# Columbian White-tailed Deer Translocation

## from Tenasillahe Island to Columbia Stock Ranch

## *Draft Environmental Assessment*

**U.S. Department of Energy - Bonneville Power Administration**
**Department of the Interior – U.S. Fish and Wildlife Service**

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# Chapter 1 Purpose and Need

## 1.1 Introduction

Bonneville Power Administration (BPA or Bonneville) is proposing to help fund the U.S. Fish and Wildlife Service (Service or USFWS) to translocate up to 50 Columbian white-tailed deer (CWTD) (*Odocoileus virginianus leucurus*) from an island in the Columbia River to conservation lands in Columbia County, Oregon.

The Service would translocate up to 50 deer from Tenasillahe Island, a part of the Julia Butler Hansen Refuge for the Columbian White-tailed Deer (JBH), to a 935-acre parcel (called the Columbia Stock Ranch or CSR) that is being managed by Columbia Land Trust (CLT) for habitat and wildlife conservation. The CSR is located on the Oregon side of the Columbia River approximately 32 miles north of Portland, Oregon (see Figure 1). The translocations would help establish a new subpopulation of the CWTD listed as threatened under the Endangered Species Act (ESA) (16 United States Code (USC) § 1531 *et seq.*), and help BPA meet its commitments under the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act) (16 USC § 839b(h)(10)(A)).

BPA and the Service are cooperating agencies in the preparation of this draft Environmental Assessment (EA) pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 USC 4321 *et seq.*) and its implementing regulations which require federal agencies to assess the impacts that their actions may have on the environment and make this impact analysis available to the public. This EA was prepared to determine if the Proposed Action would be likely to significantly affect the environment, warranting preparation of an environmental impact statement (EIS), or whether it is appropriate to prepare a finding of no significant impact (FONSI).

**Figure 1 Proposed Action's capture and release locations**

## 1.2 Purpose and Need

Bonneville needs to respond to a request from the Service to help fund the proposal to translocate the CWTD. Funding the translocations would assist BPA in meeting its commitments under the Northwest Power Act (16 U.S.C. § 839b(h)(10)(A)) which requires BPA to fund fish and wildlife protection, mitigation, and enhancement actions consistent with the Northwest Power and Conservation Council's Fish and Wildlife Program. BPA's funding of the actions described in this draft EA would be consistent with the Council's Fish and Wildlife Program. This would also assist in meeting BPA's commitments in the FCRPS Biological Opinion (BiOp), as amended in 2010 and 2014 (NMFS 2008a; 2010; 2014), which directs BPA and the other FCRPS Action Agencies, which includes BPA, the Corps, and the Bureau of Reclamation[1], to develop projects that improve fish habitat quality and fish survival in the Columbia River estuary.

The Service needs to implement recovery actions described in the Revised Columbian White-Tailed Deer Recovery Plan (hereinafter, "CWTD Recovery Plan") (USFWS 1983) and to meet management objectives for the JBH Refuge as described in its Comprehensive Conservation Plan (USFWS 2010).

The purpose of the proposal to translocate the deer is to establish a new subpopulation of CWTD on suitable habitat within the historic range of the Columbia River Distinct Population Segment (DPS). Establishing new subpopulations through capture and translocation is a recovery action described in the CWTD Recovery Plan and is a management objective for the JBH Refuge. The Service considers establishing a new subpopulation to be a recovery action that shortens the time and increases the likelihood for future recovery of the Columbia River DPS. Helping increase the future likelihood of removing the CWTD from the list of endangered and threatened species also helps meet the Service's commitments under Section 7 of the ESA for carrying out conservation measures to recover species listed under the ESA.

While Tenasillahe Island supports a viable and secure subpopulation of CWTD, the habitat is reliant on old dikes to keep waters from inundating the island. These dikes were constructed in the early 1900s, are very expensive to maintain, may be impacted by sea level rise and climate change, and are subject to failure. Creating a new subpopulation at Columbia Stock Ranch would help ensure CWTD recovery efforts if Tenasillahe Island habitat becomes unsuitable habitat overtime.

In addition, the current subpopulation of CWTD on the island is well over the Service's management goal. The island is actively managed by the Service to maintain a healthy and sustainable subpopulation of approximately 125 CWTD (USFWS 2010), however the island currently has almost 200 CWTD. The removal of surplus deer could help decrease competition for the limited resources on the island and help maintain the island subpopulation.

## 1.3 Background

### 1.3.1 Bonneville Power Administration

BPA is a federal power marketing agency within the U.S. Department of Energy with responsibility for marketing and selling power generated by the Federal Columbia River Power System (FCRPS). BPA's operations are governed by several statutes, including Northwest Power Act (16 U.S.C. § 839b(h)

[1] While all three federal agencies are FCRPS Action Agencies for the FCRPS BiOp, BPA and the Corps have agreed to develop the survival benefits in the Columbia River estuary.

(10)(A)). Among other things, this act directs BPA to protect, mitigate, and enhance fish and wildlife affected by the development and operation of the FCRPS. To assist in accomplishing this, the act requires BPA to fund fish and wildlife protection, mitigation, and enhancement actions consistent with the Northwest Power and Conservation Council's Fish and Wildlife Program.

BPA's funding of the actions described in this EA would be consistent with the Council's Fish and Wildlife Program and would assist in meeting BPA's commitments in the FCRPS Biological Opinion, as amended in 2010 and 2014 (NMFS 2008a; 2010; 2014).

### 1.3.2 U.S. Fish and Wildlife Service

The Service, an agency of the Department of the Interior (DOI), is the principal federal agency responsible for conserving, protecting, and enhancing fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Service is responsible under the ESA for recovery planning of CWTD (listed as threatened under the ESA) which includes identifying lands for protection and restoration to ensure viable, secure populations of deer will persist into the future. The Service manages the Julia Butler Hansen Refuge for the Columbian White-tailed Deer (JBH), which includes Tenasillahe Island. The Service also holds a Section 10(a)(1)(A) Recovery Permit for translocations and monitoring of CWTD as part of the proposed action. A Section 10(a)(1)(A) Recovery Permit is required for activities designed to enhance a listed species propagation or survival. As part of the permit process, a capture plan must be submitted and approved.

### 1.3.3 Columbian White-tailed Deer

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 (80 Stat. 926: 16 U.S.C. 668aa(c)). On October 13, 1970, CWTD were identified as an endangered subspecies (35 FR 16047) under the authority of the new regulations implementing the Endangered Species Conservation Act of 1969. Species listed as Endangered under the Endangered Species Conservation Act of 1969 were automatically included in the List of Endangered and Threatened Wildlife when the ESA was enacted in 1973. In 2003, the Service published a rule (68 FR 43647) that recognized the Douglas County and Columbia River populations as DPSs due to geographic isolation and removed the Douglas County population of CWTD from the List due to achieving recovery. In 2016, the Service reclassified the Columbia River DPS of CWTD from Endangered to Threatened and implemented a Section 4(d) rule under the ESA establishing take prohibitions (USFWS 2016).

The CWTD Recovery Plan, as discussed above, was developed for CWTD in 1976 and was revised in 1983 (USFWS 1983). For delisting the Columbia River DPS, the CWTD Recovery Plan recommended maintaining three viable subpopulations, all located on secure habitat with at least 50 individuals. 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 (USFWS 1983) and that has supported viable subpopulations of CWTD for 20 or more years with no anticipated land management changes that would make the habitat less suitable to CWTD (USFWS 2013). Currently, the total population of the Columbia River DPS is estimated at about 1,200 animals with two viable and secure subpopulations (Tenasillahe and Puget Islands). Translocating CWTD to CSR would help establish a new subpopulation on secure lands that connect other subpopulations, which may bring this DPS closer to reaching delisting goals.

### 1.3.4 Columbia Land Trust

CLT is a private, nonprofit, organization with a mission to conserve and care for the lands, waters, and wildlife of the Columbia River region. To date, CLT has conserved more than 43,000 acres of land. Their area of focus encompasses two states (Oregon and Washington) and 13,760 square miles around the Columbia River and its many tributaries, in an area stretching from The Dalles to the Pacific Ocean.

### 1.3.5 Columbia Stock Ranch

CSR, the destination for translocated CWTD, is located between the cities of Rainier and St. Helens, Oregon on the left bank of the Lower Columbia River between river miles 75 and 77, in Columbia County, Oregon. The property has supported agriculture and livestock grazing since the 1940's.

The CSR property consists of two parcels of land (divided by Oregon Highway 30) totaling 935 acres (Figure 2). Approximately 460 acres west of Highway 30 contain floodplain and lowland riparian habitats adjacent to the Columbia River, with 1.5 miles of frontage to the river. The remaining 475 acres consist of upland habitats dominated by mixed Douglas fir and hardwood forests located west and upslope of Highway 30.

CLT owns the CSR, purchased with funding from BPA in 2012, and manages the land for habitat and conservation. BPA has a perpetual conservation easement on the land. Protecting the habitat on the property for the benefit of CWTD in perpetuity is an integral part of the future land management of the CSR.

**Figure 2 Columbia Stock Ranch (outlined in red).**

## 1.4 Public Involvement

To help determine issues to be addressed in the EA, BPA conducted public scoping outreach. BPA mailed letters on August 27, 2018 to landowners, tribes, government agencies, and other potentially affected or concerned citizens and interest groups. The public letter provided information about the Proposed Action and EA scoping period, requested comments on issues to be addressed in the EA, and described how to comment (mail, fax, telephone, the BPA website, and at scoping meetings). The public letter was posted on a project website established by BPA to provide information about the program and the EA process. The public comment period began on August 23, 2018, and BPA accepted comments on the project from the public until September 24, 2018. All project documents and comments received are available for public review on BPA's website at www.bpa.gov/goto/CWTDtranslocation.

