Appendix C: Replies to Sierra club comments to the Greenwater Elk Forage Management Project Scoping Letter

The Forest Service sent scoping and government-to-government letters to interested and affected partisan July 5, 2005 . Two comment letters were received: one from Wayne Shaw supporting the project, and the other from Charlie Raines, Sierra Club, Cascade chapter. Mr. Raines' comments are addressed point by point below. Responses to comments are from Wildlife, Silviculture, Fire, and Botany specialist reports (response to comments sections and/or within other sections of individual reports) and other appropriate document sources as referenced. This document is attached to and incorporated into the Greenwater Elk Forage Management Project Decision Memo by reference.

Comment 1: First, what size of herd is the objective? How does that compare to existing conditions? What are the limiting factors for that to occur? How will the proposed project contribute to that? Are any other methods more effective? What is the geographic extent of the winter range used by this herd? How much do the Greenwater lands contribute? How do roads affect the herd size? What is the affect of other human uses, especially in winter?

Forest Service Response: The herd size objective is 900-1000 animals. This is the historical population level that peaked in 1991 (WDFW 2002) and has since declined to the current level of approximately 600 animals. The change in forest practices, i.e. the reduction of timber harvest, lack of quality forage, and high rate of predation of elk calves are contributing factors to elk herd declines. Elk are primarily herbivorous grazers and browsers of habitats associated with early successional vegetation. The proposed project will remove forest overstory and convert these sites to maintain early successional vegetation. Other than artificial feeding programs, large scale forest management, or catastrophic forest fires, there are no known practical and effective means of increasing and maintaining herd size. Historically, winter range was extensive. Traditional winter range increasingly became impacted by the presence of humans and associated activities that has reduced or permanently eliminated winter range habitat. Portions of the Greenwater and White River basins, much of it under National Forest management, were identified in the Huckleberry Land Exchange EIS documents as a potential source for creating and establish forage in winter range habitat. Roads may impart a major influence on elk behavior and distribution within the river basin. Secondary roads leading from road 7000 into the project area is closed to motorized vehicle use from December 15 through May 1. Forest road 7000 remains open year-round up to milepost 9 for motorized winter recreation. Motorized winter activity is restricted to areas outside of winter range protected areas in the Greenwater River drainage. Deer and elk using forage units adjacent road 7000 may respond negatively to the presence of motorized vehicles. This affect is expected to be minimal because elk are often observed foraging on snow-free roadway edges of highway 410 and forest roads.

Comment 2: What is the primary food source for elk in the winter? Will merely cutting the trees provide this? Will any mechanical means be used to control brush? If so, what methods? Will the FS need to do supplementary planting of prime forage plants? Will native brush species be allowed to grow in the area? This could provide more browse for deer and habitat for other species. The FS should not be managing for a single species, unless it is endangered with a limited range.

Forest Service Response: Food preference by elk may vary depending on availability. In general elk will graze and browse on early successional forbs, herbs, grasses, and shrubs.

During winter when forbs and herbs are unavailable, elk will forage on shrubs and conifers. Monitoring may determine, for example, if more browse is selected by ungulates in the winter forage areas, especially if snow-depth restricts availability of residual herbs and forbs. Brush may not be necessarily controlled if indicators conclude it is a food source. If thickets become impenetrable to deer and elk movement, it will likely be managed during the next maintenance schedule. Methods for brush removal may be with controlled burns, hand and gas-powered tools, and possibly low impact mechanized machines where access is feasible. Contracts have been awarded to begin collecting of native shrub cuttings in calendar year 2008 for Phase I of this proposed project. Cuttings along with propagation of native seeds from the river basins will help augment the forage planting base in the created openings. Although this forage project is targeted for big-game ungulates, this project will benefit a spectrum of wildlife species including avian species, non-game animals, large carnivores (which prey on deer and elk), as well as the general public and the Tribes who view and hunt big-game.

