

## Appendix A

The following information was taken from Targhee National Forest Subsections and Landtype Associations, Bowerman, Dorr, Leahy, Warrick, 1997.

### 401--Northern Madison Plateau - Conifer Forest

#### Summary

The northern portion of the Madison Plateau developed from a large ignimbrite sheet flow that overtopped the east rim of the Island Park Caldera. The ignimbrite materials have been overlaid with finer loess and ash layers varying in thickness from about 30 to 60 inches

#### Setting

Subsection: Madison and Pitchstone Plateaus

M331Ab

Landform: plateaus and escarpments of plateaus

Elevation: 6200 to 8300 feet

Slope: 2 to 60 percent

Relief: 20 to 100 feet

Drainage: The landscape is slightly dissected by both parallel and dendritic drainage patterns.

Surface drainage is rare in this area because the underlying materials have high porosity.

Precipitation: 50 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 32 degrees F

Geology: Igneous rocks.

#### Vegetation

Dominant Potential Natural Communities

- .. subalpine fir/grouse whortleberry p.a.
- .. subalpine fir/ grouse whortleberry p.a., grouse whortleberry phase
- .. whitebark pine/Ross sedge p.a., lodgepole pine phase
- .. a mosaic of: whitebark pine/elk sedge p.a. and whitebark pine/grouse whortleberry p.a.

#### Soils

Parent material: local alluvium derived from loess and volcanic ash over residuum from mixed volcanic ash and tephra

The primary soils are very deep (greater than 60 inches). Non-disturbed areas have a thin (about one inch) forest litter layer of organic materials on the surface. The mineral soil surface and subsurfaces consist of medium-textured materials; the subsoils consists of moderately - coarse textured materials; the substratums consist of coarse textured soil materials that contain cobbles and stones.

These soils are classified as ashy glassy Alfic Vitricryands (Oleo series), ashy-skeletal, glassy Vitrandic Cryochrepts (Lasac series), ashy-skeletal, glassy Humic Vitricryands (Castan series) and ashy, glassy, Typic Vitricryands (Dashiki series).

#### Related LTA Units

- .. Unit 402 is lower in elevation, warmer and is more dissected.
- .. Unit 403 has been glaciated and has glacial till parent material.
- .. Unit 404 has been glaciated and has glacial till parent material.

#### Comments

The majority of this delineation consists of Ecological Map Units 1225, 1570, and 1573. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

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## 402--Southern Madison Plateau- Conifer Forest

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### **Summary**

The southern portion of the Madison Plateau developed from a large ignimbrite sheet flow that overtopped the east rim of the Island Park Caldera. The ignimbrite materials have been reworked by alluvial and colluvial process in most of this unit. This has resulted in areas of rhyolitic tuff from the caldera rim being exposed in parts of the unit. All of the area has been covered by loess and ash layers varying in thickness from about 30 to greater than 60 inches.

### **Setting**

Subsection: Madison and Pitchstone Plateaus  
M331Ab

Landform: dissected tablelands

Elevation: 6600 to 7900 feet

Slope: 15 to 35 percent

Relief: 50 to 200 feet

Drainage: The landscape is highly dissected by both parallel and dendritic drainage patterns.

Surface drainage is rare in this area because the underlying materials have high porosity

Precipitation: 30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 36 degrees F

Geology: Igneous rocks

### **Vegetation**

Dominant Potential Natural Communities

- “ subalpine fir/grouse whortleberry p.a., pinegrass phase

### **Soils**

Parent material: local alluvium or colluvium derived from mixed volcanic rocks and loess

The primary soils are very deep (greater than 60 inches). Non-disturbed areas have a thin (about one inch) forest litter layer of organic materials on the surface. The mineral soil surfaces and subsurfaces consist of moderately coarse-textured soil materials; the subsoils and substratums consist of moderately coarse-textured materials that contain cobbles and stones.

These soils are classified as loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts (Rhylow series).

### **Related LTA Units**

- “ Unit 401 is higher in elevation, cooler and is less dissected.
- “ Unit 403 has been glaciated and has glacial till parent material.
- “ Unit 404 has been glaciated and has glacial till parent material.

### **Comments**

The majority of this delineation consists of Ecological Unit 1585. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication

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**403-- Western Falls River Basin - Conifer Forest**


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**Summary**

The Pitchstone Plateau has undergone mountain glaciation. The western portion of this plateau is dominated by dissected tablelands. The LTA is on these tablelands.

**Setting**

Subsection: Madison and Pitchstone Plateaus  
M331Ab

Landform: dissected tablelands

Elevation: 6200 to 6700 feet

Slope: 4 to 15 percent

Relief: 20 to 100 feet

Drainage: The landscape is slightly dissected by a dendritic drainage pattern. A multi-basinal drainage pattern has developed in areas of the landscape that contain kettles.

