

Department of Transportation. These are adjudications under 5 U.S.C. 554 in which the position of the Department is represented by an attorney or other representative who enters an appearance and participates in the proceeding. Coverage of the Act begins at designation of a proceeding or issuance of a charge sheet. Any proceeding in which the Department may prescribe or establish a lawful present or future rate is not covered by the Act. Proceedings to grant or renew licenses are also excluded, but proceedings to modify, suspend, or revoke licenses are covered if they are otherwise "adversary adjudications." For the Department of Transportation, the types of proceedings covered include, but may not be limited to: National Highway Traffic Safety Administration (NHTSA) automotive fuel economy enforcement under 49 CFR part 511; Federal Motor Carrier Safety Administration (FMCSA) enforcement of motor carrier safety regulations under 49 CFR 386; and the Department's aviation economic enforcement proceedings conducted by its Office of Aviation Enforcement and Proceedings pursuant to 14 CFR Chapter II. Also covered is any hearing conducted under Chapter 38 of title 31 of the U.S. Code or the Religious Freedom Restoration Act of 1993 (42 U.S.C. 2000bb *et seq.*).

\* \* \* \* \*

Issued under authority delegated in 49 CFR 1.27(c).

Molly J. Moran,

Acting General Counsel.

[FR Doc. 2016-24052 Filed 10-14-16; 8:45 am]

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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS-R1-ES-2014-0045; FXES11130900000C6-167-FF09E42000]

RIN 1018-BA30

#### Endangered and Threatened Wildlife and Plants; Reclassifying the Columbia River Distinct Population Segment of the Columbian White-Tailed Deer as Threatened With a Rule Under Section 4(d) of the Act

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), determine

threatened species status under the Endangered Species Act of 1973 (Act), as amended, for the Columbia River distinct population segment (DPS) of Columbian white-tailed deer (*Odocoileus virginianus leucurus*). This subspecies of white-tailed deer is found in limited areas of Clatsop, Multnomah, and Columbia Counties in Oregon, and Cowlitz, Wahkiakum, Pacific, Skamania, and Clark Counties in Washington. The effect of this rule is to change the listing status of the Columbia River DPS of Columbian white-tailed deer from an endangered species to a threatened species on the List of Endangered and Threatened Wildlife. We call this "reclassifying" or "downlisting" the DPS. We are also adopting a rule under the authority of section 4(d) of the Act (a "4(d) rule") that is necessary and advisable to provide for the conservation of the Columbia River DPS of the Columbian white-tailed deer.

**DATES:** This rule is effective November 16, 2016.

**ADDRESSES:** This final rule is available online at <http://www.regulations.gov> under Docket No. FWS-R1-ES-2014-0045. Comments and materials received, as well as supporting documentation used in preparation of this final rule, are available for public inspection at <http://www.regulations.gov>, or by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE. 98th Avenue, Portland, OR 97266; telephone 503-231-6179.

**FOR FURTHER INFORMATION CONTACT:** Paul Henson, State Supervisor, telephone: 503-231-6179. Direct all questions or requests for additional information to: Columbian White-tailed Deer Information Request, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE. 98th Avenue, Portland, OR 97266. Individuals who are hearing impaired or speech impaired may call the Federal Relay Service at 800-877-8337 for TTY (telephone typewriter or teletypewriter) assistance 24 hours a day, 7 days a week.

**SUPPLEMENTARY INFORMATION:**

#### Executive Summary

*Why we need to publish a rule.* Under the Act, a species may warrant reclassification from endangered to threatened if it no longer meets the definition of endangered (in danger of extinction). The reclassification of a listed species can only be completed by issuing a rule. The endangered designation no longer correctly reflects the current status of the Columbia River DPS of Columbian white-tailed deer (CWTD) due to a substantial

improvement in the species' status. This action is based on a thorough review of the best available scientific and commercial data, which indicate an increasing population trend within the DPS and the presence of multiple secure subpopulations.

This rule finalizes the reclassification of the Columbia River DPS of CWTD as a threatened species. It includes provisions under the authority of section 4(d) of the Act that are necessary and advisable for the conservation needs of the CWTD.

*The basis for our action.* Under the Act, we may determine that a species is an endangered or threatened species because of any one or a combination of the five factors described in section 4(a)(1) of the Act: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. The population of the Columbia River DPS of CWTD consists of over 900 individuals. In addition to the new Ridgefield National Wildlife Refuge (NWR) subpopulation of 100 individuals, there are three other secure subpopulations. We have determined that the CWTD is no longer at risk of extinction and, therefore, does not meet the definition of endangered, but is still impacted by habitat loss and degradation of habitat to the extent that the DPS meets the definition of a threatened species under the Act (a species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range).

Under section 4(d) of the Act, the Secretary of the Interior has discretion to issue such regulations she deems necessary and advisable to provide for the conservation of the species. A 4(d) rule may include some or all of the prohibitions and authorizations set out in title 50 of the Code of Federal Regulations (CFR) at sections 17.31 and 17.32 (50 CFR 17.31 and 17.32), but also may be more or less restrictive than those general provisions. For the Columbia River DPS of CWTD, the Service has determined that a 4(d) rule is appropriate as a means to facilitate conservation of CWTD in the Columbia River DPS and expansion of the species' range by increasing flexibility in management activities for our State and Tribal partners and private landowners.

*Peer review and public comment.* We sought comments from independent specialists to ensure that our

determination is based on scientifically sound data, assumptions, and analyses. We invited these peer reviewers to comment on the downlisting proposal. We considered all comments and information we received during the comment period.

## Background

### Previous Federal Actions

On March 11, 1967, the Secretary of the Interior identified the CWTD as an endangered species (32 FR 4001), under the authority of the Endangered Species Preservation Act of October 15, 1966 (80 Stat. 926; 16 U.S.C. 668aa(c)). On March 8, 1969, the Secretary of the Interior again identified the CWTD as an endangered species (34 FR 5034) under section 1(c) of the Endangered Species Preservation Act of 1966. On August 25, 1970, the Acting Secretary of the Interior proposed to list the CWTD as an endangered subspecies (35 FR 13519) under the authority of new regulations implementing the Endangered Species Conservation Act (ESCA) of 1969. On October 13, 1970, the Director of the Bureau of Sport Fisheries and Wildlife listed the CWTD as an endangered subspecies (35 FR 16047) under the authority of new regulations implementing the ESCA of 1969. Species listed as endangered under the ESCA of 1969 were automatically included in the List of Endangered and Threatened Wildlife when the Endangered Species Act (16 U.S.C. 1531 *et seq.*) was enacted in 1973. In December 1971, the Service established the Julia Butler Hansen National Wildlife Refuge (JBHR) for CWTD in Cathlamet, Washington. JBHR consists of the Mainland Unit and Tenasillahe Island (see Figure 1).

On October 21, 1976, the Service released the CWTD Recovery Plan. On June 14, 1983, the Service released the Revised Recovery Plan for CWTD. The revised plan addressed the two main populations of CWTD, Columbia River and Douglas County, separately. On July 24, 2003, the Service published a rule (68 FR 43647) that: (1) Recognized the Douglas County and Columbia River populations as DPSs under the Service's 1996 Policy Regarding the Recognition of Distinct Vertebrate Population Segments under the Act (see 61 FR 4722; February 7, 1996), and (2) removed the Douglas County population

of CWTD from the List of Endangered and Threatened Wildlife. It was determined that recovery criteria for the Douglas County population had been met, as it achieved benchmarks in both population size and amount of secure habitat.

A 5-year status review of the Columbia River DPS was completed on November 5, 2013 (U.S. Fish and Wildlife Service 2013a). This review concluded that the CWTD's status had substantially improved since listing, that the DPS no longer met the definition of an endangered species under the Act, and recommended that the DPS be downlisted from endangered to threatened.

On October 8, 2015, we published a proposed rule (80 FR 60850) to downlist the Columbia River DPS of CWTD from endangered to threatened, with a 4(d) rule that is necessary and advisable to provide for the conservation of that DPS. We accepted public comments on the proposal for 60 days, ending December 7, 2015.

### Species Information

The CWTD is the westernmost representative of 38 subspecies of white-tailed deer in North and Central America (Gavin 1984, p. 6). It resembles other white-tailed deer subspecies, ranging in size from 39 to 45 kilograms (kg) (85 to 100 pounds (lb)) for females and 52 to 68 kg (115 to 150 lb) for males (Oregon Department of Fish and Wildlife 1995, p. 2). Although CWTD can live up to 20 years, their median lifespan ranges from 3 to 5 years for bucks and 5 to 9 years for does (Gavin 1984, p. 490; U.S. Fish and Wildlife Service, unpublished data). Breeding occurs from mid-September through late February, with a peak in November. Does reach sexual maturity by 6 months of age or when their weight reaches approximately 36 kg (80 lb); however, their maturation and fertility depends on the nutritional quality of available forage (Verme and Ullrey 1984, p. 96). Fawns are born in early summer after an approximately 200-day gestation period. In their first pregnancy, does usually give birth to a single fawn, although twins are common in later years if forage is abundant (Verme and Ullrey 1984, p. 96). On the JBHR Mainland Unit, Service biologists often observe fawns in pastures of tall, dense reed canary grass (*Phalaris arundinacea* L.)

and tall fescue (*Festuca arundinacea*), as well as mixed deciduous and Sitka spruce (*Picea sitchensis*) forest (U.S. Fish and Wildlife Service 1983, p. 10; Brookshier 2004, p. 2).

CWTD were formerly distributed throughout the bottomlands and prairie woodlands of the lower Columbia, Willamette, and Umpqua River basins in Oregon and southern Washington (Bailey 1936, p. 92; Verts and Carraway 1998, p. 479). The subspecies occupied a range of approximately 60,000 square kilometers (km<sup>2</sup>) (23,170 square miles (mi<sup>2</sup>)) west of the Cascades Mountains: From the Dalles, Oregon, in the east, to the Pacific Ocean in the west; and Lake Cushman in Mason County, Washington, in the north, to Grants Pass, Oregon, in the south (Crews 1939, p. 3; Smithsonian 2014, p. 1). Early accounts indicate that CWTD were locally common, particularly in riparian areas along major rivers (Crews 1939, p. 5), until the arrival and settlement of pioneers in the fertile river valleys (Crews 1939, p. 2). Conversion of brushy riparian land to agriculture, urbanization, uncontrolled sport and commercial hunting, and perhaps other factors caused the extirpation of CWTD over most of its range by the early 1900s (Crews 1939, pp. 2, 5). By 1940, a population of 500 to 700 animals along the lower Columbia River in Oregon and Washington, and a disjunct population of 200 to 300 in Douglas County, Oregon, survived (Crews 1939, p. 3; Gavin 1984, p. 487; Verts and Carraway 1998, p. 480). These two remnant populations remain geographically separated by about 320 km (200 mi), much of which is unsuitable or discontinuous habitat. Currently, the Columbia River DPS has a discontinuous range of approximately 240 km<sup>2</sup> (93 mi<sup>2</sup>) or about 24,281 hectares (ha) (60,000 acres (ac)) (Smith 1985, p. 247) (Figure 1) in limited areas of Clatsop, Multnomah, and Columbia Counties in Oregon, and Cowlitz, Wahkiakum, Pacific, Skamania, and Clark Counties in Washington. Within that range, CWTD currently occupy an area of approximately 6,475 ha (16,000 ac) (U.S. Fish and Wildlife Service 2013a, p. 7), with a 2015 population estimate of about 966 deer (U.S. Fish and Wildlife Service, unpublished data).

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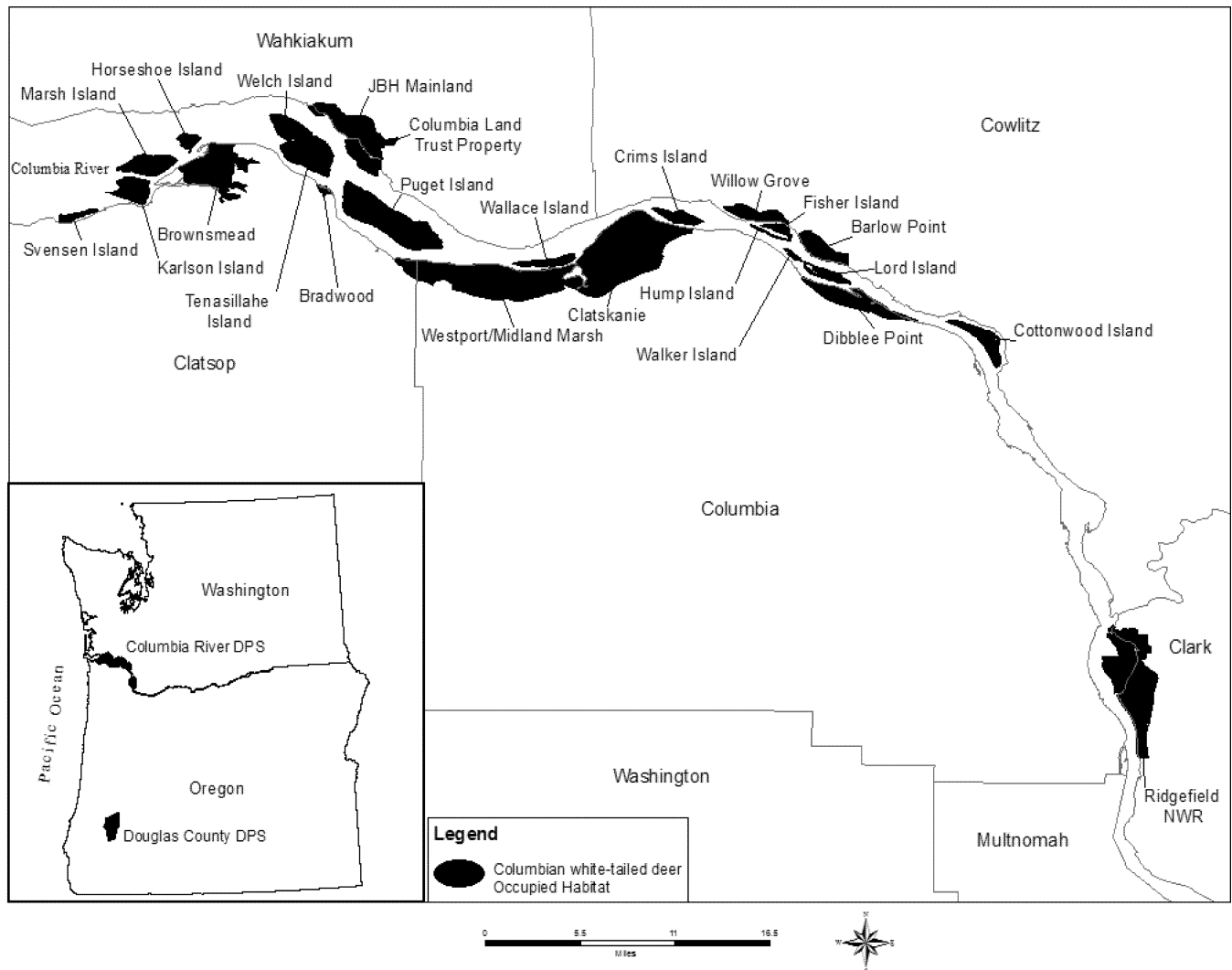


Figure 1. Current range of the Columbia River DPS of CWTD including subpopulations, as well as known CWTD occurrence. Inset map shows the geographic isolation between the Columbia River DPS (top) and the delisted Douglas County DPS (bottom).

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### Summary of Comments and Recommendations

In the proposed rule that published on October 8, 2015 (80 FR 60850), we requested that all interested parties submit written comments on the proposal by December 7, 2015. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. Newspaper notices inviting general public comments were published in the Oregonian, Columbian, Olympian, and Seattle Times newspapers. We did not receive any requests for a public hearing.

During the public comment period on the proposed rule, we received a total of 9 comment letters, including 3 from

peer reviewers, addressing the proposed downlisting and proposed 4(d) rule. We received two duplicate comments in opposition to the proposed downlisting; however, no reasons specific to CWTD were given. The other seven comment letters either supported the proposed downlisting and proposed 4(d) rule or provided anecdotal evidence of increases in CWTD numbers. Within those 7 comment letters, we identified 15 substantive comments grouped into 6 categories: status of CWTD, population dynamics, threat assessment, surveys, calculated take, and habitat security. All substantive information provided during comment periods has either been incorporated directly into this final determination or is addressed below. All public and peer review comments are available at [http://](http://www.regulations.gov)

[www.regulations.gov](http://www.regulations.gov) (Docket No. FWS-R1-ES-2014-0045) and from our Oregon Fish and Wildlife Office by request (see **FOR FURTHER INFORMATION CONTACT**).

### Peer Review

In accordance with our policy, "Notice of Interagency Cooperative Policy for Peer Review in Endangered Species Act Activities," published on July 1, 1994 (59 FR 34270), we solicited expert opinion of three knowledgeable individuals with scientific expertise that included familiarity with CWTD and its habitat, biological needs, and threats. We received responses from all three peer reviewers.

### Peer Reviewer Comments

(1) *Comment:* Two peer reviewers commented on the status of CWTD. They agreed that the DPS was not in immediate danger of extinction. One peer reviewer also requested clarification on the Upper Estuary Island subpopulation and commented that translocations to the Upper Estuary Island area were successful because CWTD were not found there previously. Another peer reviewer asked if there was any biological evidence to support calling Westport and Wallace Island the same subpopulation.