Comment 3: Presumably, the rationale is that elk need grassy forage areas, which are being eliminated by the maturing forest. However, elk thrive in the old-growth forests in Olympic National Park. Over time, the Greenwater valley will evolve into such old-growth with multistoried canopy with patches of shrubs and forbs. At what point does the Forest Service believe such permanent elimination of habitat will have an appreciable effect on the spotted owl? What modeling has the FS done? What consultation with USFWS has been done? Does increasing one species in this watershed justify putting another at risk?

Forest Service Response: Elk herds in the Olympic National Park are unmanaged. Herd productivity is affected similarly to animals found outside of the park where the availability of quality, early successional forage can cause a profound effect on reproductive success (Jenkins and Starkey 1984) (Hutchins 2006).

Elk herds in the Olympic National Park are allowed to exist within the range of natural variability (Jim Schabed pers comm… Wildlife ecologist, Mt. Rainier National Park). Under current Park Service Management Policies, the park service has established baseline wildlife studies and long-term monitoring to maintain and protect the natural abundance and distribution of wildlife found within the park boundaries. The park's wildlife program also includes a collaborative process with adjacent landowners to further the park's ability to protect wildlife resources.

A least one spotted owl activity center (AC) is within proximity of this project. The AC has been occupied by a reproductive pair of owls over the last 14 years when systematic monitoring began. Prior to this time period, other owl ACs have been located within the checkerboard lands prior to the 1980s. Forest Service engaged in consultation with the U.S. Fish and Wildlife Service (Service) as required by the ESA for the Huckleberry Land Exchange (which included the proposed creation of forage openings. The Service concurred that the spotted owl (and marbled murrelets) would not be adversely affected by this project. The project is located within a relatively large expanse of forests in a designated late-successional reserve land allocation that will, over time, develop into large contiguous blocks of mature forests. By limiting most forage openings to 15 acres or less, the forage units will have minimal affects to future owl habitat by limiting fragmentation and edge effect, and minimizing distance to facilitate dispersal among habitat blocks between breeding activity centers. Spotted owl monitoring will continue during the implementation of this project will guide future planning forage creation efforts.

Comment 4: Just downstream from the westernmost elk opening site is 100,000 acres of commercial timber land (Hancock) that will be managed on 40 year rotations, providing large areas with good forage conditions on a rotating basis in prime elk winter range. Just to the north, the Green River has mostly timber company lands, which will also be managed on short rotations. Has this been considered in the calculations of herd size and associated forage needs?

Forest Service Response: Hancock Forest Management is known to administer herbicides to remove or control unwanted vegetation that compete with conifer plantations. Repellants to keep foraging ungulates out of the plantations are available, but their use by Hancock is unknown. It is assumed that there are residual amounts of available forage throughout Hancock lands, but the amounts and distribution are unknown to the Forest Service. Elk inhabiting the Green River Watershed are considered resident or non-migratory. The lands are managed by Tacoma Water as a municipal watershed with restricted access to the general public. The forage creation project would benefit elk herds in the Greenwater and White River drainages. These sub-herds migrate between winter and summer range habitat. An associated benefit of this project includes increased elk numbers on National Forest lands, which would provide increased viewing and hunting opportunities for Tribes and the general public.

Comment 5*:* Forest fires will happen in the future, re-establishing forage areas of potentially very large size. Has the forest service done any modeling to see how this might contribute to elk forage?

Forest Service Response: The Greenwater Elk Forage Management Project would occur in deer and elk (ungulate) winter range. It is located on the Snoqualmie Ranger District of the Mt. Baker-Snoqualmie National Forest within the Greenwater and White River basins in portions of Sections 19, 21, 23, and 31 in T19N, R10E. These lands are among the acres acquired from Weyerhaeuser Timber Company, as part of the Huckleberry Land Exchange. The land exchange Record of Decision (ROD) (April 2001) designated the Greenwater Special Area as Management Area 8E for creating and maintaining forest openings as permanent elk forage habitat (Forest Plan Amendment #16). The project's purpose is to help meet the goal of Management Area 8E. The need for this project, in accordance with the standards and guidelines for MA 8E, is to create up to 400-500 acres of permanent openings in deer and elk winter to increase forage production for elk and deer.

