

04-01

#7

Silverbird Salvage Sale  
Post-harvest Monitoring Summary  
June 2003 – Karen Gallogly and David Deschaine

	<u>Ground Cover % Average (Plant, litter, rock)</u>	<u>Coarse Woody Debris</u>
Unit 10A	49.5% (two 100-foot transects)	11 tons/acre (one 100-foot transect)
Unit 11	90% (three 100-foot transects)	0.7 ton/acre (one 100-foot transect)
Unit 12A	61% (two 100-foot transects)	no measurement taken
Unit 16	84% (one 100-foot transect)	no measurement taken
Unit 18A	93.2% (one 100-foot transect)	2.4 tons/acre
Unit 20	94.6% (two 100-foot transects)	0.8 ton/acre (one 100-foot transect)
Unit 22	83% (five 100-foot transects)	5.1 tons/acre (three 100-foot transects)
Unit 23	84% (one 100-foot transect)	no measurement taken
Unit 39A	67% (three 100-foot transects)	no measurement taken

High lead (skyline) harvest system: areal extent of disturbance 4.2%

Ground cover removed in high lead corridor – avg. ground cover for 9 units = 78.5%

Coarse woody debris average for 5 units is 4 tons/acre

Minor soil displacement in corridor (see photos)

No detrimental compaction – penetrometer readings only slightly higher in corridors when compared to undisturbed soils.

# Soil Condition Evaluation and Qualitative Soil Management Monitoring Form

## Site Characteristics

Project/Site Name Silverbird Date 6/12/03 By Whom C. Leschaine Forest S-C District Salmon/Cobalt  
 County Lemhi State Id  
 Location: Sec. \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Meridian \_\_\_\_\_ Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ UTM \_\_\_\_\_ GPS \_\_\_\_\_  
 Filename \_\_\_\_\_  
 Slope% \_\_\_\_\_ Aspect deg. \_\_\_\_\_ Elevation \_\_\_\_\_ ft m Subsection \_\_\_\_\_ LTA \_\_\_\_\_ Landtype/soil/EUI unit \_\_\_\_\_  
 Bedrock \_\_\_\_\_ Landform/Topography \_\_\_\_\_  
 Parent Material \_\_\_\_\_ Soil Classification (family) \_\_\_\_\_ Habitat/Community Type \_\_\_\_\_  
 Acreage \_\_\_\_\_  
Silverbird Unit 10A 5yr unit

Land Use or Area History (describe disturbance history, conditions during and after use, cumulative effects) Clear Creek fire Summer 2000

## Soil Condition Assessment

Purpose(s) of Assessment (circle one or more): 1) General Assessment for Planning 2) Forest Plan Level Monitoring 3) Project Level Monitoring

### Assessment Method (Circle most intensive method used)

- Observed:** Estimates on soil health were made from visual observations only
- Traversed:** On-site walk through, direct soil contact, grab samples, quick pits, ocular estimates of cover, rills, erosion
- Transected, low intensity:** On-site investigations may include systematic or random sampling, core samples collected, tape measured surface cover, soil pit descriptions
- Transected, high intensity:** Use of designed sampling methods such as Howes, Hazard and Geist or project specific monitoring plan for collection of quantifiable information

Hydrologic and Physical Soil Condition Rating (circle one for each appropriate indicator)			
Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Soil Structure	Moderate/strong granular or single grained	Sub-angular blocky or weak granular	Massive or platy
Compaction Estimate	No compaction is evident in the activity area	Compaction is evident but limited in extent and does not significantly effect root growth	Compaction limits root growth and occurs throughout the activity area
Hydrophobicity (natural or post fire)	None or Slight, Bead of water infiltrates in less than 10 seconds	Moderate, bead of water infiltrates on mineral soil 10-40 seconds	High, bead of water does not infiltrate on mineral soil within 40 seconds
Surface Erosion Sheet	No pedestaling of plants or rocks	Pedestals present but on mature plants only, no roots exposed	Most plants and rocks pedestaled, roots exposed, lichen line evident on rocks
Surface Erosion Rills and Gullies	Absent or with blunted features	Small, embryonic and not connected to dendritic pattern	Well defined, actively expanding, dendritic pattern established
Active erosion	None, recent depositional material is vegetated	Some recent depositional material is non-vegetated	All recent depositional material is non-vegetated
Effective Ground Cover	Sufficient ground cover exists to limit soil erosion to natural erosion rates	More than 1/2 of the natural ground cover and erosion rates are within the range for natural conditions	More than 1/2 of the ground cover has been removed and erosion rate are above natural rates
Soil Displacement	Minimal or no soil displacement, no hummocks or displacement evident	Soil has displacement effects, small hummocks present, puddles	Soil displacement is common, hummocks evident, soil material moved, puddles
Soil Deposition	Not unusual or excessive	Soil and/or litter deposition is present. Fine litter may be patterned as small debris accumulations	Soil and/or litter is deposited on the uphill side of logs, brush piles, etc. Soil may be moving offsite

Biological Soil Condition Rating (circle one for each appropriate indicator)			
Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Coarse Woody Debris Forested Ecosystems	Meets or exceeds FP Minimums for the Ecological Type	Does not meet FP minimums for the Ecological Type	
Grassland and Shrubland Debris	Organic matter is distributed evenly across the soil surface and meets FP minimums for the Ecological Type	Organic matter is absent or does not meet minimum FP direction for the Ecological Type	
Severely Burned Soils	Litter remains on the soil surface	All litter is consumed but ash and dead needle fall provides some erosion protection	All litter has been consumed, no inputs from falling needles, high soil temperatures have occurred
Vegetative Community Composition	Distribution of desirable, perennial plant reflects species by vegetative layer (i.e. trees, shrubs, forbs and graminoids) as identified in the potential plant community	Changes in vegetation composition indicate a shift towards a drier, less productive plant community. There may also be an increase in annual plants, shallow rooted grasses, or invasive plants	The perennial forb and/or graminoid vegetative layers are absent or sparse

Summation (circle one for each)			
Question	Satisfactory	Impaired	Unsatisfactory
Your soil health rating for this activity area	Satisfactory	Impaired	Unsatisfactory
What is the soil health trend?	Aggrading	No change	Degrading

# Data Collection

Effective Ground Cover Describe Technique used (100 ft transect every 1 foot, nested frequency, fixed circular plot): \_\_\_\_\_

Calculation of Effective Ground Cover (use appropriate technique, nested frequency, 100 foot transects, 10 points on each, etc...)						
	Transect 1	Percent T1	Transect 2	Percent T2	Transect 3	Percent T3
Gravel/rock >3/4 inch	☒☒☒ 26		☒☒☒			
Litter/wood debris	☒☒☒ 12		☒☒☒			
Plant living	☒☒☒ 4		☒☒☒			
Total Effective Ground Cover (sum above)	42%		57%			
Bare Soil rock <3/4 inch	☒☒☒☒☒☒		☒☒☒☒☒☒			

## Soil Description

Brief Pedon Description							
Depth (cm)	Horizon	Texture	% Clay	Color	Structure	pH	Comments

## Other Observations

Coarse Woody Debris Diameter: Number:	Bulk Density g/cc:	Penetration Resistance Depth cm:	Infiltration Rate cm/hr:	Modeled Soil Loss Potential t/h/yr: Current t/h/yr: Natural t/h/yr:	Other

## Photos

Picture Number	Photo Point Number	Subject	Comments
#7		overview of unit 10A	

## Comments or

Remarks: Area of high severity burn bank and need for consistent small diameter completely burned.

