

E.3 WATERFOWL HUNTING COMPATIBILITY DETERMINATION

Use: Waterfowl Hunting

Refuge Name: Turnbull National Wildlife Refuge, Spokane County, near Cheney, Washington

Establishing and Acquisition Authorities:

- Executive Order 7681, dated July 30, 1937
- Migratory Bird Conservation Act [16 U.S.C. 715-715d, 715e, 715f-715r]
- Refuge Recreation Act as amended (16 U.S.C. 460k-460k-4)
- Fish and Wildlife Act of 1956, as amended [16 U.S.C. 742a-742j, not including 742l]

Refuge Purposes:

- “... as a Refuge and breeding ground for migratory birds and other wildlife...” (Executive Order 7681, dated July 30, 1937)
- “... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” (16 U.S.C. 715d [Migratory Bird Conservation Act])
- “... suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ...” (16 U.S.C. 460k-1) “ ... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ...” 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).
- “... for the development, advancement, management, conservation, and protection of fish and wildlife resources ...” (16 U.S.C. 742f(a)(4) “... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ...” 16 U.S.C. 742f (b)(1) (Fish and Wildlife Act of 1956).

National Wildlife Refuge System Mission: The mission of the National Wildlife Refuge System is “...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.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

Description of Use: Turnbull NWR lands currently are not open to waterfowl hunting. Under the CCP and after preparation and approval of a Hunt Plan, the US Fish & Wildlife Service will implement an annual 2-day youth waterfowl hunt in late September within the boundaries of Turnbull NWR. Youth waterfowl hunting will be open on approximately 140 acres of wetlands and associated shoreline each year. The designated waterfowl hunting area is the north side of Upper Turnbull Slough. Hunting areas will be posted with signs. Hunting will be allowed consistent with annual State hunting regulations. Hunter numbers will be limited to two with an adult supervisor per spaced hunting site. Youths must be accompanied by an adult. By spacing hunters at least 300 yards apart, we estimate there will be sites available for six to eight hunting blinds across Upper Turnbull Slough. Under this scenario, the Refuge could accommodate approximately 6-16 youth hunters per day. No construction of permanent facilities will be made except for spaced numbered posts noting designated hunting blind. Dogs will be allowed for retrieval; however they must be under control of the hunter at all times. Should an additional 300+ acres of restored wetland be added to the Refuge through acquisition or conservation easement in the identified Stewardship Area, the U.S. Fish and Wildlife Service would consider expanding the waterfowl hunt on the existing Refuge into the regular state waterfowl season. Under this scenario, we envision the Refuge accommodating approximately 24-36 hunters per day. The waterfowl season will last 3 weeks to

3 months depending upon the season/freeze up. See description of the use in Chapter 2 of the CCP (US FWS 2006). Also see Map 3 in Chapter 2 of the CCP for locations and facilities of the use.

This use is defined as a wildlife-dependent recreational use under the Improvement Act. See Implementation section (Appendix F of the CCP) to determine priority of projects associated with these uses as funding becomes available.

Use Within the Expansion Area: Waterfowl hunting currently occurs within some portions of the Refuge expansion area. Philleo Lake is one area within the expansion that currently receives waterfowl hunting from a private duck club. There are no public lands that support waterfowl hunting within the expansion area at this time.

Compatible waterfowl hunting could be allowed in the future expansion area in designated localities if large enough blocks are added. Since we do not presently know which landowners may be willing sellers and which may not, we are not able to address future hunting use in specific locations at this time. However, if Philleo Lake is acquired, waterfowl hunting could be permitted at this area, under similar program management and stipulation features as waterfowl hunts permitted on the Refuge.

Availability of Resources: The following funds will be required to run a program as designed under the CCP. Currently, no funds are being expended on this program, so the funds below represent all new funding needs. For the one-time expenses, all available sources will be investigated.

Activity	One Time Expense	Recurring Expense
Development and Administration of Hunt Plan and associated documentation	\$10,000	\$500
Placement and maintenance of signs	\$1,000	\$500
Law Enforcement Staffing	0	\$1,200
Biological staff to monitor hunt program	0	\$1,200
Totals	\$11,000	\$3,400

Offsetting revenues:

Hunt permit fees \$240-\$480 (@\$10/hunter per day)

Anticipated Impacts of the Use(s): The direct effect of hunting on waterfowl is mortality, wounding, and disturbance.

