

## Concise Explanatory Statement Periodic Status Review

### Rules amended as part of this rulemaking:

WAC 232-12-014	Wildlife classified as endangered species
WAC 232-12-011	Wildlife classified as protected

### 1. Reasons for rulemaking:

The department has reviewed all relevant data pertaining to the population status of bald eagle, peregrine falcon, American white pelican, lynx, and marbled murrelet in Washington; rule changes are described below.

#### **Peregrine Falcon** (*Falco peregrinus*)

Prior Status – WA State Sensitive

Action – Remove from the state’s list of Sensitive species

Peregrine falcons exhibited well-documented population declines across North America and much of their global range following the widespread use of DDT. The peregrine falcon was listed nationally as an endangered species by the U.S. Fish and Wildlife Service (USFWS) in 1970 and by the Washington Fish and Wildlife Commission in 1980 when only five pairs were found to be nesting statewide. With the banning of DDT and initiation of intensive captive breeding and reintroduction programs, the peregrine population has recovered and was removed from the federal endangered species list in 1999. In 2002 the species was reclassified as a state sensitive species after >70 territories were found occupied. In 2009, there were over 108 occupied peregrine falcon nesting territories distributed in suitable habitat across the state. The current population demographics and positive growth trajectory warrant removal from the State’s list of endangered, threatened, and sensitive species. Therefore, the action is to amend WAC 232-12-011 to remove the Peregrine Falcon from the list of species classified as sensitive. However, as a non-game bird, the Peregrine Falcon shall remain a protected species under WAC 232-12-011. This species will also continue to be protected under the federal Migratory Bird Treaty Act.

#### **Bald Eagle** (*Haliaeetus leucocephalus*)

Prior Status – WA State Sensitive

Action – Remove from the state’s list of Sensitive species

Bald Eagles were first listed under the Federal ESA in 1978. The imperiled status of the species was primarily due to the effects of DDT and, to a lesser extent, habitat loss. Protection

measures to recover the species have abated those threats allowing Bald Eagles to make an incredible recovery both within Washington as well as nationally. In Washington, nest density exceeded estimated carrying capacity by over 100 active territories by 2005 and indications are that the number of territories has increased by an average of 28 per year since then, adding 281 territories since the last directed state-wide survey. The total number of known territories in the state is now 1334 as of 2015 and the trend is continuing to increase. While there are still potential threats across the landscape, the preponderance of evidence suggests that the Bald Eagle population continues to grow despite those threats. It is, therefore, recommended that the designation of Sensitive status for Bald Eagles is no longer appropriate. Therefore, the action is to amend WAC 232-12-011 to remove the Bald Eagle from the list of species classified as sensitive. However, as a non-game bird, the Bald Eagle shall remain a protected species under WAC 232-12-011. This species will also continue to be protected under the federal Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

**American White Pelican** (*Pelecanus erythrorhynchos*)

Current Status – WA State Endangered

Action – Remove from the State’s list of Endangered species, add to the State’s list of Threatened species.

The population and range of American White Pelicans were reduced throughout the 19th and early 20th century due to habitat loss resulting from water projects, persecution, and contaminants. In more recent decades, populations have recovered from pre-1970 declines. Concurrent with rangewide increases, the numbers of American White Pelicans observed in Washington have increased substantially in the last 30 years. The single breeding colony in Washington is on the Columbia River north of Walla Walla. Numbers have grown steadily since its establishment in 1994. Over 3,000 birds were counted in 2015. Although White Pelicans have recovered substantially, populations remain vulnerable. White pelicans are highly sensitive if disturbed by humans or predators on breeding colonies and prone to desert or leave eggs and young exposed to predation. Other factors affecting white pelican populations include loss of breeding and foraging habitats due to water level changes, diseases, and severe weather. However, given the increase in numbers and new colony establishing just over the border in the Lower Columbia River, our recommendation is to reclassify the White Pelican as a state threatened species. Therefore, the action is to amend WAC 232-12-014 to remove the American White Pelican from the list of species classified as endangered and amend WAC 232-12-11 to add the American White Pelican to the list of species classified as Threatened.

**Marbled Murrelet** (*Brachyramphus marmoratus*)

Prior Status - State Threatened

Action – Remove from the State’s list of Threatened species; add to the State’s list of Endangered species.

Primary threats for initial listing included loss of old forest nesting habitat from commercial timber harvesting and mortality associated with net fisheries and oil spills. In Washington, nesting habitat losses due to timber harvest since initial listing in 1993 have been substantial, with an estimated 30% loss on nonfederal lands. At-sea population monitoring from 2001 to 2015 indicated a 4.4% decline annually, which represents a 44% reduction of the population since 2001. The magnitude of the population decline indicates that the status of the Marbled Murrelet in Washington has become more imperiled since state listing in 1993. Without solutions that can effectively address these concerns in the short-term, it is likely the Marbled Murrelet could become functionally extirpated in Washington within the next several decades. Therefore, the action is to amend WAC 232-12-011 to remove the Marbled Murrelet from the list of species classified as threatened and amend WAC 232-12-14 to add the Marbled Murrelet to the list of species classified as Endangered.

**Lynx** (*Lynx canadensis*)

Prior Status – State Threatened

Action – Remove from the State’s list of Threatened species; add to the State’s list of Endangered species.

Available information indicates that the distribution of lynx in Washington has contracted significantly from its historic extent and that western Okanogan County is the only area in Washington that supports a resident lynx population. Estimates of population size, while rudimentary, suggest that this population may include approximately 54 individuals. Threats to this population include loss and fragmentation of habitat due to wildfire, small population size, demographic stochasticity, and the unpredictable effects of climate change. There has been no indication that the conservation status of Washington’s lynx population has improved since it was state or federally listed. Given the reduced distribution, small and restricted population, and an increase in the number and severity of threats to lynx in Washington, the action is to amend WAC 232-12-011 to remove the Lynx from the list of species classified as threatened and amend WAC 232-12-14 to add the Lynx to the list of species classified as Endangered.

**2. Differences between the text of the proposed rule and the rule as adopted:**

No Differences.

**3. Summary of Public Comments Received during Official Comment Period and WDFW Response for amended rules:**

**Bald Eagle Comments**

Report Section	Comment and Response
<b>Population and Habitat Status</b>	The population of Bald Eagles in Washington has recovered and should be delisted.

