WILKESON SERIES

The Wilkeson series consists of deep, well drained soils formed in materials weathered from andesite and basalt. Wilkeson soils are on uplands and mountains. Mean annual precipitation is about 60 inches and mean annual temperature is about 47 degrees F.

TAXONOMIC CLASS: Fine-loamy, isotic, mesic Vitrandic Haploxeralfs

TYPICAL PEDON: Wilkeson gravelly silt loam - forested on a 45 percent slope at 1,600 feet elevation. (Colors are for moist soil unless otherwise noted.)

A1--0 to 4 inches; very dark grayish brown (10YR 3/2) gravelly silt loam, grayish brown (10YR 5/2) dry; weak very fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; many very fine and fine pores; 5 percent shot, 30 percent angular pebbles; moderately acid (pH 5.6); abrupt smooth boundary. (3 to 6 inches thick)

A2--4 to 10 inches; dark brown (10YR 3/3) very gravelly loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; many fine, medium and coarse roots; many very fine and fine pores; 5 percent shot, 45 percent angular pebbles; strongly acid (pH 5.4); diffuse wavy boundary. (5 to 14 inches thick)

B1--10 to 18 inches; brown (10YR 4/3) gravelly silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; hard, firm, sticky and plastic; many very fine and fine pores; 20 percent shot and angular pebbles strongly acid (pH 5.4); clear wavy boundary. (7 to 9 inches thick)

Bt1--18 to 27 inches; dark yellowish brown (10YR 4/4) gravelly heavy loam, pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; many fine, medium and coarse roots; common very fine and fine pores; thin patchy clay films in pores; 5 percent shot, 30 percent angular pebbles; strongly acid (pH 5.4); diffuse wavy boundary. (8 to 12 inches thick)

Bt2--27 to 36 inches; yellowish brown (10YR 5/4) gravelly loam, light yellowish brown (10YR 6/4) dry; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, sticky and plastic; few fine and coarse roots; common very fine and fine pores; moderately thick patchy clay film in fine pores; 5 percent angular pebbles; moderately acid (pH 5.8); gradual wavy boundary. (8 to 35 inches thick)

Bt3--36 to 49 inches; dark yellowish brown (10YR 4/4) loam, yellowish brown (10YR 5/6), light yellowish brown (10YR 4/6) and pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few fine roots; common very fine and fine pores; thick patchy clay films on faces of peds and in very fine pores; 10 percent angular pebbles; moderately acid (pH 5.8); diffuse wavy boundary. (7 to 14 inches thick)

Bt4--49 to 64 inches; yellowish brown (10YR 5/4) gravelly loam, light reddish brown (2.5YR 6/4), very pale brown (10YR 7/3), light yellowish brown (10YR 6/4), and brownish yellow (10YR 6/6) dry; moderate coarse subangular blocky structure; hard, firm, sticky and plastic; few fine roots; few very fine and fine pores; thick continuous clay films in pores; 25 percent angular pebbles; moderately acid (pH 6.0).

TYPE LOCATION: Snoqualmie Pass Area, Pierce County, Washington; 1,700 feet east and 1,600 feet south of the northwest corner sec. 21, T. 17 N., R. 5 E.

RANGE IN CHARACTERISTICS: These soils are usually moist but are dry in the moisture control section for 45 to 60 consecutive days following summer solstice. The mean annual soil temperature is estimated to range from 47 to 49 degrees F. The soils are usually moist but are dry for 45 to 60 consecutive days following summer solstice. The particle-size control section averages 18 to 35 percent clay and 15 to 35 percent coarse fragments.

The A horizon has chroma of 2 or 3 moist or dry. Reaction is strongly acid or moderately acid.
The Bt horizon has hue of 10YR or 7.5YR, value of 3 to 5 moist, 5 through 7 dry, and chroma of 3 to 6 moist and dry. It is loam, gravelly silt loam, loam, gravelly clay loam, or gravelly silty clay loam. It has moderate prismatic or subangular blocky structure. The BCt horizon has hue of 10YR, 7.5YR, or 2.5Y, value of 5 or 6 moist, 5 through 8 dry, and chroma of 3 through 6 dry. It has weak subangular blocky structure or is massive. In some pedons the lower portion of the BCt horizon contains strongly weathered andesite or basalt stones. It is loam, gravelly loam, or gravelly clay loam. Reaction is strongly acid to slightly acid.