Effect on distribution and use of habitat: Belanger and Bedard (1995) concluded that disturbance caused by hunting can modify the distribution and use of various habitats by birds (Owens 1977; White-Robinson, 1982; Madsen 1985). In Denmark, Madsen (1995) experimentally tested disturbance effects of hunting by the establishment of two experimental reserves where hunting activity was manipulated such that sanctuary areas were created in different parts of the study area in different hunting seasons. In both areas, waterbird numbers increased, most strongly in hunted species (3-40 fold increase), with highest densities found in sanctuary areas, irrespective of where these sanctuaries were sited. At Sacramento National Wildlife Refuge, in California, researchers found statistically significant differences in the densities of northern pintails among hunting units, units adjacent to hunting units, units adjacent to auto tour route, and units isolated from disturbance (Wolder 1993). Prior to the opening of hunting season, pintail used units in proportion to their availability, indicating no preference to particular areas. During

the hunting season, 50-60% of the pintails on the Refuge were located on the isolated units that contained 26-28% of the Refuge wetlands, suggesting a strong waterfowl preference for areas of little human activity. Units along the auto tour route and adjacent to hunting units maintained pintails at similar proportions to their availability. Three to sixteen percent of the pintails on the Refuge were located on hunted units (36-40% of the available habitat) during non-hunt days (4 days per week) and almost entirely absent on days when hunting was taking place, indicating an avoidance of the hunted areas.

Belanger and Bedard (1989) studied the effect of disturbances to staging greater snow geese in a Quebec bird sanctuary over 471 hours of observation. They found that the level of disturbance (defined as any event causing all or part of the goose flock to take flight) that prevailed on a given day in fall influenced goose use of the sanctuary on the following day. When disturbance exceeded two events per hour, it produced a 50% drop in the mean number of geese present in the sanctuary the next day.

Effects on energetics and survival: Hunting limits access of waterfowl to food resources and may modify migration timing. Madsen (1988 as cited by Dalgren and Korschgen 1992) suggested that hunting on the coastal wetlands of Denmark modified waterfowl movements and caused birds to leave the area prematurely. However, Kahl (1991) suggested that lack of adequate access to food may decrease survival of canvasbacks by causing birds to remain on a staging site longer and forage under suboptimal conditions, or by causing birds to migrate in shorter flights with more frequent stops.

Disturbance due to hunting has caused waterfowl to cease feeding or resting activities, thus decreasing energy intake and increasing energy expenditure. At Chincoteage NWR, Morton et al. (1989a) found that wintering black ducks experienced reduced energy intake while doubling energy expenditure by increasing the time spent in locomotion in response to disturbance. Belanger and Bedard (1995) in a quantitative analysis, estimated that neither the response to disturbance by flying away and promptly returning to the foraging site to resume feeding, nor the response of flying away (leaving the foraging site for a roosting site - thus interrupting feeding) allowed snow geese to balance their daytime energy budget. At high disturbance rates (>2/hour - these included hunting and transport related disturbance), Belanger and Bedard estimated that an increase in night feeding as a behavioral compensation mechanism could not counterbalance energy lost during the day. Likewise, geese could not compensate for a loss in feeding time by increasing their daily foraging behavior to maximize food intake during undisturbed periods. Belanger and Bedard suggested mitigation with spatial or temporal buffer zones.

Considerations for design of hunt units: Fox and Madsen (1997) found that mobile hunting activity close to roosting and or feeding areas is more disturbing than hunting from fixed points or where birds are shot moving between such areas. For sanctuary areas, they recommended areas with regular shape, maximum practicable size, and with a diameter of three times the escape flight distance (at a minimum) of the most sensitive species present. Flock size also affects flush distance, larger flocks tending to react at a greater distance. Based on estimated flight distances from boats, Kahl (1991) recommended that sanctuaries should be at least 1.5-2.0 km square and encompass as much of a feeding area as feasible.

This use may impact threatened and endangered species, including Spalding's silene and bald eagle. Impact to the silene populations are expected to be minimal. Disturbance impacts to the bald eagle would be expected to increase, but could be reduced to a certain extent through the design of public use facilities. See Section 4.1.7 of the Draft CCP/EA (US FWS 2005) for further discussion of the effects of this use on threatened and endangered species.