<p><i>We agree with this comment.</i></p>
<p>We don't have a true count of the number of Bald Eagles in Washington.</p>
<p><i>This is correct, and is true for nearly every wildlife species in every state. Obtaining actual counts of every individual in a population would be prohibitively expensive, impractical, and would be essentially impossible for most species. Given the discontinuation of post-delisting monitoring by the U.S. Fish and Wildlife Service, we relied on information from Stinson et al. (2007) to inform about vital rates, WDFW's Washington Survey Data Management database to calculate the number of new territories established or documented since 2007, and the Breeding Bird Survey to evaluate trends in abundance.</i></p>
<p>During the single year of population monitoring leading up to the federal delisting decision, between 2005 and 2006, the number of breeding pairs went from 7,066 to 9,789; an almost 40% increase in population in just one year. The FWS concluded that two years after the Bald Eagles' complete delisting from the ESA in 2007, the population of breeding pairs in the lower 48 states was estimated to be at 16,048.</p>
<p><i>Data on Bald Eagle population performance at a national level is important to understand for context, and we included a summary of that information in the status review. The emphasis of the status review is the population in Washington, and the status review included a brief summary of the trend data reported in Stinson et al. (2007). To respond specifically to the two statements above, we note the second comment is correct. The website that was referenced with respect to the first statement contains summary information and state-by-state tallies of eagle abundance through 2006. It is noteworthy, however, that the level of survey activity across states declined substantially after 2000; some states did not conduct surveys between 2000 and 2006 which means that tallies were incomplete in those years. Without a complete data set to make comparisons we think the dramatic difference between 2005 and 2006 counts noted by the commenter was likely influenced to some extent by different levels of survey coverage in those years and does not represent an almost 40% increase in population size in one year. Nonetheless, we agree that the population is strongly increasing in Washington and across North America.</i></p>
<p>Population growth modeling, which indicates that population growth across the Bald Eagles' range is projected to continue for another 10 to 20 years until the total population stabilizes at around 228,000 eagles.</p>
<p><i>We agree with this statement.</i></p>
<p>In 1980, there were only 105 occupied Bald Eagle nests in the state. This number increased by around 30 per year, so that by 2005 Washington supported over 840 breeding pairs, which was 12% of the entire Bald Eagle population in the lower 48 states.</p>
<p><i>In 1980, there were 104 occupied Bald Eagle territories documented in Washington and this number increased to 840 by 2005 (Stinson et al. 2007). The tally of Bald Eagles in Washington in 2005 was about 12% of the total national count from 2005; note, however, that the national tally from 2005 did not include data from all states and likely underrepresented the abundance of Bald Eagles in North America (see response to comment 3).</i></p>

<b>Factors Affecting Continued Existence</b>	Retain the Bald Eagle as a listed species, because they are recovering slowly due to factors like habitat loss and vehicle collisions; they are still vulnerable to a precipitous decline.
	<i>The Bald Eagle is currently considered a sensitive species. This status applies to “any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened throughout a significant portion of its range within the state without cooperative management or removal of threats” (WAC 232-12-297). The population of Bald Eagles in Washington is healthy and survey data indicate the number of Bald Eagles is continuing to increase. Therefore, it is no longer vulnerable or declining and is not likely to become endangered or threatened, in part because of the effectiveness of other existing regulations. For these reasons, the Bald Eagle population in Washington no longer meets the definition of a sensitive species. The recovery of the Bald Eagle is a tremendous success story, both in Washington and across North America.</i>
	Bald Eagles are protected by federal laws.
	<i>This is correct. Bald Eagles are protected under three federal laws: the Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act, and the Lacey Act.</i>
	Numerous federal laws provide ample protection and make Washington’s state listing redundant and ultimately meaningless.
	<i>The purpose of this document is to provide a technical briefing to the Fish and Wildlife Commission that will inform their subsequent decision about the status of the Bald Eagle. Consequently, this particular public comment is beyond the scope of the document.</i>
<b>Conclusion and Recommendation</b>	The state-level listing of a stable, healthy, and thriving population is not consistent with the language and purpose of Washington’s ESA.
	<i>The Bald Eagle was listed in Washington at a time when its population was dramatically depressed and the species was doing poorly. The population has now clearly recovered, and with regulatory mechanisms in place to provide continued protection the time has come to delist the species. Our recommendation to the Fish and Wildlife Commission is to delist the Bald Eagle as it no longer meets the definitions of Sensitive, Threatened, or Endangered as defined in WAC 232-12-297.</i>

**Peregrine Falcon Comments:**

Report Section	Comment and Response
<b>General comments</b>	I agree with state delisting of peregrine falcons.
	<i>WDFW is recommending that peregrine falcons be removed from the Washington sensitive species list because the species no longer meets the definition of sensitive under state law (WAC 232-12-292, Section 2.6), thus delisting is the most appropriate action to take regarding the species' legal status. Organochlorine pesticides, mainly DDT, caused the decline in Arctic and American peregrine falcon populations in North America, adversely affecting peregrine falcons by causing direct mortality by poisoning or by adversely affecting reproduction by causing egg breakage and hatching failure. The most significant factor in the recovery of peregrine falcons was the restrictions placed on organochlorine pesticide use in the U.S and Canada in the early 1970's. Aided in some regions by the release of captive bred falcons, peregrine populations have increased and expanded their range. Population indices historically affected by organochlorine contamination, namely territory occupancy rates, nest success, and productivity, have improved over the years and continue to be consistent with values observed in stable or increasing populations.</i>
	I agree with state delisting of peregrine falcons. This should be accomplished with continued monitoring to assure that future stressors such as climate change or new pesticides do not negatively impact the bird.
	<i>WDFW agrees with the first remark. See the response to Comment 1. If the Fish and Wildlife Commission agrees with the Departments recommendation to delist the peregrine falcon state law requires a review of the status of the species at least once, five years following the date of delisting (WAC 232-12-292, Section 10.2).</i>
	I support maintaining endangered status for the peregrine falcon primarily because of habitat loss.
	<i>See the response to Comment 1. Contamination by organochlorine pesticides, not habitat loss, was the cause of population declines in peregrine falcon populations in North America.</i>
	I support the strongest possible protections for the listed species...peregrine falcon...and all other species considered by the WDFW.
	<i>See the response to Comment 1.</i>
	I am not in favor of moving species from endangered to threatened. Habitat loss continues for ...peregrines. It is known that humans continually demand more areas that these species frequent, causing habitat loss.
	<i>See the response to Comment 1. Contamination by organochlorine pesticides, not habitat loss, was the cause of population declines in peregrine falcon populations in North America.</i>
WDFW has not conducted a population survey of this bird since the Washington Forest Practices Board approved removal of Peregrine Falcon critical habitat from forest practice rules. This bird should continue to be listed as endangered until a	

	<p>new survey can demonstrate if there have been any negative effects to this bird's population. No survey has been done since 2009, so consideration to remove this bird is very premature.</p>
	<p><i>Washington State Forest Practices Rules identify critical habitat for endangered and threatened species, but not sensitive species (WAC 222-16-080). The peregrine falcon was reclassified to state sensitive status in 2002. Since then, peregrine populations have continued to increase. In 2012, WDFW surveyed a random sample of 25 nesting territories for the American peregrine falcon subspecies and found continued high occupancy rates (84%), high nest success (76%) and high productivity rates (1.81 young per occupied nesting territory) consistent with stable and increasing peregrine populations.</i></p>

**American White Pelican Comments:**

<b>Report Section</b>	<b>Comment and response</b>
<b>General comments</b>	<p>I remain very concerned about the obvious conflict of interest your agency and USFWS both share; it is in your absolute career, funding, personal and professional interest to "list" and "manage" and "recover" and "plan". You should not be the deciders. We have seen so much abuse of this system that I believe an independent science board not related to or beholden to WDFW should start making unbiased, fair and smart decisions on these species listing status.</p> <p><i>State-listing decisions in Washington are made by the Fish and Wildlife Commission, an independent board of citizens appointed by the Governor and confirmed by the senate. Many members are scientists, and all have knowledge of fish or wildlife issues. Our status reviews and recommendations also receive peer review by regional experts outside WDFW.</i></p> <p>Washington State is literally the only state left that is continually disregarding the outstanding recovery of this species to maintain their listing status, while simultaneously jeopardizing several other listed species (e.g. salmon) that call Washington home.</p> <p><i>White pelicans are also listed as endangered in British Columbia, where they also are restricted to one colony. White pelicans are also a 'species of greatest conservation need' in the Wildlife Action Plans of all eight western states in which they breed (IDFW 2016), and they have various conservation designations (e.g. Oregon: Sensitive; California: Bird Species of Special Concern).</i></p>
<b>Population</b>	<p>This species is not even known with certainty to have been native to Washington State in a breeding population. The WDFW's own "Periodic Status Review for the</p>

