

Part Three: Design Criteria Guidelines

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1. Introduction

Part Three of this Land Management Plan contains the design criteria, which provide guidance for project and activity implementation and future decision-making.

Part Three consists of two sections: Guidelines and Other Direction.

1. Guidelines provide guidance for project and activity implementation to help achieve desired conditions and objectives.
2. Other Direction references highlighted guidance authorized through other processes (other than at the land management plan-level) or additional information to consider during project design. This section highlights references specifically related to the Dixie and Fishlake National Forests. This other direction also helps achieve desired conditions. However, this section is not all-inclusive nor is it not intended to include everything that should be considered during project design. Additional references, more broadly relevant to the Dixie and Fishlake National Forests, can be found in the plan set of documents. These include laws, policies, and regulations that govern the management of National Forest System lands.

2. Guidelines

1. Management activities should meet minimum levels for effective ground cover, litter retention, and coarse woody debris. Minimum levels are determined by ecosystem type and are identified at the forest or project level. Maximum fuel loads resulting from management actions should not exceed those identified at the forest or project level.
2. Operation of mechanical equipment off designated routes should be avoided during periods when soils are susceptible to puddling, rutting, and compaction.
3. Operation of mechanical equipment on slopes greater than 35 percent should be avoided, unless otherwise determined by project-level analysis.
4. Prescribed fire activities should be implemented under soil moisture conditions that avoid water repellency and damage from heating. Minimum soil moisture levels for prescribed fire activities should be designed and determined at the project level.
5. When decommissioning roads or trails, channel crossing structures should be removed and the channel restored to natural contour in order to minimize or prevent the risk of failure and associated watershed degradation.
6. Management activities and human uses within riparian influence zones should protect or enhance streams and waterbodies, including the associated riparian and

wetland areas. Activities in these areas should be conducted for the overall long-term benefit of aquatic resources, riparian function, and water quality. Riparian area influence zone definitions and requirements can be referenced in Forest supplements to FSH 2509.

7. If resource uses are not allowing progress toward desired conditions within riparian areas, an interdisciplinary team should convene to assess the following conditions:
 - Condition of selected key species,
 - Structure and composition of selected key species,
 - Ground cover,
 - Stream bank stability or alteration in key reaches, and
 - Soil compaction and productivity.
8. Mineral operations and facilities should avoid or minimize the release of sediment and pollutants to the adjacent environment and aquatic systems.
9. Mineral operations and facilities should be designed and located to avoid loss of surface water flow in drainages, wetlands, springs, and associated riparian vegetation and aquatic ecosystems from surface disturbances, underground mining, and mining-induced subsidence.
10. Mineral operations and facilities should be designed and located to prevent damage to facilities and structures from surface disturbance and mining-induced subsidence and seismic responses.
11. Upon completion of mining projects, operators should restore disturbed areas to either pre-mining conditions or conditions that enable planned post-mining land uses.
12. Management activities should avoid scientifically significant paleontological resources, or those resources should be recovered and recorded in accordance with established requirements.
13. Surface-disturbing activities that uncover paleontological resources (excluding common invertebrate and plant fossils) should be discontinued until those resources are evaluated by a qualified scientist under the direction of the Forest Service.
14. The maximum size of openings created by the application of even-aged harvests should approximate natural disturbance openings, as determined at the project level.

15. Project-level plans and decisions should set desired site-specific outcomes for adequate regeneration and design the project to achieve those outcomes. The following table provides guidance for adequate restocking, on a stand-level basis, at five years post-harvest. The figures should be refined with site-specific silviculture prescriptions.

Forest Cover Type	5-Year Post-harvest Minimum Adequate Stocking (Trees per Acre)
Spruce or fir	150
Aspen	2,500
Mixed conifer	100
Ponderosa pine	50

16. When initiating vegetative management treatments in forested cover types (excluding pinyon and juniper, Gambel oak, and mountain mahogany woodlands) the following minimum number and size of snags should be retained or recruited. If the minimum numbers of snags are unavailable, green trees should be substituted. If the minimum size is unavailable, the largest trees should be retained. The number of snags should be present at the stand level on average and, where available, distributed over each treated 100 acres.

Cover Type	Minimum Snag Numbers (per 100 acres)	Minimum Preferred Size (Diameter <_> Length) ¹
Ponderosa pine	200	18 inches DBH <_> 30 feet tall
Mixed conifer and spruce/fir	300	18 inches DBH <_> 30 feet tall
Aspen	200	8 inches DBH <_> 15 feet tall

¹ If minimum size is not available, retain largest available on the site.
DBH – Diameter Breast Height

17. Vegetation management prescriptions in forested cover types (excluding pinyon and juniper, Gambel oak, and mountain mahogany woodlands) should be designed to retain the following minimum amounts of coarse woody debris. These components should be present on average at the stand level and, where available, distributed over each treated 10 acres.

Cover Type	Minimum Down Logs (per 10 acres) ¹	Minimum Log Size (Diameter <_> Length) ²	Minimum Coarse Woody Debris ≥ 3 inch diameter ³
Ponderosa pine	30	12 inches <_> 8 feet	50
Mixed conifer and spruce/fir	50	12 inches <_> 8 feet	100
Aspen	50	6 inches <_> 8 feet	30

¹ Down logs take precedence over tons of coarse woody debris.