Impacts to other wildlife-dependent recreational uses: Hunting (especially gunshot noise) has the potential to disturb Refuge visitors engaged in other wildlife-dependent recreational uses. To minimize this potential conflict, the Refuge has designated defined hunting areas that will be separated spatially

from the Public Use Area and the Columbia Plateau Trail. See Map 3 in Chapter 2 of the CCP (US FWS 2006) for public use locations and facilities.

Summary and application to Turnbull NWR: The studies cited above display the variety and scale of negative impacts to waterfowl from hunting. In full consideration of these studies, a youth waterfowl hunting program at Turnbull, were it to be implemented as envisioned under the CCP, is not expected to have a major effect on Refuge waterfowl populations. The most likely effect would be a shift in waterfowl populations away from hunted areas to non-hunted areas on the Refuge. Total fall wetland habitat available to waterfowl at the present time is estimated at 800 acres. Under the CCP, approximately 17.5% of the existing fall Refuge wetland base will be open to waterfowl hunting. Hunters will be limited to 25 shells per day per hunter, with non-toxic shot permitted only.

By its very nature, waterfowl hunting has very few if any positive effects on waterfowl and other birds while the activity is occurring, but it is well recognized that this activity has given many people a deeper appreciation of wildlife and a better understanding of the importance of conserving their habitat, which has ultimately contributed to the Refuge System mission. At Turnbull NWR, efforts will be made to ensure that hunting impacts will be minimal, by restricting the hunt to a two day youth, and requiring hunting from a limited number of fixed spaced hunting sites.

Anticipated Impacts of the Use within the Expansion Area: A block of lands would have to be acquired, sufficient in size to support a quality hunt program and sanctuary area, before a hunt program could be initiated. Staffing would also have to increase to adequately manage and enforce the hunt program. Preliminary stipulations that would have to be met before a waterfowl hunting program could be implemented in the expansion area include:

- 1) There is no significant indirect, direct, or cumulative threat anticipated to human health or safety;
- 2) There is no significant indirect, direct, or cumulative threat anticipated to natural or cultural resources;
- 3) The use is consistent with management of existing Turnbull NWR lands and would contribute to achieving Refuge goals;
- 4) The newly acquired lands represent a meaningful unit within which to manage the activity; and
- 5) There are no significant anticipated conflicts with other wildlife-dependent recreational uses.

If and when the US Fish & Wildlife Service acquires land within the expansion area, there could be opportunities for compatible waterfowl hunting. Due to the similarity of species and habitats with current Refuge owned lands, this use would be anticipated to have impacts similar to those described for current Refuge owned lands. If the Refuge manager determines that those opportunities would substantially change the conditions under which this use was found compatible, or that there is new, substantive information regarding the effects of the use, this CD would need to be re-evaluated.

Public Review and Comment: Public review and comments were solicited in conjunction with release of the Draft CCP/EA (US FWS 2005) in order to comply with the National Environmental Policy Act and with Service policy. Appendix L of the CCP (US FWS 2006) contains a summary of the comments and Service Responses. Public review of a step down Hunt Plan (see Stipulations) as required under Service policy will be conducted before opening the Refuge to hunting.

Determination:

_____ Use is Not Compatible

Use is Compatible With Following Stipulations

Stipulations Necessary to Ensure Compatibility:

User stipulations:

- Hunters must obey all state and federal hunting regulations.
- Daily limit of 25 shells per hunter, non-toxic shot only.
- Hunting permitted from stationary posted spaced hunting sites only.
- Hunting limited to the early fall two day Youth Waterfowl Hunting season.
- Hunting dogs will be under hunter control at all times.
- Before expanding the waterfowl hunt to the regular state hunting season, an additional 300+ acres of wetlands shall be restored in the Stewardship area surrounding the Refuge.

Administrative stipulations:

- Allowing the use as described is contingent upon finding the full funding to properly manage and administer the use.
- Prior to opening of a hunt, a complete Hunting Plan package (Hunting Plan, NEPA documentation, state concurrence, Section 7 ESA consultation, and Federal register regulations) will be completed as required under Refuge System policy. Hunting will not be allowed until regulations allowing hunting have been published in the Federal Register.
- The U.S. Fish & Wildlife Service will install 6-8 stationary blinds spaced at least 300 yards apart to minimize crowding.
- Hunt areas will be well separated from other public use areas of the Refuge.
- Hunt areas and no hunting zones will be well posted.
- Refuge staff will issue hunt permits, conduct law enforcement, maintain hunting facilities, and monitor wildlife impacts.