Eleven comments were received during the scoping period. The following issues were raised:

- Mortality risk to CWTD from OR Highway 30
- Potential for rapid dispersal of CWTD off of CSR, since no barriers exist to keep them contained
- Impact of CWTD on elk use of CSR and adjacent properties
- Impact of CWTD on adjacent property owners' income generation from elk hunters
- Impact on adjacent landowners' use of private property by presence of ESA-listed CWTD
- Concern that CSR, being smaller than Tenasillahe Island, may not support the translocated CWTD
- Planned closure of permitted remote-controlled-aircraft flying field on CSR

Mortality risk to CWTD from potential vehicle strikes on Highway 30 was raised by one commenter who observed multiple occurrences of this with CWTD formerly on their property. This potential is discussed in Section 3.1.5.

Potential for rapid dispersal of deer from CSR was raised as a concern by commenters for two reasons: there are no artificial or natural barriers to contain them, and the area is smaller than Tenasillahe Island. The dispersal of these deer from CSR was portrayed by the commenters as a translocation failure. Section 3.1.5 discusses the limited likelihood of CWTD dispersing from CSR and the smaller size of CSR in comparison to Tenasillahe Island. CSR has sufficient and suitable habitat to support all of the CWTD individuals being translocated there. The management goal for Tenasillahe Island is 125 deer, yet there are approximately 200 deer residing there. Rather than moving 75 deer immediately to meet management objectives on Tenasillahe Island, up to 50 deer will be translocated over the course of two years because that is likely the number of deer CSR habitat can reasonably sustain with growth from natural reproduction.

Two commenters raised concerns about elk populations on both CSR and on private lands where landowners generate income from hunters pursuing them. The effect of translocated CWTD on the resident elk population is discussed in Section 3.1.5. In that Section, research is cited as showing that in areas where interactions between white-tailed deer and elk have been studied, it is the deer that are displaced rather than the elk. The effect on elk is anticipated to be low.

Private landowners' use of their private property in the presence of an ESA-listed species such as CWTD was raised as a concern and is addressed in Section 3.2.5.1.1. The presence of CWTD will not

prohibit current land management practice, and programs exist to assist private landowners should impacts occur from CWTD. Section 3.2.5.1.1 also discusses the lack of significant problems with landowners around prior successful translocation areas.

A number of respondents raised an issue concerning the planned closure of a radio-controlled aircraft field permitted in the past by prior and current landowners. The permitting of this use on CSR is not within the scope of the decisions being made here by BPA or the Service. That is an issue of land uses, and alternative land use proposals are not being proposed nor analyzed in this EA.

# Chapter 2 Proposed Action and the No Action Alternative

## 2.1 Proposed Action

Under the Proposed Action, BPA would fund the Service to translocate up to 50 deer from Tenasillahe Island to CSR between 2018 and 2020. The Service would translocate about 30 deer in 2018 and about 20 deer in 2019. The specific number of deer transferred in 2019 will depend on the success of the 2018 effort.

CSR was selected as a release location because of its size, location, and habitat suitability. CSR has one of the larger blocks of suitable habitat along the lower Columbia River, the land is managed for conservation purposes, and the CLT (the fee owner of CSR) is a supportive partner in these deer translocations. In addition, the area is within the current population range, situated between two existing subpopulations.

Translocations would occur from December 1, 2018 to March 31, 2019 and from December 1, 2019 to March 31, 2020. This timeframe is the post-breeding season and would help ensure that most does will be pregnant, thereby increasing the effective translocated population size. Pregnant females have been found to remain closer to the release site than post-parturient does released without their fawns (Jones *et al.* 1997), and this practice eliminates chance hybridizations that could occur if deer were moved in estrus into an area that is insufficiently populated with CWTD bucks. In addition, deer moved at this time of year tend to disperse less than those moved in fall (Hawkins and Montgomery 1969, Pais 1987, Jones *et al.* 1997).

Capture and translocation would occur three to five times per week. The Service would employ several ground capture methods including corral traps, drop netting, darting, and drive netting. Once captured, deer would be transported in specially made crates by vehicle to a waiting boat, which would transport the deer to the Westport boat ramp. From there, deer would be transferred to a vehicle, driven to CSR and released in the lowlands there. Deer that pose a risk to themselves while in the transport crates may be released on Tenasillahe Island or at the Westport boat ramp to keep them from harm.

Approximately 25 to 33 percent of the deer relocated would be males and 67 to 75 percent females. This reflects the sex ratio of a normal population, and translocating a higher proportion of females allows for more rapid establishment of the subpopulation.

Care would be taken in these translocations to avoid separating fawns from does since it is possible that moving deer outside of family groups can adversely affect dispersal patterns (Nelson and Mech 1992).

Monitoring will commence immediately by agents authorized under the Service's Section10(a)(1)(A) Recovery Permit (Service, Cowlitz Indian Tribe, Washington Department of Fish and Wildlife (WDFW), Oregon Department of Fish and Wildlife (ODFW), and CLT staff). Post-translocation monitoring would include the placement of Geographic Positioning System (GPS) collars on all the does translocated in this action. These collars send multiple locations per day to a central server, and the information can be downloaded via the internet. Bucks will be fitted with VHF collars and monitored at least once per week for the first 6 months post-release and 2-4 times per month 6-12 months post-release. Monitoring will continue once per month from 1-3 years post release as funding allows.

Coyotes are one of the primary causes of mortality to white-tailed deer fawns. Therefore, predator control (lethal removal of coyotes on CSR) would occur prior to the translocations, and during the fawning period to improve survival of fawns and thus improve the probability of establishing the new

subpopulation. Predator control would continue as needed as described in the JBH Comprehensive Conservation Plan. Licensed trappers under contract to the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) would be used.

## 2.2 No Action Alternative

Under the No Action Alternative, BPA would not fund the Service to translocate CWTD from Tenasillahe Island to CSR, and the Service would not translocate CWTD using other funding sources.

## 2.3 Mitigation Measures

The following measures are proposed to reduce the potential adverse effects of the Proposed Action on CWTD.

1. Restrict translocations to the period December 1 to March 31.
2. Comply with the Special Terms and Conditions of permits issued for deer capture and translocation.
3. Move entire family groups of CWTD together. Does will not be separated from fawns by translocation actions if at all possible
4. Follow trapping guidelines in the capture plan (Section 1.2.3) to minimize stress and reduce time spent handling and transporting deer.
5. Release family groups into small shelters where they can calm down, regroup, and then exit at a time of their choosing.
6. Monitor translocations as described in Section 2.1.
7. Apply predator control through contract with APHIS to ensure it is conducted in an effective manner that minimizes harm to non-target species.
8. Conduct outreach and informative actions to inform local communities of the newly present CWTD.

# Chapter 3 Affected Environment and Environmental Consequences

This chapter describes the existing environmental resources that could be affected by the Proposed Action and the potential impacts the Proposed Action would have on those resources. The resources considered in detail include:

- Wildlife
- Land use
- Socioeconomics

The impact levels are characterized as high, moderate, low, or no impact. Impacts that were determined to be minimal or barely noticeable were characterized as "low", those that were more than negligible were characterized as "moderate", and those characterized as "high" were those considered to be noticeable, significant impacts. The impact levels are based on the analysis provided, which incorporates the considerations of context and intensity defined in the Council of Environmental Quality Regulations (40 Code of Federal Regulations [CFR] 1508.27). Mitigation measures that would help reduce or avoid impacts are identified in Section 2.3.

The area of focus of this analysis is on the CSR and adjacent landowners with the introduction of the CWTD, and to a lesser degree, on Tenasillahe Island with the removal of between 30 to 50 deer over a two year period.

Because the Proposed Action does not include ground-disturbing or site-modifying actions, the following resources were considered and eliminated from detailed analysis because there would be little to no impacts.

- Geology and soils
- Water (quality and quantity)
- Wetlands,
- Floodplains
- Vegetation
- Cultural resources
- Scenic values
- Transportation

Impacts to vegetation by browsing deer are not addressed, because browse effects by CWTD (the only foreseeable effects on vegetation) are likely indistinguishable from those already created by the Columbian black-tailed deer (CBTD) which currently occur on CSR and adjacent lands. For all of these resources, there would be no resource impact or change that could be discussed further than what is disclosed here.

## 3.1 Wildlife and Fish

### 3.1.1 Columbian White-tailed Deer

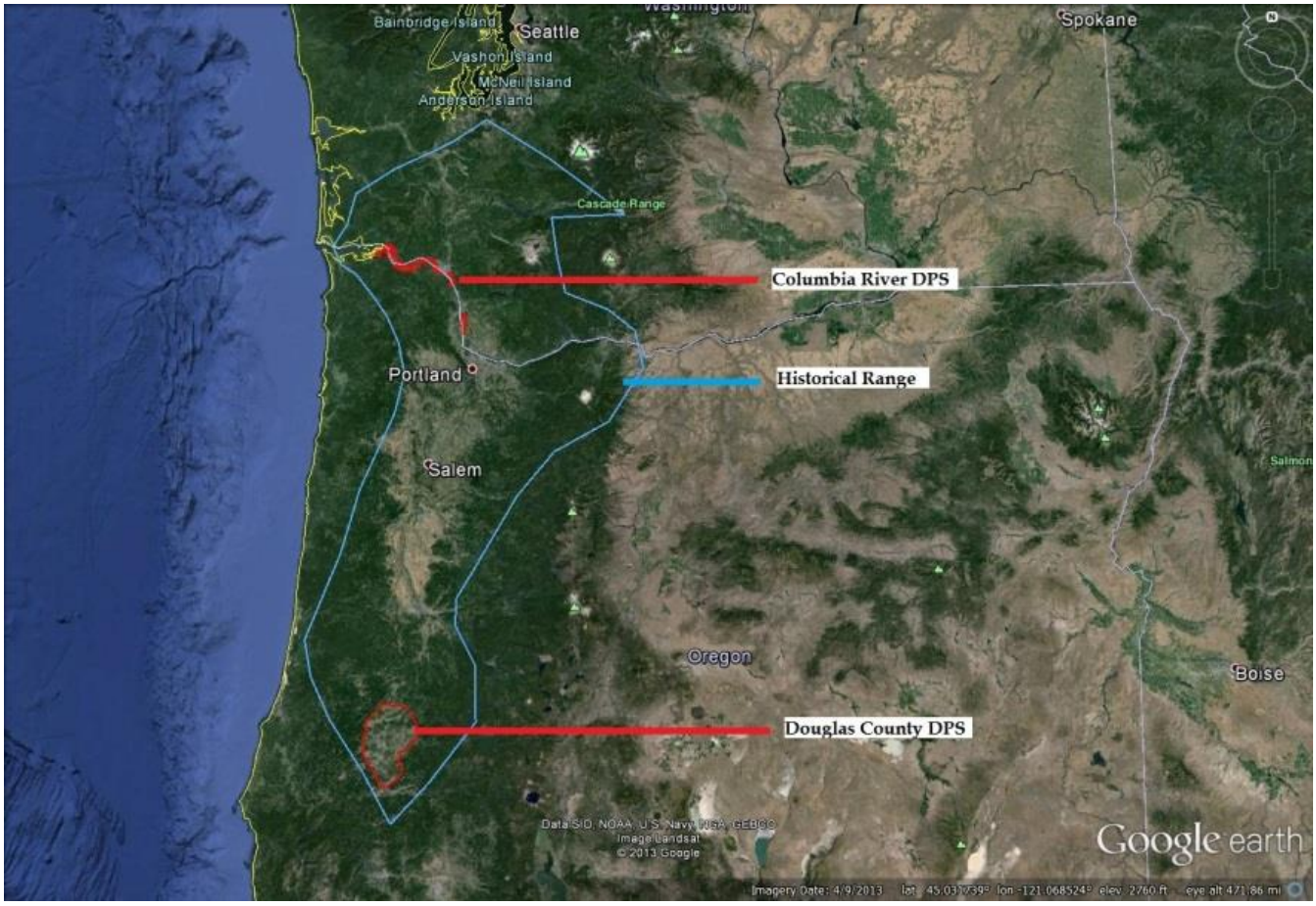
CWTD prefer parkland forest habitat (a mosaic of cover and meadow) and deciduous or mixed deciduous habitat with moderate canopy cover. As they utilize both browse and forage, they thrive where moderate cover, shrubs, and meadows are present. CWTD inhabit Tenasillahe Island; there is no known population of CWTD on CSR, but they may occur there occasionally in small numbers.