Wildland fires are irregular events, temporally and spatially. It would be extremely difficult to predict when a forest fire would occur that would affect adequate number of acres for elk forage habitat in the project area. Wildfires normally occur during the warmest, driest conditions during the summer, which normally results in highest fire severity on vegetation, soil and water quality. Prescribed fire is ignited under prescribed conditions identified in a prescribed fire burn plan that are established to meet management objectives while accomplishing fuel/hazard reduction.

Comment 6*:* How will success be determined? What conditions would terminate such openings (e.g., after forest fires in the valley)? How will decisions on additional openings be made? What criteria? What are the cumulative effects of related elk management actions? What is included in the proposed monitoring plan?

Forest Service Response: Appendix B to the Decision Memo is the Habitat Monitoring Plan for the project. The Forest will work collaboratively with state and federal agencies, and the Muckleshoot Indian Tribe to forage habitat conditions and assess elk herd productivity.

Further collaboration will be made to examine Phase II planning which includes enhancement of summer range habitat. The estimated total acres to establish winter and summer range was developed during the Huckleberry Land Exchange NEPA process and negotiations. Currently, as recorded in project specialist reports and in the project decision memo (pages 9-15, Excluded from Documentation in an EA or EIS, Findings Required by Other Laws, and Consistency With Regulatory Framework sections) there are no measurable adverse cumulative effects as a result of this proposed action (Phase I)

Comment 7: How will invasive plants, such as Scotch broom be kept out? This is very common in the lower elevations of the western Cascades. Control can be an expensive, long-term project. Will pesticides be used to control unwanted vegetation? Since elk don't eat Scotch broom, such an infestation could negate the best intentions of this project.

Forest Service Response: Creation and maintenance of forage openings would create disturbance that could allow the establishment and spread of noxious weeds within the project area. This is especially likely for tansy ragwort and Scot's broom in and around units 15 and 31-36, and tansy ragwort, Canada thistle, and herb Robert in unit 18 because the species (and their seeds, presumably) are already present (10/26/07 Botany Report)

Control of these species prior to disturbance and implementation of the project management requirements and mitigation measures for noxious weeds included in the project Decision Memo (pages 4-6) would decrease the likelihood of further spread and infestation.

Comment 8: What are the requirements for leave trees and reforestation? Under state forest practices regulations, some minimal amount of trees must be left in each unit, and reforestation is required. NF regulations have similar requirements. So, does allowing natural reseeding, then hacking or burning the new seedlings meet these requirements? Please site the regulations allowing such a type conversion and any conditions or constraints on such activity.

Forest Service Response: There are no requirements of leave trees or reforestation in a type conversion treatment. The areas will become non-forest in terms of land management goals, overriding minimum stocking requirements applicable to forested lands under NFMA. (Decision Memo p. 1-2 and 13-14 and 10/26/07 Silviculture Report)

The regulations which allow type conversion are the regulations which allow amendments to Forest Plans. 36 Code of Federal Regulations 219.8 explains the regulations associated with amending a Forest Plan. The Mt. Baker-Snoqualmie national Forest Plan itself also contains direction on Forest Plan Amendments in Chapter 5 (USFS 1990, pages 5-6).

The Greenwater Elk Forage Management Project occurs in deer and elk (ungulate) winter range. It is located on the Snoqualmie Ranger District Mt. Baker-Snoqualmie National Forest within the Greenwater and White River basins in portions of Sections 19, 21, 23, and 31 in T19N, R10E (see DM Figures 1-5). These lands are among the acres acquired from Weyerhaeuser Timber Company, as part of the Huckleberry Land Exchange. The land exchange Record of Decision (ROD) (April 2001) designated the Greenwater Special Area as Management Area 8E for creating and maintaining forest openings as permanent elk forage habitat and included a Forest Plan amendment to provide for them (Forest Plan Amendment #16). Refer to Decision Memo Appendix D.