*Our Response:* Greater detail has been added to the description of the Upper Estuary Island subpopulation to clarify which islands are included and why. We concur that translocations to the Upper Estuary Islands did create a new subpopulation of CWTD; however, recovery criteria for minimum population sizes of deer have not yet been met, and extensive management would likely be required in order to expand the population. We did not group Westport and Wallace Island based on biological evidence; rather, we defined subpopulations by the likelihood of mixing. At the narrowest point, Wallace Island is approximately 0.13 miles (0.21 km) from the bank of the Oregon mainland near Westport. At the widest point, Wallace Island is 0.30 miles (0.49 km) from the shore. Although we do not have telemetry data or genetic data, Wallace Island appears to be close enough that deer would cross between it and Westport, and we do have evidence that deer are capable of crossing the amount of water between these two areas (Meyers 2016, pers. comm.). Wallace Island is also not large enough to support a self-sustaining herd, such that CWTD on the island likely rely on Westport for their life-history requirements.

(2) *Comment:* We received two comments regarding population dynamics in regard to subpopulation classification. One peer reviewer asked if the new population at Ridgefield NWR was a subpopulation or a new DPS. Another commenter stated that the lower Columbia River population (LCRP) is a metapopulation with unique attributes that underpin and influence all three elements of population dynamics. The commenter went on to say that metapopulations rely on both demographic and genetic rescue through periodic dispersal from other subpopulations (none of which was acknowledged, described, or discussed), suggesting a lack of understanding of the unique nature of the LCRP or the population processes necessary for its

persistence. The commenter further stated that the risk of extirpation of each subpopulation is far greater than the metapopulation, which increases substantially as each subpopulation becomes extirpated, and that there was little data or discussion about dispersal among subpopulations, which is fundamental to metapopulation viability.

*Our Response:* The new population at Ridgefield NWR is a subpopulation, not a DPS, because it occurs within the identified range of the current DPS and there are no geographical barriers preventing the deer from intermingling with other nearby subpopulations within the existing DPS. The Service agrees that since the various subpopulations in the lower Columbia River DPS have infrequent, but regular, interactions among them, the entire lower Columbia River DPS can be considered a metapopulation. For instance, CWTD have been seen swimming between the JBHR Mainland Unit and Tenasillahe Island (Meyers 2015, pers. comm.). While we have anecdotal evidence, along with data from several telemetry receivers, to document movement patterns of CWTD, we do not have information available regarding dispersal patterns or gene flow across the entire DPS. Based on yearly survey efforts, however, we do know that no new subpopulations have formed without translocations, suggesting dispersal may be limited.

(3) *Comment:* We received one comment regarding population dynamics as it relates to the origin of our minimum viable population size estimates. Specifically, the commenter asked how we can say that 50 deer is a minimum viable population without any consideration of age and sex structure.

*Our Response:* We incorporated additional clarification on the origin of minimum viable population estimates from the 1983 Revised Recovery Plan, including details on how age and sex structure were incorporated into the estimates. To determine minimum population sizes, the Revised Recovery Plan used the formula  $F = 1/(2N_e)$ , where  $F$  is the inbreeding coefficient and  $N_e$  is the effective population size (*i.e.*, the number of individuals that contribute offspring to the next generation) (U.S. Fish and Wildlife Service 1983, p. 72). Given potential barriers to genetic exchange within the Columbia River DPS, the Revised Recovery Plan considered 2 percent to be the maximum reasonable inbreeding coefficient for a subpopulation and 0.25 percent to be a reasonable inbreeding coefficient for the total DPS population

(U.S. Fish and Wildlife Service 1983, pp. 72–74). Using both the aforementioned formula and inbreeding coefficients, the effective population size would be a minimum of 50 deer per subpopulation and a minimum of 400 total deer in the DPS, after correcting for an unequal sex ratio (3 females to 1 male) and the percentage of the herd that is of breeding age (65 percent) (U.S. Fish and Wildlife Service 1983, p. 73). To determine the sex ratio and the percentage of breeding individuals, we used data from surveys of fawn to doe ratios that also included number of bucks seen during those surveys. We continue to conduct fawn to doe surveys on the current population to gather sex ratio and age structure information, but we do not use that information to create new minimum viable population (MVP) estimates. We also do not break down age classes further than fawn and adult. In white-tailed deer, age can be estimated based on tooth wear and replacement, the amount of cementum built up on the roots of the teeth, or physical characteristics. The first two techniques require the jaws of the deer, which require capturing or killing the deer; however the latter technique, also known as aging on the hoof (AOTH), can be done in the field. In a recent study assessing the efficacy of AOTH by deer biologists, the overall accuracy of assigning white-tailed deer of known ages into the correct age category was 36 percent (Gee *et al.* 2014, p. 99). Since the accuracy of AOTH is poor and it is only used to age adult males, we used the more conservative categorization of fawn, adult female, or adult male for our age and sex structure. This information still allowed us to estimate both the sex ratio of adults and the proportion of a population that is breeding, both of which were important details in calculating the aforementioned MVP size of 50 individuals per subpopulation. All of the subpopulations deemed viable have far exceeded the MVP of 50 individuals per subpopulation. In 2015, Puget Island had almost five times the number of individuals necessary to achieve the MVP, while Westport/Wallace had almost four times the number of individuals, and Tenasillahe Island had three times the number of individuals. These data provide support that the viable subpopulations can handle fluctuations in age and sex structure and continue to grow.

(4) *Comment:* We received one comment regarding our threats assessment. One peer reviewer stated that assisting deer to expand their range out of the Columbian River's riparian

zone is the only long-term solution to flooding and climate-induced habitat changes. The commenter also stated that while the current rate of vehicle-caused mortality does not appear to be limiting, estimates of the number of deer killed on roads are probably low, and increasing human development and deer population sizes could result in increased mortality rates in the future.

*Our Response:* We concur with the comments. First, flooding has been an issue at the JBHR Mainland Unit multiple times resulting in temporary reductions in the number of CWTD located there. To minimize these impacts, new tide gates, a new culvert, and a new set-back levee were installed. Finding upland areas with suitable habitat would be beneficial for CWTD and will be pursued prior to making a decision regarding delisting the deer (that is, removing the Act's protections for the subspecies), as would a monitoring program with funding available to determine if current habitat management on the JBHR Mainland Unit has been successful for CWTD or if management changes are warranted. Second, because deer are highly mobile, collisions between CWTD and vehicles do occur, but the number of collisions in the Columbia River DPS has not prevented the DPS population from increasing over time and meeting recovery criteria for downlisting. The frequency of collisions is dependent on the proximity of a subpopulation to roads with high traffic levels, and collisions with CWTD have been most frequent among deer that have been translocated to areas that are relatively close to highly trafficked roads. Even if translocated areas are relatively far from highly trafficked roads, deer typically roam following translocation events and may enter traffic corridors. We anticipate that vehicle collisions could increase as both the CWTD population and human infrastructure increase. In order to address the issue of collisions, a habitat connectivity model is being developed by the Washington Department of Transportation. The goal of this model is to identify areas that contain suitable habitat for CWTD movement within their range and to identify areas with potential land-use conflicts. This model would be a tool for managers to make decisions regarding translocation sites where vehicle collisions are less likely and to prioritize habitat restoration sites.

(5) *Comment:* One peer reviewer questioned the ability of surveys to accurately quantify the number of CWTD when within black-tailed deer (*Odocoileus hemionus columbianus*) habitat. The peer reviewer stated that for

the period in which there was data collected with a similar protocol in the same locations over time there was a correlation coefficient of  $r = -0.93$ , indicating a negative population trend.

*Our Response:* Greater detail regarding forward-looking infrared (FLIR) survey methodology in habitat containing black-tailed deer and potential error in survey population estimates is incorporated into this final rule. Aerial surveys using FLIR are a common methodology for estimating ungulate abundance. The Service began using FLIR thermography camera systems affixed to a helicopter (or, in 2008, a fixed-wing Cessna 206) to conduct aerial CWTD surveys in conjunction with annual ground counts within the Columbia River DPS beginning in 1996. FLIR uses thermal contrast between animals and their environment, and operates by using sensors to detect infrared radiation undetectable to human observers. The limitations of FLIR are two-fold: The inability to determine the demographic structure of a population and the inability to differentiate between CWTD and black-tailed deer. To address these limitations, we used data from annual ground counts and photos from trail cameras to determine a rough estimate of sex ratio and to determine the ratio of CWTD to black-tailed deer in a given area. For the latter, the number of deer observed in the FLIR count is adjusted by the estimated ratio of CWTD to black-tailed deer. Thus, we do not count every individual deer detected in a FLIR survey as a CWTD. We have ground count data available from 1984 through 2015, to estimate subpopulation size because FLIR was always used in conjunction with ground counts. We do not know the detection rate or error rate of FLIR within the geographic range of the DPS, and we do not apply reported detection rates from other studies due to the variability of FLIR detection rates from studies reporting them along with use of different equipment and survey protocols. To determine detection rates and compare survey methods for this DPS, we ideally would have replicated surveys of closed populations with known numbers of individuals to ensure that detection rates accounted for differences in counts. Since we do not have detection rates, we attempted to increase the likelihood of detection by conducting FLIR surveys in late fall when deer are less likely to be obscured by overhead vegetation and using the same equipment year to year. Thus, we have no evidence to suggest that changes in annual population estimates were the result of differences in survey

methods or detectability, and we have taken measures to reduce the likelihood of bias in our population estimates. We have no evidence to suggest that bias in survey methods is accountable for the increase in population size estimates.

In this instance, a correlation coefficient is not an appropriate statistical analysis to accurately reflect population trends across the DPS for multiple reasons. First, the data used for the correlation were from 1984 to 2005, which eliminates 10 years of population data and eliminates the upward trend in the population in those 10 years. Second, the reviewer stated that the choice of the aforementioned dates was for the period in which there was data collected with a similar protocol in the same locations over time; however, from 1984 to 1996, only ground counts were conducted to obtain population data, but from 1996 to 2005, both FLIR and ground counts were used. Thus, the protocol was not similar throughout the time frame suggested for the correlation. Third, correlation is only applicable to linear relationships. A scatter plot of the population data portrays a quadratic relationship due to the negative trend through 2004, followed by the upward population trend observed from 2005 onward. Fourth, the overall population trend for the Columbia River DPS does appear to decline over time until 2004; however, closer examination revealed that the overall trend was strongly influenced by the decline at the JBHR Mainland Unit in the late 1980s. Although population estimates fluctuated, the population has been steadily increasing over time since 2004. We know that population numbers have been influenced by severe flooding in the late 1990s and early 2000s, and by the new subpopulation at Ridgefield NWR, which has been observed breeding and producing twins following translocations. Thus, we have biological evidence to support the positive population trend occurring since 2004.

(6) *Comment:* Two peer reviewers and one commenter questioned take of CWTD. One peer reviewer suggested changing the limit on take to 5 percent of each subpopulation while another asked why we chose 5 percent as the limit.

*Our Response:* In regard to changing the limit on take to 5 percent of each subpopulation instead of 5 percent of the DPS, we point out that this would not change the number of deer allowed to be taken. Five percent of each subpopulation results in the same number as 5 percent of the DPS. We determined the take percentage and developed the 4(d) rule using best available data on annual mortality of

CWTD, annual subpopulation growth, translocation data, and best professional judgment. The subpopulations of CWTD have been able to maintain a positive annual growth rate even with the removal of individuals from subpopulations for translocations. For example, the Service removed 34 CWTD, which constituted 20 percent of the subpopulation, from Puget Island for translocations in 2012. The estimated size of the subpopulation on Puget Island was 227 CWTD in 2015, representing an annual population growth rate of 16 percent. If the subpopulation continues to grow 16 percent each year, then removing a maximum of 5 percent would still allow the subpopulation to grow. While it is possible that some areas may experience higher levels of take than others, we do not anticipate that all 5 percent of annual allotted take would affect one subpopulation. As currently written, the 4(d) rule allows a maximum of 5 percent of the DPS to be lethally taken annually for the following activities combined: (1) Damage management of problem CWTD; (2) misidentification during black-tailed deer damage management; and (3) misidentification during black-tailed deer hunting.

(7) *Comment:* Two peer reviewers questioned habitat security. One reviewer found the updated definition of habitat security surprising, yet supported calling Puget Island a secure population because there has been a large population of CWTD there since surveys began, there is little danger of flooding, and the levees are higher than on JBHR. The other commenter stated that the new interpretation of secure habitat violated both the Recovery Plan guidelines defining secure critical habitat and the mandate on the Department of the Interior's (Department's) Web site stating that the Department will use the best science to guide policy and management. This commenter further stated that the proposal will set a precedent that will almost certainly lead to future unsupported, arbitrary and capricious considerations. The commenter emphasized the need for conservation easements to establish secure habitat.

*Our Response:* We understand that considering Puget Island to be secure may appear to contradict earlier definitions of secure habitat in the 1983 Revised Recovery Plan. In that plan, secure habitat was defined as free from adverse human activities in the foreseeable future and relatively safe from natural phenomena that would destroy the habitat's value to CWTD (U.S. Fish and Wildlife Service 1983, p. 33). The Service initially interpreted

that definition of secure habitat to mean that legal instruments, such as local land use planning, zoning, easements, leases, agreements, memoranda of understanding, or a combination of these, were the only ways to secure habitat protection and enhancement that was free from adverse human activities in the foreseeable future because we lacked empirical evidence of potential long-term security for this DPS. However, for the reasons explained in this rule, we found that this restrictive interpretation of what constitutes security has limited our ability to make progress toward recovery of CWTD. Therefore, we reevaluated the current status of CWTD under a broadened framework for what constitutes "secure" habitat based on 30 years of population data. The 30-year population trend from Puget Island makes it clear that CWTD can maintain stable populations on suitable habitat that is not formally set aside by acquisition, conservation easement, or agreement for the protection of the species. Thus, the definition of secure habitat now includes locations that, regardless of ownership status, have supported viable subpopulations of CWTD for 20 or more years, and have no anticipated change to land management in the foreseeable future that would make the habitat less suitable to CWTD.

#### *Comments From States and Counties*

Section 4(b)(5)(A)(ii) of the Act states that the Secretary shall give actual notice of the proposed regulation (including the complete text of the regulation) to the State agency in each State in which the species is believed to occur, and to each county or equivalent jurisdiction in which the species is believed to occur, and invite the comment of such agency and each such jurisdiction on the proposed regulation. We submitted the proposed rule (containing our proposed regulation language) to the States of Oregon and Washington and received formal comments from Oregon. We also notified Clatsop, Multnomah, and Columbia Counties in Oregon, and Cowlitz, Wahkiakum, Pacific, Skamania, and Clark Counties in Washington, when we published the proposed rulemaking. We did not receive any comments from the counties.

(8) *Comment:* The Oregon Department of Fish and Wildlife indicated they support Federal reclassification of the Columbia River DPS of CWTD, as proposed, along with the proposed 4(d) rule, and they welcome the opportunity to work with the Service, the State of Washington, Tribes, and other partners in recovering this DPS in Oregon.

*Our Response:* We thank the Oregon Department of Fish and Wildlife for its comments. Without our partners, we would not have been able to accomplish the downlisting goals for the DPS. We continue to work with our partners toward full recovery of CWTD.

#### *Public Comments*

(9) *Comment:* One commenter asked what the next steps are and what we hope to see from this reclassification of the DPS from endangered to threatened.

*Our Response:* By reclassifying CWTD to threatened, the Service is recognizing that CWTD are no longer in immediate danger of extinction, based upon overall population size, addition of a new subpopulation, and secured habitat. Many landowners do not welcome endangered or threatened species on their lands due to increased regulatory restrictions. In addition, under section 4(d) of the Act, we may issue rules to provide for the conservation of the species. Issuing a 4(d) rule in this case will support conservation of the species by providing opportunities for CWTD translocations to new areas previously unavailable to create new subpopulations, encouraging habitat restoration of areas on private lands that may act as dispersal corridors for CWTD, and promoting coexistence between people and CWTD as the deer population increases. These activities will facilitate conservation partnerships with the agricultural community and private landowners to voluntarily create or restore habitat for new and existing subpopulations of CWTD, and encourage natural expansion of CWTD. Thus, we have determined that this 4(d) rule is necessary and advisable for the conservation and recovery of CWTD.

#### **Summary of Changes From the Proposed Rule**

In response to comments, in the preamble of this final rule, we added an explanation of how viable population size using sex and age structure data was determined in the Revised Recovery Plan, greater detail regarding the Upper Estuary subpopulation, and clarification of surveys conducted to estimate population size. We also reorganized the information associated with downlisting criterion 2 (maintain three viable subpopulations, two of which are located on secure habitat) to clarify the interaction between population viability and secure habitat. In addition, we revised the section discussing climate change. Finally, we added survey data from 2015 that were unavailable when the proposed downlisting and proposed 4(d) rule published in the **Federal Register** (80 FR 60850; October 8, 2015).

With these new data, we were able to provide more information regarding the new subpopulation at Ridgefield NWR.

In the Regulation Promulgation section of this final rule, we made minor changes to what we proposed for the 4(d) rule for clarity. Specifically, in the definition of CWTD, we include “individual specimens” to clarify the use of that term in the rule. Also, where we set forth the provisions concerning the take of problem CWTD, we specify that this is take “resulting in mortality.” Last, where we set forth reporting and disposal requirements, we now include a reference to requirements for Tribal employees, State and local law enforcement officers, and State-licensed wildlife rehabilitation facilities acting under 50 CFR 17.40(i)(6) of the rule.

