

DRAFT
Subject to Field Testing

July, 2016

FORAGE SUITABILITY GROUP – WESTERN OREGON

POORLY DRAINED

Number: G-001XY008OR

MLRA: A1 Northern Pacific Coast Range, Foothills, and Valleys

Climate: Average annual precipitation ranges from 50 to 90 inches (127 to 229 centimeters). Precipitation is evenly distributed throughout fall, winter, and spring, but summers are dry. In most of this area, snow falls only a few days each year. Average annual temperatures vary from 49 to 54 degrees Fahrenheit (9 to 12 degrees Celsius). Average freeze-free-period is 140 to 205 days.

Vegetation: The native vegetation is mainly hardwoods, shrubs, grasses, sedges, and rushes. The following tree species can occur: Oregon white oak, western redcedar, black cottonwood, and occasionally Douglas fir. The following plant may be found in the understory: hawthorn, wild rose, swordfern, willow, blackberry, and both annual and perennial grasses. Once cultivated for pasture or hay, the areas that have low level or no management tend to show an increase in brushy species such as blackberry.

Soil Suitability Group Description:

Soil Description: These poorly drained soils are generally deep, and are generally formed in alluvium, colluvium, and residuum. Textures are predominantly silt loam, silty clay, silty clay loam, and clay loam. Rooting depth is highly variable due to high water table and a clayey substratum. It can vary from 0 to 12 inches due to high water table, and can be more than 60 inches on some soils found in this group. In summer irrigation is needed for maximum production of most crops.

Landscape position: Benches on mountain slopes, flood plains, stream terraces, broad ridges, mountains, slump benches and saddles.

Depth to seasonal water table: from 0 inches to 30 inches on most soils. However, Wauna soil (protected phase) is 24 inches to 60 inches.

Available Water Holding Capacity: 6.1 to 7.9 inches.

pH range: 4.5 - 6.5.

Frequency and duration of flooding: Flooding occurs on approximately one-third of the soils in this group. Frequency of flooding varies from rare to frequent and stay on the soil for brief periods of time.

Frost heave potential: Soils in this group have a frost heave potential of none.

Degree of stoniness: Fragments > than 3 inches are typically none.

Trafficability parameters: Sticky and plastic when wet which restricts trafficability.

Typical soils: Whobrey, Wauna (protected phase), Quosatana, Pyburn, and Natal.

Adapted Forage Species List:

Grazing Use:

Common Name	Scientific Name
Tall Fescue	Festuca arundinacea
Alsike Clover	Trifolium hybridum
White Clover	Trifolium repens
Birdsfoot Trefoil	Lotus corniculatus
Reed Canarygrass*	Phalaris arundinacea

*Use only when Reed Canarygrass is already present in field

Machine Harvest:

Common Name	Scientific Name
Tall Fescue	Festuca arundinacea
Timothy	Phleum pratense
Alsike Clover	Trifolium hybridum
White Clover	Trifolium repens
Birdsfoot Trefoil	Lotus corniculatus
Reed Canarygrass*	Phalaris arundinacea

*Use only when Reed Canarygrass is already present in field

Suggested seeding season: Spring or Fall

Production Estimates: Based on Animal Unit Months, and high level of management

Grazing use:

Non-irrigated –

For **Whobrey and Pyburn** soils: 1.5 - 3 AUMs/Acre/Year (@ 35% Harvest Efficiency – 100% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

Very Low	Low	Moderate	High	Maximum
2350	3100	4700	7050	7800

For **Natal** soils: 7 to 8 AUMs/Acre/Year (@ 35% Harvest Efficiency – 100% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

Very Low	Low	Moderate	High	Maximum
6250	8350	12500	18750	20850

For **Quosatana, Wauna, and Zyzug** soils: 12 AUMs/Acre/Year (@ 35% Harvest Efficiency – 100% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

Very Low	Low	Moderate	High	Maximum
9400	12500	18750	28150	31290

Irrigated - 14 to 15 AUMs/Acre/Year (@ 35% Harvest Efficiency – 100% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

Very Low	Low	Moderate	High	Maximum
11750	15650	23450	35200	39100

Machine Harvest:

Non-Irrigated – 3 to 4 Tons/Acre/Year (@ 70% Harvest Efficiency – 80% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

