CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

Replace Section 1.5 Relationship to Revised Forest plan on page 7 of Chapter 1 of the West Bear Vegetation Management Project FEIS with the following 2 paragraphs. It updates information on the planning rule currently in effect and the consideration of Best Available Science.

1.5 Relationship to Revised Forest Plan

The 2003 Revised Forest Plan sets forth management direction for managing the land and resources of the Wasatch-Cache National Forest. The Forest Plan is the result of programmatic analysis, which is addressed in the Forest Plan FEIS. The West Bear Vegetation Management EIS is a project-level analysis; its scope is confined to addressing the significant issues and possible environmental consequences of the project. Where appropriate, the West Bear Vegetation Management EIS tiers to the Forest Plan FEIS, as encouraged by 40 CFR 1502.20.

A 2007 court ruling enjoined the Forest Service from implementing the 2005 planning rule (*Citizens for a Better Forestry v. USDA* and *Defender of Wildlife v. Johanns*). The 2008 Planning Rule is not final at the time of DSEIS publication. The 2000 planning rule including its transition provisions as clarified by the 2004 interpretive rule is now in effect. The 2004 interpretive rule requires that the best available science be considered in implementing the current plan.

Best Available Science

The techniques and methodologies used in this analysis consider the best available science. The analysis includes a summary of the credible scientific evidence which is relevant to evaluating reasonably foreseeable impacts. The analysis also identifies methods used and references scientific sources relied on. When appropriate, the conclusions are based on the scientific analysis that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information.

CHAPTER 2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Add the following to Section 2.01 Introduction on page 2-1 in the West Bear Vegetation Management Project FEIS.

2.01 Introduction

This chapter of the West Bear Vegetation Management Project Supplemental Environmental Impact Statement corrects and/or clarifies information presented in Chapter 2 of the West Bear Vegetation Management Project Final EIS (USDA Forest Service, 2007).

This chapter does not replace Chapter 2 of the West Bear FEIS in entirety. Instead, information provided in the chapter will replace discrete sections of the FEIS or is an addition. Some sections of the document refer to maps, appendices, or other information contained in the West Bear Vegetation Management FEIS (USDA Forest Service, 2007). This document is available at the following web site (http://www.fs.fed.us/r4/wcnf/projects/decisions/index.shtml)

Replace the last sentence under Alternative 2 – Proposed Action in section 2.1.2, Chapter 2, page 2 of the West Bear Vegetation Management Project with the following:

Approximately 3.4 miles of firelines would be needed.

Replace the narrative describing the vegetation management under Alternative 2 – Proposed Action in section 2.1.2.1, Chapter 2, pages 3 through 4 of the West Bear Vegetation Management Project with the following:

Spruce-fir treatment would consist of the following:

1. Group Selection (patch cuts). Within the ~575 gross acres of spruce-fir stands identified for treatment, harvesting would create approximately 115 acres of small openings to establish spruce regeneration. Openings would range from ¼ acre to ½ acre in size, and planting containerized spruce seedlings after harvest would ensure adequate spruce regeneration. Groups in patches of spruce-fir would not exceed ½ acre in size. Existing small openings would be used whenever possible to meet treatment objectives.
2. Thinning. This treatment would thin dense groups of mature spruce-fir within approximately 460 acres of spruce-fir stands (575 acres minus 115 acres of group selection) to reduce the stand density. Thinning would be discontinuous concentrating on groups or “clumps” of trees. Spruce-fir clumps would be thinned to an average of about 120 square feet to reduce the higher densities associated with “high hazard” ratings for spruce beetle with an objective of retaining at least 80 square feet of live trees (Schmid and Frye 1976). Thinning would remove both subalpine fir and spruce trees to perpetuate spruce on the landscape, while maintaining a mixed species stand to improve resistance to future spruce beetle activity. Standing and down trees would be retained to benefit wildlife in accordance with Forest Plan Guidelines.

3. Salvage. Harvest would remove existing insect killed and infested trees in excess of those needed to meet Forest Plan guidelines for snag and woody debris retention. Recently killed trees in the spruce-fir stands are generally individual trees or very small patches of trees.

Mixed Conifer stands contain substantial variation in species composition; therefore no single treatment would be applied uniformly throughout the stands. Rather the treatments would be determined by the composition of patches within the stand and would consist of the following:

1. Group Selection (patch cuts). Within the ~427 gross acres of mixed conifer, an estimated 85 acres of groups and/or small patches would be harvested to increase the amount of mixed conifer regeneration within the type. Groups in patches of spruce-fir would not exceed ½ acre in size; groups in lodgepole pine dominated patches would not exceed 2 acres in size.
2. Thinning. Thinning clumps of spruce-fir and/or lodgepole pine would reduce bark beetle hazard ratings on ~342 acres (427 acres minus 85 acres of regeneration). Spruce-fir clumps would be thinned to about 120 square feet to reduce the higher densities associated with "high hazard" ratings for spruce beetle, while lodgepole pine clumps would be thinned to less than 100 square feet. Thinning would be done with an objective of retaining at least 80 square feet of live spruce and 60 square feet of live lodgepole pine.
3. Salvage. Harvest would remove existing insect killed and infested trees in excess of those needed to meet Forest Plan guidelines for snag and woody debris retention. Most of these are mountain pine beetle infested patches of lodgepole pine and are located primarily in units 30, 31, 36, and 37.

Aspen/Conifer treatment would consist of the following:

1. Harvest merchantable conifers from 4 stands totaling about 285 acres. Slash would be left scattered to provide fuel for prescribed burning.
2. Prescribed burn harvested areas to stimulate aspen regeneration. The fire is expected to burn about an additional 197 acres between harvested units. Assuming 80% burn effectiveness, about 418 acres would be regenerated.
3. Removal of conifers from 1-5 acre patches totaling about 40 acres of mixed aspen/conifer scattered within about 161 acres in units 7, 24, and 25 to create uneven-aged aspen patches.

Total acres harvested under any treatment prescription would not exceed those listed in Table 2.1.1.

Replace the Mill City Sale and Burn portion of Table 2.1.2 listing road and fireline miles for Alternative 2 in Chapter 2, pages 4 through 5 of the West Bear Vegetation Management Project with the following:

Table 2.1.2. Alternative 2 Roads and Firelines.

Sale Name	Unit #	Estimated Acres	Temp Rd (Mi.)	Int. Svc. Rd (Mi)	Road Reloc. (Mi)	Fireline (Mi)
Mill City Sale and Burn	41	43	0.5	0	0	0.3
	42	47	0.3	0	0	0.2

Sale Name	Unit #	Estimated Acres	Temp Rd (Mi.)	Int. Svc. Rd (Mi)	Road Reloc. (Mi)	Fireline (Mi)
	43	75	1.0	0	0	0.1
	44	120	0.9	0	0	0.6
	Burn	197	0.0	0	0	1.6
Mill City Totals	**5**	**482**	**2.7**	**0**	**0**	**3.2**
Totals	**38**	**1,686**	**7.8**	**0.9**	**0.6**	**3.4**

Replace Fireline Construction/Rehabilitation line of Table 2.1.3 Summary of the activities that would be included in this alternative for Alternative 2 in Chapter 2, page 5 of the West Bear Vegetation Management Project with the following:

Table 2.1.3. Summary of the activities that would be included in this alternative.