### Recovery

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from the List of Endangered and Threatened Wildlife or the List of Endangered and Threatened Plants. However, revisions to the Lists of Endangered and Threatened Wildlife and Plants (adding, removing, or reclassifying a species) must be based on determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is endangered or threatened (or not) because of one or more of five threat factors. Section 4(b) of the Act requires that the determination be made “solely on the basis of the best scientific and commercial data available.” While recovery plans provide important guidance to the Service, States, and other partners on methods of minimizing threats to listed species and measurable objectives against which to measure progress towards recovery, they are not regulatory documents and cannot substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species on, or to remove a species from, the Federal List of Endangered and Threatened Wildlife (50 CFR 17.11) is ultimately based on an analysis of the best scientific and commercial data then available to determine whether a species

continues to meet the definition of an endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

There are many paths to accomplishing recovery of a species, and recovery may be achieved without all criteria suggested in the recovery plan being fully met. For example, one or more criteria may be exceeded while other criteria may not yet be achieved or may never be achieved. In that instance, we may determine that the threats are minimized sufficiently and the species is robust enough to delist. In other cases, recovery opportunities may be discovered that were not known when the recovery plan was finalized. These opportunities may be used instead of methods identified in the recovery plan. Likewise, information on the species may be learned that was not known at the time the recovery plan was finalized. The new information may change the extent to which criteria need to be met for recognizing recovery of the species. Recovery of a species is a dynamic process requiring adaptive management that may, or may not, fully follow the guidance provided in a recovery plan.

For downlisting the Columbia River DPS from endangered to threatened, the Revised Recovery Plan for CWTD (U.S. Fish and Wildlife Service 1983) established the following criteria: (1) Maintain a minimum of at least 400 CWTD across the Columbia River DPS; and (2) maintain three viable subpopulations, two of which are located on secure habitat (U.S. Fish and Wildlife Service 1983, pp. 31–33). Viable is defined as a minimum November population of 50 individuals or more in a subpopulation. A minimum viable population size of 50 deer in each subpopulation and of 400 total deer in the DPS would theoretically cancel out any deleterious effects of inbreeding. To determine minimum population sizes, the Revised Recovery Plan used the formula  $F = 1/(2N_e)$ , where  $F$  is the inbreeding coefficient and  $N_e$  is the effective population size (*i.e.*, the number of breeding individuals necessary for optimal genetic exchange) (U.S. Fish and Wildlife Service 1983, p. 72). Given potential barriers to genetic exchange within the Columbia River DPS, the Revised Recovery Plan considered 2 percent to be the maximum reasonable inbreeding coefficient for a subpopulation and 0.25 percent to be a reasonable inbreeding coefficient for the total DPS population (U.S. Fish and Wildlife Service 1983, pp. 72–74). Using both the aforementioned formula and inbreeding

coefficients, the effective population size would be a minimum of 50 deer per subpopulation and a minimum of 400 total deer in the DPS, after correcting for an unequal sex ratio (3 females to 1 male) and the percentage of the herd that is of breeding age (65 percent) (U.S. Fish and Wildlife Service 1983, p. 73).

To determine the sex ratio and the percentage of breeding individuals, we used data from surveys of fawn to doe ratios that also included number of bucks seen during those surveys. We did not, however, have estimates of the age structure of the population. In white-tailed deer, age can be estimated based on tooth wear and replacement, the amount of cementum built up on the roots of the teeth, or physical characteristics. The first two techniques require the jaws of the deer, which require capturing or killing the deer; however, the latter technique, also known as aging on the hoof (AOTH), can be done in the field. In a recent study assessing the efficacy of AOTH by deer biologists, the overall accuracy of assigning white-tailed deer of known ages into the correct age category was 36 percent (Gee *et al.* 2014, p. 99). Since AOTH accuracy is poor and is only used to age male deer, we categorized individuals as fawns, adult females, or adult males. We incorporated this information into our analyses of the aforementioned minimum effective population size.

In order to ensure viable subpopulations of at least 50 individuals, the Revised Recovery Plan determined that protection through securing habitat would be necessary. Secure habitat was defined as free from adverse human activities in the foreseeable future and relatively safe from natural phenomena that would destroy the habitat’s value to CWTD (U.S. Fish and Wildlife Service 1983, p. 33). An example of a human activity that may cause adverse impacts to deer is large-scale commercial development. An example of natural phenomena that may destroy CWTD habitat is persistent flooding.

For delisting (*i.e.*, removing the species from the Federal List of Endangered and Threatened Wildlife), the recovery plan established the following criteria: (1) Maintain a minimum of at least 400 CWTD across the Columbia River DPS; and (2) maintain three viable subpopulations, all located on secure habitat. Recovery actions specified in the recovery plan to achieve the downlisting and delisting goals include management of existing subpopulations and protection of their habitat, establishment of new subpopulations, and public education

and outreach to foster greater understanding of the CWTD and its place in the natural environment of its historical range (U.S. Fish and Wildlife Service 1983, pp. 31–33).

*Recovery Plan Implementation for the Columbia River DPS.* At the time of the Revised Recovery Plan's publication, the JBHR Mainland Unit subpopulation was the only subpopulation considered viable and secure. The Revised Recovery Plan recommended increasing the Tenasillahe Island subpopulation to a minimum viable herd of 50 deer, maintaining a total population minimum of 400 deer, and securing habitat for one additional subpopulation (U.S. Fish and Wildlife Service 1983, p. 31).

Forty-nine years have passed since the CWTD was federally listed as endangered, and the species is now more abundant and better distributed throughout the lower Columbia River Valley. The improvement is due in part to the maintenance and augmentation of existing subpopulations, and to the establishment of new subpopulations via successful translocations within the species' historical range. Many threats to the species have been substantially ameliorated, and CWTD have met all of the criteria for downlisting to threatened in the Revised Recovery Plan. A review

of the species' current status relative to the downlisting criteria follows.

*Downlisting criterion 1:* Maintain a minimum of at least 400 CWTD across the Columbia River DPS. This criterion has been met. The total population of the Columbia River DPS has been maintained at over 400 deer annually since regular surveys began in 1984. At the time of the CWTD Revised Recovery Plan publication in 1983, the number of deer in the Columbia River DPS was thought to be 300 to 400. The first comprehensive survey effort in 1984 resulted in an estimate of 720 deer, suggesting that prior estimates were probably low. Since 1985, fall ground counts have been conducted to establish long-term trends by indicating gross population changes. In addition to annual fall ground counts, the Service began using forward-looking infrared (FLIR) thermography camera systems affixed to a helicopter (or, in 2008, a fixed-wing Cessna 206) to conduct aerial CWTD surveys within the Columbia River DPS beginning in 1996. The limitations of FLIR are two-fold: the inability to determine the demographic structure of a population and the inability to differentiate between CWTD and black-tailed deer. To address these limitations, ground counts and photos from trail cameras are used to determine a rough estimate of sex ratio and to

determine the ratio of white-tailed deer to black-tailed deer in a given area. For the latter, the number of CWTD observed in the FLIR count is adjusted by the estimated percentage of CWTD to black-tailed deer. In years when FLIR surveys were not completed, ground counts were used to estimate whether there had been any unusual decrease or increase in a subpopulation. As of 2015, there are approximately 966 CWTD spread across 6 main subpopulations: JBHR Mainland Unit, Tenasillahe Island, Upper Estuary Islands, Puget Island, Westport/Wallace Island, and Ridgefield NWR (see Table 1, below).

While the overall population trend for the Columbia River DPS appeared to decline over time along a similar trajectory as the JBHR Mainland Unit subpopulation until 2006, closer examination revealed that the overall trend was strongly influenced by the decline at the JBHR Mainland Unit in the late 1980s. Although population numbers fluctuated, the other subpopulations did not undergo a similar decline, and when the JBHR Mainland Unit is left out of the analysis, the overall Columbia River DPS population demonstrates a more positive trend exceeding the minimum population size of 400 individuals. Thus, downlisting criterion 1 has been met.

TABLE 1—ESTIMATED POPULATION SIZE OF THE COLUMBIA RIVER DPS OF CWTD BY SUBPOPULATION  
[U.S. Fish and Wildlife Service 2013a, p. 7; U.S. Fish and Wildlife Service, Unpublished Data]

Year	Puget Island	Tenasillahe Island	Westport/Wallace Island	JBHR Mainland Unit	Upper Estuary Islands <sup>c</sup>	Ridgefield NWR	Total
1984	170	40	150	360	0	0	720
1985	215	40	125	480	0	0	860
1986	195	55	125	500	0	0	875
1987	185	70	150	500	0	0	905
1988	205	80	150	410	0	0	845
1989	205	90	150	375	0	0	820
1990	200	105	150	345	0	0	800
1991	200	130	150	280	0	0	760
1992	200	165	175	280	0	0	820
1993	200	195	200	175	0	0	770
1994	200	205	225	140	0	0	770
1995	200	205	225	120	0	0	750
1996	200	<sup>a</sup> 125	<sup>a</sup> 225	<sup>a</sup> 51	0	0	610
1997	200	<sup>a</sup> 150	<sup>a</sup> 200	<sup>a</sup> 100	0	0	650
1998	200	<sup>a</sup> 200	<sup>a</sup> 200	<sup>a</sup> 110	0	0	710
1999	150	<sup>a</sup> 160	<sup>a</sup> 140	<sup>a</sup> 110	<sup>a</sup> 25	0	585
2000	150	<sup>a</sup> 135	<sup>a</sup> 150	<sup>a</sup> 120	<sup>a</sup> 55	0	610
2001	125	<sup>a</sup> 135	<sup>a</sup> 150	<sup>a</sup> 120	<sup>a</sup> 55	0	585
2002	125	<sup>a</sup> 100	<sup>a</sup> 140	<sup>a</sup> 125	<sup>a</sup> 55	0	545
2003	125	<sup>a</sup> 100	<sup>a</sup> 140	<sup>a</sup> 115	<sup>a</sup> 80	0	560
2004	110	<sup>a</sup> 100	<sup>a</sup> 140	<sup>a</sup> 110	<sup>a</sup> 95	0	555
2005	125	<sup>a</sup> 100	<sup>a</sup> 140	<sup>a</sup> 100	<sup>a</sup> 100	0	565
2006 <sup>a</sup>	n/a	86	104	81	67	0	.....
2007 <sup>a</sup>	n/a	82	n/a	59	<sup>e</sup> 41	0	.....
2009 <sup>a</sup>	138	<sup>b</sup> 97	146	<sup>b</sup> 74	28	0	<sup>d</sup> 593
2010 <sup>a</sup>	n/a	143	164	68	39	0	<sup>d</sup> 630
2011 <sup>a</sup>	171	90	n/a	83	<sup>f</sup> 18	0	<sup>d</sup> 603
2014 <sup>a</sup>	227	154	<sup>g</sup> 154	88	39	48	<sup>d</sup> 830



TABLE 1—ESTIMATED POPULATION SIZE OF THE COLUMBIA RIVER DPS OF CWTD BY SUBPOPULATION—Continued  
[U.S. Fish and Wildlife Service 2013a, p. 7; U.S. Fish and Wildlife Service, Unpublished Data]

Year	Puget Island	Tenasillahe Island	Westport/Wallace Island	JBHR Mainland Unit	Upper Estuary Islands <sup>c</sup>	Ridgefield NWR	Total
2015 <sup>a</sup>	228	155	190	100	36	100	<sup>d</sup> 966

<sup>a</sup> Estimates from 1996–2015 are derived from forward-looking infrared (FLIR) survey results, but survey results from 2008 produced anomalous data because an alternative technique was used. These data are not considered representative of actual numbers, and are thus not included in this table.

<sup>b</sup> Numbers reflect a post-survey translocation of 16 CWTD from Tenasillahe Island to the Refuge mainland.

<sup>c</sup> Includes Lord, Walker, Fisher, Hump, and Crims Islands.

<sup>d</sup> Includes estimates from residual populations in Cottonwood Island, Clatskanie Flats, Brownsmead, Willow Grove, Barlow Point, and Rainier.

<sup>e</sup> Does not include Fisher and Hump Islands.

<sup>f</sup> Assuming a white-tailed:black-tailed deer ratio of 20:1; this includes only Crims Island.

<sup>g</sup> Approximate population estimate after 2014 translocation. Note: Totals are not given in 2006 and 2007 due to incomplete data, and no surveys were conducted in 2012 or 2013.

*Downlisting criterion 2:* Maintain three viable subpopulations, two of which are located on secure habitat. There are currently six recognized subpopulations of CWTD: JBHR Mainland Unit with 100 deer, Westport/Wallace Island with 190 deer, Upper Estuary Islands with 36 deer, Ridgefield NWR with 100 deer, Tenasillahe Island with 155 deer, and Puget Island with 228 deer (see Table 1). One of these subpopulations is a viable yet insecure subpopulation of CWTD; three are non-viable yet secure; and two are viable and secure. The Service attempted to establish an additional subpopulation on Cottonwood Island; however, the deer were unable to establish a population there.

*Viable yet insecure subpopulations.* The Westport/Wallace Island subpopulation has been stable and relatively abundant since regular surveys began. After reaching a peak of approximately 225 deer in 1995, the subpopulation's last estimate from 2015 was 190 deer (see Table 1, above) despite the removal of 10 deer from the area to contribute to the 2014 translocation to Ridgefield NWR. Habitat in the Westport area consists mainly of cottonwood/willow swamp and scrub-shrub tidal wetlands. In 1995, Wallace Island, Oregon, was purchased by the Service for CWTD habitat. Although the habitat is now protected for the recovery of CWTD, the 227-ha (562-ac) island alone is considered too small to support a viable population (U.S. Fish and Wildlife Service 2010, p. 4:39). Because it is located adjacent to Westport, Oregon, and anecdotal reports suggest that CWTD traverse both areas, Wallace Island is considered part of the Westport/Wallace Island CWTD subpopulation. Acquisitions by JBHR also included a 70-ha (173-ac) area of Westport called the Westport Unit. The remaining portion of Westport Island is in private ownership.

Apart from Wallace Island and the Westport Unit, most of the area where the Westport/Wallace Island subpopulation resides is owned and managed by one individual family. The family has managed the land for duck hunting for many years, implementing intensive predator control and maintaining levees as part of their land management activities. The Service suspects that CWTD reproduction in the Westport/Wallace Island subpopulation has benefited from this intensive predator control (Meyers 2013, pers. comm.). If the property owners alter the management regime or the property should change hands, the Westport/Wallace Island subpopulation could be negatively affected, particularly if the owners decide to remove the current levees, thereby inundating some of the CWTD habitat (Meyers 2013, pers. comm.). Because the stability of CWTD in this area appears to be so closely tied to one private landowner and their land management choices, there is less certainty as to the long-term security of this subpopulation and its associated habitat. As a result, although a small portion of the habitat for this subpopulation is protected for CWTD, the Service does not currently recognize Westport/Wallace Island as secure habitat. However, given that the area has supported a healthy subpopulation of CWTD for several decades, if the landowner were willing, then securing this property through purchase or conservation agreement would potentially increase recovery prospects for the Columbia River DPS.

*Non-viable yet secure subpopulations.* The Upper Estuary Islands are a five-island complex with a total area of 400 ha (989 ac), under a mix of private and State ownership. The Revised Recovery Plan originally identified four of the five islands near Longview, Washington, as suitable habitat to create a third subpopulation of CWTD. Of these islands, Fisher Island is a naturally

occurring tidal wetland dominated by black cottonwood (*Populus trichocarpa*), willow (*Salix* spp.), and dogwood (*Cornus nuttallii*) (U.S. Fish and Wildlife Service 2005, p. 1). The remaining three islands are dredge material sites with dense cottonwood and shrub habitat. The fifth island, Crims Island, lies 1.6 km (1 mi) downstream from the four original Upper Estuary Islands, and contributes to the interchange among CWTD of neighboring islands and mainland subpopulations (U.S. Fish and Wildlife Service 2005, p. 4). Given Crims Island's role in connectivity for subpopulations, population counts of CWTD on the island were included with the Upper Estuary Islands, and it was secured for CWTD recovery in a 1999 agreement among the Bonneville Power Administration, the Columbia Land Trust, and the Service (U.S. Fish and Wildlife Service 2010, p. 1:19). The protected portion of the island (approximately 191 ha (473 ac)) contains about 121 ha (300 ac) of deciduous forest (black cottonwood, Oregon ash (*Fraxinus latifolia*), and willow), pasture, and marsh. Crims Island was designated as a suitable translocation site in the Revised Recovery Plan and was originally considered able to support 50 to 100 deer (U.S. Fish and Wildlife Service 2000, p. 2).

To establish a new subpopulation in the Upper Estuary Islands, translocations of CWTD to Fisher/Hump and Lord/Walker Islands began in 2003, and a total of 66 deer (33 to each set of islands) have been relocated there to date (U.S. Fish and Wildlife Service 2013a, p. 23). In addition, 66 deer have been translocated to Crims Island through several translocation efforts (U.S. Fish and Wildlife Service 2013a, p. 21). At the time of the translocations, CWTD were not known to inhabit these islands, but habitat was available. The population goal for the five-island

complex is at least 50 CWTD (U.S. Fish and Wildlife Service 2005, p. 1), but as a unit, this complex has yet to maintain the target population of 50 deer. The original four islands currently contain 10 CWTD and reach a total of only 39 deer with the Crims Island population. It is suspected that the low numbers of CWTD in the complex are a result of deer finding higher quality habitat in areas adjacent to the island complex. Telemetry data indicated that CWTD moved to the adjacent mainland areas of Willow Grove, the Barlow Point industrial area, and Dibblee Point (U.S. Fish and Wildlife Service 2005, p. 3), after translocations. These adjacent areas averaged 44 CWTD between 2009 and 2011 (U.S. Fish and Wildlife Service 2013a, p. 23); however, these areas are considered residual populations, rather than part of the Upper Estuary Islands, because the mainland portion consisting of privately owned land cannot be secured. Further range expansion in this region is limited by its direct proximity to urban development. The potential for problems associated with translocations, particularly damage to private gardens and commercial crops, remains an issue with local landowners and, therefore, limits CWTD range expansion at this time. Thus, even with translocation efforts, this undeveloped island complex has only supported between 8 and 33 deer since 2000, with the latest population estimate at 25 deer in 2015. Therefore, the Upper Estuary islands do not constitute a viable subpopulation now, and we do not expect it will in the foreseeable future.