<p><b>status</b></p>	<p>American White Pelican” states that there are no definite records of their nesting in the state other than one from 1926. Your document says they "likely" bred in inland waterways. Where is the actual evidence of such activity? Post-1926 records do not reflect this: what evidence did you rely upon to conclude there were meaningful breeding numbers in those areas prior to 1926?</p>
	<p><i>Lewis and Clark observed white pelicans in Washington in 1805, and Townsend noted white pelicans in the Columbia in the 1830s, and said that in spring, “they retire inland to breed” (Jobanek and Marshall 1992). As described in the Population Status section, historical information from the 19<sup>th</sup> and early 20<sup>th</sup> century is limited, but clearly indicates that white pelicans nested at Moses Lakes, and perhaps Sprague and a few other lakes (Dawson and Bowles 1909, Jewett et al. 1953). The first published record of nesting is from 1926 at Moses Lake, Grant County (Brown 1926); that colony may have persisted into the 1930s. Kitchin (1934) states, “breeds in eastern Washington (commonly at Moses lake),” but there are otherwise no definite records from that period (Motschenbacher 1984). Motschenbacher (1984) noted that a long-time resident recalled that up to ~500 pelicans were present seasonally on Moses Lake from 1902 until the 1940s, and he listed 4 additional sites where conditions were suitable and pelicans may have once nested. Dawson and Bowles (1909) stated, “Concerning their nesting in Washington, nothing has been preserved; but it is fair to suppose that they have bred, at least until recently, on Moses and Colville Lakes.” However, between being shot, colony disturbance, wetland losses, and later, DDT, pelicans declined dramatically nation-wide in the 20<sup>th</sup> century, and were extirpated as a breeder in Washington from the 1940s until 1994.</i></p>
	<p>The Seattle Audubon Society shows in a map that the white pelican is not a traditional resident species overall, as populations breeding west of the Rocky Mountains “typically move south to California and the west coast of Mexico.” Also, there is a scarce presence in Washington during their migration to begin with, while “[s]mall numbers of non-breeding American White Pelicans remain in eastern Washington throughout the year.”</p>
	<p><i>Seattle Audubon’s Birdweb site has a simple outdated (mid-20<sup>th</sup> century) North American range map for the species (link below), evidently based on data prior to the pelicans re-establishing themselves as a breeder here 20 years ago. The map shows white pelican’s presence in Washington as ‘migration (scarce)’, and doesn’t claim to portray the historical record. The information is correct that white pelicans are a migrant, and much smaller numbers are present during winter, with most moving south. Much more useful and accurate is their map of Washington indicating the seasonal presence of white pelicans, and the year-round presence near the Badger</i></p>

	<p><i>Island colony (note: the indication of breeding at Sprague Lake is not based on confirmed information that we are aware of).</i></p> <p>(map at <a href="http://www.birdweb.org/birdweb/bird/american_white_pelican#">http://www.birdweb.org/birdweb/bird/american_white_pelican#</a> )</p>
	<p>You use a greatly outdated and provably inaccurate overall population estimate of 157,000 during the period of 1998-2001. This information is so outdated as to be of no real scientific value. Why no current estimate? It's obviously a heck of a lot higher....</p>
	<p><i>The 1998-2001 total is the most recent continent-wide estimate; the Breeding Bird Survey trend index (Fig. 3) suggests they have increased substantially since then, but there has been no comprehensive range-wide survey effort. The 2014 tally for western colonies was 42,692 (Table 1). White pelicans are not a high priority for surveys in most states and provinces, hence range-wide estimates were infrequently updated. However, the Pacific Flyway Council (2013) has outlined a schedule for monitoring western colonies every three years.</i></p>
	<p>The other population center of white pelicans in Washington is in the Columbia River estuary on Miller Sands Spit, which hosted a colony of 144 nests in 2015. Furthermore, this particular colony's area, as well as shorelines of water bodies used by pelicans for most of their foraging, is regulated by the Department of Ecology under the Shoreline Management Act.</p>
	<p><i>Miller Sands is in Oregon, and therefore not protected under the Shoreline Management Act, a Washington regulation. Although access is theoretically restricted, human intruders camped near the pelicans' colony in 2014, causing flightless young to abandon the colony. Many were rescued from the water by researchers and taken to a rehab facility (see Human disturbance).</i></p>
<p><b>Factors Affecting White Pelicans in Washington</b></p>	<p>The species has been federally delisted since 1987, and Washington's continued listing of this species (despite being a state that doesn't even enjoy being within the species' main migratory route) can hardly be said to have been the only force upholding the resurgence and explosion of the white pelican species around the country.</p> <p><i>The American white Pelican was never listed under the federal ESA. As mentioned under Range-wide population status, Sloan (1982) suggested that they should be listed as threatened, but they were never formally petitioned, or listed.</i></p> <p><i>Since the Badger Island colony has become the fourth largest western colony, and the birds from Stum Lake, BC, likely migrate through the area, Washington is considered to be within the species' migratory route.</i></p> <p>It is only a matter of time before the white pelican population (considering it is growing at an incredible rate) starts causing <i>serious</i> damage to the smolt populations in the Columbia Basin. There is only passing reference to the growing problem of</p>

	<p>more than 1,000 of these large predators on the Yakima River between the mouth and the dam at Parker. The Yakima River is subject to low flows and excessive temperatures during periods of salmon (endangered) smolt presence and migration. What studies have you conducted looking for evidence of high predation losses by the pelican on this section of this water? Where is your PIT data for the Yakima? How smart is it to spend millions hatching smolt to feed this ravenous predator?</p>
	<p><i>The impacts of the fish-eating birds in the Columbia River system has been a subject of investigation for &gt;20 years. As discussed in Fisheries conflicts, all the data (including PIT data) suggest that Caspian Terns and Cormorants and more important predators of smolts than the Badger Island white pelican colony. Pelicans prefer larger prey such as carp, suckers, and pikeminnows. Yakima River Summer and Fall Chinook, the smolts that most often fall prey to pelicans (based on PIT tags found on the colony), are not ESA-listed. Nonetheless, they may be taking a significant number of smolts at certain places and times on the Yakima, which may require management action in the future to discourage them. Pelicans are very conspicuous and may receive more than their share of blame for predation on smolts and fish of recreational value.</i></p>
	<p>This bird represents a threat to human life and property destruction via bird strike on commercial and general aviation aircraft. Migrating geese are another issue, but they tend to stay below 2500 feet and often travel in larger flocks more easy to detect and avoid. Please consider this issue when contemplating protection of this species.</p>
	<p><i>Of 151,267 bird strikes on U. S. civilian aircraft in the 25 years from 1990-2014, there were 16 involving white pelicans (Dolbeer et al. 2015). Although extremely rare, strikes involving pelicans are extremely dangerous because of their large size. Nonetheless, this record compares with 4,675 strikes involving ducks, geese, or swans, &gt;10,000 involving raptors (eagles, hawks, falcons, owls), and &gt;10,000 involving gulls. We do not believe that conservation considerations for pelicans should be diminished or eliminated over this issue, but neither should bird strike hazard mitigation near airports be compromised for concern about pelican populations.</i></p>
<p><b>Conclusion and recommendation</b></p>	<p>You acknowledge that populations have recovered substantially yet conclude they are still vulnerable. What evidence is there of that, and what would cause mass mortality under present conditions? They have grown from first observation in the early 1990's to over 100,000, a rapid, sustained growth. I see no real threats to this bird that can be reasonably anticipated. I support a downgrading all the way to removal on the State and Federal lists. It cannot be said that this species is likely to become endangered “within the foreseeable future” either. Between the 1960s and 1980, the number of known breeding colonies went from 43 to 55, and population of breeding white pelicans went from 63,000 to 109,000. The National Audubon entity actually supports the assertion that their health as a species is optimistic, pointing out that the white pelican population has experienced a “substantial increase since 1970s.” The</p>