Alternative 2 - Activities	
Activity	**Quantity**
Fireline Construction/Rehabilitation	3.4 miles

Replace the narrative describing the vegetation management under Alternative 3 in section 2.1.3.1, Chapter 2, pages 6 through 7 of the West Bear Vegetation Management Project with the following:

Spruce-fir treatment would consist of the following:

1. Group Selection. Within the estimated 389 gross acres of spruce-fir stands identified for treatment, harvesting would create approximately 78 acres of small openings to establish spruce regeneration. Openings would range from ¼ acre to ½ acre in size, and planting containerized spruce seedlings after harvest would ensure adequate spruce regeneration. Groups in patches of spruce-fir would not exceed ½ acre in size. Existing small openings would be used whenever possible to meet treatment objectives.
2. Thinning. This treatment would thin dense groups of mature spruce-fir within approximately 311 acres of spruce/fir stands (389 acres minus 78 acres of group selection) to reduce the stand density. Thinning would be discontinuous concentrating on groups or "clumps" of trees. Spruce-fir clumps would be thinned to an average of about 120 square feet to reduce the higher densities associated with "high hazard" ratings for spruce beetle with an objective of retaining at least 80 square feet of live trees (Schmid and Frye 1976). Thinning would remove both subalpine fir and spruce trees to perpetuate spruce on the landscape, while maintaining a mixed species stand to improve resistance to future spruce beetle activity. Standing and down trees would be retained to benefit wildlife in accordance with Forest Plan Guidelines.
3. Salvage. Harvest would remove existing insect killed and infested trees in excess of those needed to meet Forest Plan guidelines for snag and woody debris retention.

Recently killed trees in the spruce/fir stands are generally individual trees or very small patches of trees.

Mixed Conifer stands contain substantial variation in species composition; therefore no single treatment would be applied uniformly throughout the stands. Rather the treatments would be determined by the composition of patches within the stand and would consist of the following:

1. Group Selection. Within the estimated 348 gross acres of mixed conifer, an estimated 70 acres of groups and/or small patches would be harvested to increase the amount of mixed conifer regeneration within the type. Groups in patches of spruce-fir would not exceed ½ acre in size; groups in lodgepole pine dominated patches would not exceed 2 acres in size.
2. Thinning. Thinning clumps of large spruce and/or lodgepole pine would reduce bark beetle hazard ratings on about 278 acres (348 acres minus 70 acres of regeneration). Spruce-fir clumps would be thinned to an average of about 120 square feet to reduce the higher densities associated with "high hazard" ratings for spruce beetle, while lodgepole pine clumps would be thinned to less than 100 square feet. Thinning would be done with an objective of retaining at least 80 square feet of live spruce-fir or 60 square feet of live lodgepole pine.
3. Salvage. Harvest would remove existing insect killed and infested trees in excess of those needed to meet Forest Plan guidelines for snag and woody debris retention. Most of these are mountain pine beetle infested patches of lodgepole pine and are located primarily in units 30, 31, 36, and 37.

Aspen/Conifer treatment would consist of the following:

1. Construct Firelines around burn units. No timber harvest would occur within the units.
2. Prescribed burn approximately 523 acres to stimulate aspen regeneration. Assuming 40% burn effectiveness, an estimated 209 acres would be regenerated.
3. Removal of conifers from 1-5 acre patches totaling about 32 acres of mixed aspen/conifer scattered within the estimated 127 acres in units 7, 24, and 25 to create uneven-aged aspen patches.

Total acres harvested under any treatment prescription would not exceed those listed in Table 2.1.4.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Add the following to Section 3.01 Introduction in Chapter 3, page 1 in the West Bear Vegetation Management Project FEIS.

3.01 Introduction

This chapter of the West Bear Vegetation Management Project Supplemental Environmental Impact Statement presents analysis to correct and/or clarify information presented in Chapter 3 of the West Bear Vegetation Management Project Final EIS (USDA Forest Service, 2007).

This chapter does not replace Chapter 3 of the West Bear FEIS in entirety. Instead, information provided in the chapter will replace discrete sections of the FEIS or is an addition. Some sections of the document refer to maps, appendices, or other information contained in the West Bear Vegetation Management FEIS (USDA Forest Service, 2007). This document is available at the following web site (http://www.fs.fed.us/r4/wcnf/projects/decisions/index.shtml)

The information is this chapter is a summary of project-specific reports, assessments, and input prepared by Forest Service specialists, which are incorporated by reference in this draft supplement to final environmental impact statement (SEIS). These reports or memoranda are part of the project record on file at the Evanston Ranger District.

This Draft Supplemental EIS is also an opportunity to clarify the scientific methodology employed in the West Bear Vegetation Management Project. The techniques and methodologies used in this analysis consider the best available science. The analysis also identifies methods used and references scientific sources relied on. When appropriate, the conclusions are based on the scientific analysis that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information.

Replace the narrative describing the direct, indirect and cumulative effects of Alternative 2 – Proposed Action in Chapter 3, pages 27 through 28 in section 3.2.4.1 of the West Bear Vegetation Management Project with the following:

Alternative 2 – Proposed Action

Direct and Indirect Effects

Soil Erosion, Compaction and Severe Soil Burning: Under this alternative, erosion rates that exceed soil loss tolerance values were not predicted to occur on any harvest units as a result of a 6 year return period rain storm. Under the proposed action, erosion rates that exceed soil loss tolerance values were predicted to occur on harvest units containing the steeply sloping (40 to 60 % slope gradients) Namon soils found within soil type 491. However, Forest Plan standard S1 specifically prohibits the use of ground based skidding on slopes with gradients steeper than 40%, so this level of erosion would not be seen as a result of proposed activities (USDA Forest Service. 2003b). Also under this alternative, soil erosion rates exceeding soil loss tolerance values were predicted to occur, as a result of a 30 year return period rain storm, in proposed harvest units 7, 8, 31, 41, 42, 43, and 44, or about 22% of the activity areas (Flood, Paul. 2005a). Because these kinds of storms are not likely to occur within the time frame of harvest activity, the probability of detrimental soil erosion actually occurring in these units, as a result of proposed activities, is very low. Also, because this alternative avoids ground based skidding on the steep, erosive, and unstable slopes of soil type 491, Forest Plan guideline G9 is being met. Consequently no specific erosion control practices will be needed to mitigate this effect.

Soil types that are most susceptible to the effects of compaction occur in many of the harvest units in this alternative (Flood, Paul. 2005b). Unit 34 is the only unit on these soil types requiring fireline construction with 0.2 miles of fireline required. Most of the fireline would be accomplished by utilizing the fire line locations as skid trails. For these soil types, restricting mechanized harvest to a designated system of timber skidding trails will reduce unmitigated detrimental soil compaction to an average of about 13 % percent of the 20 activity areas that contain these soil types (See: Treatment Unit Disturbance Table for Alt. 2, below).

Normal requirements for skidding during the normal operating season or on frozen soils are adequate protection for those landtypes that are not the most susceptible to compaction. Under this alternative, because the units are proposed for prescribed fire treatments only during spring or fall, none will be subject to severe soil burning.

