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Environmental Gradients  
of  
Potential Rangeland Vegetation  
in the  
Interior Pacific Northwest  
A Chart Book

Volume 1  
Interior Columbia Basin Ecosystem Management Project  
Potential Vegetation Types

by:

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Bureau of Land Management

May 1996



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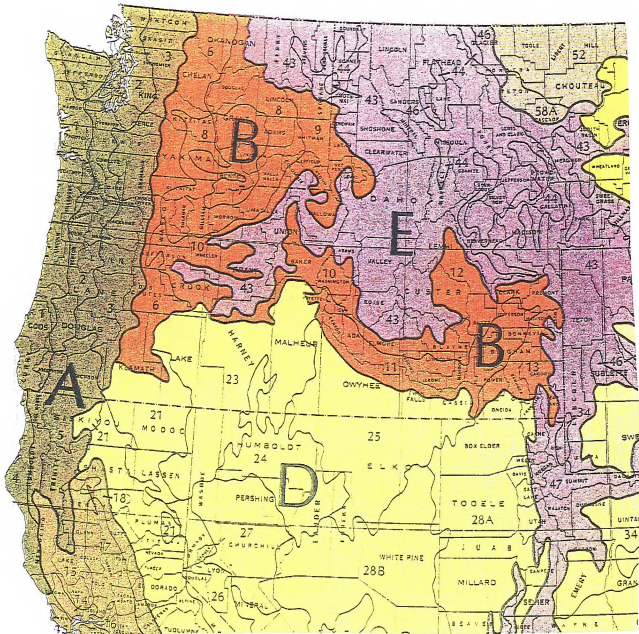


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## Land Resource Regions and Major Land Resource Areas

Source: Natural Resource Conservation Service (1981)



### Report Area

Those portions of Land Resource Regions B and D within Oregon, Washington, and Idaho

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## Volume 1

### Interior Columbia Basin Ecosystem Management Project Potential Vegetation Types

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## INTRODUCTION

This report presents a series of graphs representing environmental gradients of most potential rangeland vegetation types found in the interior Pacific Northwest. The specific area of coverage includes all of Land Resource Region B and those portions of Land Resource Region D that are included within the states of Oregon and Idaho (Natural Resource Conservation Service 1981).

The report comes in five volumes with environmental gradients for each of five different classification systems as follows:

- Volume 1    Compiled by Interior Columbia Basin Ecosystem Management Project (ICBEMP) Potential Vegetation Types.
- Volume 2    Compiled by Society of American Foresters (SAF) Forest Cover Types (Eyre 1980) and Society for Range Management (SRM) Rangeland Cover Types (Shiflet 1994)
- Volume 3    Compiled by Natural Heritage Program (NHP) ELCODES (Bourgeron and Engelking 1994, Kagan and others 1996)
- Volume 4    Compiled by Series
- Volume 5    Compiled by Association

Gradients are presented for each of the following environmental factors:

- Precipitation
- Frost Free Period
- Soil Temperature Regime
- Soil Depth
- Soil Texture
- Elevation
- Slope and Aspect

One graph per environmental factor is presented for each of the following levels of compilation:

- Combined Report Area (1)
- Each Land Resource Region (2)
- Each Major Land Resource Area (12)

The gradients were compiled from information provided in **Range Site Descriptions**.

"A range site is a distinctive kind of rangeland that differs from other kinds of rangeland in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differs from that of other range sites in the kind or proportion of species or in total production" and "The natural plant community of a range site in the absence of abnormal disturbances and physical site deterioration is the climax plant community for that site (original and natural potential are acceptable synonyms for climax ). It is the total plant community that is best adapted to the unique combination of environmental factors. It should be the plant community that is in dynamic equilibrium with the environment. Such natural disturbances as drought, wild fires, grazing of native fauna, and insects are inherent in the development of any native plant community. Plant communities that are protected from these natural influences for long periods do not always typify the climax vegetation" (Natural Resource Conservation Service 1976).

A range site may be viewed as a phase of a habitat type.

"The habitat type is defined as the aggregate areal extent of a plant association that an area supports or is capable of again supporting (Daubenmire 1952). Although not stated in specific terms, the range site classification is also a land classification based on the plant association that is constrained by levels of productivity (Dyksterhuis 1949; Shiflet 1973). The added constraint of productivity makes the range site a more homogeneous land unit in terms of uniformity in species abundance and soils than the habitat type" (Hironaka 1987).

Range sites are identified and described in conjunction with the National Cooperative Soil Survey. Proposed range site descriptions are then reviewed, correlated, and approved by the State Rangeland Conservationists of the Natural Resource Conservation Service (formerly Soil Conservation Service).

Three hundred seventy-six range site descriptions from Oregon (256), Washington (48), and Idaho (72) were reviewed and entered into a database table (OAESIS database under development) in the summer and fall of 1995. This included all approved range site descriptions for Oregon; Oregon descriptions proposed in conjunction with the Harney county Ecological Site Inventory (ESI); Washington descriptions for all soil phases identified in BLM ESIs; and Idaho descriptions for all BLM lands included in "subsample watersheds" evaluated during the ICBEMP mid-scale exercise. While not totally complete, most major types should be adequately represented for the report area.

During that review, each range site description was also classified under each of the five classification systems used in this report.

Unfortunately, vegetation classification is not an exact science. Many range sites can quite legitimately be placed in more than one class. The groupings that have been made represent the author's effort to place each range site into the "best fit" class consistent with the purpose and assumptions of each of the classification systems. One of the primary purposes of the ICBEMP classification, for example, is to group lands by similar successional dynamics for modeling with the Vegetation Dynamics Development Tool (Beukema and Kurz 1995). Therefore, site behavior was afforded some preference over floristic composition when range sites were assigned to this classification system. The written discussions were used for guidance in assigning range sites to the SAF and SRM systems. Assignments to the NHP classifications were made more on the basis of an association concept.

**Series and Association** were handled as a natural classification with an open legend and a set of rules. Associations were classified strictly on the basis of a single dominant tree, shrub, and herb on the basis of composition (not height). In addition, no layer was included in a class unless that lifeform comprised at least 10% of the composition. Even with these rules, some flexibility was applied to control the number of classes. Bluebunch wheatgrass and Idaho fescue, for example, frequently occur together in more or less co-dominance. Range sites in this situation were assigned to an Idaho fescue association only if the site description indicated that the amounts of bluebunch wheatgrass were minor. As an illustration, a basin big sagebrush site description specifying 30-60% Idaho fescue and 15-30% bluebunch wheatgrass would have been assigned to the **basin big sagebrush/bluebunch wheatgrass** association. The dominant species in the tallest layer in the association name is the **Series**.

The graphs that present the environmental gradients show an "optimum" range and a "marginal" range. These were calculated by compiling the minimums and maximums from the range site data. Optimum was then calculated as the range from the average of minimums to the average of maximums. Marginal was calculated as one-half of the range from the average of minimums to the minimum of minimums, and as one-half of the range from the average of maximums to the maximum of maximums. Given three range site descriptions in a set with elevations as follows:

|        |      |    |      |
|--------|------|----|------|
| Site A | 1000 | to | 2000 |
| Site B | 2000 | to | 3000 |
| Site C | 1500 | to | 2500 |

The average of minimums is 1500 and the average of maximums is 2500, so "optimum" is 1500 to 2500. The minimum of minimums is 1000, so "marginal" on the minimum side is 1250 to 1500. The maximum of maximums is 3000, so "marginal" on the maximum side is 2500 to 2750.

Using this approach, there is no marginal range calculated for classes that included only one site description, or where multiple descriptions specified exactly the same range. Also, not all site descriptions provided information for all seven factors evaluated. Therefore, the number of range site descriptions that were used to make the gradient calculations are shown in parenthesis for each class on each graph.

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- In addition to the above, the range site descriptions listed in the "Legend and Range Site Groupings" section that follows are incorporated as references.



LEGEND and RANGE SITE GROUPINGS  
by  
ICBEMP POTENTIAL VEGETATION TYPES

|       |            |                                      |                               |
|-------|------------|--------------------------------------|-------------------------------|
| ACANA |            | Silver Sagebrush (not an ICBEMP PVT) |                               |
|       | 021XY108OR | 1989                                 | INTERMITTENT LAKE             |
|       | 023XY200OR | 1988                                 | PONDED CLAY                   |
|       | 025XY032ID | 1982                                 | CLAY BASIN 12-16 PZ           |
|       | 025XY035ID | 1981                                 | CHURNING CLAY 12-16 PZ        |
| AGST  | 101        | Bluebunch Wheatgrass Grassland       |                               |
|       | 007XY012OR | 1986                                 | SANDY 8-10 PZ                 |
|       | 007XY013OR | 1986                                 | SANDY LOAM 8-10 PZ            |
|       | 008AY013WA | 1985                                 | LOAMY 12-15 PZ                |
|       | 008BY009WA | 1991                                 | VERY SHALLOW 9-15 PZ          |
|       | 008XY017WA | 1986                                 | SANDY LOAM 12-15 PZ           |
|       | 008XY028WA | 1986                                 | SHALLOW STONY 12-16 PZ        |
|       | 008XY140OR | 1987                                 | SHALLOW LOAM 12-14 PZ         |
|       | 009XY027OR | 1989                                 | MOUNTAIN VERY SHALLOW 13+ PZ  |
|       | 009XY031OR | 1989                                 | SHALLOW SOUTH 14+ PZ          |
|       | 009XY034OR | 1989                                 | MOUNTAIN SOUTH 13-17 PZ       |
|       | 009XY035OR | 1989                                 | MOUNTAIN SOUTH 17-24 PZ       |
|       | 009XY036OR | 1989                                 | MOUNTAIN SHALLOW SOUTH 13+ PZ |
|       | 043XY019WA | 1990                                 | LOAMY 15-20 PZ                |
| ASPEN | 120        | Aspen                                |                               |
|       | 006XB100OR | 1989                                 | WET MEADOW                    |
|       | 021XY412OR | 1989                                 | LOAMY 18+ PZ                  |
|       | 021XY416OR | 1989                                 | ASPEN GROVE                   |
|       | 023XY418OR | prop                                 | ASPEN GROVE                   |
|       | 025XY030ID | 1981                                 | MOUNTAIN BRUSH 18-22 PZ       |
| BSBW  | 103        | Big Sagebrush-Basin Wildrye          |                               |
|       | 007XY001WA | 1991                                 | LOAMY BOTTOM 6-12 PZ          |
|       | 007XY010OR | 1986                                 | SANDY BOTTOM                  |
|       | 009XY001WA | 1986                                 | ALKALI BOTTOM 15-18 PZ        |
|       | 010AY022ID | 1980                                 | LOAMY 12-16 PZ                |
|       | 010XB016OR | 1990                                 | SWALE 12-16 PZ                |
|       | 010XB019OR | 1990                                 | GUMBO 9-12 PZ                 |
|       | 010XB020OR | 1990                                 | GRAVELLY FAN 9-12 PZ          |
|       | 010XC013OR | 1990                                 | SWALE 9-12 PZ                 |

|            |      |                            |
|------------|------|----------------------------|
| 010XC0140R | 1990 | MOUNTAIN SWALE 9-12 PZ     |
| 010XC0170R | 1990 | MOUNTAIN SWALE 12-16 PZ    |
| 010XC0180R | 1990 | SR ADOBELAND 9-12 PZ       |
| 010XC0250R | 1990 | GRAVELLY FAN 12-16         |
| 010XY0060R | 1990 | MOUNTAIN LOAMY BOTTOM      |
| 011XY0050R | 1991 | SWALE 9-11 PZ              |
| 012XY0111D | 1979 | ALLUVIAL BOTTOM 8-13 PZ    |
| 021XY1000R | 1989 | DRY FLOODPLAIN 10+ PZ      |
| 023XY0090R | prop | DRY BASIN                  |
| 023XY0190R | prop | SILT LOAM TERRACE 10-12 PZ |
| 023XY1020R | 1988 | SANDY BOTTOM               |
| 023XY1040R | 1988 | LOAMY BOTTOM               |
| 023XY2020R | prop | SWALE 10-14 PZ             |
| 023XY4060R | 1988 | MOUNTAIN SWALE             |
| 024XY0040R | 1986 | DRY FLOODPLAIN             |
| 024XY0090R | PROP | DRY BASIN                  |
| 024XY1130R | prop | SODIC FAN 6-10 PZ          |
| 025XY0070R | 1991 | SWALE 11-13 PZ             |
| 025XY0080R | 1991 | SWALE 13-16 PZ             |
| 025XY0281D | 1981 | LOAMY BOTTOM 12-16 PZ      |

