

## **VEGETATION MANAGEMENT ACTIVITIES AND PRACTICES**

This section of the Guide is organized into four parts: 1) SRLA Vegetation Management Direction; 2) Discussion of Key Concepts; 3) Questions and Answers; and 4) Examples of Vegetation Projects.

### ***Part 1. SRLA Vegetation Management Direction***

**The following objectives, standards, and guidelines apply to vegetation management projects in lynx habitat within lynx analysis units (LAUs) in occupied habitat. With the exception of Objective VEG O3 that specifically concerns wildland fire use<sup>1</sup>, the objectives, standards, and guidelines do not apply to wildfire suppression, wildland fire use, or removal of vegetation for permanent developments such as mineral operations, ski runs, roads, and the like. None of the objectives, standards, or guidelines apply to linkage areas.**

#### Objective VEG O1

Manage vegetation to mimic or approximate natural succession and disturbance processes while maintaining habitat components necessary for the conservation of lynx.

#### Objective VEG O2

Provide a mosaic of habitat conditions through time that support dense horizontal cover, and high densities of snowshoe hare. Provide winter snowshoe hare habitat in both the stand initiation structural stage and in mature, multi-story conifer vegetation.

#### Objective VEG O3

Conduct fire use activities to restore ecological processes and maintain or improve lynx habitat.

#### Objective VEG O4

Focus vegetation management in areas that have potential to improve winter snowshoe hare habitat but presently have poorly developed understories that lack dense horizontal cover.

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<sup>1</sup> *Note: Since the SRLA decision was issued, the Forest Service as an agency has abandoned use of the term “wildland fire use” in its fire management lexicon. Instead, the agency refers to the fact that for all wildfires affecting National Forest System lands, the Forest Service develops a response that may be based on multiple ecological, social, and legal issues or objectives, including opportunities to achieve restoration of ecological processes and maintaining or improving lynx habitat.*

Standard VEG S1

**Where and to what this applies:** Standard VEG S1 applies to all vegetation management projects<sup>36</sup> that regenerate forested stands, except for fuel treatment projects within the wildland urban interface (WUI) as defined by HFRA, subject to the following limitation:

**(WUI Fuels Exemption)** Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, or VEG S6 shall occur on no more than 3 percent (cumulatively) of lynx habitat on each administrative unit (a National Forest or administratively combined National Forests). In addition, fuel treatment projects may not result in more than three adjacent LAUs exceeding the standard.

For fuel treatment projects within the WUI see guideline VEG G10.

**The standard:** Unless a broad scale assessment has been completed that substantiates different historic levels of stand initiation structural stages limit disturbance in each LAU as follows:

If more than 30 percent of the lynx habitat in an LAU is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects.

Standard VEG S2

**Where and to what this applies:** Standard VEG S2 applies to all timber management projects that regenerate forests, except for fuel treatment projects within the wildland urban interface (WUI) as defined by HFRA, subject to the following limitation:

**(WUI Fuels Exemption)** Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, or VEG S6 shall occur on no more than 3 percent (cumulatively) of lynx habitat on each administrative unit (a National Forest or administratively combined National Forests).

For fuel treatment projects within the WUI see guideline VEG G10.

**The standard:** Timber management projects shall not regenerate more than 15 percent of lynx habitat on NFS lands within an LAU in a ten-year period. This 15 percent includes the entire stand within an even-age regeneration area, and only the patch opening areas within group selections. Salvage harvest within stands killed by insect epidemics, wildfire, etc. does not add to the 15 percent, unless the harvest treatment would cause the lynx habitat to change to an unsuitable condition.

Standard VEG S5

**Where and to what this applies:** Standard VEG S5 applies to all precommercial thinning projects, except for fuel treatment projects that use precommercial thinning as a tool within the wildland urban interface (WUI) as defined by HFRA, subject to the following limitation:

**(WUI Fuels Exemption)** Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, or VEG S6 may occur on no more than three percent (cumulatively) of lynx habitat on each administrative unit (a National Forest or administratively combined National Forests) for the life of this amendment.

For fuel treatment projects within the WUI see guideline VEG G10.

**The Standard:** Precommercial thinning practices and similar activities intended to reduce seedling/sapling density are subject to the following limitations from the stand initiation structural stage until the stands no longer provide winter snowshoe hare habitat.

Precommercial thinning may occur only: **(VEG S5 Exceptions)**

1. Within 200 feet of administrative sites, dwellings, or outbuildings; or
2. For research studies or genetic tree tests evaluating genetically improved reforestation stock; or
3. For conifer removal in aspen, or daylight thinning<sup>5</sup> around individual aspen trees, where aspen is in decline; or
4. Based on new information that is peer reviewed and accepted by the regional/state levels of the Forest Service and FWS, where a written determination states:
  - a) That a project is not likely to adversely affect lynx; or
  - b) That a project is likely to have short term adverse effects on lynx or its habitat, but would result in long-term benefits to lynx and its habitat.
5. In addition to the above exceptions (and above and beyond the three percent limitation for fuels projects within the WUI), precommercial thinning may occur provided that:
  - a) The additional precommercial thinning does not exceed one percent of the lynx habitat in any LAU for the life of this amendment, and the amount and distribution of winter snowshoe hare habitat within the LAU must be provided through appropriate site-specific analysis and consultation; and
  - b) Precommercial thinning in LAUs with more than 30 percent of the lynx habitat currently in the stand initiation structural stage is limited to areas that do not yet provide winter snowshoe hare habitat; and
  - c) Projects are designed to maintain lynx habitat connectivity and provide snowshoe hare habitat over the long term; and
  - d) Monitoring is used to determine snowshoe hare response.

Exceptions 2 and 3 may not occur in any LAU in which VEG S1 is exceeded (i.e., more than 30 percent of LAU in stand initiation structural stage).

**Note:** This standard is intended to provide snowshoe hare habitat while permitting some thinning, to explore methods to sustain snowshoe hare habitat over time, reduce hazardous fuels, improve forest health, and increase timber production. Project design must ensure any

precommercial thinning provides an appropriate amount and distribution of snowshoe hare habitat with each LAU over time, and maintains lynx habitat connectivity within and between LAUs. Project design should focus on creating irregular shapes for the thinning units, creating mosaics of thinned and unthinned areas, and using variable density thinning, etc.

#### Standard VEG S6

**Where and to what this applies:** Standard VEG S6 applies to all vegetation management practices within multi-story mature or late successional conifer forests, except for fuel treatment projects within the wildland urban interface (WUI) as defined by HFRA, subject to the following limitation:

**(WUI Fuels Exemption)** Fuel treatment projects within the WUI that do not meet Standards VEG S1, VEG S2, VEG S5, or VEG S6 shall occur on no more than 3 percent (cumulatively) of lynx habitat on each administrative unit (a National Forest or administratively combined National Forests).

For fuel treatment projects within the WUI see guideline VEG G10.

**The Standard:** Vegetation management projects that reduce winter snowshoe hare habitat in multi-story mature or late successional conifer forests may occur only (VEG S6 Exceptions):

1. Within 200 feet of administrative sites, dwellings, outbuildings, recreation sites, and special use permit improvements, including infrastructure within permitted ski area boundaries; or
2. For research studies or genetic tree tests evaluating genetically improved reforestation stock; or
3. For incidental removal during salvage harvest (e.g., removal due to location of skid trails); or
4. Where uneven-aged management (single tree and small group selection) practices are employed to maintain and encourage multi-story attributes as part of gap dynamics. Project design must be consistent with VEG O1, O2 and O4, except where impacts to areas of dense horizontal cover are incidental to activities under this exception (e.g., construction of skid trails).

Exceptions 2 and 4 may not occur in any LAU in which VEG S1 is exceeded.

Guideline VEG G1

Vegetation management projects should be planned to recruit a high density of conifers, hardwoods, and shrubs where such habitat is scarce or not available. Priority for treatment should be given to stem-exclusion, closed-canopy structural stage stands to enhance habitat conditions for lynx or their prey (e.g. mesic, monotypic lodgepole stands). Winter snowshoe hare habitat should be near denning habitat.

Guideline VEG G4

Prescribed fire activities should not create permanent travel routes that facilitate snow compaction. Constructing permanent firebreaks on ridges or saddles should be avoided.

Guideline VEG G5

Habitat for alternate prey species, primarily red squirrel, should be provided in each LAU.

Guideline VEG G10

Fuel treatment projects within the WUI as defined by HFRA should be designed considering Standards VEG S1, S2, S5, and S6 to promote lynx conservation.

Guideline VEG G11

Denning habitat should be distributed in each LAU in the form of pockets of large amounts of large woody debris, either down logs or root wads, or large piles of small wind thrown trees (“jack-strawed” piles). If denning habitat appears to be lacking in the LAU, then projects should be designed to retain some coarse woody debris, piles, or residual trees to provide denning habitat in the future.