Comment 9: The 200 acres that has merchantable timber could produce several million board feet when cut. Is this why are you proposing to clearcut 35 year old stands? Even when additional acreage of younger stands is available? Is this designed to provide revenue to pay for the project? Units F12, 13, 14, 15, 16 and 24 are this age. F13, 14, 15 and 16 are accessed by a

road that should be removed. F 16 is very close to the river. These units should be reconsidered. Is totally removing the trees from these stands the only way to improve habitat for elk?

Forest Service Response: The elk forage project will require clearcutting second-growth stands identified in the project that are less than 80 years old. Due to the density of young second-growth trees controlled burning will be employed to remove woody debris produced by logging operations. Site selection was limited to the MA 8E boundaries and outside of riparian reserves and other resource concern areas. Total tree removal was considered an efficient method to establish forage sites using similar prescriptions that can be found in other ungulate forage enhancement sites throughout western Washington. Riparian zones are often selected by large ungulates because of the relatively high forage base that is produced due to fertile soils, and active channel migration zones that regularly provide early successional vegetation. Riverine habitats are often selected as travel corridors between summer and winter range habitat, and offer quick accessibility to security/hiding cover. In the implementation of this stewardship project, the value of the timber will provide the "goods for services" needed to obtain project vegetation and habitat objectives.

Comment 10: Your letter states," The type conversion and maintenance of forage openings will be accomplished as funding is available." If you have no funds to maintain these openings, they will revert to dense young stands or weed patches, with little value to elk. If you have left no snags, or green leave trees, it will return to a monoculture. Thus, any openings should have a full complement of snags and larger leave trees.

Forest Service Response: Beyond the 10-year stewardship agreement, future funding sources may be difficult to guarantee. Collaborative effects to address this concern will require support from inter-agency managers as well as NGOs, and all funding options will be considered. Although the current second growth stands are dominated by an overstory of conifers, typically Douglas-fir, the existing stands contain varying degrees of tree species diversity which may include western hemlock, western redcedar, Pacific yew, alder, black cottonwood, and a variety of woody shrubs. If controlled burns are used to maintain forage openings over time, any residual standing leave trees left in the forage openings run the risk of being killed. Because the forested stands outside of the forage areas will be maintained under LSR standards and guidelines, snag and downed wood recruitment will not be limiting as forest stands begin to mature over time.

The average tree diameter is 9 inches DBH, and the largest estimated tree diameter is 13 inches. Snags and large trees are minimal in these stands. Trees that are dead are small in size as well.

If opening maintenance is not possible due to lack of funding, the expected result is that conifers would again take over the sites. Most of the openings will be no greater than 15 acres in size which implies a close seed source to all cases [in? unclear]. The surrounding stands are old enough to produce seed, and openings will fill in through natural seeding over time. Leaving trees and snags will not prevent openings from becoming dense young stands in the case of no maintenance funding

Comment 11: Forest Service budgets are shrinking, and there is no expectation that will change. Thus, we must assume that there will be very little money available for long term stewardship of these areas. Thus, the project should be scaled so that there is reasonable certainty that any future management will be funded. The FS could establish a stewardship endowment fund so that proponents could contribute to the long term management costs.

Forest Service Response: See response to Comment 10.

Comment 12: LSRs have been established in the White River as acknowledgement of the need for and the lack of late-successional forest habitat, especially at lower elevations. Any exception to the objective of maintaining and restoring LS/OG needs compelling rationale.

Forest Service Response: The project is not located within LSR. It is located in MA 8E. This project was covered by a Forest Plan amendment, and proposed to implement part of the decision made in the Huckleberry Land Exchange ROD and to help meet the goal of Management Area 8E: "…no net loss of forage habitat, consistent with all other laws and regulations, such as the ESA" (page R-6, Huckleberry ROD; emphasis in the original). MA 8E falls under the Administratively Withdrawn land allocation. All of the MA 8E sections are roaded, and were harvested in the recent past. Note that outside of the proposed openings, the acres of MA 8E are managed under Late Successional Reserve standards and guidelines.