Justification: Waterfowl hunting at Turnbull NWR as described in this CD contributes to the mission of the National Wildlife Refuge System by providing a wildlife-oriented recreational benefit to Americans. By limiting the numbers of hunters and days of hunting as well as always providing sanctuary from human disturbance in other areas of the Refuge, this waterfowl hunting program will not interfere with the Refuge achieving its purposes of providing *sanctuary* and a *breeding ground for migratory birds*. The use contributes to the purpose of *wildlife-oriented recreational development*. Hunting is also one of the six wildlife-dependent recreational uses of the National Wildlife Refuge System as stated in the National Wildlife Refuge System Improvement Act of 1997.

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

2021 Mandatory 15-year Re-Evaluation Date (for priority public uses)
_____ Mandatory 10-year Re-Evaluation Date (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

- ___ Categorical Exclusion without Environmental Action Statement
- ___ Categorical Exclusion and Environmental Action Statement
- Environmental Assessment and Finding of No Significant Impact
- ___ Environmental Impact Statement and Record of Decision

Literature Cited:

- Belanger, L. and Bedard, J. 1989. Responses of staging greater snow geese to human disturbance. *J. Wildl. Management* 53:713-719.
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- Dahlgren, R.B. and C.E. Korschgen. 1992. Human disturbances of waterfowl: an annotated bibliography. *Resource Publ.* 188. U.S. Fish and Wildlife Service, Washington, D.C., 62 pp.
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- Madsen, J. 1985. Impact of disturbance on field utilization of pink-footed geese in West Jutland, Denmark. *Biol. Conserv.* 33:53-63.
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- Owens, N. W. 1977. Responses of wintering brant geese to human disturbance. *Wildfowl* 28:5-14.
- White-Robinson, R. 1982. Inland and saltmarsh feeding of wintering brent geese in Essex. *Wildfowl* 33:113-118.
- Wolder, M. 1993. Disturbance of wintering northern pintails at Sacramento National Wildlife Refuge, California. M.S. Thesis, Humboldt Stat Univ., Arcata, California, 62 pp.
- U.S. Fish and Wildlife Service. 2005. Environmental Assessment for the Draft Refuge Comprehensive Conservation Plan, Turnbull National Wildlife Refuge.
- U.S. Fish and Wildlife Service. 2006. Comprehensive Conservation Plan for Turnbull National Wildlife Refuge.

Signatures:

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3/9/07
Date

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3/9/07
Date

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Regional Chief, National Wildlife Refuge System *Cowdell. Bohan*

3/22/07
Date

E.4 ELK HUNTING COMPATIBILITY DETERMINATION

Use: Elk Hunting

Refuge Name: Turnbull National Wildlife Refuge, Spokane County, near Cheney, Washington

Establishing and Acquisition Authorities:

- Executive Order 7681, dated July 30, 1937
- Migratory Bird Conservation Act [16 U.S.C. 715-715d, 715e, 715f-715r]
- Refuge Recreation Act as amended (16 U.S.C. 460k-460k-4)
- Fish and Wildlife Act of 1956, as amended [16 U.S.C. 742a-742j, not including 742i]

Refuge Purpose(s):

- “... *as a Refuge and breeding ground for migratory birds and other wildlife...*” (Executive Order 7681, dated July 30, 1937)
- “... *for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.*” (16 U.S.C. 715d [Migratory Bird Conservation Act])
- “... *suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ...*” (16 U.S.C. 460k-1) ... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ... 16 U.S.C. 460k-2 (Refuge Recreation Act (16 U.S.C. 460k-460k-4), as amended).
- “... *for the development, advancement, management, conservation, and protection of fish and wildlife resources ...*” (16 U.S.C. 742f(a)(4) ... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ... 16 U.S.C. 742f(b)(1) (Fish and Wildlife Act of 1956).

National Wildlife Refuge System Mission: The mission of the National Wildlife Refuge System is “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.” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee])

Description of Use: No hunting occurs on the Refuge at the current time. Elk hunting will be implemented under the CCP to respond to issues related to elk management, especially: a) heavy browsing of young aspen and other deciduous shrubs and trees on the Refuge; b) neighbor complaints of elk damage to hay, fences and other property items; and c) to facilitate hunting as a wildlife-dependent recreational use as specified under the Improvement Act.

