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Department of Agriculture  
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and  
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and the  
University of Nevada  
Agricultural  
Experiment Station

# Soil Survey of Lyon County Area, Nevada

the limited depth to bedrock and hardpan. Cutting and filling are reduced by building roads in the less sloping areas of the unit. Roads should be provided with adequate surface drainage. Erosion can be controlled and maintenance cost reduced by stabilizing areas that have been disturbed. Unless an adequate wearing surface is maintained, stones and cobbles in the Old Camp soil create road hazards and increase maintenance cost.

The Lapon and Fulstone soils are in capability subclass VII, nonirrigated, and the Old Camp soil is in capability subclass VIe, nonirrigated. The Lapon soil is in range site 27-20, the Fulstone soil is in range site 26-25, and the Old Camp soil is in range site 27-22.

**441—Lunder very cobbly loam, 2 to 15 percent slopes.** This shallow, well drained soil is on old alluvial fans. It formed in alluvium derived dominantly from basic igneous rock. Elevation is 6,000 to 7,500 feet. The average annual precipitation is about 12 inches, the average annual air temperature is about 47 degrees F, and the average frost-free period is 80 to 100 days.

Included in this unit is about 10 percent Shree soils on the upper part of alluvial fans (range site 26-10).

Typically, the surface layer averages very cobbly loam that is brown. It is about 7 inches thick. The subsoil is brown cobbly clay about 9 inches thick. The upper 15 inches of the substratum is a hardpan that is cemented with silica and lime, and the lower part to a depth of 60 inches or more is very pale brown and pale brown extremely cobbly sandy loam that is weakly to strongly cemented with silica and lime. Depth to the hardpan ranges from 14 to 20 inches.

Permeability of this Lunder soil is slow. Available water capacity is very low. Effective rooting depth is 14 to 20 inches. Runoff is medium, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used for livestock grazing and wildlife habitat.

The potential plant community on this unit is mainly Thurber needlegrass, Canby bluegrass, and low sagebrush. The present vegetation in most areas is mainly low sagebrush, bottlebrush squirreltail, and widely scattered singleleaf pinyon. The production of forage is limited by the very low available water capacity and restricted rooting depth. The suitability of this unit for rangeland seeding is very poor. The main limitations are rock fragments on the surface, restricted rooting depth, and very low available water capacity. The stones and cobbles on the surface interfere with use of mechanical equipment and the movement of livestock. Grazing should be delayed until the soil is firm and the more desirable forage plants have achieved sufficient growth to withstand grazing pressure.

This unit is limited for roads because of restricted depth to the hardpan and cobbles on the surface. Roads should be designed to minimize cuts because of the

limited depth to the underlying hardpan. Unless an adequate wearing surface is maintained, stones and cobbles in the soil create road hazards and increase maintenance cost.

This map unit is in capability subclass VII, nonirrigated, and in range site 26-23.

**451—Obanion loamy coarse sand.** This very deep, very poorly drained soil is in small basins and on alluvial fans and alluvial flats. It formed in alluvium derived from various kinds of rock. Slope is 0 to 2 percent. Elevation is 4,500 to 5,000 feet. The average annual precipitation is about 7 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

Typically, the surface layer is grayish brown loamy coarse sand about 11 inches thick. The underlying material to a depth of 60 inches or more is mottled and gleyed, stratified sandy loam to sandy clay loam.

Included in this unit are about 5 percent Hotsprings soils on toe slopes of alluvial fans (range site 26-16) and 5 percent Haybourne soils on toe slopes of alluvial fans (range site 26-16). Included areas make up about 10 percent of the total acreage. The percentage varies from one area to another.

Permeability of this Obanion soil is moderately slow. Available water capacity is high. Effective rooting depth is limited by a seasonal high water table that is at a depth of 0.5 to 2.0 feet from January through December. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used mainly for livestock grazing. It is also used for waterfowl habitat.

The potential and present plant community on this unit is mainly sedges and rushes. The production of forage is limited by the low average annual precipitation. The suitability of this unit for rangeland seeding is very poor. The main limitation is the seasonal high water table. Plants that tolerate wetness should be seeded. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

This unit is limited for roads because of the hazard of frost heaving and the seasonal high water table. Local roads and streets may require a special base to avoid frost heave damage. Drainage is needed for the construction of roads and to reduce maintenance cost.

This map unit is in capability subclass Vw, nonirrigated, and in range site 27-1.