<p>International Union for Conservation of Nature (“IUCN”) finds the condition of the species to be of the least concern.</p>
<p><i>The numbers mentioned, and the conservation status terms used by national and international organizations refer to the entire continental population. This comment confuses the continent-wide numbers (&gt;157,000) with Washington’s population of ~3,200 breeding adults. The Washington listing rule (WAC 232-12-297) refers to only the status of the species in Washington. Washington hosts only one colony, and white pelican nesting colonies are very sensitive. Disturbance by predators or humans could result in colony abandonment and extirpation as a breeding species in Washington. Diseases, including West Nile Virus and Type C botulism have caused multiple mortality events (e.g. 9,000 and 8,500 deaths) in the last 20 years. White pelicans were also persecuted historically by fishermen, although they most often feed on non-game fish such as suckers and carp.</i></p>
<p>I believe the white pelican should be kept on the endangered list because it is easily disturbed by humans and predators, and at risk to changes in water levels.</p>
<p><i>Comment noted. The species is sensitive to disturbance and can be affected by water level changes. However, white pelicans have been steadily increasing for ~20 years in Washington and regionally. For these reasons, their status is more consistent with ‘threatened’, as defined in the WAC.</i></p>
<p>I support revising the protection status of the American White Pelican to “threatened”. They appear to have few threats to their existence in Washington, and their numbers have increased markedly.</p>
<p><i>Comment noted.</i></p>
<p>WDFW has rightfully proposed a down-listing of the white pelican on the state ESA, as the species can’t reasonably be considered endangered in a scientific or legal sense any longer. The white pelican no longer fits the definition of endangered, or threatened, or even sensitive in the state of Washington based on the definitions provided by WAC 232-12-297. Not only is this population increasing, but it is entirely protected by federal regulation, as the island happens to be situated within the McNary National Wildlife Refuge, thus falling under the egis of the FWS.</p>
<p><i>The national wildlife refuge status of Badger Island provides some protection, but completely eliminating the potential for trespass on an uninhabited island is impossible, as demonstrated by the disturbance of the Miller Sands, Oregon, colony. Redundant federal/state protections can provide more than one option for prosecution, which can be an advantage, and state and federal laws often provide parallel prohibitions. [In regards to the WAC definitions of threatened and sensitive, see the response to the next comment.]</i></p>
<p>‘Sensitive’ is defined in WAC 232-12-297 as a species “native to the state of</p>

	<p>Washington that is vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats.” As is very clear, even this relaxed statutory definition does not reasonably apply to a species that is increasing in both population size and overall health in the state of Washington, and around the entire country. It seems as though the WDFW is under the misguided impression that a species must be down-listed sequentially, occupying all three tiers before full delisting approval. There is no such requirement.</p>
	<p><i>Agreed, there is no requirement that down-listing be incremental through each step. We considered down-listing to sensitive or delisting white pelicans. However, Section 4.2 states, “A species may be delisted from endangered, threatened, or sensitive only when populations are no longer in danger of failing, declining, are no longer vulnerable”. There is only 1 colony in Washington, and colonies are prone to abandonment if disturbed by humans or predators, and major disturbances to the Badger Island colony could lead to the extirpation of the species as a breeder in Washington. Given this situation, along with the history of persecution, we interpret this species status as being at least ‘vulnerable.’ We will revisit their listing status in five years.</i></p>

Marbled Murrelet Comments:

<b>Report Section</b>	<b>Comment and Response</b>
<b>General comments</b>	Protecting Marbled Murrelet habitat will protect habitat for other species.
	<i>Marbled Murrelets use mature and older conifer forests. Other species that use such habitats will benefit from measures that conserve murrelet habitat.</i>
	Protecting Marbled Murrelets (and habitat) should be valued over short-term economic gain (and to alleviate adverse impacts).
	<i>These comments reflect a policy perspective and are therefore beyond the scope of this document. However, we point out that state and federal rules and regulations are designed to address the need to protect Marbled Murrelet habitat while allowing for lawful resource extraction practices.</i>
	Marbled murrelets continue to be impacted by “forest mismanagement...”
	<i>Noted; the comment reflects a policy-related issue, which is outside the scope of this document.</i>
	Government policy must reflect the danger of extinction and increase protections for this seabird. According to recent research, the most important factor in explaining the decline of the species is the decrease of suitable nesting habitat due to logging. We cannot continue funding our children's education at the expense of their ecological future.

	<i>Noted; the comment reflects policy-related issues and is outside the scope of this Status Review document.</i>
	The bird is on the decline and will easily become extinct in Washington if urgent conservation policy isn't enacted. We cannot allow another species to needlessly become extinct due to human activities.
	<i>Noted; the comment reflects policy-related issues and is outside the scope of this document.</i>
	By increasing protections for the murrelet, we protect our forests.
	<i>Comment noted.</i>
	The Marbled Murrelet has taken a back seat to the lumber industry. Oregon and California have both done a better job of preserving this bird and old growth trees than we in WA have done.
	<i>Comment noted; we cannot speak to state management in Oregon and California.</i>
<b>General comments</b>	After a storm, a raft of tree trunks, limbs, and debris had been washed into Commencement Bay. The flotsam moved north passing Poverty Bay and stretching from Normandy Park to Maury Island. I counted 10 Marbled Murrelets feeding on the fish gathered under the floating debris. In the waters off Pt Townsend we used to see many murrelets when we arrived in Seattle in the '70's. Nowadays there is only the occasional pair or single bird.
	<i>Comment noted, thank you for the information.</i>
	As a private citizen I have witnessed extensive loss of late successional habitat in southwest Washington that has impacted murrelets.
	<i>Comment noted, thank you for the information.</i>
	It has been nearly 20 years after the [WDNR] HCP was signed and a Marbled Murrelet Long-Term Conservation Strategy has yet to be put into place while the murrelet population is in steep decline. The HCP has benefitted the DNR with predictability of harvest and lower costs. Corresponding benefits to the murrelet population are questionable; my concern is that we have lost important habitat in the interim.
	<i>Comment noted.</i>
	There is no biological support for cutting more trees in MMMA's, thereby decreasing the habitat for future generations of Marbled Murrelets. We urge you to plan to defer any potential timber sales which are parts of MMMA's. We are asking you to follow the Science Team's recommendations by adopting a conservation strategy now.
	<i>These comments reflect a policy perspective and are therefore beyond the scope of this document. However, we point out that state and federal rules and regulations are designed to address the need to protect Marbled Murrelet habitat while allowing for lawful resource extraction practices.</i>