² Mid-point diameter. If minimum size is not available, retain largest available on the site.

³ Tons per 10 acres, inclusive of down logs.

18. To determine the level of northern goshawk field survey(s) needed for completion of a biological evaluation and to document where surveys are not necessary, the latest regionally accepted (Forest Service Intermountain Region) biological pre-field research form should be used. Where northern goshawk field surveys are necessary, surveys for territory occupancy should be conducted within suitable habitat during the nesting season and/or post-fledgling period. Surveys should be conducted at least one year prior to implementation of management actions.
19. Where northern goshawk field surveys are necessary, surveys for territory occupancy should be conducted within suitable habitat during the nesting season and/or post-fledgling period. Two consecutive years of surveys for territory occupancy prior to implementation of management actions are preferred over one year of surveys. Surveys should be conducted at least one year prior to implementation of management actions.
20. Within vegetative treatment areas designed to maintain or promote Vegetation Structural Stages (VSS) 4, 5, and/or 6, the percentage of the group acreage covered by clumps of trees (typically 2-9 trees) with interlocking crowns should typically range from 40-70 percent in post-fledgling and forage areas, and 50-70 percent in nest areas. To manage outside this range, it should be shown that the range is not within the properly functioning condition, and that the range is met at the landscape level.
21. When an active northern goshawk nest area is identified, two alternate nest areas and three replacement nest areas should be identified using characteristics identified in *Management Recommendations for the Northern Goshawk in the Southwestern United States* (Reynolds et al. 1992). Nest areas should encompass about 30 acres each (for a total of approximately 180 acres) when suitable habitat exists. The post-fledgling area should include a minimum of 420 acres. The area identified, including nest areas and the post-fledgling area, should total approximately 600 acres. Where sufficient suitable habitat is not present, existing suitable habitat should be used.
22. Forest vegetative manipulation (e.g., timber harvest, prescribed burning, fuelwood harvest, thinnings, and weeding) within active nest areas and post-fledgling areas should occur outside the active nesting period (active nesting normally occurs between March 1 and September 30). Wildland fire use decisions in these areas should be determined on a case-by-case basis.
23. Forest Service management activities and human uses for which the Forest Service issues permits (excluding livestock permits) should be restricted within active nest stands during the active nesting period unless disturbance is not likely to result in nest abandonment.
24. Forest vegetative manipulation within a post-fledgling area should be designed to maintain or improve northern goshawk habitat features (stand structure, snags, down logs, and goshawk and prey species nest trees).

25. Within northern goshawk post-fledgling areas, openings created as a result of mechanical vegetative treatments (does not include any wildland fire activities) should not exceed the following opening sizes by cover type:

Cover Type	Maximum Created Opening Size
Ponderosa pine and mixed conifer	2 acres
Spruce/fir	1 acre
Aspen	Follow current management direction

26. Within goshawk foraging areas, openings created as a result of mechanical vegetative treatments (excluding any wildland fire activities or responses to natural disturbance events) should not exceed the following opening sizes by cover type:

Cover Type	Maximum Created Opening Size
Ponderosa pine and mixed conifer	4 acres
Spruce/fir	1 acre
Aspen	Follow current management direction

27. Where timber harvest is prescribed, planning of the transportation system should minimize disturbance to post-fledgling areas. Variance may occur if it is determined that a combination of new permanent or temporary roads and permanent skid trails would result in less overall disturbance to post-fledgling area habitat.
28. When non-vegetative management activities (e.g., land exchanges, recreation facility development, ski resort construction, or utility corridors) are proposed that would result in loss of suitable northern goshawk habitat, sufficient mitigation measures should be employed to ensure an offset of the loss. The biological evaluation process should document findings, recommend mitigation measures, and evaluate consistency with the intent of the *Conservation Strategy and Agreement for the Management of Northern Goshawk Habitat in Utah* (1998).
29. Management activities outside of Wildland Urban Interface (WUI) areas should maintain wildlife cover along arterial, collector, and local roads. Cover values and habitat effectiveness should be analyzed at the site-specific level. Safety needs and other ecosystem objectives should be part of this analysis.
30. Motorized access within important mule deer and elk winter range (as determined at the project level) should be avoided from January 1 to April 15.
31. Construction of roads, trails, and facilities, drilling, and use of heavy equipment in sensitive wildlife habitat areas (e.g., big game winter range, elk calving and deer fawning areas, active goshawk nests, and sage grouse leks) should be conducted outside of critical periods of wildlife use as determined at the project level.
32. Mechanized vegetation management treatments and ignition (active lighting) of prescribed fire should not occur within 1,000 feet of known boreal toad breeding sites.

33. Site-specific utilization criteria that address streambank alteration and residual vegetation condition should be established by an interdisciplinary team as terms and conditions for grazing permits.
34. Suitable rangeland areas with vegetation disturbance exceeding 300 acres should be rested from livestock grazing for a minimum of two years, unless modified by a site-specific evaluation. The evaluation could consider more or less than two years of rest. Disturbances less than 300 acres may be evaluated for rest if special resource conditions exist.

3. Other Potential Guidelines

Additional guidelines may be added to provide direction for:

- Management of aquatic nuisance species, and
- Habitat for Species of Concern.¹

¹ As identified in the Species Diversity Desired Condition in Part One, Vision.