**452—Obanion sandy loam, drained.** This very deep, very poorly drained soil is on alluvial fans and alluvial flats. The drainage has been altered as a result of changes in the original course of streams or as a result of channel entrenchment. The soil formed in alluvium derived from various kinds of rock. Slope is 0 to 2 percent. Elevation is 4,500 to 5,000 feet. The average annual precipitation is about 7 inches, the average

annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

Typically, the surface layer is grayish brown sandy loam about 11 inches thick. The underlying material to a depth of 60 inches or more is mottled, stratified sandy loam to sandy clay loam.

Included in this unit are about 5 percent Saralegui soils on lake terraces (range site 26-16) and 5 percent Haybourne soils on toe slopes of alluvial fans (range site 26-16). Included areas make up about 10 percent of the total acreage. The percentage varies from one area to another.

Permeability of this Obanion soil is moderately slow. Available water capacity is high. Effective rooting depth is limited by a seasonal high water table that is at a depth of 2.0 to 3.5 feet from January through December. Runoff is slow, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used mainly for livestock grazing. It is also used for irrigated cultivated crops.

The potential and present plant community on this unit is mainly rushes, sedges, tufted hairgrass, and Nevada bluegrass. The production of forage is limited by the low average annual precipitation. The suitability of this unit for rangeland seeding is poor. The main limitation is the low average annual precipitation. Plants that tolerate wetness should be seeded. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

This unit is suited to irrigated hay, pasture, and cultivated crops. It is limited mainly by the seasonal high water table. Deep-rooted crops are suited to areas where the natural drainage is adequate or where a drainage system has been installed. Furrow, border, corrugation, and sprinkler irrigation systems are suited to the unit. The method used generally is governed by the crop grown. The rate of application of irrigation water should be regulated to prevent a rise in the level of the water table.

This unit is limited for roads because of the hazard of frost heaving. Local roads and streets may require a special base to avoid frost heave damage.

This map unit is in capability subclasses IIIw, irrigated, and VIw, nonirrigated. It is in range site 27-4.

**453—Obanion sandy loam, saline-alkali.** This very deep, very poorly drained soil is in basins and on alluvial fans and alluvial flats. It formed in alluvium derived from various kinds of rock. Slope is 0 to 2 percent. Elevation is 4,500 to 5,000 feet. The average annual precipitation is about 7 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

Typically, the surface layer is grayish brown sandy loam about 11 inches thick. The underlying material to a depth of 60 inches or more is mottled and gleyed, stratified sandy loam to sandy clay loam.

Included in this unit are small areas of nonsaline and nonalkali Obanion soils in shallow depressional areas (range site 27-1). Included areas make up about 10 percent of the total acreage.

Permeability of this Obanion soil is moderately slow. Available water capacity is high. Effective rooting depth is limited by a seasonal high water table that is at a depth of 0.5 to 2.0 feet from January through December. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is slight. This soil is moderately salt- and alkali-affected to a depth of 11 inches.

This unit is used mainly for livestock grazing. It is also used for waterfowl habitat.

The potential plant community on this unit is mainly alkali sacaton, inland saltgrass, and black greasewood. The present vegetation in most areas is mainly inland saltgrass, creeping wildrye, and black greasewood. The production of forage is limited by the low average annual precipitation and the content of salts and alkali in the surface layer. The water table provides supplemental moisture for plants. The suitability of this unit for rangeland seeding is very poor. The main limitations are the seasonal high water table and the content of salts and alkali. Grazing should be delayed until the soil has drained sufficiently and is firm enough to withstand trampling by livestock.

This unit is limited for roads because of the hazard of frost heaving and the seasonal high water table. Local roads and streets may require a special base to avoid frost heave damage. Drainage is needed for the construction of roads and to reduce maintenance cost.

This map unit is in capability subclass VIw, nonirrigated, and in range site 27-5.

**462—Olac-Rock outcrop complex, 8 to 15 percent slopes.** This map unit is on strongly sloping uplands. Elevation is 4,800 to 5,900 feet. The average annual precipitation is about 9 inches, the average annual air temperature is about 48 degrees F, and the average frost-free period is 90 to 110 days.

This unit is 70 percent Olac very stony loam, 8 to 15 percent slopes, and 20 percent Rock outcrop. The Olac soil is mostly on south- and west-facing slopes, and Rock outcrop is along ridges and on some side slopes.

Included in this unit are about 6 percent Old Camp soils on concave, north-facing slopes (range site 26-22) and 4 percent Veta soils that are flooded and are in drainageways (range site 26-34). Included areas make up about 10 percent of the total acreage. The percentage varies from one area to another.

