

INTRA-SERVICE SECTION 7 CONSULTATION

Originating Person: Paul Meyers, Julia Butler Hansen NWR, Willapa Bay National Wildlife Refuge Complex, Cathlamet, WA 360/795-3915

Date: December 10, 2012

I. Region: One

II. Service Activity: Emergency Translocation of Columbian White-tailed Deer from the Julia Butler Hansen Refuge and Puget Island to Ridgefield NWR and Cottonwood Island

III. A. Listed Species and/or Their Critical Habitat

1. Within the action area that may be affected:

Columbian White-tailed Deer *Odocoileus virginianus leucurus*

2. Within the action area that will not be affected:

Water Howellia *Howellia aquatilis*

Nelson's Checkermallow *Sidalcea nelsoniana*

B. Proposed Species and/or Proposed Critical Habitat

1. Within the action area that may be affected: None

2. Within the action area that will not be affected:

Streaked Horned Lark *Eremophila alpestris strigata*

C. Category 1 Candidate Species:

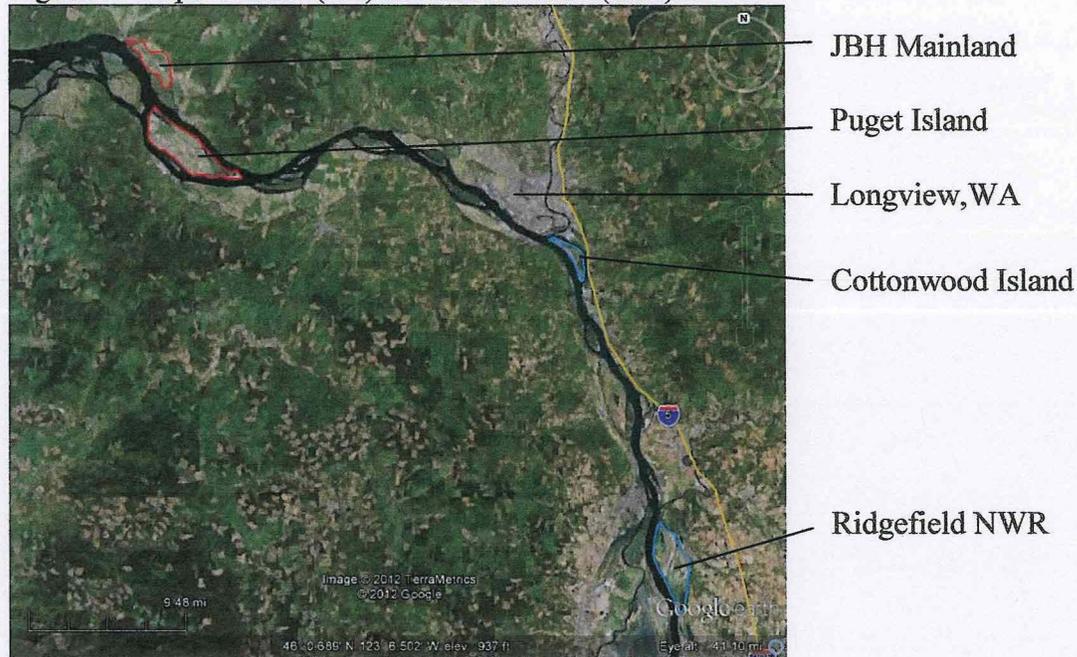
1. Within the action area that may or may not be affected: None

2. Within the action area that will not be affected: None

IV. Geographic Area or Station Name and Action:

The project area includes the upland areas of the Julia Butler Hansen (JBH) Refuge's Mainland Unit and surrounding area, including Puget Island, and the upland areas of the Ridgefield NWR and Cottonwood Island (fig. 1).

Figure 1. Capture sites (red) and release sites (blue).