## ***Part 2. Discussion of Key Concepts***

Several concepts and terms are important to better understanding of the standards, guidelines, and objectives for vegetation management. These terms/concepts include A) Exemptions and Exceptions to Vegetation Standards, B) Wildland Urban Interface (WUI) and Communities at Risk, C) Currently Unsuitable Habitat, D) Winter Snowshoe Hare Habitat, E) Incidental Damage, and F) Uneven-aged Management.

### ***A) Exemption and Exceptions to Vegetation Standards***

The SRLA provides specific guidance and direction in the form of standards, guidelines, and objectives for vegetation management activities in lynx habitat on the Southern Rockies National Forests. There are management exemptions and exceptions in which deviations from the vegetation standards are allowed, within limits established over the 15-year life of the Southern Rockies Lynx Amendment.

Exemption to Vegetation Standards - The WUI exemption allow for up to 3 percent of the lynx habitat per Forest to be treated in a manner that does not meet the vegetation standards VEG S1, S2, S5, and S6. *This exemption only applies to fuels projects within the WUI areas.*

Specifically:

- Under the exemption to **VEG S1**, fuels reduction projects in the WUI can result in more than 30 percent of a LAU in the stand initiation structural stage (*aka* currently

- unsuitable) as long as these projects cumulatively occur on no more than 3 percent of the lynx habitat per Forest and result in no more than 3 adjacent LAUs exceeding the standard (e.g., no more than 3 adjacent LAUs can have more than 30 percent of the LAU in the stand initiation structural stage).
- Under the exemption to **VEG S2**, fuels reduction projects in the WUI can result in more than 15 percent of the lynx habitat per LAU regenerated (i.e., stand initiation structural stage or currently unsuitable) in a 10-year period as long as these projects cumulatively occur on no more than 3 percent of the lynx habitat per Forest. Note that this standard specifies regeneration treatments, which is the cutting of trees that create a new age class. Primary methods of regeneration harvests are clear cuts, seed tree, shelterwood, and group selection cuts. Therefore, fuels reduction projects in the form of tree thinning, which generally do not create a new age class, would not count towards the 15 percent limit, while group selection patch cuts that do create a new age class *would* count towards the 15 percent limit.
  - Under the exemption to **VEG S5**, fuels reduction projects in the WUI in the form of *pre-commercial thinning* would be allowed in all age classes of lynx habitat as long as these projects cumulatively occur on no more than 3 percent of the lynx habitat per Forest. Pre-commercial thinning projects include thinning practices and similar activities that are intended to reduce seedling/saplings densities. Pre-commercial thinning that occurs outside the WUI is not exempt from **VEG S5** and can occur only 1) in stands that no longer provide winter snowshoe hare habitat, or 2) in accordance with the conditions of **Exception 5 in VEG S5** (see discussion below).
  - Under the exemption to **VEG S6**, fuels reduction projects in the WUI that *reduce winter snowshoe hare habitat in multi-story mature or late successional conifer forests* can occur as long as these projects cumulatively occur on no more than 3 percent of the lynx habitat per Forest. Vegetation management projects that reduce snowshoe hare habitat in multi-story mature or late successional conifer forests in areas outside the WUI may only occur in accordance with the conditions of the exceptions to **VEG S6** (see discussion below).

*Note* - The 3 percent WUI exemption from vegetation standards was derived by an effects analysis of the communities at risk in the Southern Rockies (FEIS 2008; included on the CD accompanying this Implementation Guide). This analysis determined that the lynx habitat encompassed by a one-mile buffer around all the communities at risk represented approximately 3 percent of the total lynx habitat within the Southern Rockies amendment area. Therefore, the vegetation standards were modified in the FEIS to include this 3 percent exemption for fuels treatments in WUI in order to provide greater flexibility for fuels management.

Exceptions to Vegetation Standards S5 and S6 - The exceptions to VEG S5 and S6 allow for some additional vegetation treatments, either within or outside of WUI areas, for the purposes of protecting structures, for research, for promoting conservation of aspen, for incidental removal of trees during salvage harvest, and for some additional pre-commercial thinning.

Exceptions to **VEG S5** allow for:

- **(Exception 1)** Pre-commercial thinning projects within 200 feet of administrative sites, dwellings, or buildings.
- **(Exception 2)** Pre-commercial thinning projects for the purposes of research studies or genetic tree tests that evaluate genetically-improved reforestation stock.
- **(Exception 3)** Pre-commercial thinning projects that remove conifer in aspen stands, or as daylight thinning around individual aspen trees, where aspen is in decline. Aspen is considered to be in decline where evidence suggests that aspen has been reduced from its historic proportion of the landscape. Evidence of decline includes nearby applicable research or studies; comparison of historical and recent aerial photographs; numerous stands with dead or dying mature aspen with little or no aspen regeneration, etc.
- **(Exception 4)** Pre-commercial thinning projects that, based on new, peer-reviewed information, would “not likely adversely affect” lynx, or would have only short-term adverse effects and long-term beneficial effects to lynx and its habitat. Projects allowed under Exception 4 must be accepted by regional/state levels of the Forest Service and the Service and must include a written determination from the Service.
- **(Exception 5)** Additional pre-commercial thinning (above and beyond the 3 percent limitations for fuels projects within the WUI) provided that: a) the additional thinning does not exceed 1 percent of the lynx habitat in *any LAU* for the life of the amendment; b) pre-commercial thinning in LAUs with more than 30 percent in the stand initiation structural stage is limited to areas that do not yet provide winter snowshoe hare habitat; c) projects are designed to maintain lynx habitat connectivity and snowshoe hare habitat over the long term; and d) monitoring is used to determine snowshoe hare response. This exception may occur either within or outside of WUI areas.

Additionally, if the baseline of the LAU is above 30% unsuitable/stand initiation structural stage, Exceptions 2 and 3 of VEG S5 may not be used.

Exceptions to **VEG S6** allow for specific vegetation management projects that reduce snowshoe hare habitat in multi-story mature or late successional conifer forests, as follows:

- **(Exception 1)** Vegetation projects within 200 feet of administrative sites, dwellings, outbuildings, recreation sites, and special use improvements, including infrastructure within permitted ski area boundaries.
- **(Exception 2)** Vegetation projects for the purposes of research studies or genetic tree tests that evaluate genetically-improved reforestation stock.
- **(Exception 3)** Incidental removal during salvage harvest, such as from a skid trails, temporary roads, landings, hazard tree removal (see additional discussion below on Incidental Damage). The impacts to lynx habitat from salvage harvests will differ depending on whether the stand was killed by a fire event or by an insect epidemic. Salvage harvest does not count towards the regeneration total unless the harvest treatment would cause the lynx habitat to change to a stand initiation structural stage. (see additional discussion below on Salvage Harvest).

- **(Exception 4)** Where uneven-aged management (single tree and small group selection) practices are employed to maintain and encourage multi-story attributes as part of gap dynamics. Project design must be consistent with **VEG 01, 02, and 04**, except where impacts to areas of dense horizontal cover are incidental to activities under this exception (e.g., construction of skid trails). The amount of lynx habitat that can be treated under **Exception 4 in VEG S6** is limited by **VEG S1 and S2**. The regeneration treatments in small openings, skid trails and landings created by group selections count towards the regeneration treatments tracked under **VEG S1 and S2**; individual tree removal does not count towards the regeneration totals, but will likely result in some reduction of snowshoe hare habitat. Reduction of snowshoe hare habitat from individual tree removal does not count against caps, but will result in relatively minor effects.

Additionally, if the baseline of the LAU is above 30% in stand initiation, Exceptions 2 and 4 of VEG S6 may not be used.

Collectively, the total area that could be impacted by exceptions to VEG S5 and S6 (excluding Exception 5 in VEG S5 and Exception 4 in VEG S6) would affect no more than 0.5 percent of the lynx habitat per Forest, based on the Incidental Take statement in the Biological Opinion.

Projects treated under Exception 5 in VEG S5 are limited by the condition that pre-commercial thinning will not exceed 1 percent of lynx habitat per LAU, and these acres are tracked under the 1% cap.

There are no limits to the amount of lynx habitat that can be treated under Exception 4 in VEG S6, with the exceptions of limitations under VEG S1 and S2. Given the guidelines for this exception, projects implemented under this exception are generally not anticipated to result in take of Canada lynx. In the event that take is anticipated in individual projects, those effects will be addressed in a second tier biological opinion, as needed.

Table 3 from the Biological Opinion is provided below to help clarify the percentages of lynx habitat that can be treated per the various exemptions and exceptions.