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T1 CWD

6	11	2.5
7	11	3.4
9	1	2.8
5	11	1.7
4	1	0.6
		<u>11 tons/acre</u>

Unit 10 A Summary 932  
 Avg Ground Cover 49.5  
 Coarse woody debris 11 tons/acre

# Soil Condition Evaluation and Qualitative Soil Management Monitoring Form

## Site Characteristics

Project/Site Name <u>Silverbird</u>	Date <u>12/6/10</u>	By Whom <u>Dix Schmale</u>	Forest <u>S-C</u>	District <u>Salmier/Arbit</u>
County <u>Lemhi</u>	State <u>IA</u>			
Location: Sec. <u>    </u>	T. <u>    </u>	R. <u>    </u>	Meridian <u>    </u>	Latitude <u>    </u>
Longitude <u>    </u>	UTM <u>    </u>	GPS <u>    </u>	Filename <u>    </u>	
Slope% <u>    </u>	Aspect deg. <u>    </u>	Elevation <u>    </u>	ft m Subsection <u>    </u>	LTA <u>    </u>
Landtype/soil/EUI unit <u>    </u>	Bedrock <u>    </u>	Landform/Topography <u>    </u>	Parent Material <u>    </u>	
Soil Classification (family) <u>    </u>	Habitat/Community Type <u>    </u>	Acreage <u>    </u>		
<u>Silverbird Unit #11</u>				

**Land Use or Area History** (describe disturbance history, conditions during and after use, cumulative effects)

Clear check fire Summer 2000

## Soil Condition Assessment

**Purpose(s) of Assessment** (circle one or more): 1) General Assessment for Planning    2) Forest Plan Level Monitoring    3) Project Level Monitoring

### Assessment Method (Circle most intensive method used)

- Observed:** Estimates on soil health were made from visual observations only
- Traversed:** On-site walk through, direct soil contact, grab samples, quick pits, ocular estimates of cover, rills, erosion
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<i>Hydrologic and Physical Soil Condition Rating (circle one for each appropriate indicator)</i>			
Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
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Soil Deposition	Not unusual or excessive	Soil and/or litter deposition is present. Fine litter may be patterned as small debris accumulations	Soil and/or litter is deposited on the uphill side of logs, brush piles, etc. Soil may be moving offsite

<i>Biological Soil Condition Rating (circle one for each appropriate indicator)</i>			
Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Coarse Woody Debris Forested Ecosystems	Meets or exceeds FP Minimums for the Ecological Type	Does not meet FP minimums for the Ecological Type	
Grassland and Shrubland Debris	Organic matter is distributed evenly across the soil surface and meets FP minimums for the Ecological Type	Organic matter is absent or does not meet minimum FP direction for the Ecological Type	
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Vegetative Community Composition	Distribution of desirable, perennial plant reflects species by vegetative layer (i.e. trees, shrubs, forbs and graminoids) as identified in the potential plant community	Changes in vegetation composition indicate a shift towards a drier, less productive plant community. There may also be an increase in annual plants, shallow rooted grasses, or invasive plants	The perennial forb and/or graminoid vegetative layers are absent or sparse

<i>Summation (circle one for each)</i>			
Your soil health rating for this activity area	Satisfactory	Impaired	Unsatisfactory
What is the soil health trend?	Aggrading	No change	Degrading

# Data Collection

Effective Ground Cover Describe Technique used (100 ft transect every 1 foot) nested frequency, fixed circular plot): \_\_\_\_\_

*Calculation of Effective Ground Cover (use appropriate technique; nested frequency, 100 foot transects, 10 points on each, etc...)*

	Transect 1	Percent T1	Transect 2	Percent T2	Transect 3	Percent T3
Gravel/rock >3/4 inch				2 2%		
Litter/wood debris	☒☒☒☒☒☒☒☒☒☒	74 73%	☒☒☒☒☒☒☒☒☒☒	50 51%		
Plant living	☒☒	19 18.8%	☒☒☒☒☒☒☒☒☒☒	37 37.7%		
Total Effective Ground Cover (sum above)		73		89 9.8		
Bare Soil rock <3/4 inch	☐	8 7.9%	☒☒	9		
		101 99.7%		98 100.5		

91.75%  
Avg Ground cover

## Soil Description

*Brief Pedon Description*

Depth (cm)	Horizon	Texture	% Clay	Color	Structure	pH	Comments

## Other Observations

Coarse Woody Debris Diameter: Number:	Bulk Density g/cc:	Penetration Resistance Depth cm:	Infiltration Rate cm/hr:	Modeled Soil Loss Potential t/h/yr: Current t/h/yr: Natural t/h/yr:	Other

## Photos

Picture Number	Photo Point Number	Subject	Comments
#3		overview of unit #11	

## Comments or Remarks:

Unit #11

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Transect 1  
No large woody debris

Transect 2  
3" 1 .3 ton/ha  
4" 11 1.1 ton/ha

Unit 11 Summary  
Avg. ground cover 90%  
Avg. Coarse Woody Debris .7 ton/ha

(see attached page for 2nd transect)

Oct 2, 2002 / Silverbird  
 Monitoring to determine ground cover

Ground Cover

Unit 16  
 25% slope

B	R	L	L	V
L	R	L	L	L
R	L	L	B	V
V	B	B	L	V
V	B	L	L	V
V	V	V	L	V
R	V	V	L	R
R	V	L	L	L
L	B	V	V	B
B	L	L	V	L

B = bare ground  
 L = letter  
 R = rock  
 V = vegetation

B = 8 x 2 = 16%  
 L = 20 40%  
 R = 6 12%  
 V = 16 32%  
 100%  
 84% ground cover  
 by letter, rock + veg

Unit 11  
 gently sloping  
 8% slope

V	L	L	L	B
L	B	V	L	V
B	L	V	V	V
L	L	L	V	L
L	L	L	V	V
L	V	L	V	V
B	V	L	L	L
B	V	L	L	L
L	L	L	L	L
L	V	L	L	B

B = 6 x 2 = 12  
 L = 29 x 2 = 58  
 R = 0  
 V = 15 x 2 = 30  
 100%  
 88% ground cover  
 by letter + veg.