BSMJ 115 Mountain Big Sagebrush with Juniper

|            |      |                                    |
|------------|------|------------------------------------|
| 010XC0320R | 1990 | SR MOUNTAIN CLAYEY 12-16 PZ        |
| 010XC0330R | 1990 | SR MOUNTAIN LOAMY 12-16 PZ         |
| 010XC0470R | 1990 | SR MOUNTAIN SOUTH 12-16 PZ         |
| 010XC0510R | 1990 | HIGH MOUNTAIN SOUTH 16-20 PZ       |
| 010XC0540R | 1990 | SR MOUNTAIN SHALLOW SOUTH 12-16 PZ |
| 010XC0550R | 1990 | MOUNTAIN SHALLOW SOUTH 16-20 PZ    |
| 013XY0471D | 1986 | SHALLOW FRACTURED LOAMY 16-22 PZ   |
| 021XY3080R | 1989 | SOUTH SLOPES 14-18 PZ              |
| 023XY3020R | 1988 | SOUTH SLOPES 12-16 PZ              |
| 023XY3100R | 1988 | NORTH SLOPES 12-16 PZ              |
| 023XY3180R | 1988 | LOAMY 12-16 PZ                     |
| 023XY3200R | 1988 | DEEP LOAMY 12-16 PZ                |
| 023XY4000R | 1988 | LOAMY 16-20 PZ                     |
| 023XY4020R | 1988 | DEEP SOUTH SLOPES 16+ PZ           |
| 023XY5010R | prop | UNKNOWN                            |
| 023XY5090R | prop | UNKNOWN                            |
| 025XY0121D | 1982 | LOAMY 13-16 PZ                     |
| 025XY0131D | 1980 | JUNIPER SAVANNA 10-14 PZ           |
| 025XY0171D | 1981 | SHALLOW BREAKS 10-18 PZ            |

BSMW 114 Mountain Big Sagebrush (west)

|            |      |                            |
|------------|------|----------------------------|
| 010AY0041D | 1980 | LOAMY 12-16 PZ             |
| 010AY0051D | 1980 | GRAVELLY LOAM 12-16 PZ     |
| 010AY0081D | 1980 | NORTH SLOPE LOAMY 16-20 PZ |

|  |      |                                      |
|--|------|--------------------------------------|
| 010AY009ID                                   | 1980 | SOUTH SLOPE STONY 12-16 PZ           |
| 010AY013ID                                   | 1980 | NORTH SLOPE LOAMY 18-24 PZ           |
| 010AY020ID                                   | 1980 | MIXED SHRUB 12-16 PZ                 |
| 010AY031ID                                   | 1992 | BOULDERY LOAM 12-16 PZ               |
| 010XC0190R                                   | 1990 | DRY MOUNTAIN SWALE 12-16 PZ          |
| 010XC0370R                                   | 1990 | SR MOUNTAIN SHALLOW 12-16 PZ         |
| 010XC0530R                                   | 1990 | HIGH MOUNTAIN LOAM 18+ PZ            |
| 010XC0660R                                   | 1990 | SR MOUNTAIN NORTH 12-16 PZ           |
| 010XC0750R                                   | 1990 | SR MOUNTAIN SHALLOW NORTH 12-16 PZ   |
| 012XY012ID                                   | 1984 | LOAMY 13-16 PZ                       |
| 012XY021ID                                   | 1979 | LOAMY 16-22 PZ                       |
| 012XY024ID                                   | 1980 | SUBALPINE SLOPE LOAMY 20+            |
| 013XY001ID                                   | 1979 | LOAMY 13-16 PZ                       |
| 013XY008ID                                   | 1979 | STEEP SLOPES 12-16 PZ                |
| 013XY023ID                                   | 1980 | LOAMY 16-22 PZ                       |
| 013XY028ID                                   | 1981 | SHALLOW SAND 12-16 PZ                |
| 013XY031ID                                   | 1982 | STEEP STONY SLOPES 16-22 PZ          |
| 023XY4040R                                   | prop | DEEP NORTH 12-18 PZ                  |
| 023XY5020R                                   | prop | UNKNOWN                              |
| 025XY008ID                                   | 1980 | STONY NORTH SLOPE 12-16 PZ           |
| 025XY0140R                                   | 1991 | LOAMY 13-16 PZ                       |
| 025XY022ID                                   | 1981 | LOAMY 16+ PZ                         |
| 025XY023ID                                   | 1981 | NORTH SLOPE LOAMY 16+ PZ             |
| CEW1 121 Mountain Mahogany                   |      |                                      |
| 010XB0570R                                   | 1990 | JD MAHOGANY ROCKLAND 9-12 PZ         |
| 010XC0580R                                   | 1990 | GREASEBUSH-MAHOGANY ROCKLAND 9-12 PZ |
| CEW2 122 Mountain Mahogany with Sagebrush    |      |                                      |
| 010XC0590R                                   | 1990 | MAHOGANY ROCKLAND 12+ PZ             |
| 012XY015ID                                   | 1979 | STEEP LIMESTONE 13-16 PZ             |
| 021XY4020R                                   | 1989 | ROCKY RIDGES 14+ PZ                  |
| 023XY4080R                                   | 1988 | ROCKY RIDGES 12-16 PZ                |
| 023XY5100R                                   | prop | UNKNOWN                              |
| CTRV 110 Cottonwood Riverine                 |      |                                      |
| 010XY0050R                                   | 1990 | LOAMY BOTTOM                         |
| 010XY0110R                                   | 1990 | GRAVELLY BRAIDED BOTTOM              |
| 011XY0010R                                   | 1991 | LOAMY BOTTOM                         |
| DRDFB 53 Dry Douglas-fir with Ponderosa Pine |      |                                      |
| 043XY007WA                                   | 1989 | LOAMY UPLAND 15-20 PZ                |

FESC 111 Fescue Grassland

|            |      |                                 |
|------------|------|---------------------------------|
| 006XA204OR | 1989 | SOUTH SLOPES 20-40 PZ           |
| 008XY018WA | 1984 | LOAMY 12-15 PZ                  |
| 008XY120OR | 1987 | LOAMY 12-14 PZ                  |
| 009XY010OR | 1989 | LOAMY 14-17 PZ                  |
| 009XY013OR | 1989 | LOAMY 17-22 PZ                  |
| 009XY015OR | 1989 | CLAYEY 14-17 PZ                 |
| 009XY016OR | 1989 | CLAYEY 17-22 PZ                 |
| 009XY017OR | 1989 | MOUNTAIN LOAMY 13-17 PZ         |
| 009XY018OR | 1989 | MOUNTAIN LOAMY 17-24 PZ         |
| 009XY020OR | 1989 | SHALLOW CLAYEY 14-17 PZ         |
| 009XY021OR | 1989 | SHALLOW CLAYEY 17-22 PZ         |
| 009XY022OR | 1989 | MOUNTAIN SHALLOW 13+ PZ         |
| 009XY040OR | 1989 | NORTH 14-17 PZ                  |
| 009XY042OR | 1989 | LOW ELEVATION NORTH 14-17 PZ    |
| 023XY503OR | PROP | OPEN SLOPES 25-35 PZ            |
| 023XY505OR | PROP | SUBALPINE THIN SURFACE 35-40 PZ |

INTPP 63 Interior Ponderosa Pine

|            |      |                                   |
|------------|------|-----------------------------------|
| 006XA304OR | 1989 | LOAMY 20-40 PZ                    |
| 006XB206OR | 1989 | PINE-BITTERBRUSH-SNOWBRUSH-FESCUE |
| 006XY017WA | 1983 | LOAMY 20-45 PZ DROUGHTY           |
| 010XC080OR | 1990 | MAHOGANY MOUNTAIN LOAM 14-18 PZ   |
| 010XC082OR | 1990 | DRY PINE 14-16 PZ                 |
| 021XY414OR | 1989 | PONDEROSA PINE-FESCUE             |
| 043XY006WA | 1989 | UPLAND 15-18 PZ                   |
| 043XY010OR | prop | PINE - BITTERBRUSH                |
| 043XY012OR | prop | PINE - SNOWBERRY                  |
| 043XY013OR | prop | FIR - PINE - SEDGE                |

LSME 104 Low Sagebrush (moist)

|            |      |                                |
|------------|------|--------------------------------|
| 010AY006ID | 1985 | CLAYEY 11-14 PZ                |
| 010AY038ID | 1992 | STONY CLAYEY 8-16 PZ           |
| 010XB029OR | prop | CLAYPAN 9-12 PZ                |
| 011BY013ID | 1982 | SHALLOW LOAMY 8-12 PZ          |
| 011XY013ID | 1982 | SHALLOW LOAMY 8-12 PZ          |
| 012XY001ID | 1981 | LIMEY GRAVELLY 8-13 PZ         |
| 012XY002ID | 1981 | SHALLOW LOAM 12-16 PZ          |
| 012XY025ID | 1980 | SHALLOW SUBALPINE 16+ PZ       |
| 013XY011ID | 1979 | WINDSWEPT RIDGE 12-16 PZ       |
| 013XY014ID | 1979 | SHALLOW STONY 12-16 PZ         |
| 021XY306OR | 1989 | STONY CLAYPAN SOUTH 14-18 PZ   |
| 021XY310OR | 1989 | SHALLOW NORTH 14-18 PZ         |
| 023XY215OR | prop | SHALLOW GRAVELLY-LOAM 10-12 PZ |
| 023XY312OR | prop | SHALLOW NORTH 12-16 PZ         |

|   |      |                                   |
|---|------|-----------------------------------|
| 023XY324OR                                  | prop | SHALLOW SWALE 10-14 PZ            |
| 023XY410OR                                  | 1988 | GRAVELLY RIDGE 12-16 PZ           |
| 023XY412OR                                  | 1988 | GRAVELLY RIDGE 16+ PZ             |
| 023XY504OR                                  | prop | UNKNOWN                           |
| 024XY021OR                                  | 1986 | THIN SURFACE 8-14 PZ              |
| 025XY010ID                                  | 1981 | SHALLOW CLAYPAN 12-16 PZ          |
| 025XY016OR                                  | 1991 | SHALLOW LOAM 11-13 PZ             |
| 025XY017OR                                  | 1991 | SHALLOW GRAVELLY LOAM 11-13 PZ    |
| 025XY018OR                                  | 1991 | SHALLOW LOAM 13-16 PZ             |
| 025XY026OR                                  | 1991 | SHALLOW SOUTH SLOPES 13-16 PZ     |
| 025XY038OR                                  | 1991 | SHALLOW NORTH SLOPES 11-13 PZ     |
| 025Z2003ID                                  | 1978 | SHALLOW 16+ PZ                    |
| LSMJ 105 Low Sagebrush (moist) with Juniper |      |                                   |
| 010XB080OR                                  | 1990 | MOUNTAIN CLAYPAN 12-16 PZ         |
| 021XY214OR                                  | 1989 | CLAYPAN 14-18 PZ                  |
| 021XY216OR                                  | 1989 | STONY CLAYPAN 14-18 PZ            |
| 023XY214OR                                  | 1988 | CLAYPAN 10-12 PZ                  |
| 023XY216OR                                  | 1988 | CLAYPAN 12-16 PZ                  |
| 023XY217OR                                  | prop | JUNIPER TABLELAND 12-16 PZ        |
| 023XY507OR                                  | prop |                                   |
| LSXE 106 Low Sagebrush (dry)                |      |                                   |
| 007XY006WA                                  | 1991 | SHALLOW STONY 6-9 PZ              |
| 007XY019WA                                  | 1991 | VERY SHALLOW 6-12 PZ              |
| 008BY008WA                                  | 1991 | THIN SHALLOW 9-12 PZ              |
| 008XY007WA                                  | 1981 | VERY SHALLOW 9-18 PZ              |
| 008XY150OR                                  | 1987 | VERY SHALLOW 10-14 PZ             |
| 009XY025OR                                  | 1989 | VERY SHALLOW 14+ PZ               |
| 009XY025WA                                  | 1986 | VERY SHALLOW 15-18 PZ             |
| 010XC038OR                                  | 1990 | SR VERY SHALLOW 9-12 PZ           |
| 023XY218OR                                  | 1988 | THIN SURFACE CLAYPAN 10-16 PZ     |
| LSXJ 107 Low Sagebrush (dry) with Juniper   |      |                                   |
| 010XC039OR                                  | 1990 | MOUNTAIN VERY SHALLOW 12-16 PZ    |
| 010XC040OR                                  | 1990 | MOUNTAIN VERY SHALLOW 16-20 PZ    |
| 021XY204OR                                  | 1989 | SHALLOW STONY 10+ PZ              |
| MTSH 123 Mountain Shrub                     |      |                                   |
| 009XY014OR                                  | 1989 | DEEP LOAM 17-22 PZ                |
| 009XY030OR                                  | 1989 | SOUTH 17-22 PZ                    |
| 009XY041OR                                  | 1989 | DEEP NORTH 14-17 PZ               |
| 009XY043OR                                  | 1989 | LOW ELEVATION DEEP NORTH 14-17 PZ |
| 009XY045OR                                  | 1989 | NORTH 17-24 PZ                    |

|            |      |                                 |
|------------|------|---------------------------------|
| 009XY046OR | 1989 | DEEP NORTH 17-24 PZ             |
| 009XY048OR | 1989 | SHALLOW NORTH 17-24 PZ          |
| 010XC067OR | 1990 | SHRUBBY MOUNTAIN NORTH 16-20 PZ |