**Table 3. Total Acres of Vegetation Treatments Possible per Forest under Exemptions and Exceptions to VEG S1, S2, S5 or S6 over the Life of the SRLA.**

<b>National Forest</b>	<b>Total NFS Lynx habitat Acres</b>	<b>Acres of Treatment in WUIs under Exemptions to VEG S1, S2, S5, or S6 (3% of Lynx Habitat)</b>	<b>Acres of Treatment under Exceptions 1-4 in VEG S5 and Exceptions 1-3 in VEG S6 (0.5% of Lynx Habitat)<sup>1</sup></b>	<b>Acres of Treatment under Exception 5 in VEG S5 (1% of Lynx Habitat per LAU)<sup>2</sup></b>	<b>Acres of Total Treatment under Exemptions and Exceptions to VEG S1, S2, S5, or S6 (4.5% of Lynx Habitat)</b>
Arapaho-Roosevelt	690,082	20,702	3,450	6,900	31,054
GMUG	1,641,664	49,250	8,208	16,416	73,875
Medicine Bow/Routt	1,192,466	35,774	5,962	11,924	53,661
Pike-San Isabel	826,156	24,785	4,131	8,261	37,177
Rio Grande	1,035,420	31,063	5,177	10,354	46,593
San Juan	1,048,567	31,457	5,243	10,485	47,186
White River	1,142,794	34,284	5,714	11,427	51,426
<b>Total:</b>	<b>7,577,149</b>	<b>227,315</b>	<b>37,885</b>	<b>75,771</b>	<b>340,972</b>

*1 - Note that there are no limitations on the number of acres that can be treated under Exception 4 in VEG S6 resulting from the Biological Opinion, with the exception of the limitations under VEG S1 and S2.*

*2 - Although acres are presented per Forest in this table, actual amounts of pre-commercial thinning under Exception 5 in VEG S5 will be limited to 1 percent of lynx habitat per LAU.*

### ***B) Wildland Urban Interface (WUI) and Communities at Risk***

As directed by the Healthy Forest Restoration Act (HFRA), the Forest Service has been giving increased attention to fuels management within the Wildland Urban Interface (WUI). The area encompassed by the WUI is identified in a Community Wildfire Protection Plan (CWPP). If there is no CWPP in place, the WUI is identified as: 1) the area 0.5 miles from the boundary of an at-risk community; 2) within 1.5 miles of the boundary of an at-risk community if the terrain is steep or there is a nearby road or ridge top that could be incorporated into a fuel break or the land is in condition class 3; or 3) the area contains an emergency exit route that requires hazardous fuel reductions to provide safer evacuation from the at-risk community.

At-risk communities are defined in HFRA as: A) i – an interface community identified in 66 Fed. Reg. 753, January 4, 2001, or ii) a group of homes with basic infrastructure and services [such as utilities and collectively maintained transportation routes] within or adjacent to Federal lands; B) in which conditions are conducive to a large scale fire event; and C) for which there is a significant threat to human life or property. For the purposes of the SRLA,

we are not placing a dependence on the need to have “group of homes with a basic infrastructure and services” in order to qualify as a “community at risk”, but rather focus on conditions that are conducive to a large scale fire event for which there is significant threat to human life or property. For the SRLA, A copy of the Healthy Forest Restoration Act and its definitions of WUI and Communities at Risk is available on the CD accompanying this Implementation Guide, or online at: [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108\\_cong\\_bills&docid=f:h1904enr.txt.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_bills&docid=f:h1904enr.txt.pdf)

### ***C) Currently Unsuitable Habitat and Habitat in Stand Initiation Structural Stage***

The use of the phrase “Lynx Habitat Currently in Unsuitable Condition” from the LCAS has been replaced in the SRLA with the term “stand initiation structural stage” (SISS). The LCAS definition of currently unsuitable habitat was “Areas within identified/mapped lynx habitat that are in early successional stages as a result of recent fires or vegetation management, in which the vegetation has not developed sufficiently to support snowshoe hare populations during all seasons.” The SRLA definition of “stand initiation structural stage” is “The stand initiation stage generally develops after a stand-replacing disturbance by fire, insects, or regeneration harvest. A new single-story layer of shrubs, tree seedlings, and saplings establish and develop, reoccupying the site.” Many biologists in the Southern Rockies are more familiar with the phrase “Lynx Habitat Currently in Unsuitable Condition,” having used the term for many years. Hence, at least early on in the SRLA use of the terms interchangeably is to be expected and the terms are largely synonymous.

Habitat that is “currently unsuitable” generally does not have an overstory, and, for the purposes of the SRLA, we are using a canopy closure of 0-10 percent to help further describe habitat that is “currently unsuitable” or “SISS.” Furthermore, once vegetation is beyond the SISS, all forest types that provide lynx habitat (prey and forage) are considered suitable.

### ***D) Winter Snowshoe Hare Habitat and Dense Horizontal Cover (e.g., “High quality” Snowshoe Hare Habitat)***

High snowshoe hare abundance and density have been observed when dense horizontal cover is present at the snow surface up to approximately two (2) meters above the surface (Wolfe et al. 1982; Shaw 2001; Squires and Ruggiero 2007).

Wolfe et al. (1982) suggested that during winter, areas with less than 40% vegetation cover (using Nudds 1977 methodology) at or near snow level or surface were not suitable in winter to snowshoe hares. Squires (pers. comm. with K. Broderdorp 2008, 2009) suggested that during the winter, lynx avoided areas with horizontal cover below 35% (using the 0.5 m X 2 m cover board). This 35% horizontal cover level represents the lower “hinge point” for lynx use during the winter. Therefore, for the purposes of quantifying snowshoe hare habitat, if the horizontal cover measurement is  $\geq 35\%$ , it should be considered “Dense Horizontal Cover” (DHC) unless more site-specific information suggests a different value. If DHC occurs from the surface of the actual or average snow depth and up to approximately two (2) meters above that surface, the site should be considered to have winter snowshoe hare habitat.

Determining/measuring DHC serves to address the applicability of VEG S6 in the context of the SRLA. This means that if DHC is present within a stand and DHC is above mean snow

depth, VEG S6 may apply. Refer to more detailed discussions elsewhere in this section regarding VEG S6 applicability and reporting requirements.

Much of the DHC discussion herein and within the SRLA framework focuses on DHC  $\geq$  35%, coupled with its occurrence above mean snow depth. However, little information is presented here discussing circumstances where VEG S6 does not apply. Many multi-story, or even-aged timber stands, may not contain horizontal cover  $\geq$  35%. That does not necessarily translate to an absence of snowshoe hares, but may contain hares at lower densities. As stated elsewhere, the 35% DHC correlates to areas where lynx are believed to be most frequently located. Therefore, project level analysis should recognize that vegetation management may still reduce snowshoe hare habitat, but at lower DHC levels treated acres do not count against caps established in the programmatic BO. The effects analysis should still document estimates of snowshoe hare habitat reduction against the environmental baseline and the corresponding response by lynx.

Using an acceptable methodology (see *Guide Section 7: Habitat Monitoring*), a Forest Service biologist, silviculturist, or other suitable designee can measure the horizontal cover. Use of the methodology provided in the Monitoring section of this document would be an acceptable method for making the determination. If no data are available, assume DHC is present and VEG S6 applies if the site is in a multi-story mature or late successional conifer forest.

Because of the variability of snow depths, if horizontal cover is measured in the summer as a surrogate for winter measurements of winter snowshoe hare habitat availability, measurements should be taken from ground level up to approximately three - four meters (nine - 13 feet) above ground level at higher elevations. At lower elevations, measuring horizontal cover up to approximately two - three meters above ground level may be sufficient. If measurements are taken during the winter, horizontal cover would be measured one - two meters above the snow.

### ***E) Incidental Damage***

Incidental damage is allowed in both Exception 3 and Exception 4 of VEG S6. Skid trails, temporary roads, landings, hazard tree removal, trees damaged/killed from felling other trees are all considered 'incidental' impact or removal. After discussion with several USFS Region 2 silviculturists, a reasonable rule of thumb for what is incidental removal for either salvage harvest or uneven-aged management would typically be 15-20% of the understory. However, there may be several factors about projects and project areas that affect this estimate or actual levels of unavoidable damage. Field reviews should result in an estimate of how much of the incidental understory removal would actually affect *winter* snowshoe hare habitat. VEG S6 only applies in lynx habitat when there is sufficient live understory tall enough to provide for winter snowshoe hare habitat and the stand is considered a multi-story stand or late successional stand.

While reduction of *winter* snowshoe hare habitat must be estimated related to caps established in the BO, incidental damage to vegetation within stands where VEG S6 does not apply may still result in reduced snowshoe hare habitat, and should be documented in the biological assessment.

In many cases, keeping the incidental damage to 15% or 20% may need to be accomplished by, for example, carefully locating the designated skid trails, larger spacing between skid trails, placing landings in open areas, logging during the winter, and quality oversight by the timber sale administrator and the Forest Service representative. In the case of the broad effects of mountain pine beetle on forest stands, 100% salvage of the overstory may result in more than “incidental” removal of the understory. Typically these stands are no longer considered multi-storied, even though they may provide limited snowshoe hare habitat in the live understory. In each case, the biologist should work closely with the silviculturist during the NEPA planning to estimate this indirect loss and document it in the Biological Evaluation or Assessment.

Forest Plan standards come into play when estimating these incidental impacts. Typically the Watershed Conservation Practices Handbook (FSH 2409.25.14.1) has management direction to limit soil compaction from skid trails to no more than 15% of the stand in order to protect soil quality. Also, the timber sale contract has a standard provision to protect regeneration: B(T)6.32 Protection of Residual Trees and B(T)6.42 Skidding and Yarding. If the Forest ID Team during the NEPA process determines that additional measures are needed to protect regeneration, they can be identified as project design features/criteria to be included later in the appropriate C provision during contract preparation.

