

Map Unit: 654D—Tolby family - Rock outcrop - Hiwan family complex, 40 to 150 percent slopes.

Ecological Land Unit: 654D—lodgepole pine, subalpine fir and Engelmann spruce on montane and subalpine, south facing steep to very steep mountain slopes.

MAP UNIT SETTINGS

Location: mountainous areas where igneous and metamorphic rocks predominate.

Landform: steep to very steep mountain slopes.

Parent material: residuum and colluvium.

Geologic symbol: Tmi, Xb, Xfh, Xg, Yg.

Elevation range: 9,000 to 11,800 feet.

Aspect: south.

Climatic zone: montane and subalpine.

Mean annual precipitation: 20 to 40 inches.

Mean annual air temperature: 36°F. to 44°F.

Average annual snowfall: 200 to 400 inches.

COMPOSITION

40 percent Tolby and similar soils.

30 percent Rock outcrop.

20 percent Hiwan and similar soils.

Contrasting inclusions

10 percent Cryoborolls shallow to deep on south slopes under grass and shrub canopy.

TYPICAL PROFILES:

Tolby

Surface covering layer:

1 to 0 inches - partially decomposed needle and twig litter.

Surface layer (s):

0 to 12 inches - brown, gravelly silt loam.

Subsurface layer (s):

12 to 33 inches - dark yellowish brown, very cobbly, loamy fine sand.

Subsoil layer (s):

33 to 60 inches, dark yellowish brown, very cobbly coarse sand.

Rock outcrop

Hiwan

Surface covering layer:

1 to 0 inches - spruce, fir and pine litter and duff.

Surface layer(s):

0 to 4 inches - brown, very gravelly sandy loam.

Substratum layer(s):

4 to 16 inches - light brownish gray, very gravelly loamy sand.

SOIL PROPERTIES AND QUALITIES

Tolby

Effective rooting depth: greater than 20 inches.

Natural drainage class: excessively.

Depth to seasonal high water table: greater than 6 feet.

Available water capacity: very low.

Permeability: rapid.

Runoff: moderate.

Rock outcrop

Hiwan

Effective rooting depth: greater than 20 inches.

Natural drainage class: excessively.

Depth to seasonal high water table: greater than 6 feet.

Available water capacity: very low.

Permeability: very rapid.

Runoff: rapid.

VEGETATION

Potential natural communities:

Tolby: subalpine fir-Engelmann spruce/common juniper (Abla-Pien1/Juco) typical site and lodgepole pine/common juniper (Pico/Juco) below 10,000 feet and limber pine/common juniper (Pifl/Juco) dry site.

Hiwan: (Abla-Pien1/Juco) typical site and (Pico/Juco) below 10,000 feet and (Pifl/Juco) dry site.
Seral stages: dominated with lodgepole pine and other plants of the respective potential natural communities.
Present vegetation: includes plants of the respective potential natural communities.

USE AND MANAGEMENT CONSIDERATIONS

Major uses: dispersed non-motorized recreation, wildlife habitat and watershed.

Mass movement potential:

Landslides: moderate.

Debris flows: high.

Snow avalanche: high.

Road and trail limitations:

Cut and fill slope stability

Tolby: severe - slope and sandy parent material.

Rock outcrop: slight- bedrock.

Hiwan: moderate - slope.

Improved unsurfaced roads:

Tolby: severe - slope.

Rock outcrop: severe - cliffs and unstable talus.

Hiwan: severe - slope and shallow depth to bedrock.

Offroad vehicle roads and trails:

Tolby: severe - slope and erosion hazard.

Rock outcrop: severe - cliffs and unstable talus.

Hiwan: severe - slope and erosion hazard.

Foot trails and paths:

Tolby: moderate - slope.

Rock outcrop: severe - cliffs and unstable talus.

Hiwan: moderate - slope.

Revegetation limitations:

Tolby: severe - low available water capacity, low inherent fertility, slope and erosion hazard.

Rock outcrop: severe - bedrock.

Hiwan: severe - low available water capacity, low inherent fertility, shallow depth to bedrock, slope and erosion hazard.

Revegetation considerations: Plant drought tolerant plants to survive south facing slopes. Mulch will conserve soil moisture and protect seedling establishment. Surface netting in conjunction with mulching will reduce the erosion hazard.

Timber management considerations: Conventional logging operations limited by slope, rock outcrop and erosion hazards.

Wildlife management considerations: This map unit provides shelter for upland game animals.

Acid precipitation buffering capacity: low.