The JBHR Mainland Unit subpopulation has fluctuated in numbers since regular surveys began, with a high of 500 CWTD in 1987 to a low of 51 deer in 1996 (after a catastrophic flood event). When the refuge was established, refuge biologists established a goal of approximately 125 deer for the JBHR Mainland Unit to balance the density of deer given the amount of available habitat (U.S. Fish and Wildlife Service 2010, p. 2:62).

Flooding on the JBHR Mainland Unit has occurred three times over the history of the refuge, in 1996, 2006 and 2009, resulting in short-term population declines after each flood. In March of 2011, a geotechnical assessment determined that the dike that protects the JBHR Mainland Unit from flooding by the Columbia River was at "imminent risk" of failure (U.S. Fish and Wildlife Service 2013b, p. 2) and a breach at that location would result in the flooding of the JBHR Mainland Unit at high tides. In response to this threat, the Service conducted an emergency

translocation of 37 CWTD from the JBHR Mainland Unit to unoccupied but suitable habitat at Ridgefield NWR in early 2013 (U.S. Fish and Wildlife Service 2013c, p. 8). The U.S. Army Corps of Engineers subsequently constructed a set-back levee on the JBHR Mainland Unit to prevent flooding of the refuge and to restore salmonid habitat (U.S. Army Corps of Engineers 2013, p. 11). Though the set-back dike, completed in fall 2014, reduces available CWTD habitat on the JBHR Mainland Unit by approximately 28 ha (70 ac), or approximately 3.5 percent of the total 797 ha (1,970 ac), it will reduce the likelihood of future flooding. After the removal of 37 CWTD in 2013, the population of the JBHR Mainland Unit rebounded to an estimated 100 deer (2015). Although the current subpopulation count exceeds the criterion of 50 individuals described in the Revised Recovery Plan, we currently characterize the JBHR Mainland subpopulation as non-viable because in defining viability, the Revised Recovery Plan did not account for either the significant changes in the numbers of individuals within a donor subpopulation resulting from translocations or the impacts of significant land disturbances necessary to protect habitat. Therefore, we recognize that additional demographic monitoring is needed to more reliably demonstrate viability of the JBHR Mainland Unit subpopulation, given the removal of nearly half its numbers in 2013 (from 83 prior to translocations to 46 afterward) and the reduction in habitat from the construction of the setback dike.

Ridgefield NWR is the most recently established subpopulation of CWTD and it was created by translocating individual deer from the JBH Mainland, Puget Island, and Westport subpopulations to the refuge beginning in 2013. It is located in Clark County, Washington, approximately 108 km (67 mi) southeast of JBHR, and is comprised of 2,111 ha (5,218 ac) of marshes, grasslands, and woodlands with about 1,537 ha (3,800 ac) of upland terrestrial habitat. As part of the 2013 emergency translocation, the Service moved 37 deer from the JBHR Mainland Unit to the Ridgefield NWR (U.S. Fish and Wildlife Service 2013c, p. 8). Eleven of the deer suffered either capture-related mortality or post-release mortality within 2 months, potentially due to predation (U.S. Fish and Wildlife Service, unpublished data). In 2014, another 21 deer were translocated to Ridgefield NWR from Puget Island and Westport, and the current estimated

population based on FLIR surveys is 100 deer (see Table 1, above). Although this subpopulation has exceeded the criterion of 50 individuals described in the Revised Recovery Plan, we currently characterize the Ridgefield NWR subpopulation as non-viable because in defining viability, the Revised Recovery Plan did not account for the complex suite of factors that determine the success or failure of translocations and the resulting establishment of a new subpopulation. While translocations may appear immediately successful, variation in both an animal's ability to adapt to a new environment and the habitat affect the ultimate success of translocations. This variation can include donor deer population genetics, animal condition, age and sex of translocated individuals, and quality of food sources (Foley *et. al.* 2008, p. 26). Therefore, we recognize that additional demographic monitoring is needed to more reliably demonstrate viability of the newly established Ridgefield NWR subpopulation.

*Non-viable and unsecured subpopulations.* Although attempts have been made to translocate deer to Cottonwood Island, it does not contain a viable subpopulation of CWTD. The island is a recreational site for camping and fishing; the surrounding waters are used for waterfowl hunting. Cottonwood Island has multiple landowners, which consist primarily of a coalition of ports administered by the Port of Portland, but there are no people living on the island and there are no commercial interests (U.S. Fish and Wildlife Service 2013b, p. 15). It lies approximately 1.6 km (1 mi) upriver from Dibblee Point on the Washington side of the Columbia River. The 384-ha (948-ac) island was considered in the Revised Recovery Plan as a potential relocation site; it was thought that the island could support up to 50 deer. In the fall of 2010, 15 deer were moved to Cottonwood Island from the Westport population in Oregon (Cowlitz Indian Tribe 2010, p. 1). Seven confirmed mortalities resulted from vehicle collisions as CWTD dispersed off the island (Cowlitz Indian Tribe 2010, p. 3). Telemetry monitoring by Washington Department of Fish and Wildlife (WDFW) personnel in the spring of 2011 detected three radio-collared CWTD on Cottonwood Island and two on the Oregon mainland near Rainier, Oregon. A second translocation of 12 deer to Cottonwood Island (from Puget Island) occurred in conjunction with the 2013 emergency translocation effort (U.S. Fish and Wildlife Service 2013a, p. 24). All but four of these new CWTD subsequently died or moved off

the island, with five deer dying from vehicle strikes (U.S. Fish and Wildlife Service, unpublished data). We are uncertain why the deer moved off the island, but we suspect that habitat quality may have been a factor.

Approximately 6 ha (15 ac) of habitat was improved in 2013, by eliminating reed canary grass and other invasive plants and by planting native vegetation. Staff from JBHR and staff representing the Cowlitz Indian Tribe continue to conduct periodic monitoring of CWTD translocated to Cottonwood Island.

*Viable and secure subpopulations.* Tenasillahe Island in Oregon is part of the JBHR. The Revised Recovery Plan recommended increasing the Tenasillahe Island subpopulation to a minimum viable herd of 50 CWTD. The Service has accomplished this recovery goal through several translocation efforts and habitat enhancement, and the island's subpopulation, though still susceptible to flood events, has remained above 50 individuals for the past 20 years. The most current FLIR survey at this location (in 2015) estimated the population at 155 CWTD (see Table 1, above). Because this population has been stable and occurs within the JBHR boundaries, it is considered secure.

Puget Island is a mix of private and public land. The private land consists mainly of pasture for cattle and goats, residential lots, and hybrid cottonwood plantations that provide food and shelter for the deer. Farmers and ranchers on the island often implement predator (coyote, *Canis latrans*) control on their lands to protect poultry and livestock, and this management activity likely benefits the CWTD population on the island. In fact, Puget Island has supported one of the largest and most stable subpopulations of CWTD. While densities have historically been lower than on refuge lands, the size of Puget Island (about 2,023 ha (5,000 ac)) has enabled it to support a robust number of deer. Since regular surveys began in 1984, the population at Puget Island has averaged between 175 and 200 deer. The latest survey (2015) estimated the population at a high of 228 deer, although 11 deer were removed from the area for the 2014 translocation to the Ridgefield NWR. Although Puget Island is not formally set aside for the protection of CWTD, the fawn:doe (F:D) ratios are higher than on the protected JBHR Mainland Unit, and the area has supported a stable CWTD population without active management in the midst of continued small-scale development for several decades.

Of the three viable subpopulations, only the Tenasillahe Island and Puget Island subpopulations are located on secure habitat. Page 37 of the Revised Recovery Plan states, “. . . protection and enhancement (of off-refuge CWTD habitat) can be secured through local land use planning, zoning, easement, leases, agreements, and/or memorand[a] of understanding” (U.S. Fish and Wildlife Service 1983, p. 37). In much of the 30 years following the development of the Revised Recovery Plan, the Service interpreted this to mean that the only ways to securing habitat in order to meet recovery criteria were the ones listed in the above citation. This led the Service to focus most CWTD recovery efforts on increasing and maintaining the subpopulations within the boundaries of the JBHR rather than working in areas that did not meet this narrow interpretation of “secure” habitat. These efforts resulted in some successful recovery projects such as growing and stabilizing the subpopulation on Tenasillahe Island, which is part of JBHR and currently one of the largest subpopulations in the Columbia River DPS. However, it also led the Service to put significant resources and time toward efforts that have shown less consistent success, such as establishing viable and stable herds on the Upper Estuary Islands. At present, a total of 314 deer have been translocated in an effort to move CWTD to “secure” habitats. As discussed earlier in this section, some translocations appear to have yielded success (Ridgefield NWR) and some failed to create viable and secure subpopulations (Cottonwood Island and the Upper Estuary Islands).

Two subpopulations, Puget Island and Westport/Wallace Island, have maintained relatively large and consistent numbers over the last 3 decades even though these areas are not under conservation ownership or agreement. The number of CWTD in these two areas clearly demonstrates a measure of security in the habitat regardless of the ownership of the land and may be related to the type of activity taking place in these areas.

The 30-year population trends from Puget Island and Westport/Wallace Island make it clear that CWTD can maintain secure and stable populations on suitable habitat that is not formally set aside by acquisition, conservation easement, or agreement. In light of this information, we have reevaluated the current status of CWTD and have determined that “secure” habitat includes locations that, regardless of ownership status, have supported viable subpopulations of CWTD for 20 or more

years, and have no anticipated change to land management in the foreseeable future that would make the habitat less suitable to CWTD.

While Puget Island and Westport/Wallace Island had previously not been considered “secure” habitat, they have been supporting two of the largest and most stable subpopulations in the Columbia River DPS since listing. Although CWTD numbers at these 2 locations have fluctuated, the Westport/Wallace Island subpopulation had 150 deer in 1984 and 164 deer in 2010, and the Puget Island population had 170 deer in 1984 and 227 deer in 2014 (see Table 1, above). The Revised Recovery Plan identified Puget Island and the Westport area as suitable sources for CWTD translocations due in large part to their population stability. Subsequently, these two locations have been the donor source for numerous translocations over the last 30 years, including the removal of 23 deer from Puget Island and 10 deer from Westport as part of the 2013 and 2014 translocation efforts. Removal of CWTD from these two locations on multiple occasions for the purpose of translocation has not resulted in any significant decrease in donor population numbers.

Since the late 1980s, the total acreage of tree plantations on Puget Island decreased by roughly half (Stonex 2012, pers. comm.). However, a proportional decrease in the numbers of CWTD did not occur. Furthermore, though Puget Island has experienced changes in land use and increases in development over time, such as the break-up of large agricultural farms into smaller hobby farms, the changes have not inhibited the ability of CWTD to maintain a very stable population on the island. The Wahkiakum Comprehensive Plan (2006) anticipates that future development on Puget Island will continue to be tree farms, agricultural farms, and rural residential (both low density with 1- to 2-ha (2.5- to 5-ac) lots and medium density with 0.4- to 1-ha (1- to 2.5-ac) lots), with a goal of preserving the rural character of the area (Wahkiakum County 2006, p. 392). Puget Island's human population has grown at a nominal rate of 1 to 1.5 percent over the past 15 years; that past rate along with building permit growth over the last 5 years leads Wahkiakum County to project a population growth rate on the island of 1.5 percent through the 20-year “plan horizon” that extends through the year 2025 (Wahkiakum County 2006, p. 379). Because CWTD have demonstrated the ability to adapt to this type of development on the island, continued development of this type and at this low

level is not expected to impact CWTD on the island in the foreseeable future (Meyers 2013, pers. comm.). Since the CWTD population on the island has been viable for decades and the best available information does not predict significant changes to land management in the foreseeable future that would make the habitat less suitable to CWTD, the Service considers Puget Island secure habitat.

In conclusion, there are currently three viable subpopulations of CWTD: Tenasillahe Island at 155 deer, Puget Island at 228 deer, and Westport/Wallace Island at 190 deer (see Table 1, above). Of those, we consider Tenasillahe Island and Puget Island to be located on secure habitat. Thus, the downlisting criterion to maintain three viable subpopulations, two of which are located on secure habitat, has been met. The Westport/Wallace Island subpopulation has shown consistent stability over the last 30 years, on par with Puget and Tenasillahe Islands, but its long-term security is less certain. While the secure JBHR Mainland Unit and Ridgefield NWR subpopulations have reached the criterion of 50 individuals described in the Revised Recovery Plan, we currently characterize them as non-viable because in defining viability, the Revised Recovery Plan did not account for either the significant changes in the numbers of individuals within a donor subpopulation resulting from translocations or the impacts of significant land disturbances necessary to protect habitat (*i.e.* JBHR Mainland Unit subpopulation), nor for the complex suite of factors that determine the success or failure of translocations and the resulting establishment of a new subpopulation (*i.e.*, Ridgefield NWR subpopulation).

#### Summary of Factors Affecting the Species

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing species, reclassifying species, or removing species from listed status. "Species" is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct vertebrate population segment of vertebrate fish or wildlife that interbreeds when mature (16 U.S.C. 1532(16)). A species may be determined to be an endangered or threatened species because of any one or a combination of the five factors described in section 4(a)(1) of the Act: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B)

overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We must consider these same five factors in reclassifying (in this case, downlisting) a species. We may reclassify a species from endangered to threatened ("downlist") if the best available scientific and commercial data indicate that the species no longer meets the definition of endangered, but instead meets the definition of threatened because: (1) The species' status has improved to the point that it is not in danger of extinction at the present time throughout all or a significant portion of its range, but the species is not recovered (as is the case with the CWTD); or (2) the original scientific data used at the time the species was classified were in error.

Determining whether a species' status has improved to the point that it can be downlisted requires consideration of whether the species is endangered or threatened because of the same five categories of threats specified in section 4(a)(1) of the Act. For species that are already listed as endangered or threatened, this analysis of threats is an evaluation of both the threats currently facing the species and the threats that are reasonably likely to affect the species in the foreseeable future following the delisting or downlisting and the removal or reduction of the Act's protections.

A species is "endangered" for purposes of the Act if it is in danger of extinction throughout all or a significant portion of its range and is "threatened" if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. The word "range" in the significant portion of its range (SPR) phrase refers to the general geographical area in which the species occurs at the time a status determination is made. For the purposes of this analysis, we evaluate whether the currently listed species, the Columbia River DPS of CWTD, continues to meet the definition of endangered.

In considering what factors might constitute threats, we must look beyond the exposure of the species to a particular factor to evaluate whether the species may respond to the factor in a way that causes actual impacts to the species. If there is exposure to a factor and the species responds negatively, the factor may be a threat, and during the five-factor analysis, we attempt to determine how significant a threat it is. The threat is significant if it drives or

contributes to the risk of extinction of the species, such that the species warrants listing as endangered or threatened as those terms are defined by the Act. However, the identification of factors that could impact a species negatively may not be sufficient to compel a finding that the species warrants listing. The information must include evidence sufficient to suggest that the potential threat is likely to materialize and that it has the capacity (*i.e.*, it should be of sufficient magnitude and extent) to affect the species' status such that it meets the definition of endangered or threatened under the Act.

In the following analysis, we evaluate the status of the Columbia River DPS of CWTD throughout its range as indicated by the five-factor analysis of threats currently affecting, or that are likely to affect, the species within the foreseeable future.

#### A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

CWTD evolved as a prairie edge/ woodland-associated species with historically viable populations that were not confined to river valleys (Bailey 1936, pp. 92–93). However, CWTD have been extirpated in all but two areas of their historical range: the Columbia River DPS area and the Douglas County DPS area. The remnant Columbia River DPS population was forced by anthropogenic factors (residential and commercial development, roads, agriculture, etc., causing fragmentation of natural habitats) into the lowland patches of forest and fields it now inhabits. While CWTD can adapt to scattered human development, the diffusion of urban, suburban, and agricultural areas now limit natural range expansion within the current subpopulations, and existing occupied areas support densities of CWTD indicative of low-quality habitats, particularly lower-lying and wetter habitat than where the species would typically be found.

Loss of habitat is suspected as a key factor in historical CWTD declines; 12,140 ha (30,000 ac) of habitat along the lower Columbia River were converted for residential and large-scale agricultural use from 1870 to 1970 (Northwest Power and Conservation Council 2004, p. B4:13). Over time, CWTD were forced into habitat that was fragmented, wetter, and in more lowland than what would be ideal for the species. The recovery of the Douglas County DPS reflects the availability of more favorable habitat (a mix of conifer and hardwood-dominated vegetation communities, including oak woodlands

and savannah) and compatible land-use practices, such as intensive sheep grazing (Franklin and Dyrness 1988, p. 110).

Though limited access to high-quality upland habitat in the Columbia River DPS remains the most prominent hindrance to CWTD dispersal and recovery today, the majority of habitat loss and fragmentation has already occurred. The most dramatic land-use changes occurred during the era of hydroelectric and floodplain development in the Columbia River basin, beginning with the construction of the Willamette Falls Dam in 1888, and continuing through the 1970s (Northwest Power and Conservation Council 2013, p. 1). Compared to the magnitude of change that occurred in CWTD habitat through activities associated with these types of development (e.g., dredging, filling, diking, and channelization) (Northwest Power and Conservation Council 2004, pp. III, 13–15), significant future changes to currently available habitat for the Columbia River DPS are not anticipated.

Recovery efforts for CWTD have, in large part, focused on formally protecting land for the recovery of the species through acquisitions and agreements such as JBHR, Crims Island, Cottonwood Island, and Wallace Island, as well as restoration activities to increase the quality of existing available habitat. In addition, the Service has expanded CWTD distribution from approximately 8,093 ha (20,000 ac) to 24,281 ha (60,000 ac) through translocations, reducing the risk that a catastrophic event affecting any one subpopulation would lead to extinction. To date, the Service has worked to conserve 3,604 ha (8,918 ac) of habitat for the protection of CWTD (U.S. Fish and Wildlife Service 2013, p. 20). Habitat restoration and enhancement activities on JBHR have improved the quality of habitat since publication of the Revised Recovery Plan in 1983, and the Ridgefield NWR now has an active habitat enhancement program in place to support the translocated population of CWTD. These efforts have added to the available suitable habitat for the Columbia River DPS and helped offset some of the impacts of previous habitat loss.