The amount of incidental damage to winter snowshoe hare habitat (dense horizontal cover one-two meters above average snow levels) needs to be tracked if it is currently providing snowshoe hare habitat, and would indirectly be removed or damaged. The biologist and silviculturist should estimate this in the environmental analyses and documents, including the effects analysis report (i.e. biological evaluation or assessment), based on site-specific conditions. Post-treatment monitoring will need to occur to evaluate the amount of incidental damage that actually occurred.

### ***F) Uneven-aged Vegetation Management***

Uneven-aged management is recognized as a proactive approach to mimic natural gap dynamics that maintain or encourage multi-story attributes while accomplishing other resource management objectives. Gaps are created naturally in the canopy of stands from small bug infestations, diseases, blowdown pockets of trees, and other natural influences.

The general principle of uneven-aged vegetation management, as identified in **Exception 4 in VEG S6**, is the small group selections that consist of small forest openings (approximately 1-2 acres in size) in which the openings created by group selection will not exceed 20 percent of a stand in a single entry, but individual tree selection can occur throughout an entire stand or between the groups. Therefore, uneven-aged treatments will approximate natural succession and disturbance processes while maintaining and providing habitat conditions that support lynx and snowshoe hare through time in both the stand initiation structural stage and in mature, multi-story conifer vegetation (**VEG O1 and O2**). Additionally, uneven-aged treatments will be focused in areas that have the potential to improve winter snowshoe hare habitat but presently have poorly-developed understories that lack dense horizontal cover (**VEG O4**).

There are many possible examples of treatments that meet the objectives **VEG O1, O2, and O4**, including:

- Harvesting a mature lodgepole stand with very little understory, which would regenerate and improve snowshoe hare habitat in 10 - 20 years.
- In a spruce-fir or mixed conifer stand, an uneven-aged treatment should focus the location of the patches or small groups in those areas of each stand that have less than 35% horizontal cover at up to two meters above the average snow depth.

The intent of VEG O4 is to focus vegetation treatment in areas that could improve snowshoe hare habitat. It does not mean that it *requires* 100% of treatments to be in poorly-developed understory. The intent of Exception 4 was to encourage uneven-aged management in multi-storied stands to provide both snowshoe hare habitat within these stands and meet other Forest Plan objectives for vegetation treatments. There are no limits to the amount of lynx habitat that can be treated under Exception 4 in VEG S6, with the exception of limitations under VEG S1 and S2. Given the guidelines for this exception, projects implemented under this exception are generally not anticipated to result in take. In the event that take is anticipated in individual projects, those effects will be addressed in a second tier Biological Opinion, as needed.

### ***Part 3. Questions and Answers for Vegetation Management***

#### ***General***

1. *Can most lynx habitat issues be addressed during sale lay out procedures?*

**Answer:** Lynx habitat issues should be addressed at all phases of project planning: project design, NEPA, section 7 consultation, and implementation. The more that can be addressed early and often such as during lay-out procedures, the more likely the project will be compatible with the SRLA and avoid unintended consequences or costly surprises later.

2. *There are possible effects to logging operations that may occur during the "Normal Operating Season" under the timber sale contracts. A common practice on our timber sales is to brush out any existing roads that will be used to haul logs. Is this allowed?*

**Answer:** Yes, this activity is allowed (see HU G8). Clearing of overgrowth over an existing road to allow trucks to get through would not count against the acre caps under the SRLA management exemption and exceptions.

3. *Are SRLA timeframes dynamic or static? What is the baseline for the time period in any particular treatment area and once a particular area reaches said time period, what mechanism will be in place to remove that stand from the overall calculation?*

**Answer:** The 10-year timeframe for VEG S2 is separate from the 15-year life span of the SRLA decision. The baseline for the 10 year timeframe in VEG S2 is the 10-year period preceding the current NEPA analysis for a vegetation treatment project proposal. In that sense, the timeframe could be seen as dynamic, or basically a moving 10-year period that shifts relative to the date of analysis of the current project proposal. The 15-year timeframe of the SRLA is static and began October 29, 2008, with the signing of the Record of Decision by the Regional Forester. This will be needed by the Forests and Region 2 Regional Office to track the use of exemptions and exceptions to the

VEG standards and to be able to transfer that information annually to the Fish and Wildlife Service under the terms and conditions of the Biological Opinion. Additionally, a stand will be considered suitable when the vegetation height is greater than two meters above the average snow depth and canopy cover is greater than 10 percent.

4. *There is confusion created by having lynx habitat defined interchangeably as mature forest stands for denning and young stands for forage. (For example: can't harvest more than 15% lynx habitat—refers to mature—and 30% limit of unsuitable lynx habitat—refers to young stands).*

**Answer:** Actually, both VEG S1 and S2 address vegetation treatments that regenerate forested stands, resulting in the creation of early seral forested stands. VEG S1 limits all forms of natural and man-made regeneration (fire, insect, blowdown and timber management) to 30% of an LAU, while VEG S2 only addresses timber management projects that regenerate stands, limiting the amount of acreage in stand initiation stage resulting from timber management to 15% of the LAU over a ten-year period.

5. *Are we now required under the SRLA to routinely do intensive field surveys and monitoring of dense horizontal cover in our project areas? Is the cover board methodology the only procedure we can use to quantify snowshoe hare habitat?*

**Answer:** There is no direct requirement under the SRLA to conduct specific levels of monitoring for implementation of the decision. The importance of dense understory as snowshoe hare habitat has been known for some time, but was emphasized in the SRLA analyses and final decision. Some early project consultations affected by the SRLA revealed uncertainties and inconsistencies within and between the agencies about how this habitat should be measured and to what extent or frequency necessary to adequately inform project planning and section 7 consultations. The central point is for Forests to be thinking about how best to address this management need and how much monitoring may be needed to understand the location and condition of understory vegetation relative to project areas and against some yardstick of “dense understory/high quality hare habitat.”

The monitoring effort is necessarily a Forest-level decision likely based on considerations of current information gaps and internal Forest needs for developing informed projects, conducting rigorous effects analyses, and coordinating between the agencies in section 7 consultations. Project areas with clearly low horizontal cover would not need field sampling, nor would areas of obviously high cover in the understory. It will be important to document those conditions, ideally including photographs and field notes. For those gray areas where it is difficult to discern if the cover meets DHC, personnel can either assume it does exist and conduct project planning and effects analyses accordingly, or alternatively sample some project areas. Over time, with some strategic sampling including photographic records, the expectation is that Forest biologists will become increasingly proficient in assessing habitat conditions and extent of DHC in project areas largely from photographic documentation, much like has been done for fuels assessments for many years. Section 7 of this Implementation Guide provides one procedure for doing field surveys and

monitoring of understory. For larger projects, it may be appropriate to monitor and track stands that represent only a subset of the total treatment unit. Other procedures such as counting stem densities may also be appropriate. Whatever approach is used, the technique should be closely coordinated between the local Forest and FWS biologists to ensure agreement that it is the most appropriate for the situation.

6. *Does VEG O1 apply to all forest types? If so, should we be mimicking stand replacement fires in lodgepole systems?*

**Answer:** VEG O1 applies to all forest types that are considered lynx habitat. The intent of VEG O1 is to mimic natural succession and disturbance processes that create future habitat while maintaining habitat components for conservation of lynx. However, in both seral lodgepole pine and spruce-fir stands, we would likely not be treating vegetation at the scale of a large, stand replacing wildfire. Wildland fires managed to address multiple objectives including restoration of ecological processes and maintaining and improving lynx habitat is encouraged under Objective VEG O3.

7. *Does VEG G4 contradict direction for ski runs, Community Wildfire Protection Plans (CWPPs), and other vegetation treatments?*

**Answer:** VEG G4 states that prescribed fire activities should not create permanent travel routes that facilitate snow compaction and that permanent firebreaks should avoid ridges and saddles. If the Forest Service proposes to construct a permanent fire break on a ridge or saddle, the project should be evaluated to determine the importance of the firebreak and whether or not a firebreak in a different location could serve a similar function. If the analysis determines that the firebreak is important at that location, then the firebreak project should proceed and the reason for not following the guideline should be documented in the annual report. Note that the vegetation management standards and guidelines do not apply to removal of vegetation for permanent developments, such as ski runs.

8. *Define “consider” VEG S1, S2, S5, and S6 in VEG G10. If we choose not to meet those standards in the fuel treatment project, does the 3% rule still apply? If so, is that the only rule?*

**Answer:** “Consider” means that the vegetation objectives, guidelines, and standards should be followed wherever possible. This is in the spirit of the SRLA decision, although the decision also provides flexibility to affect habitat for several reasons including fuels management. If the project is able to meet the vegetation standards and does not require the use of exemptions, the acres treated will not need to count towards the 3% fuels exemption cap. However, other standards and guidelines provided in the SRLA may still apply, and the expectation is that most projects can be designed in a way that achieves multiple objectives.