The project includes creating small, permanent forage openings within the inventoried elk winter range as per the standards and guidelines established for MA 8E in the Huckleberry ROD, which include:

- The majority of openings will be no larger than 15 acres, and will take advantage of any existing openings and meadows; openings are permanent and will not rotate;
- No forage openings will be created within Riparian Reserves;
- The total area within openings will be no more than about 400 to 500 acres within the winter range.
- Road reconstruction and maintenance needed for management of the created forage openings will be allowed;
- Forage openings will be accomplished via a type conversion—permanently converting the existing vegetation to a grass-forb habitat—using a variety of methods (mechanical, hand tools, fire, etc.) as determined in the site-specific analysis; and
- The type conversion and maintenance of forage openings will be accomplished as funding is available.

Comment 13: The proposed openings limit the restoration of low elevation old-growth (on high productivity sites). This is detrimental to species associated with late-successional forest such as spotted owls and martens. It is also impacts aquatic resources, in part, due to retaining roads (which also impact terrestrial species, and encourage motorized use).

Forest Service Response: See response to Comment 3.

Comment 14: The letter casually mentions the "potential effect of removing dispersal habitat within known spotted owl... activity centers" (emphasis added).[Where's the emphasis added?] It is not a potential effect, it will be a real effect- especially in the older stands. How will the units affect the dispersal, foraging and nesting of this endangered species in this valley? The NF lands are part of an LSR. Although heavily cut, there are substantial areas of late-successional forest providing refugia for this endangered species. The cutover lands are needed to provide dispersal and ultimately foraging habitat for the spotted owl. With the populations of owls decreasing, how does the Forest Service justify continued active destruction of habitat, especially where there is known activity? What consultation with USFWS has been done? Does increasing one species in this watershed justify putting another at risk?

Forest Service Response: See response to Comment 3.

Comment 15: How does this project relate to the overall road objectives of the valley? We object to maintaining roads solely for the purpose of keeping the openings free of trees. Once any initial cutting is complete, the roads should be decommissioned and any subsequent work done on foot. The proposal must include a determination about which roads are to be maintained and to what standard and which are to be decommissioned.

Forest Service Response: Forest Plan standards and guidelines for Management Area 8E provide for roads for management of the created forage openings (Huckleberry EIS, page 2-14)

Approximately 14.7 miles of road reconstruction, and 1.0 mile of temporary road construction will be required. Location and description of work is described in Table 2, below. Temporary roads will be closed and decommissioned following forest management activities. Approximately 2.78 miles of roads will be closed and put into Maintenance Level 1 upon completion of this project.

The following table from the 10/26/07 Roads Report discloses the Forest-wide Roads Analysis need for access to MA 8E and LSR lands.

Forest-wide Roads Analysis Summary for Analysis Area Roads

Road Number/ Name	BMP	EMP	Miles	LSR	Admin Withdraw MA 8E	Need	Resource Concern	Current ML	ML Obj
		70 Road System Haul Route							
70 – Greenwater Units - 25-26-29-28-19-18-20-17	0	7.21	7.21	Low	High	High	Aquatics-Wildlife-Low Cultural-	5	5
7000115 Unit - 25	0.0	0.53	0.53	-	-	-		2	*1
7000118 Unit - 19	0.0	0.07	0.07	-	-	-		2	*1
7000119 Unit - 19	0.0	0.09	0.09	-	-	-		2	*1
7200223 Unit - 20	0.0	0.25	0.25	-	-	-		2	*1
7200224 Unit - 20	0.0	0.23	0.23	-	-	-		2	*1
7140 – Old Twin Camp – Units 28-29-26	0.0	1.12	1.12	-	-	-		2	*1
		7010 Road System Haul Route							
7010 – Midnight Creek Units – 2-13.1-13.2-15-14-16	0.0	2.49	2.49	Low	High	High	Aquatics-Low Wildlife-High Cultural-Low	3	3
7012 – Divide Ridge Units – 2-13.1-13.2-15-14-16	0.0	0.88	0.88	-	-	-		2	3
7012240 Units – 2-13.1-13.2-15-14-16	0.0	0.88	0.88	-	-	-		2	3
7013 – Foss Creek Units – 26-29-28	0.0	1.08	1.08	Low	High	High	Aquatic–Moderate Wildlife-High Cultural-Low	3	3
7020 – Slide West Units – 16-14-13.1-13.2-2-15	0.0	0.9	0.9	Low	High	-	Aquatics-Wildlife–High Cultural-	2	3
7020110 Units 2 – 13.2	0.0	0.25	0.25	-	-	-		1	2
7020050 Unit 13.1	0.0	0.22	0.22	Low	High	High	Aquatics-Moderate Wildlife-High Cultural-Low	2	2
		72 Road System Haul Route							
72 – Twenty Eight Mile Creek Units – 31-37-36-35-34-33-32	0.0	0.62	0.62	Low	High	High	Aquatics-Moderate Wildlife-High Cultural-Low	3	3
7200420 Unit 31	0.0	0.46	0.46	Low	High	High	Aquatics-Low Wildlife-High Cultural-Low	2	*1
7270 – HUC Units – 36-35-34-33-32	0.0	1.15	1.15	-	-	-		2	*1