Under the CCP, elk hunting will occur each year, but the number of permits issued and length and number of seasons will vary depending on aspen monitoring results conducted each year. Elk hunting will occur outside the Public Use Area in special safe hunting areas designated by the Refuge Manager. Areas tentatively identified include the west side of the Refuge below the Turnbull Slough, and the east side of the Refuge north of the Public Use Area and east of the Turnbull Pines Research Natural Area. Hunting areas will be specified in a hunt plan. The hunt program will permit vehicles at parking facilities accessing these hunt areas. Hunters will access hunting areas by foot. Key facilities involved include parking areas at two to three hunter access points. Special needs for disabled hunters will be accommodated upon request.

Under the CCP, approximately 6-10 elk hunt permits may be issued for each of the hunt seasons proposed in any particular year (example: 6-10 permits for an archery season plus 6-10 permits for a youth rifle hunt). The actual number of permits will be determined after consultation with Washington Fish & Wildlife Department and based on wildlife and habitat monitoring results. All hunting will occur in the months of September, October, November, and/or December during legal hunting hours. No overnight camping will be permitted. See Chapter 2 of the CCP (US FWS 2006) for a detailed description of the use under the CCP. Also see Map 3 in Chapter 2 of the CCP for locations and facilities of the use.

This use is defined as a wildlife-dependent recreational use under the Improvement Act. See Implementation section (Appendix F of the CCP) to determine priority of projects associated with these uses as funding becomes available.

Use Within the Expansion Area: Chapter 2 of the CCP identifies areas in which the Service will seek to acquire land from willing sellers outside of the current approved acquisition boundary [Refuge expansion area]. Elk hunting currently occurs within the Refuge expansion areas. Compatible elk hunting could be allowed in the future expansion area in designated localities if large enough land blocks are added. Since we do not presently know which landowners may be willing sellers and which may not, we are not able to address future hunting use in specific locations at this time.

Availability of Resources: The following funds will be required to run a program as designed under the CCP. Currently, no funds are being expended on this program, so the funds below represent all new funding needs. For the one-time expenses, all available sources will be investigated.

Activity	One Time Expense	Recurring Expense
Development and administration of Hunt Plan and associated documentation	\$20,000	\$2,500
Development and maintenance of hunter parking	\$48,000	\$2,000
Placement and maintenance of signs	\$1,000	\$ 500
Law enforcement staffing	0	\$10,000
Biological staff for monitoring effects	0	\$ 5,000
Totals	\$69,000	\$20,000

Offsetting revenues: (recurring)
Hunt permit fees \$ 3,000

Existing Refuge resources are not adequate to properly and safely administer the use as envisioned under the CCP. To implement the use, the Refuge will pursue partnerships with appropriate cooperators and/or volunteers. Additional funds and in-kind services will be needed, especially to assist in costs of administering and patrolling the hunt.

Anticipated Impacts of the Use(s):

Impacts to Wildlife and Habitats: Direct mortality to elk associated with the hunt would of course occur. Some wounding would occur as well. In all cases, the Refuge would seek to minimize needless elk mortality while providing a quality hunt experience and obtaining habitat objectives.

Foot travel associated with elk hunting could potentially result in trampling of vegetation. Since elk hunting would involve small numbers of hunters, and take place during the time of the year most understory plants are dormant, this activity would likely have little direct impact on any native plant species.

The activity of hunters pursuing elk on the Refuge could also disturb some wildlife species. These potential impacts are described more fully in the Refuge's 2006 Wildlife Observation CD (USFWS 2006). Hunters walking in close proximity to wetlands and associated gun fire can result in behavioral responses by waterfowl and other wetland birds. Any portions of the Refuge that may be open to elk hunting would include wetlands. Waterfowl use, however, occurs only on the permanent and semi permanent wetlands of the Refuge through mid-November when freeze-up usually occurs and waterfowl move to rivers and larger, deeper lakes off-Refuge. This short period of overlap between the elk hunting season and the period of peak fall waterfowl concentrations coupled with a small number of hunters and a hunting season tied into habitat damage, would likely result in only minimal impacts to waterfowl.