The Olac soil is very shallow and well drained. It formed in residuum derived dominantly from rhyolitic tuff. Typically, the surface layer is grayish brown very stony loam about 4 inches thick. The subsoil is yellowish brown extremely gravelly clay loam about 10 inches

sand. The production of forage is limited by the low average annual precipitation. The suitability of this unit for rangeland seeding is very poor. The main limitation is the low average annual precipitation.

Roads can easily be constructed and maintained on this unit.

This map unit is in capability subclass VIIc, nonirrigated. The Rawe gravelly sandy loam is in range site 27-18, and the Rawe loamy sand is in range site 27-9.

**553—Rawe-Malpais association.** This map unit is on gently sloping to strongly sloping dissected alluvial fans and in associated drainageways. Slope is 2 to 15 percent. Elevation is 4,400 to 5,000 feet. The average annual precipitation is about 5 inches, the average annual air temperature is about 51 degrees F, and the average frost-free period is 100 to 130 days.

This unit is 60 percent Rawe gravelly sandy loam and 25 percent Malpais gravelly sandy loam. The Rawe soil is on remnants of old alluvial fans, and the Malpais soil is in drainageways and on alluvial fan skirts.

Included in this unit are about 6 percent Perazzo soils on alluvial fans (range site 27-18), 5 percent Cleaver soils on alluvial fans (range site 27-18), and 4 percent Patna soils on stabilized low dunes and hummocks. Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.

The Rawe soil is very deep and well drained. It formed in alluvium derived dominantly from basic igneous rock. Typically, the surface layer is light gray gravelly sandy loam about 1 inch thick. The subsoil is brown gravelly clay about 9 inches thick. The substratum to a depth of 60 inches or more is light brownish gray very gravelly sandy loam.

Permeability of the Rawe soil is slow to a depth of 10 inches and moderately rapid below this depth. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is moderate. The hazard of soil blowing is slight.

The Malpais soil is very deep and well drained. It formed in alluvium derived from various kinds of rock. Typically, the surface layer is pale brown gravelly sandy loam about 3 inches thick. The underlying material to a depth of 60 inches or more is brown to grayish brown extremely cobbly sandy loam and very gravelly sandy loam.

Permeability of the Malpais soil is moderately rapid. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used for livestock grazing and wildlife habitat.

The potential and present plant community on this unit is mainly Indian ricegrass, Bailey greasewood, and shadscale. The production of forage is limited by the low average annual precipitation. The suitability of this unit for rangeland seeding is very poor. The main limitation is the low average annual precipitation.

Cutting and filling are reduced by building roads in the less sloping areas of this unit. Unless an adequate wearing surface is maintained, stones and cobbles in the Malpais soil create road hazards and increase maintenance cost.

This map unit is in capability subclass VIIc, nonirrigated, and in range site 27-18.

**561—Rebel sandy loam, 0 to 2 percent slopes.** This very deep, well drained soil is on alluvial fans. It formed in alluvium derived from various kinds of rock. Elevation is 4,700 to 5,200 feet. The average annual precipitation is about 9 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

Typically, the surface layer is brown sandy loam about 14 inches thick. The subsoil and substratum to a depth of 60 inches or more average sandy loam that is yellowish brown.

Included in this unit are about 6 percent Haybourne soils on the upper end of alluvial fans (range site 26-16) and 4 percent Hotsprings soils in narrow stringers throughout the unit (range site 26-16). Included areas make up about 10 percent of the total acreage. The percentage varies from one area to another.

Permeability of this Rebel soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used for livestock grazing, wildlife habitat, and irrigated cultivated crops.

The potential plant community on this unit is mainly Wyoming big sagebrush, Thurber needlegrass, and Indian ricegrass. The present vegetation in most areas is mainly Wyoming big sagebrush, Anderson peachbrush, and Nevada ephedra. The production of forage is limited by the low average annual precipitation and the moderate available water capacity. The suitability of this unit for rangeland seeding is poor. The main limitation is the low average annual precipitation.

This unit is well suited to irrigated cultivated crops. Furrow, border, corrugation, and sprinkler irrigation systems are suited to the unit. The method used generally is governed by the crop grown. The moderately rapid movement of water in the soil should be considered when selecting and designing irrigation systems.

If surface drainage and a stable base are provided, damage from frost heaving is minimized on roads on this unit.