### *3.1.1.1 Population overview*

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; Verts and Carraway 1998). This subspecies of Eastern white-tailed deer (*Odocoileus virginianus*) occupied a range of approximately 23,170 square miles 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). Early accounts indicate that CWTD were locally common, particularly in riparian areas along major rivers (Crews 1939). Conversion of brushy riparian land to agriculture, urbanization, and uncontrolled sport and commercial hunting caused the extirpation of CWTD over most of its range by the early 1900s (Crews 1939).

Today, CWTD occur as two Distinct Population Segments (DPS) (Figure 3): the Douglas County DPS in Oregon which contains over 6,000 animals, and the Columbia River DPS which contains about 1,200 with about 30 percent occurring on JBH near Cathlamet, Washington. This EA will only discuss the Columbia River DPS because the Douglas County DPS is outside of the proposed action area.

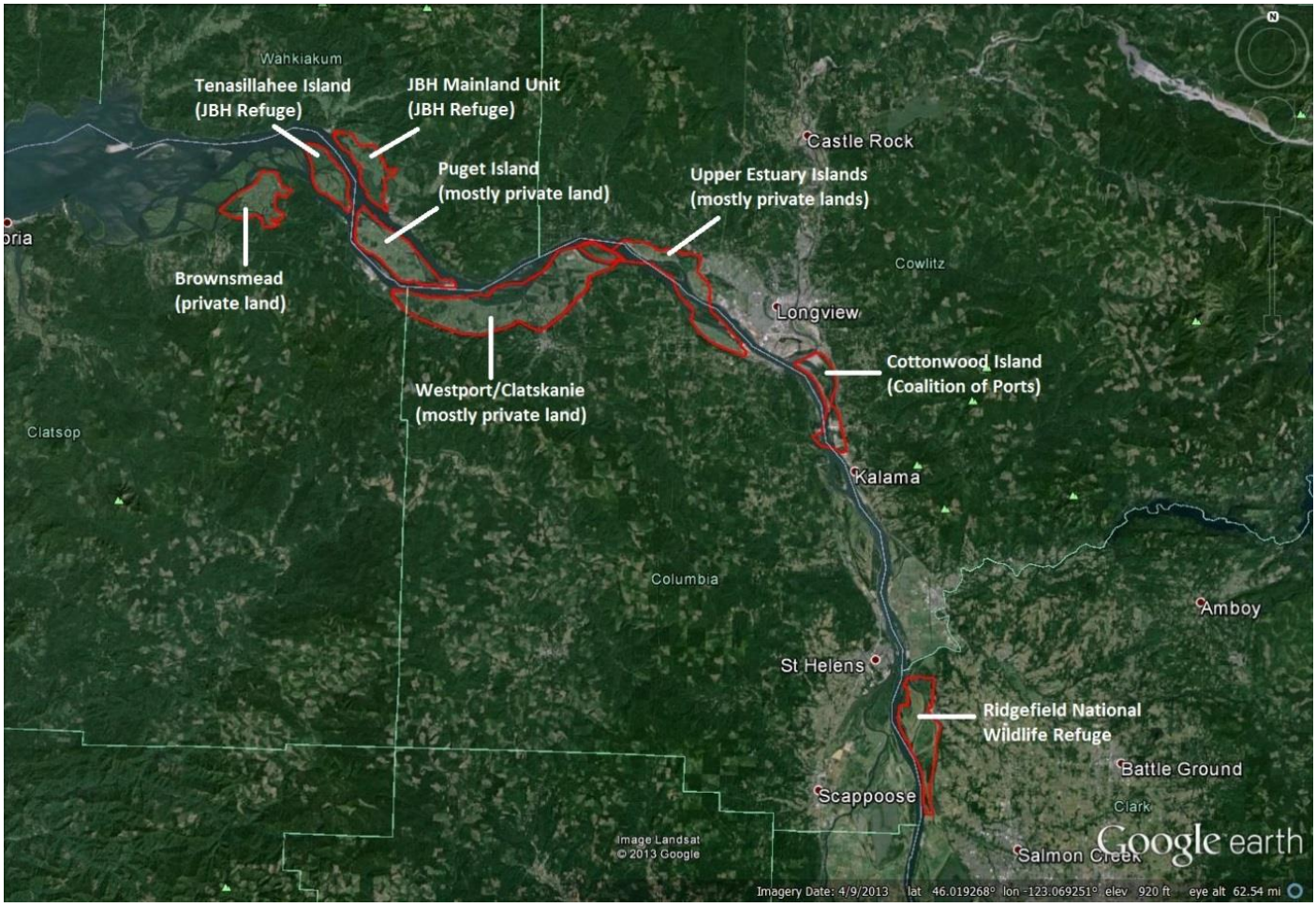
**Figure 3 Range of CWTD (current in red; historical in blue)**



### *3.1.1.2 Columbia River Distinct Population Segment*

The Columbia River DPS has a discontinuous range of approximately 93 square miles (about 60,000 acres) in small 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 16,000 acres (USFWS 2013). The CWTD population here is typified by small subpopulations along the lower Columbia River valley that reflect the fragmented habitat found here. These subpopulations are separated by both man-made barriers (e.g., roads and other human infrastructure) and habitat barriers (e.g., rivers and coniferous forests). The JBH Refuge supports over 320 CWTD, including approximately 200 CWTD on Tenasillahe Island. Another 880 CWTD occur on other public and private lands along the Columbia River between Tenasillahe and Ridgefield National Wildlife Refuge (Figure 4).

**Figure 4 Current Range of the Columbia River DPS and approximate subpopulation boundaries*.**




*** Two viable and secure subpopulations exist at Puget Island and Tenasillahe Island**.

In population management, small numbers are more difficult to regulate and are more vulnerable to random events than large populations. Given the habitat fragmentation in the Lower Columbia River Valley, a large contiguous population of CWTD is not possible, but population viability can still be

improved by increasing the number of small subpopulations that make up the overall population (metapopulation). As discussed above, the range for CWTD in the lower Columbia consists of a patchwork of lowland habitats that are separated by rivers and coniferous forests, which are barriers to movement. The increase in CWTD population size seen in the past 40 years has largely been due to translocation efforts, where deer are physically moved past barriers to new locations, and the new subpopulations have been allowed to grow on their own. For the most part, these efforts have been successful. All translocations intended for range expansion have resulted in new, enduring subpopulations, though deer have not always stayed exclusively at the intended site.

The goal of CWTD management is to create and maintain subpopulations that are self-sustaining and stable. This is generally interpreted to mean the creation and maintenance of subpopulations of over 50 animals in habitat where future development is not likely to adversely impact the herd. Establishing new subpopulations of CWTD off refuge lands upstream of Longview, Washington is a management objective for the JBH Refuge as described in its Comprehensive Conservation Plan (USFWS 2010).

Since the Columbia River DPS was listed, the number of subpopulations has increased from four (JBH Mainland, Tenasillahe Island, Puget Island, Westport) to six (Upper Estuary Islands, Ridgefield NWR). A translocation to CSR would represent a seventh new subpopulation that would expand the distribution of the overall population, populate a relatively large gap between subpopulations at Cottonwood Island and Ridgefield National Wildlife Refuge, and provide opportunity for additional population growth. Improved distribution, connectivity, and dispersal decreases extinction risk and improves the chance of eventual recovery of CWTD. See Figure 5.

**Figure 5 Capture site (green), release site (red), and current range (blue)**


### 3.1.2 Other Wildlife

All sites involved in the proposed translocation are located in the Columbia River floodplain and share similar wildlife species. While many birds (especially migrating and wintering waterfowl), amphibians, reptiles, and mammals occur at all sites, only a small number of wildlife species could potentially be affected by the CWTD translocations. These include CBTD and elk *(Cervus canadensis)*, which likely compete with CWTD for resources; and coyote (*Canis latrans)*, a predator species targeted for control during the early years after translocation. CBTD and elk are present on CSR, but not on Tenasillahe Island; coyotes are present at both sites.

