

DRAFT
Subject to Field Testing

December, 1997

FORAGE SUITABILITY GROUP – WESTERN OREGON

MODERATELY WELL DRAINED < 15% SLOPES

Number: G-002XY004OR

MLRA: A2 Willamette and Puget Sound Valleys

Climate: Average annual precipitation ranges from 29.5 to 100 inches. 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 9 to 13 degrees Centigrade. Average freeze-free-period is 140 to 210 days.

Vegetation: The native vegetation is generally an overstory of trees and an understory comprised of shrubs and grass. Generally the following tree species occur: Douglas-fir, Oregon white oak, western redcedar, ponderosa pine, red alder, bigleaf maple, black cottonwood, and Oregon ash. The following plants may be found in the understory: willow, creambush, oceanspray, wild rose, tall Oregon grape, Pacific dogwood, western hazel, salal, swordfern, brackenfern, vine maple, poison oak, forbs, and both perennial and annual grasses. Once cultivated, the areas that experience low level or no management tend to show an increase in brush species such as blackberry and Scotch broom. Also tansy ragwort and St. Johnswort may increase on these same sites.

Soil Suitability Group Description:

Soil description: These moderately well drained soils are generally moderately deep to deep, and are formed generally in alluvium and colluvium. Textures are predominantly silt loams, and silty clay loams. A high water table affects rooting depth on most soils in this group during the months of November through May. Most soil in this group have rooting depth from 2 to 6 feet, while Coburg soil has a rooting depth of 1.5 to 2.5 feet. Water tables on most of these soils vary from 2 to 6 feet. In summer irrigation is needed for maximum production of most crops.

Landscape position: Flood plains, alluvial fans, low and high stream terraces, rolling upland, convex foot slopes, and on side slopes of old terraces.

Depth to seasonal water table: varies from 1 to 2 feet on Hazelair soil, to 2 to 6 feet on Marcola, McAlpin, McBee, Santiam, Veneta, and Woodburn.

Available water holding capacity: 3 to 20 inches, but most soil are in the range of 8 to 13 inches.

pH range: 5.1 - 6.5.

Frequency and duration of flooding: Flooding occurs on only two soils in this group. McAlpin floods rarely while McBee floods frequent for a brief duration.

Frost heave potential: None

Degree of stoniness: None, except Marcola contain 15 to 45% rock fragments > 3 inches.

Trafficability parameters: None

Typical soils: See attached list.

Adapted Forage Species List:

Grazing Use:

Tall Fescue	Festuca arundinacea
Orchard Grass	Dactylis glomerata
Alfalfa	edicago sativa
Annual Ryegrass	Lolium multiflorum
Perennial Ryegrass	Lolium perenne
White Clover	Trifolium repens
Birdsfoot Trefoil	Lotus corniculatus

Machine Harvest:

Tall Fescue	Festuca arundinacea
Orchardgrass	Dactylis glomerata
Alfalfa	edicago sativa
White Clover	Trifolium repens
Birdsfoot Trefoil	Lotus corniculatus

Suggested seeding season: Spring or Fall

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

Grazing Use:

Non irrigated - 8 to 16 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
18050	22550	27075	31600	36100

Irrigated - 16 to 21 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
36100	38925	41750	44575	47400

Machine Harvest:

Non irrigated - 3 to 6 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
10700	13375	16050	18750	21425

Irrigated - 6 to 8 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
19050	20650	22225	23800	25400

Growth Curve: Pasture & Hayland - High Level Management

Growth Curve Number: **02MXHN**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	10	15	15	25	15	5	0	5	5	5	0

Growth Curve Number: **02MXHI**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	5	10	25	25	15	5	5	0	5	5	0

Growth Curve: Pasture & Hayland - Medium Level Management

Growth Curve Number: **02MXMN**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	10	15	20	25	15	0	0	5	5	5	0

Growth Curve Number: **02MXMI**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	10	15	15	25	15	5	0	5	5	5	0

Growth Curve: Pasture & Hayland - Low Level Management

Growth Curve Number: **02MXLN**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	10	15	25	30	10	0	0	0	5	5	0

Growth Curve Number: **02MXLI**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	10	15	20	30	10	5	0	0	5	5	0

Management:

Limitations: These soils are susceptible to compaction when wet, and a tillage pan will form on most of these soils if they are tilled while wet. Grazing and machine use should be restricted when soils are saturated. High water table during the growing season affects long-lived deep rooting plants such as alfalfa unless soil is drained.

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 pastures 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 the 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.