PUTR 102 Antelope Bitterbrush

|            |      |                                   |
|------------|------|-----------------------------------|
| 006XB200OR | 1989 | PINE-JUNIPER-BITTERBRUSH-FESCUE   |
| 006XB202OR | 1989 | PONDEROSA PINE-FESCUE             |
| 006XB204OR | 1989 | PINE-BITTERBRUSH-MANZANITA-FESCUE |
| 006XY001WA | 1981 | LOAMY 18+ PZ                      |
| 007XY011OR | 1986 | SANDS 8-10 PZ                     |
| 008AY010WA | 1986 | SANDY LOAM 9-12 PZ                |
| 008AY011WA | 1987 | SANDY 9-12 PZ                     |
| 008AY017WA | 1985 | SANDY 12-15 PZ                    |
| 008AY019WA | 1986 | SHALLOW SOUTH EXPOSURE 12-15 PZ   |
| 008AY021WA | 1987 | STONY NORTH EXPOSURE 12-15 PZ     |
| 008AY034WA | 1988 | SHALLOW LOAM 9-12 PZ              |
| 009XY029OR | 1989 | SOUTH 14-17 PZ                    |
| 010XB027OR | 1990 | JD CLAYEY 12-16 PZ                |
| 010XB028OR | 1990 | SHRUBBY MOUNTAIN CLAYEY 12-16 PZ  |
| 010XB045OR | 1990 | JD CLAYEY SOUTH 12-16 PZ          |
| 010XB046OR | 1990 | SHRUBBY MOUNTAIN SOUTH 12-16 PZ   |
| 010XB071OR | 1990 | SHRUBBY MOUNTAIN NORTH 12-16 PZ   |
| 010XB082OR | 1990 | SHRUBBY MOUNTAIN CLAYPAN 12-16 PZ |
| 010XC034OR | 1990 | SHRUBBY MOUNTAIN LOAM 16-20 PZ    |
| 010XC049OR | 1990 | SHRUBBY MOUNTAIN SOUTH 16-20 PZ   |
| 010XC056OR | 1990 | TERRACE ESCARPMENT 9-12 PZ        |
| 010XY003ID | 1979 | LOAMY 16-20 PZ                    |
| 013XY027ID | 1981 | SAND 12-16 PZ                     |
| 021XY200OR | 1989 | LOAMY 10-14 PZ                    |
| 021XY202OR | 1989 | SHALLOW LOAM 10-14 PZ             |
| 021XY206OR | 1989 | DEEP LOAMY 10-14 PZ               |
| 021XY208OR | 1989 | SANDY 10-14 PZ                    |
| 021XY210OR | 1989 | LOAMY 14-18 PZ                    |
| 021XY212OR | 1989 | SHALLOW LOAM 14-18 PZ             |
| 021XY300OR | 1989 | SOUTH SLOPES 10-14 PZ             |
| 021XY312OR | 1989 | NORTH SLOPES 14-18 PZ             |
| 021XY410OR | 1989 | DEEP LOAMY 16-20 PZ               |
| 023XY210OR | 1988 | PUMICE 10-12 PZ                   |
| 023XY300OR | 1988 | SOUTH SLOPES 8-12 PZ              |
| 025XY034OR | 1991 | NORTH SLOPES 13-16 PZ             |

RIGR 124 Riparian Graminoid

|            |      |                     |
|------------|------|---------------------|
| 009XY026WA | 1986 | WET MEADOW 15-24 PZ |
| 010XY002OR | 1990 | MOUNTAIN MEADOW     |
| 010XY004OR | 1990 | MEADOW              |
| 021XY406OR | 1989 | WET MEADOW          |

|  |      |                            |
|--|------|----------------------------|
| 023XY414OR   | 1988 | DRY MEADOW                 |
| 023XY416OR   | 1988 | WET MEADOW                 |
| 024XY118OR   | PROP | BASIN DRY MEADOW           |
| 025XY004OR   | 1991 | DRY MEADOW                 |
| 043XY005WA   | 1985 | WET MEADOW - HAIRGRASS     |
| RUSH                    Rush Wetland (not an ICBEMP PVT) |      |                            |
| 023XY100OR   | 1988 | LAKEBED                    |
| 024XY117OR   | PROP | BASIN WET MEADOW           |
| SALX            119    Salix-Carex                       |      |                            |
| 006XB102OR   | 1989 | COLD WET MEADOW            |
| 010XY001OR   | 1990 | WET MOUNTAIN MEADOW        |
| 010XY003OR   | 1990 | WET MEADOW                 |
| 010XY012OR   | 1990 | MOUNTAIN BRAIDED BOTTOM    |
| 012XY023ID   | 1979 | SEMIWET MEADOW - CAREX     |
| 025ZZ004ID   | 1982 | SEMI-WET MEADOW            |
| SARP            125    Saline Riparian                   |      |                            |
| 010XY007OR   | 1990 | SODIC BOTTOM               |
| 010XY008OR   | 1990 | SODIC MEADOW               |
| 011XY003OR   | 1991 | SODIC BOTTOM               |
| 021XY102OR   | 1989 | SODIC FLAT 10+ PZ          |
| 021XY104OR   | 1989 | SALINE MEADOW              |
| 024XY001OR   | 1986 | SODIC FLAT                 |
| 024XY002OR   | 1986 | SODIC MEADOW               |
| 024XY003OR   | 1986 | SODIC BOTTOM               |
| 024XY112OR   | PROP | DRY SODIC FLOODPLAIN       |
| 024XY114OR   | PROP | SODIC LAKE TERRACE         |
| SDSH            117    Salt Desert Shrub                 |      |                            |
| 007XY020WA   | 1983 | CALCAREOUS LOAM 6-9 PZ     |
| 011XY010ID   | 1981 | CALCAREOUS LOAM 7-10 PZ    |
| 011XY014OR   | 1991 | SANDY 6-9 PZ               |
| 011XY022OR   | 1991 | SHALLOW ESCARPMENT 6-11 PZ |
| 011XY024OR   | 1991 | SHRUBBY ESCARPMENT 9-11 PZ |
| 024XY005OR   | 1986 | SODIC DUNES                |
| 024XY010OR   | 1986 | CLAY BASIN 6-8 PZ          |
| 024XY011OR   | 1986 | SILTY 6-10 PZ              |
| 024XY012OR   | 1986 | SANDY 6-10 PZ              |
| 024XY013OR   | 1986 | SODIC FAN 6-10 PZ          |
| 024XY014OR   | 1986 | SODIC TERRACE 6-10 PZ      |
| 024XY015OR   | 1986 | DESERT LOAM 6-10 PZ        |
| 024XY031OR   | 1986 | SHALLOW SLOPES 6-10 PZ     |



|  |      |                                |
|--|------|--------------------------------|
| 024XY032OR                                     | 1986 | SOUTH SLOPES 6-10 PZ           |
| TTSA 118 Threetip Sagebrush                    |      |                                |
| 010AY023ID                                     | 1981 | LOAMY 12-16 PZ                 |
| 010AY035ID                                     | 1992 | LOAMY BASIN 11-13 PZ           |
| 012XY008ID                                     | 1979 | DRY GRAVELLY 13-16 PZ          |
| 012XY010ID                                     | 1982 | NORTH SLOPE LOAMY 12-16 PZ     |
| 023XY314OR                                     | 1988 | GRAVELLY NORTH SLOPES 12-16 PZ |
| WBSC 109 Wyoming or Basin Big Sagebrush (cool) |      |                                |
| 006XY004WA                                     | 1985 | LOAMY 15-18 PZ                 |
| 008AY002WA                                     | 1986 | STONY LOAM 9-12 PZ             |
| 008AY005WA                                     | 1987 | CALCAREOUS LOAM 9-12 PZ        |
| 008AY007WA                                     | 1988 | SHALLOW STONY 9-12             |
| 008BY002WA                                     | 1991 | LOAMY NORTH EXPOSURE 9-12 PZ   |
| 008XY002WA                                     | 1991 | LOAMY 9-12 PZ                  |
| 008XY003WA                                     | 1981 | NORTH EXPOSURE 9-12 PZ         |
| 008XY007WA                                     | 1981 | NORTH EXPOSURE 12-15 PZ        |
| 008XY012WA                                     | 1981 | LOAMY 12-15 PZ                 |
| 008XY200OR                                     | 1987 | SOUTH 10-14 PZ                 |
| 008XY210OR                                     | 1987 | SHALLOW SOUTH 10-14 PZ         |
| 008XY220OR                                     | 1987 | NORTH 10-14 PZ                 |
| 010AY032ID                                     | 1992 | BOULDERY 11-13                 |
| 010XB022OR                                     | 1990 | JD CLAYEY 9-12 PZ              |
| 010XB042OR                                     | 1990 | JD CLAYEY SOUTH 9-12 PZ        |
| 010XB051OR                                     | 1990 | JD SHALLOW SOUTH 9-12 PZ       |
| 010XB063OR                                     | 1990 | JD NORTH 9-12 PZ               |
| 010XB070OR                                     | 1990 | JD NORTH 12-16 PZ              |
| 010XC020OR                                     | 1990 | SR LOAMY 9-12 PZ               |
| 010XC021OR                                     | 1990 | SR CLAYEY 9-12 PZ              |
| 010XC030OR                                     | 1990 | SR MOUNTAIN LOAMY 9-12 PZ      |
| 010XC031OR                                     | 1990 | SR MOUNTAIN CLAYEY 9-12 PZ     |
| 010XC035OR                                     | 1990 | SR SHALLOW 9-12 PZ             |
| 010XC036OR                                     | 1990 | SR MOUNTAIN SHALLOW 9-12 PZ    |
| 010XC043OR                                     | 1990 | SR CLAYEY SOUTH 9-12 PZ        |
| 010XC050OR                                     | 1990 | SR SHALLOW SOUTH 9-12 PZ       |
| 010XC057OR                                     | prop | SHALLOW ESCARPMENT 9-12 PZ     |
| 010XC064OR                                     | 1990 | SR NORTH 9-12 PZ               |
| 010XC065OR                                     | 1990 | SR MOUNTAIN NORTH 9-12 PZ      |
| 011AY002ID                                     | 1980 | SHALLOW LOAMY 8-12 PZ          |
| 011AY005ID                                     | 1978 | CLAYPAN 8-12 PZ                |
| 011AY014ID                                     | 1983 | SANDY 8-12 PZ                  |
| 011BY004ID                                     | 1979 | SANDY 8-12 PZ                  |
| 011BY019ID                                     | 1983 | LOAMY 7-10 PZ                  |
| 011BY020ID                                     | 1983 | SHALLOW FRACTURED 7-12 PZ      |
| 011XY014ID                                     | 1981 | SANDY LOAM 8-12 PZ             |