This map unit is in capability subclasses IIc, irrigated, and VIc, nonirrigated. It is in range site 26-16.

**571—Reno gravelly sandy loam, 2 to 4 percent slopes.** This moderately deep, well drained soil is on old alluvial fans. It formed in alluvium derived from various kinds of rock. Elevation is 4,400 to 5,300 feet. The average annual precipitation is about 9 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

Typically, the surface layer is light gray gravelly sandy loam about 5 inches thick. The subsoil is dark yellowish brown gravelly clay about 22 inches thick. The next layer is a strongly silica- and lime-cemented hardpan about 14 inches thick. Below this to a depth of 60 inches or more is brown extremely gravelly loamy sand. Depth to the hardpan ranges from 20 to 40 inches.

Included in this unit are about 6 percent Fulstone soils on convex alluvial fans (range site 26-25), 6 percent Ackley soils on toe slopes of alluvial fans (range site 26-16), and 3 percent Veta soils in drainageways and on inset fans (range site 26-24). Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.

Permeability of this Reno soil is very slow. Available water capacity is low or moderate. Effective rooting depth is 20 to 40 inches. Runoff is slow, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used for livestock grazing and homesite development.

The potential plant community on this unit is mainly low sagebrush, Thurber needlegrass, Sandberg bluegrass, and bottlebrush squirreltail. The present vegetation in most areas is mainly low sagebrush, bottlebrush squirreltail, and Sandberg bluegrass. The production of forage is limited by the low average annual precipitation, restricted available water capacity, and restricted rooting depth. The suitability of this unit for rangeland seeding is poor. The main limitations are the low average annual precipitation, restricted available water capacity, and the thin surface layer.

The main limitation for construction of dwellings is the content of highly expansive clay. If buildings are constructed on this unit, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage because of shrinking and swelling. Excavation for building sites is limited by the hardpan.

The main limitations for septic tank absorption fields are the hardpan, the very slow permeability above the hardpan, and rapid permeability below the hardpan. Use of sandy backfill for the trench and long absorption lines helps to compensate for the very slow permeability. The operation of septic tank absorption fields can be improved by placing the absorption lines below the hardpan. Heavy equipment is needed for excavation.

Because the soil is rapidly permeable below the hardpan, special design may be needed to avoid polluting the ground water.

This unit is limited for roads because of the content of highly expansive clay that has low load-bearing capacity. Roads should be provided with a stable base and an adequate wearing surface.

This map unit is in capability subclass VIIc, nonirrigated, and in range site 26-25.

**572—Reno cobbly sandy loam, 4 to 15 percent slopes.** This moderately deep, well drained soil is on old alluvial fans. It formed in alluvium derived from various kinds of rock. Elevation is 4,400 to 5,400 feet. The average annual precipitation is about 9 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

Typically, the surface layer is light brownish gray cobbly sandy loam about 5 inches thick. The subsoil is dark yellowish brown gravelly clay about 22 inches thick. The next layer is a silica- and lime-cemented hardpan about 14 inches thick. Below this to a depth of 60 inches or more is very gravelly loamy sand. Depth to the hardpan ranges from 20 to 40 inches.

Included in this unit are about 8 percent Fulstone soils on convex alluvial fans (range site 26-25), 4 percent Ackley soils on toe slopes of alluvial fans (range site 26-16), and 3 percent Veta soils in drainageways and on inset fans (range site 26-24). Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.

Permeability of this Reno soil is very slow. Available water capacity is low or moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used for livestock grazing and homesite development.

The potential plant community on this unit is mainly low sagebrush, Thurber needlegrass, Sandberg bluegrass, and bottlebrush squirreltail. The present vegetation in most areas is mainly low sagebrush, Sandberg bluegrass, and bottlebrush squirreltail. The production of forage is limited by the low average annual precipitation, restricted available water capacity, and restricted rooting depth. The suitability of this unit for rangeland seeding is poor. The main limitations are the low average annual precipitation, restricted available water capacity, and the thin surface layer.

The main limitation for construction of dwellings is the content of highly expansive clay in the soil. If buildings are constructed on this unit, properly designing foundations and footings and diverting runoff away from buildings help to prevent structural damage because of shrinking and swelling. Excavation for building sites is limited by the hardpan.

60 inches or more. Runoff is medium, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used mainly for livestock grazing and wildlife habitat. It is also used for irrigated crops and homesite development.