Precipitation: 32 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 37 degrees F

Geology: igneous rocks

**Vegetation**

Dominant Potential Natural Communities

- “ subalpine fir/blue huckleberry p.a.,  
huckleberry phase

**Soils**

Parent material: local alluvium derived glacial till and loess, glacial till and volcanic ash

The Primary soils are moderately deep (20 to 40 inches) to dense basal till material. Non-disturbed areas have a one to three inch forest litter layer of organic materials on the surface. The mineral soil surfaces and subsurfaces consist of moderately coarse-textured soil materials; the subsoils consist of moderately coarse-textured soil materials that contain gravel; the substratums consists of dense basal till material.

These soils are classified as ash, amorphic Typic Vitricryands (Winegar series).

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**Related LTA Units**

- “ Unit 401 has parent material derived from loess and ash over residuum from mixed volcanic ash and tephra. This unit is higher in elevation and cooler.
- “ Unit 402 has parent material derived from loess and ash over residuum from mixed volcanic ash and tephra. This unit is higher in elevation and cooler.
- “ Unit 404 is on foothills, is cooler and more moist.

**Comments**

The majority of this delineation consists of Ecological Unit 1516. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

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## 404--Eastern Falls River Basin - Conifer Forest

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### Summary

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The Pitchstone Plateau has undergone mountain glaciation. The eastern portion of this plateau is dominated by a mountain glaciation landscape. Erosional features are both depositional and erosional in this area. Rock outcrop is common on south facing slopes. Glacial erratic occur at random.

### Setting

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Subsection: Madison and Pitchstone Plateaus  
M331AB

Landform: foothills

Topography: The topography is characterized by hilly to moderately steep slopes.

Elevation: 6500 to 8000 feet

Slope: 4 to 25 percent

Relief: 20 to 100 feet

Drainage: The landscape is slightly dissected by a dendritic drainage pattern. Perennial and intermittent streams are common.

Precipitation: 44 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 34 degrees F

Geology: igneous rocks

### Vegetation

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Dominant Potential Natural Community

- .. subalpine fir/blue huckleberry p.a., grouse whortleberry phase.

### Soils

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Parent material: local alluvium, colluvium or residuum derived from igneous rocks, loess and volcanic ash

The primary soils are moderately deep to very deep (20 to greater than 60 inches) to hard bedrock. Non-disturbed areas have a one to three inch forest litter layer of organic materials on the surface. The mineral soil surfaces and subsoils consist of moderately coarse-textured soil materials that contain gravel.

These soils are classified as loamy-skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series).

### Related LTA Units

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- .. Unit 401 had parent material derived from loess and ash over residuum from mixed volcanic ash and tephra. The unit is also higher in elevation and cooler.
- .. Unit 402 has parent material derived from loess and ash over residuum from mixed volcanic ash and tephra. The unit is also higher in elevation and cooler.
- .. Unit 403 is on dissected tablelands and is warmer and drier.

### Comments

The majority of this delineation consists of Ecological Map Unit 1600. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

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### 501 - Teton Foothills - Conifer Forest

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#### Summary

The Teton Range is a fault block mountain range trending north to south. The range grades from forested foothills in the west through forested mountain sideslopes in the mid portion to alpine summits in the east. The northern portions of the forested foothills are on a volcanic cap that overlay sedimentary and other volcanic materials. The volcanic cap is dissected by parallel drainages draining the upper slopes of the subsection. The southern portions of the forested foothills are on a thin mantle of colluvium over mixed sedimentary bedrock. Slope stability is a concern on these materials.

#### Setting

Subsection: Teton Range M331Dm

Landform: dissected tablelands, and foothills of mountains

Elevation: 5300 to 7300 feet

Slope: 4 to 50 percent

Relief: 100 to 200 feet

Drainage: The landscape is moderately dissected by a parallel drainage pattern. Intermittent streams occur in larger drainages.

Precipitation: 24-30 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 36-38 degrees F

Geology: mixed

#### Vegetation

Dominant Potential Natural Communities

- .. subalpine fir/blue huckleberry p.a., myrtle pachistima phase.
- .. subalpine fir /sweetcicely p.a., myrtle pachistima phase.
- .. an ecotone of : Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/ California brome p.a.

#### Soils

Parent material: local alluvium or colluvium derived from mixed rocks and loess

The Primary soils are very deep (greater than 60 inches). Non-disturbed areas with timber have a thin (about 1 inch) forest litter layer of organic materials on the surface. The mineral soil surfaces

and subsurfaces consist of medium textured soil materials;

at lower elevations the subsoils consist of medium-textured soil materials; at higher elevations subsoils and substratums consist of moderately coarse-textured and medium textured soil materials that contain gravel and cobbles.