Unit 12A  
 gently sloping  
 (side slope)  
 (north aspect)

V	B	B	B	B
B	R	B	R	R
B	L	B	V	L
L	B	R	L	R
R	L	L	L	R
B	B	B	B	B
B	L	B	B	B
B	R	L	B	R
B	B	B	L	R
R	L	R	B	B

$B = 25 \times 2 = 50$   
 $L = 11 \times 2 = 22$   
 $V = 2 \times 2 = 4$   
 $R = 12 \times 2 = 24$   
 100%

50% ground cover  
 by litter, rock  
 + veg.

Unit 12A  
 ridge -  
 less severely burned

R	B	L	L	R
B	L	L	B	L
L	R	L	L	B
B	R	B	B	L
R	L	L	B	B
R	L	L	L	L
V	L	B	L	B
L	L	L	L	V
L	L	L	L	B
L	L	B	B	V

$B = 14 \times 2 = 28$   
 $L = 27 \times 2 = 54$   
 $R = 6 \times 2 = 12$   
 $V = 3 \times 2 = 6$

100%  
 72% ground  
 cover by  
 litter, rock  
 + veg.

# Soil Condition Evaluation and Qualitative Soil Management Monitoring Form

## Site Characteristics

Project/Site Name Silverbird Date \_\_\_\_\_ By Whom K. G. Hoggly Forest \_\_\_\_\_ District \_\_\_\_\_  
 County \_\_\_\_\_ State \_\_\_\_\_  
 Location: Sec. \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Meridian \_\_\_\_\_ Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ UTM \_\_\_\_\_ GPS \_\_\_\_\_  
 Filename \_\_\_\_\_  
 Slope% \_\_\_\_\_ Aspect deg. \_\_\_\_\_ Elevation \_\_\_\_\_ ft m Subsection \_\_\_\_\_ LTA \_\_\_\_\_ Landtype/soil/EUI unit \_\_\_\_\_  
 Bedrock \_\_\_\_\_ Landform/Topography \_\_\_\_\_  
 Parent Material \_\_\_\_\_ Soil Classification (family) \_\_\_\_\_ Habitat/Community Type \_\_\_\_\_  
 Acreage \_\_\_\_\_  
Unit # 18A

Land Use or Area History (describe disturbance history, conditions during and after use, cumulative effects)

## Soil Condition Assessment

Purpose(s) of Assessment (circle one or more): 1)General Assessment for Planning 2)Forest Plan Level Monitoring 3)Project Level Monitoring

### Assessment Method (Circle most intensive method used)

Observed: Estimates on soil health were made from visual observations only

Traversed: On-site walk through, direct soil contact, grab samples, quick pits, ocular estimates of cover, rills, erosion

Transected, low intensity: On-site investigations may include systematic or random sampling, core samples collected, tape measured surface cover, soil pit descriptions

Transected, high intensity: Use of designed sampling methods such as Howes, Hazard and Geist or project specific monitoring plan for collection of quantifiable information

### Hydrologic and Physical Soil Condition Rating (circle one for each appropriate indicator)

Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Soil Structure	Moderate/strong granular or single grained	Sub-angular blocky or weak granular	Massive or platy
Compaction Estimate	No compaction is evident in the activity area	Compaction is evident but limited in extent and does not significantly effect root growth	Compaction limits root growth and occurs throughout the activity area
Hydrophobicity (natural or post fire)	None or Slight, Bead of water infiltrates in less than 10 seconds	Moderate, bead of water infiltrates on mineral soil 10-40 seconds	High, bead of water does not infiltrate on mineral soil within 40 seconds
Surface Erosion Sheet	No pedestaling of plants or rocks	Pedestals present but on mature plants only, no roots exposed	Most plants and rocks pedestaled, roots exposed, lichen line evident on rocks
Surface Erosion Rills and Gullies	Absent or with blunted features	Small, embryonic and not connected to dendritic pattern	Well defined, actively expanding, dendritic pattern established
Active erosion	None, recent depositional material is vegetated	Some recent depositional material is non-vegetated	All recent depositional material is non-vegetated
Effective Ground Cover	Sufficient ground cover exists to limit soil erosion to natural erosion rates	More than 1/2 of the natural ground cover and erosion rates are within the range for natural conditions	More than 1/2 of the ground cover has been removed and erosion rate are above natural rates
Soil Displacement	Minimal or no soil displacement, no hummocks or displacement evident	Soil has displacement effects, small hummocks present, puddles	Soil displacement is common, hummocks evident, soil material moved, puddles
Soil Deposition	Not unusual or excessive	Soil and/or litter deposition is present. Fine litter may be patterned as small debris accumulations	Soil and/or litter is deposited on the uphill side of logs, brush piles, etc. Soil may be moving offsite

### Biological Soil Condition Rating (circle one for each appropriate indicator)

Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Coarse Woody Debris Forested Ecosystems	Meets or exceeds FP Minimums for the Ecological Type	Does not meet FP minimums for the Ecological Type	
Grassland and Shrubland Debris	Organic matter is distributed evenly across the soil surface and meets FP minimums for the Ecological Type	Organic matter is absent or does not meet minimum FP direction for the Ecological Type	
Severely Burned Soils	Litter remains on the soil surface	All litter is consumed but ash and dead needle fall provides some erosion protection	All litter has been consumed, no inputs from falling needles, high soil temperatures have occurred
Vegetative Community Composition	Distribution of desirable, perennial plant reflects species by vegetative layer (i.e. trees, shrubs, forbs and graminoids) as identified in the potential plant community	Changes in vegetation composition indicate a shift towards a drier, less productive plant community. There may also be an increase in annual plants, shallow rooted grasses, or invasive plants	The perennial forb and/or graminoid vegetative layers are absent or sparse

### Summation (circle one for each)

Your soil health rating for this activity area	Satisfactory	Impaired	Unsatisfactory
What is the soil health trend?	Aggrading	No change	Degrading

# Data Collection

Effective Ground Cover Describe Technique used (100 ft transect every 1 foot) nested frequency, fixed circular plot: \_\_\_\_\_