|            |      |                                |
|------------|------|--------------------------------|
| 012XY004ID | 1981 | GRAVELLY LOAM 8-12 PZ          |
| 012XY005ID | 1982 | SOUTH SLOPE GRAVELLY 11-13 PZ  |
| 012XY030ID | 1981 | LOAMY 7-10 PZ                  |
| 012XY032ID | 1983 | LOAMY 8-11 PZ                  |
| 021XY302OR | 1989 | NORTH SLOPES 10-14 PZ          |
| 023XY204OR | 1988 | SHALLOW LOAM 8-10 PZ           |
| 023XY212OR | 1988 | LOAMY 10-12 PZ                 |
| 023XY213OR | prop | SANDY LOAM 10-12 PZ            |
| 023XY220OR | 1988 | CLAYEY 10-12 PZ                |
| 023XY222OR | prop | SHALLOW LAVA 10-12 PZ          |
| 023XY301OR | prop | DROUGHTY SOUTH SLOPES 11-13 PZ |
| 023XY301OR | PROP | DROUGHTY SOUTH SLOPES 11-13 PZ |
| 023XY303OR | prop | SANDY SLOPES 10-12 PZ          |
| 023XY308OR | 1988 | NORTH SLOPES 10-12 PZ          |
| 023XY316OR | 1988 | DROUGHTY LOAM 12-14 PZ         |
| 024XY007OR | prop | DRY PONDED CLAY 6-10 PZ        |
| 024XY008OR | prop | CLAYEY PLAYETTE                |
| 024XY016OR | 1986 | LOAMY 8-10 PZ                  |
| 024XY017OR | 1986 | SHALLOW LOAM 8-10 PZ           |
| 024XY018OR | prop | SANDY LOAM 8-10 PZ             |
| 024XY020OR | 1986 | SHRUBBY LOAM 8-10 PZ           |
| 024XY030OR | 1986 | LOAMY SLOPES 6-10 PZ           |
| 024XY033OR | 1986 | NORTH SLOPES 6-10 PZ           |
| 024XY110OR | prop | DUNES                          |
| 025XY005ID | 1980 | LOAMY 12-16 PZ                 |
| 025XY006ID | 1980 | STONY SOUTH SLOPE 10-13 PZ     |
| 025XY007ID | 1980 | SHALLOW LOAMY UPLAND 10-14 PZ  |
| 025XY009ID | 1980 | LOAMY 12-16 PZ                 |
| 025XY010OR | 1991 | LOAMY 8-11 PZ                  |
| 025XY012OR | 1991 | LOAMY 11-13 PZ                 |
| 025XY019ID | 1981 | LOAMY 10-13 PZ                 |
| 025XY020ID | 1981 | LOAMY 7-10 PZ                  |
| 025XY024ID | 1981 | LOAMY UPLAND 12-16 PZ          |
| 025XY024OR | 1991 | SHALLOW SOUTH SLOPES 11-13 PZ  |
| 025XY032OR | 1991 | NORTH SLOPES 11-13 PZ          |

WBSW 108 Wyoming or Basin Big Sagebrush (warm)

|            |      |                      |
|------------|------|----------------------|
| 007XY003WA | 1987 | SANDY LOAM 6-9 PZ    |
| 007XY004WA | 1987 | SANDY 6-9 PZ         |
| 007XY005WA | 1991 | LOAMY 6-9 PZ         |
| 007XY007WA | 1991 | SHALLOW 6-12 PZ      |
| 007XY014OR | 1986 | LOAMY 8-10 PZ        |
| 007XY015OR | 1986 | SHALLOW LOAM 8-10 PZ |
| 007XY018WA | 1987 | SANDS 6-9 PZ         |
| 007XY020OR | 1986 | SOUTH 8-10 PZ        |
| 007XY025OR | 1986 | SANDY NORTH 8-10 PZ  |
| 008AY001WA | 1987 | LOAMY 9-12 PZ        |

|            |      |                                |
|------------|------|--------------------------------|
| 008AY018WA | 1985 | SOUTH EXPOSURE 12-15 PZ        |
| 008AY020WA | 1984 | NORTH EXPOSURE 12-15 PZ        |
| 008BY001WA | 1991 | LOAMY 9-12 PZ                  |
| 008BY010WA | 1991 | LOAMY 12-15 PZ                 |
| 008XY001WA | 1981 | SHALLOW STONY 9-12 PZ          |
| 008XY024WA | 1983 | NORTH SLOPE 9-12 PZ            |
| 008XY031WA | 1986 | LOAMY 12-15 PZ                 |
| 008XY110OR | 1987 | LOAMY 10-12 PZ                 |
| 008XY130OR | 1987 | SANDY LOAM 10-12 PZ            |
| 010XC044OR | 1990 | SOUTH SCHIST 9-12 PZ           |
| 010XC052OR | 1990 | SHALLOW SOUTH SCHIST 9-12 PZ   |
| 011AY003ID | 1983 | SHALLOW FRACTURED 8-12 PZ      |
| 011AY004ID | 1981 | LOAMY 8-12 PZ                  |
| 011AY009ID | 1983 | LOAMY 8-12 PZ                  |
| 011AY010ID | 1978 | CHURNING CLAY 8-12 PZ          |
| 011XY010OR | 1991 | SILTY 6-9 PZ                   |
| 011XY012OR | 1991 | SILTY 9-11 PZ                  |
| 011XY016OR | 1991 | SANDY 9-11 PZ                  |
| 011XY018OR | 1991 | SHALLOW LOAM 9-11 PZ           |
| 011XY020OR | 1991 | SOUTH SLOPES 6-11 PZ           |
| 011XY030OR | 1991 | SILTY NORTH SLOPES 6-9 PZ      |
| 011XY032OR | 1991 | SILTY NORTH SLOPES 9-11 PZ     |
| 025XY020OR | 1991 | SOUTH SLOPES 11-13 PZ          |
| 025XY030OR | 1991 | DROUGHTY NORTH SLOPES 11-13 PZ |

WOAK        74    White Oak

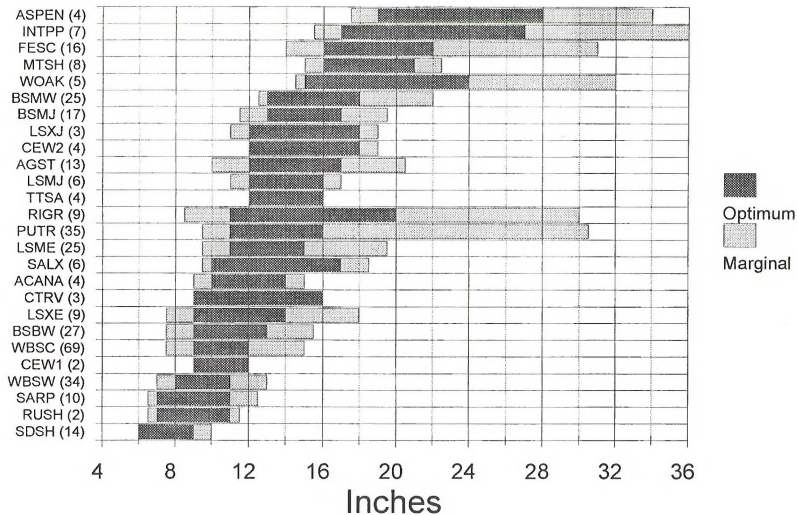
|            |      |                             |
|------------|------|-----------------------------|
| 006XA100OR | 1989 | SANDY BOTTOM                |
| 006XA200OR | 1989 | SOUTH SLOPES 14-20 PZ       |
| 006XA202OR | 1989 | NORTH SLOPES 14-20 PZ       |
| 006XA300OR | 1989 | LOAMY 14-20 PZ              |
| 006XA302OR | 1989 | STEEP SOUTH SLOPES 20-40 PZ |

**Section 1**

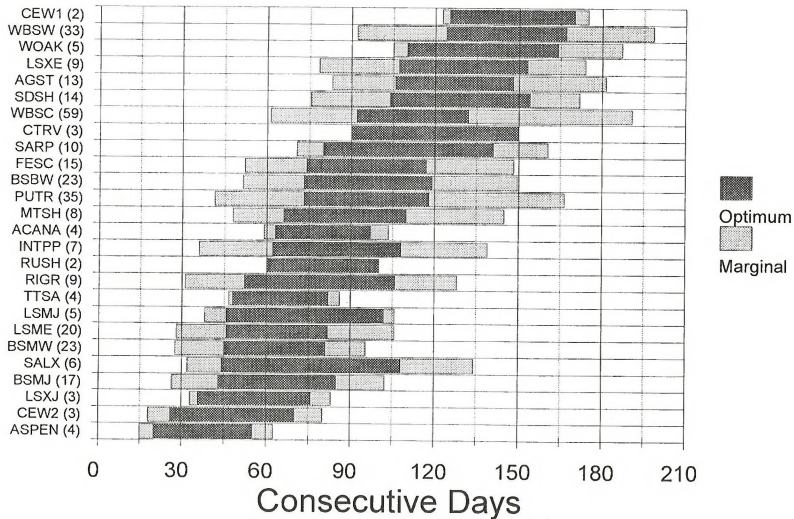
**Compiled  
by  
Combined Report Area**