V. Location (see Figure 1)

A. County and State:

- Julia Butler Hansen NWR, Wahkiakum County, WA
- Puget Island, Wahkiakum County, WA
- Cottonwood Island, Cowlitz County, WA
- Ridgefield NWR, Clark County, WA

B. Township, Range, and Section:

- Julia Butler Hansen NWR T9N, R6W, Sections 16, 17, 21, 22, 12, 26–28, 34, 35
- Puget Island, T8N R6W, Sections 3, 4, 9–11, 13–16, 23–25
- T8N T5W, Sections 19, 29, 30
- Cottonwood Island, T7N R2W, Sections 13–15, 23–25
- Ridgefield NWR, T4N R1W, Sections 11, 14, 22–27, 36, 38–43, 45–47, 57
- T3N R1W, Sections 1, 2, 40–42, 47

C. Distance (miles) and direction to nearest town:

- | | |
|-------------------------|-------------------------------|
| Julia Butler Hansen NWR | 2 miles N of Cathlamet, WA |
| Puget Island | 1 mile S of Cathlamet, WA |
| Cottonwood Island | 2 miles SE of Longview, WA |
| Ridgefield NWR | 0.2 miles W of Ridgefield, WA |

VI. Ecology of Listed and Proposed Species

Nelson's Checkermallow

Nelson's checkermallow is listed as threatened under the Endangered Species Act. It is a perennial plant typically found in open moist prairies or open Oregon ash woodlands. The species grows up to 5 feet tall, is shade intolerant, and does not persist in areas with a dense canopy of trees or other over-topping vegetation such as reed canary grass or Himalayan blackberry. The dark red-to-purple flowers are spike-like/elongated inflorescences or clusters. Plants have either perfect flowers (male and female) or pistillate flowers (female only). The plant can also reproduce by rhizomes. Flowering typically occurs in June to early July. Seeds are mature between mid-June and mid-September.

In partnership with the Ecological Services Offices in Washington and Oregon as well as the Washington State Natural Heritage Program, nursery plugs were planted in grids in five sites at the Ridgefield NWR (fig. 2). This species currently occurs at four of those sites (the Kiwa trailhead site does not support any plants). Three occupied sites are located on the Bachelor Island Unit and one site is located in Texas Island Field in the River S Unit. Threats to this species include herbivory, competition from invasive plants (i.e. Canada thistle and reed canary grass) and changes in groundwater elevations related to the management of the Columbia River flows. Herbivory is most notable at the Texas Island site as it is close to a hedgerow and ash/cottonwood forest used by black-tailed deer and cottontail rabbits.

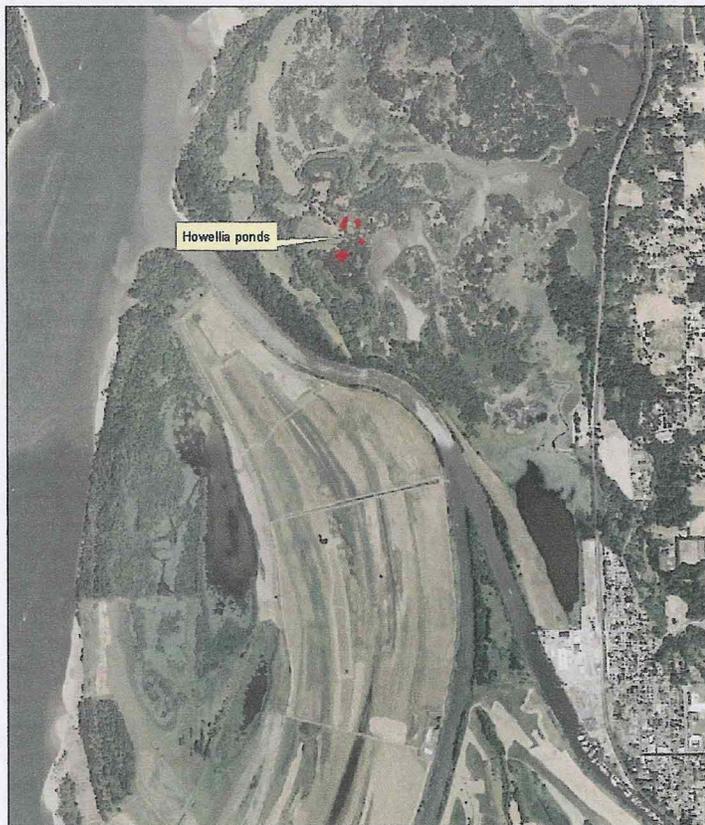
Figure 2. Nelson's Checkermallow planting sites on Ridgefield NWR.



