

SBEADMR Project Level Lynx Analysis Process

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1) Pre-sale process of LAU checks

- a. The District wildlife biologists use the most currently available GMUG lynx habitat mapping GIS data to review the lynx habitat baseline, particularly Standard VEG S1 (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.). At the project-level, biologists and/or timber survey crews conduct field verification consisting of dense horizontal cover surveys (DHC). DHC data contributes to understanding where the highest quality lynx habitat occurs, and design treatment units to reduce incidental loss of DHC. In SBEADMR salvage sales, to protect high-quality DHC, snags and snag groups in areas with high percentages of DHC are emphasized for retention consistent with SBEADMR design features. This pre-sale field work is documented in the SBEADMR Pre-Treatment Checklist, and informs which design features are applicable to the project. District biologists must confirm that SBEADMR projects meet all applicable Southern Rockies Lynx Amendment (SRLA) direction per the following SBEADMR design features:
 - i. WFRP-12: "Areas supporting live advanced regeneration with >35% Dense Horizontal Cover in blocks greater than 0.3 acres will be avoided to the extent possible during layout (and during harvest operations), while allowing feasible operations." This design feature is consistent with SRLA Standard VEG S6.
 - ii. WFRP-13 and WQSP-5A: "Landings and main skid trails should be evaluated to determine if detrimental soil compaction has occurred. Based on review by a specialist, when detrimental compaction is found, subsoil ripping may be applied to reduce soil impacts. When a site prep contract is necessary, this provides the opportunity to rip skid trails and landings in the area and potentially in nearby adjacent areas. This would provide for a more suitable seedbed for future regeneration, thus preventing permanent impacts of skid trails that when left in a compacted state, often do not regenerate as well as adjacent un-compacted areas. Importantly, all operations will conform to the direction in Chapter 10 of the Water Conservation Practices Handbook including managing treatments to limit the sum of severely burned soil and detrimentally compacted, eroded, and displaced soil to no more than 15% of any activity area." This design feature addresses impacts and recovery of snowshoe hare and lynx habitat by promoting tree regeneration.
 - iii. WFRP-17: "Habitat connectivity will be maintained at the landscape scale (Lynx Analysis Unit and Linkage zones for lynx) through various methods depending on treatment type, location and overall condition of each Lynx Analysis Unit. Methods may include a combination of variable retention regeneration harvest methods through resiliency treatment types; tree retention areas of various sizes and shapes to retain snag groups and protect live understory trees across the landscape, with emphasis on multi-storied forest stands and areas typically used by wildlife as travel corridors (ridges, saddles, stream corridors); protection of water influence zones and stringers of timber; and maintaining areas of high

quality snowshoe hare habitat as determined from dense horizontal cover field surveys using an established scientific protocol (cover board protocol). In terms of habitat connectivity considerations and to meet the Southern Rockies Lynx Amendment direction, there will be a lot of focus on protecting areas with high quality dense horizontal cover in multi-storied stands and managing vegetation at the landscape-scale toward Potential Natural Vegetation (PNV). On a timber sale by timber sale basis, coordination will occur between the District wildlife biologist and the timber staff to determine the appropriate method for accomplishing habitat connectivity goals, including determining the appropriate size, shape, and location of tree retention areas." This design feature is intended to support consistency with SRLA direction and recommendations from the Interagency Lynx Biology Team (2013) for lynx habitat connectivity.

- iv. WFRP-18: "To maintain the amount and distribution of lynx foraging habitat over time capable of supporting lynx at the LAU scale, manage so that no more than 30% of the lynx habitat in an LAU is in an early stand initiation structural stage or has been silviculturally treated to remove horizontal cover (i.e., does not provide winter snowshoe hare habitat). Emphasize sustaining snowshoe hare habitat in an LAU. If more than 30% of the lynx habitat in an LAU is in early stand initiation structural stage or has been silviculturally treated to remove horizontal cover (e.g., clear-cuts, seed tree harvest, pre-commercial thinning, or understory removal), no further increase as a result of vegetation management treatments should occur on federal lands. Acres affected by lynx analysis unit through 2015 are available in the treatment analysis file. As management occur in the affected LAU over the life of the treatment, acres affected will be tracked by the District wildlife biologist and Forest wildlife program lead to ensure consistency with this conservation measure." This design feature supports consistency with SRLA Standard VEG S1.
 - v. WFRP-20: "Within secondary habitat for lynx (300 foot buffer from primary habitat) retain spruce and fir in aspen-spruce mix stands. Primary habitat is defined as having a dominance of spruce-fir cover type. Most of the secondary habitat includes either pure aspen or aspen-spruce mixed stands." This design retains habitat important for supporting snowshoes hares and lynx.
 - vi. WFRP-23: "In LAU with extensive mortality of mid-late and late seral spruce (Habitat Structural Stages 4A, 4B and 4C), retain these live stands to the greatest extent practicable during treatment design." Protects live trees in beetle-killed areas.
- 2) Updated lynx habitat mapping was completed in March 2021, which determined that the Cathedral LAU was estimated to be exceeding the 30% unsuitable threshold. FSveg data, which was updated per change detection analysis to account for spruce beetle-killed forests, was used to update the lynx habitat mapping. The Cathedral Salvage project is the last timber sale implemented in the Cathedral LAU. The Cathedral Salvage SBEADMR Pre-Treatment Checklist was completed and signed in 2017. Based on lynx habitat mapping at that time, we were in compliance with Standard VEG S1 as documented in the 2017 Cathedral Checklist. Salvage harvest in single-storied spruce-fir stands for which all the overstory trees are dead (and little to no live understory is present) is considered unsuitable habitat for lynx because they do not provide winter snowshoe hare habitat; harvest activities in those areas does not contribute to further conversion to a stand initiation structural stage. Salvage harvest in multi-story mature or late successional conifer forests (uneven age-class) stands with dead overstory but enough live

understory to still provide suitable winter snowshoe hare habitat does contribute to conversion to unsuitable where incidental removal during salvage occurs (SRLA Standard VEG S6, Exception 3). Per SRLA annual reporting on 2017 activities, 103 acres were reported under Standard VEG S6 Exception 3 for the Cathedral Salvage project. The Cathedral LAU is one of the hardest-hit LAUs on the GMUG from the spruce-beetle epidemic.