Treatment Unit Disturbance Table for Alt. 2

Unit #	Acres in Unit	Acres in LT 226	Unit Skidtrail acres	Unit Fireline acres	Unit Landing Acres	Temp Road Within Activity Area Acres	% Activity Area Left Disturbed
2*	19	0	2.1	0.0	0.4	0.0	13
3*	43	0	4.8	0.0	0.9	0.0	13
5*	18	0	2.0	0.0	0.4	0.2	14
6*	21	0	2.3	0.0	0.4	0.2	14
7	28	27	2.3**	0.0	0.6	0.2	11
8	16	15	1.8	0.0	0.3	0.2	14
9	13	0	1.4	0.0	0.3	0.0	13
10	16	0	1.8	0.0	0.3	0.0	13
11*	169	0	18.6	0.0	3.4	0.0	13
12*	57	0	6.3	0.0	1.1	0.2	13
13*	11	0	1.2	0.0	0.2	0.1	14
14*	8	0	0.9	0.0	0.2	0.1	15
15	25	0	2.8	0.0	0.5	0.2	14
16	8	0	0.9	0.0	0.2	0.1	15
17	21	0	2.3	0.0	0.4	0.2	14
18	22	0	2.4	0.0	0.4	0.2	13
19	6	0	0.7	0.0	0.1	0.0	13
20*	42	0	4.6	0.0	0.8	0.2	13
21	6	0	0.7	0.0	0.1	0.0	13
22	10	0	1.1	0.0	0.2	0.0	13
23	7	0	0.8	0.0	0.1	0.0	13
24*	80	0	6.6**	0.0	1.6	1.2	12
25*	55	0	4.5**	0.0	1.1	0.7	11
26*	14	0	1.5	0.0	0.3	0.1	14
27	22	0	2.4	0.0	0.4	0.3	14
30*	47	0	5.2	0.0	0.9	0.3	14
31*	19	15	2.1	0.0	0.4	0.0	13
32*	65	37	7.1	0.0	1.3	0.2	13
33*	60	0	6.6	0.0	1.2	0.2	13
34*	41	0	3.4**	0.2	0.8	0.7	12
35*	161	0	17.5	0.0	3.2	1.0	13
36*	56	0	6.2	0.0	1.1	0.0	13
37*	19	0	2.1	0.0	0.4	0.0	13
41	43	41	3.5**	0.4	0.9	0.9	13
42	47	47	3.9**	0.2	0.9	0.5	12
43	75	75	6.2**	0.1	1.5	1.7	13
44	120	120	9.9**	0.7	2.4	1.5	12
Burn Only	197	197	0.0	1.9	0.0	0.0	1

* Harvest units with the most compactible soils.

** Harvest units 7, 24, 25, 34, 41, 42, 43, and 44 contain an estimated 30% to 40% aspen. Since no aspen will be harvested, skid trail density is assumed to be 75% of that needed to harvest units with pure conifer.

The proposed action would result in very little additional detrimental soil disturbance or total soil resource commitment of the soil resource. Natural soil productivity would be maintained on at least 85% of the analysis area. Significant indirect effects from soil damage or disturbance on the ability of native vegetation communities to establish and maintain themselves would not occur as a result of this alternative

Cumulative Effects

The small amount of soil disturbance and damage that would occur as a result of silvicultural activities proposed in this alternative would be cumulative to the effects of other present and reasonably foreseeable activities that have occurred, or might occur, within the harvest units proposed under this alternative. These effects include soil erosion and compaction that could occur as a result of livestock grazing and dispersed recreation activities such as camping or off road vehicle use. The small amount of soil damage that could occur as a result of future wildfires in the area would be cumulative to the effects from present activities, but is unpredictable.

Proposed harvest units 7, 8, 9, 10, 11 had approximately 170 acres of past salvage harvesting (Meadow and Humpy Creek Sales) in all or portions of the units due to a spruce beetle infestation in the early 1990's. This harvesting was scattered in nature and included only those trees killed by beetles. Based upon recent monitoring of past timber harvest activities in the Meadow Creek and Humpy Creek watersheds, very little (less than 6%) of the areas actually treated show detrimental effects to soil quality from either erosion or compaction (Flood, Paul. 2004).

The same skid trails, landings, and roads from the Meadow and Humpy Creek sales will be used again to harvest additional trees under Alternative 2. No new skid trails would be needed where past harvesting was done. The impact to soils from these existing skid trails has been analyzed as part of the effects of Alternative 2.

In areas that were not accessed for the Meadow and Humpy Creek timber sales, additional skid trails would be needed. The impact to soils from these new skid trails has also been analyzed as part of the effects of Alternative 2

Consequently, the total impacted area of skid trails, existing or new, that contribute to detrimental soil disturbance has been analyzed as part of Alternative 2. There are no cumulative effects to detrimental soil disturbance from the past Meadow and Humpy Creek timber sales. For purposes of analysis, it was assumed that all portions of all proposed units would be accessed under this alternative.

No additional timber sales in this area are scheduled in this planning period, assumed for the purpose of this analysis to run through the end of all treatments (approximately 10 years). Cumulative detrimental soil disturbances would be about 13% of the activity areas, within FP guidelines for Soil Quality.

Replace the narrative describing the direct, indirect and cumulative effects of Alternative 3 – Reduced Roads in Chapter 3, pages 29 through 30 in section 3.2.4.1 of the West Bear Vegetation Management Project with the following:

Alternative 3 – Reduced Roads

Direct and Indirect Effects

Soil Erosion, Compaction and Severe Soil Burning : Under this alternative, erosion rates that exceed soil loss tolerance values were not predicted to occur on any harvest units as a result of a 6 year return period rain storm. This is because the alternative avoids placing soil disturbing timber harvest practices on any of the steep, erosive and unstable slopes that occur in the analysis area. This allows the alternative to meet direction provided under Forest Plan Standard S1 and Guideline G9. Soil erosion rates exceeding soil tolerance values could occur under this alternative, as a result of a 30 year return interval heavy thunderstorm event, in proposed harvest units 7, 8, 29, 31, and 32, or about 8% of the activity area (Flood 2005a). Because these kinds of storms are not likely to occur within the time frame of harvest activity, the probability of detrimental soil erosion actually occurring in these units, as a result of proposed activities, is very low. Consequently no specific erosion control practices will be needed to mitigate this effect.

Soil types that are most susceptible to the effects of compaction occur in many of the harvest units in this alternative (Flood, Paul. 2005b). Unit 34 is the only unit on these soil types requiring fireline construction with 1 mile of fireline required. For these soil types, restricting mechanized harvest to a designated system of timber skidding trails will reduce unmitigated detrimental soil compaction to an average of about 13 % percent of the 14 activity areas that contain these soil types.

Treatment Unit Disturbance Table for Alt. 3

Unit #	Acres in Unit	Acres in LT 226	Unit Skidtrail acres	Unit Fireline acres	Unit Landing Acres	Temp Road Within Activity Area acres	% Activity Area Left Disturbed
7	28	27	2.3**	0.0	0.6	0.2	11
8	16	15	1.8	0.0	0.3	0.2	14
9	13	0	1.4	0.0	0.3	0.0	13
10	16	0	1.8	0.0	0.3	0.0	13
11*	149	0	16.4	0.0	3.0	0.0	13
12*	57	0	6.3	0.0	1.1	0.2	13
13*	11	0	1.2	0.0	0.2	0.1	14
14*	8	0	0.9	0.0	0.2	0.1	15
15	25	0	2.8	0.0	0.5	0.2	14
16	8	0	0.9	0.0	0.2	0.1	15
17	21	0	2.3	0.0	0.4	0.2	14
20*	42	0	4.6	0.0	0.8	0.2	13
21	6	0	0.7	0.0	0.1	0.0	13

Unit #	Acres in Unit	Acres in LT 226	Unit Skidtrail acres	Unit Fireline acres	Unit Landing Acres	Temp Road Within Activity Area acres	% Activity Area Left Disturbed
22	10	0	1.1	0.0	0.2	0.0	13
23	7	0	0.8	0.0	0.1	0.0	13
24*	54	0	4.5**	0.0	1.1	0.5	12
25*	45	0	3.7**	0.0	0.9	0.3	11
29	19	12	2.1	0.0	0.4	0.2	14
30*	43	0	4.7	0.0	0.9	0.0	13
31*	19	15	2.1	0.0	0.4	0.0	13
32*	28	19	3.1	0.0	0.6	0.2	14
33*	60	0	6.6	0.0	1.2	0.2	13
34*	41	0	0.0	1.2	0.0	0.0	3
35*	104	0	11.4	0.0	2.1	0.0	13
36*	56	0	6.2	0.0	1.1	0.0	13
37*	19	0	2.1	0.0	0.4	0.0	13
41	65	63	0.0	1.9	0.0	0.0	3
42	417	417	0.0	4.6	0.0	0.0	1

* Harvest units with the most compactible soils.
** Harvest units 7, 24, 25, 34, 41, and 42 contain an estimated 30% to 40% aspen. Since no aspen will be harvested, skid trail density is assumed to be 75% of that needed to harvest units with pure conifer

Normal requirements for skidding during the normal operating season or on frozen soils are adequate protection for those landtypes that are not considered the most compactible. Under this alternative, because the units are proposed for prescribed fire treatments only during spring or fall, none will be subject to severe soil burning.