Although much of the occupied habitat in the Columbia River DPS is fragmented, wetter than the species prefers, and vulnerable to flooding, many variables influence CWTD survival. A mosaic of ownerships and protection levels does not necessarily hinder the existence of CWTD when land use is compatible with the habitat

needs of the deer. For example, on Puget Island, which is not formally set aside for the protection of CWTD, the fawn:doe (F:D) ratios are higher than on the protected JBHR Mainland Unit, and the area has supported a stable CWTD population without active management in the midst of continued small-scale development for several decades. Additionally, the Westport/Wallace Island subpopulation has long maintained stable numbers, even though most of the area is not managed for the protection of CWTD. The level of predation, level of disturbance, and condition of habitat all influence how CWTD can survive in noncontiguous habitats.

Flooding, from either anthropogenic or natural events, is a threat to CWTD habitat when browsing and fawning grounds become inundated for prolonged periods. CWTD habitat is susceptible to flooding because a large proportion of occupied CWTD habitat is land that was reclaimed from tidal inundation by construction of dikes and levees for agricultural use in the early 20th century (U.S. Fish and Wildlife Service 2010, p. 2:48). For example, in 1983, the population of CWTD at Karlson Island was estimated to be between 8 and 12 individuals. Since that time, however, the dike on the island has breached such that the island is now prone to sustained and frequent flooding events. CWTD have abandoned the island. On the JBHR Mainland Unit, three major storm-related floods occurred in 1996, 2006, and 2009. These flooding events were associated with a sudden drop in population numbers, followed by population recovery in the next few years.

In recent years, there has been interest in restoring the natural tidal regime to some of the land that was reclaimed from tidal inundation in the early 20th century, mainly for fish habitat enhancement. This restoration could reduce habitat for CWTD in certain areas where the majority of the subpopulation relies upon the reclaimed land. Since 2009, three new tide gates were installed on the JBHR Mainland Unit to improve fish passage and facilitate drainage in the event of large-scale flooding. When the setback levee on the refuge was completed in fall 2014, the original dike under Steamboat Slough Road was breached, and the estuarine buffer created now provides additional protection from flooding to the JBHR Mainland Unit. However, it has also resulted in the loss or degradation of about 28 ha (70 ac) of CWTD habitat, which amounts to approximately 3.5 percent of the total acreage of the JBHR Mainland Unit.

The persistence of invasive species, especially reed canary grass, has reduced forage quality over much of the CWTD's range, but it remains unclear how much this change in forage quality is affecting the overall status of CWTD. While CWTD will eat the grass, it is only palatable during early spring growth, or about 2 months in spring, and it is not a preferred forage species (U.S. Fish and Wildlife Service 2010, p. 3:12). Cattle grazing and mowing are used on JBHR lands to control the growth of reed canary grass along with tilling and planting of pasture grasses and forbs. This management entails a large effort that will likely be required in perpetuity unless other control options are discovered. Reed canary grass is often mechanically suppressed in agricultural and suburban landscapes, but remote areas, such as the upriver islands, experience little control. Reed canary grass thrives in wet soil and excludes the establishment of other grass or forb vegetation that is likely more palatable to CWTD. Increased groundwater due to sea-level rise or subsidence of diked lands may exacerbate this problem by extending the area impacted by reed canary grass. However, where groundwater levels rise high enough and are persistent, reed canary grass will be drowned and may be eradicated, although this rise in water level may also negatively affect CWTD. The total area occupied by reed canary grass in the future may therefore decrease, remain the same, or increase, depending on topography, land management, or both.

Competition with elk (*Cervus canadensis*) for forage on the JBHR Mainland Unit has historically posed a threat to CWTD (U.S. Fish and Wildlife Service 2004, p. 5). To address these concerns, JBHR staff trapped and removed 321 elk during the period from 1984 to 2001. Subsequently, JBHR staff conducted two antlerless elk hunts, resulting in a harvest of eight cow elk (U.S. Fish and Wildlife Service 2004, p. 13). The combination of these efforts and elk emigration reduced the elk population to fewer than 20 individuals. The JBHR considers their elk reduction goal to have been met. Future increases in the population above 20 individuals may be controlled with a limited public hunt (U.S. Fish and Wildlife Service 2010, p. B–20). In a related effort, JBHR personnel have constructed roughly 4 miles (6.4 km) of fencing to deter elk immigration onto JBHR (U.S. Fish and Wildlife Service 2004, p. 10).

#### *Climate Change*

Our analyses under the Act include consideration of ongoing and projected

changes in climate. The terms “climate” and “climate change” are defined by the Intergovernmental Panel on Climate Change (IPCC). “Climate” refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (Intergovernmental Panel on Climate Change 2013, p. 1450). The term “climate change” thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (Intergovernmental Panel on Climate Change 2013, p. 1450). Various types of climate change may be positive, neutral, or negative and they may vary over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (e.g., habitat fragmentation) (Intergovernmental Panel on Climate Change 2007, pp. 8–14, 18–19). In our analyses, we use our expert judgment to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change.

Environmental changes related to climate change will likely affect CWTD occupying low-lying habitat that is not adequately protected by well-maintained dikes. Furthermore, even in areas that have adequate dikes built, the integrity of those dikes could be at risk of failure due to the effects of climate change. Climatic models have projected significant sea-level rise over the next century (Mote *et al.* 2014, p. 492). Rising sea levels could degrade or inundate current habitat, forcing some subpopulations of CWTD to move out of existing habitat along the Columbia River into marginal or more developed habitat. A rise in groundwater levels could alter vegetation regimes, lowering forage quality of CWTD habitat and allowing invasive plants to expand their range into new areas of CWTD habitat. The increase in ground water levels due to sea-level rise could also allow the threat of hoof rot (see discussion under Factor C) to persist or increase.

Maintaining the integrity of existing flood barriers that protect CWTD habitat will be important for recovery of the Columbia River DPS until greater numbers of CWTD can occupy upland habitat through additional translocations, and subsequent recruitment and natural range expansion. The JBHR Mainland Unit has experienced three major storm-related floods since 1996. While we do not have

data to indicate that climate change is responsible for past storm-related flooding events, climate change could result in increased storm intensity and frequency, which would exacerbate the impacts of flooding. Flooding events have been associated with sudden drops in the CWTD population (see Table 1, above), which then slowly recovered. An increased rate of occurrence of these events, however, could permanently reduce the size of this subpopulation. To facilitate drainage in the event of large-scale flooding, three new tide gates have been installed on the JBHR Mainland Unit since 2009. Potentially, additional tide gates could be installed and dikes could be elevated to reduce the impact of flooding and sea-level rise on the JBHR Mainland Unit. A new, larger culvert under Highway 4 was also installed in 2015 allowing a tributary better flow from the Elochoman River to facilitate drainage and reduce the likelihood of flooding. Since Puget and Tenasillahe Islands lack stream input from the Elochoman River or other stream sources, the risk of flooding from storm events is low. Additionally, Puget Island and Tenasillahe Island are adequately protected from potential sea level rises due to the height of their levees and their location within the main stem of the Columbia River.

The National Wildlife Federation has employed a model to project changes in sea level in Puget Sound, Washington, and along areas of the Oregon and Washington coastline. The study projected an average rise of 0.28 meters (m) (0.92 feet (ft)) by 2050, and 0.69 m (2.26 ft) by 2100, in the Columbia River region (Glick *et al.* 2007, p. 73). A local rise in sea level would translate into the loss of some undeveloped dry land and tidal and inland fresh marsh habitats. By 2100, projections show that these low-lying habitats could lose from 17 to 37 percent of their current area due to an influx of saltwater. In addition, since the JBHR Mainland Unit and Tenasillahe Island were diked in the early 1900s, the land within the dikes has subsided and dropped to a level near or below groundwater levels. This in turn has degraded CWTD habitat quality in some areas. Although saltwater intrusion does not extend this far inland, the area experiences 2 to 2.5 m (7 to 8 ft) tidal shifts due to a backup of the Columbia River. Sea-level rise may further increase groundwater levels on both of these units, as levees do not provide an impermeable barrier to groundwater exchange.

Due to the reasons listed above, we find the effects of climate change (specifically sea level rise and increased frequency and magnitude of storm

events) to be a threat to CWTD in the foreseeable future. The indirect effects of climate change in the form of more frequent or more severe floods may be exacerbated by that threat. Because of the low-lying nature of some currently occupied CWTD habitat in the Columbia River DPS, the long-term stability of the subpopulations in those areas may rely on the availability of and access to upland habitat protected from the effects of projected sea-level rise. The Columbia River DPS would benefit from the identification of additional suitable high-quality upland habitat and the development of partnerships with State wildlife agencies to facilitate the translocation of CWTD to these areas, as well as securing land with existing stable subpopulations, such as the Westport area.

#### Summary of Factor A

Habitat loss from fragmentation, flooding, and continued urban and suburban expansion remains a threat to CWTD persistence. Stable populations of the species do persist in habitat that was previously dismissed as inadequate for long-term survival such as the subpopulations on Puget Island, Washington, and in Westport, Oregon (Westport/Wallace Island subpopulation). Historical habitat loss was largely a result of development, and while this activity is still a limiting factor, we now understand that the type of development influences how CWTD respond. Areas such as Puget Island have been and are expected to continue experiencing the break-up of large agricultural farms into smaller hobby farms with a continued focus on low- to medium-density rural residential development. This type of change has not inhibited the ability of CWTD to maintain a stable population on Puget Island (about 2,023 ha (5,000 ac)). Therefore, this type of development is not expected to impact CWTD on Puget Island in the foreseeable future. In contrast, areas like Willow Grove will likely see a continued change from an agricultural to a suburban landscape; this type of development may have a negative impact on CWTD depending on the density of development.

The Service's recovery efforts involving habitat acquisition and restoration have led to a corresponding increase in the amount and quality of habitat specifically protected for the benefit of CWTD. Habitat enhancement efforts have been focused primarily on the JBHR Mainland Unit, Tenasillahe Island, and Crims Island where attention has been focused on increasing the quality of browse, forage, and cover. There is also a new habitat

enhancement program at Ridgefield NWR that is focused on increasing the amount of browse and forage available to CWTD. Finally, CWTD now have access to the upland areas at Ridgefield NWR, and it is expected that they will respond positively to the higher quality habitat.

The rise in sea level predicted by climate change models may threaten any low-lying habitat of the Columbia River DPS not adequately protected by dikes, and may also threaten the integrity of dikes providing flood control to certain subpopulations of CWTD. To minimize possible impacts from flooding, dikes and levees will need to be maintained and potentially rebuilt or improved over time. Although the effects of climate change do not constitute a threat to CWTD now, we do expect the effects to constitute a threat in the foreseeable future. Overall, although the threat of habitat loss and modification still remains, it is lower than when the species was listed and the Recovery Plan was developed; this is due to habitat acquisition and enhancement efforts, based on an overall better understanding of the influence of different types of development on CWTD populations.

#### *B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

Overutilization for commercial, scientific, or educational purposes would likely be a threat to CWTD without the continued protections of the Act. Although legal harvest of CWTD in the Columbia River DPS ceased when CWTD were federally listed as endangered, historical overharvest of CWTD in the late 1800s and early 1900s contributed to population decline. Early pioneers and explorers to western Oregon used CWTD as a food resource along main travel corridors, resulting in extirpation of CWTD in these locations (Crews 1939, p. 5).

As long as take prohibitions generally remain in place, poaching is not currently considered a threat. Just after the establishment of the JBHR, poaching was not uncommon given the JBHR's proximity to roads and easy accessibility. Public understanding and views of CWTD have gradually changed, however, and poaching is no longer considered a threat but could become a threat if regulations and enforcement are not maintained to protect CWTD from overutilization. This downlisting and associated 4(d) rule will not change this. There have been only a few cases of intentional shooting of CWTD through poaching in the 49 years since CWTD were first listed (Bergh 2014, pers.

comm.). Although poaching cannot be completely ameliorated, this current level of poaching is not considered a threat to the DPS. If poaching levels change, however, then poaching could hinder CWTD population growth because of the DPS's small population size. Small populations face greater risks of extinction because genetic drift and demographic stochasticity (*i.e.*, random change) have a proportionally large effect on small populations. Genetic drift reduces allelic diversity in the population, so poaching could lead to higher levels of homozygosity and inbreeding depression. Loss of such genetic variation can reduce the population's ability to respond to environmental changes and increase the risk of extinction. In addition, preferential pursuit of bucks for trophy reasons can skew buck to doe ratios and possibly reduce the overall age structure of bucks. If these larger and older bucks are removed from the population, the genetic advantages they may pass down to offspring would also be removed from the population. Thus, while overutilization does not constitute a threat to CWTD now, it would likely become a threat without the continued protections of the Act.

#### *C. Disease or Predation*

##### *Disease*

The Revised Recovery Plan lists necrobacillosis (hoof rot) as a primary causal factor in CWTD mortality on the JBHR (U.S. Fish and Wildlife Service 1983, p. 13). *Fusobacterium necrophorum* is identified as the etiological agent in most cases of hoof rot, although concomitant bacteria such as *Arcanobacterium pyogenes* may also be at play (Langworth 1977, p. 383). Damp soil or inundated pastures increase the risk of hoof rot among CWTD with foot injuries (Langworth 1977, p. 383); increased flooding frequency thus may have potential to increase these risk factors in the future. Among 155 carcasses recovered from 1974 to 1977, hoof rot was evident in 31 percent (n=49) of the cases, although hoof rot was attributed directly to only 3 percent (n=4) of CWTD mortalities (Gavin *et al.* 1984, pp. 30–31). Currently, CWTD on the JBHR Mainland Unit have occasionally displayed visible evidence of hoof rot, and recent cases have been observed on Puget Island, but its prevalence is not known to be a limiting factor in population growth (U.S. Fish and Wildlife Service 2010, p. 4:53). Of the 49 CWTD captured from the JBHR Mainland Unit and Puget Island in 2013, none displayed evidence of hoof rot at the time of capture (U.S.

Fish and Wildlife Service, unpublished data).

Deer hair loss syndrome (DHLS) was documented in black-tailed deer in northwestern Oregon from 2000 to 2004 (Biederbeck 2004, p. 4). DHLS results when a deer with an immune system weakened by internal parasites is plagued with ectoparasites such as deer lice (*Damalinia (Cervicola) spp.*). The weakened deer suffer increased inflammation and irritation, which result in deer biting, scratching, and licking affected areas and, ultimately, removing hair in those regions. This condition is found most commonly among deer occupying low-elevation agricultural areas (below 183 m (600 ft) elevation). While the study found a higher instance in black-tailed deer, cases in CWTD have also been observed. Most cases (72 percent) of DHLS detected at the Saddle Mountain Game Management Unit in northwestern Oregon were associated with black-tailed deer. Twenty-six percent of black-tailed deer surveyed in the Saddle Mountain Game Management Unit showed symptoms of DHLS, while only 7 percent of CWTD were symptomatic (Biederbeck 2004, p. 4). Additionally, cases were identified in CWTD in 2002 and 2003, but none of the CWTD surveyed in 2004 showed evidence of the disease (Biederbeck 2004, p. 4). CWTD captured during translocations in recent years have occasionally exhibited evidence of hair loss. Mild hair loss has been observed in a few fawns and yearlings (U.S. Fish and Wildlife Service 2010, p. 4:53).

DHLS is not thought to be highly contagious, nor is it considered to be a primary threat to CWTD survival, although it has been associated with deer mortality (Biederbeck 2002, p. 11; 2004, p. 7). Reports of DHLS among black-tailed deer in Washington have indicated significant mortality associated with the condition. In 2006, a high number of Yakima area mule deer (*Odocoileus hemionus*) mortalities were reported with symptoms of DHLS (Washington Department of Fish and Wildlife 2010, p. 1), although their mortality may be more related to a significant outbreak of lice in the population at the time. With respect to CWTD, however, there has been no documented mortality associated with the disease on the JBHR Mainland Unit (U.S. Fish and Wildlife Service 2010, p. 4:53), and DHLS is not a current or foreseeable threat.

Parasite loads were tested in 16 CWTD on the JBHR Mainland Unit and Tenasillahe Island in February of 1998 (Creekmore and Glaser 1999, p. 3). All CWTD tested via fecal samples showed



evidence of the stomach worm *Haemonchus contortus*. Lung worm (*Parelaphostrongylus* spp.) and trematode eggs, possibly from liver flukes (*Fascioloides* spp.), were also detected. These results are generally not a concern among healthy populations, and although the Columbia River DPS of CWTD has less than optimal forage and habitat quality available in some subpopulations, their relatively high parasite load has never been linked to mortality in the DPS. Parasites are not a current or future threat to CWTD, as the parasite load appears to be offset by a level of fecundity that supports stable or increasing populations.