	<p>Protecting the bird will have some positive effects. The nesting habitat that is currently suitable and those trees that will become suitable in future decades and centuries will be managed with much more care. The carbon stored in old growth trees and the carbon dioxide that is being taken in by growing forests are more likely to remain in the forest rather than being harvested and soon converted back into atmospheric gases.</p>
	<p><i>Comment noted.</i></p>
	<p>The PSR does not point out that we must arrest the further loss of suitable habitat and forest fragmentation is a severe threat that needs to be ameliorated.</p>
	<p><i>Comment noted; The PSR is not designed to provide management recommendations. The purpose of the PSR is to review the current status of the species and provide recommendations to the Fish and Wildlife Commission regarding Washington legal status.</i></p>
	<p>It is clear that recovery of the species will increasingly rely on greater conservation efforts on nonfederal land in the near term. It stands to reason that non-federal lands may also play an increasing role in providing terrestrial nesting areas as forests mature.</p>
	<p><i>Noted; the comment reflects a policy-related issue, which is outside the scope of this document.</i></p>
<p><b>Habitat and Population Status</b></p>	<p>Marbled Murrelets have been impacted by the extent and duration of past nesting habitat loss: an overall loss of 82% of old-growth forests statewide (Booth 1991) plus a net loss of 13% of habitat statewide over the past 20 years alone.</p>
	<p><i>Comment noted; WDFW appreciates the information.</i></p>
	<p>Absent some significant regulatory shifts, recent modeling demonstrates that Washington’s murrelet population will continue to decline and risk extirpation in the coming decades.</p>
	<p><i>Comment noted WDFW appreciates the information and the concern. We are aware of these data.</i></p>
	<p>The Marbled Murrelet population has stabilized since 2010-2012 in both their entire range and within Washington.</p>
	<p><i>For the listed range of WA, OR, and CA combined for 2000-2013, we acknowledge there was no significant trend detected for population increase or decrease. However, in general, we see negative point estimates for declines in the Washington conservation zones and see stable or increasing populations to the south in recent years.</i> <i>In Washington, the slopes for both zones 1 and 2 are negative and one zone has strong evidence for a decline as of 2015. Overall, Washington State Zones 1 and 2 combined show a significant decline of 4.4% per year.</i> <i>The most recent published trend information, including season 2015 data (Lance and Pearson 2016), indicates that at the scale of individual conservation zones, there was evidence for a population decline in Conservation Zone 1 (5.3% decline per year; 95% CI: -8.4 to -2.0%) (Lance and Pearson 2016 Table 2; Figures 2 and 4). The data also indicate that there is a negative trend in Conservation Zone 2, but the upper confidence interval overlaps zero – therefore, the trend for this</i></p>

	<p><i>Conservation Zone is less certain. The confidence interval for the Zone 2 trend has overlapped zero in some recent years and not in others suggesting both strong and weak evidence for a decline depending on the year (e.g., compare trend estimates for this zone using data through 2013, 2014, and 2015).</i></p> <p><i>“...in addition to murrelet population stabilization since 2010-2012, the habitat loss has stabilized dramatically as well.”</i></p> <p><i>Regarding murrelet population stabilization, please see comment response above. Regarding habitat loss, we know of no information that would corroborate this statement. The estimated loss on non-federal lands for Washington was -29.8% of the baseline from 1993-2012, and -13.3% statewide for all ownerships (Raphael et al. 2016a; PSR July 2016 Table 1). The NWFP does not have habitat change data beyond 2012, nor can a true rate be reliably calculated between one beginning point in 2010 and one ending point in 2012.</i></p> <p><i>Habitat gains and losses for years 2013 to present were not reported by WDFW Status Review.</i></p> <p><i>We do not know of any other comprehensive data set available that is comparable to the Northwest Forest Plan monitoring 20 year review (Falxa and Raphael 2016), which tracked murrelet abundance estimates and nesting habitat gains and losses at regional landscape provinces. Unfortunately, forest monitoring was only modeled up to the year 2012 (inclusive) for the NWFP report. We would appreciate a reference of any similar comprehensive data set covering nesting habitat for these years that we could include in the PSR.</i></p> <p><i>Commenter states “Interestingly, ‘in terms of nesting habitat persistence on federal land, the NWFP’ (which includes all federal critical habitat) ‘has been largely effective for Washington’ ..., as &gt;99% of designated critical habitat in Washington occurs on federal lands.”</i></p>
<p><b>Habitat and Population Status</b></p>	<p><i>The commenter has misquoted language in the PSR, leaving out an important phrase (the ellipse above): ... ‘has largely been effective for Washington <b><u>federal lands</u></b>’ which misconstrued the meaning of the sentence. Because 99% of the designated federal critical habitat is on <u>federal lands</u>, it has been effective for persistence of nesting habitat on the Washington <u>federal lands only</u>, not the <u>entirety of the state</u>. We do not imply it has been effective for all ownerships in Washington; this would not be the case. This statement has been clarified in the final draft.</i></p> <p><i>Population estimates from Zone 1 may not be reliable because of “highly volatile” population numbers from year to year. Downward trend in Zone 1 is a cause of perceived population declines as a whole, but likely affected by irregular attendance by Canadian birds. If Zone 1 fluctuations are not due to habitat on land, but to forage fish spatial shifts, then Zone 1 trends are not representative.</i></p>

*Falxa et al. (2016:30) acknowledge the possibility that a northward shift in murrelet distribution from Washington to Canada could mimic a population decline in Zone 1. However, the authors think this possibility is unlikely because: (1) the murrelet distribution at sea during the breeding season generally coincides with the distribution of potential nesting habitat directly inland (Burger 2002, Meyer et al. 2002, Miller et al. 2002, Raphael 2006, Burger and Waterhouse 2009, Raphael et al. 2002, 2015); and (2) a large population fluctuation or population shift would suggest that breeders are shifting nest locations, which is contrary to existing evidence for nest site fidelity (Hebert et al. 2003, Piatt et al. 2007, Burger et al. 2009), and because population trend data in B.C. from 1996-2013 do not support such a population shift, as annual murrelet population trends in B.C. are negative for 2 of 3 sampling regions adjacent to WA waters (Bertram et al. 2015). This clarification has been included in the final draft.*

Trends derived from monitoring from zones 2-5 suggest populations not declining. Plots for Conservation zones 2-4 shows much lower variability than individual zone plots. Despite reported habitat loss there is no decline of murrelets in Conservation zones 2-4.

*Our review is focused on the status of the murrelet in Washington State only. In Washington, the slopes for both zones 1 and 2 are negative and one zone has strong evidence for a decline as of 2015. The most recent published trend information (Lance and Pearson 2016) indicates that at the scale of individual conservation zones, there was evidence for a population decline in Conservation Zone 1 (5.3% decline per year; 95% CI: -8.4 to -2.0%) (see Table 2 and Figures 2 and 4). The data also indicate that there is a negative trend in Conservation Zone 2, but the upper confidence interval overlaps zero – therefore, the trend for this Conservation Zone is less certain. The confidence interval for the Zone 2 trend has overlapped zero in some recent years and not in others suggesting both strong and weak evidence for a decline depending on the year (e.g., compare trend estimates for this zone using data through 2013, 2014, and 2015). Falxa et al. (2016a:24) show adequate power to detect trends: 95% power to detect 4% decline in Zone 1 and Zone 2 (19 years and 22 years resp.). Zone 3, the next most southerly zone was not sampled in 2015 and, as a result trends cannot be assessed through 2015. In general, we see negative point estimates for declines in the Washington conservation zones and see stable or increasing populations to the south in recent years.*

It is our belief that the underlying data and habitat models for murrelet nesting are not sufficiently reliable for their intended purposes. High AUC values of Maxent nesting habitat models may be overestimating habitat model goodness; this is supported by low correlation over time in nesting habitat area and population trends; and the model is dubious and not suitable for management purposes.