Calculation of Effective Ground Cover (use appropriate technique; nested frequency; 100 foot transects; 10 points on each, etc...)						
	Transect 1	Percent T1	Transect 2	Percent T2	Transect 3	Percent T3
Gravel/rock >3/4 inch	□	6 5.8%				
Litter/wood debris	☒☒☒☒☒☒☒	70 68%				
Plant living	☒☒	20 19.4%				
Total Effective Ground Cover (sum above)						
Bare Soil rock <3/4 inch	□	7 6.8%				
		<u>103</u>		<u>100</u>		

## Soil Description

Brief Pedon Description							
Depth (cm)	Horizon	Texture	% Clay	Color	Structure	pH	Comments

## Other Observations

Coarse Woody Debris Diameter: Number:	Bulk Density g/cc:	Penetration Resistance Depth cm:	Infiltration Rate cm/hr:	Modeled Soil Loss Potential t/h/yr: Current t/h/yr: Natural t/h/yr:	Other

## Photos

Picture Number	Photo Point Number	Subject	Comments
#9		Overview of unit 18A	

## Comments or Remarks:

Unit 18A  
 Not much dead - possibly recommend dropping unit

## Transect

5" | .9  
 4" | .6  
 3" ||| .9  
 -----  
 2.4 tons/acre

Avg ground cover  
 94.6%

Coarse Woody  
 Debris  
 2.4 tons/acre

(see attached  
 pg for 2nd transect)

# Soil Condition Evaluation and Qualitative Soil Management Monitoring Form

## Site Characteristics Unit 20

Project/Site Name Silverbird Date 6/12/03 By Whom W. Deane Forest S-C District Salmon/Robit  
 County Leinhi State Id  
 Location: Sec. \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Meridian \_\_\_\_\_ Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ UTM \_\_\_\_\_ GPS \_\_\_\_\_  
 Filename \_\_\_\_\_  
 Slope% \_\_\_\_\_ Aspect deg. E Elevation 7000 ft m Subsection \_\_\_\_\_ LTA \_\_\_\_\_ Landtype/soil/EUI unit \_\_\_\_\_  
 Bedrock \_\_\_\_\_ Landform/Topography \_\_\_\_\_  
 Parent Material \_\_\_\_\_ Soil Classification (family) \_\_\_\_\_ Habitat/Community Type \_\_\_\_\_  
 Acreage \_\_\_\_\_

Land Use or Area History (describe disturbance history, conditions during and after use, cumulative effects) Clear by fire Summer 2000, previous harvest

## Soil Condition Assessment

Purpose(s) of Assessment (circle one or more): 1)General Assessment for Planning 2)Forest Plan Level Monitoring 3)Project Level Monitoring

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Hydrologic and Physical Soil Condition Rating (circle one for each appropriate indicator)			
Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Soil Structure	Moderate/strong granular or single grained	Sub-angular blocky or weak granular	Massive or platy
Compaction Estimate	No compaction is evident in the activity area	Compaction is evident but limited in extent and does not significantly effect root growth	Compaction limits root growth and occurs throughout the activity area
Hydrophobicity (natural or post fire)	None or Slight, Bead of water infiltrates in less than 10 seconds	Moderate, bead of water infiltrates on mineral soil 10-40 seconds	High, bead of water does not infiltrate on mineral soil within 40 seconds
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Summation (circle one for each)			
Your soil health rating for this activity area	Satisfactory	Impaired	Unsatisfactory
What is the soil health trend?	Aggrading	No change	Degrading

# Data Collection

Effective Ground Cover Describe Technique used (100 ft transect every 1 foot, nested frequency, fixed circular plot): \_\_\_\_\_

**Calculation of Effective Ground Cover (use appropriate technique; nested frequency, 100 foot transects, 10 points on each, etc...)**

		Transect 1	Percent TXL	Transect 2	Percent T2	Transect 3	Percent T3
Gravel/rock > 3/4 inch	46.5	11	10.6%	3	2.9%		
Litter/wood debris	21	21	20.4%	70	68.4%	see attached	
Plant living (moss)	16	16	15.5%	27	26.4%	pg for 3rd transect	
Total Effective Ground Cover (sum above)							
Bare Soil rock < 3/4 inch	5.5	5.5	5.3%	2	1.9%		
	<u>103</u>		<u>99.5%</u>	<u>102</u>	<u>99.8%</u>	Avg ground cover 71.5%	

## Soil Description

**Brief Pedon Description**

Depth (cm)	Horizon	Texture	% Clay	Color	Structure	pH	Comments

## Other Observations

Coarse Woody Debris Diameter: Number:	Bulk Density g/cc:	Penetration Resistance Depth cm:	Infiltration Rate cm/hr:	Modeled Soil Loss Potential t/h/yr: Current t/h/yr: Natural t/h/yr:	Other

## Photos

Picture Number	Photo Point Number	Subject	Comments
# 5		Unit 20 overview	
# 6		Unit 20 moss closeup	Vegetation and some rock

## Comments or

Remarks: This unit has very little needle cast. Needles were all washed.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



Unit 20

L	V	R	R	L
B	B	L	B	R
R	L	L	L	L
R	B	R	R	R
L	B	L	R	R
L	R	B	B	B
B	R	L	R	R
B	R	L	L	B
R	B	R	R	B
L	B	B	L	R

$L = 15 \times 2 = 30$

$B = 15 \times 2 = 30$

$R = 19 \times 2 = 38$

$V = 1 \times 2 = 2$

100%

70% ground cover  
by letter, rock  
and vegetation

Unit 23

(steep)

B	L	L	L	V
R	B	L	L	V
L	R	B	L	V
R	V	L	L	V
B	B	L	L	V
R	L	L	L	V
V	B	B	R	L
L	L	L	V	L
B	L	R	V	L
R	L	R	V	R

$B = 8 \times 2 = 16$

$R = 9 \times 2 = 18$

$L = 22 \times 2 = 44$

$V = 11 \times 2 = 22$

100%

84% ground cover  
by rock, letter  
& veg.