#### Predation

Coyote predation on CWTD has been a problem for the Columbia River DPS, but careful attention to predator control has demonstrated that predation can be managed. Since 1983, studies have been conducted to determine the primary factors affecting fawn survival throughout the range of the Columbia River DPS of CWTD (U.S. Fish and Wildlife Service, unpublished data), and coyote predation is thought to be the most significant impact on fawn recruitment. On the JBHR Mainland Unit, Clark *et al.* (2010, p. 1) fitted 131 fawns with radio collars and tracked them for the first 150 days of age from 1978 to 1982, and then again from 1996 to 2000 (16 deer were dropped from the analyses due to collar issues). The authors found only a 23 percent survival rate. They also determined that predation from coyotes was the primary cause of fawn mortality, accounting for 69 percent ( $n = 61$ ) of all documented deaths. Of the remaining fatalities, 16 percent were attributed to disease and starvation, and 15 percent were attributed to unknown causes. The percentage of mortalities from predation for CWTD fawns is comparable to that of other ungulate species; however, CWTD fawn survival rate is much lower. Using 111 papers and reports, Linnell *et al.* (1995, p. 209) found the average fawn survival rate of northern ungulates was approximately 54 percent, with predation accounting for 67 percent of fawn mortality.

Between 1997 and 2008, 46 coyotes were removed from the JBHR Mainland Unit by the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (U.S. Fish and Wildlife Service 2010, p. 4:62). Coyote removal appears to result in an increase in fawn survival, although this has not been analyzed statistically. In 1996, the estimated JBHR Mainland Unit fawn:doe (F:D) ratio was 15:100. The following year, after 9 coyotes were

removed, the F:D ratio increased to 61:100 (U.S. Fish and Wildlife Service 2010, p. 4:54); however, this was the year following catastrophic flooding, so some F:D ratio improvement could be a result of post-flooding conditions. On Tenasillahe Island, the average F:D ratio between 2001 and 2003 was 6:100. No coyotes were removed during that time. Over the next 5 years (2004 to 2008), 31 coyotes were removed, and the F:D ratio improved and averaged 37:100. Clark *et al.* (2010, p. 14) suggested shifting the timing of coyote removal from winter/early spring to the critical fawning period of June to September. This suggestion has been included in the comprehensive conservation plan for the JBHR and has been implemented since 2008. Since shifting the timing of predator control, a F:D ratio of 37:100 has been maintained on the JBHR Mainland Unit. Due to the evident success of predator control efforts at JBHR, Ridgefield NWR began implementing a coyote control program in May 2013, to support the then-newly translocated CWTD. We do not anticipate a change in predator control levels on refuge lands in the foreseeable future.

It is common for private landowners in the region to practice predator control on their property, but we do not know the extent of predator control occurring currently or the amount that is likely to occur in the future. On private lands with sheep and other livestock, we have no information that leads us to anticipate a decrease in the level of predator control in the foreseeable future (Meyers 2016, pers. comm.). Even with predation occurring on private lands, the populations of Puget Island and Westport still demonstrate a positive growth rate over time (see Table 1, above). Additionally, coyote control has been in practice on refuge lands for some time and will continue to be implemented on both the JBHR and Ridgefield NWR to support CWTD populations. While coyote control efforts in the Columbia River DPS have met with some success, there may be other factors, such as habitat enhancement, that are also influencing increased F:D ratios in certain CWTD subpopulations. Doe survival in the DPS depends heavily on the availability of nutritious forage rather than on predation pressure, although fawn predation within subpopulations is most likely influenced by coyote population cycles (Phillips 2009, p. 20). Furthermore, deer and elk populations can be depressed by the interplay between various factors such as habitat quality and predation pressure (Oregon

Department of Fish and Wildlife 2013, p. 8).

The causes of mortality in ungulates are often divided into predation and food limitation (Linnell *et al.* 1995, p. 209). Predation levels on CWTD fawns are comparable to average predation levels for other ungulates; however, average survival rates are lower for CWTD fawns. Thus, further information is needed on food availability and habitat quality within the range of the Columbia River DPS of CWTD to determine how food limitation affects fawn survival. As CWTD increase in numbers and occupy areas with higher quality habitat, predation will likely be offset by increased fecundity. For instance, anecdotal observations of twins on Ridgefield NWR provide some indication that CWTD fecundity is higher in higher quality habitat. The population size of the Ridgefield NWR subpopulation also doubled in 1 year, from 48 individuals in 2014 to 100 individuals in 2015 (see Table 1, above). Fecundity increases that will lead to self-sustaining population levels are anticipated as a result of long-term improvement of habitat conditions and continued focus on coyote control on refuge lands (and monitoring of predation by other species such as bobcat). As predation on CWTD fawns is comparable to fawn predation levels in other ungulates, and as we anticipate increases in fecundity, and potentially fawn survival, with habitat improvement, predation is not a threat to the DPS.

#### Summary of Factor C

Naturally occurring diseases such as hoof rot, DHLS, and parasite loads can often work through an ungulate population without necessarily reducing the overall population abundance. Although the relatively high parasite load in the Columbia River DPS of CWTD is compounded by the additional stressor of suboptimal forage and habitat quality for some subpopulations, the load itself has never been linked to mortality in the DPS. Disease in the Columbia River DPS of CWTD is not a threat now, and we have no evidence to suggest it may become a threat in the foreseeable future.

Predation in the Columbia River DPS of CWTD is not a threat now, and we have no reason to expect it to become a threat in the foreseeable future. Depredation of fawns by coyotes is common in the Columbia River DPS; however, many factors, such as food availability, work in conjunction with each other to determine the overall level of fawn recruitment. Coyote control is in practice on some private lands in the



region as well as on both the JBHR and Ridgefield NWR to decrease the likelihood of fawn depredation, and the level of control is not anticipated to change in the foreseeable future on refuge lands. Even with a large proportion of fawns being lost to predation, the population of the Columbia River DPS has increased since surveys began in the late 1980s. As CWTD increase in numbers and habitat quality improves through restoration efforts, population increases will likely offset the impact of predation.

#### *D. The Inadequacy of Existing Regulatory Mechanisms*

Under this factor, we examine whether existing regulatory mechanisms adequately address the threats to the CWTD discussed under other factors. Section 4(b)(1)(A) of the Act requires the Service to take into account, “those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species. . . .” In relation to Factor D under the Act, we interpret this language to require the Service to consider relevant Federal, State, and Tribal laws, regulations, and other such mechanisms that may minimize any of the threats we describe in threat analyses under the other four factors, or otherwise enhance conservation of the species. We give strongest weight to statutes and their implementing regulations and to management direction that stems from those laws and regulations. Examples are State governmental actions enforced under a State statute or constitution, or Federal action under statute.

The following section includes a discussion of State, local, or Federal laws, regulations, or treaties that apply to CWTD. It includes legislation for Federal land management agencies and State and Federal regulatory authorities affecting land use or other relevant management. Before CWTD was federally listed as endangered in 1967, the species had no regulatory protections. Existing laws were considered inadequate to protect the subspecies. The CWTD was not officially recognized by Oregon or Washington as needing any special protection or given any special consideration under other environmental laws when project impacts were reviewed.

Now the CWTD is designated as “State Endangered” by the WDFW. Although there is no State Endangered Species Act in Washington, the Washington Fish and Wildlife Commission has the authority to list species (Revised Code of Washington

(RCW) 77.12.020), and they listed CWTD as endangered in 1980. State-listed species are protected from direct take, but their habitat is not protected (RCW 77.15.120). Under the Washington State Forest Practices Act, the Washington State Forest Practices Board has the authority to designate critical wildlife habitat for State-listed species affected by forest practices (Washington Administrative Code (WAC) 222–16–050, WAC 222–16–080), although there is no critical habitat designated for CWTD.

The WDFW’s hunting regulations remind hunters that CWTD are listed as endangered by the State of Washington (Washington Department of Fish and Wildlife 2015, pp. 18, 20). This designation means it is illegal to hunt, possess, or control CWTD in Washington. There has been one documented case of an accidental shooting of CWTD by a black-tailed deer hunter due to misidentification, and a few cases of intentional shooting of CWTD through poaching in the 49 years since CWTD were first listed (Bergh 2014, pers. comm.). The State endangered designation protects individual CWTD from direct harm, but offers no protection to CWTD habitat.

The Washington State Legislature established the authority for Forest Practices Rules (FPR) in 1974. The Forest Practices Board established rules to implement the Forest Practices Act in 1976, and has amended the rules continuously over the last 30 years. The WDNR is responsible for implementing the FPR and is required to consult with the WDFW on matters relating to wildlife, including CWTD. The FPR do not specifically address CWTD, but they do address endangered and threatened species under their “Class IV-Special” rules (WAC 222–10–040). If a landowner’s forestry-related action would “reasonably . . . be expected, directly or indirectly, to reduce appreciably the likelihood of the survival or recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species,” then the landowner would be required to comply with the State’s Environmental Policy Act guidelines before the landowner could perform the action in question. The guidelines can require the landowner to employ mitigation measures, or they may place conditions on the action such that any potentially significant adverse impacts would be reduced. Compliance with the FPR does not substitute for or ensure compliance with the Federal Endangered Species Act. A permit system for the scientific taking of State-listed endangered and threatened

wildlife species is managed by the WDFW.

Though CWTD (Columbia River DPS) are not listed as endangered or threatened by the State of Oregon, they are classified as a “protected mammal” by the State of Oregon because of their federally endangered designation, and this will not change upon CWTD being federally downlisted to threatened (Oregon Department of Fish and Wildlife 2012, p. 1). The CWTD is designated as “Sensitive-Vulnerable” by the Oregon Department of Fish and Wildlife (ODFW). The “Sensitive” species classification was created under Oregon’s Sensitive Species Rule (Oregon Administrative Rules (OAR) 635–100–040) to address the need for a proactive species conservation approach. The Sensitive Species List is a nonregulatory tool that helps focus wildlife management and research activities, with the goal of preventing species from declining to the point of qualifying as “endangered” or “threatened” under the Oregon Endangered Species Act (Oregon Revised Statutes (ORS) 496.171, 496.172, 496.176, 496.182 and 496.192). Species designated as Sensitive-Vulnerable are those facing one or more threats to their populations, habitats, or both. Vulnerable species are not currently imperiled with extirpation from a specific geographic area or the State, but could become so with continued or increased threats to populations, habitats, or both. This designation encourages but does not require the implementation of any conservation actions for the species. The ODFW does not allow hunting of CWTD, except for controlled hunt of the federally delisted Douglas County DPS in areas near Roseburg, Oregon (Oregon Department of Fish and Wildlife 2015, p. 39). There have been no documented cases of accidental or intentional killing of CWTD in the Columbia River DPS in Oregon (Boechler 2014, pers. comm.).

The State may authorize a permit for the scientific taking of a federally endangered or threatened species for “activities associated with scientific resource management such as research, census, law enforcement, habitat acquisition and maintenance, propagation and transplantation.” An incidental taking permit or statement issued by a Federal agency for a species listed under the Federal Endangered Species Act “shall be recognized by the state as a waiver for any state protection measures or requirements otherwise applicable to the actions allowed under the federal permit” (ORS 96.172(4)).

The Oregon Forest Practices Act (ORS 527.610 to 527.992 and OAR chapter 629, divisions 600 to 665) lists

protection measures specific to private and State-owned forested lands in Oregon. These measures include specific rules for overall maintenance of fish and wildlife, and specifically for federally endangered and threatened species including the collection and analysis of the best available information and establishing inventories of these species (ORS 527.710, section 3(a)(A)). Compliance with the forest practice rules does not substitute for or ensure compliance with the Federal Endangered Species Act.

The Oregon Department of Forestry recently updated their Northwest Oregon Forest Plan (Oregon Department of Forestry 2010). There is no mention of CWTD in their Forest Plan, but they do manage for elk and black-tailed deer. Landowners and operators are advised that Federal law prohibits a person from taking certain endangered or threatened species that are protected under the Federal Endangered Species Act (OAR 629-605-0105).

The 4(d) rule we are making final in this rulemaking retains most take prohibitions, which will provide additional protections to CWTD that are not available under State laws. Other than the “take” that will be allowed for the specific activities outlined in the 4(d) rule, “take” of CWTD is prohibited on all lands without a permit or exemption from the Service. Furthermore, the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd *et seq.*) provides additional protection to CWTD. Where CWTD occur on NWR lands (the JBHR and Ridgefield NWRs), this law protects CWTD and their habitats from large-scale loss or degradation due to the Service’s mission “to administer a national network of lands . . . for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats.”

The JBHR was established in Washington in 1971, specifically to protect and manage the endangered CWTD. Approximately one-third of the population of CWTD occurs on the JBHR in the JBHR Mainland Unit subpopulation and the Tenasillahe Island subpopulation. The JBHR’s comprehensive conservation plan (CCP) includes goals for the following: (1) Protecting, maintaining, enhancing, and restoring habitats for CWTD; (2) contributing to the recovery of CWTD by maintaining minimum population sizes on JBHR properties; and (3) conducting survey and research activities, assessments, and studies to enhance species protection and recovery (U.S. Fish and Wildlife Service 2010a, pp.

2:48–76). The JBHR implements habitat improvement and enhancement actions on a regular basis as well as predator management. As of early 2013, the Ridgefield NWR is home to a new subpopulation of CWTD. The Ridgefield CCP states that current and proposed habitat management will support a mix of habitats suitable for CWTD (U.S. Fish and Wildlife Service 2010b, p. 48). Habitat conditions on Ridgefield NWR are favorable for CWTD, and both habitat enhancement and predator control are being implemented. Regular monitoring will occur to assess the viability of this subpopulation over time. Both JBHR and Ridgefield NWR must conduct consultations under section 7 of the Act for any refuge activity that may result in adverse effects to CWTD.

#### Summary of Factor D

Although additional regulatory mechanisms have been developed for the Columbia River DPS since its listing under the Act and these mechanisms are working as designed and help to minimize threats, they do not fully ameliorate the threats to the species and its habitat. Without the continued protections of the Act, the existing regulatory mechanisms for the Columbia River DPS would be inadequate.

#### *E. Other Natural or Manmade Factors Affecting Its Continued Existence*

##### Hybridization

Hybridization with black-tailed deer was not considered a significant threat to the Columbia River DPS of CWTD at the time of the development of the Revised Recovery Plan (U.S. Fish and Wildlife 1983, p. 40). Later studies raised some concern over the presence of black-tailed deer genes in the isolated Columbia River DPS population. Gavin and May (1988, p. 1) found evidence of hybridization in 6 of 33 samples of CWTD on the JBHR Mainland Unit and surrounding area. A subsequent study revealed evidence of hybridization on Tenasillahe Island, but not within the JBHR Mainland Unit (Piaggio and Hopken 2009, p. 18). On Tenasillahe Island, 32 percent (8) of the 25 deer tested and identified as CWTD contained genes from black-tailed deer. Preliminary evidence shows no morphological differences in CWTD/black-tailed deer hybrids, suggesting molecular analysis may be the only analytic tool in tracking hybridization. These data suggest that these genes may have been due to a single hybridization event that is being carried through the Tenasillahe Island population (Piaggio and Hopken 2009, p. 18).

Translocation efforts have at times placed CWTD in areas that support black-tailed deer populations. While few black-tailed deer inhabit the JBHR Mainland Unit or Tenasillahe Island, the Upper Estuary Islands population may experience more interspecific interactions. Aerial FLIR survey results in 2006 detected 44 deer on the four-island complex of Fisher/Hump and Lord/Walker. Based upon the proportion of CWTD to black-tailed deer sightings using trail cameras on these islands, Service biologists estimated that, at most, 14 of those detected were CWTD (U.S. Fish and Wildlife Service 2007, p. 1). A study conducted in 2010 by the JBHR and the National Wildlife Research Center using fecal samples collected on Crims, Lord, and Walker Islands showed no hybridization in any of the samples collected, suggesting a low tendency to hybridize even in island situations (Piaggio and Hopken 2010, p. 14). The actual magnitude of hybridization has probably not changed since the listing of CWTD; however, there are not enough data available to confirm this assumption. Hybridization might affect the genetic viability of the Columbia River DPS, and additional research regarding hybridization could give broader insight to the implications and occurrence of this phenomenon, and how it may influence subspecies designation. Although a more complete data set would provide more conclusive information regarding hybridization in CWTD, based upon the minor level of detections of black-tailed deer genetic material and the complete lack of any evidence of hybridization on several islands, we find that hybridization is not a threat to the Columbia River DPS.

##### Vehicle Collisions

Because deer are highly mobile, collisions between CWTD and vehicles do occur, but the number of collisions in the Columbia River DPS has not prevented the DPS from increasing over time and meeting downlisting criteria. The frequency of collisions is dependent on the proximity of a subpopulation to roads with high traffic levels, and collisions with CWTD have been most frequent among deer that have been translocated to areas that are relatively close to high trafficked roads. In 2010, 7 of 15 deer translocated to Cottonwood Island, Washington, from Westport, Oregon swam off the island and were killed by collisions with vehicles on U.S. Highway 30 in Oregon, and on Interstate 5 in Washington (Cowlitz Indian Tribe 2010, p. 3). In 2013, 5 of 12 deer translocated to Cottonwood Island from Puget Island were killed by collisions with vehicles,

and another 4 may have been killed by vehicles or by other means such as disease or predation (U.S. Fish and Wildlife Service, unpublished data). When combined, 12 of 27 CWTD (44 percent) were killed by vehicle strikes while dispersing from Cottonwood Island. (Translocation efforts to Cottonwood Island are not currently active.) By contrast, of the 58 deer that were translocated to Ridgefield NWR in 2013 and 2014, only 3 have been struck by vehicles, and all 3 were struck after wandering off refuge land. Because of its proximity to Highway 4 in Washington, JBHR sees occasional collisions between vehicles and CWTD on or near the refuge. Refuge personnel recorded four CWTD killed by vehicle collisions in 2010 along Highway 4 and on the JBHR Mainland Unit. These were deer that were either observed by Service personnel or reported directly to the JBHR. There are no trend data available for these collisions because systematic data collection has not occurred.