CBTD currently occupy the habitat to which CWTD will be translocated. There is some niche overlap between these two species, but habitats occupied by CWTD are generally believed to be marginal for CBTD in the lower Columbia River and observations there have shown that CWTD and CBTD

generally do not occupy the same habitats at the same time. Little aggression (outside of mating season behaviors) between these two deer species has been documented (Suring 1975) though some interbreeding has been observed (Gavin 1984).

Elk are also found at CSR. There is a resident population of about 30 to 35 that occupy the area year-round, but the population swells to nearly 100 during the fall elk hunting seasons. These additional elk have learned that CSR is an area where they can escape hunting pressure so they migrate there when hunting pressure moves them out of their home territories in surrounding lands.

Coyotes are ubiquitous in the Lower Columbia River and are known to prey on young CWTD (USFWS 2008). When specific thresholds are exceeded, coyotes are controlled on JBH (USFWS 2008).

### 3.1.3 Fish

The lower Columbia River, including the waters around Tenasillahe Island and CSR, is a critical migratory corridor for all anadromous salmonids in the Columbia River basin. This basin historically produced some of the world's largest runs of salmon, but today all are listed as threatened or endangered under the ESA.

Juvenile anadromous salmon and steelhead rear near, and migrate past, Tenasillahe Island and CSR with numbers peaking in spring and early summer. In a typical year, over 750,000 adult and 100,000,000 juvenile salmonids pass through the area. Although the presence of salmonids here has seasonal patterns, adults and juveniles of various species, runs, and life-history strategies are present throughout the year.

### 3.1.4 ESA-listed Species

#### *3.1.4.1 Columbian White-tailed Deer*

The Columbia River DPS of CWTD is listed as threatened under the ESA (81 FR 71386). The current range of this DPS consists of fragmented habitat within the Columbia River floodplain from Ridgefield, Washington to Brownsmead, Oregon. See Section 3.1.1.

#### *3.1.4.2 Streaked Horned Lark*

The streaked horned lark is a threatened species (78 FR 61451) that nests on islands in the lower Columbia River. These birds nest in sandy areas with sparse vegetation. Most nesting sites in the lower Columbia consist of transitional habitats on dredge material sites. A nesting area occurs in a dredge material placement area at the south (upstream) end of Tenasillahe Island. The closest potential nesting habitat to CSR is on Sandy Island (immediately downstream of CSR and offshore from Kalama, Washington; visible in Figures 2 and 5).

#### *3.1.4.3 Fish*

All runs of Chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), chum (*O. keta*), sockeye (*O. nerka*), and steelhead (*O. mykiss*) that migrate past CSR and Tenasillahe Island have been listed as either threatened or endangered under ESA (Table 1).

**Table 1 ESA-listed fish species in the Lower Columbia River**

| Fish Species | ESA listing status | Critical Habitat status |
|---|---|---|
| Chinook salmon (*Oncorhynchus tshawytscha)* | | |
| Snake River spring/summer | Threatened 70 Federal Register (FR) 37160 | Designated 58 FR 68543 |
| Snake River fall | Threatened 70 FR 37160 | Designated 58 FR 68543 |
| Upper Columbia River spring | Endangered 70 FR 37160 | Designated 70 FR 52685 |
| Estuary | Threatened 70 FR 37160 | Designated 70 FR 52685 |
| Upper Willamette River | Threatened 70 FR 37160 | Designated 70 FR 52685 |
| Steelhead (*O. mykiss*) | | |
| Snake River | Threatened 70 FR 37160 | Designated 70 FR 52685 |
| Upper Columbia River | Threatened 74FR 42605 | Designated 70 FR 52685 |
| Middle Columbia River | Threatened 57 FR 14517 | Designated 70 FR 52685 |
| Estuary | Threatened 62 FR 43937 | Designated 70 FR 52685 |
| Upper Willamette River | Threatened 62 FR 43937 | Designated 70 FR 52685 |
| Chum Salmon (*O. keta*) | | |
| Columbia River | Threatened 70 FR 37160 | Designated 70 FR 52685 |
| Sockeye Salmon (*O. nerka*) | | |
| Snake River | Endangered 70 FR 37160 | Designated 58 FR 68543 |
| Coho Salmon (*O. kisutch*) | | |
| Estuary | Threatened 70 FR 37160 | Designated 81 FR 9251 |
| Pacific eulachon (*Thaleichthys pacificus*) | Threatened 75 FR 13012 | Designated 76 FR 65323 |
| Southern DPS | Threatened 75 FR 13012 | Designated 76 FR 65324 |
| Green sturgeon (*Acipenser medirostris*) | | |
| Southern DPS | Threatened 71 FR 17757 | Designated 73 FR 52088 |
| Bull Trout (*Salvelinus confluentis*) | | |
| Columbia River DPS | Threatened 63 FR 31647 | Designated 75 FR 63898 |

Other listed species that occur in the lower Columbia River but not known to use specific sites at Tenasillahe or CSR include bull trout (*Salvelinus confluentus*), green sturgeon (*Acipenser medirostris*), and Pacific Eulachon (*Thaleichthys pacificus*).

Both Tenasillahe Island and CSR interior fish habitats have limited access to the Columbia River. On CSR, all interior aquatic habitats are separated from the Columbia River by dikes with no interior use by listed salmonids. The interior sloughs of Tenasillahe Island are separated from the Columbia River by tide gates that open for only a few hours each day at specific tidal flows, with limited access and use by juvenile Chinook salmon (Johnson et. al. 2008).

The presence of coho, steelhead, coastal cutthroat trout and Pacific lamprey has been documented in off-channel habitats near CSR (USFWS 2009), and in the lower Columbia River and estuary near Tenasillahe Island are important areas for anadromous fish migrating to spawning areas and for juveniles migrating downstream to the ocean. Adult ESA-listed anadromous salmonids use the lower

Columbia River and estuary as a corridor to migrate upstream to spawning habitats throughout much of the Columbia River Basin. Adults actively migrate past CSR, but are not expected to use the area adjacent to CSR for resting or feeding. Migrating adults may spend time in the estuary near Tenasillahe Island to physiologically acclimate to freshwater, especially if they find cool water areas during warmer summer months. Chum, coho, and Chinook salmon, and steelhead populations spawn in tributaries of the Columbia River; and chum and Chinook salmon spawn in the mainstem Columbia River in appropriately sized gravel. Spawning is not expected to occur near either Tenasillahe Island or CSR because the sites lack the appropriate spawning habitat and substrate.

### 3.1.5 Effects to Wildlife and Fish

#### *3.1.5.1 Effects of the Proposed Action on Wildlife and Fish*

***Columbian White-tailed Deer***

Under the Proposed Action, the Service would translocate up to 50 deer from Tenasillahe Island to Columbia Stock Ranch between 2018 and 2020. The number of deer in the DPS would not immediately change; it would merely be redistributed.

The newly established group of CWTD, however, would be expected to grow into a new and viable subpopulation in an area that would provide connectivity between existing CWTD subpopulations. The new CSR subpopulation would be anticipated to link to the Ridgefield and Sauvie/Scappoose subpopulations (upstream) and the Cottonwood/Kalama subpopulation (downstream) through dispersing individuals[2]. This new subpopulation and the connectivity it would provide may have a moderate long-term effect on the recovery of CWTD.

Translocations would reduce the Tenasillahe Island subpopulation (200 deer) by up to 50 deer over two years - a 25 percent reduction. This reduction would be in line with JBH management objectives but would be temporary because the subpopulation is expected to rebound to some degree. A reduction in the CWTD subpopulation on the island decreases competition for available resources, which may improve physical condition of the remaining animals, potentially increasing survival and fecundity. In such cases, the net loss to the subpopulation would be less than the actual number of deer removed, and eventually numbers would be expected to return to prior levels.

Subpopulation numbers of CWTD have returned to prior levels quickly following translocations along the lower Columbia River in the past. Puget Island has been used as a source population ten times in the past 20 years. From 1985 to 1988, 80 deer were removed from Puget Island for translocations, and from 1999 to 2000, 60 deer were removed. From 2013-2015, 31, 37, and 32 deer were removed from Puget Island, JBH Mainland, and Westport, respectively. In all cases the donor subpopulations maintained robust subpopulation levels. The Service expects the subpopulation on Tenasillahe Island to rebound in a few years after deer removal. Deer numbers on Tenasillahe Island, however, are above management goals, and would be so even after the translocation reductions. There would be a low effect on the Tenasillahe Island subpopulation even if no rebound occurred.

[2] Connectivity between subpopulations is essential in maintaining healthy genetic diversity of the overall population. It only takes a few migrants per generation moving between subpopulations to minimize the loss of genetic variation within subpopulations (Mills and Allendorf, 1996).

For deer being translocated, however, the stress of capture, handling, transport, and adaptation to a new location may lead to somewhat higher mortality than what is expected for a population that is not moved. This mortality is typically low and varies by technique, location, and year. White and Bartmann (1994) documented a 2-week mortality rate for mule deer fawns of five percent for net-gunning and 11 percent for drop-netting. This can be considered capture-related mortality as opposed to longer term overall mortality. Sullivan *et al.* (1991) reported a drive-netting mortality rate of 0.9 percent, compared to 23.5 percent for rocket-netting and 16.2 percent for corral trapping. DeYoung (1988) reported a mortality rate for net-gunning of 2.4 percent.

In coordination with WDFW, ODFW, Cowlitz Tribe, veterinarians, and other partners, the Service implements measures to ensure low injury and mortality rates during translocation. In addition, transport protocols will be altered as needed to further reduce the chance of transportation-related mortality. The Willapa National Wildlife Refuge Complex currently holds an ESA Section 10(a)(1)(A) Recovery permit for translocating CWTD. All parties engaged in translocating CWTD will comply with the Special Terms and Conditions of this permit.

For lower Columbia CWTD captures, ground capture techniques (drop-netting, drive-netting, and darting) have averaged 4.5 percent capture-related mortality for six past translocation efforts (USFWS 2012). Helicopter net-gunning has averaged 12.3 percent capture-related mortality over four efforts, but two efforts have resulted in a rate of 29.8 percent (17.6 percent for all net-gunning combined).