# Soil Condition Evaluation and Qualitative Soil Management Monitoring Form

## Site Characteristics

*Unit 39A*

Project/Site Name _____	Date _____	By Whom _____	Forest _____	District _____
County _____	State _____			
Location: Sec. _____ T. _____ R. _____	Meridian _____	Latitude _____	Longitude _____	UTM _____ GPS _____
Filename _____				
Slope% _____	Aspect deg. _____	Elevation _____ ft m	Subsection _____	LTA _____ Landtype/soil/EUI unit _____
Bedrock _____	Landform/Topography _____			
Parent Material _____	Soil Classification (family) _____		Habitat/Community Type _____	
Acreage _____				

**Land Use or Area History** (describe disturbance history, conditions during and after use, cumulative effects)

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## Soil Condition Assessment

**Purpose(s) of Assessment (circle one or more):** 1)General Assessment for Planning 2)Forest Plan Level Monitoring 3)Project Level Monitoring

### Assessment Method (Circle most intensive method used)

**Observed:** Estimates on soil health were made from visual observations only  
**Traversed:** On-site walk through, direct soil contact, grab samples, quick pits, ocular estimates of cover, rills, erosion  
**Transected, low intensity:** On-site investigations may include systematic or random sampling, core samples collected, tape measured surface cover, soil pit descriptions  
**Transected, high intensity:** Use of designed sampling methods such as Howes, Hazard and Geist or project specific monitoring plan for collection of quantifiable information

### Hydrologic and Physical Soil Condition Rating (circle one for each appropriate indicator)

Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Soil Structure	Moderate/strong granular or single grained	Sub-angular blocky or weak granular	Massive or platy
Compaction Estimate	No compaction is evident in the activity area	Compaction is evident but limited in extent and does not significantly effect root growth	Compaction limits root growth and occurs throughout the activity area
Hydrophobicity (natural or post fire)	None or Slight, Bead of water infiltrates in less than 10 seconds	Moderate, bead of water infiltrates on mineral soil 10-40 seconds	High, bead of water does not infiltrate on mineral soil within 40 seconds
Surface Erosion Sheet	No pedestaling of plants or rocks	Pedestals present but on mature plants only, no roots exposed	Most plants and rocks pedestaled, roots exposed, lichen line evident on rocks
Surface Erosion Rills and Gullies	Absent or with blunted features	Small, embryonic and not connected to dendritic pattern	Well defined, actively expanding, dendritic pattern established
Active erosion	None, recent depositional material is vegetated	Some recent depositional material is non-vegetated	All recent depositional material is non-vegetated
Effective Ground Cover	Sufficient ground cover exists to limit soil erosion to natural erosion rates	More than 1/2 of the natural ground cover and erosion rates are within the range for natural conditions	More than 1/2 of the ground cover has been removed and erosion rate are above natural rates
Soil Displacement	Minimal or no soil displacement, no hummocks or displacement evident	Soil has displacement effects, small hummocks present, puddles	Soil displacement is common, hummocks evident, soil material moved, puddles
Soil Deposition	Not unusual or excessive	Soil and/or litter deposition is present. Fine litter may be patterned as small debris accumulations	Soil and/or litter is deposited on the uphill side of logs, brush piles, etc. Soil may be moving offsite

### Biological Soil Condition Rating (circle one for each appropriate indicator)

Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Coarse Woody Debris Forested Ecosystems	Meets or exceeds FP Minimums for the Ecological Type	Does not meet FP minimums for the Ecological Type	
Grassland and Shrubland Debris	Organic matter is distributed evenly across the soil surface and meets FP minimums for the Ecological Type	Organic matter is absent or does not meet minimum FP direction for the Ecological Type	
Severely Burned Soils	Litter remains on the soil surface	All litter is consumed but ash and dead needle fall provides some erosion protection	All litter has been consumed, no inputs from falling needles, high soil temperatures have occurred
Vegetative Community Composition	Distribution of desirable, perennial plant reflects species by vegetative layer (i.e. trees, shrubs, forbs and graminoids) as identified in the potential plant community	Changes in vegetation composition indicate a shift towards a drier, less productive plant community. There may also be an increase in annual plants, shallow rooted grasses, or invasive plants	The perennial forb and/or graminoid vegetative layers are absent or sparse

### Summation (circle one for each)

Your soil health rating for this activity area	Satisfactory	Impaired	Unsatisfactory
What is the soil health trend?	Aggrading	No change	Degrading

**Data Collection**

July 8, 2003 Silverbird Unit 39A

Effective Ground Cover Describe Technique used (100 ft transect every 1 foot, nested frequency, fixed circular plot): 100' transect

**Calculation of Effective Ground Cover (use appropriate technique; nested frequency, 100 foot transects, 10 points on each, etc...)**

	Transect 1	Percent T1	Transect 2	Percent T2	Transect 3	Percent T3
Gravel/rock >3/4 inch	3	19	18			
Litter/wood debris	52	48	15	48		
Plant living	27	14	12			
Total Effective Ground Cover (sum above)	78					
Bare Soil rock <3/4 inch	22	23	52			

near lower road Right of drainage Ridge top Left of drainage

**Soil Description**

Brief Pedon Description							
Depth (cm)	Horizon	Texture	% Clay	Color	Structure	pH	Comments

**Other Observations**

Coarse Woody Debris Diameter: Number:	Bulk Density g/cc:	Penetration Resistance Depth cm:	Infiltration Rate cm/hr:	Modeled Soil Loss Potential t/h/yr: Current t/h/yr: Natural t/h/yr:	Other

**Photos**

Picture Number	Photo Point Number	Subject	Comments

**Comments or**

Remarks: ≈ 100 yds of wetland on road Sedges Small pond nearby water would require

Unit 39A Summary

avg ground cover 67%

# Soil Condition Evaluation and Qualitative Soil Management Monitoring Form

## Site Characteristics

Project/Site Name Silverbird Date 4/12/23 By Whom D. Deschaine Forest S-C District Salmon Cobalt  
 County Wemh State ED  
 Location: Sec. \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Meridian \_\_\_\_\_ Latitude \_\_\_\_\_ Longitude \_\_\_\_\_ UTM \_\_\_\_\_ GPS \_\_\_\_\_  
 Filename \_\_\_\_\_  
 Slope% \_\_\_\_\_ Aspect deg. \_\_\_\_\_ Elevation \_\_\_\_\_ ft m Subsection \_\_\_\_\_ LTA \_\_\_\_\_ Landtype/soil/EUI unit \_\_\_\_\_  
 Bedrock \_\_\_\_\_ Landform/Topography \_\_\_\_\_  
 Parent Material \_\_\_\_\_ Soil Classification (family) \_\_\_\_\_ Habitat/Community Type \_\_\_\_\_  
 Acreage \_\_\_\_\_  
Harvest Unit 22, 5yr tractor Unit

**Land Use or Area History** (describe disturbance history, conditions during and after use, cumulative effects) Clear Creek Fire - Summer 2000

## Soil Condition Assessment

**Purpose(s) of Assessment (circle one or more):** 1) General Assessment for Planning 2) Forest Plan Level Monitoring 3) Project Level Monitoring

### Assessment Method (Circle most intensive method used)

**Observed:** Estimates on soil health were made from visual observations only

**Traversed:** On-site walk through, direct soil contact, grab samples, quick pits, ocular estimates of cover, rills, erosion

**Transected, low intensity:** On-site investigations may include systematic or random sampling, core samples collected, tape measured surface cover soil pit descriptions