### ***Salvage Harvest***

9. *Does salvage harvest in stands killed by beetles, wildfire, or other disturbances get counted against the management standards and thresholds?*

**Answer:** Salvage harvest within currently unsuitable lynx habitat cannot further change its condition. Such stands have a dead overstory resulting from insect epidemics, wildfire, or other natural disturbances and lack multi-story structure. Salvage of these stands does not create additional unsuitable lynx habitat because the stand is already “currently unsuitable.” The SRLA does not limit salvage harvest in non-multi-story stands where the overstory is dead and the understory does not yet provide winter hare habitat.

10. *If areas proposed for salvage do not have dense horizontal cover (i.e.,  $\geq 35\%$  horizontal cover), is it correct that the standard VEG S6 does not apply?*

**Answer:** That is correct that VEG S6 does not apply. However, if the salvage harvest creates currently unsuitable habitat (i.e., stand initiation structural stage) then those acres of currently unsuitable habitat should be counted towards VEG S1 and S2. Furthermore, if underdeveloped understory (i.e., height of understory vegetation is not yet suitable) exists in the project area, the effects analysis for the project should include some consideration of any effects to lynx that might be realized in setting back or delaying the continued development of that understory. This evaluation would just be part of the analysis and not intended to imply that SRLA management standards, exemptions, or exceptions apply.

11. *If dense horizontal cover is present in a project area but avoided, do we only count those acres affected ‘incidentally’ by the salvage harvest towards the cap?*

**Answer:** The question suggests that the dense horizontal cover would in fact not be completely avoided in all cases. The SRLA decision does emphasize avoidance where possible, and otherwise minimizing incidental damage where complete avoidance is not possible. Incidental damage under Exception 3 in VEG S6 is part of the 0.5% cap under the SRLA decision.

### ***Exemptions and Exceptions***

12. *Do all vegetation projects count towards the 4.5% cap per Forest – regardless of whether or not the projects are formal or informal?*

**Answer:** Yes, all vegetation treatments that use the exemptions and exceptions count towards the 4.5% cap per Forest (with the exception of Exception 4 in VEG S6), regardless of whether or not those projects have been determined to be “adverse effect” (LAA) projects or “not likely” (NLAA) projects. Note that there is not a cap or limit on the number of acres that can be treated using Exception 4 in VEG S6. The intent is to allow uneven-aged vegetation management that maintains and creates multi-storied stands, while still being consistent with VEG O1, O2, and O4. For more detailed discussion about the connections among the SRLA management exemptions, exceptions, and “caps,” see the earlier section entitled *A) Exemptions and Exceptions to Vegetation Standards* above.



13. *Is it true that all allowed actions under VEG S5 & VEG S6 are considered exceptions? Clarify.*

**Answer:** The exceptions are the allowed actions for pre-commercial thinning (VEG S5) and reducing winter snowshoe hare habitat in mature multi-storied or late successional forest through vegetation management projects (VEG S6). The exemptions, often referred to as the WUI fuels exemptions, are also allowed under VEG S5 and S6 only for fuels reduction projects in WUI areas. See Table 3 from the Biological Opinion in this Section of the Guide (*Part 2. Discussion of Key Concepts*).

14. *If LAUs are greater than 30 percent currently unsuitable, do the 1 percent and 3 percent caps still apply?*

**Answer:** Yes, the caps always apply regardless of the condition of the LAUs. If a Forest cap is reached before the 15 year estimated life of the SRLA, formal consultation will need to be reinitiated by that Forest. Note that the exemption for fuels treatments in WUI areas allows for standard VEG S1 (e.g., no more than 30 percent of LAU can be currently unsuitable) to be exceeded, although the 3 percent cap per Forest still applies. Also note that the standard VEG S1 states that there cannot be more than three adjacent LAUs that exceed the VEG S1 standard as a result of fuels treatment projects. This condition means that there cannot be a fourth adjacent LAU that exceeds the VEG S1 standard as a result of fuels treatment projects in a given Forest (administrative unit).

15. *What happens if the 3% caps are exceeded?*

**Answer:** If any of the caps are exceeded (e.g., 3% fuels exemption cap, 0.5% exception cap, or 1% precommercial thinning cap) on a Forest, then that Forest will need to reinitiate consultation. It is anticipated that some Forests that are experiencing a mountain pine beetle or spruce beetle epidemic will likely reach those caps sooner than other Forests.

16. *What are the percentages of impact to lynx habitat that are allowed for the various exemptions and exceptions?*

**Answer:** The exemptions and exceptions are as follows:

- The WUI Fuels Exemptions under VEG S1, S2, S5 and S6 allow for up to **3%** percent cumulatively of the lynx habitat per Forest (or combined administrative unit).
- The exceptions to VEG S5 and S6 allow for up to **0.5%** percent of lynx habitat per Forest (excluding Exception 5 in VEG S5 and Exception 4 in VEG S6).
- Exception 5 in VEG S5 allows for up to **1%** of lynx habitat per Forest (but with the condition that it also cannot exceed 1 percent of lynx habitat in any LAU).
- Collectively, the combined exemptions and exceptions add up to **4.5 %** of the lynx habitat per Forest.

- Exception 4 in VEG S6 is not limited by the number of acres that can be treated under this exception since, given the guidelines for this exception, it is generally not anticipated to result in take. In the event that take is anticipated in future projects, those effects will be addressed in a second tier biological opinion, as needed.

Because habitat conditions have changed since the Biological Assessment was completed, the cap from the Biological Opinion may be reached by some Forests more quickly than estimated. In this case, consultation may be reinitiated by the individual Forest related to their needs. It would not, however, lead to a site specific Plan amendment, as the cap was a result of the Biological Opinion, not Forest Plan standards.

*17. Is there a limit to the amount of treatment in an individual LAU? Can we have >30% currently unsuitable habitat in a LAU but continue to put most of our Forest's WUI exception/exemption treatments in that same LAU? Seems that as long as we provide connectivity and some habitat through the LAU, then we can do this? This would fall within WUI exceptions for 30%, 15% in 10 years. WUI includes much more than residences, so this could account for lots of acres.*

**Answer:** Fuels reduction projects in the WUI are exempt from standards VEG S1, S2, S5, and S6. These exemptions mean that fuels reduction projects are allowed to: 1) exceed the VEG S1 standard (e.g., lynx habitat in LAU cannot exceed 30 percent unsuitable); 2) exceed the VEG S2 standard (e.g., vegetation treatments cannot convert more than 15 percent of lynx habitat in a LAU to unsuitable within a 10-year period); 3) exceed VEG S5 (e.g., no pre-commercial thinning in areas providing lynx winter forage habitat; and 4) exceed VEG S6 (e.g., no removal of winter snowshoe hare habitat in multi-storied stands or late successional forests), as long as the treatments are consistent with the other standards and guidelines in the SRLA. Use of the fuels exemptions is cumulative for the combined VEG S1, S2, S5, and S6, rather than for each standard.

However, fuels treatments within the WUI that use the 3% fuels exemption should still try follow the vegetation standards as much as possible, as provided in VEG G10, which states that "fuel treatment projects within the WUI as defined by Healthy Forest Restoration Act should be designed considering Standards VEG S1, S2, S5, and S6 to promote lynx conservation.

Even though the amended Forest Plans now allow for the vegetation standards to be exceeded under in specific provisions, the project may result in an adverse effect determination a project-specific Biological Assessment.

*18. The exemption to VEG S1 says that "Fuels treatment projects may not result in more than three adjacent LAUs exceeding the standard." What does this mean?*

**Answer:** This part of the exemption means that if there are three adjacent LAUs that have exceeded standard VEG S1 (no more than 30% of lynx habitat is currently unsuitable), then fuels treatment projects cannot result in a fourth adjacent LAU

exceeding the VEG S1 standard. Therefore, fuels treatment projects in WUI areas can continue to occur in the three adjacent LAUs even if more than 30% of the lynx habitat in the LAU is currently unsuitable, but fuels project in the fourth LAU cannot exceed the 30% currently unsuitable. The amount of acres that can be treated in the three adjacent LAUs is limited by the 3% cap per Forest.

It is important to remember that the VEG S1 standard states that “If more than 30 percent of the lynx habitat in an LAU is currently in a stand initiation structural stage that does not yet provide winter snowshoe hare habitat, no additional habitat may be regenerated by vegetation management projects.” It is only because of the exemption to the standard that allows fuels treatment projects in WUIs to exceed the 30% currently unsuitable amount. If a fuels treatment project is outside a WUI or if the vegetation treatment is for purposes other than fuels reduction, then the 30% currently unsuitable amount cannot be exceeded. Note that if a fuels treatment project does not result in regeneration (i.e., stand initiation structural stage), then the treatment can proceed even if the 30% unsuitable amount has been exceeded. Additionally, it does not matter what caused the 30% currently unsuitable to be exceeded (fire, insect, vegetation treatment).