The potential plant community on this unit is mainly Thurber needlegrass, Wyoming big sagebrush, Indian ricegrass, and bottlebrush squirreltail. The present vegetation in most areas is mainly Wyoming big sagebrush, bottlebrush squirreltail, and Indian ricegrass. The production of forage is limited by the low average annual precipitation and the low available water capacity. The suitability of this unit for rangeland seeding is very poor. The main limitation is the very gravelly texture of the surface layer.

This unit is poorly suited to irrigated hay, pasture, and cultivated crops. It is limited mainly by slope, the very gravelly texture of the surface layer, and the low available water capacity. Sprinkler irrigation can be used, but water needs to be applied slowly to minimize runoff. If furrow or corrugation irrigation systems are used, runs should be on the contour or across the slope. To avoid overirrigating and leaching of plant nutrients, applications of irrigation water should be adjusted to the available water capacity, the water intake rate, and the crop needs.

The presence of stones and cobbles interferes with the preparation of building sites on this unit.

The main limitation for septic tank absorption fields is the rapid movement of water through the substratum. Because the substratum is rapidly permeable, special design may be needed to avoid polluting ground water.

If surface drainage and a stable base are provided, damage from frost heaving is minimized for roads on this unit. Unless an adequate wearing surface is maintained, stones and cobbles in the soil create road hazards and increase maintenance cost.

This map unit is in capability subclasses IVs, irrigated, and VIIs, nonirrigated. It is in range site 26-16.

**735—Hunewill very gravelly sandy loam, 8 to 15 percent slopes.** This very deep, well drained soil is on alluvial fans. It formed in alluvium derived from various kinds of rock. Elevation is 4,500 to 7,000 feet. The average annual precipitation is about 9 inches, the average annual air temperature is about 49 degrees F, and the average frost-free period is 90 to 120 days.

Typically, the surface layer is light brownish gray very gravelly sandy loam about 3 inches thick. The upper 10 inches of the subsoil is brown very gravelly clay loam, and the lower 5 inches is very gravelly sandy loam. The substratum to a depth of 60 inches or more is grayish brown sand and gravel with some layers of extremely cobbly loamy sand.

Included in this unit are about 10 percent Stucky soils on the upper part of convex alluvial fans (range site 26-

47) and 5 percent Veta soils in drainageways (range site 26-24). Included areas make up about 15 percent of the total acreage. The percentage varies from one area to another.

Permeability of this Hunewill soil is moderately slow. Available water capacity is low. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used mainly for livestock grazing and wildlife habitat. It is also used for homesite development and irrigated crops.

The potential plant community on this unit is mainly Thurber needlegrass, Wyoming big sagebrush, Indian ricegrass, and bottlebrush squirreltail. The present vegetation in most areas is mainly Wyoming big sagebrush, bottlebrush squirreltail, and Indian ricegrass. The production of forage is limited by the low average annual precipitation and the low available water capacity. The suitability of this unit for rangeland seeding is very poor. The main limitation is the very gravelly texture of the surface layer.

This unit is poorly suited to irrigated hay, pasture, and cultivated crops. It is limited mainly by slope, the very gravelly texture of the surface layer, and the low available water capacity. Sprinkler irrigation can be used, but water needs to be applied slowly to minimize runoff. Use of this method permits the even, controlled application of water, reduces runoff, and minimizes the risk of erosion. To avoid overirrigating and leaching of plant nutrients, applications of irrigation water should be adjusted to the available water capacity, the water intake rate, and the crop needs.

Steepness of slope is a concern for design and construction of dwellings on this unit. The presence of stones and cobbles interferes with the preparation of building sites.

The main limitation for septic tank absorption fields is the rapid movement of water through the substratum. Because the substratum is rapidly permeable, special design may be needed to avoid polluting ground water.

Cutting and filling are reduced by building roads in the less sloping areas of the unit. If surface drainage and a stable base are provided, damage from frost heaving is minimized. Unless an adequate wearing surface is maintained, stones and cobbles in the soil create road hazards and increase maintenance cost.

This map unit is in capability subclasses IVs, irrigated, and VIIs, nonirrigated. It is in range site 26-16.

**741—Wedertz-Wellington-Saralegui complex, 0 to 2 percent slopes.** This map unit is on alluvial fans and lake terraces. Elevation is 4,500 to 5,200 feet. The average annual precipitation is about 8 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

This unit is 40 percent Wedertz coarse sandy loam, 30 percent Wellington coarse sandy loam, and 20 percent Saralegui sandy loam. The Wedertz soil is on the lower lying lake terraces, the Wellington soil is on the higher lying lake terraces, and the Saralegui soil is on inset alluvial fans. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included in this unit is about 10 percent sandy soils on stabilized dunes and hummocks (range site 27-23).