**Transected, high intensity:** Use of designed sampling methods such as Howes, Hazard and Geist or project specific monitoring plan for collection of quantifiable information

<b>Hydrologic and Physical Soil Condition Rating (circle one for each appropriate indicator)</b>			
Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Soil Structure	Moderate/strong granular or single grained	Sub-angular blocky or weak granular	Massive or platy
Compaction Estimate	No compaction is evident in the activity area	Compaction is evident but limited in extent and does not significantly effect root growth	Compaction limits root growth and occurs throughout the activity area
Hydrophobicity (natural or post fire)	None or Slight, Bead of water infiltrates in less than 10 seconds	Moderate, bead of water infiltrates on mineral soil 10-40 seconds	High, bead of water does not infiltrate on mineral soil within 40 seconds
Surface Erosion Sheet	No pedestaling of plants or rocks	Pedestals present but on mature plants only, no roots exposed	Most plants and rocks pedestaled, roots exposed, lichen line evident on rocks
Surface Erosion Rills and Gullies	Absent or with blunted features	Small, embryonic and not connected to dendritic pattern	Well defined, actively expanding, dendritic pattern established
Active erosion	None, recent depositional material is vegetated	Some recent depositional material is non-vegetated	All recent depositional material is non-vegetated
Effective Ground Cover	Sufficient ground cover exists to limit soil erosion to natural erosion rates	More than 1/2 of the natural ground cover and erosion rates are within the range for natural conditions	More than 1/2 of the ground cover has been removed and erosion rate are above natural rates
Soil Displacement	Minimal or no soil displacement, no hummocks or displacement evident	Soil has displacement effects, small hummocks present, puddles	Soil displacement is common, hummocks evident, soil material moved, puddles
Soil Deposition	Not unusual or excessive	Soil and/or litter deposition is present. Fine litter may be patterned as small debris accumulations	Soil and/or litter is deposited on the uphill side of logs, brush piles, etc. Soil may be moving offsite

<b>Biological Soil Condition Rating (circle one for each appropriate indicator)</b>			
Soil Health Indicator	Satisfactory	Impaired	Unsatisfactory
Coarse Woody Debris Forested Ecosystems	Meets or exceeds FP Minimums for the Ecological Type	Does not meet FP minimums for the Ecological Type	
Grassland and Shrubland Debris	Organic matter is distributed evenly across the soil surface and meets FP minimums for the Ecological Type	Organic matter is absent or does not meet minimum FP direction for the Ecological Type	
Severely Burned Soils	Litter remains on the soil surface	All litter is consumed but ash and dead needle fall provides some erosion protection	All litter has been consumed, no inputs from falling needles, high soil temperatures have occurred
Vegetative Community Composition	Distribution of desirable, perennial plant reflects species by vegetative layer (i.e. trees, shrubs, forbs and graminoids) as identified in the potential plant community	Changes in vegetation composition indicate a shift towards a drier, less productive plant community. There may also be an increase in annual plants, shallow rooted grasses, or invasive plants	The perennial forb and/or graminoid vegetative layers are absent or sparse

<b>Summation (circle one for each)</b>			
Your soil health rating for this activity area	Satisfactory	Impaired	Unsatisfactory
What is the soil health trend?	Aggrading	No change	Degrading

# Data Collection

Effective Ground Cover Describe Technique used (100 ft transect every 1 foot, nested frequency, fixed circular plot): \_\_\_\_\_

Calculation of Effective Ground Cover (use appropriate technique; nested frequency, 100 foot transects, 10 points on each, etc...)						
	Transect 1	Percent T1	Transect 2	Percent T2	Transect 3	Percent T3
Gravel/rock > 3/4 inch		1 0.9%		3 2.6%		
Litter/wood debris	XXXXXX	60 58%	XXXXXX	52 46%	XXXXXX	69 66.3%
Plant living	XL	26 25%	XL	15 13.3%	XXXX	31 30%
Total Effective Ground Cover (sum above)		87 84%		68 62%		96 96%
Bare Soil rock < 3/4 inch	XL	16 15%	XXXXXX	43 38%		4 3.8%
		103 99%		113 99.9%		104 100%

## Soil Description

Brief Pedon Description							
Depth (cm)	Horizon	Texture Transect 4	% Clay	Color	Structure Transect 5	pH	Comments
Rock						4	3.7%
Litter		XXXXXX	56 55.4%		XXXXXX	76	71.0% 4 3 9
Plant		XXXX	33 32.6%		XL	11	10.8%
bare		XL	12 11.8%		XL	16	17.9%
			101 99.8%				
						107	99.8%

## Other Observations

Coarse Woody Debris Diameter: Number:	Bulk Density g/cc:	Penetration Resistance Depth cm:	Infiltration Rate cm/hr:	Modeled Soil Loss Potential t/h/yr: Current t/h/yr: Natural t/h/yr:	Other

## Photos

Picture Number	Photo Point Number	Subject	Comments
# 1		Overview of Unit 22	scheduled as a survey point but probably later caught ground cover to be a fly over
# 2		Close up of needle cast in Unit 22	
# 3		Close up of moss	
# 4		Steep part of south end of Unit 22.	

Comments or Remarks: Bare soil average is 17% Avg. Ground Cover 83%  
 Most (59.8%) of the ground cover is litter/wood debris. Some of the plants are yarrow, -most have several snowberry, pinegrass, dogtooth violet. Quite a bit of moss is developed in areas without a cover of needle cast.  
 Infiltration tested in 3 locations on bare soil in all locations infiltration was immediate.

The steep part of Unit 22 has been covered with needle cast but not much vegetative cover.

August 1<sup>st</sup> 2002

Silverbird Post-harvest  
Monitoring for DD

- Unit 7 - logs were  
selectively harvested  
from unit. Only minor  
disturbance observed  
<sup>in unit</sup> away from <sup>the</sup> <sup>main</sup> <sup>trail</sup>  
surface is extremely  
gravelly, ground cover  
by CAPR is excellent  
(see photo showing trail  
& ground cover)

Penetrometer readings  
taken on <sup>the</sup> trail  
were only slightly more  
compacted than in  
undisturbed area.

2 tracks about 6'  
wide observed.