This alternative would result in very little additional detrimental soil disturbance. Natural soil productivity would be maintained on at least 85% of the analysis area. Significant indirect effects from soil damage or disturbance on the ability of native vegetation communities to establish and maintain themselves would not occur as a result of this alternative

Cumulative Effects

The small amount of soil disturbance and damage that would occur as a result of silvicultural activities proposed in this alternative would be cumulative to the effects of other past, present and reasonably foreseeable activities that have occurred, or might occur, within the harvest units proposed under this alternative. These effects include soil erosion and compaction that have occurred, or could occur as a result of past harvest activities, livestock grazing and dispersed recreation activities such as camping or off road vehicle use. The small amount of soil damage that could occur as a result of future wildfires in the area would be cumulative to the effects from present activities, but is unpredictable.

Based upon recent monitoring of past timber harvest activities in the Meadow Creek and Humpy Creek watersheds, very little (less than 6%) of the areas actually treated show detrimental effects to soil quality from either erosion or compaction (Flood, Paul. 2004).

Proposed harvest units 7, 8, 9, 10, 11 had approximately 170 acres of past salvage harvesting (Meadow and Humpy Creek Sales) in all or portions of the units due to a spruce beetle infestation in the early 1990's. This harvesting was scattered in nature and included only those trees killed by beetles. Based upon recent monitoring of past timber harvest activities in the Meadow Creek and Humpy Creek watersheds, very little (less than 6%) of the areas actually treated show detrimental effects to soil quality from either erosion or compaction (Flood, Paul. 2004).

The same skid trails, landings, and roads from the Meadow and Humpy Creek sales will be used again to harvest additional trees under Alternative 3. No new skid trails would be needed where past harvesting was done. The impact to soils from these existing skid trails has been analyzed as part of the effects of Alternative 3.

In areas that were not accessed for the Meadow and Humpy Creek timber sales, additional skid trails would be needed. The impact to soils from these new skid trails has also been analyzed as part of the effects of Alternative 3

Consequently, the total impacted area of skid trails, existing or new, that contribute to detrimental soil disturbance has been analyzed as part of Alternative 3. There are no cumulative effects to detrimental soil disturbance from the past Meadow and Humpy Creek timber sales. For purposes of analysis, it was assumed that all portions of all proposed units would be accessed under this alternative.

No additional timber sales in this area are scheduled in this planning period, assumed for the purposed of this analysis to run through the end of all treatments (approximately 10 years).

Cumulative detrimental soil disturbances would be about 13% of the activity areas, within FP guidelines for Soil Quality.

Replace the narrative describing the spruce-fir forest type in Chapter 3, pages 50 and 51 in section 3.4.3.1 of the West Bear Vegetation Management Project with the following:

Spruce/Fir

This type represents a climax condition in the West Fork Bear River landscape and is found in both even-aged (one or two age classes) and uneven-aged (three or more age classes) stands. Spruce-fir stands in the analysis area are mature and old, with stand ages exceeding 150 years. Trees tend to be large and dense, with diameters of the overstory trees (those greater than 7") averaging over 12", and basal areas greater than 150 square feet per acre. The West Bear Ecosystem Management Project (USDA FS 2002) indicated the spruce-fir forest was outside the historic range of variation. In the long term, and in the absence of disturbance, subalpine fir may become more dominant. However, there are two schools of thought on this and neither is definitive. Research (Veblen 1986) indicates that because spruce is longer-lived than subalpine fir, it may continue to dominate a stand until a stand replacing event such as a large wildfire occurs. It is unlikely that spruce would not maintain some presence in stands where they are currently dominant or codominant. In systems with high fuel loading such as the spruce-fir in

the West Bear analysis area, allowing any fire to burn involves the risk of a large stand replacing fire, given fairly rapid changes in weather that can occur. Most small fires can effectively be suppressed. Beetle outbreaks can also be suppressed in the early stages. The Forest Service is not always successful in suppressing fires that escape initial attack with heavy fuel loading and hot, dry, windy weather. The Forest Service is also not successful in suppressing bark beetle infestations once they are more than just small pockets of beetle infestation. Suppression of small fires and beetle outbreaks reduces the disturbance processes on the landscape. Without these disturbances it is likely that over a long period of time these stands could shift toward more predominance of subalpine fir (Steen et al. 2005). It will take a long period of time to complete all of the group selection entries needed to achieve an uneven aged stand of spruce-fir.

Schoennagel et al (2004) state that infrequent, high-severity, stand-replacing fires dominate the historical and contemporary fire regime in spruce-fir forests. Climatic variation, through its effects on the moisture content of live fuels and larger dead fuels, is the predominant influence on fire frequency and severity. Dense trees and abundant ladder fuels are natural in subalpine forests and do not represent abnormal fuel accumulations. Fire suppression has had minimal influence on the size, severity, and frequency of high-elevation fires. Mechanical fuel reduction in subalpine forests would not represent a restoration treatment but rather a departure from the natural range of variability in stand structure. They conclude that given the behavior of fire in Yellowstone in 1988, fuel reduction projects probably will not substantially reduce the frequency, size, or severity of wildfires under extreme weather conditions. Keane et al. (2002) cites authors that the last 70 to 80 years of fire suppression have not had much influence on subalpine landscapes with fire intervals of 200 to several hundred years but there have been recent shifts in forest stand ages to older age classes. Fire exclusion effects in long fire interval fire regimes, such as those in lodgepole pine and spruce fir, are not yet manifest at the stand level, but are detectable at the landscape level. They mentioned young age classes are often missing from subalpine landscapes where fires have been excluded. The well substantiated relationship of reduced forest health due to fire exclusion in ecosystems characterized by high fire return intervals (for example, low-elevation ponderosa pine woodlands) cannot be applied to all mesic subalpine ecosystems with long fire return intervals. But despite these exceptions, the Rocky Mountain landscape, taken as a whole, is not burning at the pre-1900 rate. In spruce-fir forests of Colorado, spruce beetle (*Dendroctonus rufipennis*) outbreaks do not affect young (less than 80 years) postfire stands, which implies that long-term fire exclusion in the subalpine zone eventually would result in increased beetle activity as a larger portion of the landscape enters old-growth stages. Veblen (2003) found that the fire regime of the spruce-fir cover type in northern Colorado is characterized by infrequent, crown fires that burn large areas. High severity fires resulting in spruce-fir stands of high tree densities are part of the natural fire regimes of this ecosystem type. Although late seral stands with heavy fuel loading in spruce-fir are not uncharacteristic, the effects of a fire may not be desirable in a landscape being managed for multiple uses. About 19% of the spruce-fir type has reduced fuel loading due to past silvicultural treatments (Tables TM-3 and TM-4). The remaining 81% is in late seral stages with usually heavy fuel loading. Fire suppression is likely to continue on this landscape. The adverse effects of escaped wildfire in the spruce-fir type with heavy fuel loading at a landscape scale are evident in the recent (2002) East Fork Fire (USDA FS 2004c). All of the spruce in large patches were killed by the fire, leaving very little seed source. Very little spruce regeneration in this fire has been observed to date. Although the spruce-fir stands in West Bear are probably not outside

the range of variation, a very large percentage of the spruce-fir at the landscape level is susceptible to stand replacing fire during drought cycles. A literature review by Keane et al. (2002) displays stand level and landscape effects of fire exclusion. At the landscape level a decrease in early seral communities, increased landscape homogeneity, increase in dominance of one patch type, and decreased patch diversity occurs along with larger and more severe fires, increase in crown fires, increased insect and disease epidemics, and increased contagion resulting in more severe insect and disease epidemics. Silvicultural systems can replace some of the effects of fire in landscapes where wildfires are not acceptable and where fire cannot be safely prescribed.

