counties where it is rare. The population likely consists of fewer than 50 individuals.

Habitat

This species appears to be dependent on oak and oak-conifer woodlands. In Washington and Oregon, they are commonly associated with Oregon white oak, as well as black cottonwood and Oregon ash. Nuthatch densities are greater in areas with higher numbers of large trees, which provide more surface area for foraging and have more natural cavities for nesting and roosting. Large open-grown oaks in woodlands with sparse understories are particularly important as habitat because these trees have more cavities and foraging substrate than oaks grown in densely vegetated habitats. Birds are therefore more abundant in smaller (less than 30 acres) woodland patches, which by definition have more edge, than in larger (greater than 62 acres) patches.

References

- Chappell, C. B. 2005. White-breasted nuthatch (*Sitta carolinensis*). Pp 280 - 281 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Hagar, J.C., and M.A. Stern. 2001. Avifauna in oak woodlands of the Willamette Valley, Oregon. *Northwestern Naturalist* 82:12-25.
- Peter, D. and C. Harrington. 2002. Site and tree factors in Oregon white oak acorn production in western Washington and Oregon. *Northwest Science* 76:189-201.
- Pravosudov, V.V. and T.C. Grubb, Jr. 1993. White-breasted nuthatch (*Sitta carolinensis*). *Birds of North America* 54: 1-16.
- Viste-Sparkman, K. 2006. White-breasted Nuthatch density and nesting ecology in oak woodlands of the Willamette Valley, Oregon. M.S. thesis, Oregon State University, Corvallis, Oregon.

Slender-Billed White Breasted Nuthatch: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Fish and wildlife habitat loss or degradation	Conversion of oak and oak-conifer woodlands	Work with landowners to incorporate conservation of this species and oak woodlands into long-term land management	Current insufficient	Both
2	Fish and wildlife habitat loss or degradation	small size and isolation of Washington populations	Conduct feasibility study for reintroductions; implement translocations if feasible	Current insufficient	Both
3	Resource information collection needs	Current status is unclear without systematic surveys	Conduct surveys where pairs were historically found, characterize habitat, and identify additional areas to target surveys; Assess factors that may account for loss of pairs at formerly occupied sites	Current insufficient	Both
NOTE: Numbers are for reference only and do not reflect priority.					

STREAKED HORNED LARK (*Eremophila alpestris strigata*)

Conservation Status and Concern

The Streaked Horned Lark is a subspecies only found in southwest Washington and western Oregon, with a total population estimated at less than 2,000.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
Threatened	Endangered	Yes	Critical/unknown	G5T2	S1B

Biology and Life History

Streaked Horned Larks forage on the ground in short vegetation of bare fields. They breed in grassland and remnant prairies of south Puget Sound, coastal beaches, and some islands in the lower Columbia River. They are known to overwinter in Oregon and on some of the lower Columbia River sites. They may rear 2-3 broods per season. This species is a coastal subspecies of the Pacific Northwest.

Distribution and Abundance

This is an uncommon breeder on airport grasslands and remnant prairies and beaches of western Washington and Oregon; it is considered extirpated in British Columbia. In Washington, it currently breeds at 14 to 16 sites, including: 3 prairie areas used for army training and 5 airports in the southern Puget lowlands; 2 to 4 sandy coastal sites; and 4 sites along the lower Columbia River. The entire subspecies population is estimated at 1,170 to 1,610 birds, with about 245 pairs detected in Washington in 2013. Density trends from standardized transect data for 2010 through 2012 produced an estimated average annual decline of 11.7 percent; intensive management may have stabilized the inland and Columbia River populations, but data suggest that females may be subject to high mortality rates.



Photo: C. Baker

Habitat

In Washington, Streaked Horned Larks are found on prairie and grassland south of Puget Sound, coastal beaches, and islands and sparsely vegetated shoreline sites on the lower Columbia River. Streaked horned larks are also found on agricultural fields and drying seasonal wetlands in Oregon. Habitat consists of large expanses of bare or sparsely vegetated land, including fields, prairies, upper beaches, airports, and similar areas with low/sparse grassy vegetation.

Reference

- Altman, B. 2011. Historical and current distribution and populations of bird species in prairie-oak habitats in the Pacific Northwest. *Northwest Science* 85:194-222.
- Stinson, D.W. 2015. Periodic status review for the Streaked Horned Lark in Washington. Washington Department of Fish and Wildlife, Olympia, Washington.