Water Howellia

Water howellia is also listed as threatened under ESA. It is a winter annual aquatic plant that grows 4-24 inches high in shallow seasonally flooded water bodies associated with oxbows or geological potholes that are typically surrounded by deciduous trees. It has extensively branched, fragile submerged or floating stems and narrow, linear, alternate leaves up to 2 inches in length. Water howellia usually flowers in May and June. Flowers are white to light purple in color, and bloom near the water surface. Seeds are produced in the summer and germinate in the fall when the ponds dry. This species is known to occur in California, Idaho, Montana, and Washington and was present historically in Oregon. In the project impact area, the species occurs in four ponds within the Blackwater Island Research Natural Area in the Carty Unit of the Ridgefield NWR (fig. 3). Threats to this species include unsuitable water level fluctuations which could interfere with seed production or germination, excessive turbidity, and invasive plant species, specifically reed canary grass.

Figure 3. Water Howellia occurrences at ponds on Ridgefield NWR.



**Water Howellia Occurrences
2009 to 2012**

Streaked Horned Lark

The streaked horned lark (STHL) is a candidate species that nests on islands in the lower Columbia River. The Service has recently proposed to list this species as threatened and has designated critical habitat, none of which occurs in the project area. These birds nest in sandy areas with sparse vegetation. Most nesting sites in the lower Columbia consist of transitional habitats on dredge material areas. Cottonwood Island appears to contain suitable STHL habitat, and the species occurs on other similar islands in the area. Surveys in 2010, however, failed to document the presence of STHLs on the island, and annual surveys there have been discontinued as recommended by the Streaked Horned Lark Working group. Most of the dredge material areas on Cottonwood Island are relatively new, and they have not developed the vegetation profile preferred by the species.

Columbian White-tailed Deer

The Columbian white-tailed deer population is comprised of two distinct herds that represent southern and northern fragments of the original range. The southern population occurs near Roseburg, OR in Douglas County. This portion of the herd was once considered endangered but has since recovered to over 6,000 animals and has been delisted. The northern or lower Columbia population is considered a Distinct Population Segment (DPS) and is listed as endangered under ESA (FWS 1983). The current range of this DPS consists of fragmented habitat within the Columbia River floodplain from Longview, WA to Brownsmead, OR (fig. 4). The DPS exists as a series of subpopulations separated by habitat barriers.

CWTD prefer parkland forest habitat (a mosaic of cover and meadow) and mixed deciduous habitat with moderate cover. As they utilize both browse and forage, they thrive where moderate cover, shrubs, and meadows are present. CWTD do not occur on Ridgefield NWR but are common on JBH and Puget Island. They occur in small numbers in the Cottonwood Island area, mostly on the Washington mainland adjacent to the island.

Recovery requires a total of at least 400 animals, with 3 secure subpopulations of 50 or more. Total population is currently estimated at about 600 animals with two secure subpopulations over 50 (USFWS 2012¹). One of these two viable subpopulations is currently under threat of flooding because of a failing dike that protects the JBH Mainland Unit. This unit supports a stable population of 70–90 animals. Dike failure would likely cause high mortality, reduce reproductive output, and significantly lower or eliminate the number of resident deer. A certain number of deer would probably cross the Columbia River and arrive at Tenasillahe Island where they would become part of that subpopulation. North of the Mainland is about 200 acres recently purchased by the Columbia Land Trust. This area would support a handful of deer. Outside of these sites, the JBH mainland unit is surrounded by marginal to poor-quality white-tailed deer habitat.

Areas outside the unit are typified by dense coniferous forests that support black-tailed deer. Flooding of the unit would force most of the resident deer into marginal or unsuitable habitats with a high degree of competition. In addition to lowered health and productivity, a certain amount of direct and indirect mortality would occur due to vehicle strikes (deer in flooded habitat tend to linger on the raised roadsides), drowning (deer caught in fences and vegetation), and starvation (deer in suboptimal habitat). Prior one-week flooding events have resulted in population drops of 27% (2009) and 19% (2006) and a reduction in fawn recruitment of 12% and 88%, respectively. The result of chronic flooding has not been documented but can be expected to be much higher. By comparison, a similar dike breach on Karlson Island eliminated the small herd there, and other intertidal areas on the lower Columbia support few if any deer.