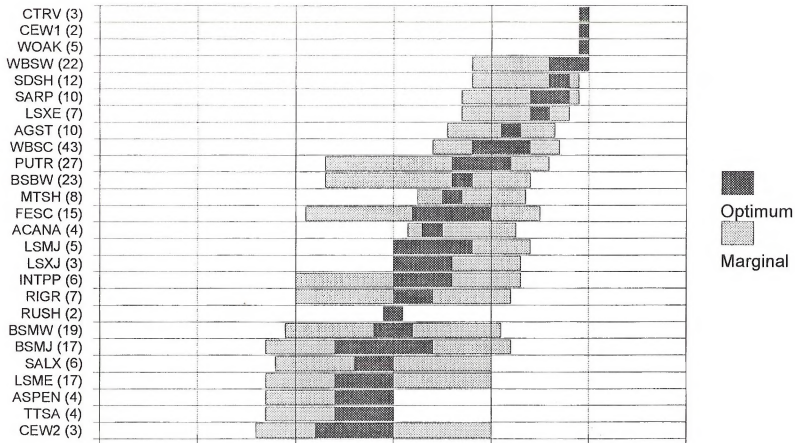
# Precipitation



# Frost Free Period

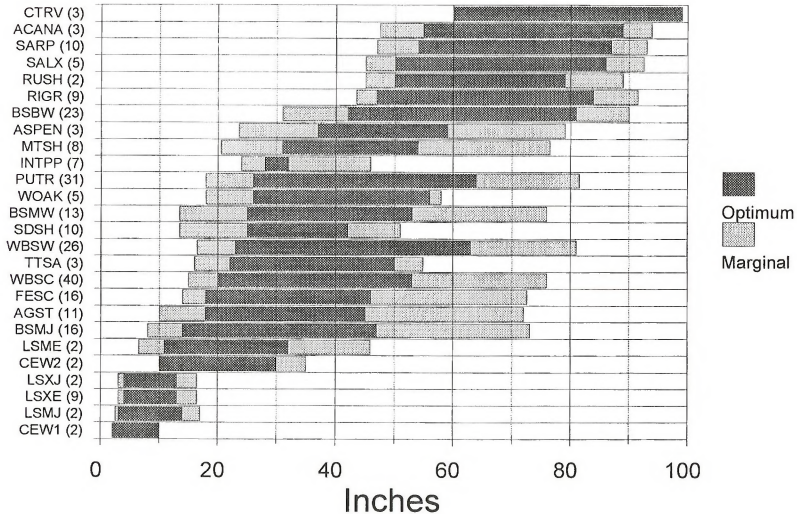


# Soil Temperature Regime



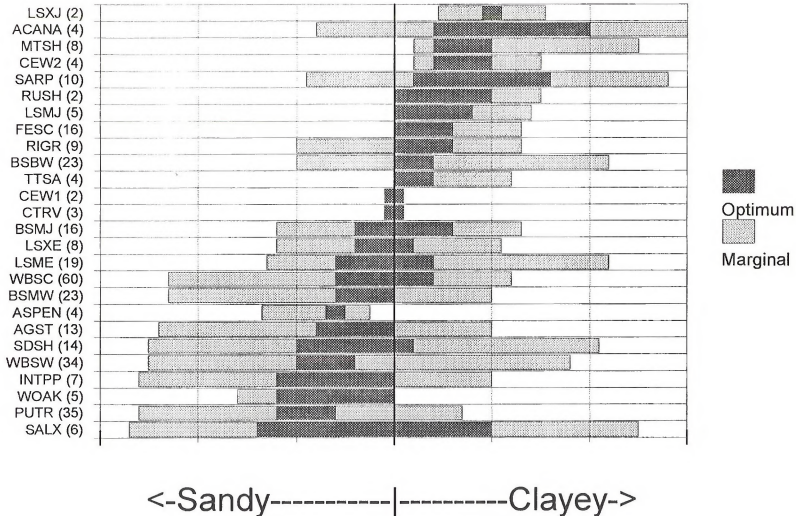
<-Cryic-----Frigid-----Mesic->

# Soil Depth

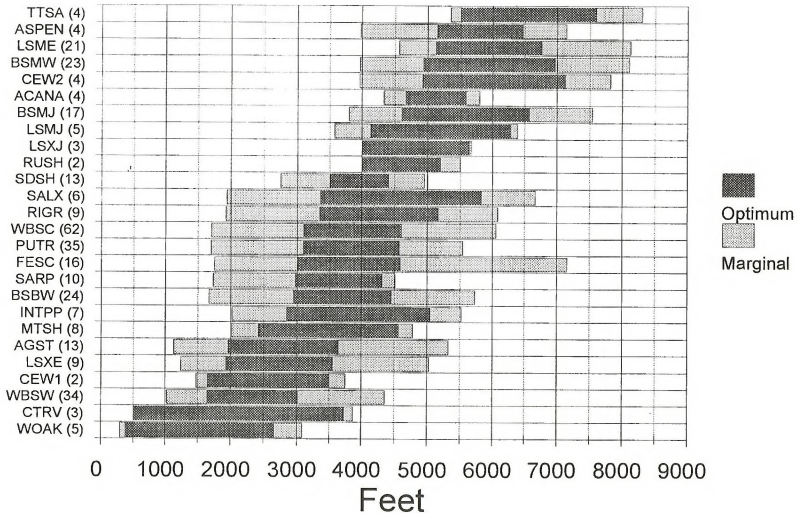




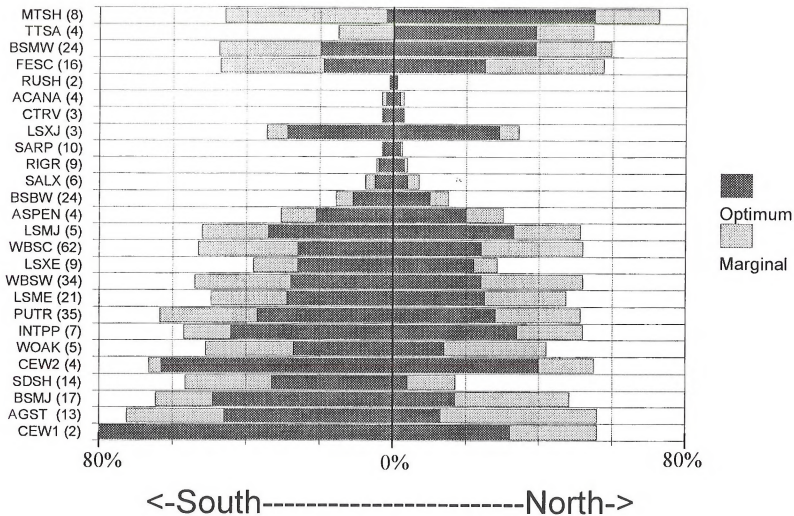
# Soil Texture



# Elevation



# Slope and Aspect



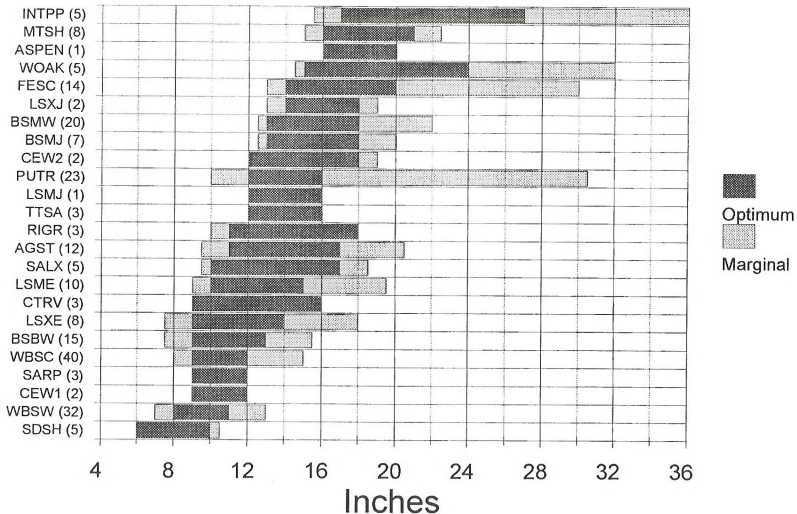


**Section 2**

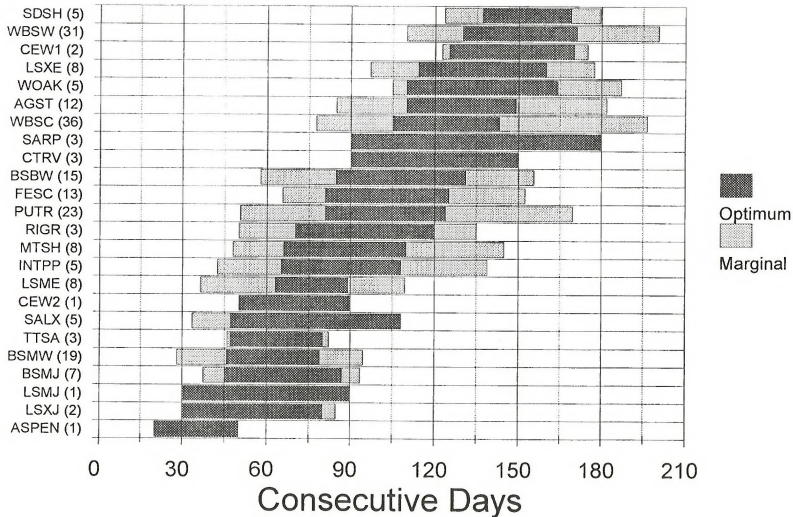
**Compiled  
by  
Land Resource Region**



# Precipitation (LRR B)

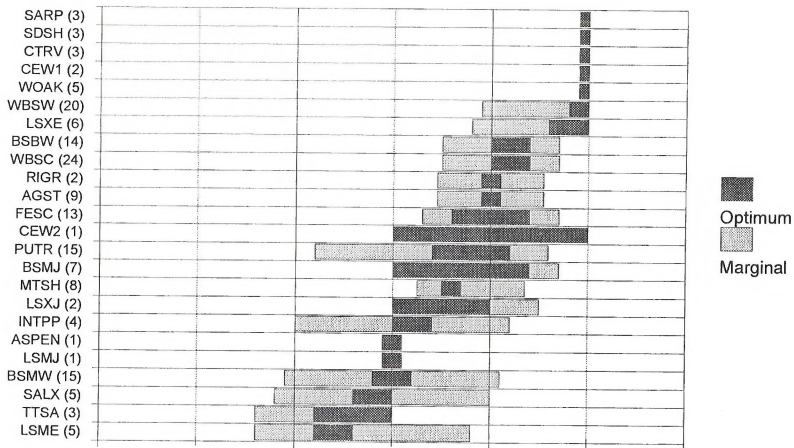


# Frost Free Period (LRR B)



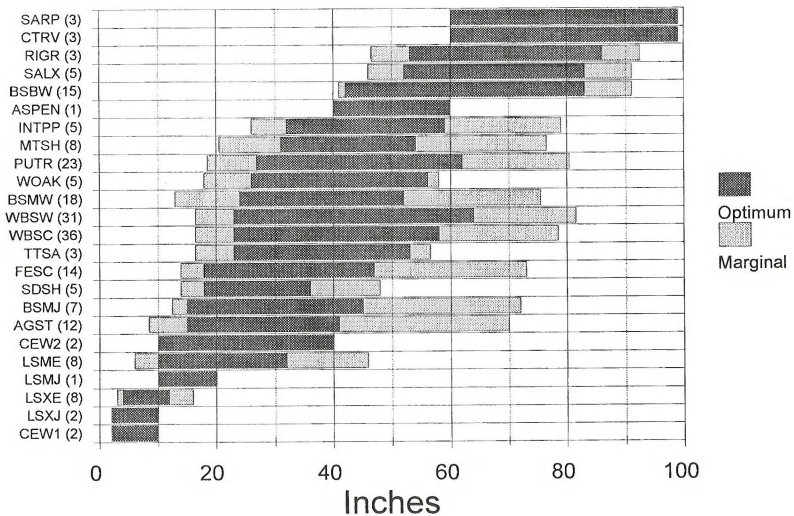


# Soil Temperature Regime (LRR B)

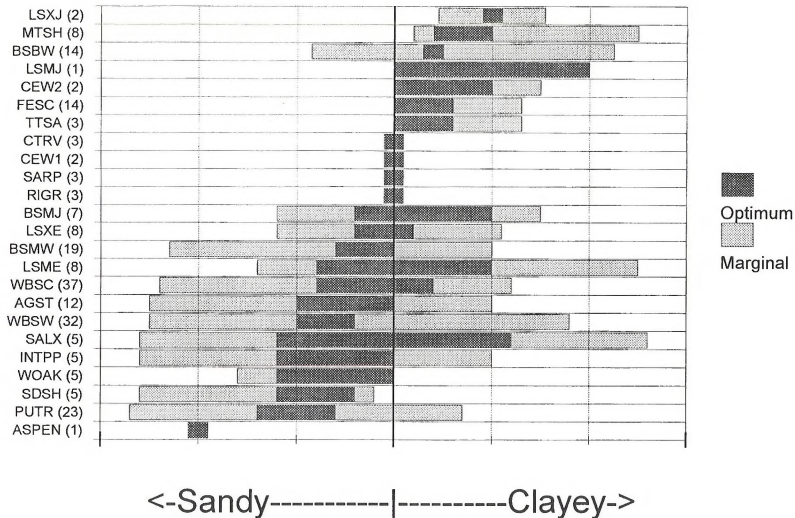


<-Cryic-----Frigid-----Mesic->

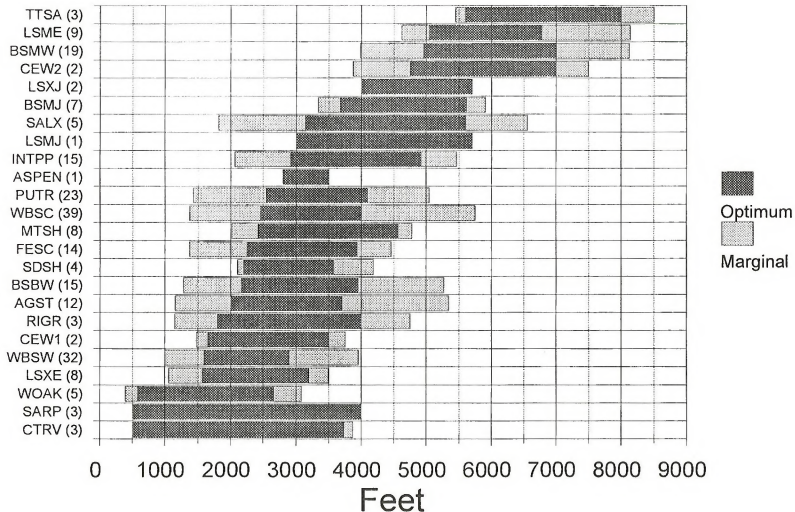
# Soil Depth (LRR B)