Data collected from 5 stands in Meadow Creek, 4 stands in Humpy Creek and 5 stands east of Whitney Reservoir in early fall of 2001 are summarized below (Table TM.3). These data were extracted from stand tables on file in the Evanston Ranger District. The data indicate that the spruce component (PIEN) comprises 24 and 16 percent of all trees in the stand, respectively, with subalpine fir (ABLA) the majority species. It is interesting to note that the overstory (trees larger than 7" dbh) contains a much higher proportion of spruce. Of the 13 stands, only 2 have less than 40% spruce in the overstory. However, when the smaller diameter trees and seedlings are included, only 2 stands have 25% or more spruce. This indicates that the majority of the existing regeneration is subalpine fir.

Replace the narrative describing the effects of Alternative 1 – No Action, Chapter 3, page 64 in section 3.4.4.1 of the West Bear Vegetation Management Project with the following:

Alternative 1 – No Action

Alternative 1 would have no direct effect on movement toward properly functioning condition (PFC). Stands would remain in their current conditions unless affected by unplanned disturbance such as insects, fire or windthrow. Wildfire suppression would continue on the landscape but the potential for an escaped fire would gradually increase due to increases in fuel loading over time. Allowing wildfires to burn in this area was determined to be unacceptable under the Wasatch-Cache Antennal Forest Wildland Fire Use Plan due to downwind private property. Spruce-fir and mixed conifer stands are heavily skewed toward mature and old age classes. The Wasatch-Cache Forest Plan has desired landscape structure for spruce-fir and mixed conifer of about 40% in mature and old age classes with the remaining age classes in grass/forb, seedling/sapling, young forest and mid-aged forest. About 93 % of the spruce-fir and mixed conifer in the West Bear landscape is currently mature and old. Most of the lodgepole pine in the landscape is currently mature and old and is presently being threatened by a heavy mountain pine beetle infestation. The Forest Plan has a desired landscape structure of 30% old aspen forest with 40% in grass/forb and seedling/sapling age classes and, 30% in young, mid-aged, and mature forests. Only 3% of the aspen in the West Bear landscape is currently in the grass/forb and seedling sapling age classes.

An indirect effect of Alternative 1 would be continued mortality from mountain pine beetle in the mixed conifer and aspen/conifer types, and spruce beetle in the spruce-fir forest type. Increaased fuel loads that accompany most outbreaks put homes, businesses, and other structures in the wildland/urban interface at risk of damage or loss in both management (prescribed fires) and wildland fires, and risk of injury and death for residents and firefighters alike. Post-outbreak

fuels management costs are significantly higher and more complex due to intermingled ownerships and the inherently high risk associated with tools such as prescribed fire (Samman et al 2000). If the current level of mountain pine beetle activity continues or increases, significant mortality would be expected, resulting in a possible shift of species composition toward subalpine fir, and a gradual increase in fuel loadings as the beetle-killed trees fall. The increased fuel loadings would increase the level of severity and the resistance to control in the event of a future wildfire in extreme fire weather conditions. In the spruce-fir type, this could result in large stand replacement fires due to similar conditions at an ecosection scale. Kulakowski et al (2003) stated that because stand-replacing fires create a mosaic of different age patches, their occurrence may prevent an entire landscape from being affected by a single outbreak. Conversely, a homogenization of the landscape due to suppression of stand-replacing fires may increase landscape susceptibility to outbreak. Spruce-fir stands burned under these conditions may take several decades to regenerate naturally, due to the hot, dry site conditions following the burn and loss of seed sources.

Increased fuel loadings could have positive benefits to PFC in the mixed conifer type and aspen/conifer types if a wildfire escaped initial attack suppression or wildland fire use were allowed in the future. Increased fuels could promote stand replacing fires which would in turn reduce the amount of fir regeneration and provide favorable conditions for early seral species such as aspen and lodgepole pine. This would reduce the amount of late seral stage forest and increase the early (grass/forb and seedling/sapling) age classes. Patch sizes would be determined by burning conditions and fuels, and may approximate historical patterns.

Replace the narrative describing the cumulative effects of Alternative 2 – Proposed Action Chapter 3, page 3-65 in section 3.4.4.1 of the West Bear Vegetation Management Project with the following:

Cumulative Effects

The regeneration of approximately 200 acres of the spruce-fir and mixed conifer forest into grass/forb, seedling/sapling age would reduce the acres of mature spruce-fir and mixed conifer acres within the analysis area to about 5,996, and increase the early seral stage to approximately 298 acres (current activity plus 98 existing acres in Pass Creek area). About 10 % of the spruce-fir and mixed conifer in the West Bear landscape would be in younger age classes. Creation of about 458 acres of aspen regeneration in addition to the 88 acres previously treated would result in about 556 acres of aspen regeneration, equal to approximately 16% of the mixed conifer/aspen and aspen in the analysis area. The fire regime condition class (FRCC) for the forested area is currently at the high end of “moderately departed” considering past harvest and fires. Alternative 2 would have a minor cumulative effect of reducing the departure from 66% to 65% in the West Bear watershed and from 65% to 62% in the Hayden Fork watershed (FEIS Table 3.5.8). Roads and firelines are necessary to provide access and firebreaks. These are narrow corridors that result in minor fragmentation of the forest. However, the firelines and most of the roads are temporary and will therefore result in only temporary fragmentation. The 0.9 miles of intermittent service road under Alternative 2 would be closed to public use and seeded following timber harvest and would therefore have less fragmentation effect than an open road. The landscape structure would still not be balanced for any of the forest cover types as described under Forest Plan Guideline (G14) to manage vegetation for properly functioning condition at

the landscape scale. The landscape structure would remain skewed toward mature and old forest with less than desired in the grass/forb, seedling/sapling, young, and mid-aged forest. There is a heavy infestation of mountain pine beetles in progress in the lodgepole pine in the analysis area. The Coyote Road Hollow Sale is thinning much of the lodgepole pine dominated component. Lodgepole pine is also being infested in the mixed conifer forest, which will result in some openings larger than 2 acres and a reduced percentage of lodgepole pine in the thinned areas. Spruce beetles are currently endemic throughout the area. If spruce beetle infestations or an epidemic were to develop, there would be a reduction in representation of spruce in the overstory of spruce-fir and mixed conifer stands and buildup of large down woody fuels especially in untreated areas. In a study of snag dynamics following fire on the east slope of the Cascade range (Everett et al 1999), approximately 50% of the small diameter lodgepole pine and subalpine fir snags <23 cm dbh fell or broke to a minimum (1.8 m) snag height during the first 7 – 12 years after the fire. Regression analysis predicted that approximately 50% of mid-diameter spruce and subalpine fir snags (23-41 cm dbh) fell within 25 years after fire, but 50% of similar size snags of lodgepole pine fell within 15 years. Although large Engelmann spruce snags (>41 cm dbh) initially fell rapidly (50% in 20 years), the species is predicted to maintain 30% of its initial snag density up to 80 years following fire. There are no cumulative effects with grazing since no range lands are being treated.

Replace the narrative describing the effects of Alternative 1 – No Action on Chapter 3, page 66 in section 3.4.4.2 of the West Bear Vegetation Management Project with the following:

Alternative 1 – No Action

Alternative 1 would have no direct effect on current beetle infestations or the forest's susceptibility to future outbreaks. The high basal areas, average diameters and proportion of spruce and lodgepole pine provide the necessary stand conditions suitable to sustain a beetle epidemic.