VII. Management History on the Proposed Sites

The JBH Refuge, located in southwestern Washington and northwestern Oregon, was established in 1972 specifically to protect and manage CWTD. The Refuge manages over 5,600 acres of pastures, forested tidal swamps, brushy woodlots, marshes, and sloughs along the Columbia River to benefit wildlife, primarily CWTD. The primary capture site is on the JBH Mainland Unit, which consists of about 2,000 acres of lowland habitat typified by mixed deciduous vegetation, wetlands, and reed canary grass. The area forms a mosaic of forest and meadow providing habitat for CWTD and many other wildlife species (see USFWS 2010 for full description).

The secondary capture site is on Puget Island, WA. This is a roughly 5000-acre area that consists of Puget and Little Island. Most of the island is privately owned by a large number of small landowners. The island is mainly rural/residential. Agricultural interests include cattle and goat grazing and cottonwood farming. The area is a mosaic of pastures, woodlots, and several-acre home sites.

The Ridgefield NWR is located approximately 67 miles southeast of JBH Refuge in Ridgefield, Washington and is comprised of 5,218 acres of marshes, grasslands and woodlands with about 3,800 acres of terrestrial habitat. Ridgefield NWR is separated into 5 units. The Carty Unit supports mixed deciduous habitat with oak savannah comprising a large portion of the unit. The area contains some areas of moderate to sparse reed canary grass, with upland meadows supporting a variety of grasses and forbs. This area also contains large areas of dry soils above the normal flood level. The Roth unit represents more of a parkland mosaic, with dense deciduous tree stands and open meadows. The topography consists of fingers of high ground separated by swales. The three remaining units—Bachelor Island, River S, and Ridgeport Dairy—all contain large areas of low-lying meadow or seasonally-flooded wetlands with pockets of woody cover. Most of the open areas in the River S and Bachelor Island units consist of low-lying meadows and wetlands (see USFWS 2011 for full description of area). Deer will be released in the Roth and Carty units but some deer are expected to move into the other units in low numbers.

Cottonwood Island consists of about 1000 acres with large tracts of sand or sand covered

by a thin layer of moss and lichen. The island is uninhabited and is largely a dredge material site. The vegetated area consists of deciduous trees and shrubs (mainly cottonwood, willow, and scotch broom). The Army Corps of Engineering recently planted about 50 acres of shrubs for CWTD habitat enhancement, and JBH planted about 16 acres of forage. The Ports allow public access, and the island is a recreational site for camping, hunting, and fishing.

VIII. Description of Proposed Action:

The U.S. Fish and Wildlife Service (Service) proposes to translocate 50–65 Columbian white-tailed deer (CWTD) from the JBH Mainland Unit and surrounding area (Wahkiakum County, WA) to Cottonwood Island (Cowlitz County, WA) and the Ridgefield NWR (Clark County, WA). Animals will be collected using a variety of techniques including drop nets, drive nets, darting, and helicopter net-gunning. Attempts will be made to capture family groups and release them together. Chemical immobilization and sedation may be employed as required by a certified wildlife veterinarian who will be responsible for selecting the appropriate agents and doses.

VIX. Effects of the Proposed Action

Water howellia

Water howellia is an annual that occurs in seasonally flooded wetlands or water bodies that provide little suitable forage or cover for CWTD. Black-tailed deer currently occur in the vicinity and they do not appear to impact water howellia. It is expected that CWTD will exhibit similar behavior in regards to this species. It is possible that CWTD could cause some injury or mortality by trampling plants while wading through ponds, especially during the flowering and seed-set periods. This impact would likely be localized and uncommon. A short period of time may occur when the pond dries and the plant is still succulent that some grazing may occur. This might occur at very low intensity and would happen after seeding, therefore it would not be expected to affect the life cycle of the plant.

Nelson's checkermallow

Browsing on Nelson's checkermallow by black-tailed deer has been observed at the Texas Island site in 2012. The impacts were largely limited to the flower heads and some trampling. Deer browsing has not been observed at the other reintroduction sites, possibly because they are located in open pastures with little other forage or cover for black-tailed deer. It is possible that CWTD would occasionally browse and trample Nelson's checkermallow at the Texas Island site as the two deer species will likely use similar habitat at Ridgefield NWR.

