

LOCATION CANWALL

WY

Established Series

RLR/PSD

02/1999

## CANWALL SERIES

The Canwall series consists of well drained soils that are moderately deep to limestone. They formed in aeolian and colluvial material overlying residuum derived from limestone. These soils are on cuesta dipslopes, north-facing canyon walls, and structural benches. Slopes are 3 to 30 percent. The mean annual precipitation is about 12 inches, and the mean annual temperature is about 43 degrees F.

**TAXONOMIC CLASS:** Coarse-loamy, mixed, superactive, frigid Ustic Calcicgids

**TYPICAL PEDON:** Canwall fine sandy loam on a northwest-facing convex slope of 4 percent-rangeland. (Colors are for dry soil unless otherwise stated.)

**A--**0 to 3 inches; yellowish brown (10YR 5/4) fine sandy loam, dark brown (10YR 3/3) moist, weak medium and fine granular structure; slightly hard, very friable, slightly sticky and nonplastic; many very fine, fine, and medium roots; slightly effervescent, carbonates disseminated; 5 percent coarse pebbles and cobbles, moderately alkaline (pH 8.0); abrupt smooth boundary. (3 to 5 inches thick)

**Bt--**3 to 12 inches; brown (7.5YR 5/4) very fine sandy loam, dark brown (7.5YR 3/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; continuous thin and moderately thick clay films on faces of peds; slightly effervescent, carbonates disseminated; 5 percent coarse pebbles and 5 percent angular cobbles; moderately alkaline (pH 8.0); clear smooth boundary. (5 to 10 inches thick)

**2Btk--**12 to 16 inches; brown (7.5YR 5/4) very cobbly very fine sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; few medium roots; continuous thin clay films on faces of peds; strongly effervescent, common fine concretions and moderately thick pendants of secondary calcium carbonate on undersides of coarse fragments; 25 percent angular cobbles and 15 percent coarse pebbles; moderately alkaline (pH 8.2); clear wavy boundary. (0 to 9 inches thick)

**2Bk--**16 to 24 inches; very pale brown (10YR 7/4) very cobbly very fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, slightly sticky and slightly plastic; violently effervescent, common fine concretions, thin seams, and thick pendants of secondary calcium carbonate in matrix and on undersides of coarse fragments, 18 percent calcium carbonate equivalent by calcimeter; 45 percent angular cobble and 15 percent coarse pebbles; moderately alkaline (pH 8.2); abrupt irregular boundary. (6 to 18 inches thick)

**R--**24 inches; limestone.

**TYPE LOCATION:** Albany County, Wyoming; about 5 miles southeast of Laramie; approximately 300 feet south and 800 feet west of NE corner of sec. 18, T. 15 N., R. 72 W.

**RANGE IN CHARACTERISTICS:** Depth to the lithic contact is 20 to 40 inches. The mean annual soil temperature ranges from 40 to 47 degrees F., and the mean summer soil temperature ranges from 59 to 68 degrees F. About half of the pedons do not have a recognizable discontinuity. Reaction of the profile is mildly alkaline or moderately alkaline.

The A horizon has hue of 7.5YR or 10YR; value of 4 or 5 dry, 3 or 4 moist; and chroma of 3 or 4 dry, 2 through 4 moist. Coarse fragments range from 5 to 20 percent coarse angular pebbles and 0 to 5 percent cobbles. Clay content ranges from 8 to 14 percent. This horizon is noncalcareous in some pedons.

The Bt horizon has hue of 7.5YR or 10YR; value of 4 through 6 dry, 3 or 4 moist; and chroma of 3 through 6 dry, 2 through 4 moist. Texture is fine sandy loam or very fine sandy loam modified with 5 to 25 percent coarse angular pebbles and 0 to 10 percent small angular cobbles. Clay content ranges from 10 to 18 percent. About half of the pedons have transitional Btk horizons with small concretions and thin pendants of calcium carbonate on undersides of the rock fragments. The Btk horizons may contain up to 40 percent rock fragments.

The 2Bk horizon has hue of 7.5YR or 10YR; value of 5 through 8 dry, 4 through 7 moist; and chroma of 3 or 4 dry and moist. Rock fragments range from 10 to 40 percent pebbles, 25 to 60 percent cobbles, and 0 to 15 percent flagstones. Matrix texture is very fine sandy loam with 4 to 12 percent clay. Secondary calcium carbonate occurs as many small concretions and as thin to thick pendants on the cobbles. Calcium carbonate content ranges from 17 to 32 percent by volume.

**COMPETING SERIES:** These are the [Cotha](#), [Elk Mountain](#), [Farson](#), [Joemre](#), [Means](#), [Rawlins](#), [Rohonda](#), [Ryan Park](#), and [Ryark](#) series. Cotha, Elk Mountain, and Means soils have a paralithic contact at 20 to 40 inches. Farson, Joemre, Rawlins, Ryan Park, and Ryark soils are deep. Rohonda soils have hue of 5YR or redder in the Bt horizon.

**GEOGRAPHIC SETTING:** Canwall soils are on nearly level to steep cuesta dipslopes, north-facing canyon walls, and structural benches. Slopes are 3 to 30 percent. These soils formed in aeolian and colluvial material overlying residuum from limestone. Elevation is 6,000 to 7,800 feet. The mean annual precipitation is about 12 inches and ranges from 10 to 14 inches with about half falling as snow and rain in April, May, and early June. The mean annual temperature ranges from 40 to 45 degrees F. The frost-free season is approximately 60 to 90 days.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are the Pilotpeak and Telecan soils. Pilotpeak soils are less than 20 inches deep over limestone. Telecan soils do not have argillic horizons. These soils both have more than 35 percent coarse fragments in the control section.

**DRAINAGE AND PERMEABILITY:** Well drained; medium runoff; moderately rapid permeability.

**USE AND VEGETATION:** These soils are used for rangeland and wildlife habitat. Vegetation is mostly needleandthread, bluebunch wheatgrass, Idaho fescue, sagebrush, snowberry, and mountain mahogany.

**DISTRIBUTION AND EXTENT:** The flank slopes of mountainous areas in southeastern Wyoming. The series is of small extent, less than 5,000 acres.

**MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE:** Bozeman, Montana

**SERIES PROPOSED:** Albany County Area, Wyoming; 1981. The name is coined.

**REMARKS:** Diagnostic horizons recognized in this pedon are:

Ochric epipedon - 0 to 3 inches (A horizon)

Argillic horizon - 3 to 16 inches (Bt, 2Btk horizons)

Calcic horizon - 16 to 24 inches (2Bk horizon)

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