In 2013-2015, the Service moved 88 deer to Ridgefield National Wildlife Refuge. Capture-related mortality for those three years averaged 8 percent, with a total two-week mortality (including vehicle strikes and predation) of 13.6 percent. The Service expects to reduce capture-related mortality rates through additional sedation during transport but anticipates similar post-release mortalities to occur from external factors. In total, the two-week mortality rate is expected to be in the range of 5-10 percent. Because deer are given supplements and deworming agents, it is not unusual for deer that survive this two-week window to have higher than normal survival rates, and total annual survival for the translocated group is expected to be similar to non-translocated deer. Assuming 5-10 percent translocation mortality on 50 deer, this would equate to 2-5 deer over the course of two years. This loss would not be expected to have a significant effect on the subpopulation.

To reduce post-release mortality, predator control would be implemented prior to translocation. This action would be expected to relieve predation pressure on does and fawns and reduce total annual mortality. Furthermore, habitat improvements, including reforestation and pasture rehabilitation[3], would occur within two years of translocation. These improvements would be expected to provide additional benefits to the subpopulation in terms of more cover and forage, which could lead to higher fecundity and/or survival.

An additional risk to the translocated CWTD could come from hazards at CSR not experienced at Tenasillahe Island. The risk posed by fast-moving motor vehicles, such as on State Highway 30, is an example raised by the public during the scoping period. Some CWTD are anticipated to disperse from CSR and their encounter with highways and fast-moving vehicles is likely. Some degree of mortality is anticipated, but the numbers and impact to the success of the translocation is unknown. Past translocations to other areas in the lower Columbia River have been successful despite similar risk

[3] These habitat improvement actions are elements of CLT's ongoing land management plans for CSR and are not included in this BPA-funded action.

exposure to translocated deer, so it is anticipated that though some individuals may be lost, there would be low risk to the success of the translocation effort.

Restoring subpopulations of CWTD to the point where the DPS is meeting recovery goals (as defined in the Recovery Plan) is believed to be likely under both the Proposed Action and the No Action Alternative. This is based on the expectation that under either scenario the JBH Mainland and Ridgefield subpopulations would probably reach viable status as described in the Recovery Plan given more time and monitoring evidence. However, the Proposed Action would increase the health of the overall population by increasing numbers and distribution. Under the Proposed Action, CSR would likely support a persistent, secure, subpopulation, though it is uncertain if it could achieve a verifiable "viable" status within the secured CSR boundary as defined by the Recovery Plan. It is, however, expected to persist for the long term given the amount of suitable habitat within and surrounding CSR, and the limited human access and activity in the area. The addition of a secure subpopulation that increases connectivity would increase the robustness of the overall population regardless of its status as viable within the CSR boundary. If and when the Ridgefield and JBH Mainland subpopulation attain viable and secure status this additional subpopulation would add to the likelihood of persistence of the overall population. Under this scenario, the recovery goal of three secure and viable subpopulations would be achieved along with an additional secure subpopulation.

***Other Wildlife***

CWTD and CBTD generally have different habitat associations, but there is overlap. In the absence of CWTD, CBTD have increased their numbers into former CWTD range. Competition and a partitioning of the habitat between these two species at CSR is expected, though they are likely to coexist for many years. CWTD are expected to eventually occupy habitat on CSR, which has more open areas and is more suitable for CWTD. Some CBTD are expected to be displaced from CSR but continue to dominate use of the more forested habitats west of Highway 30 which have higher cover percentages and steeper slopes.

Elk would likely be unaffected by the arrival of CWTD onto CSR lands. There could however be some interspecific competition between the two species. Waldrip (1977) reported that white-tailed deer appear to avoid elk and are not regularly seen in areas containing dense populations. His data suggest that elk may have forced whitetails into marginal habitat for fawning, predisposing fawns to predation. CSR, however, does not support a dense population of elk (except for that brief period of time when elk hunters drive them to this secure location) sufficient to generate this impact. There may be some overlap in their feeding on grasses and forbs, since CWTD are more grazers than browsers, as are elk.

Large mesopredators, such as coyotes, prey on deer fawns. Additional deer at CSR may increase the prey base for coyotes. Coyote numbers however, are probably more influenced by small mammal and bird abundance, as this is their prey base for most of the year. Coyote home range size varies from an average of 2 square miles up to 55 square miles depending on social demographics, habitat type, and prey abundance (Tesky 1995).

Coyote control would occur at CSR for both years of the translocation and may be implemented in subsequent years if fawn recruitment is low. While coyote control has little effect on the long-term coyote population, there may be short-term reductions in coyote numbers at CSR during years of coyote control.

No effects are expected on other small mammals, birds, amphibians, and reptiles.

***Fish***

The Proposed Action has no ground-disturbing activities, and will take no action within aquatic habitats. No fish or fish habitats would be affected by this action.

***ESA-listed Species***

Columbia White-Tailed Deer – see section 3.1.5.1 above

Streaked Horned Lark - Streaked horned lark nesting habitat occurs adjacent to Tenasillahe Island and CSR. Larks have been documented to nest near Tenasillahe Island but there are no known nesting sites on Sandy Island near CSR. The nesting area near Tenasillahe would remain unchanged. If anything, the reduction in deer numbers may slightly reduce the chance of deer/lark interactions. At CSR, deer may cross the channel to Sandy Island. If deer do arrive at Sandy Island, they may occasionally wander through the nesting habitat in this area. However, they are expected to spend very little time there because of the sparse habitat and lack of cover. While it is possible that a deer could step on a nest or flush a nesting bird, it is highly unlikely to occur. Translocations will occur in winter, when streaked horned lark are not present. No effect is expected from translocation-associated human activity. Overall, the Proposed Action is unlikely to affect streaked horned larks or their habitat.

ESA-listed Fish - This action has no ground disturbing activities and will take no action within aquatic habitats. No fish or fish habitats will be affected by this action.

### *3.1.5.2 Effects of the No Action Alternative on Wildlife and Fish*

Under this alternative no deer would be moved, so there would be no effects on wildlife habitat. Tenasillahe Island, which currently has a large population of deer, would be expected to drop slightly in numbers to a density that is closer to the management goal. CWTD may eventually reach CSR on their own, but given that this has not occurred since they were extirpated from that area at least 50 years ago, the probability of this happening is low.

No other wildlife or wildlife habitat would be affected by the No Action Alternative.

No additional subpopulation would be created and the recovery timeline would not be accelerated. Under this scenario, the increasing number of CWTD on Tenasillahe Island would likely increase competition for resources, potentially causing the subpopulation to decline over time due to lack of sufficient resources.

As discussed above, the recommended criteria for delisting would likely be met eventually, as four viable and secure populations are expected to develop (JBH Mainland Unit, Tenasillahe Island, Ridgefield NWR, and Puget Island). This may lead to eventual delisting. However, the Ridgefield subpopulation would remain geographically isolated from the rest of the population, and future translocations to Ridgefield may be necessary to maintain genetic diversity. In addition, nearly the entire DPS exists on diked lands, which are more at risk from flooding from dike failure or sea-level rise than upland areas. Each additional subpopulation that is added to the overall DPS lowers the risk of extinction due to catastrophic events at one or more subpopulations. The No Action Alternative would maintain the status quo for this DPS, without lowering extinction risk or improving connectivity.

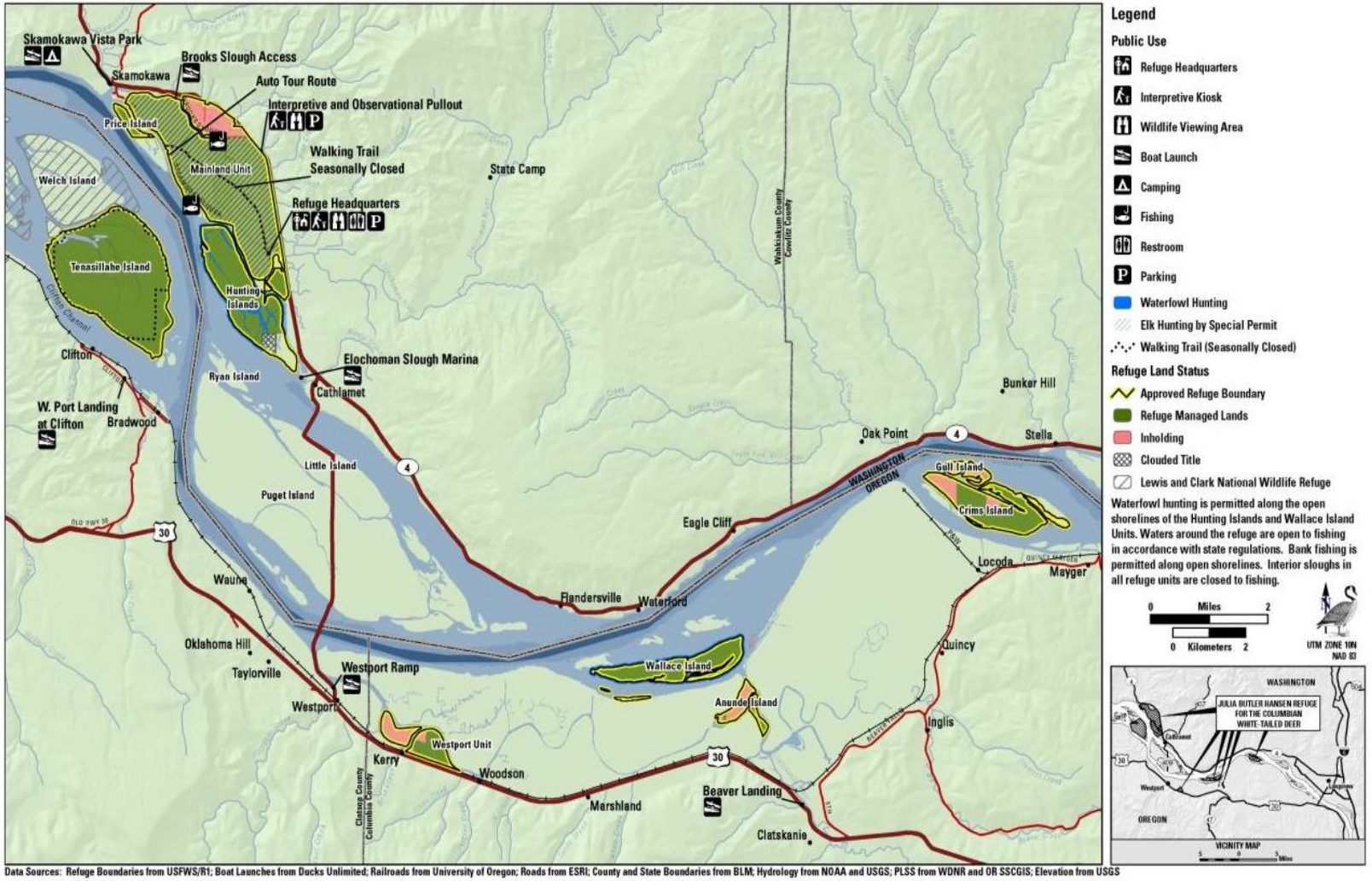
## 3.2 Land Use and Recreation

### 3.2.1 National Wildlife Refuge System and Julia Butler Hansen Refuge

The Service established the National Wildlife Refuge System to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