Streaked Horned Lark: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Resource information collection needs	Monitoring declining population; identify new potential breeding sites	Occupancy surveys/counts at known and potential sites; compile, analyze data	Current sufficient	Both
2	Management Decision Needs	Disturbance/mortalities on Columbia river sites from dredged material deposition	Dredged material management plan that avoids disturbance, maintains habitat	Current sufficient	External
3	Overharvesting of biological resources	Mortalities from collisions with aircraft on military airfields	Create/restore nesting habitat away from runways	Current insufficient	External
4	Fish and wildlife habitat loss or degradation	Loss of prairie/grassland habitat	Acquire or restore additional habitat for nesting	Current insufficient	External
5	Fish and wildlife habitat loss or degradation	Inbreeding/declining genetic health	Translocation of eggs from Oregon for genetic augmentation	Current sufficient	External
NOTE: Numbers are for reference only and do not reflect priority.					

WESTERN BLUEBIRD (*Sialia mexicana*)

Conservation Status and Concern

Declines in recent decades caused primarily by habitat loss. Recent reintroductions onto San Juan Island may need additional translocations and removal of competitor's nests from nestboxes to be successful.

Federal Status	State Status	PHS	Population size/trend	Global Ranking	State Ranking
None	Monitor	No	Low/declining	G5	S3B

Biology and Life History

Western Bluebirds are mainly insectivorous, feeding seasonally also on berries and other fruit. They are secondary cavity nesters, relying on cavities created by other species. Most females produce or attempt two broods per year. Fledged young are tended by the male if the female re-nests.

Distribution and Abundance

This is an uncommon migrant and summer resident in western Washington, except for the Fort Lewis area, where it is common due to an unprecedented nest box program. It was recently reintroduced onto San Juan Island. Availability of nesting cavities is a major limiting factor for bluebird populations. Breeding Bird Survey data show no significant change in numbers from 1966 to 2012. Nestbox programs have been used with much success; a breeding population that has exceeded 200 pairs has been documented at Joint Base Lewis McChord, which constitutes by far the largest breeding location in western Washington; the remainder of the western population is dispersed and a total population estimate has not been established.



Photo: W. Siegmund

Habitat

Western Bluebirds inhabit woodland/prairie mosaic, agricultural areas and recently harvested or burned forest where snags or cavity trees are present. Cover types includes open woodlands, farmlands, orchards, savanna, riparian woodlands, and burned forests. They use many open forest types, including post-fire and post-harvest forests, if sufficient snags are present to provide nest and perch sites. Nests are in natural tree cavities, abandoned woodpecker holes, or bird nestboxes, and standing snags/cavity trees are important habitat features.

References

- Buchanan, J. B. 2005. Western Bluebird (*Sialia mexicana*). Pp 290 - 291 in T. R. Wahl, B. Tweit, and S. G. Mlodinow (eds.) Birds of Washington: Status and Distribution. Oregon State University Press, Corvallis, OR, USA. 436 pp.
- Slater, G.L. and B. Altman. 2011. Avian restoration in the Prairie-Oak Ecosystem: a reintroduction case study of Western Bluebirds to San Juan Island, Washington. Northwest Science 85:223-232.

Western Bluebird: Key Conservation Threats and Actions

	STRESSOR	DESCRIPTION	ACTION NEEDED	LEVEL OF INVESTMENT	LEAD
1	Management decision needs	Need improved snag retention or snag management in forest landscapes.	Retention of snags - via incentive-based programs and forest practices and other land regulation mechanisms.	Current insufficient	WDFW
2		Long-term success of translocation efforts	Continue to monitor success of translocation efforts to the San Juan Islands	TBD	TBD
NOTE: Numbers are for reference only and do not reflect priority.					



APPENDICES

APPENDIX A: Alphabetical list of species

SGCN Birds: Alphabetical List

1. American White Pelican
2. Bald Eagle
3. Band-tailed Pigeon
4. Barrow's Goldeneye
5. Black Scoter
6. Brown Pelican
7. Burrowing Owl
8. Cinnamon Teal
9. Clark's Grebe
10. Columbian Sharp-tailed Grouse
11. Common Loon
12. Dusky Canada Goose
13. Ferruginous Hawk
14. Flammulated Owl
15. Golden Eagle
16. Great Gray Owl
17. Greater Sage-grouse
18. Harlequin Duck
19. Lewis' Woodpecker
20. Loggerhead Shrike
21. Long-tailed Duck
22. Marbled Godwit
23. Marbled Murrelet
24. Mountain Quail
25. Northern Spotted owl
26. Oregon Vesper Sparrow
27. Peregrine Falcon
28. Purple Martin
29. Pygmy Nuthatch
30. Red Knot
31. Red-necked Grebe
32. Rock Sandpiper
33. Sage Thrasher
34. Sagebrush Sparrow
35. Sandhill Crane (Greater)
36. Short-eared Owl
37. Short-tailed Albatross
38. Slender-billed White-breasted Nuthatch
39. Spruce Grouse
40. Streaked Horned Lark
41. Surf Scoter
42. Tufted Puffin
43. Upland Sandpiper
44. Western Bluebird (W. Wash)
45. Western Grebe
46. Western High Arctic Brant
47. Western Screech Owl
48. Western Snowy Plover
49. White-headed Woodpecker
50. White-tailed Ptarmigan
51. White-winged Scoter
52. Yellow-billed Cuckoo