### ***Wildland Urban Interfaces (WUI) and Communities at Risk***

*19. Are powerline corridors considered WUI for purposes of applying the SRLA management direction, especially the management exemptions and exceptions to vegetation clearing activities within and along the corridors?*

**Answer:** In most cases, powerline corridors are not considered to be WUIs. We recognize that vegetation clearing occurs along powerline corridors for the purposes of access, fuels reduction, and hazard mitigation. However, this vegetation clearing results in a permanent removal of vegetation, somewhat analogous to permanent vegetation removal and maintenance along ski runs at ski areas. Therefore, the SRLA vegetation management standards do not apply, since they refer to vegetation regenerating activities.

There is one exception to the issue of powerline corridors and WUIs, namely, if a CWPP identifies a powerline corridor as part of their WUI, then the fuels treatment activities in that specific WUI can use the WUI fuels exemption (i.e., 3 percent of lynx habitat per Forest).

*20. How are treatments recommended in a Community Wildfire Protection Plan addressed in this plan? Are they exempt from these standards?*

**Answer:** The area encompassed by the WUI is identified in a Community Wildfire Protection Plan (CWPP) or by the Healthy Forest Restoration Act WUI definition. Fuels treatments in WUI areas are exempted from the standards VEG S1, S2, S5, and S6 for up to 3 percent of the lynx habitat per Forest. ”

*21. Does the WUI vary in size from place to place? How do we apply it consistently across our Forest under the SRLA decision?*

**Answer:** According to the HFRA definition that was also adopted in the SRLA decision, the area of a WUI is identified in a Community Wildfire Protection Plan

(CWPP). If there is no CWPP in place, the WUI then is considered the area 0.5 mile – 1.5 miles from an at-risk community. The actual distance within that range is dependent on terrain and other factors. See *Part 2, Discussion of Key Concepts, Wildland Urban Interface and Communities at Risk*, for a more detailed definition. The definition of WUI is also found in the Glossary of the SRLA decision, Attachment page 1-15 (a copy of the decision is in Section 1 of this Guide).

22. *Are adverse effects allowed for projects outside the WUI?*

**Answer:** Projects with adverse effects are allowed both within and outside of WUI areas. Incidental take has been provided in the Biological Opinion for specific vegetation treatments that utilize the exemptions and exceptions, although a Tier 2 consultation will still need to occur. The exemptions can occur only within the WUI, while the exceptions may occur both within and outside of the WUI. The Fish and Wildlife Service will use a streamlined Tier 2 Biological Opinion for adverse affect projects that use the exemptions and exceptions. Projects that are determined to result in an adverse effect but do not use the exemption and exceptions will have a separate Biological Opinion prepared by the Fish and Wildlife Service.

***Stand Initiation Structural Stage and Unsuitable Habitat***

23. *Quantify “stand initiation structural stage”. When does “stand initiation structural stage” stop providing winter hare habitat (e.g., diameter, height, crown closure, height differentiation, canopy base height, stems/acre)? Glossary says “where the trees are generally less than 10 to 30 years old and have not grown tall enough to protrude above the snow during winter” – in many cases 20-30 year old trees protrude well above the snow.”*

**Answer:** “Stand initiation structural stage” is the silviculture terminology used for “early successional stage” of a forested stand. The early portions of the stand initiation stage do not provide winter snowshoe hare forage since the vegetation is generally below the snow. The later portion of “stand initiation structural stage” may provide winter snowshoe hare habitat. At some point, in sapling-sized lodgepole pine (late early to mid successional) , the branches (“crowns”) at the bottom of the tree have self-pruned to levels above the average snow pack or get too high for snowshoe hares to use. At this point, the stand no longer provides winter snowshoe hare habitat. Stand initiation and stem exclusion structural stage are also defined in the glossary.

24. *Given the current mountain pine beetle epidemic, how much overstory needs to be gone (dead) for the stand to be considered unsuitable?*

**Answer:** It depends on the understory and the height of the advanced regeneration. If the advanced regeneration is at least 1-2 meters above average snow depth, the stand may still be considered suitable. If there is very little understory regeneration, or the understory is only 1-2 meters above the average snow depth, and 90% of the overstory is dead, the stand could be considered to be currently unsuitable.

25. *How high above the snow does crown lift have to be to prohibit hare use?*

**Answer:** Hodges (2000) says 0.5 meter, but to account for varying snow levels, we are suggesting one-to-two meters over average snow level.

26. *Is summer/other habitat now combined with currently unsuitable (stand initiation stage)? A statement in the Biological Opinion (page 44) suggests there is no separate summer habitat (other) category, or should we call other/summer foraging habitat something else to clarify it? This would cause almost all LAUs to have >30% habitat in stand initiation stage, limiting our management options.*

**Answer:** The current lynx habitat mapping criteria is still in place. The “other” foraging habitat is still considered currently suitable habitat.

27. *Clarify vegetation management activities and practices statement (p. 1-2 attachment of Record of Decision): “The following objectives, standards, and guidelines apply to vegetation management projects in lynx habitat within LAUs in occupied habitat. With the exception of Objective VEG O3 that specifically concerns wildland fire use, the VEG objectives, standards, and guidelines do not apply to wildfire suppression, wildland fire use, or removal of vegetation for permanent developments such as mineral operations, ski runs, roads, and the like. None of the VEG objectives, standards, or guidelines applies to linkage areas.” Does this statement mean that these activities do not count toward the 30%, 15%, 3%, 1% limitations or exceptions/exemptions? How would we track changes to lynx habitat if a wildfire or highway construction caused an LAU to go over 30% stand initiation stage but these changes didn’t apply to the standards, guidelines, and objectives? We could continue to push a LAU far beyond 30% in the stand initiation stage.*

**Answer:** Permanent losses of habitat are not limited by the SRLA VEG standards and guidelines, which are only concerned with vegetation regenerating activities. The VEG standards do not apply to wildland fires and wildfire suppression, because those are unplanned activities that may be beneficial to lynx over the long term. However, we still will need to track the current conditions of the vegetation/lynx habitat after wildfires, blowdowns and insect invasions/epidemics. Accordingly, live vegetation treatments can occur in LAUs exceeding the 30% early stand initiation structural stage only by using the appropriate exemptions or exceptions.

## **VEG S5**

28. *Is Timber Stand Improvement (TSI) thinning allowed in lodgepole pine? If so, what are the quantifiable specifications (age, density, acreage?)*

**Answer:** Standard VEG S5 applies to all precommercial thinning, as defined in the ROD, including timber stand improvement (TSI). Fuel treatments within a WUI are exempt from the standards up to 3% of the lynx habitat per Forest, combined with the exemptions for all VEG standards. VEG S5 limits precommercial thinning and similar activities, from stand initiation structural stage until the stand no longer provides snowshoe hare habitat (crowns have lifted above approximately 1-2 meter above average snow level). The tree species allowed to be thinned are not specified. The decision to provide flexibility in the aftermath of the mountain pine beetle epidemic

(ROD page 8) is intended to allow thinning in lodgepole pine. The age and density are not specified, but the intent is to explore methods to sustain hare habitat over time while meeting other resource objectives.

29. *Is TSI thinning allowed in spruce/fir?*

**Answer:** TSI thinning in spruce/fir or other mesic mixed conifer stands within lynx habitat may conflict with standard VEG S6 if multistory conditions exist and dense horizontal cover is present.

If VEG S6 does not apply (e.g. a regenerating spruce/fir stand without an overstory), then a TSI thinning could be implemented. However, thinning is limited to 1% of the lynx habitat within the LAU if the project is outside a WUI. If the proposed thinning treatment is considered to be a fuels reduction project and is within a WUI, then the project is exempt from standards, VEG S5 and S6, but is still limited to 3% (combined) of the lynx habitat per Forest.

NOTE: Biologists, silviculturists, and other should identify desired conditions (presumably to improve snowshoe hare habitat) and then develop prescriptions to achieve those conditions. Monitoring is needed to determine the pros and cons of the thinning, including hare response.

30. *How is the term “research” defined as part of VEG S5?*

**Answer:** Before using this exception (Exception 2 in VEG S5 and Exception 2 in VEG S6), it is recommended that a study design be developed using sound scientific methodologies. One intent of this exception is to encourage experimentation of methods to pre-commercially thin in order to improve snowshoe hare habitat for a longer period of time (i.e., delay crown lift in young lodgepole pine stands).

31. *Please clarify phrase in VEG S5 Exception 5a...and the amount and distribution of winter hare habitat within the LAU must be provided through appropriate site-specific analysis and consultation.*

**Answer:** This statement refers to the need to analyze the amount and location of precommercial thinning activities that may affect winter hare habitat within the context of the amount and distribution of existing winter hare habitat throughout the LAU. For the purposes of analysis and consultation, this information will provide site-specific effects to the amount and availability of winter hare habitat within the LAU. There is no set amount of winter hare habitat identified to be maintained within a LAU in the SRLA. However, the amount of PCT that can occur within any LAU is limited to 1% for projects occurring outside the WUI.