This use may impact threatened and endangered species, including Spalding's silene and bald eagle. Impact to the silene populations are expected to be minimal. Short-term disturbance impacts to the bald eagle would be expected to increase inside the hunt units. Some short-term effects to bald eagle use within the hunt units would also be expected. Wintering populations of bald eagles have shown susceptibility to disturbance resulting in disrupted foraging behavior and changes in social dynamics between other species in the avian scavenger guild (Skagen 1991) and avoidance of areas with high disturbance (Stalmaster and Newman 1978). Stalmaster and Newman (1978) also found that recreational activities occurring within 250 meters of roosting and foraging areas resulted in changes in distribution patterns by displacement to areas of lower human activity. With regards to hunting, Stalmaster and Newman (1978) found that gunshots were the only noises that elicited overt escape behavior by eagles in their study. Edwards (1969) also found that gunshots could be used to flush eagles from their roost (cited in Stalmaster and Newman 1978). Hunt units would likely incorporate portions of large permanent wetlands utilized by bald eagles for foraging, potentially placing hunters within 250 meters of this habitat.

Elk hunting can also have indirect impacts to habitat by reducing populations or redistributing elk thereby changing densities of elk in a given area. Under very high densities, elk can damage habitats through overgrazing and trampling resulting in the loss of preferred forage species, soil damage, increased erosion and spread of less palatable exotic species on disturbed areas. Generally elk populations (unless extremely large) do not impact the ponderosa pine and steppe communities found on the Refuge because of the low preference for pine and the resistance of most grasses and forbs to moderate grazing pressure. The only impacts to pine forest that have been observed on the Refuge to date have been in the tall shrub phase of the Ponderosa pine/snowberry association. In these areas high use of blue elderberry, serviceberry, chokecherry and spiraea has occurred impacting growth form and reproduction. Elk use and preference for aspen and other deciduous browse is, however, well documented (Debyle 1985). Under high elk densities and limited habitat, elk browsing during winter can have a negative impact on the regeneration of aspen and other deciduous trees and shrubs. Elk browse the tips of new shoots below 2.5 meters and also eat the bark of mature aspen. When browsing intensity is high enough to remove the majority of the current years' growth, aspen develops a shrub form or the new sprouts are killed. Without recruitment of an adequate density of well formed aspen stems, mature trees that die will not be replaced and the stand will decline.

It is important to note that redistributing elk from areas of high density to areas providing relatively greater security without reductions in population size will only transfer impacts. If hunting is applied on an annual basis in the same units, elk may alter use patterns and begin using the remaining no-hunting zones to a greater degree. These no-hunting zones would be private parcels and portions of the Refuge

set aside for other public uses. The main no-hunting zone on the Refuge would be the Public Use Area. This portion of the Refuge has historically received low elk use as a result of the relatively greater level of human disturbance. Since disturbance associated with hunting has a greater influence on elk behavior than other public uses (Skovlin 1982), elk will likely begin to habituate to the level of human disturbance in the no shooting areas (Ward 1973). Increased density of elk in these areas may increase the intensity of grazing and browsing resulting in habitat damage.

Impacts to other wildlife-dependent recreational uses: Hunting (especially gunshot noise) has the potential to disturb Refuge visitors engaged in other wildlife-dependent recreational uses. To minimize this potential conflict, the Refuge has designated defined hunting areas that would be separated spatially from the Public Use Area and the Columbia Plateau Trail. See Map 3 for public uses and facilities.

Elk hunting could have a positive effect on wildlife observation/photography quality. Hunt areas would be located outside the boundaries of the Public Use Area and buffered from the Columbia Plateau Trail and County roadways. Although uncertain, wildlife observation/photography opportunities could be increased as a variety of animals move away from the hunted zones toward no hunting zones, including the Public Use Area. The ultimate outcome for the visitor is that higher numbers of animals may be visible, but the aesthetic value of the experience may be diminished somewhat by the occasional sound of shots.