An indirect effect of Alternative 1 would be a shift in species composition and structure, at least in the short term, toward fir and, where aspen is present, mixed aspen and fir stands to replace the dead lodgepole pine and spruce. If a spruce beetle or mountain pine beetle outbreak were to occur, the primary response of vegetation to this scale and intensity of disturbance is the establishment of new stands (Oliver 1981; Veblen et al. 1991). This type of disturbance serves to reduce competition and increase nutrient availability resulting in the accelerated growth of understory plants and subcanopy trees (Veblen et al. 1991). The understory and subcanopy trees within the project area are primarily subalpine fir. There is uncertainty over whether or not spruce canopy composition in spruce-fir forests is significantly affected in the long term as described in FEIS Section 3.4.3.7. A large scale disturbance of this magnitude would affect the large tree character component of the existing forest. This effect would be greatest in the spruce-fir forest type, and somewhat less in the mixed conifer, due to the species diversity of the latter type. The loss of the large tree characteristic would have detrimental effects on other forest resources, such as visuals, recreation and wildlife habitat. Based on the beetle susceptible forest that currently exists and the mortality associated with other beetle epidemics within Utah, the majority of large diameter spruce would be killed if a spruce beetle outbreak occurred. If a

beetle outbreak were to occur, most of the larger diameter spruce or lodgepole pine component would be lost within a 5-10 year period.

Kulakowski et al (2003) state that based on a study of fire and spruce beetle outbreak legacies on the disturbance regime of a subalpine forest in Colorado, the occurrence of severe fire following beetle outbreaks is not inevitable. They attribute the lack of stand replacing fire following an out break in their study area to possible incrreased moisture as evidenced by mesic herbs, and lack of dry weather events. They state that a response of fire-hazard mnitigation following outbreak may not be necessary in order to maintain a normal fire hazard Recent studies indicate that spruce beetle mortality does not influence the risk of wildfires in the spruce-fir zone unless accompanied by drought (Bebi et al. 2003). They state that there was no increase in fire density in the same area studied by Kulakowski et al. However, under extreme fire weather conditions, large quantities of dead fuels would contribute to more intense and widespread fire in spruce-beetle killed stands than in unaffected forests (Jenkins et al. 1998; Veblen et al. 1994; Veblen et al. 1991). The cumulative effect of widespread tree mortality also causes dead fuels to accumulate for decades, increasing the hazard of high-intensity fire over time (Arno 1980).

Add the following to Section 3.6.3.2 - Region 4 Sensitive Species, Chapter 3, page 85 in the West Bear Vegetation Management Project FEIS.

Northern Goshawk

Northern Goshawk (Humpy Nest)

The two known goshawk territories in the West Bear analysis area are referred to as the "Gold Hill" and "Coyote Hollow" goshawk territories. The nests are similar to all of the goshawk nests on the North Slope. All nests and territories consist of a large component of lodgepole pine. Nests may be found in a mixed stand (aspen/lodgepole) but the lodgepole vegetation type is associated with the nest and post-fledgling area.

A third potential nest, the "Humpy Creek" nest was documented on goshawk monitoring sheets because some characteristics associated with the nest were similar to other known goshawk occupied nests on the North Slope of the Uinta Mountain Range.

The Humpy Creek nest and its characteristics (location within stand and vegetation type) were analyzed to validate whether it was a goshawk nest. The Humpy "potential" territory is comprised mostly by spruce and fir vegetation. Scattered individual lodgepole pine can be found in areas of the stand but not enough to be delineated as dominant lodgepole patches (see table 3.6.1). There have been no documented goshawk nest territories in the spruce-fir vegetation type on the North Slope. It was not considered to be "representative" of other known goshawk territories in the project area or on the North Slope. Further, additional monitoring of the Humpy Creek nest has been completed since the completion of the Final Environmental Impact Statement (an unknown date in 2006 during nesting period, 5/24/07, 6/5/07, and 7/23/07) for activity or alternate nest locations. The nest has not been active in any year since being discovered and there have been no alternate nests located. A Cooper's hawk was observed with prey and aggressively harassing a Red-tailed hawk from the stand during the prior two visits.

The additional monitoring data collected, habitat analysis of the Humpy Creek nest, and knowledge of goshawk habitat selection on the North Slope of the Uintas confirms that the nest is not being utilized by a Northern goshawk. Consequently, within the Environmental Impact Statement the two known goshawk nests are analyzed and the Humpy Creek nest is not.

Supplemental Table 3.6.1 Acres of forested habitat within "known" and "potential" territories within the analysis area

Territory	Spruce-Fir	Lodgepole	Mixed conifer	Conifer/ Aspen	Aspen
Coyote	2076	965	87	380	385
Gold Hill	627	2243	10	229	1053
Humpy	1600	0	31	305	404

Add the following to the first paragraph in Section 3.6.3.4 – Terrestrial Management Indicator Species, Chapter 3, page 86 in the West Bear Vegetation Management Project FEIS.

The Forest updated the Management Indicator Species of the Wasatch-Cache National Forest Report in November 2007 (USDA, 2007). Additional survey field data was incorporated into the 2007 Report. Trend conclusions stated in the West Bear Vegetation Management Project Final Environmental Impact Statement did not change in the 2007 Report.

Replace Chapter 3, Section 3.6.4.2 – R4 Sensitive Species, page 108 in the West Bear Vegetation Management Project FEIS with the following..

Northern Goshawk – Cumulative Effects

There are a number of activities (motorized recreation, timber, and grazing) that occur within the analysis area and contribute a minor incremental effect to the goshawk; however, the loss of habitat for foraging and nesting may be the most significant to the goshawk.

There has been a total of 1636 acres of vegetation treatments in mixed-conifer, aspen/conifer, spruce-fir, and lodgepole habitat types in the analysis area of which 605 occur within the two known goshawk territories. Cumulative effects from Alternative 2 and 3 are described in terms of effects on the three components of a goshawk's home range (nesting, post-fledgling, and foraging) important to goshawk lifecycles.

Affected acres from past and current vegetation treatments in the three components are shown in Tables 3.6.2 and 3.6.3

Supplemental Table 3.6.2 Whitney/Coyote Territory affected acres

Whitney/Coyote Territory	Past	Current	Proposed Alt2	Proposed Alt3
Nest Area	0	0	0	0
Post-fledgling Area (PFA)	146	83	94	76
Foraging Area (FA)	485	239	590	451

Supplemental Table 3.6.3 Gold Hill Territory affected acres

Gold Hill Territory	Past	Current	Proposed Alt2	Proposed Alt3
Nest Area	0	0	0	0
Post-fledgling Area (PFA)	100	0	130*	30**
Foraging Area (FA)	166	178	418*	209**

* harvested acres and 80% of treated acres within prescribed burn.
* *harvested acres and 40% of treated acres within prescribed burn.

In the *Utah Northern Goshawk Project Environmental Assessment (USDA, 2000)* guidelines and standards were established for the conservation of the goshawk. The intent of this direction was incorporated into the 2003 Revised Forest Plan. Direction from the Northern Goshawk Project EA that was not expressly incorporated into the Revised Forest Plan can be recommended as additional conservation guidance for any project (USDA, 2007).

Additional recommended conservation guidance for the desired percentage of VSS 4, 5, and/or 6 groups in the West Bear Vegetation Management Project is:

> Vegetative treatments designed to maintain or promote a VSS 4, 5 and/or 6 group, the percent of the group acreage covered by clumps of trees with interlocking crowns should typically range from 40-70% in post-fledgling and foraging areas, and 50-70% in nest areas. To manage outside this range, it should either be shown that the range is not within PFC for the site and the biological evaluation process determines that managing outside the range will be consistent with landscape needs of the goshawk and its prey. Use the best information available and deemed most reliable to make determinations. Groups are made up of multiple clumps of trees. Groups should be of a size and distribution in a landscape that is consistent with disturbance patterns defined in Regional or local proper functioning condition assessments (PFC). Clumps typically have 2-9 trees in the VSS 4,5 or 6 size class with interlocking crowns (Utah Northern Goshawk Project EA, Appendix CC, March 2000), .