**COMPETING SERIES:** These are the Boomer, Casabonne, Centralia, Cherryhill, CleElum, Cohasset, Crozier, Dalig, Fives, Glenview, Gunn, Holland, Hood, Hotaw, Kalama, Latourell, Lettia, McGowan, Musick, Para, Rosehaven, Speaker, Teanaway, Tigit, Trelk, Underwood, Varelum and Wohly series. Boomer soils have a mean annual temperature of 54 to 58 degrees F. and have a hue of 5YR or redder in the particle-size control section. Casabonne, Cohasset, and Rosehaven soils have a mean annual temperature of 52 to 59 degrees F and are dry for more than 60 consecutive days in the moisture control section. Centralia, Fives, Gunn, Holland, Hood, Latourell, McGowan, Teanaway, and Varelum soils have less than 15 percent rock fragments in the particle-size control section. Also, Holland, Hood, Latourell, McGowan, Teanaway, and Varelum soils are dry for more than 60 consecutive days in the moisture control section. Cherryhill soils have a mean annual soil temperature of 53 to 55 degrees F. and are dry for 60 to 80 consecutive days. CleElum, Crozier, Hotaw, Speaker, and Tigit soils have a paralithic contact at a depth of 20 to 40 inches. Dalig soils have an argillic horizon 35 to 48 inches thick. Glenview soils are dry more than 60 consecutive days and have a mean annual soil temperature of 52 to 59 degrees F. Kalama soils have grayish mottles in the Bt horizon. Lettia soils have an ochric epipedon a horizon 8 to 13 inches thick. Glenview soils are dry more than 60 consecutive days in the moisture control section. Para soils have 15 to 35 percent soft weathered rock fragments in the particle-size control section and are dry for more than 60 consecutive days. Underwood soils have 0 to 15 percent hard pebbles and 5 to 25 percent soft pebbles in the particle-size control section and have a solum less than 43 inches thick. Trek soils have a surface volcanic ash layer 8 to 13 inches thick.

**GEOGRAPHIC SETTING:** The Wilkeson soils are on convex slopes in the foothills of the Cascade Mountains. Elevations range from 600 to 1,800 feet. The soils formed primarily in weathered andesite and basalt. The climate is marine with an average annual precipitation of 50 to 70 inches, occurring mostly as snowfall and heavy rainfall during the winter periods, with cool dry summers. Average January temperature is 30 degrees F, average July temperature 63 degrees F, and mean annual temperature is 47 degrees F. The frost-free season is 125 to 175 days. The growing season (28 degrees F) is 150 to 200 days.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are the Baumgard, Jonas, Olympic, Pheeney, and Rainier soils. Baumgard, Jonas, and Pheeney soils lack an argillic horizon. Also, Jonas and Pheeney soils are frigid. Olympic and Rainier soils are clayey.

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

**USE AND VEGETATION:** Woodland and wildlife habitat. Vegetation is Douglas-fir, red alder, western hemlock, bigleaf maple, western redcedar, and bitter cherry, with an understory of vine maple, salal, western brackenfern, western swordfern, Oregon-grape, red huckleberry, trailing blackberry, Pacific trillium, bedstraw, and violet.

**DISTRIBUTION AND EXTENT:** West slopes of the Cascade Mountains in western Washington; moderate extent.

**MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE:** Portland, Oregon

**SERIES ESTABLISHED:** Pierce County, Washington, 1939.

Classification only updated 3/94 because of recent amendments to Soil Taxonomy. In 0 to 10 inch zone the estimated content of volcanic glass is 5 to 20 percent and extract by ammonium-oxalate is 1.0 to 2.0 percent; based on lab data for pedon #84P0917. Lab Data S71-Wash. 27-7; Sample #71-324-330. Diagnostic horizons and features recognized in this pedon are an umbric epipedon from the mineral surface to 10 inches and an argillic horizon from 10 to 64 inches.