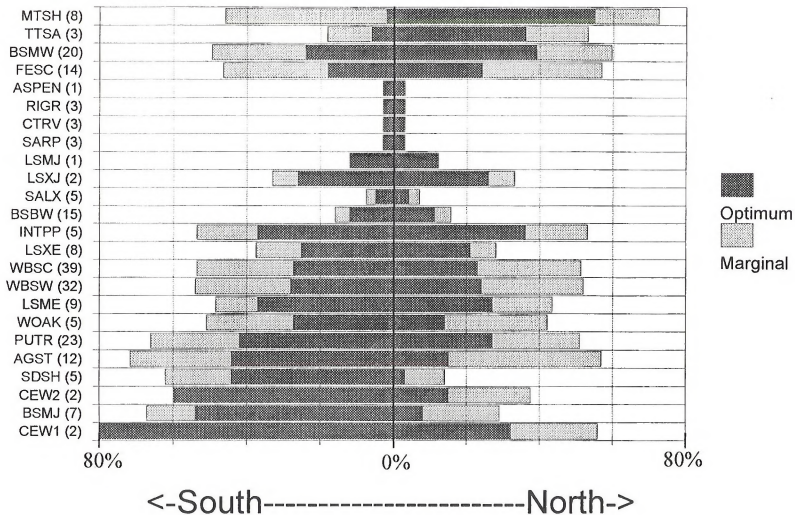
# Soil Texture (LRR B)



# Elevation (LRR B)

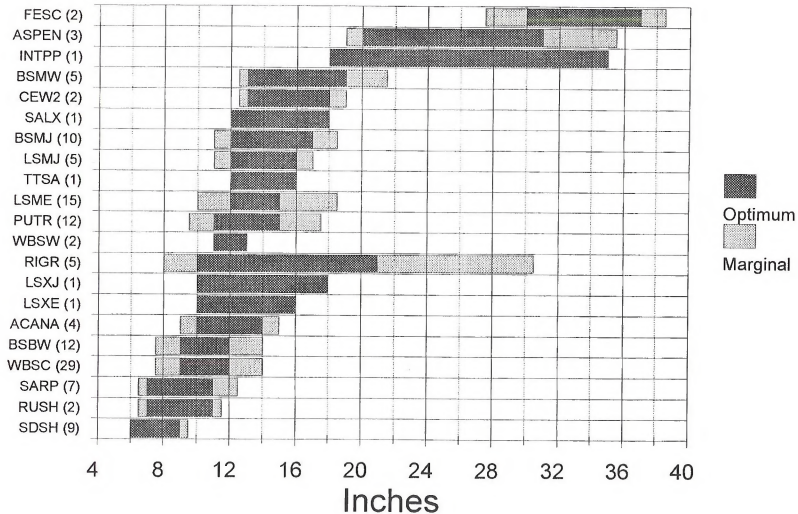


# Slope and Aspect (LRR B)



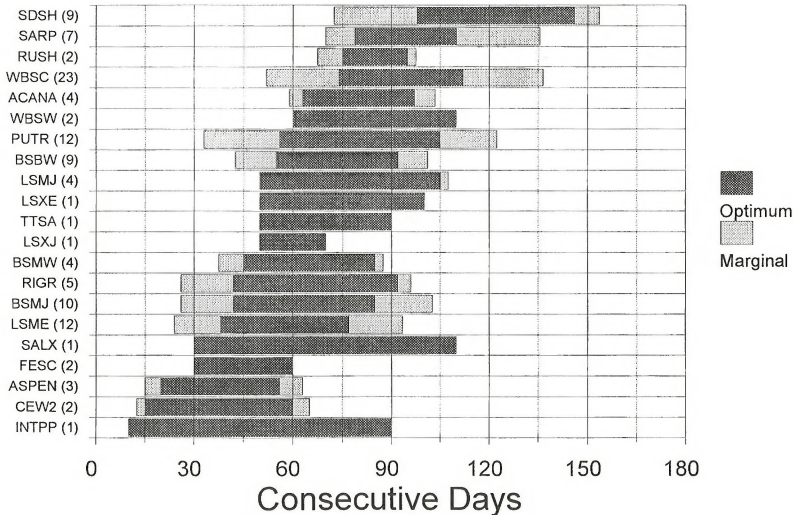


# Precipitation (LRR D)



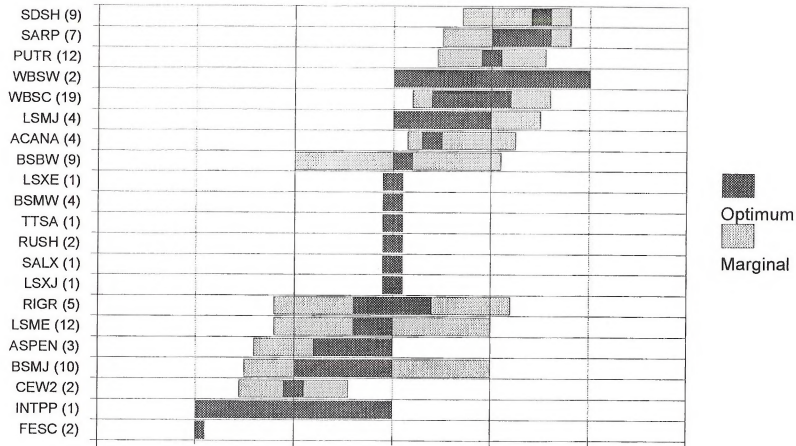


# Frost Free Period (LRR D)



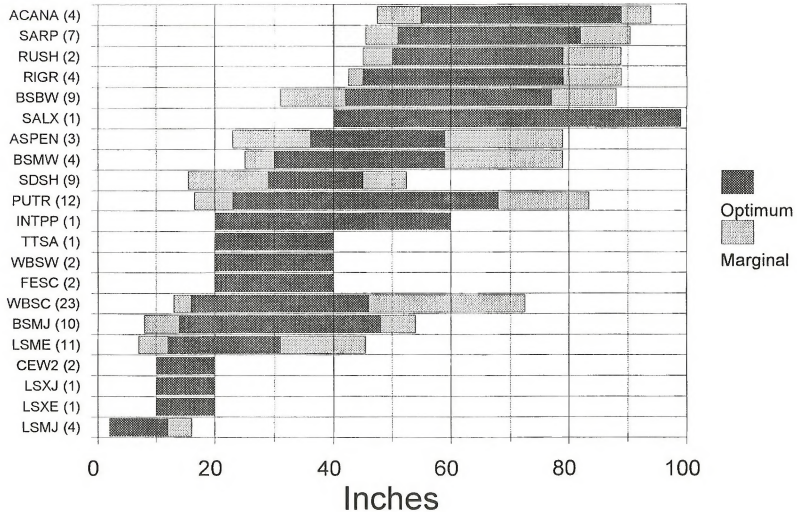


# Soil Temperature Regime (LRR D)

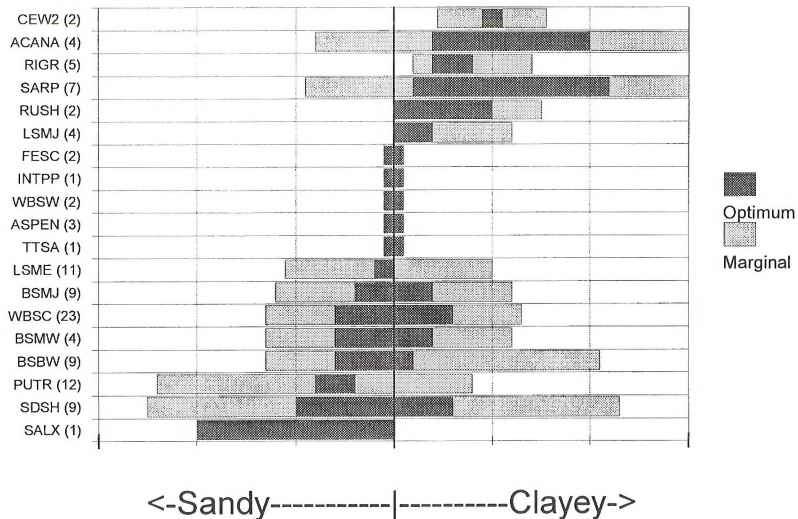


<-Cryic-----Frigid-----Mesic->

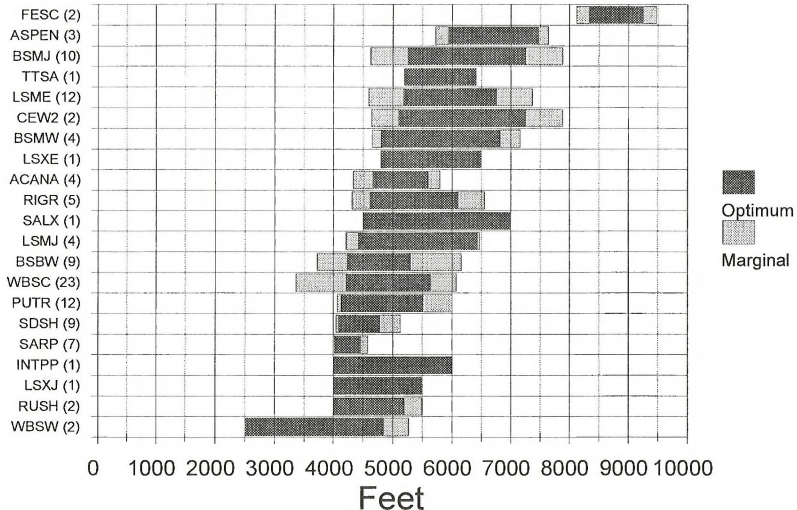
# Soil Depth (LRR D)



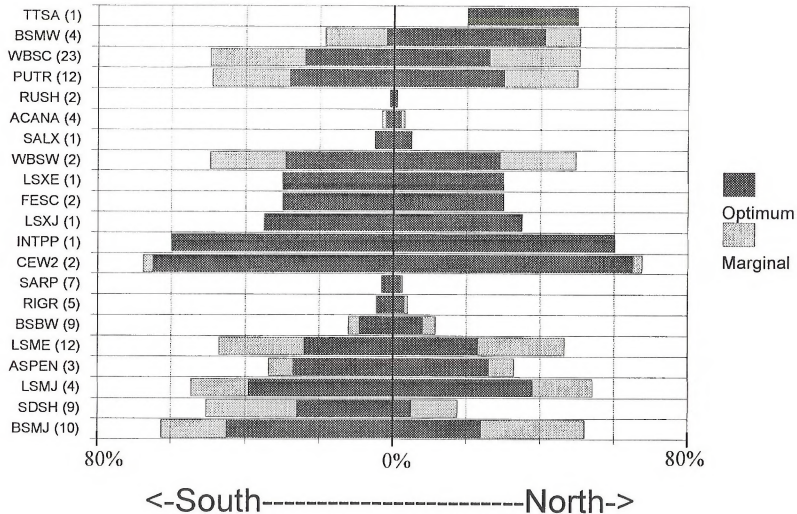
# Soil Texture (LRR D)