Of the 11,164 forested acres within the analysis area, 1,742 or approximately 15% are in early to mid-seral stages. The remaining 85% are mature old (stand age greater than 100 years). Tables 3.4.2 through 3.4.5 in the FEIS West Bear Vegetation Management Project summarize the conditions of the stands in the analysis area by vegetation type (lodgepole pine, spruce-fir, mixed conifer and aspend/mixed conifer).

Nesting

Because none of the proposed treatments are within nesting habitat there is no incremental impact to nesting habitat resulting in cumulative effect

Post Fledgling

There have been 146 acres treated within the Whitney/Coyote and 100 acres within the Gold Hill Post-Fledgling Areas (PFA). Past treatments varied in prescription method but would be expected to provide habitat for goshawks. Regeneration in clearcut units provides foraging opportunities for prey species and in turn for goshawks. Thinned stands continue to provide habitat for prey species but may not provide suitable nesting habitat for goshawks. Currently in the Whitney/Coyote PFA there is an ongoing thinning project (Coyote/Road Hollow) to reduce the susceptibility of lodgepole pine stands to beetle infestation. Nesting habitat would not be

available until a future time when regeneration is in a VSS 4 or 5 group. Foraging may be available in some stands for goshawks and prey species.

Both Alternatives 2 and 3 propose to clearcut and thin within stands found in the Whitney/Coyote PFA. In Alternative 2 there would be about 94 acres treated while in Alternative 3 there would be about 76 acres. Suitable habitat would be available upon the completion of each alternative and within the desired VSS groups for the PFA.

Alternatives 2 and 3 propose to clearcut and prescribe burn stands found in the Gold Hill PFA. In Alternative 2 there would be about 130 acres treated while in Alternative 3 there would be about 30 acres. As shown in Supplemental Table 3.6.4 below suitable habitat would be available upon the completion of each alternative and within the desired VSS groups for the PFA described earlier in the narrative as additional conservation guidance.

Supplemental Table 3.6.4 Goshawk Post Fledgling Area within VSS groups 4,5, and/or 6

Territory	VSS 4, 5, and/or 6 acres	Proposed Treated Acres Alt 2	Proposed Treated Acres Alt 3	% VSS 4, 5, and/or 6 post treatment Alt 2	% VSS 4, 5, and/or 6 post treatment Alt 3
Whitney/Coyote	**374**	**94**	**76**	**45**	**48**
Gold Hill	**408**	**130**	**30**	**46**	**62**

Foraging

There have been 485 acres treated within the Whitney/Coyote and 166 acres within the Gold Hill FA in the past. Some of the past harvest units provide foraging opportunities for goshawks and their prey species, however nesting habitat is not available. The Deer Creek Fire regenerated 128 acres which currently does not provide habitat for snowshoe hares or goshawks. Currently the Coyote/Road Hollow project has treated 239 acres in the Whitney/Coyote FA and 209 acres within the Gold Hill FA. Nesting habitat would not be available until a future time when regeneration is in a VSS 4 or 5 groups. Foraging may be available in some stands for goshawks and prey species.

In the Whitney/Coyote FA, as shown on Supplemental Table 3.6.5 below, in Alternative 2 there would be 590 acres treated while in Alternative 3 there would be 451 acres treated. Spruce-fir stands that are thinned would not be expected to lose their function. Although canopy cover would be reduced the stand would still function in providing some goshawk habitat. Suitable habitat would be available upon the completion of each alternative and within the desired VSS groups for the FA.

In the Gold Hill FA, as shown in Supplemental Table 3.6.5 below, in Alternative 2 there would be 418 acres treated while in Alternative 3 there would be 209 acres treated. Spruce-fir stands that are thinned would not be expected to lose their function. Although canopy cover would be reduced the stand would still function in providing some goshawk habitat. Suitable habitat

would be available upon the completion of each alternative and within the desired VSS groups for the FA.

Supplemental Table 3.6.5 Goshawk Foraging area within VSS 4,5, and/or 6

Territory	VSS 4, 5, and/or 6 acres	Proposed Treated Acres Alt 2	Proposed Treated Acres Alt 3	% VSS 4, 5, and/or 6 post treatment Alt 2	% VSS 4, 5, and/or 6 post treatment Alt 3
Whitney/Coyote	**2834**	**590**	**451**	**41**	**43**
Gold Hill	**3131**	**418**	**209**	**46**	**49**

Other activities that may result in a cumulative effect to goshawk are described below.

Motorized recreation occurs on a year round basis within the analysis area with snowmobiling in the winter and ATV use in the summer. Squires and Reynolds (1997) state "Human disturbance associated with timber practices and other activities may affect goshawks and can cause nest failure, especially during incubation." However, the USFWS (1998) reported that "disturbance generally does not appear to be a significant factor affecting the long-term survival of any North American goshawk population." (Roberson et al 2003). Lee (1981) concluded that goshawks may habituate to high levels of human activities including snowmobile traffic, cross-country and alpine skiing, hiking, horseback riding, and construction activities (Stangl 1996). The two goshawk territories are within high use areas and the birds have seemed to become habituated to human disturbance. There are nine other goshawk territories monitored across the North Slope that are within high use areas. The nests found in these territories occur near and/or adjacent to major roads, access routes, and producing oil wells. The goshawks within the analysis area, like others found in high use areas, have nested successfully.

The increased traffic from logging trucks could potentially increase the likelihood that the alternate nest found adjacent to the main Whitney road would not be utilized in the future. However, the increased log hauling traffic may not disturb the goshawk to a degree in which it abandons the territory. Reynolds and Roy (1998) state goshawk territories typically contain multiple alternate nests, generally in the central portion of territories, used by the resident goshawks over years. Territorial pairs of goshawks often move from year-to-year to alternate nests within their territories. Many pairs of goshawks have two or four alternate nest areas within their home range. All previously occupied nest areas may be critical for maintaining nesting populations because they contain the habitat elements that attracted the goshawk originally. Additionally, replacement nest areas are required because goshawk nest stands are subject to loss from catastrophic events and natural decline (Reynolds et al 1992). Replacement nest areas are available for each of the two territories within the analysis area.

Graham et al.'s Assessment (1999) identifies the nonforest understory vegetation in and/or associated with several forest cover types as being important goshawk prey-base habitat. Generally speaking coniferous forest cover types, other than ponderosa pine, are typically classified as unsuitable. However, some coniferous forest may be classified as suitable rangeland depending on canopy cover and intermixing with nonforest cover types or aspen.

Grazing is likely to reduce the available forage for some prey species within the analysis area in meadows or in forested stands where access is not limited. A rangeland report by Richard Zobell, Rangeland Management Specialist (Zobell 2005a) indicates that seven monitoring studies have been established with the analysis area that can be used to determine ground cover conditions. Three of the six monitoring studies indicate that ground cover conditions are meeting the Forest Plan standard (S7). Of the remaining four studies, three indicate a trend towards the standard. The cumulative effects from grazing and the loss of habitat for some species within the analysis area would not significantly affect the goshawk. Prey species would still be available in some treated and untreated stands within the analysis area.

There has been a total of 1696 acres of vegetation treatments in mixed-conifer, aspen/conifer, spruce-fir, and lodgepole habitat types in the analysis area. Vegetation methods differed within these habitat types and depending on the site regeneration may not provide habitat for all prey species. However, it is expected that avian and/or mammal prey species will continue to exist within the regenerating units even as the stand progresses in age.