The JBH Refuge, located in southwestern Washington and northwestern Oregon, was established in 1971 specifically to protect and manage CWTD. The JBH Refuge manages over 6,200 acres of pastures, forested tidal swamps, brushy woodlots, marshes, and sloughs along the Columbia River to benefit wildlife, primarily CWTD. The JBH Refuge is comprised of six principal units separated by waterways: Mainland, Tenasillahe Island, Hunting Islands, Price Island, Wallace Island, and Crims Island (Figure 6).

**Figure 6 Julia Butler Hansen Refuge (green) and inholdings (pink)**



The goals of the JBH Refuge (USFWS 2010) are to:

- Provide short-grass fields for the benefit of CWTD, dusky Canada geese, and other grassland-dependent wildlife.
- Restore and maintain riparian forests with diverse age and structural features characteristic of the historical lower Columbia River.
- Restore and maintain non-tidal wetlands and sloughs as a mosaic with other habitat types, especially riparian forest and short grass fields.
- Maintain and protect tidally influenced freshwater wetlands and swamp habitats characteristic of the historic lower Columbia River.
- Maintain a healthy, sustainable population of endangered CWTD to promote the recovery of this species.
- Provide and encourage establishment of aquatic habitat conditions that benefit salmonids and other native aquatic species of the lower Columbia River.
- Gather scientific information (inventories, monitoring, research, and studies) in support of adaptive management decisions on the JBH Refuge.
- Provide visitors with the opportunity to participate in wildlife observation, hunting, fishing, photography, interpretation, and environmental education.

Periodic removal of coyotes is practiced to maximize survival rates of adult and juvenile CWTD and to promote healthy deer herds on JBH refuge management units at objective levels.

### 3.2.1 Tenasillahe Island

Tenasillahe Island is one of the principal units of the JBH Refuge. The island lies just across the main channel of the Columbia River and west of the Mainland, Hunting Island, and Price Island units. Historically, Tenasillahe Island was estuarine habitat with daily inundation caused by back-up of the Columbia River during high tides. The island is approximately 1,950 acres in size, of which 1,700 acres are now surrounded by a dike. The dike was built in the early 1900s and the area was farmed and grazed until the JBH Refuge was established in 1971.

The diked area is similar to the Mainland Unit in water drainage and land cover. The interior of the island is drained by ditches, sloughs, and four tide gates. The island's vegetation is a mix of woodlots, brush, pastures, and old grass fields. The southern tip of the island consists of a black cottonwood/Sitka spruce intertidal swamp that encompasses 175 acres and is not diked. A combination of land subsidence and increasing groundwater levels has led to increasingly wet soils and the proliferation of invasive reed canarygrass (*Phalaris arundinacea*).

The Tenasillahe Island Unit is actively managed by the JBH Refuge to maintain a healthy and sustainable subpopulation of CWTD (USFWS 2010). Given the size and habitat of the unit, the JBH Refuge's population objective for Tenasillahe Island is 125 deer. Intensive management actions to directly benefit CWTD are necessary to ensure herd health and genetic integrity necessary for a long-term sustainable population on the refuge. Active management of the habitat includes mowing, grazing, haying, and pasture improvements. About 200 acres are tilled and planted with pasture grasses and forbs on a 4-year rotation. Another 600 acres are under cattle grazing through management with cooperative farmers. Grazing from April through October is used to control invasive reed canarygrass and encourage the growth of understory forbs. About 50 acres of pasture are mowed each year during late summer to encourage forb growth, and another 105 acres of ephemeral wetlands are managed through water control structures.

Tenasillahe Island currently has a population of almost 200 CWTD, which is well over the management goal of 125. This unit supports one of two secure and viable subpopulations[4] of CWTD, which facilitated the Service's 2016 reclassification of the CWTD from endangered to threatened (81 FR 71386).

### 3.2.2 Columbia Stock Ranch

CSR is located between the cities of Rainier and St. Helens, Oregon on the left bank of the Lower Columbia River between river miles 75 and 77, in Columbia County, Oregon. The project site is downstream from the Lewis River confluence, between Sandy Island and Deer Island Slough at the northern (downstream) tip of Deer Island.

The 935-acre CSR property consists of two parcels of land separated by Highway 30. There are 460 acres of floodplain and lowland riparian habitats adjacent to the Columbia River, east and downslope of Highway 30; and 475 acres of upland dominated by mixed Douglas fir and hardwood forests west and upslope of Highway 30. CSR has 1.5 miles of frontage to the Columbia River.

Two main drainage channels transect the project area: Deer Island Slough and Tide Creek. Tide Creek flows through the middle of the property and historically carried all discharge from upland sources to the Columbia River. Most of the flows from upstream sources are now diverted to Deer Island Slough and its downstream pump station. A dilapidated tide gate at the downstream terminus of Tide Creek allows the site's interior runoff to drain through the existing levee into the Columbia River. CSR is disconnected from the mainstem Columbia River upstream by the existing flood control levee. The site is used for agriculture and livestock grazing.

The Columbia River Levee (1940s) and the Portland and Western Railroad grade (early 1900s) has blocked fish passage into the project area, functionally isolating the property from natural tidal and fluvial processes. In addition, management of the flood-protected area for agriculture and cattle grazing has allowed invasive plant communities to become firmly established; reducing habitat quality for CWTD. Many portions of CSR are dominated by non-native pasture grasses that were promoted for cattle grazing and agriculture and invasive species that have become established throughout the property.

### 3.2.3 Private lands adjacent to CSR

The lands surrounding CSR are privately-owned rural properties with land uses ranging from large agricultural and forestry holdings to small private home lots. Apart from Highway 30, access is limited to county and private local access roads. There is no recreation site or commercial enterprise open to use or visitation by the general public. Land uses on both large and small holdings are rural in nature; there are no subdivisions that are suburban in appearance or function.

### 3.2.4 Recreation

CSR is privately owned and is not open for recreation, including public hunting of CBTD. The shoreline along the CSR property is used by the public for boating, fishing and waterfowl hunting. Oregon state law provides for public access and use along rivers and streams below their ordinary high water mark. It is in this zone along CSR's Columbia River frontage where this recreation takes place.

[4] The other secure and viable subpopulation is on Puget Island.

Recreation on lands adjacent to CSR is also limited because of the lack of public access, but hunting is a recreational pursuit on surrounding private lands.

Tenasillahe Island is closed to public use with the exception of a walking trail, accessible by boat, which is open June 1 through September 30.

### 3.2.5 Effects on Land Use and Recreation

#### *3.2.5.1 Effects on Land Use*

##### 3.2.5.1.1 Effects of the Proposed Action on Land Use

Currently there is one rancher that grazes cattle at CSR. Grazing is employed to reduce invasive plants and create wintering waterfowl habitat. It also benefits the cattle owner financially. The translocation of CWTD and the expected habitat improvements may decrease the acreage and the number of days that grazing occurs. Grazing would still be employed to maximize wildlife benefit, but the grazing prescription may change.

Some deer that are translocated to CSR are expected to disperse beyond CSR's boundary. Translocated deer often spend the first few weeks exploring before settling into a home range. Establishment on nearby lands has occurred after most translocation efforts. Thus, some CWTD may establish home ranges on private lands surrounding CSR. Deer translocated to Ridgefield for example have resulted in a small number of deer on Sauvie Island, Shillapoo Wildlife Area, and near the Scappoose airport. Translocations to Lord and Fisher Islands resulted in ancillary subpopulations in Longview, Washington, and Rainier, Oregon. Over decades, only a small number of complaints from private landowners have been made regarding minor damage to commercial and private property. Most complaints pertain to vegetation damage of gardens, agricultural crops, and nurseries.

As the new CSR subpopulation grows, conflicts may arise between land uses and CWTD. In the past, however, CWTD damage management activities have not been required for successfully translocated CWTD. To increase the management options and flexibility for landowners, the Service developed a 4(d) rule under the ESA to allow landowners to take action in response to damage from CWTD, as well as allowance for misidentification during black-tailed deer damage management or hunting. Specifically, landowners may conduct intentional harassment of CWTD that would not be likely to cause mortality; they may take[5] CWTD if it is accidental and incidental to an otherwise permitted and lawful activity to control damage by black-tailed deer; or they may take a CWTD that is deemed a problem because (1) it 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 Service expects, however, that most CWTD damage problems will be resolved using non-injurious or nonlethal deterrents so that lethal take of problem CWTD will rarely be necessary.

Since CWTD is a federally-listed species, private landowners with CWTD on their lands must consider the effects their operations may have on the species. In addition to the 4(d) rule discussed above, the

[5] "Take" is a specific term under ESA and is defined there as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species".

Service also provides assistance to landowners through the Partners for Fish and Wildlife[6] program and through Safe Harbor Agreements[7] to encourage voluntary management for CWTD. The Natural Resource Conservation Service also has funded programs to assist private landowners with habitat improvement projects for CWTD on their lands in Columbia County[8].