Nelson's checkermallow is a perennial plant that will reproduce from both seed and rhizomes. It can survive low levels of deer grazing (Jeff Dillon, USFWS, Portland, OR, pers. comm.) and occasional mowing. Grazing and mowing also reduce plant

competition with other species, and the Refuge mows the planting sites after the plants have senesced each year. Nelson's checkermallow occurs in many areas with white-tailed deer populations, and we would not expect overuse by this particular herd. The Refuge monitors the Nelson's checkermallow sites several times a year and performs annual population censuses. If deer browsing is observed and appears to be impacting the survival of the plants, the Refuge may install fence to exclude deer from the planting sites. Fencing is not currently used to allow for equipment access for annual mowing.

Streaked Horned Larks

While Cottonwood Island may have some appropriate nesting habitat for Streaked horned larks, no documented sightings have occurred there. It is possible that as the dredge material sites undergo vegetation succession, the area may attract nesting birds, but at this time the potential for interaction between CWTD and STHL appears to be extremely low to nonexistent. In addition deer will be released in wooded areas well away from potential STHL nesting habitat. STHL nesting habitat offers little in the way of food or cover for CWTD, and they will be expected to avoid these areas, using them only occasionally to cross from one area to another.

Columbian White-tailed Deer

Translocation of CWTD is expected to result in an independent subpopulation of deer on Ridgefield NWR. Translocation, however, can result in deer mortalities. This mortality varies by technique, location, and year. White and Bartmann (1994) documented 2-week mortality of 5 and 11% for net-gunning and drop-netting, respectively, for mule deer fawns. 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%, compared to 23.5% for rocket-netting and 16.2% for corral trapping. DeYoung (1988) reported a mortality rate for net-gunning of 2.4%.

For CWTD captures in the lower Columbia, ground capture techniques (drop-netting, drive-netting, and darting) have averaged 4.5% capture-related mortality for 6 translocation efforts (USFWS 2012²). Helicopter net-gunning has averaged 12.3% capture-related mortality for 4 efforts, but two efforts have resulted in a rate of 29.8% (17.6% for all net-gunning combined). We intend to use a variety of methods during this translocation effort to increase our chances of capturing 65 deer. While we prefer to use ground capture, we are uncertain that goals can be met using only those methods. Helicopter techniques allow for a larger number of deer captured in a short time frame and can be conducted in areas of the refuge that are otherwise inaccessible or unsafe for ground capture.

We intend to capture 75% of the deer with ground capture techniques and 25% of the deer with helicopter net-gunning. If we assume 4.5% mortality for ground capture and 17.6% for net-gunning, we would expect a capture mortality of about 6 deer in 65 (actual capture-related mortality is expected to be less than this figure because deer will be sedated prior to transport for this effort). This rate is significantly less than would be encountered if the project did not take place and a dike failure occurred.

Post-release mortality is less understood. Because deer are given antibiotics and supplements, they often have better survival than resident deer. But that can be offset by mortality resulting from unfamiliar surroundings (e.g., vehicle strikes or poor nutrition). Clark (USFWS 1988) translocated 64 deer from Puget Island in 1986–88 and found no higher mortality than the baseline rate of resident deer (USFWS 2005); however, post-release mortality can vary widely due to deer condition and factors at the release site. Jones and Witham (1990) summarized mortality in 10 deer translocation efforts, showing overall mortality rates (4–16 months) of hunted populations from 25–85%. Natural mortality varies widely depending on year and area. Deer in Llano County, TX experienced 4–52% natural annual mortality (not including hunting) over 6 years (Teer 1984). Overall mortality for lower Columbia WTD captures has been less than 25% for 8 efforts and 29–49% for 4 efforts. Current habitat conditions at the capture site are good, and we expect good physical condition of the deer before capture. Observation at the release site suggests moderate to good habitat quality and a safe distance from major highways (USFWS 2012³).