Anticipated Impacts of the Use within the Expansion Area: A block of lands would have to be acquired, sufficient in size to support a quality hunt program and sanctuary area, before a hunt program could be initiated. Staffing would also have to increase to adequately manage and enforce the hunt program. Preliminary stipulations that would have to be met before an elk hunting program could be implemented in the expansion area include:

- 1) There is no significant indirect, direct, or cumulative threat anticipated to human health or safety;
- 2) There is no significant indirect, direct, or cumulative threat anticipated to natural or cultural resources;
- 3) The use is consistent with management of existing Turnbull NWR lands and would contribute to achieving Refuge goals;
- 4) The newly acquired lands represent a meaningful unit within which to manage the activity; and
- 5) There are no significant anticipated conflicts with other wildlife-dependent recreational uses.

If and when the Refuge acquires land within the expansion area, there could be opportunities for compatible elk hunting. Due to the similarity of species and habitats with current Refuge owned lands, this use would be anticipated to have impacts similar to those described for current Refuge owned lands. If the Refuge manager determines that those opportunities would substantially change the conditions under which this use was found compatible, or that there is new, substantive information regarding the effects of the use, this CD would need to be re-evaluated.

Public Review and Comment: Public review and comments were solicited in conjunction with release of the Draft CCP/EA (US FWS 2005) in order to comply with the National Environmental Policy Act and with Service policy. Appendix L of the CCP (US FWS 2006) contains a summary of the comments and Service Responses. Public and state review will also be solicited during preparation of the step-down Hunting Plan subsequent to approval of the CCP.

Determination :

Use is Not Compatible

Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility:

User stipulations:

- Hunters must obey all state and federal hunting regulations.
- Hunting permitted from within designated hunting areas only.
- Access will be walk-in only except upon special request to reasonably accommodate disability.

Administrative stipulations:

- Allowing the use as described in The CCP is contingent upon finding the full funding to properly manage and administer the use. However, if funds are short for construction of facilities associated with this use, that should not be construed as invalidating the compatibility of the use overall.
- Prior to opening of a hunt, a complete Hunting Plan package (Sport Hunting Plan, NEPA documentation, state concurrence, Section 7 ESA consultation regulations, and Federal Register regulations) will be completed as required under Refuge System policy. Hunting will not be allowed until regulations allowing hunting have been published in the Federal Register.
- Hunt units will be well posted and separated from other public use areas of the Refuge including the main Public Use Area, Columbia Plateau Trail, Turnbull Laboratory for Ecological Studies, and County roads to assure public safety.
- The Refuge will vary hunt units to reduce impacts to non-target wildlife by providing spatial and /or temporal sanctuary from disturbance associated with elk hunting.
- To the extent possible, the Refuge will vary hunt units spatially and/or temporally to also minimize habituation by elk and their concentration in no shooting zones.
- Approximately 6-10 elk hunt permits may be issued for each of the hunt types (i.e. archery hunt, rifle hunt) proposed in any particular year. The actual number of permits will be determined after consultation with Washington Fish & Wildlife Department and based on wildlife and habitat monitoring results.

Justification: Elk hunting at Turnbull NWR as described in this CD contributes to the mission of the National Wildlife Refuge System by conserving aspen stands through elk management. Elk browsing of aspen is a known concern on the Refuge. Elk hunting will reduce and redistribute elk densities which can decrease browsing intensity on aspen sprouts enough to allow escapement and height growth putting them beyond the reach of elk. Disturbance concerns can be incorporated into the design of the hunt area, mitigating these impacts to a certain extent. Elk hunting also contributes to the mission by providing a wildlife-oriented recreational benefit to Americans. By limiting the numbers of hunters and days of hunting as well as always providing sanctuary from human disturbance in other areas of the Refuge, an elk hunting program will not interfere with the Refuge achieving its purposes of providing *sanctuary* and a *breeding ground for migratory birds and other wildlife*. The use also contributes to the purposes of *wildlife-oriented recreational development* and *the protection of natural resources*. Hunting is also one of the six wildlife-dependent recreational uses of the National Wildlife Refuge System as stated in the National Wildlife Refuge System Improvement Act of 1997.

Mandatory Re-Evaluation Date (provide month and year for "allowed" uses only):

2021 Mandatory 15-year Re-Evaluation Date (for priority public uses)
____ Mandatory 10-year Re-Evaluation Date (for all uses other than priority public uses)

NEPA Compliance for Refuge Use Decision (check one below):

- Categorical Exclusion without Environmental Action Statement
- Categorical Exclusion and Environmental Action Statement
- Environmental Assessment and Finding of No Significant Impact
- Environmental Impact Statement and Record of Decision

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Date

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