Private landowners and ESA-listed CWTD have coexisted successfully along the lower Columbia River for decades and the Service's assistance and education efforts would help reduce impacts from the translocation of CWTD to CSR. For example, Puget Island contains one of the secure and viable subpopulations of CWTD and it is comprised entirely of private land. It is anticipated that private landowners around CSR will continue to have management flexibility for land use practices with CWTD presence. The effect on land uses from CWTD translocations to CSR would be low.

#### 3.2.5.1.2 Effects of No Action on Land Use

Because no changes are expected in current deer distribution under the No Action Alternative, there would be no change in animal damage issues or impacts to private land uses. There would be no effect.

### *3.2.5.2 Effects on Recreation*

#### 3.2.5.2.1 Effects of the Proposed Action on Recreation

There are currently no recreational opportunities on CSR since it is closed to public uses. The Proposed Action would not provide public access or open the area for recreation, nor would the presence of CWTD on the property change the opportunities people have to use the property's Columbia River shoreline (below mean high water) as allowed by state law. Recreation on lands adjacent to CSR is also not anticipated to be affected.

Private landowners around CSR may allow hunting; and CWTD, which cannot legally be hunted, would now be seen in areas where hunters previously expected to see only CBTD. During past translocation efforts, the Service, WDFW and ODFW worked to educate hunters to reduce the potential effects on CBTD hunting, resulting in no changes to local hunting regulations. Similar responses would be expected in areas around CSR. It is anticipated that with each successive hunting season there would be more awareness by hunters of the presence of CWTD in the area and hunting closures would not be expected.

Some closures to hunting in the Lower Columbia River are presently in place where CWTD and CBTD coexist due to the status of CWTD, but hunters here have been differentiating between legal-to-hunt CBTD and protected CWTD for decades. Currently there are many hunting seasons and areas where both Washington and Oregon require hunters to clearly identify deer species. The Service, ODFW and

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[6] "Partners for Fish and Wildlife" is a voluntary partnership program administered by the Fish and Wildlife Service to provide financial and technical assistance to private landowners who wish to protect or restore wetlands, uplands, and riparian and instream habitats.

[7] A "Safe Harbor Agreement (SHA) is a voluntary agreement involving private or other non-federal property owners whose actions contribute to the recovery of species listed under the ESA. In exchange for actions that contribute to the recovery of listed species on non-Federal lands, participating property owners receive formal assurances from the Service that if they fulfill the conditions of the SHA, the Service will not require any additional or different management activities by the participants without their consent. In addition, at the end of the agreement period, participants may return the enrolled property to the baseline conditions that existed at the beginning of the SHA.

[8] National Resources Conservation Service, Columbian White Tailed Deer Habitat Improvement, https://www.nrcs.usda.gov/wps/portal/nrcs/detail/or/programs/financial/?cid=nrcseprd1351831

WDFW have developed outreach information to provide education on proper identification of the species for the public, including neighboring landowners, visitors to the JBH refuge, and hunters. This education effort should further minimize the potential for accidental shooting of CWTD. Accidental shootings of CWTD in the pursuit of CBTD is exempt from the take prohibitions of the ESA as part of the 4(d) rule for the Lower Columbia DPS of CWTD

The effects on recreation from translocations of CWTD to CSR would be low.

#### 3.2.5.2.2 Effects of the No Action Alternative on Recreation

Because no changes are expected in current deer distribution under the No Action Alternative, there would be no overlap of CWTD presence in areas where hunters have traditionally only seen CBTD. There would be no effect to recreation.

## 3.3 Socioeconomics and Environmental Justice

### 3.3.1 Socioeconomic conditions

The economies and the lifestyles of the communities near Tenasillahe Island and CSR are rural in nature and have been compatible with CWTD protection since CWTD were listed under the ESA in 1973.

Tenasillahe Island is located in Clatsop County, Oregon near the town of Cathlamet, Washington. The population of Clatsop County is approximately 37,000 people. The principal industries of Clatsop County are manufacturing, travel (primarily tourism), and trade. Logging and commercial fishing have traditionally been the mainstays of the economy, but both have declined in recent years. Visitation to Tenasillahe Island is estimated to be less than 100 visits annually.

CSR is located in Columbia County, Oregon. The population of Columbia County is approximately 49,000 people and its population growth has been higher than Oregon's average. The nearest community to CSR is Goble, Oregon. Some of the primary industries of Columbia County are wood products and paper manufacturing, trade, construction, and horticulture. Deer Island, of which CSR is a part, is largely agricultural, and livestock grazing is common.

### 3.3.2 Environmental Justice

Executive Order 12898 (1994), Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued with the goal of achieving environmental protection for all communities. It focuses on identifying and addressing disproportionately high and adverse human health impacts on minority and low-income populations. Consideration of environmental justice acknowledges that our environment quality affects the quality of our lives, and that minority and low-income populations should not suffer disproportionately. The Executive Order directs federal agencies to identify and address any disproportionately high and adverse impacts from federal actions on environmental justice communities, and it provides minority and low-income populations with access to public information and public participation in the federal planning process (EPA 2015).

Tenasillahe Island and the CSR are unoccupied and generally closed to the public. There are no permanent or temporary residences there, nor are there communities near either that might be considered vulnerable to bearing a disproportional share of the negative environmental consequences of translocating CWTD to CSR. There are no Indian Trust Resources at either Tenasillahe Island or CSR.

### 3.3.3 Effects of the Proposed Action on Socioeconomics and Environmental Justice

The Proposed Action would not create income opportunities for local populations. Jobs would not be created, tourist attractions would not be developed, and wildlife viewing and hunting opportunities would not increase. The translocation efforts may generate a few dollars in spending at nearby services while the translocation is being conducted, but this impact is low.

Translocations of CWTD to CSR would not result in displacements of human activity or land uses and would not generate any human health or environmental effects to minority or low-income populations, or others.

The socioeconomic effect of the Proposed Action would be low.

### 3.3.4 Effects of the No Action Alternative on Socioeconomics and Environmental Justice

Under the No Action Alternative, no actions are taken and no changes are expected to human activities in and around CSR. There is no income-generating socioeconomically-beneficial opportunity lost by taking no action. There would, however, be no opportunity for even the smallest of economic inputs from short-term translocation actions as discussed above. Conversely, there would no potential for any animal damage conflicts. There would be no socioeconomic effect from the No Action Alternative.

There would be no effect under either alternative to Indian Trust Resources as there are no such resources present.

## 3.4 Cumulative Impacts

Cumulative impacts are the impacts on the environment that result from the incremental impact of the project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

As stated above, the Proposed Action makes no physical changes to land conditions at Tenasillahe or CSR. There are thus no ground-disturbing activities that might contribute to cumulative effects of past present or ongoing actions that have physically modified the environment. The only change relevant to cumulative effects would be the change in numbers of CWTD at, and around, CSR. As stated earlier, the loss of 30 to 50 deer at Tenasillahe is likely a temporary matter for that subpopulation since it is known to be able to rebound quickly. Therefore, the discussion that follows focuses on the cumulative effects of establishing a CWTD subpopulation at CSR along with the effects of other past, present, and foreseeable future recovery actions for CWTD.

The cumulative effects of establishing a CWTD subpopulation at CSR could be environmental (as they relate to the natural environment in the area); and they could be socioeconomic (including land use), as they relate to the recovery of CWTD under ESA.

### 3.4.1 Cumulative Effects of establishing a CWTD population at CSR

The translocation of CWTD to CSR under the Proposed Action is intended to establish a new subpopulation on CSR. Over time, a connection with effective genetic exchange would be possible with the subpopulation on the Ridgefield National Wildlife Refuge upriver to the southeast.

Currently, CBTD occur in nearly all areas of CSR and adjacent lands that CWTD may eventually

reoccupy. As CWTD expand, it is expected that a certain level of habitat partitioning would occur, and that CBTD would be replaced in some areas that are more suited to CWTD. Historically, these species partitioned the habitat as they evolved together in the Pacific Northwest, and the envisioned partitioning would be a restoration of that historical condition.

Effects on other wildlife species from this restored population and resource partitioning by these two deer species are anticipated to be low and indistinguishable. The effects to other species would simply be one deer species replacing another with occupancy of a very similar niche.

Similarly, there would be no cumulative impact to the vegetative resource. CWTD are native to this area, not invasive, and resource use would not be imbalanced with native food resources as is often the case with invasive species. Additionally, impacts to vegetation are currently occurring from CBTD and those impacts would simply be replaced by those from CWTD.

The cumulative environmental effect of the Proposed Action would be low.

Under the No Action Alternative, the Service would not conduct a deer translocation to CSR. CWTD may eventually find their way to Deer Island, but so far this has not occurred on its own and is unlikely. A large gap would remain between Cottonwood Island and Ridgefield, and the Ridgefield subpopulation would continue to act as a relatively isolated herd. The cumulative environmental effect of the No Action Alternative would be low.

### 3.4.2 Cumulative Socioeconomic and Land Use effects of establishing a CWTD population at CSR

The success of the subpopulation at CSR under the Proposed Action could lead to a range expansion of CWTD in off-refuge landscapes and contribute to recovery goals, and potentially delisting, sooner than the No Action Alternative. A new secure subpopulation at CSR would lower the risk of DPS extinction by creating connectivity between subpopulations, adding to the overall population of the DPS, and increasing the distribution of the species. This subpopulation growth and expansion could occur through the natural expansion of the CSR subpopulation, and by circumventing the natural and human-made barriers by multiple future translocations to other off-refuge sites.

The Service expects this DPS to achieve recovery goals regardless of whether this project occurs. However, the recovery goals could be achieved sooner under the Proposed Action. It is likely that areas currently closed to CBTD hunting because of the presence of CWTD, would be opened. While hunting of CWTD may remain prohibited for some time after delisting, CWTD would likely become a legal game species in the lower Columbia River Valley, with regulated hunts managed by state agencies.

Under the No Action Alternative, a large gap would remain between Cottonwood Island and Ridgefield National Wildlife Refuge, and the Ridgefield subpopulation would continue to act as a relatively isolated herd.