*WDFW assumes that Northwest Forest Plan (NWFP) model verification was conducted in accordance with accepted statistical principles and peer review, and as such represents the best available estimates of habitat on an ecoregion scale. The authors of the Maxent models used in Raphael et al. (2016a) did not rely on AUC (Area Under Curve) values only to assess model performance. Their models claim to have “very good (if not “excellent) classification skill as measured by the AUC and gain values and also were well-calibrated as evidenced by the P/E (AAF) plots and associated Spearman test results” (Raphael et al. 2016a:84-85). In addition, the sources of uncertainty with their models that the authors discuss*

	<p><i>“should predispose the models to perform worse – not better. Nonetheless, even with the ‘deck stacked against’ good models, good models were generated” (Raphael et al. 2016a:84-85). The authors state that using maps at face value to locate specific stands or patches of murrelet habitat on a specific ownership is not appropriate at any scale without ground verification methods. The most appropriate use of the data is across landscapes, counties and larger watersheds or ecoregions and should be based on USGS hydrologic units of size 6 or larger.</i></p>
	<p>Any robust quantification of habitat change should also include habitat recruitment during the same period.</p>
	<p><i>Table 1 in the PSR reports habitat gains (recruitment) for Washington from the NWFP model for both federal and non-federal lands (“Gains” columns). Details for habitat gains are explained briefly in Raphael et al. (2016a:77, 82, 84, 86; Tables 2-9, 2-10). WDFW reported habitat gain figures directly from these tables. Raphael et al. (2016a) do state that consistent criteria were used between model years for both gains and losses. While the methods for detecting habitat gains were less effective at distinguishing real from false gains, there is high confidence that real habitat loss has occurred 1993-2012 (Raphael et al. 2016a).</i></p>
	<p>There is a low correlation over time in available nesting habitat and population trends, so that the data in the PSR do not provide an adequate basis for the conclusion that forest habitat loss is a primary factor in the decline for the last 15 years.</p>
	<p><i>This is explained in the section: Forest Habitat and Marine Abundance Correlations; we provide additional language below to clarify. (The reader can consult the references provided below; we did not add all of this to the PSR text because of space and time constraints.)</i></p> <p><i>For Zones 2-5, nearly 60% of the influence on murrelet at-sea abundance is explained by terrestrial factors, and for Zone 1, murrelet distribution and abundance was most influenced by the total amount of nesting habitat present in the zone (&gt;50% of influence), indicating amount and composition of habitat on the landscape was a driver of bird distribution and abundance (Raphael et al. 2016b: figure 3-9). Also Figures 3-2 and 3-4 in Raphael et al. (2016b) suggest fairly strong correlations between the residual of murrelet abundance and nesting habitat. Finally, as we state above, the murrelet distribution at sea during the breeding season generally coincides with the distribution of potential nesting habitat directly inland in several studies that have examined this relationship to date (Burger 2002, Meyer et al. 2002, Miller et al. 2002, Raphael 2006, Burger and Waterhouse 2009, Raphael et al. 2002, 2015, 2016b). As the authors point out, these correlations do not necessarily establish cause-effect relationships but they do support the hypothesis that nesting habitat may be the factor limiting population stabilization and recovery.</i></p>
	<p>If not all nesting habitat is occupied, nesting habitat is not limited, so then claiming nesting habitat is driving current population changes is not supported.</p>

	<p><i>The at-sea distribution and abundance is driven by both the amount of higher quality habitat and habitat cohesion (i.e., the amount of unfragmented habitat) adjacent to marine hotspots of murrelet abundance (See Raphael 2006, Raphael et al. 2015, 2016b). In British Columbia, 6 separate watershed-level radar studies supported a linear relationship between murrelet counts at sea and proximity to inland areas of habitat, and murrelets did not aggregate offshore where adjacent nesting habitat had been significantly reduced due to harvest (Burger and Waterhouse 2009). Because habitat is defined by both small-scale features (tree size and structure) and landscape-level features (e.g., habitat cohesion), it can be difficult to assess whether or not nesting habitat is limited. It is possible differences in habitat quality influence murrelet choice of nesting habitat. There is some evidence to suggest that nesting density of murrelets can be somewhat lower than previously thought, as Conroy et al. (2002) estimated active nest density was 0.14/hectare (~1 nest per 9 ha) in unfragmented old forest in B.C. Clearly this is an area of research that needs to be further investigated.</i></p> <p>If relative availability of higher quality habitat trended upward over the period of declining population, it does not logically follow that nesting habitat is limiting, or that timber harvest during this time contributed to the observed declines in population.</p> <p><i>There has been a net loss of higher quality nesting habitat in all conservation zones except for Zone 5, and we found no data detecting upward trends in habitat availability. In addition, there is a fairly strong relationship between murrelet population change and changes in the higher quality habitat (see Figure 3-5 in Raphael et al. [2016b:105]).</i></p> <p>Any trend in population (up or down) due to habitat manipulation would logically be in response to earlier trends in habitat and reproductive success, not current conditions, with majority of population persisting at sea. Therefore, while contemporary trends in nesting habitat appear correlated with population trends in Washington, causation is not apparent. Lack of a temporal delay suggests caution needed with the declining population interpretation.</p>
<p><b>Habitat and Population Status</b></p>	<p><i>Apparent population declines according to demographic models and the most recent work by the Effectiveness Monitoring Team suggest that populations have been declining for a long period of time (Divoky and Horton 1995, USFWS 1997, McShane et al. 2004, Miller et al. 2010) and, in the northern portions of the continental U.S. range, are continuing to decline (Lance and Pearson 2016). There is likely a temporal delay in population responses to the factors that are driving population changes in species like Marbled Murrelet because they are long-lived and have a relatively low reproductive rate. However, the recent analyses contained in Falxa and Raphael (2016) allow for this temporal delay. The changes in nesting habitat reported in Raphael et al. (2016a) occurred between 1993 and 2012, while the population changes reported in Falxa et al. (2016a) occurred between 2000 and 2013. Consequently, the comparison between murrelet population and habitat changes in Raphael et al. (2016b) allows for up to a 7-year delay for populations to respond to the habitat changes.</i></p>

	<p>Changes in forest structure due to natural or anthropogenic cause are not a permanent loss of habitat area. The PSR table 1 indicates more than 10,000 acres per year (over the period 1993 to 2012) were added to higher quality category of potential nest habitat due to forest maturation.</p> <p>WDFW states [July 2016 draft PSR, page 5] "...the recruitment of relatively lower quality habitat may not offset the loss of an equal amount of high quality habitat (Falxa and Raphael 2016)." It appears that 212,700 acres are categorized as higher quality, and it is not clear why the department suggests it to be "relatively lower quality". In context, it appears that the 212,691 acres [Class 3+4 Gains, Table 1] is categorized as "Higher quality" thus it is not clear why the Department suggests it to be relatively lower quality.</p>
	<p><i>WDFW appreciates the opportunity to provide further clarification. WDFW acknowledges changes in forest structure are not permanent and habitat gains have happened; however a greater amount of habitat was lost in the same time period. Forest used as nesting habitat may take 100- 200 years to develop after a stand leveling disturbance (depending on geographic location) and over that time frame several generations of murrelets may have lost the opportunity to reproduce in those areas. Raphael et al. (2016a:84-86) provide detail on the uncertainty regarding modeling the gains in habitat.</i></p> <p><i>In the PSR, Table 1, we refer to 'suitability Classes 3+4' (Raphael et al. 2016a) as "higher-quality Classes 3 +4". We use the term "highest quality" in the PSR to reflect 'Class 4- highest suitability'. On the gradient scale of habitat (Raphael et al. 2016a:54-55), 'Class 3- moderate suitability' is <u>relatively lower quality</u> (about 0.23 to 0.53 probability for WA) compared to Class 4 (&gt;0.53 probability). Thus the lower end of developing Class 3 is a threshold that transitions from "Class 2- marginal suitability" to Class 3 (at about 0.23 probability). Therefore, the low end of Class 3 has a lower logistic probability of providing better habitat structure conditions than Class 4 ("highest quality"), and is not an immediate and equal habitat quality replacement value for losses of highest quality. This is clarified in less detail in the Final draft.</i></p>
	<p>It is inappropriate to exclude data from post-2010 [at-sea] surveys...which... show a dramatic increase in population between 2010 and 2013.</p>
	<p><i>Please see Figure 5 in the PSR, which clearly shows survey year data for 2001 through and including year 2015. For Washington survey zones 1 and 2 combined, there was not an increase in the population trend line, in fact the opposite, as the trend for WA was significant at -4.4% per year. The trend line regression data has 95% power to detect a significant trend only if all survey year estimates are included over the full sampling time frame (2001-2015); it is statistically inappropriate to extract the last few data points to determine a trend.</i></p>
	<p>Changes in habitat due to timber harvest have occurred only in unoccupied sites since regulatory protections have been established in the 1990s.</p>
	<p><i>Raphael et al. (2016) state that the primary causes of nesting habitat loss on federal and non-federal lands was fire and timber harvest. They do not provide insights into the relative loss of occupied and unoccupied stands. In addition the definition of murrelet habitat included in the Washington Forest Practices Rules does not capture all Marbled Murrelet habitat and there is an exception for small forest landowners. Moreover, some Habitat Conservation Plans allow for harvest of Marbled Murrelet habitat. Finally, recent analysis indicate that the established</i></p>