879-4107

Unit 7

outside  
skid trail

inside  
skid trail

720 psi  
120  
60  
150  
140  
140  
160  
190  
160  
150

170 psi  
130  
190  
80  
160  
110  
130  
140  
70  
110

outside Unit of  
in

hard penetrometer

.5	.5
.5	.5
1.5	2.5
1.75	1.0
.25	1.25
.25	.25
.50	.50
1.50	1.25
.25	1.25
.25	.25

Skylight Unit 7A photo  
Unit 7A photo  
 taken

D.T.	in	out	in
95	90	1.25	1.0
110	120	1.0	1.5
60	120	.75	1.0
105	80	.25	1.0
110	90	.50	.5
90	80	.50	.75
130	50	.75	.25
80	90	1.0	.5
80	110	1.0	1.0
80	90	.25	1.25

size of landing 60x120'  
 minor displacement  
 extremely gravelly  
 adequate slash, bars  
 + tops for protection

(D.T. = Dickey John soil compaction  
 tester. Pocket is  
 a small hand held  
 penetrometer)

J. L. DARLING CORP. TUCUMAN, VA. 80424-1011  
 www.PlanetPlex.com  
 No. 352

Unit 9 - Skypine  
Total number of skid  
trails for unit: 7

DJ

<u>out</u>	<u>in</u>
95	50
110	80
120	90
40	80
100	80
120	120
90	130
70	40
100	80
110	90

skid trail  
was slightly  
cupped - E.  
all veg in  
skid trail  
removed.  
about 45%  
slope

\* Water bars  
need to be  
installed on  
skid trails  
in this unit.

Photo 1

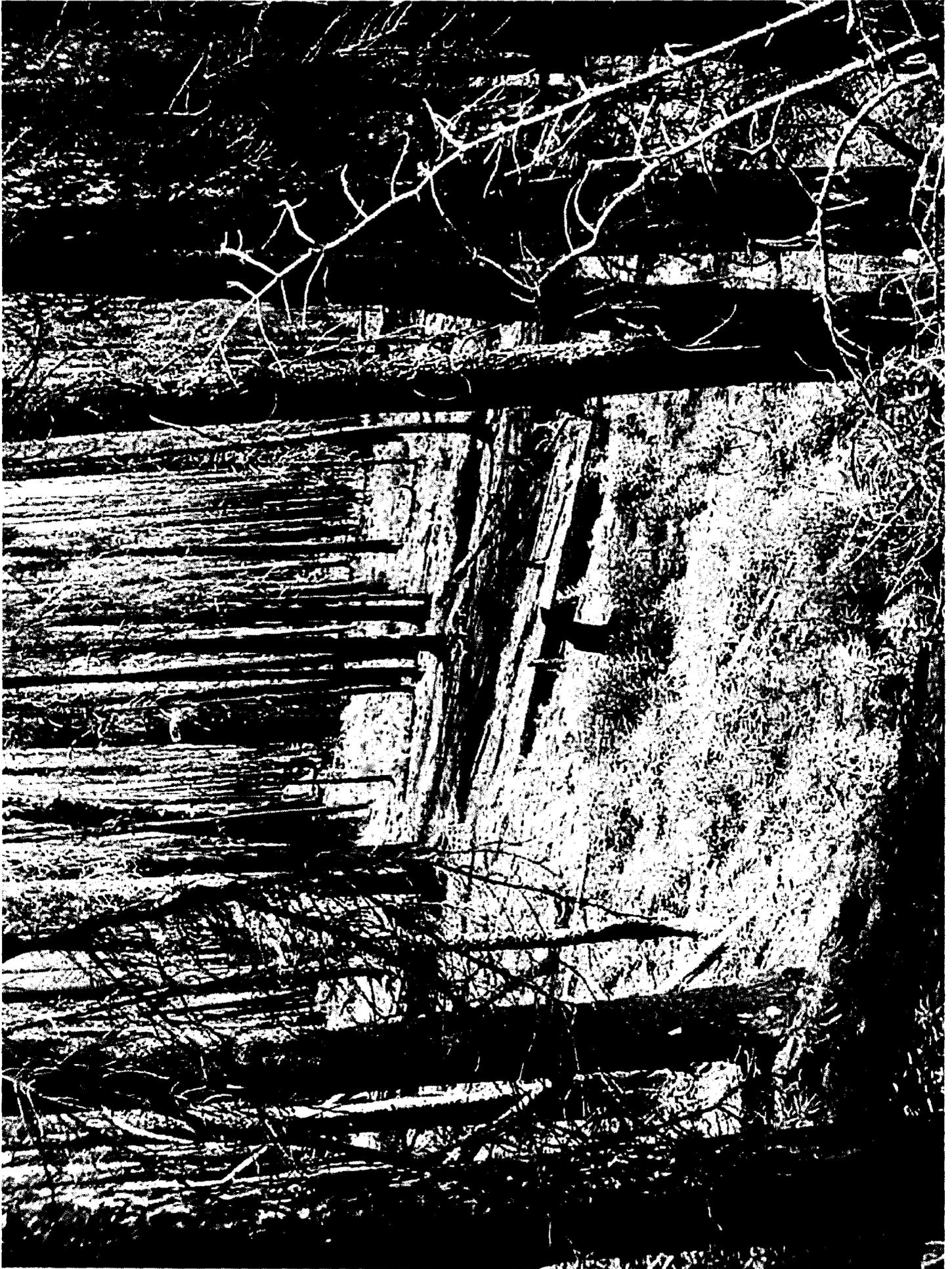


Photo 2 (10/1/55)



Photo 3. Nut 2.