The Washington Department of Transportation removes road kills without reporting species details to the JBHR, so the actual number of CWTD struck by cars in Washington is probably slightly higher than the number of cases of which JBHR staff is aware. Since the 2013 translocation, ODFW has had an agreement with the Oregon Department of Transportation (ODOT) that ODOT personnel assigned to stations along Highway 30 will report any CWTD mortalities. So far, they have been contacting the Oregon State Police and occasionally ODFW staff when they find a mortality with a collar or ear tags. It is uncertain if the ODOT staff report unmarked CWTD mortalities (VandeBergh 2013, pers. comm.).

Although the number of deer collisions may increase over time as CWTD populations expand in both numbers and range, the rate of collisions in proportion to the Columbia River DPS population size is not limiting. We acknowledge that estimates of the number of deer killed on roads could be low and that increasing human development and deer population sizes could result in increased mortality rates in the future, especially for those populations near highways. Therefore, while vehicle collisions could potentially impact certain subpopulations of CWTD, they do not constitute a threat to the entire DPS now, and we do not expect them to be a threat in the foreseeable future.

#### Summary of Factor E

Low levels of hybridization have recently been detected between black-tailed deer and CWTD on the JBHR

(Piaggio and Hopken 2010, p. 15). Future genetic work could give a broader insight into the implications and occurrence of this phenomenon. However, Piaggio and Hopken concluded that although hybridization can occur between CWTD and black-tailed deer, it is not a common or current event (2010, p. 16). The two species will preferentially breed within their own taxa, and their habitat preferences differ somewhat. Therefore, hybridization does not constitute a threat now, and we have no reason to expect it will become a threat in the foreseeable future. While collisions between CWTD and vehicles do occur, frequency of collisions is dependent on the proximity of a subpopulation to roads with high traffic levels, making some subpopulations more susceptible to vehicle mortality than others. Overall, vehicle collisions have not prevented the DPS population from increasing over time and meeting recovery criteria for downlisting, and there is no evidence to suggest that they will become a threat to the DPS in the foreseeable future.

#### Overall Summary of Factors Affecting CWTD

The Columbia River DPS has consistently exceeded the minimum population criterion of 400 deer over the past 2 decades. Based on the most recent comprehensive survey data from 2015, the Columbia River DPS has approximately 966 CWTD, with two subpopulations that are both viable and secure (Tenasillahe Island and Puget Island). The current range of CWTD in the lower Columbia River area has been expanded approximately 80.5 km (50 mi) upriver from its easternmost range of Wallace Island in 1983, to Ridgefield, Washington, due to a translocation of animals from the JBHR Mainland Unit, Puget Island, and Westport subpopulations. Based on observations of successful breeding and subpopulation growth to date, the recently established Ridgefield NWR population is expected to continue to grow and represent an additional viable subpopulation, as defined in the recovery plan; however, we will conduct additional demographic monitoring to accurately assess the overall response of the newly established Ridgefield NWR subpopulation and more reliably demonstrate its viability. Like the Ridgefield NWR subpopulation, we anticipate the JBHR Mainland Unit subpopulation will continue to rebound and represent a viable subpopulation in the near future.

Threats to the Columbia River DPS from habitat loss or degradation (Factor A) still remain and will likely continue into the foreseeable future in the form of habitat alteration, and some subpopulations are expected to be affected by habitat changes resulting from the effects of climate change. Predation, diseases, and parasites (Factor C) are not currently known to significantly contribute to mortality in CWTD. While there is potential for increased flood frequency to increase risk factors for hoof rot, available information does not indicate that the disease, in combination with other factors, is currently a significant limiting factor for the population or is likely to become so. Thus we do not consider disease or predation (Factor C) to be a threat. Without the protections of the Act, the existing regulatory mechanisms, including those to prevent overutilization (Factor B), for the Columbia River DPS remain inadequate (Factor D). While hybridization (Factor E) is not a threat, vehicle collisions (Factor E) may pose a threat to some subpopulations during dispersal.

#### Determination

As stated above, section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to or removing species from the Federal Lists of Endangered and Threatened Wildlife and Plants. An assessment of the need for a species' protection under the Act is based on whether a species is in danger of extinction or likely to become so because of any of five factors described above in the Summary of Factors Affecting the Species section. As required by section 4(a)(1) of the Act, we considered these five factors in assessing whether the Columbia River DPS of CWTD is in danger of extinction or likely to become so in the foreseeable future throughout all of its range.

As required by the Act, we considered the five factors in assessing whether the Columbia River DPS of CWTD is endangered or threatened throughout all or a significant portion of its range. We carefully examined the best scientific and commercial information available regarding the past, present, and future threats faced by the DPS. We reviewed the information available in our files and other available published and unpublished information, and we consulted with recognized experts and State and Tribal agencies.

We find that the Columbia River DPS is still affected by habitat loss and degradation, and some subpopulations are likely to be affected in the future by habitat changes resulting from the

effects of climate change and may be affected by vehicle collisions. We did not identify any factors that put the DPS in danger of extinction at the present time; however, without the continued protections of the Act, effects of take could be detrimental to small subpopulations, especially those that have not reached minimum viable population size, due to the proportionally large effects of genetic drift and demographic stochasticity. Conservation efforts have progressed to the point that the minimum population size of 400 has now been met or exceeded for more than 20 years, and we have three viable subpopulations, two of which are considered currently secure, but additional viable and secure subpopulations are needed to achieve the recovery of the DPS. Increasing the amount and quality of habitat to address the ongoing threat of habitat loss or degradation will be a key component of achieving the security of additional subpopulations to attain recovery goals. Thus, although the threats that led to the initial listing of the Columbia River DPS of the CWTDD have been ameliorated such that the DPS is not presently in danger of extinction, ongoing threats to the DPS such as habitat loss and threats to certain subpopulations such as effects due to climate change are such that the DPS is likely to become an endangered species within the foreseeable future. Our analysis thus indicates that the Columbia River DPS of CWTDD is not at imminent risk of extinction throughout all of its range; therefore, the Columbia River DPS of CWTDD does not meet the definition of an endangered species. We conclude that the DPS is not currently in danger of extinction, but is likely to become in danger of extinction within the foreseeable future, such that it now meets the definition of a threatened species. Therefore, on the basis of the best scientific and commercial data available, we find that the Columbia River DPS of CWTDD no longer meets the definition of endangered and should be reclassified as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

#### Significant Portion of the Range

Because we have concluded that the Columbia River DPS of CWTDD is a threatened species throughout all of its range, no portion of its range can be “significant” for purposes of the definitions of “endangered species” and “threatened species.” See the Service’s Significant Portion of its Range (SPR) Policy (79 FR 37578, July 1, 2014).

#### Effects of the Rule

This final rule revises 50 CFR 17.11(h) to reclassify the Columbia River DPS of CWTDD from endangered to threatened on the List of Endangered and Threatened Wildlife. Reclassification of CWTDD from endangered to threatened provides recognition of the substantial efforts made by Federal, State, and local government agencies; Tribes; and private landowners to recover the species. This rule formally recognizes that this species is no longer at imminent risk of extinction and therefore does not meet the definition of endangered, but is still impacted by habitat loss and degradation of habitat to the extent that the species meets the definition of a threatened species (a species which is likely to become an endangered species within the foreseeable future) under the Act. However, this reclassification does not significantly change the protection afforded this species under the Act. Other than the “take” that will be allowed for the specific activities outlined in the accompanying 4(d) rule, the regulatory protections of the Act will remain in place. Anyone taking, attempting to take, or otherwise possessing a CWTDD, or parts thereof, in violation of section 9 of the Act will still be subject to penalties under section 11 of the Act, except for the actions covered under the 4(d) rule. Whenever a species is listed as threatened, the Act allows promulgation of a rule under section 4(d) that modifies the standard protections for threatened species found under section 9 of the Act and Service regulations at 50 CFR 17.31 (for wildlife) and 17.71 (for plants), when it is deemed necessary and advisable to provide for the conservation of the species. These rules may prescribe conditions under which take of the threatened species would not be a violation of section 9 of the Act.

#### 4(d) Rule

The purposes of the Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in the Act. When a species is listed as endangered, certain actions are prohibited under section 9 of the Act, as specified at 50 CFR 17.21. These include, among others, prohibitions on take within the United States, within the territorial seas of the United States, or upon the high seas;

import; export; and shipment in interstate or foreign commerce in the course of a commercial activity.

The Act does not specify particular prohibitions and exceptions to those prohibitions for threatened species. Instead, under section 4(d) of the Act, the Secretary is authorized to issue regulations deemed necessary and advisable to provide for the conservation of threatened species. The Secretary also has the discretion to prohibit by regulation with respect to any threatened species any act prohibited under section 9(a)(1) of the Act. Exercising this discretion, the Service has by regulation applied those prohibitions to threatened species unless a special rule is promulgated under section 4(d) of the Act (“4(d) rule”) (50 CFR 17.31(c)). Under 50 CFR 17.32, permits may be issued to allow persons to engage in otherwise prohibited acts for certain purposes unless a special rule provides otherwise.

A 4(d) rule may include some or all of the prohibitions and authorizations set out at 50 CFR 17.31 and 17.32, but also may be more or less restrictive than those general provisions. For the Columbia River DPS of CWTDD, the Service has determined that a 4(d) rule is necessary and appropriate for the conservation of the species. As a means to provide continued protection from take and also to facilitate both conservation of CWTDD in the Columbia River DPS and to facilitate natural expansion of their range by increasing flexibility in management activities for our State and Tribal partners and private landowners, we are issuing a rule for this species under section 4(d) of the Act.

Under this 4(d) rule, take will generally continue to be prohibited but the following forms of take are allowed:

- Take by landowners or their agents conducting intentional harassment not likely to cause mortality if they have obtained a permit from the applicable State conservation agency;
- Take of problem CWTDD (as defined under Provisions of the 4(d) Rule, below) by Federal or State wildlife management agency staff, or private landowners acting in accordance with a permit obtained from a State conservation agency;
- Take by private landowners that is accidental and incidental to an otherwise permitted and lawful activity to control damage by black-tailed deer, and if reasonable due care was practiced to avoid such taking;
- Take by black-tailed deer hunters if the take was accidental and incidental to hunting done in full compliance with the State hunting rules, and if

reasonable due care was practiced to avoid such taking;

- Take by designated Tribal employees and State and local law enforcement officers to deal with sick, injured, or orphaned CWTD;
- Take by State-licensed wildlife rehabilitation facilities when working with sick, injured, or orphaned CWTD; and
- Take under permits issued by the Service under 50 CFR 17.32.

Other than these exceptions, the provisions of 50 CFR 17.31(a) and (b) apply.

The 4(d) rule targets these activities to facilitate conservation and management of CWTD where they currently occur through increased flexibility for State wildlife management agencies, and to encourage landowners to facilitate the expansion of the CWTD's range by increasing the flexibility of management of the deer on their property (see Justification, below). Activities on Federal lands or with any Federal agency involvement will still need to be addressed through consultation under section 7 of the Act. Take of CWTD in defense of human life in accordance with 50 CFR 17.21(c)(2) or by the Service or designated employee of a State conservation agency responding to a demonstrable but non-immediate threat to human safety in accordance with 50 CFR 17.21(c)(3)(iv) (primarily in the event that a deer interferes with traffic on a highway) is not prohibited. Any deterrence activity that does not create a likelihood of injury by significantly disrupting normal CWTD behavioral patterns such as breeding, feeding, or sheltering is not take and is therefore not prohibited under section 9. Non-injurious deterrence activities for CWTD damage control may include yelling at the deer, use of repellents, fencing and other physical barriers, properly deployed noise-making devices (including explosive devices such as propane cannons, cracker shells, whistlers, etc.), scarecrows, plant protection devices (bud caps, netting, tree tubes, etc.), and artificial lighting.

If there is potential that an activity would interrupt normal CWTD behavior to the point where the animal would stop feeding or not find adequate cover, creating a likelihood of injury, then the activity would have the potential to cause take in the form of harassment. Under this 4(d) rule, if the activity is not likely to be lethal to CWTD, it is classified as intentional harassment not likely to cause mortality and is allowed if the activity is carried out under and according to a legally obtained permit from the Oregon or Washington State conservation agency. Actions that may

create a likelihood of injury, but are determined by State wildlife biologists not likely to cause mortality, may include the use of nonlethal projectiles (including paintballs, rubber bullets, pellets or "BB's" from spring- or air-propelled guns, etc.) or herding or harassing with dogs, and are only allowed if the activity is carried out under and according to a legally obtained permit from the Oregon or Washington State conservation agency.

This 4(d) rule allows a maximum of 5 percent of the DPS to be lethally taken annually for the following activities combined: (1) Damage management of problem CWTD, (2) misidentification during black-tailed deer damage management, and (3) misidentification during black-tailed deer hunting. The identification of a problem CWTD will occur when the State conservation agency or Service determines in writing that: (1) A CWTD is causing more than *de minimus* negative economic impact to a commercial crop, (2) previous efforts to alleviate the damage through nonlethal methods have been ineffective, and (3) there is a reasonable certainty that additional property losses will occur in the near future if a lethal control action is not implemented.

The current estimated population of the DPS is 966 deer; therefore 5 percent would currently equate to 48 deer. We will set the allowable take at 5 percent of the most current annual November population estimate of the DPS based on FLIR surveys and ground counts to provide sufficient flexibility to our State wildlife agency partners in the management of CWTD and to strengthen our partnership in the recovery of the DPS. Although the fecundity and overall recruitment rate is strong and will allow the DPS to persist and continue to recover even with take up to the maximum allowable 5 percent, we do not expect that the number of deer taken per year will ever exceed 2 percent of the DPS per year for several reasons. First, no CWTD have been injured or killed as a result of management activities because damage management activities have not been required for successfully translocated CWTD, although most translocations were to NWR lands. We anticipate that the necessity of damage management activities may increase as the CWTD population increases and as CWTD are able to disperse to areas previously unavailable, such as those agricultural areas surrounding the Ridgefield NWR. Furthermore, the Service expects that most CWTD will respond to non-injurious or nonlethal means of dispersal so that lethal take of problem CWTD will not often be necessary. We

are, therefore, confident that the amount of CWTD lethally taken under this 4(d) rule during CWTD damage management actions will be relatively low.

Additionally, the Service expects that the potential for accidental shooting by mistaking a CWTD for a black-tailed deer will be low because there has been only one documented case of an accidental shooting of CWTD by a black-tailed deer hunter due to misidentification (Bergh 2014, pers. comm.) and there have been no documented accidental shootings of CWTD during black-tailed deer damage management. The 2015 big game hunting regulations in both Oregon and Washington provide information on distinguishing black-tailed deer from CWTD and make it clear that shooting CWTD from the Columbia River DPS is illegal under State law (Oregon Department of Fish and Wildlife 2015, p. 39; Washington Department of Fish and Wildlife 2015, pp. 18, 20). Even with this 4(d) rule in place, a hunter who shot a CWTD due to misidentification will still be required under the Act to report the incident to the Service, be required under State law to report the incident to State authorities, and be subject to potential prosecution under the discretion of State law.

Because the maximum amount of take allowed for these activities is a percentage of the DPS population in any given year, the exact number of CWTD allowed to be taken will vary from year to year in response to each calendar year's most current estimated population. As mentioned above, we do not expect that the number of deer taken will ever exceed 2 percent of the DPS per year. If take does exceed 2 percent of the DPS population in a given year, the Service will convene a meeting with the Oregon and Washington Departments of Fish and Wildlife to discuss CWTD management and strategies to minimize further take from these activities for the rest of the year. If take should exceed 5 percent of the total DPS population in any given year, no further take will be allowed for these activities in the DPS as a whole, and, should any further take occur, it would be subject to potential prosecution under the Act.

We encourage any landowner concerned about potential take of listed species on their property that is not covered under this rule (see Regulation Promulgation, below) to contact the Service to explore options for developing a safe harbor agreement or habitat conservation plan that can provide for the conservation of the species and offer management options

to landowners associated with a permit to protect the party from violations under section 9 of the Act (see **FOR FURTHER INFORMATION CONTACT**).

#### Justification

As habitat destruction remains a threat to the species, continued application of the prohibition on harm is needed to discourage significant habitat modification that would kill or injure CWTD. In addition, in light of the relatively small size of the subpopulations and the history of overutilization of CWTD, the species is vulnerable to hunting and poaching unless the prohibitions on take are generally maintained. As the Columbia River DPS of CWTD grows in number and range, however, the deer are facing increased interaction and potential conflict with the human environment. Reclassification of the Columbia River DPS of CWTD from endangered to threatened status under the Act allows employees of State conservation agencies operating a conservation program pursuant to the terms of a cooperative agreement with the Service in accordance with section 6(c) of the Act, and who are designated by their agencies for such purposes, and who are acting in the course of their official duties, to take CWTD to carry out conservation programs (see 50 CFR 17.31(b)). There are many activities carried out or managed by the States, Tribes, and private landowners that help reduce conflict with CWTD and thereby facilitate the movement of CWTD across the landscape, but would not be afforded take allowance under reclassification alone. These activities include CWTD damage management, black-tailed deer damage management, and black-tailed deer hunting. The 4(d) rule provides incentive to States, Tribes, and private landowners to support the movement of CWTD across the landscape by alleviating concerns about unauthorized take of CWTD.