# Elevation (LRR D)



# Slope and Aspect (LRR D)





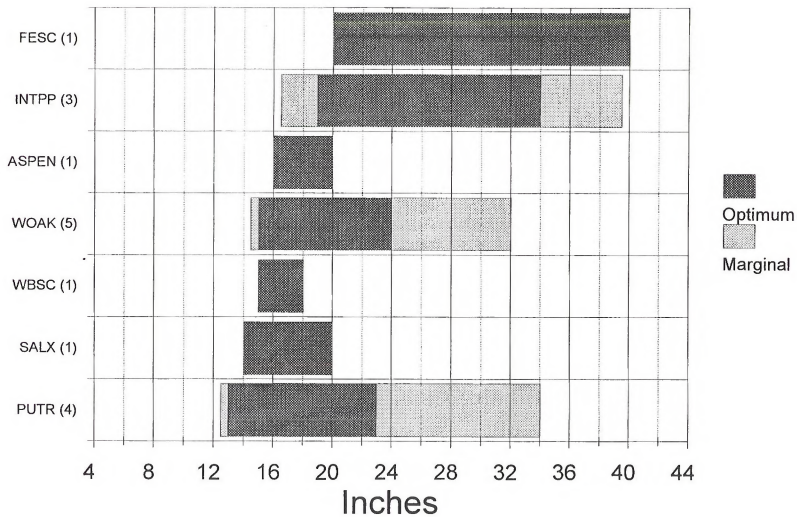
**Section 3**

**Compiled  
by  
Major Land Resource Area**

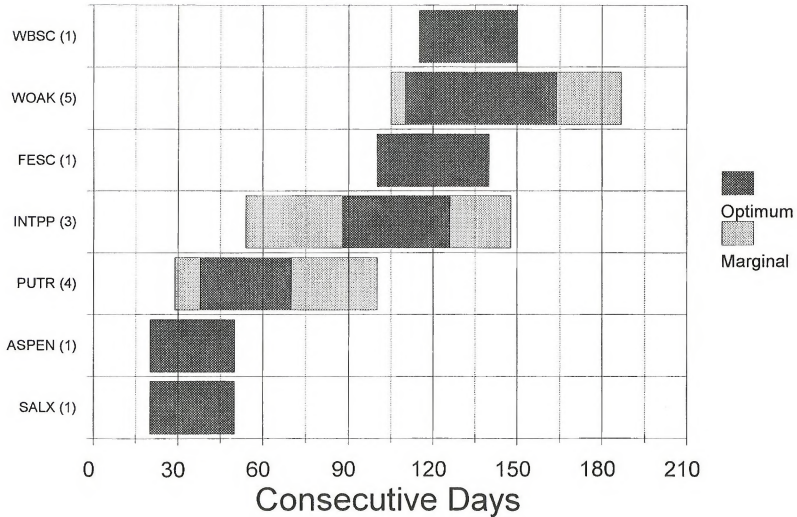




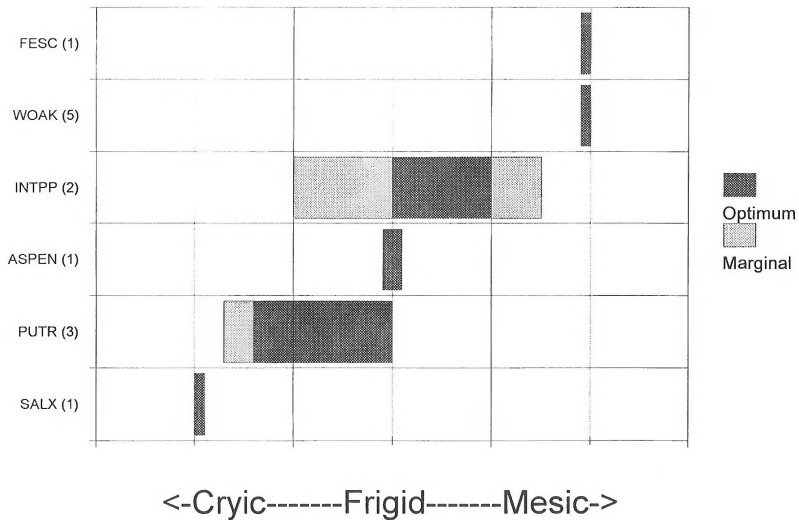
# Precipitation (MLRA B6)



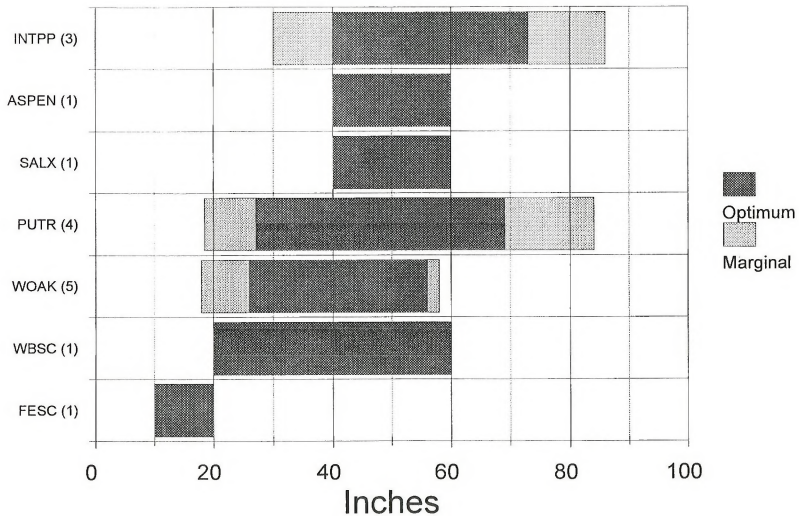
# Frost Free Period (MLRA B6)



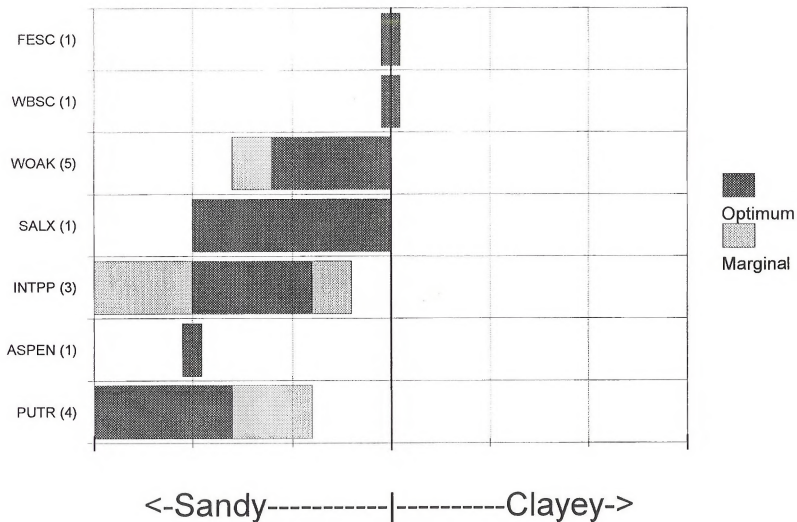
# Soil Temperature Regime (MLRA B6)



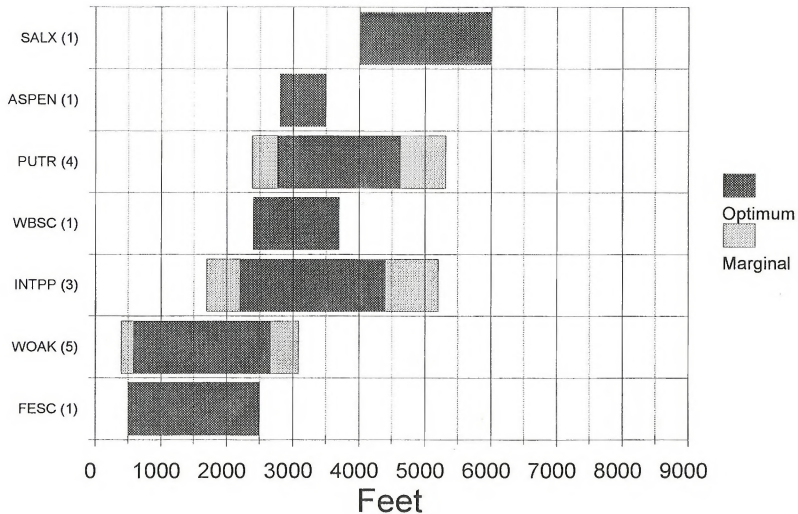
# Soil Depth (MLRA B6)



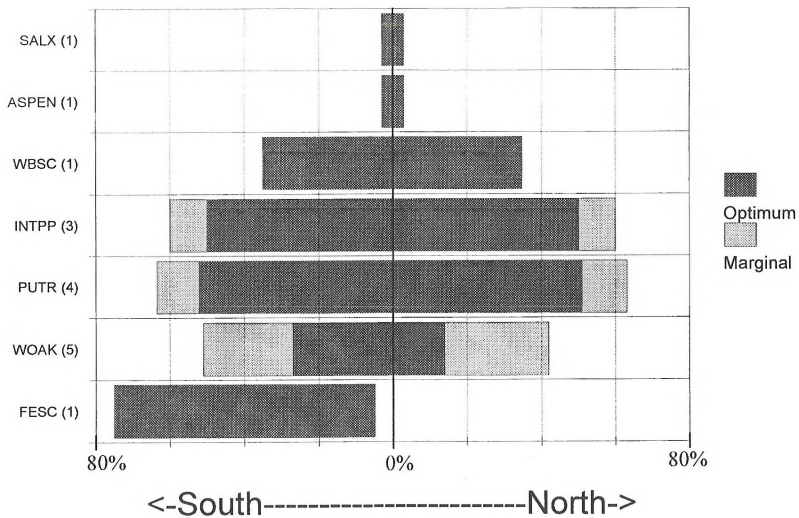
# Soil Texture (MLRA B6)



# Elevation (MLRA B6)



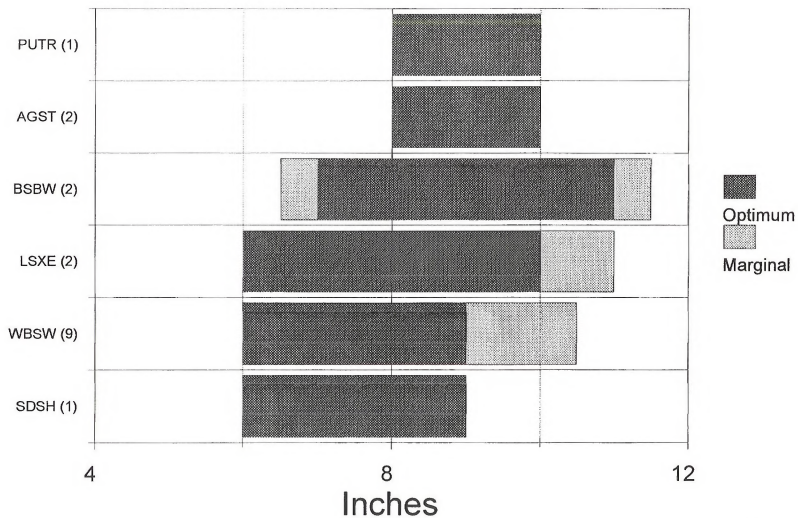
# Slope and Aspect (MLRA B6)



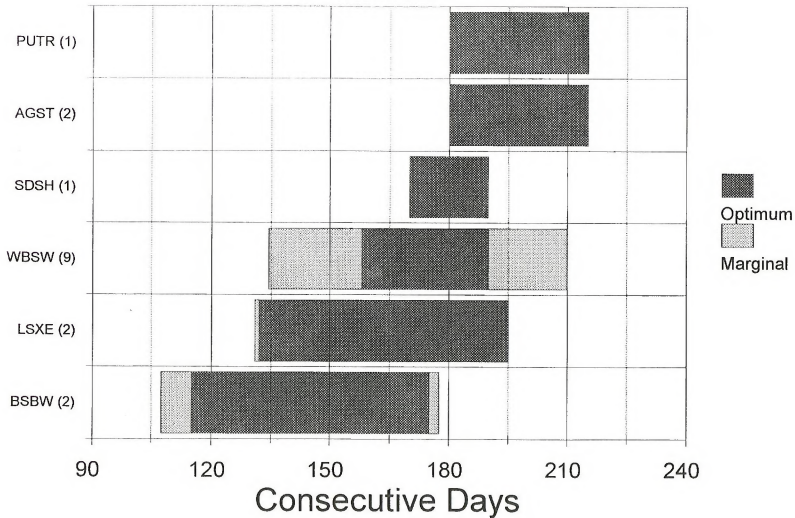




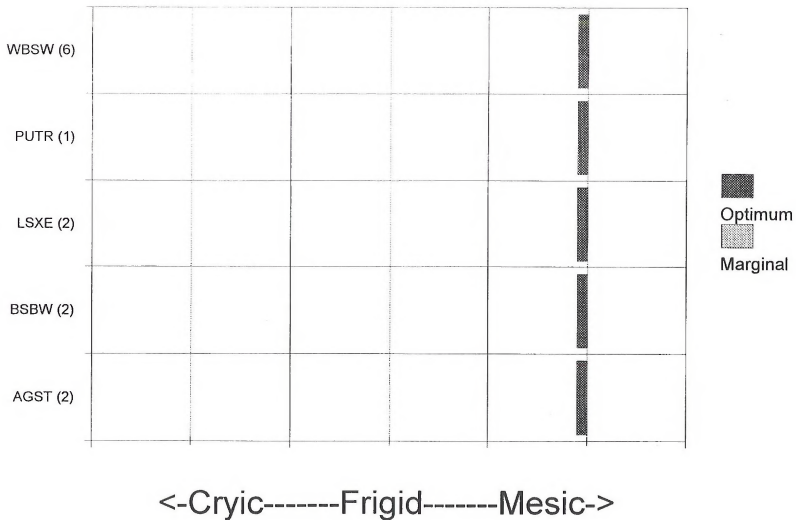
# Precipitation (MLRA B7)