These soils are classified as fine-silty, mixed, superactive Vitrandic Paleboralfs (Huckridge series), loamy-skeletal, mixed superactive Pachic Cryoborolls (Povey series) and loamy-skeletal, mixed, superactive Vitrandic Cryoborolls (Edgway series).

#### Related LTA Units

- .. Unit 502 is on mountains and is cooler.
- .. Unit 503 is on mountains and has alpine vegetation.

#### Comments

The majority of this delineation consists of Ecological Unit 1224, 1315 and 1595. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

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## 502 - Teton Mountains - Conifer Forest

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### Summary

The Teton Range is a fault block mountain range trending north to south. The range grades from forested foothills in the west through forested mountain sideslopes in the mid portion to alpine summits in the east. This LTA occupies the mid portion and is characterized by deep, east-west orientated canyons with broad, wedge-shaped inter-canyon ridgetops. Many canyons are glacial troughs with wide bottomlands.

### Setting

Subsection: Teton Range M331Dm  
 Landform: Mountains  
 Elevation: 6400 to 9800 feet  
 Slope: 30 to 70 percent  
 Relief: 100 to 300 feet  
 Drainage: Weakly dissected by a parallel drainage pattern.  
 Precipitation: 25-45 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)  
 Average annual air temperature: 30-35 degrees F  
 Geology: mixed rocks

### Vegetation

Dominant Potential Natural Communities

- .. subalpine fir/Rocky Mountain maple p.a.
- .. subalpine fir /western meadowrue p.a.
- .. subalpine fir/blue huckleberry p.a., myrtle pachistima phase.
- .. a mosaic of: subalpine fir/gooseberry currant p.a., whitebark pine phase; tall forb communities.
- .. Douglas-fir/Oregon grape p.a., whortleleaf snowberry phase.

an ecotone of: Douglas-fir/whortleleaf snowberry p.a.; mountain big sagebrush/Idaho fescue p.a.; subalpine big sagebrush/ California brome p.a.

### Soils

Parent material: local alluvium or colluvium derived from mixed sources

The Primary soils are very deep (greater than 60 inches). The mineral soil surfaces and subsurfaces consist of medium textured through moderately fine textured soil materials and contain gravel.

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These soils are classified as loamy skeletal, mixed, superactive Vitrandic Cryochrepts (Koffgo series), loamy-skeletal, mixed, superactive Vitrandic Cryumbrepts (Rhylow series), loamy-skeletal, carbonatic Calcic Pachic Cryoborolls (Katpa series), loamy-skeletal carbonatic Calcic Cryoborolls (Fritz series), fine loamy, mixed, active Abruptic Paleboralfs (Yodal series) and loamy-skeletal, mixed superactive Pachic Cryoborolls (Povey series).

### Related LTA Units

- .. Unit 501 is on foothills and is warmer.
- .. Unit 503 is on higher elevation mountains and has alpine vegetation.

### Comments

The majority of this delineation consists of Ecological Units 1170, 1172, 1175, 1216, and 1316. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

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## 503 - Teton Range Crest - Alpine

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### Summary

The Teton Range is a fault block mountain range trending north to south. The range grades from forested foothills in the west through forested mountain sideslopes in the mid portion to alpine summits basins and peaks in the east. These alpine positions form the scenic skyline of the range when viewed from the west. This LTA occupies these alpine positions and is characterized by glacial basins, scoured ramp-like surfaces and alpine peaks.

### Setting

Subsection: Teton Range M331Dm

Landform: Mountains and cirques

Elevation: 8600 to 12,200 feet

Slope: 4 to 70 percent

Relief: 100 to 300 feet

Drainage: Little stream dissection

Precipitation: 22-45 inches (Precipitation is uniformly distributed throughout the year with 55 percent falling as snow.)

Average annual air temperature: 30-35 degrees F

Geology: dominantly limestone

### Vegetation

Dominant Potential Natural Communities

- .. low alpine forb communities
- .. subalpine fir /grouse whortleberry p.a. whitebark pine phase
- .. white marshmarigold c.t.

### Soils

Parent material: local alluvium or colluvium and residuum derived dominantly from limestone with some volcanic ash, loess and glacial till.

The Primary soils are moderately deep (20 to 60 inches). The mineral soil surfaces and subsurfaces consist moderately coarse-textured to medium-textured soil materials; the subsoils and substratums consist of moderately coarse-textured to fragmental soil material.

These soils are classified as Typic Cryochrepts, fragmental, carbonatic Typic Cryochrepts (Orang series), ashy, amorphic Typic Vitricryands (Winegar series) and Oxyaquic Cryochrepts.

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### Related LTA Units

- .. Unit 501 is on foothills, has a forest potential
- .. Unit 502 is on lower elevation mountains and has forest potential.

### Comments

The majority of this delineation consists of Ecological Units 1280, 1331 and 1414. For Ecological Unit descriptions, see the *Targhee National Forest Ecological Unit Inventory* publication.