**VEG S6**

32. *What are some of the vegetation projects that are assumed to "reduce winter snowshoe hare habitat."*

**Answer:** In stands that are currently providing snowshoe hare habitat, all vegetation treatments have the potential to reduce winter snowshoe hare habitat. However, in the

case of salvage of dead trees, the only potential for reduction of snowshoe hare habitat is the indirect, or incidental, damage or removal of the understory or remaining live overstory.

33. *Define metrics for winter snowshoe hare habitat, and snowshoe hare habitat and what measurements we can use to indicate that we have reduced hare habitat. What thresholds are we looking for?*

**Answer:** The metrics for defining snowshoe hare habitat including winter snowshoe hare habitat (e.g., dense horizontal cover) are discussed earlier in this section. Most vegetation management treatments in a multi-storied mature or late successional conifer forest that contains winter snowshoe hare habitat are likely to reduce that habitat. Any reduction of winter snowshoe hare habitat in these forests is only permitted if it is part of an exemption or exception, such as salvage or uneven-aged management.

34. *Who determines if a stand is: “multi-storied” and/or “mature or late successional”?*

**Answer:** Either the biologist or the silviculturist can determine if the stand is a mature multi-storied or late successional stand. For the purposes of the SRLA, a stand will be considered multi-storied mature or late successional, if it contains at least **two** layers of live vegetative structure, combined with an overstory that provides at least 40 percent canopy (mature overstory) closure. In addition, for the stand to be considered winter snowshoe hare habitat, there must be the presence of dense horizontal cover, resulting from advanced regeneration and/or low-lying branches.

35. *Will a definition of “multi-storied mature or late successional” and “dense horizontal cover” take into consideration the varying range of these stand/vegetation characteristics over changing elevation, aspect, topography? (e.g., “dense” cover on north-facing spruce-fir may have many more stems/acre than “dense” cover on southwest-facing slopes).*

**Answer:** Dense horizontal cover in this context is related to snowshoe hare habitat. See discussion above.

36. *When does salvage harvest change suitable lynx habitat to currently unsuitable condition? Provide sideboards/guidance.*

**Answer:** Salvage harvest within currently unsuitable lynx habitat will not change suitable lynx habitat to unsuitable habitat. Such stands have a dead overstory resulting from insect epidemics, wildfire, and other natural disturbances and lack multi-story structure. Also, their understories are the equivalent of the early stand initiation structural stage (SISS) that does not yet provide winter snowshoe hare habitat [e.g., lacks adequate horizontal cover to meet snowshoe hare needs (see dense horizontal cover discussion above). The SRLA ROD (see *Guide Section 1: Record of Decision*) defines ‘lynx habitat in an unsuitable condition’ as synonymous with early SISS “...where the trees generally have not grown tall enough to protrude above the snow in winter.”

Salvage of these stands does not contribute towards the 15% limit in VEG S2, because the stand is already “currently unsuitable.” However, the project-specific Biological Assessment should consider effects to the existing understory from the salvage activities. For example, in areas with extensive effects from mountain pine beetle, we should do what we can to minimize impacts to the understory as much as possible even if it is not yet winter hare habitat. The SRLA does not limit salvage harvest in non-multi-story stands, where the overstory is dead and understory does not yet provide winter hare habitat. However, some biological consideration should be made to be consistent with the SRLA objectives. Instead of 100% salvage of a stand, the prescription could have areas with limited salvage or exclude some islands with good understory that could become winter snowshoe hare habitat in the near future.

37. *How can we meet VEG O4 and Exceptions 3 & 4 in VEG S6? Considering activities (temporary roads, skid trails, landings, cleared width to move harvest equipment through a stand, hazard trees removal, whole tree skidding, and economically viable projects), is it feasible to have only “incidental” removal or to encourage multi-story attributes?*

**Answer:** Yes, it is feasible. Biologists, silviculturists, and sale administrators need to work together in the design and implementation of the projects. Uneven-aged management allows removal of approximately 20% of the stand and the removal should be focused, where possible, in areas that could benefit from regeneration.

38. *If understory is already poor, is it reasonable to expect a multi-story stand, especially after skid trails, temporary roads, landings are added?*

**Answer:** If understory is already poor due to overstory competition, this is exactly where we need to be treating to improve snowshoe hare habitat. (See discussion of *Uneven-aged Management* in Part 2 of this section).

39. *Does VEG S6 apply to a project in a late-successional forest that does not have dense horizontal cover?*

**Answer:** No, since it only applies to vegetation management projects that affect dense horizontal cover (winter hare habitat). See dense horizontal cover discussion earlier in this paper.

40. *What are appropriate silvicultural treatments in spruce/fir (green sales) lynx habitat?*

**Answer:** Silviculture treatments that do not reduce winter snowshoe hare habitat are allowed. In addition, the following exceptions are allowed:

1. Treatments within 200 feet of administrative sites, dwellings, etc;
2. Research studies and/or genetic tree tests;
3. Salvage harvest with incidental impacts; and
4. Uneven-aged management is appropriate.

41. *The statement that: “uneven-aged management practices will be employed to maintain and encourage desired habitat attributes”, in the 4<sup>th</sup> paragraph on page 9 of the ROD*



*seems to go beyond the requirements of VEG S6 (e.g., ... projects that **reduce** snowshoe hare habitat ... may only occur: ... exemption 4) where uneven-aged management practices are employed ...*

**Answer:** This statement in the ROD explains why uneven-aged management is encouraged, while recognizing it may reduce winter snowshoe hare habitat. The explanation is not intended to extend the requirements of VEG S6.

42. *Does VEG S6 exclude all even-aged prescriptions under the assumption that they will “reduce winter snowshoe hare habitat”? This would not be true for the case where advanced regeneration is established and the final seed tree removal is the proposed treatment. If the treatment is even-aged, but does not reduce snowshoe hare habitat is it allowable under VEG S6? If so, this should be clarified.*

**Answer:** If it would not reduce snowshoe hare habitat, it is allowable. However, it is unlikely there would be very many vegetation management projects in multi-storied stands that would not have the potential to reduce snowshoe hare habitat. However, multi-storied conifer stands do not *always* provide dense horizontal cover. The intent of VEG S6 is to encourage the management of spruce-fir and mixed conifer, multi-storied stands as uneven-aged stands. For example, if a stand has been managed in the past under a shelterwood and is ready for the final overstory removal or seed tree removal, the prescription could still start managing the stand as uneven-aged by harvesting patches of the overstory and understory in group selections.

43. *Are all (or just those that reduce hare habitat) uneven-aged regeneration treatments considered an exception under VEG S6, and therefore subject to the reporting requirements listed in the “Required Monitoring” ROD Attachment 1-9 (item 2d), and the 4.5% maximum area allowed in exemptions for each National Forest?*

**Answer:** VEG S6 does not restrict vegetation management projects that do not reduce winter snowshoe hare habitat. Treatments that do not diminish habitat are not an exemption or an exception to VEG S6, and do not need to be tracked as part of the required monitoring. However, it is unlikely there would be very many vegetation management projects in multi-storied conifer stands that would not have the potential to reduce snowshoe hare habitat. When uneven-aged management is used under Exception 4, the treatments themselves are only limited by VEG S1 (30% of each LAU currently unsuitable) and VEG S2 (15% change to currently unsuitable condition over a 10-year period due to timber projects). They do NOT have to be tracked under the Required Monitoring for the exceptions.

44. *How do we track patch openings within uneven-aged harvests (group selection)? [FACTS reporting at the stand level (harvest unit) and not individual patches.]*

**Answer:** The ROD does not describe how monitoring will be accomplished. However, it is unlikely FACTS will be used to fulfill this requirement. Although FACTS may not be the mechanism to monitor openings for the SRLA, group selection cuts should be entered in FACTS using activity code 4152. The business rule for this activity is to report only the acres actually harvested in the groups. This can be an estimation, because groups may or may not be mapped using GPS, or are otherwise spatially-

displayed. The silviculture prescription can be used to provide the estimate, if better information is unavailable.

See *Guide Section 6: ESA Tools* for more information about how to annually track projects, habitat changes, and use of management exemptions and exceptions by Forest.

45. *Are we completely barred from doing any project work in areas with dense horizontal cover/high quality lynx foraging habitat?*

**Answer:** No. The habitat should be avoided to the maximum extent possible, where it occurs in the project area. But the area is not automatically off limits to project work simply because it contains dense horizontal cover.

### ***Uneven-Aged Management***

46. *Recognizing the emphasis on uneven-aged management under the SRLA decision, is even-aged management completely forbidden? Are there no situations under which even-aged management practices could be used, or seen as a tool for improving habitat for lynx and hares?*

**Answer:** Even-aged management is not completely forbidden under the SRLA decision and has a place in the toolbox for managing forest and habitat. For example, even-aged management intended as a strategy to open up mature lodgepole pine forest and accelerate understory development is permissible and encouraged under the SRLA. The litmus test is whether a proposal makes sense in terms of encouraging habitat or improving habitat quality relative to current conditions. Conversely, proposing even-aged management in spruce-fir forest that currently has habitat value to the Canada lynx would likely be inconsistent with the SRLA, unless perhaps it is a long-term habitat maintenance project. This would need close scrutiny.