For the translocated deer, we expect mortality due to translocation efforts to be lower than the expected mortality if the deer were left on JBH and the dike failed. If successful, the translocated deer will form a sustainable subpopulation on secure habitat. From a recovery standpoint this nascent subpopulation would offset the lost JBH subpopulation. If the dike does not breach, we expect the release of competition on JBH to increase deer productivity, leading to a rapid repopulation of the Mainland Unit. This scenario would result in an additional secure subpopulation and a significant advancement in the conservation of this species. Although this action is expected to result in short term negative impacts on individual CWTD because of potential capture mortality, this mortality will be lower than pursuing no action and allowing deer to stay on the JBH Mainland. This action is expected to result in beneficial long-term impacts on the population, ultimately enhancing the distribution and viability of the lower Columbia DPS of CWTD.

No interrelated or interdependent actions are associated with the project. The project will not result in indirect effects on these listed species.

VIII. References/Literature Cited

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- Hawkins, R.E and G.G. Montgomery. 1969. Movements of translocated deer as determined by telemetry. *J. Wildl. Manage.* 33:196-203.
- Jones J.M and J.H. Witham. 1990. Post-translocation survival and movements of metropolitan white-tailed deer. *Wildl. Soc. Bull.* 18:434-441.
- 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*

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- 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.
- Teer, J. G. 1984. Lessons from the Llano Basin, Texas. Pages. 261–290. *in* L. K. Halls, editor. *White-tailed deer: ecology and management*. Stackpole Books, Harrisburg, Pennsylvania, USA.
- USFWS. 1983. Revised Columbian white-tailed deer recovery plan. U.S. Fish and Wildlife Service, Olympia, WA.
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- USFWS 2012². Report of activities for Columbian white-tailed deer, recovery subpermit WNWR-9 calendar year 2012. USFWS report. Julia Butler Hansen Refuge for Columbian White-tailed Deer, Willapa Bay National Wildlife Refuge Complex, Cathlamet, WA. 9 pp.
- USFWS 2012³. Habitat suitability of Ridgefield NWR for Columbian white-tailed deer. USFWS report. Julia Butler Hansen Refuge for Columbian White-tailed Deer,

Willapa Bay National Wildlife Refuge Complex, Cathlamet, WA. 4 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.

IX. Effect determination and response requested.

A. Listed species/critical habitat

Determination

Response Requested

No affect

concurrence

Streaked Horned Lark

Eremophila alpestris strigata

Not likely to adversely affect

concurrence

Water Howellia

Howellia aquatilis

Nelson's Checkermallow

Sidalcea nelsoniana

Likely to adversely affect

formal consultation

Columbian White-tailed Deer

Odocoileus virginianus leucurus

Section 7 Evaluation

Initiating Officer Jackie Ferner

Date 12/11/12

CONCURRENCE

NONCONCURRENCE

Reviewing ESO
Field Supervisor _____

Date _____

CONCURRENCE

NONCONCURRENCE

III. Effects Determination and Response Requested:

Determination

A. no effect/no adverse modification

species: _____ status: _____
species: _____ status: _____
critical habitat: _____

B. may affect, but is not likely to adversely affect species/adversely modify critical habitat

species: Streaked Horned Lark status: Proposed
species: Water Howellia status: Threatened
species: Nelson's Checkermallow status: Threatened
critical habitat _____

C. may affect, and is likely to adversely affect species/adversely modify critical habitat

species: Columbian White-tailed Deer status: Endangered
species: _____ status: _____ *
critical habitat: _____ *

D. may affect, and is likely to adversely affect species/adversely modify critical habitat

species: _____ status: _____ **
species: _____ status: _____ **
proposed critical habitat: _____ **

* *Formal Consultation is required, check the appropriate concurrence statement below and sign; then proceed to Part 3, Section IV (Formal Consultation).*

** *For Proposed Species and Critical Habitat, or Candidate Species a conference with Branch of Refuge Biology staff is required; a Formal Consultation is not required.*



Signature of Preparer

12/7/12
Date

Evaluation by Project Leader:

1. For A & B above: Concurrence _____ Non-concurrence _____
2. For C above: Formal consultation required _____
3. For D above: Conference required _____



Signature of Project Leader
Willapa National Wildlife Refuge Complex

12/10/12
Date



Signature of Project Leader
Ridgefield National Wildlife Refuge

12/11/12
Date