	<p><i>survey protocol (Evans Mack et al. 2003) is not adequate and some sites may have been incorrectly classified as unoccupied.</i></p>
<p><b>Factors Affecting Continued Existence</b></p> <p><b>Adequacy of Regulatory Mechanisms</b></p>	<p>There is uncertainty expressed about WDNR’s Long-term Conservation Strategy for the Marbled Murrelet and the importance of maintaining habitat on state-owned lands.</p> <p>The USFWS recognizes preserving marbled murrelet habitat in SW Washington is critical to the species’ survival and recovery.</p>
	<p><i>Comment noted. This comment reflects policy-related issues outside the scope of this Status Review.</i></p>
	<p>This process would benefit greatly from a state recovery plan for murrelets which shall include target population objectives, criteria for reclassification, and an implementation plan for reaching population objectives (WAC 232-12-297 (11.1)).</p>
	<p><i>Comment noted. This comment reflects policy-related issues outside the scope of this Status Review.</i></p>
	<p>State Forest Practices Rules have clearly failed to prevent further loss of old forest nesting habitat from commercial timber harvesting.</p> <p>To prevent the unintended harvest of existing murrelet habitat on private lands (~129,000 acres at higher survey threshold, 5-7 platforms per acre) prior to conducting protocol surveys, the lower threshold (2-5 platforms per acre) for meeting the regulatory habitat definition should be applied whether or not it is located within a marbled murrelet detection area.</p> <p>We urge WDFW to assess, and the Forest Practices Board to revise the Forest Practices Rules for marbled murrelets consistent with the best available science.</p>
	<p><i>Comment noted. This comment reflects policy related issues outside the scope of this Status Review. We cannot comment on future direction by the Forest Practices Board to WDFW, as it is a policy-related issue and not within the scope of this Periodic Status Review.</i></p>
	<p>Murrelet population in Washington continues to be impacted by nest predation, declines in forage fish populations and mortality from net fisheries and pollution. Murrelets continue to decline due to habitat loss, habitat fragmentation, high nest predation rates, low fecundity and low adult survival. The marbled murrelet’s population continues to decrease precipitously.</p>
	<p><i>Comment noted.</i></p>
<p><b>Continued Risks Threats</b></p>	<p>Forage fish declines may be a driver of murrelet declines in Washington. Prey type and abundance declines may be a contributor to Marbled Murrelet declines.</p>
	<p><i>Comment noted, and WDFW agrees; however, additional research in more marine regions of Washington is needed to fully investigate this factor. Forage fish availability is one factor. When assessing both marine and terrestrial factors on changes in the distribution and abundance of murrelet populations, terrestrial factors appear to have the greatest influence (Raphael et al. 2016b, and Raphael et al. 2015). Again, these correlations do not indicate cause and effect but instead support the hypothesis that terrestrial factors and nest habitat (amount and cohesion) have the greatest influence of murrelet population trends.</i></p>

	<p>There will be future loss of nesting habitat due to natural disturbance such as fire windthrow, and disease (likely to be exacerbated by more extreme climatic conditions).</p> <p><i>The effects of climate change on Marbled Murrelets are not clear at this time, but modeling indicates that precipitation and snow pack will decrease through time and some forest landscapes may experience higher risk of less epiphyte (moss and lichen) branch cover and possibly canopy-replacing fires and other impacts. Such events could impact Marbled Murrelets and other species.</i></p>
<b>Recommendation and Conclusion</b>	<p>The Marbled Murrelet should be up-listed as an endangered species in Washington due to reasons such as declining population and habitat loss. Classifying the murrelet as a state endangered species is warranted based on its declining population, and is an important step in its recovery.</p>
	<p><i>Thank you for your comment. WDFW is recommending that the status of the Marbled Murrelet be up-listed from state threatened in 1993 to state endangered.</i></p>

**Lynx Comments:**

<b>Report Section</b>	<b>Comment and Response</b>
<b>Recommendation and Conclusion</b>	<p><u>WDFW received 176 form letters that included the following text:</u> I'm writing to support the recommendation to list Canada lynx in Washington state as endangered. Lynx are the most elusive and rare of the three wild cats that live in Washington, and I want to see lynx recover and rebound in the North Cascades and Kettle River Mountain Range.</p> <p>We need to do more for lynx in Washington, such as getting more lynx into the Kettle River Mountain Range, reducing trapping pressure in British Columbia, and protecting the North Cascades population. Uplisting to endangered status is a crucial step in the conservation and recovery of lynx that make their home in Washington.</p>
	<p><i>WDFW is recommending that the status of the Lynx be up-listed from state threatened to state endangered. Thank you for your comments.</i></p>
	<p>WDFW received comments from individuals that stated support for up-listing the lynx from a state threatened status to a state endangered status in Washington.</p>
	<p><i>WDFW is recommending that the status of the Lynx be up-listed from state threatened to state endangered. Thank you for your comments.</i></p>

	<p>In sum, given the historic loss of lynx habitat due to logging and development, the fragmentation of habitat that aggravates the effects of reduction of habitat extent, recent degradation of habitat to wildfires, projected reductions in snowpack due to global warming, as well as the danger described above from inbreeding depression and genetic drift stemming from the small population, there is no doubt that lynx in Washington State should be up-listed to endangered status.</p>
	<p><i>WDFW is recommending that the status of the Lynx be up-listed from state threatened to state endangered. Thank you for your comments</i></p>
<p><b>Habitat and Population Status</b></p>	<p>The WDFW is considering listing this species as endangered because of one element that is “anticipated threats to lynx population persistence.” The ESA is not a prophylactic that can be invoked when there is a hypothesis of a habitat effect on a population. This is an unreasonable use of the state and federal program as it was designed.</p>
	<p><i>The federal ESA listing of lynx is outside the scope of this document. WDFW is proposing that state up-listing to endangered be considered because of 5 elements that could affect the continued existence of lynx in Washington: 1) reduced range, 2) smaller population size as a result of reduced range, 3) loss of habitat as a result of large wild fires, 4) the threat of future loss and fragmentation of habitat due to large wildfires, which could exacerbated by climate change, and 5) limitations to immigration of lynx from BC because of lynx trapping in BC, and habitat loss or fragmentation. Because of the current status of the lynx population and the number and severity of threats affecting the population and it's habitat in Washington, a recommendation for up-listing the lynx in Washington is warranted.</i></p>
	<p>While the WDFW periodic review suggests a decline in the population over the last 20 years, it also states clearly that there “is little information available to estimate the size of the lynx population that was present in Washington historically.” Having a historic population estimate is a metric necessary for elementary mathematics. Changing the listing status of this species to endangered because of nebulous speculation that they might be declining is unreasonable.</p>
	<p><i>While we lack precise estimates for the lynx population that historically occurred in Washington, we do know the historic distribution of the species has greatly reduced. We recommend that the lynx be considered for up-listing based on the best available science which includes sound data that showing a significant reduction from the historical range to the current range in Washington. These data were obtained through numerous surveys within their historical range to detect lynx presence and from ongoing lynx research in western Okanogan County. In addition, a reduction in the range is expected to directly relate to a reduction in population size.</i></p>