BMP = Beginning milepost. EMP = ending milepost * Roads denoted above as Objective Maintenance Level 1 are planned to be placed in closed status upon this projects completion. ML 1 roads have existing culverts removed, the drainage restored to original contours and road entrance treatments placed. The roads already fitting this description will be restored for haul use during the project and then place back into storage condition at the completion of the project.

Comment 16: "Additional forage creation areas may be considered in the future within the MA8E winter and summer ranger [sic] habitat." How much? What is the maximum allowed? Will the entire MA8 area (minus riparian reserves) be converted? That could be ten times the current proposal. Could the currently proposed areas be expanded? Will future openings adhere to the same standards? Will maintaining openings have an effect on adjacent mature and old-growth forests, such as increasing risk of blowdown? As the trees from these clearcuts have matured, they begin to provide some protection from the wind to adjacent stands.

Forest Service Response: The Huckleberry Land Exchange ROD (2001) specified sideboards for the creation of the units in terms of size, location, resource protection, a range of total acres for forage creation, and distribution of the openings within the MA 8E boundaries. These specifications reflect the standards and guidelines of the Mt. Baker-Snoqualmie NF Forest Plan (1990) and the Northwest Forest Plan (1994). Individual or group tree blowdown, aside from catastrophic events, is a reasonable means of recruiting standing dead and downed woody material.

Maintaining these openings may increase the risk of blowdown along the edges of adjacent stands. It is expected that this may feather the edges of the openings and may contribute to "natural-appearing openings" rather than creating a hard line between opening and timber along the perimeters of openings. It is not expected to be a major effect in terms of blowdown potential. Incidental blowdown is common in older stands. Openings #20 and #32 are the only proposed openings which share a common border with stands with older trees.

Comment 17: The letter says that "…the exact location of the proposed openings may shift slightly with final layout." How much shift is acceptable? Is that size or location or both?

Forest Service Response: As identified in the scoping letter of July 5, 2005, the project would have included approximately 237 acres of forage openings. As refined for visual quality, riparian reserve boundary adjustments, etc, the project will create 21 openings totaling approximately 171 acres within MA 8E inventoried elk winter range.

Comment 18: Will project implementation be phased? If so, which units would be first? Has the Forest Service done this type of activity before? In this area? If not doesn't it make sense to try a pilot project, before committing such a large area to this type of management? This would help answer some of the questions in this letter

Forest Service Response: The purpose of the project is to meet the goal of management Area 8E by producing roughly 400-500 acres of forage openings in winter range and 100-130 acres in summer range. This project, which will create approximately 171 acres of openings, is the first phase in preparation for creating and maintaining ungulate forage habitat within MA 8E. The project will be monitored to measure objectives set forth with the creation and maintenance of forage habitat for big-game ungulates (Appendix B – Habitat Monitoring Plan)

Comment 19: What herd size is this supposed to support?

Forest Service Response: See response to Comment 1.

Comment 20: What are the forage and cover requirements?

Forest Service Response: See response to Comment 16.

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