The Wedertz soil is very deep and well drained. It formed in alluvium derived dominantly from granitic rock overlying lacustrine material. Typically, the surface layer is brown and light gray coarse sandy loam about 9 inches thick. The subsoil is brown sandy clay loam about 19 inches thick. The substratum to a depth of 60 inches or more is light gray and white loam that is weakly and continuously cemented with silica and lime.

Permeability of the Wedertz soil is moderately slow. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

The Wellington soil is shallow and well drained. It formed in alluvial and lacustrine sediment derived from various kinds of rock. Typically, the surface layer is grayish brown coarse sandy loam about 4 inches thick. The subsoil is brown and pale brown sandy clay loam about 11 inches thick. The upper 11 inches of the substratum is a hardpan that is cemented with silica and lime, and the lower part to a depth of 60 inches or more is light brownish gray very fine sandy loam. Depth to the hardpan ranges from 12 to 20 inches.

Permeability of the Wellington soil is moderately slow. Available water capacity is very low. Effective rooting depth is 12 to 20 inches. Runoff is slow, and the hazard of water erosion is slight.

The Saralegui soil is very deep and well drained. It formed in wind-worked alluvial and lacustrine material derived from various kinds of rock. Typically, the surface layer is brown and grayish brown sandy loam about 5 inches thick. The subsoil is brown and yellowish brown sandy loam about 27 inches thick. The substratum to a depth of 60 inches or more is brown and pale brown loamy sand and sand.

Permeability of the Saralegui soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is very slow, and the hazard of water erosion is slight. The hazard of soil blowing is slight.

This unit is used for irrigated crops and livestock grazing.

The potential plant community on this unit is mainly Thurber needlegrass, Wyoming big sagebrush, and Indian ricegrass. The present vegetation in most areas is mainly Wyoming big sagebrush and bottlebrush squirreltail. The production of forage is limited by the low

average annual precipitation, the moderate available capacity of the Wedertz and Saralegui soils, and the very low available water capacity of the Wellington soil. The suitability of the Wedertz and Saralegui soils for rangeland seeding is poor. The main limitation is the low average annual precipitation. The suitability of the Wellington soil is very poor. The main limitation is the very low available water capacity. Seeding of large areas of the more favorable Wedertz and Saralegui soils in this unit is difficult because of the pattern in which they occur with areas of the less favorable Wellington soils.

This unit is suited to irrigated hay, pasture, and cultivated crops. It is limited mainly by the moderate available water capacity of the Wedertz and Saralegui soils and the very low available water capacity of the Wellington soil. Furrow, border, corrugation, and sprinkler irrigation systems are suited to the unit. The method used generally is governed by the crop grown. To avoid overirrigating and leaching of plant nutrients, applications of irrigation water should be adjusted to the available water capacity, the water intake rate, and the crop needs.

If surface drainage and a stable base are provided for roads on the Wedertz and Saralegui soils, damage from frost heaving is minimized. Trafficability of roads can be improved by providing a stable base and an adequate wearing surface. Roads should be designed to minimize cuts because of the limited depth to the underlying hardpan in the Wellington soil.

This map unit is in capability subclasses IIc, irrigated, and VIc, nonirrigated. It is in range site 26-16.

**742—Wedertz-Wellington coarse sandy loams, 2 to 4 percent slopes.** This map unit is on old lake terraces. Elevation is 4,500 to 5,200 feet. The average annual precipitation is about 8 inches, the average annual air temperature is about 50 degrees F, and the average frost-free period is 100 to 120 days.

This unit is 50 percent Wedertz coarse sandy loam and 40 percent Wellington coarse sandy loam. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used.

Included in this unit are about 5 percent Saralegui soils (range site 26-16) and 5 percent sandy soils on stabilized dunes and hummocks (range site 27-23). Included areas make up about 10 percent of the total acreage. The percentage varies from one area to another.

The Wedertz soil is very deep and well drained. It formed in alluvium derived dominantly from granitic rock overlying lacustrine sediment. Typically, the surface layer is brown and light gray coarse sandy loam about 9 inches thick. The subsoil is brown sandy clay loam about 19 inches thick. The substratum to a depth of 60 inches or more is light gray and white loam and is weakly and continuously cemented with silica and lime.