	<p>The WDFW report also states that the majority of suitable habitat loss was caused “largely from extensive wildfires that have occurred in [their hypothesized habitat] since 1992.” To suggest the state elevate the listing of the lynx because they’ve been negatively impacted (so it is presumed) by wildfires is an unreasonable remedy to a problem that isn’t known with certainty to even exist.</p>
	<p><i>There is significant agreement among lynx scientists that the extensive wildfires in western Okanogan County in the last 20 years have reduced the amount of suitable lynx habitat.</i></p>
	<p>The current population estimate is that there are 87 lynx in Washington, and this estimate is entirely based on speculation of habitat characteristics, not actual population counts. Listing this animal as endangered because of an entirely hypothesized number based on an area being somewhere a lynx might live making a regulatory decision based on biological uncertainty. There should be some semblance of structure in the listing process by the WDFW, and listing this species on such an outstanding guess would be a complete divorce from that process.</p>
	<p><i>In the periodic status review we explained in detail how we estimated the population size at ~54 lynx, not 87 (Table 2, page 6). We acknowledge that the estimate is not precise but based upon sound research and that we consider the estimate valuable and representative of a small population at risk.</i></p>
	<p>Okanogan County is where the vast majority of the (yet to actually be observed) population is expected to inhabit. While critical habitat designations on private lands that would accompany an endangered listing is obviously the aim of this proposed status elevation, it states that habitat loss “may also” be a factor because of timber harvesting, but that the “bulk of habitat loss is due to large wildfires that burn subalpine” forests. Designation of critical habitat on private lands is only going to encourage the magnitude of destructive forest fires in the region, should they occur.</p>
	<p><i>The lynx status review does not address the designation of critical habitat (a federal action) and as such WDFW (a state agency) has no authority in this matter.</i></p>
	<p>If wildfires are actually the main source of habitat loss and harm to the lynx population in Washington, how then could proposing restrictions on private lands do anything to mitigate that?</p>
	<p><i>The status review does not propose restrictions on private lands.</i></p>
	<p>This proposed listing is entirely based upon speculation and “loss of habitat” that no one even knows is actually lynx habitat.</p>
	<p><i>The classification of certain forests in Okanogan County as lynx habitat has been based on scientific data collected by several researchers and published in peer-reviewed scientific journal. WDFW considers these data and the classification of lynx habitat to be highly credible.</i></p>

	<p>“Given the reduced distribution, small and restricted population, and an increase in the number and severity if threats to lynx in Washington...” are all speculations based on habitat characteristics that don’t even enjoy a confirmed lynx population.</p>
	<p><i>Our conclusions are based on habitat analyses, numerous and extensive surveys, research studies involving numerous collared lynx, and sound biological principles.</i></p>
	<p>Currently the Okanogan region is dominated by older forest and recent burns, except perhaps on DNR land, and is thus suboptimal for lynx.</p>
	<p><i>We agree that there are substantial areas within the Okanogan Lynx Management Zone that are currently not optimal for lynx. The loss of habitat as a result of fire was one of the significant factors that prompted our recommendation to up-list the lynx.</i></p>
<p><b>Factors Affecting Continued Existence</b></p>	<p>The low number of lynx in the state and the reduction in their estimated numbers from 87 in 2008 to 82 or fewer last year, based on calculations of habitat suitability, suggest the population may be imperiled for genetic reasons – in addition to the other threats it faces. Viability is compromised and weakened by genetic drift and inbreeding depression stemming from small population size. Given the trapping mortality that the larger lynx population in Canada is subject to, and that likely curtails lynx immigration to Washington, fewer than 100 animals is not nearly enough (nor even on the right scale of magnitude) to maintain viability.</p>
	<p><i>We recognize the importance that the genetic characteristics of a small population can have on its likelihood of persistence, as well as the degree to which a small population is supported by immigration from a neighboring area. Unfortunately we have very little data to currently address the genetic characteristics of the Washington lynx population and no data to address the amount of immigration or emigration that occurs in this population, however research is currently underway to address these questions We agree with your assessment of the significance of these factors and we hope to have more data in the future to evaluate them. Until that time, we recommend the lynx be up-listed based on the best data available.</i></p>
	<p>For example, while it is true that fires in the West have gone up over the past few decades (Westerling et al. 2006), the levels are still far below those seen prior to human settlement (Everett et al. 2000). Thus, it is premature to take management actions to account for future habitat conditions which cannot be reliably predicted and within the range of natural variability.</p>
	<p><i>While the commenter’s observations are valid, our concern with fire is based on the reduced area of habitat now available to a relatively small number of lynx in the Okanogan Lynx Management Zone and the significant percentage of habitat that could be lost if a large fire or a number of fires was to occur within this LMZ now.</i></p>

	<p>Lynx habitat suitability across large areas in the Okanogan region was recently reduced due to fire. We posit that over the next few years, lynx habitat suitability in areas burned in the fires of 1992 and similar early years should increase as it takes 10 to 20 years following a stand-replacement fire for high quality habitat conditions to develop (Koehler 1990).</p>
	<p><i>We agree that some forest stands that reach 10-20 years old can provided suitable habitat for lynx and snowshoe hares, however, the Interagency Lynx Biology Team (ILBT 2013) uses a broader range of ages (10-40 years), because a significant percentage of forest stands do not become suitable for lynx and snowshoe hares until they are older than 20 years of age. While some areas of Washington that were burned in 1992 may now be suitable, other areas are not yet providing habitat.</i></p>
	<p>The Interagency Lynx Biology Team (ILBT 2013) identified maintenance of lynx habitat corridors between Canada and the contiguous US as crucial for genetic flow of lynx in northeastern Washington. Hence, the genetic and population risk typically associated with small population size may not apply to lynx. Lynx are also a species that would be a good candidate for reestablishment into historical ranges that are currently unoccupied.</p>
	<p><i>The commenter states that the genetic and population risk associated with small population size may be less applicable to lynx or the Washington lynx population because the Washington population is considered continuous with the lynx population in southern British Columbia. However, we lack data to address this observation and could not evaluate it in-depth in the status review. We agree that an evaluation of lynx reestablishment merits consideration, especially if a reintroduction feasibility assessment indicates that a reintroduction could be successful at reestablishing a self-sustaining population.</i></p>
	<p>Lynx management plans have been developed for two private landowners and WDNR lands (Stinson 2001, WDNR 2006). The WDNR policy is to provide a mosaic of forest successional stages for lynx habitat. Since lynx require early seral forest for optimum hare populations, we fully support this management policy. Policies that view lynx habitat as a permanent feature of a zone on a map will misjudge what lynx need and lead to suboptimal population performance. Engagement by WDNR with other land owners, especially federal land managers in the lynx habitat zone, to implement a similar policy would likely result in greater availability of high quality habitat conditions.</p>
	<p><i>We agree.</i></p>