EXPLANATION OF TERMS

1. Conservation Status Table

- **Federal Status**

Refers to legal designations under the Federal Endangered Species Act (listed as Endangered, Threatened, or Candidate species, or designated as a Sensitive species or Species of Concern).

- **State Status**

The Washington Fish and Wildlife Commission has classified 46 species as Endangered, Threatened or Sensitive, under WAC 232-12-014 and WAC 232-12-011. Other designations include Candidate and Monitor.

- **PHS (Priority Habitats and Species Program)**

A species listed under the PHS program is considered to be a priority for conservation and management and requires protective measures for survival due to population status, sensitivity to habitat alteration and/or tribal, recreational or commercial importance. Management recommendations have been developed for PHS species and habitats, and can assist landowners, managers and others in conducting land use activities in a manner that incorporates the needs of fish and wildlife.

- **Global (G) and State (S) Rankings:** Refers to NatureServe status rankings provided by the Natural Heritage Program. These conservation status ranks complement legal status designations and are based on a one to five scale, ranging from critically imperiled (1) to demonstrably secure (5). The global (G) and state (S) geographic scales were used for the SGCN species fact sheets. For more on the methodology used for these assessments, please see: [Methodology for Assigning Ranks - NatureServe.](#)

State Rank: characterizes the relative rarity or endangerment within the state of Washington.

S1 = Critically imperiled

S2 = Imperiled

S3 = Rare or uncommon in the state – vulnerable

S4 = Widespread, abundant, and apparently secure i

S5 = Demonstrably widespread, abundant, and secure in the State

SA = Accidental in the state.

SE = An exotic species that has become established in the state.

SH = Historical occurrences only are known, perhaps not verified in the past 20 years, but the taxon is suspected to still exist in the state.

SNR or **S?** = Not yet ranked. Sufficient time and effort have not yet been devoted to ranking of this taxon.

SP = Potential for occurrence of the taxon in the state but no occurrences have been documented.

SR = Reported in the state but without persuasive documentation which would provide a basis for either accepting or rejecting the report (e.g., misidentified specimen).

SRF = Reported falsely in the state but the error persists in the literature.

SU = Unrankable. Possibly in peril in the state, but status is uncertain. More information is

need.

SX = Believed to be extirpated from the state with little likelihood that it will be rediscovered.

SZ = Not of conservation concern in the state.

Qualifiers are sometimes used in conjunction with the State Ranks described above:

B - Rank of the breeding population in the state.

N - Rank of the non-breeding population in the state.

Global Rank: characterizes the relative rarity or endangerment of the element world-wide.

G1 = Critically imperiled globally

G2 = Imperiled globally

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range - vulnerable

G4 = Widespread, abundant, and apparently secure globally

G5 = Demonstrably widespread, abundant, and secure globally, though it may be quite rare in parts of its range

GH = Historical occurrences only are known, perhaps not verified in the past 20 years, but the taxon is suspected to still exist somewhere in its former range.

GNR or **G?** = Not yet ranked. Sufficient time and effort have not yet been devoted to ranking of this taxon.

GU = Unrankable. Possibly in peril range-wide but status uncertain. More information is needed.

GX = Believed to be extinct and there is little likelihood that it will be rediscovered.

Qualifiers are used in conjunction with the Global Ranks described above:

T_n Where n is a number or letter similar to those for G_n ranks, above, but indicating subspecies or variety rank. For example, G3TH indicates a species that is ranked G3 with this subspecies ranked as historic.

2. Key Conservation Threats (Stressor) and Actions Table

The “**Level of Investment**” column is meant to be a coarse assessment of whether the action referenced is sufficient (stay the course), insufficient (invest more resources when available), or “new action needed” (nothing is currently underway and new action needs to be initiated).

The “**Lead**” column refers to whether WDFW has the lead for that particular action (WDFW), or whether external conservation partners have the lead (external), or whether WDFW shares the lead with one or more organizations (Both).