47. *If uneven-aged management is used to maintain or encourage dense horizontal cover and the project is designed to avoid the existing dense vegetation, would any of the project acres affected be counted towards the 0.5% Forest cap?*

**Answer:** The area impacted would be counted towards the 0.5% cap where dense horizontal cover is incidentally damaged during implementation of the project, or where the project has changed the multi-storied stand characteristics. Compromising existing habitat in the interests of “maintaining” it over some longer term needs careful deliberation and coordination. Furthermore, projects that encourage habitat restoration and development and avoid dense horizontal cover do not count towards the 0.5% Forest cap.

## ***Part 4. Vegetation Project Examples***

### ***Example 1. Lodgepole Pine Fuels Reduction Project Scenario A***

Existing Condition: A mature seral lodgepole pine stand is currently suitable lynx habitat and is within 0.5 miles of a community-at-risk (considered to be a WUI).

Desired Treatment (Prescription): The stand is proposed for a fuels reduction thinning treatment. Fifty of the 100 acres of lynx habitat in the stand are proposed for thinning.

SRLA Applicability: The project will use the exemption to VEG S5 to conduct the thinning. Therefore, the 50 acres that are treated will be tracked towards the 3% fuels exemption per Forest. The thinning treatment does not contribute to the amount of unsuitable habitat in the LAU (tracked under VEG S1 and S2) since the treatment will not result in regeneration (i.e., stand initiation structural stage/currently unsuitable).

(Note that if the proposed project was outside a WUI, then the thinning would be limited by the conditions in Exception 5 in VEG S5. The treatment would be restricted to 1% of the lynx habitat in the LAU and would count towards the 1% cap per Forest, rather than the 3% WUI exemption per Forest.)

### ***Example 2. Lodgepole Pine Fuels Reduction Project Scenario B***

Existing Condition: A mature seral lodgepole pine stand contains suitable lynx habitat and is within a WUI that has experienced considerable beetle mortality and is currently over 30% unsuitable. The LAU is adjacent to three other LAUs that also have more than 30% of the lynx habitat in unsuitable condition.

Desired Treatment (Prescription): The stand is proposed for a fuels reduction treatment. The prescription is the creation of a number of small forest openings, which are often referred to as “Finney bricks”.

SRLA Applicability: Because the proposed project would exceed the conditions described in VEG S1 by conducting a regeneration treatment in a *fourth* adjacent LAU that has more than 30% unsuitable habitat, the project should not proceed as planned.

(Note these other considerations and options:

- This restriction does not apply to salvage activities in stands that are already dead and does not involve green tree treatments;
- An acceptable revision of the proposed treatment would be to design a fuels reduction project that does not result in a stand initiation structural stage in the fourth LAU;
- Work can continue to proceed and the WUI exemption used in one or more of the ‘first 3’ LAUs regardless of any limitations on working in the 4<sup>th</sup> one)

### ***Example 3. Lodgepole Pine Salvage Scenario A***

Existing Condition: A mature lodgepole pine stand in lynx habitat has heavy mortality (>90%) from mountain pine beetle. There is little existing understory. The stand is currently unsuitable lynx habitat.

Desired Treatment (Prescription): The stand is proposed for salvage harvest while retaining a few scattered live trees. The silvicultural prescription is a clearcut with reserve trees since USFS policy FSM 2471.3 requires a salvage prescription only be used for intermediate harvests (no regeneration required). A regeneration harvest prescription is required if the cutting will begin the regeneration process.

**SRLA Applicability:** The salvage treatment does not contribute to the amount of unsuitable habitat in the LAU (tracked under VEG S1), since the stand is already unsuitable.

The salvage harvest does not contribute to the 15 percent threshold in the VEG S2 standard, even though there is a regeneration (clearcut with reserves) prescription, since the stand is already unsuitable.

The VEG S6 standard is not applicable because the stand is not a multi-storied mature or late successional conifer forest. The harvest does not require the use of an exemption or an exception and, therefore, does not contribute to the 4.5 percent cap.

(Note that WUI is not an issue for this example since the proposed treatment is not a fuels reduction project.)

#### ***Example 4. Lodgepole Pine Salvage Scenario B***

**Existing Condition:** A mature lodgepole pine stand in lynx habitat has heavy mortality (> 90% mortality) from mountain pine beetle and pockets of dense regeneration are present (stand had been previously thinned). The stand is currently suitable lynx habitat due to the regeneration. The stand is proposed for salvage harvest while retaining a few scattered live trees. The stand is in a WUI.

**Desired Treatment (Prescription):** The prescription is the same as the previous example, Scenario A. The stand is proposed for salvage harvest while retaining a few scattered live trees. The silvicultural prescription is a clearcut with reserve trees since USFS policy FSM 2471.3 requires a salvage prescription only be used for intermediate harvests (no regeneration required). A regeneration harvest prescription is required if the cutting will begin the regeneration process.

**Applicability to SRLA:** The salvage treatment does contribute to the amount of unsuitable habitat in the LAU (tracked under VEG S1), since the stand is suitable and because regeneration harvest will occur. The salvage harvest also contributes to the 15 percent threshold in the VEG S2.

However, the VEG S6 standard is not applicable because the stand is not a multi-storied mature or late successional conifer forest (due to the dead overstory). The harvest does not require the use of an exemption or an exception and, therefore, does not contribute to the 4.5 percent cap.

(Note that if the stand was multi-storied, then project would require the use of Exception 3 in VEG S6 and the winter snowshoe hare habitat that is impacted would be tracked towards the 0.5% cap per Forest. If a stand initiation structural stage is created, those acres should also count towards VEG S1 and S2.)

(Note that WUI is not an issue for this example since the proposed treatment is not a fuels reduction project.)

#### ***Example 5: Spruce Salvage Scenario***

**Existing Condition:** A late successional spruce-fir stand in lynx habitat has heavy mortality in the large spruce trees from spruce beetle. There is a well developed understory with 40 acres of the proposed 60-acre unit considered dense horizontal cover, based on pre-harvest monitoring. The stand currently provides quality lynx habitat.

Desired Treatment (Prescription): The silvicultural prescription is to salvage harvest most of the dead large spruce trees. The stand will remain stocked and there will be no regeneration harvest. The pre-harvest estimate is that 20 percent of the winter snowshoe hare habitat (i.e., dense horizontal cover) (or 8 acres) will likely be damaged and considered incidental removal during the salvage harvest.

Applicability to SRLA: The salvage would not contribute to the unsuitable habitat (VEG S1 standard) in the LAU since there will be no regeneration harvest. The salvage harvest also does not contribute to the 15 percent threshold in the VEG S2 standard.

Exception 3 in VEG S6 applies since the stand is mature multi-storied and the proposed treatment is salvage. Project design criteria need to be developed to reduce incidental removal associated with the salvage and should include, for example, retaining clumps with dense understory, retaining isolated spruce snags, designated skid trails, etc. The option of winter logging should also be considered. Post-harvest implementation determines that incidental damage of lynx habitat affected only 15% of the winter snowshoe hare habitat, rather than 20%, and the acres of lynx habitat contributing to the exceptions are revised from 8 acres to 6 acres.

(Note that WUI is not an issue for this example since the proposed treatment is not a fuels reduction project.)

### ***Example 6: Uneven-aged Treatment in Spruce-Fir Stand***

Existing Condition: A late successional spruce-fir stand in lynx habitat has a well developed understory, with 40 acres of the proposed 60-acre unit considered winter snowshoe hare habitat (i.e., dense horizontal cover) based on pre-harvest monitoring. The stand currently provides quality lynx habitat.

Desired Treatment (Prescription): The silvicultural prescription is for uneven-aged management in the form of group selection (i.e., small patch cuts) and individual tree salvage harvest. Uneven-aged treatments typically create patch cuts in 20% of the stand, so the project will create 8 acres of currently unsuitable habitat in the form of small forest openings. Additionally, the pre-harvest estimate is that 10 percent of the dense horizontal cover (or 4 acres) will likely be damaged and is considered incidental removal during the uneven-aged treatment due to skid trails, temporary roads, and landings.

Applicability to SRLA: The group selection would contribute to unsuitable habitat (VEG S1 and S2 standards) in the LAU since there will be regeneration harvests in the small patch cuts. Exception 4 in VEG S6 also applies to the project, but acres treated under this exception are not restricted by the 0.5 % cap.

Project design criteria need to be developed to reduce incidental removal associated with the uneven-aged treatment and should include, for example, retaining clumps with dense understory, retaining isolated spruce snags, designated skid trails, etc. The option of winter logging should also be considered. Post-harvest implementation monitoring confirms that 10% of lynx habitat is impacted by incidental damage from skid trails, etc. The area contributing to the exceptions remains as estimated at 4 acres.

(Note that WUI is not an issue for this example since the proposed treatment is not a fuels reduction project.)