The Coyote/Road Hollow proposed future treatments focus on lodgepole and mixed-conifer habitat types. The proposed project objectives are to remove and reduce the susceptibility of stands being infected with beetles. Some nesting habitat will be lost and unsuitable until a future time. Where thinning would occur the area may be suitable nesting habitat in a shorter time period than in areas where small patch cuts occur. Within the analysis area there is adequate nesting habitat available within the aspen/conifer vegetation type. This habitat is expected to be lost because of the absence of natural occurring wildfire. Within the lodgepole dominated stands nesting can occur where densities and canopy cover are suitable. This habitat will continue to exist across the landscape and within the analysis area but can be expected to decrease. The nesting habitat could potentially be affected by the increase in pine beetle activity. Currently the pine beetle levels are high within analysis area. Although goshawks have been known to nest in beetle degraded stands the likelihood for future utilization would decrease. As trees begin to drop the dead needles the canopy cover surrounding the tree would decrease. This decrease could potentially increase the predatory rate of the nest.

Potential foraging opportunities will be lost in the form of woodpecker or cavity nesting birds or rodents that require snags for foraging or nesting within patch-cut and removed trees. Depending on the needs of prey species some thinned stands may no longer provide the necessary canopy or security cover. These prey species will be displaced from the stands to other adjacent stands or other portions of the stand that are not disturbed. Habitat for woodpeckers and cavity nesting birds is available in other portions of the analysis area that are not being treated. The current level of beetles is expected to convert other the stands on the landscape to suitable habitat. Also, with the prescribed fire treatment area foraging and nesting habitat will be created.

Existing nest, post-fledging and foraging areas have been analyzed considering the past, ongoing and proposed treatments. Alternatives 2 and 3 would comply with Forest Plan Standard (S12) prohibiting forest vegetation treatments within active northern goshawk nest areas (approximately 30 acres) during the active nesting period and Forest Plan Guideline (G15) to design all management activities to maintain, restore, or protect desired goshawk and goshawk

prey habitats including foraging, nesting and movement. Further, both alternatives would meet the recommended conservation guidance.

Determination

The proposed project would have a "may impact individuals, but is not likely to cause a trend toward federal listing or a loss of viability" determination or affect the Forest-wide population trend (USDA FS 2005e).

Add the following to Chapter 3, Section 3.6.4.4 - Management Indicator Species, page 111 in the West Bear Vegetation Management Project FEIS.

Snowshoe Hares - Cumulative Effects

The incremental effect from the proposed treatments may contribute to the cumulative effects from three other ongoing management actions and/or activities. Recreation, grazing, and timber management are the activities within the analysis area that are considered in the cumulative effects analysis below.

Recreation is popular within the analysis area in both summer and winter months. The cumulative impact from recreation would be considered minor because of the limited contact between recreationists and snowshoe hares. Impacts from recreationists would be hunting, collision, and disturbance. Snowshoe hare are not considered a high priority hunting species although some individuals may be taken by individuals with small game licenses or other opportunistic hunters. Snowshoe hares colliding with vehicles or other motorized equipment would be rare but occasionally does occur on roads in the analysis area. Motorized travel through forested stands may disturb or displace individuals where recreationists leave designated routes and trails.

Sheep grazing does occur with the analysis area and would be expected to contribute to the cumulative effects of proposed actions in Alternatives 2 and 3. Livestock would be expected to utilize some or all portions of the regenerating clear-cuts or prescribed burn areas. As provided for in forest-wide guideline 73 livestock use will be delayed in post-fire and post-harvest created forest openings until successful regeneration of the shrub and tree components occurs (aspen trees reach an average height of 6 feet*)*. Following this guidance will lessen the effect on snowshoe hares' ability to utilize the regeneration Studies of grazing concurrent with aspen regeneration on the north slope of the Uinta Mountains indicates that the grazing does not prevent aspen from regenerating and growing into mature stands (Zobell 2005a). Treated spruce-fir stands where thinning and small patch cuts occur may increase the access and utilization of sheep within the stand. Treatments in mixed-conifer stands would not change utilization by sheep because of the open structure of most stands.

As shown in Supplemental Table 3.6.6 below, there have been about 1637 acres of past and current management of vegetation within the analysis area in a variety of habitat types and locations across the analysis area. In some cases the past managed areas are adjacent to current proposed units.

Supplemental Table 3.6.6 Past harvest and proposed harvest activity within West Bear analysis area (acres).

Vegetation	Acres in Analysis Area	Treated or currently ongoing	No Treatment	Alt 2	Alt 3
Lodgepole	1542	617	925	0	0
Spruce-fir	3294	512	2782	575	389
Aspen	616	11	605		
Mixed-conifer	2902	420	2482	427	348
Aspen-conifer	2810	77	2733	684	650
Totals	11,164	1637	9527	1686	1387

As shown in Supplemental Table 3.6.7 below, habitat would still be available for snowshoe hare in forested vegetation types within the analysis area post harvest. There would be 86% of forested habitat available after treatments proposed in Alternative 2 and 90% of forested habitat available after treatments proposed in Alternative 3.

Supplemental Table 3.6.7 Affected acres from proposed actions in Alternatives 2 and 3

Available forested habitat in analysis area	Past treated or currently ongoing	Unsuitable SSH habitat not recovered and ongoing project acres	Suitable SSH habitat remaining in analysis area	Cumulative Effects from past unsuitable and Alt 2 treatments*	Cumulative Effects from past unsuitable and Alt 3 treatments*
11,164	1637	378	10,786	1502 (14%)	1062 (10%)

*actual affected acres and converted to unsuitable SSH habitat within Alternative 2 (1124) and Alternative 3 (684) was determined by considering the method and vegetation type.

Chapter 4. Consultation and Coordination

4.1 Preparers and Contributors

The Forest Service consulted the following individuals, Federal, State, and local agencies, tribes and non-Forest Service persons during the development of the environmental impact statement. They will be notified as to the availability of the draft supplemental EIS and their comments will be requested.

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Core Team

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Substantial Contributors

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FEDERAL, STATE, AND LOCAL AGENCIES:

Utah State Historic Preservation Office
USDI, Fish and Wildlife Service

4.2 Distribution of the Draft Supplemental Environmental Impact Statement

Notification of availability of this draft supplemental environmental impact statement has been distributed to individuals who commented on the Draft and Final Environmental Impact Statement. In addition,

copies or notice of availability on the Wasatch-Cache National Forest web site have been sent to the following Federal agencies, federally recognized tribes, State and local governments, and organizations representing a wide range of views regarding the West Bear Vegetation Management Project.

Federal Agencies

U.S. Advisory Council on Historic Preservation
USDA APHIS PPD/EAD
U.S. Army Engineer Division, South Pacific
U.S. Department of Energy
U.S. Department of Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency
U.S. Federal Aviation Administration
USDA Natural Resources Conservation Service
USDA, National Agricultural Library
U.S. Office of Environmental Policy and Compliance

Federally Recognized Tribes

Ute Indian Tribe, Uinta and Quray Agency
N.W. Band of the Shoshone Nation

State and Local Governments

Bear River Water Commission
Coalition of Local Governments
Lyman, Wyoming
Mountain View, Wyoming
Summit County, Utah
Utah Division of Wildlife Resources
Uinta County, Wyoming
Utah Office of Planning and Budget
Utah State Planning Coordinator
Utah State Historic Preservation Office
Wyoming State Planning Coordinator

Organizations

Ayres and Baker Pole and Post
Backcountry Horsemen
Biodiversity Associates
Forest Guardians
Frontiers of Freedom, People for the USA
High Uintas Preservation Council
South and Jones Lumber Co.
The Nature Conservancy
Uinta County Citizens Coalition
Utah Environmental Congress
Western Wildlife Conservancy
Western Wood Products
Wyoming Farm Bureau

Chapter 5. LITERATURE CITED

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