One of the limiting factors in the recovery of the Columbia River DPS has been the concern of landowners and State wildlife agencies regarding CWTD on their property due to the potential property damage from the species. Landowners express concern over their inability to prevent or address the damage because of the threat of penalties under the Act. These concerns may lead landowners to modify unoccupied habitat in such a way that it could no longer support deer or to erect fences or other manmade structures to exclude deer from their lands. If landowners take actions to deter CWTD from areas where they could occur to avoid the burden of take

restrictions, then natural range expansion and connectivity on the landscape could be negatively impacted. Increased management flexibility is intended to create an incentive for private landowners to voluntarily maintain, create, or restore habitat for the benefit of CWTD. Furthermore, State wildlife agencies expend resources addressing landowner complaints regarding potential CWTD damage to their property, or concerns from black-tailed deer hunters who are hunting legally but might accidentally shoot a CWTD even after reasonable due care was practiced to avoid such taking. For instance, the majority of translocation efforts have moved CWTD to refuge lands; however, some areas of State and private land offer high-quality habitat for CWTD, and future translocations to these areas would benefit the species by either creating a new subpopulation or creating connectivity between existing subpopulations. Small-scale agricultural lands, especially, can provide potential habitat for CWTD, as demonstrated on Puget Island, as opposed to other types of land management changes. By providing more flexibility to the States, Tribes, and landowners regarding management of CWTD, we expect to enhance support for both the movement of CWTD within areas where they already occur, as well as the expansion of the subspecies' range into additional areas of Washington and Oregon through translocations. In addition, easing the general take prohibitions on non-Federal agricultural lands is intended to encourage continued responsible land uses that provide an overall benefit to CWTD and facilitate private lands partnerships that promote conservation efforts.

The 4(d) rule addresses intentional CWTD damage management by private landowners and State and Tribal agencies; black-tailed deer damage management and hunting; and management of sick, injured, and orphaned CWTD by Tribal employees, State and local law enforcement officers, and State licensed wildlife rehabilitation facilities. Addressing these targeted activities that may normally result in take under section 9 of the Act increases the incentive for landowners and land managers to allow CWTD on their property, and provides enhanced options for State wildlife agencies with respect to CWTD damage management and black-tailed deer management, thereby encouraging the States' participation in recovery actions for CWTD.

The actions and activities allowed under the 4(d) rule, while they may have some minimal level of harm or

disturbance to individual CWTD in the Columbia River DPS, are not expected to adversely affect efforts to conserve and recover the DPS. In fact, conservation efforts should be facilitated by increasing the likelihood of natural range expansion, providing support for translocations onto State and Tribal lands, and creating private lands partnerships to promote conservation efforts throughout the current range of the DPS. The take of CWTD from these activities will be strictly limited to a maximum of 5 percent of the most current annual DPS population estimate in order to have a negligible impact on the overall DPS population. Though there would be a chance for lethal take to occur, recruitment rates appear to be high enough in the DPS to allow for continued population growth despite the take that is allowed in this final rule. For example, the Service removed 34 CWTD, which constituted 20 percent of the subpopulation, from Puget Island for translocations in 2012. The estimated size of the subpopulation on Puget Island was 228 CWTD in 2015, representing an average annual population growth rate of 16 percent. If the subpopulation continues to grow 16 percent each year, then removing a maximum of 5 percent would still allow the subpopulation, and the DPS as a whole, to continue to grow.

For the reasons described above, we find that it is necessary and advisable to apply the provisions of 50 CFR 17.31(a), which prohibit take of threatened species, with exceptions intended to facilitate the growth and expansion of CWTD subpopulations within the DPS required to achieve recovery. By generally extending section 9 take prohibitions but allowing take under specified circumstances, the rule will provide needed protection to the species while allowing management flexibility to benefit the species' long-term conservation. Thus, the provisions of this rule meet the statutory requirement under section 4(d) of the Act of being necessary and advisable to provide for the conservation of the species.

#### Provisions of the 4(d) Rule

The increased interaction of CWTD with the human environment increases the potential for property damage caused by CWTD, as well as the potential for conflict with legal black-tailed deer management activities. Therefore, this 4(d) rule applies the prohibitions of 50 CFR 17.31(a) with some exceptions to increase the flexibility of CWTD management for the States, Tribes, and private landowners by allowing take of CWTD resulting from CWTD damage management, and

black-tailed deer damage management and hunting. The maximum allowable annual take per calendar year for these activities combined is 5 percent of the most current annual CWTD DPS population estimate.

A State conservation agency will be able to issue permits to landowners or their agents to harass CWTD on lands they own, rent, or lease if the State conservation agency determines in writing that such action is not likely to cause mortality of CWTD. The techniques employed in this harassment must occur only as specifically directed or restricted by the State permit in order to avoid causing CWTD mortality. The State conservation agency will also be able to issue a permit to landowners or their agents to lethally take problem CWTD on lands they own, rent, or lease if the State conservation agency or Service determines in writing that: (1) The CWTD are causing more than *de minimus* negative economic impact to a commercial crop; (2) previous efforts to alleviate the damage through nonlethal methods have been ineffective; and (3) there is a reasonable certainty that additional property losses will occur in the near future if a lethal control action is not implemented. Lethal take of problem CWTD will have to be implemented only as directed and allowed in the permit obtained from the State conservation agency. Additionally, any employee or agent of the Service or the State conservation agency, who is designated by their agency for such purposes and when acting in the course of their official duties, will be able to lethally take problem CWTD.

Take of CWTD in the course of carrying out black-tailed deer damage control will be a violation of this rule unless: The taking was accidental; reported within 72 hours; reasonable care was practiced to avoid such taking; and the person causing the take was in possession of a valid black-tailed deer damage control permit from a State conservation agency. Take of CWTD in the course of hunting black-tailed deer will be a violation of this rule unless: (1) The take was accidental; (2) the take was reported within 72 hours; (3) the take was in the course of hunting black-tailed deer under a lawful State permit; and (4) reasonable due care was exercised to avoid such taking.

The increased interaction of CWTD with the human environment increases

the likelihood of encounters with injured or sick CWTD. Therefore, take of CWTD will also be allowed by Tribal employees, State and local government law enforcement officers, and State-licensed wildlife rehabilitation facilities to provide aid to injured or sick CWTD. Tribal employees and local government law enforcement officers will be allowed take of CWTD for the following purposes: (1) Aiding or euthanizing sick, injured, or orphaned CWTD; (2) disposing of a dead specimen; and (3) salvaging a dead specimen that may be used for scientific study. State-licensed wildlife rehabilitation facilities will also be allowed to take CWTD for the purpose of aiding or euthanizing sick, injured, or orphaned CWTD.

**Required Determinations**

*National Environmental Policy Act*

We have determined that an environmental assessment or an environmental impact statement, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), need not be prepared in connection with regulations adopted pursuant to section 4(a) and 4(d) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

*Government-to-Government Relationship With Tribes*

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to

remain sensitive to Indian culture, and to make information available to Tribes.

We have coordinated the development of this reclassification and 4(d) rule with the Cowlitz Indian Tribe, which manages land where one subpopulation of CWTD population is located, Cottonwood Island. Biologists from the Cowlitz Indian Tribe are members of the CWTD Working Group and have worked with the Service, WDFW, and ODFW to incorporate conservation measures to benefit CWTD into their management plan for the island.

**References Cited**

A complete list of all references cited in this rule is available at <http://www.regulations.gov> under Docket No. FWS-R1-ES-2014-0045, or upon request from the Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

**Authors**

The primary authors of this final rule are staff members of the Oregon Fish and Wildlife Office in Portland, Oregon (see **FOR FURTHER INFORMATION CONTACT**).

**List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

**Regulation Promulgation**

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

**PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS**

- 1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

- 2. Amend § 17.11(h) by revising the entry for “Deer, Columbian white-tailed” under MAMMALS in the List of Endangered and Threatened Wildlife to read as follows:

**§ 17.11 Endangered and threatened wildlife.**

\* \* \* \* \*  
(h) \* \* \*

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
MAMMALS				



Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* Deer, Columbian white-tailed [Co- lumbia River DPS]. *	* <i>Odocoileus virginianus leucurus.</i> *	* Columbia River (Clark, Cowlitz, Pacific, Skamania, and Wahkiakum Counties, WA, and Clatsop, Columbia, and Mult- nomah Counties, OR). *	* T .....	* 32 FR 4001; 3/11/1967, 68 FR 43647; 7/ 24/2003, [Insert <b>Federal Register</b> cita- tion 10/17 2016, 50 CFR 17.40(i) <sup>4d</sup> . *

■ 3. Amend § 17.40 by adding paragraph (i) to read as follows:

**§ 17.40 Special rules—mammals.**

\* \* \* \* \*

(i) Columbian white-tailed deer (*Odocoileus virginianus leucurus*) (CWTD), the Columbia River distinct population segment. (1) *General requirements.* Other than as expressly provided at paragraph (i)(3) of this section, the provisions of § 17.31(a) apply to the CWTD.

(2) *Definitions.* For the purposes of this entry:

(i) *CWTD* means the Columbia River distinct population segment (DPS) of Columbian white-tailed deer or individual specimens of CWTD.

(ii) *Intentional harassment* means an intentional act which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Intentional harassment may include prior purposeful actions to attract, track, wait for, or search out CWTD, or purposeful actions to deter CWTD.

(iii) *Problem CWTD* means an individual specimen of CWTD that has been identified in writing by a State conservation agency or the Service as meeting the following criteria:

(A) The CWTD is causing more than *de minimus* negative economic impact to a commercial crop;

(B) Previous efforts to alleviate the damage through nonlethal methods have been ineffective; and

(C) There is a reasonable certainty that additional property losses will occur in the near future if a lethal control action is not implemented.

(iv) *Commercial crop* means commercially raised horticultural, agricultural, or forest products.

(v) *State conservation agency* means the State agency in Oregon or Washington operating a conservation program for CWTD pursuant to the terms of a cooperative agreement with the Service in accordance with section 6(c) of the Endangered Species Act.

(3) *Allowable forms of take of CWTD.* Take of CWTD resulting from the

following legally conducted activities is allowed:

(i) Intentional harassment not likely to cause mortality. A State conservation agency may issue permits to landowners or their agents to harass CWTD on lands they own, rent, or lease if the State conservation agency determines in writing that such action is not likely to cause mortality of CWTD. The techniques employed in this harassment must occur only as specifically directed or restricted by the State permit in order to avoid causing CWTD mortality.

(ii) Take of problem CWTD resulting in mortality. Take of problem CWTD is authorized under the following circumstances:

(A) Any employee or agent of the Service or the State conservation agency, who is designated by their agency for such purposes, may, when acting in the course of their official duties, take problem CWTD. This take must occur in compliance with all other applicable Federal, State, and local laws and regulations.

(B) The State conservation agency may issue a permit to landowners or their agents to take problem CWTD on lands they own, rent, or lease. Such take must be implemented only as directed and allowed in the permit obtained from the State conservation agency.

(iii) Accidental take of CWTD when carrying out State-permitted black-tailed deer damage control. Take of CWTD in the course of carrying out black-tailed deer damage control will be a violation of this rule unless the taking was accidental; reasonable care was practiced to avoid such taking; and the person causing the take was in possession of a valid black-tailed deer damage control permit from a State conservation agency. When issuing black-tailed deer damage control permits, the State conservation agency will provide education regarding identification of target species. The exercise of reasonable care includes, but is not limited to, the review of the educational material provided by the State conservation agency and identification of the target before shooting.

(iv) Accidental take of CWTD when carrying out State-permitted black-tailed

deer hunting. Take of CWTD in the course of hunting black-tailed deer will be a violation of this rule unless the take was accidental; the take was in the course of hunting black-tailed deer under a lawful State permit; and reasonable due care was exercised to avoid such taking. The State conservation agency will provide educational material to hunters regarding identification of target species when issuing hunting permits. The exercise of reasonable care includes, but is not limited to, the review of the educational materials provided by the State conservation agency and identification of the target before shooting.

(4) *Take limits.* The amount of take of CWTD allowed for the activities in paragraphs (i)(3)(ii), (iii), and (iv) of this section will not exceed 5 percent of the CWTD population during any calendar year, as determined by the Service. By December 31 of each year, the Service will use the most current annual DPS population estimate to set the maximum allowable take for these activities for the following calendar year. If take exceeds 2 percent of the DPS population in a given calendar year, the Service will convene a meeting with the Oregon Department of Fish and Wildlife and the Washington Department of Fish and Wildlife to discuss CWTD management and strategies to minimize further take from these activities for the rest of the year. If take exceeds 5 percent of the CWTD population in any given calendar year, no further take under paragraphs (i)(3)(ii), (iii), and (iv) will be allowed during that year and any further take that does occur may be subject to prosecution under the Endangered Species Act.

(5) *Reporting and disposal requirements.* Any injury or mortality of CWTD associated with the actions authorized under paragraphs (i)(3), (6), and (7) of this section must be reported to the Service within 72 hours, and specimens may be disposed of only in accordance with directions from the Service. Reports should be made to the Service's Law Enforcement Office at (503) 231-6125, or the Service's Oregon Fish and Wildlife Office at (503) 231-6179. The Service may allow additional



reasonable time for reporting if access to these offices is limited due to closure.

(6) *Additional taking authorizations for Tribal employees, State and local law enforcement officers, and State-licensed wildlife rehabilitation facilities.*

(i) Tribal employees and State and local government law enforcement officers. When acting in the course of their official duties, both Tribal employees designated by the Tribe for such purposes, and State and local government law enforcement officers working in the States of Oregon or Washington, may take CWTD for the following purposes:

(A) Aiding or euthanizing sick, injured, or orphaned CWTD;

(B) Disposing of a dead specimen; and

(C) Salvaging a dead specimen that may be used for scientific study.

(ii) Such take must be reported to the Service within 72 hours, and specimens may be disposed of only in accordance with directions from the Service.

(7) *Wildlife rehabilitation facilities licensed by the States of Oregon or Washington.* When acting in the course of their official duties, a State-licensed wildlife rehabilitation facility may take CWTD for the purpose of aiding or euthanizing sick, injured, or orphaned CWTD. Such take must be reported to the Service within 72 hours as required by paragraph (i)(5) of this section, and specimens may be retained and disposed of only in accordance with directions from the Service.

(8) *Take authorized by permits.* Any person with a valid permit issued by the Service under § 17.32 may take CWTD, pursuant to the special terms and conditions of the permit.

\* \* \* \* \*

Dated: October 5, 2016.

**Stephen Guertin,**

*Acting Director, U.S. Fish and Wildlife Service.*

[FR Doc. 2016-24790 Filed 10-14-16; 8:45 am]

**BILLING CODE 4333-15-P**

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

#### 50 CFR Part 622

[Docket No. 101206604-1758-02]

RIN 0648-XE959

#### Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic; 2016-2017 Commercial Accountability Measures and Closure for King Mackerel in Western Zone of the Gulf of Mexico

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Temporary rule; closure.

**SUMMARY:** NMFS implements accountability measures (AMs) for commercial king mackerel in the western zone of the Gulf of Mexico (Gulf) exclusive economic zone (EEZ) through this temporary rule. NMFS has determined that the commercial quota for king mackerel in the western zone of the Gulf EEZ will be reached by October 14, 2016. Therefore, NMFS closes the western zone of the Gulf EEZ to commercial king mackerel fishing on October 14, 2016. This closure is necessary to protect the Gulf king mackerel resource.

**DATES:** The closure is effective at noon, local time, October 14, 2016, until 12:01 a.m., local time, on July 1, 2017.

**FOR FURTHER INFORMATION CONTACT:** Susan Gerhart, NMFS Southeast Regional Office, telephone: 727-824-5305, email: [susan.gerhart@noaa.gov](mailto:susan.gerhart@noaa.gov).

**SUPPLEMENTARY INFORMATION:** The fishery for coastal migratory pelagic fish (king mackerel, Spanish mackerel, and cobia) is managed under the Fishery Management Plan for the Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic (FMP). The FMP was prepared by the Gulf of Mexico and South Atlantic Fishery Management Councils (Councils) and is implemented by NMFS under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) by regulations at 50 CFR part 622.

The commercial quota for the Gulf migratory group king mackerel in the Gulf western zone is 1,071,360 lb (485,961 kg) for the current fishing year, July 1, 2016, through June 30, 2017 (50 CFR 622.384(b)(1)(ii)).

Regulations at 50 CFR 622.388(a)(1)(i) require NMFS to close the commercial sector for Gulf migratory group king

mackerel in the western zone when the commercial quota is reached, or is projected to be reached, by filing a notification to that effect with the Office of the Federal Register. NMFS has determined the commercial quota of 1,071,360 lb (485,961 kg) for Gulf migratory group king mackerel in the western zone will be reached by October 14, 2016. Accordingly, the western zone is closed to commercial fishing for Gulf migratory group king mackerel effective at noon, local time, October 14, 2016, through June 30, 2017, the end of the current fishing year. The western zone of Gulf migratory group king mackerel is that part of the EEZ between a line extending east from the border of the United States and Mexico and 87°31.1' W. long., which is a line extending south from the state boundary of Alabama and Florida.

Except for a person aboard a charter vessel or headboat, during the closure no person aboard a vessel that has been issued a Federal commercial permit for king mackerel may fish for or retain Gulf migratory group king mackerel in the EEZ in the closed zone (50 CFR 622.384(e)(1)). A person aboard a vessel that has a valid Federal charter vessel/headboat permit for coastal migratory pelagic fish may continue to retain king mackerel in or from the closed zone under the recreational bag and possession limits set forth in 50 CFR 622.382(a)(1)(ii) and (a)(2), provided the vessel is operating as a charter vessel or headboat (50 CFR 622.384(e)(2)). A charter vessel or headboat that also has a commercial king mackerel permit is considered to be operating as a charter vessel or headboat when it carries a passenger who pays a fee or when there are more than three persons aboard, including operator and crew.

During the closure, king mackerel from the closed zone, including those harvested under the bag and possession limits, may not be purchased or sold. This prohibition does not apply to king mackerel from the closed zone that were harvested, landed ashore, and sold prior to the closure and were held in cold storage by a dealer or processor (50 CFR 622.384(e)(3)).

#### Classification

The Regional Administrator, Southeast Region, NMFS, has determined this temporary rule is necessary for the conservation and management of Gulf migratory group king mackerel and is consistent with the Magnuson-Stevens Act and other applicable laws.

This action is taken under 50 CFR 622.388(a)(1)(i) and 622.384(e), and is