Expansion of the CSR subpopulation along with other foreseeable translocations and recovery efforts may lead to increased human/CWTD interaction in nearby areas. However, both CBTD (which currently occupy areas of likely future CWTD expansion) and CWTD are expected to present the same potential for human/deer interaction, and as such, there is no expectation of an increased cumulative impact from increased human/CWTD interactions.

# Chapter 4 Coordination, Consultation, and Compliance

## 4.1 Agency Coordination and Public Involvement

Meetings and monthly conference calls among WDFW, ODFW, the Cowlitz Indian Tribe, Columbia Land Trust, Ecological Services, Ridgefield NWR, Bonneville Power Administration, and JBH Refuge have long been ongoing for technical coordination and planning of actions to benefit CWTD and for restoration of estuary habitats in the lower Columbia River. CWTD translocations and this project specifically have been included in these conferences.

Input from nearby landowners and other members of the public who may have an interest in this Project have been contacted during the public scoping effort described in Section 1.6. Outreach to landowners surrounding CSR has occurred and will continue. BPA has also contacted elected officials at the county and federal levels.

## 4.2 Environmental Review and Coordination

In conducting a translocation effort, the Service and BPA would comply with applicable Federal laws, regulations, and executive orders. The following section describes how the proposed action is in compliance with the National Environmental Policy Act; Endangered Species Act; National Historic Preservation Act; Comprehensive Environmental Response, Compensation, and Liability; and other relevant Federal executive orders.

### 4.2.1 National Environmental Policy Act

As Federal agencies, BPA and the Service must comply with provisions of the 1969 National Environmental Policy Act, as amended (42 USC 4321-4347). This environmental analysis (EA) was prepared to comply with NEPA and serve as the basis for determining whether implementation of the proposed action would constitute a major Federal action significantly affecting the quality of the human environment. The planning process for developing the environmental assessment facilitates the involvement of government agencies and the public.

In this EA, the agencies evaluated two alternatives to meet the purpose and need as described in Chapter 1: The Proposed Action and the No Action Alternative. The Proposed Action would involve the translocation of deer from Tenasillahe Island to the CSR to establish a new subpopulation.

### 4.2.2 Endangered Species Act

A Section 7 consultation will be completed by the Service to determine effects of the translocation on threatened and endangered species. The Service also holds a Section 10(a)(1)(A) Recovery Permit for translocations and monitoring of CWTD as part of the proposed action. A Section 10(a)(1)(A) Recovery Permit is required for activities designed to enhance a listed species propagation or survival.

### 4.2.3 National Historic Preservation Act

This action has no potential to impact cultural resources since it has no ground-disturbing activities. However, the Service would follow established procedures for protecting archaeological and cultural resources if encountered during the translocation process. The Service would avoid damaging cultural and historic resources and would comply with the National Historic Preservation Act of 1966 (16 U.S.C. 469) and other cultural resource preservation laws.

### 4.2.4 Comprehensive Environmental Response, Compensation, and Liability Act

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. 9601 *et seq*.), the Service and BPA has determined that the proposed project areas are not on the Environmental Protection Agency's National Priority List.

### 4.2.5 Executive Order 12372. Intergovernmental Review

Coordination and consultation with affected Tribal, local and State governments, other Federal agencies, and local interested persons has been completed through personal contact by Refuge staff, and Refuge Supervisors and by the formal scoping process conducted for this EA.

### 4.2.6 Executive Order 13186. Responsibilities of Federal Agencies to Protect Migratory Birds.

This Executive Order directs departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act. A provision of the Executive Order directs Federal agencies to consider the impacts of their activities, especially in reference to birds on the Fish and Wildlife Service's list of Birds of Conservation (Management) Concern. It also directs agencies to incorporate conservation recommendations and objectives in the North American Waterbird Conservation Plan and bird conservation plans developed by Partners in Flight into agency planning. This action includes no ground-disturbing or bird-habitat altering actions, thus no actions specified by this Executive Order are necessary.

### 4.2.7 Other Federal Executive Orders

In implementing the Proposed Action, the Service would comply with the following Executive Orders: Protection of Historical, Archaeological, and Scientific Properties (Executive Order 11593); Management and General Public Use of the National Wildlife Refuge System (Executive Order 12996); Departmental Policy on Environmental Justice (Executive Order 3127); and Consultation and Coordination with Indian Tribal Governments (Executive Order 13175).

## 4.3 Tribal Consultation

**USFWS Secretarial order #3206: American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act**

The Cowlitz Indian Tribe was notified of this Proposed Action prior to, and during, the scoping effort described in Section 1.4. They provided no comments. The Service has also been coordinating closely with the Tribe throughout the planning process.

The JBH Refuge 2010 Comprehensive Conservation Plan includes Tribal Consultation in section 2.3.11, reading: "Tribal Coordination: Coordination with Native American Tribes that have an interest in the refuges will occur. The Service will coordinate and consult with the Cowlitz Tribe and the Shoalwater Bay Tribe regarding issues of shared interest." The Service may expand and seek assistance from other Tribes for future issues related to cultural resources education and interpretation, special programs, the National Historic Preservation Act, and the Native American Graves Protection and Repatriation Act.

## 4.4 Distribution and Availability

A press release was sent to media outlets near Columbia Stock Ranch or Tenasillahe Island (in both Washington and Oregon) announcing the availability of the Draft EA.

Copies of the EA are available on both the BPA (*www.bpa.gov/goto/CWTDtranslocation*) and Refuges' websites: *www.fws.gov/jbh* . Hardcopies of the document are also available at the following locations:

Julia Butler Hansen Refuge for the Columbian White-tailed Deer
46 Steamboat Slough Road
Cathlamet, WA 98612
360/795-3915

Willapa National Wildlife Refuge
3888 SR101
Ilwaco, WA 98624
360/484-3482

A copy of the EA is available on request from BPA by calling the toll-free document request line at 1-800-622-4520.

## Chapter 5 References


DeYoung, C.A. 1988. Comparison of net-gun and drive-net capture for white-tailed deer. Wildl. Soc. Bull., 16(3):318-320.

Environmental Protection Agency (EPA). 2015. Guidance on considering environmental justice during development of regulatory actions. https://www.epa.gov/sites/production/files/2015-06/documents/considering-ej-in-rulemaking-guide-final.pdf

Gavin, T.A. 1984. Whitetail Populations and Habitats: Pacific Northwest. Pg 487-496. In White-tailed Deer: ecology and management (I.K. Halls, ed.) Stackpole Books,Harrisburg, Pennsylvania. 870 pp.

Hawkins, R.E and G.G. Montgomery. 1969. Movements of translocated deer as determined by telemetry. J. Wildl. Manage. 33:196-203.

Johnson, J., Ennis, S., Poirier, J., and T.A. Whitesel. 2008. Assessment of Salmonid Populations and Habitat on Tenasillahe and Welch Islands, 2008 Project Report. U.S. Fish and Wildlife Service, Columbia River Fisheries Program Office, Population & Habitat Assessment Program, 1211 S.E. Cardinal Court, Suite 100, Vancouver, Washington 98683.

Jones, M.L, Mathews N.E., and W.F. Porter. 1997. Influence of Social Organization on Dispersal and Survival of Translocated Female White-Tailed Deer. Wildlife Society Bulletin, 25:272-278.

Mills, L.S. and F.W. Allendorf, 1996. The One-Migrant-per-Generation Rule in Conservation and Management. Conservation Biology. 10:1509-1518.

Nelson, M.E. and L.D. Mech. 1992. Dispersal in Female White-Tailed Deer. Journal of Mammalogy, Vol. 73, No. 4 (Nov., 1992), pp. 891-894.

Pais, R.C. 1987. Mortality, dispersal and habitat use of resident and translocated white-tailed deer does on the Cumberland Plateau of eastern Kentucky. M.S. Thesis. Univ. Kentucky, Lexington. 82pp. As quoted in Jones et al. 1997.

Sullivan, J.B., C.A. DeYoung, S.L. Beasom, J.R. Heffelfinger, S.P. Coughlin, and M.W. Hellickson. 1991. Drive-netting deer: incidence of mortality. Wildl. Soc. Bull., 19(4):393-396.

Suring, I. H. 1975. Habitat use and Activity Patterns of Columbian White-tailed Deer along the lower Columbia River. M.S. Thesis, Oregon State University, 59 pp.

Tesky, J. L. 1995. Vulpes vulpes. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: www.fs.fed.us/database/feis/animals/mammal/vuvu/all.html [2018, October 9]. USFWS. 1983. Revised Columbian white-tailed deer recovery plan. U.S. Fish and Wildlife Service, Olympia, WA.

USFWS. 2008. Factors affecting fawn survival of Columbian white-tailed deer in the lower Columbia River. U.S. Fish and Wildlife Service, Julia Butler Hansen Refuge for Columbian White-tailed Deer, Cathlamet, WA. 11pp.

USFWS. 2010. Lewis and Clark National Wildlife Refuge and Julia Butler Hansen Refuge for the Columbian White-tailed Deer Comprehensive Conservation Plan and Environmental Impact

Statement. U.S. Fish and Wildlife Service, Willapa National Wildlife Refuge Complex, Ilwaco, WA. 505 pp.

USFWS. 2012. Report of activities for Columbian white-tailed deer, recovery sub-permit WNWR-9 calendar year 2012. USFWS report. Julia Butler Hansen Refuge for Columbian White-tailed Deer, Willapa National Wildlife Refuge Complex, Cathlamet, WA. 9 pp.

USFWS. 2013. Columbia River Distinct Population Segment of the Columbian White-tailed Deer (*Odocoileus virginianus leucurus*) 5-Year Review: Summary and Evaluation Columbian White-Tailed Deer. Washington Fish and Wildlife Office. Lacey, Washington. November 2013.

USFWS. 2016. 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. Oregon Fish and Wildlife Office. Portland, Oregon. November 2016.

Waldrip, G.P. 1977. Elk habitat use during calving season with possible effects on white-tailed deer at the Witchita Mountains National Wildlife Refuge. M.S. thesis., Oklahoma State University, Stillwater. 81 pp.

White G.C. and R.M. Bartmann. 1994. Drop nets versus helicopter net guns for capturing mule deer fawns. Wildl. Soc. Bull. 22:248-252.

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