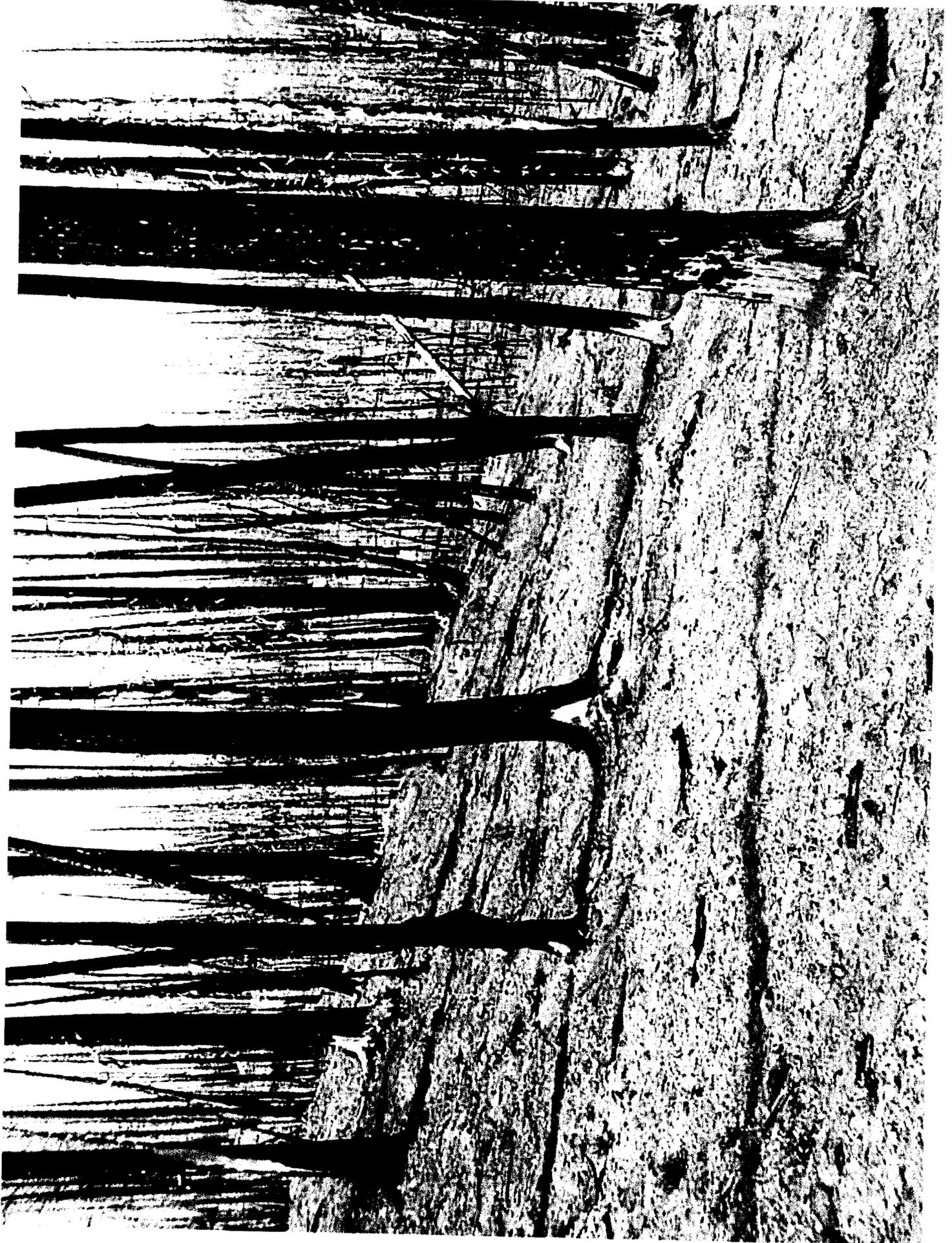
Proctor Unit 22



Photo 5 Unit 20



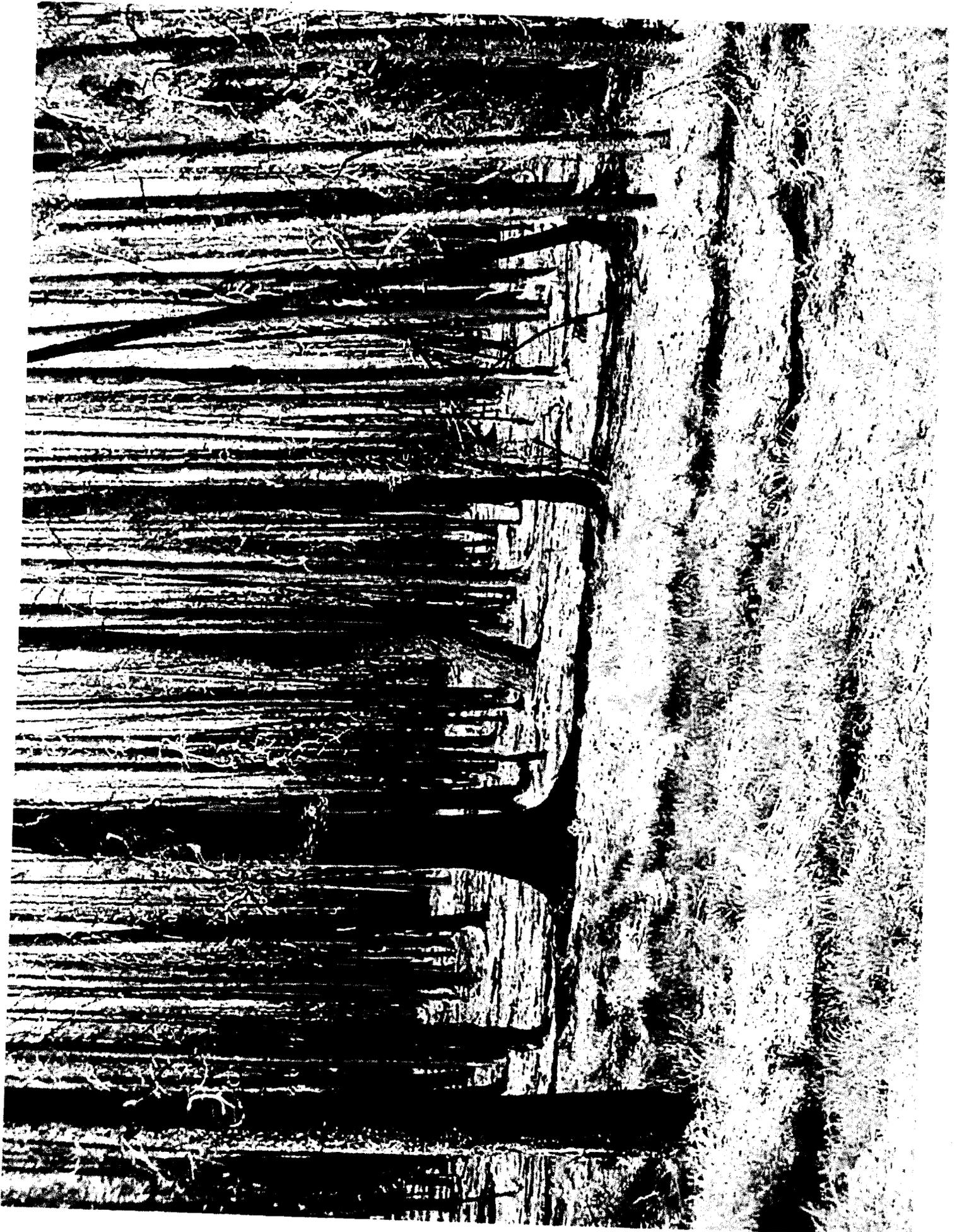
Photo Unit 5



Unit 10A



Photo 8 Unit 1



Part of Unit 18A





*Silverbird Salvage*

*Unit 22*

*Estimated areal extent of  
disturbance is 4.2%*



Silverbird Salvage  
Skyline Corridor  
Disturbance is from displacement



Silverbert Salenge  
note excellent growth of pine  
grass  
Displacement in skyline corridors  
measuring compaction with penetrometer



Schwerdt Salvage  
Skylens yarding



Silverbird Sabonje  
Coarse Woody Debris  
Avg for sampled sites is 4 tons/acre