Very Low	Low	Moderate	High	Maximum
4300	5700	8550	12850	14300

Irrigated – 5 to 6.5 Tons/Acre/Year (@ 70% Harvest Efficiency – 90% of Growth Curve)

Base Production by Soil Fertility Level (Lbs./Acre/Year)

Very Low	Low	Moderate	High	Maximum
6950	9300	13900	20900	23200

Growth Curve: Pasture & Hayland - High Level Management

Growth Curve Number: **01MPDHN**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	5	5	15	15	15	15	5	10	10	5	0

Growth Curve Number: **01MPDHI**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	15	15	15	15	15	5	5	0

Growth Curve: Pasture & Hayland - Medium Level Management

Growth Curve Number: **01MPDMN**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	15	20	20	10	5	5	10	10	0

Growth Curve Number: **01MPDMI**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	15	15	15	15	10	10	5	0

Growth Curve: Pasture & Hayland - Low level Management

Growth Curve Number: **01MPDLN**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	15	20	20	10	5	5	10	10	0

Growth Curve Number: **01MPDLI**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	20	15	15	10	10	10	5	0

Management:

Limitations: Wetness generally limits the suitability of these soils for deep-rooted crops. Most crops on these soils are adversely affected by excess moisture. Excessive tillage can result in the formation of a tillage pan. Grazing and machine use should be restricted when soils are saturated. Grazing while soils are wet results in compaction of surface layer, poor tilth, and excessive runoff.

Vegetation Management: Move livestock by plant height. Move livestock onto a field when forage is at least 6 to 8 inches tall. Discontinue grazing when the average height of the pasture is down to 2 to 4 inches. Avoid grazing when soil is wet and before pasture stand is fully established. Remaining stubble height is the more important of these two measurements.

Season of use: To avoid damage to plants and compaction of wet soils in the winter months caused by animals, any livestock on pasture should be removed when the soils are saturated, which generally occurs for long periods between November and March.

Facilitating Practices:

Cross-fencing: Cross fencing will help achieve higher forage yields and more uniform grazing use through more intensive management.

Water developments: Water is critical to livestock gains and general health. Generally, the best source of water in a field is a trough with water piped from a well or a spring. If piped water is not available, allow only restricted access to rivers or streams. If livestock only have a small access area for watering, the amount of manure and sediment in the water will be minimized. Additionally, bank erosion problems will be minimized, and streamside vegetation will be protected, which will keep the water cooler.

Minerals: Salt should be provided in the field for livestock. The salt block or box should be up off the ground and under cover so it will not dissolve by rain or dew. Salt should be placed away from watering areas to reduce livestock concentration areas and encourage more uniform grazing.

Clipping and dragging: Clip and drag pasture as often as required to encourage uniform grazing and pasture vigor. Clipping and dragging is best done after each grazing period and a minimum of twice annually.

Fertilization: Take soil samples to determine nutrient levels. An application of nitrogen in the spring is generally necessary for optimum forage production, but tests have shown that two applications one in fall and one in winter will optimize forage production. Fertilization

will increase both the production and the nutritive value of the forage for livestock, but too much fertilizer can build up toxic level of certain minerals (such as nitrate and potassium) in forages.

Weed control: Weed control can be accomplished mechanically, chemically, biologically, or with a combination of these methods. The recommendations for chemicals can change, so it is always best to contact the local county extension office.

Hayland management: For maximum production and quality of forage, the grass should be cut just as the head emerges. The stubble height should be no lower than 2 to 3 inches. The best time to apply manure is just after harvest, because the nutrients can reach the soil more efficiently if excess foliage isn't in the way.

Reseeding: Reseeding should always be the last option. It is expensive, and takes a pasture out of production for most of a year. Additionally, the need to reseed is usually a symptom of a need to change livestock management practices. If management problems or a change in stocking rate or season of use are not addressed first, newly seeded pastures will soon look like the ones they replaced. Species selection is very important. If the species is not adapted to the site, the best seedbed preparation in the world will not make the seeding successful. Generally, a mix of one grass species and one legume is recommended. This cuts down on patch grazing of grasses caused by palatability differences. If multiple species are desired, make sure that the species of grass all have approximately the same growth schedule. It is very important to keep the animals off of a new seeding until well established. Otherwise, the new seedlings probably will be damaged or killed, and the time and money invested in the seeding will be wasted.