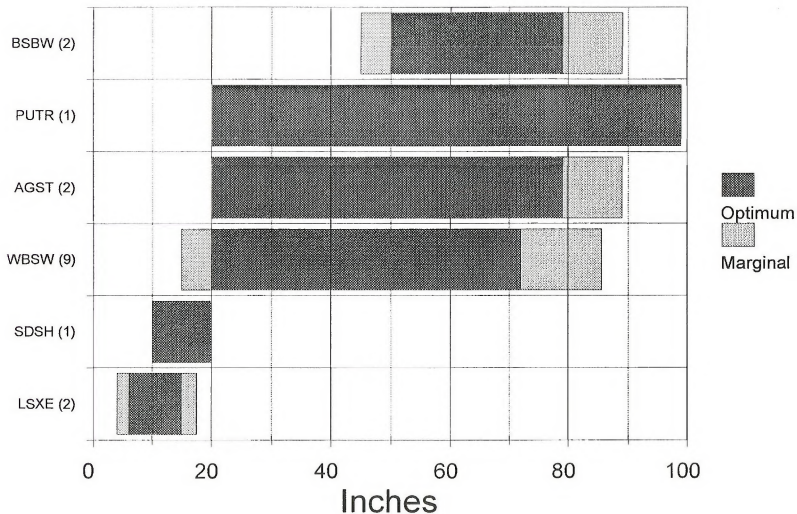
# Frost Free Period (MLRA B7)



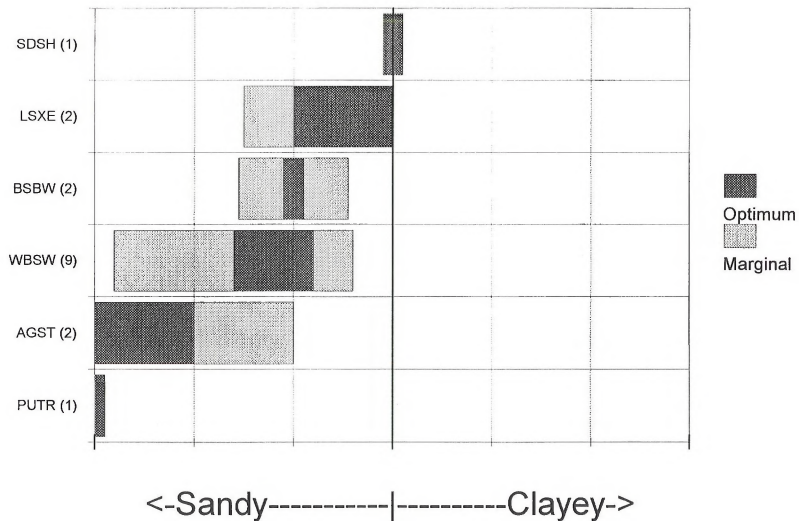
# Soil Temperature Regime (MLRA B7)



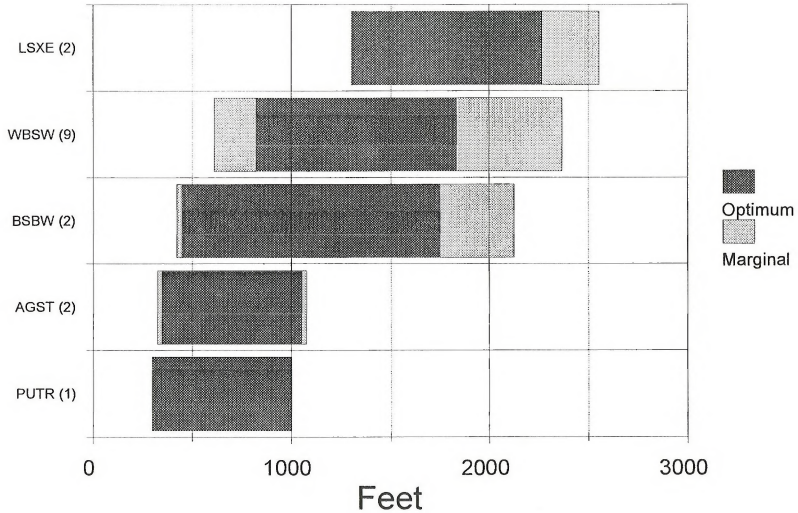
# Soil Depth (MLRA B7)



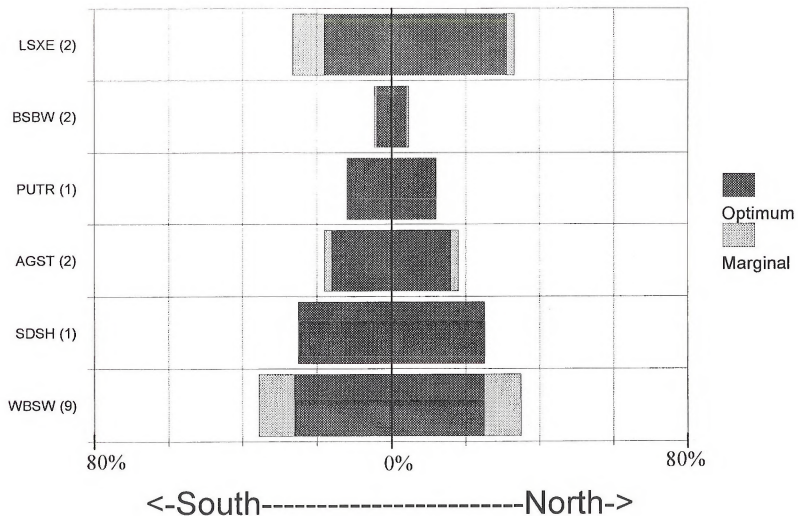
# Soil Texture (MLRA B7)



# Elevation (MLRA B7)



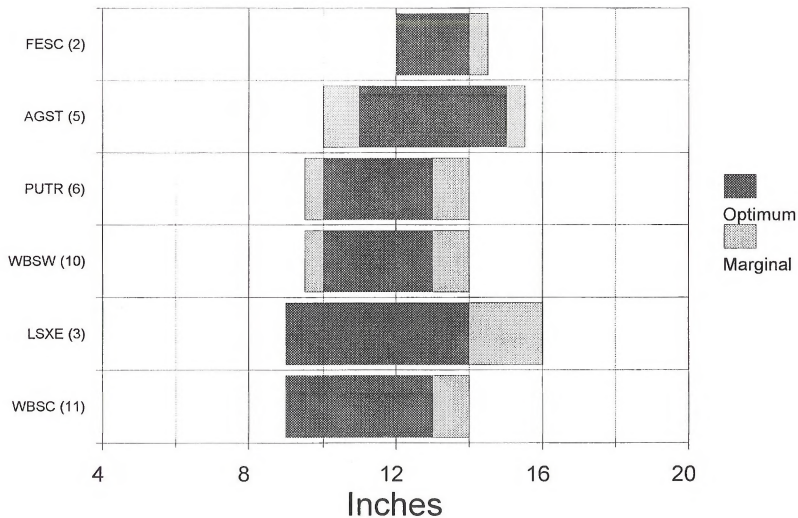
# Slope and Aspect (MLRA B7)



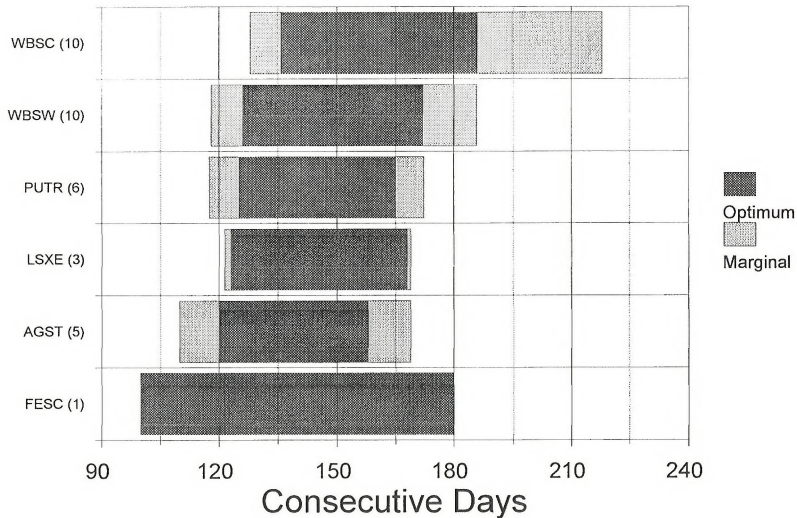




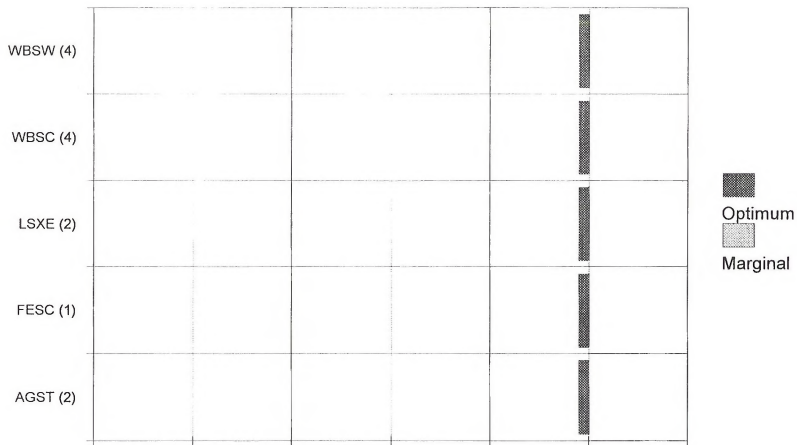
# Precipitation (MLRA B8)



# Frost Free Period (MLRA B8)

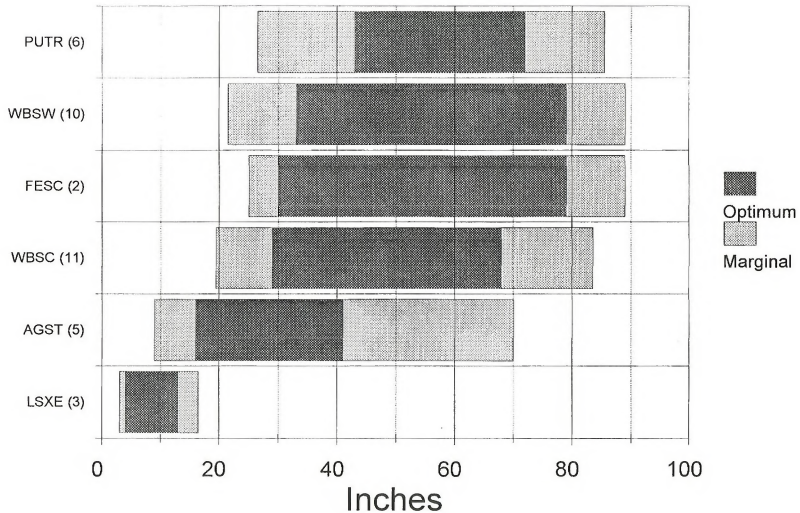


# Soil Temperature Regime (MLRA B8)

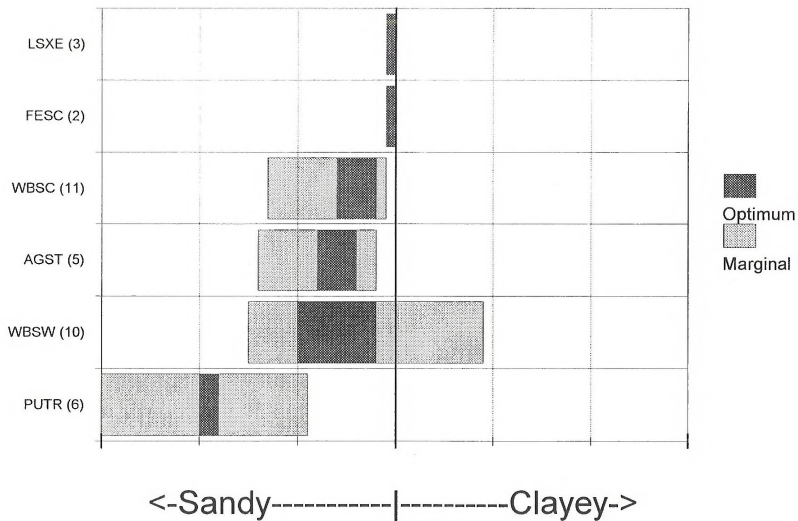


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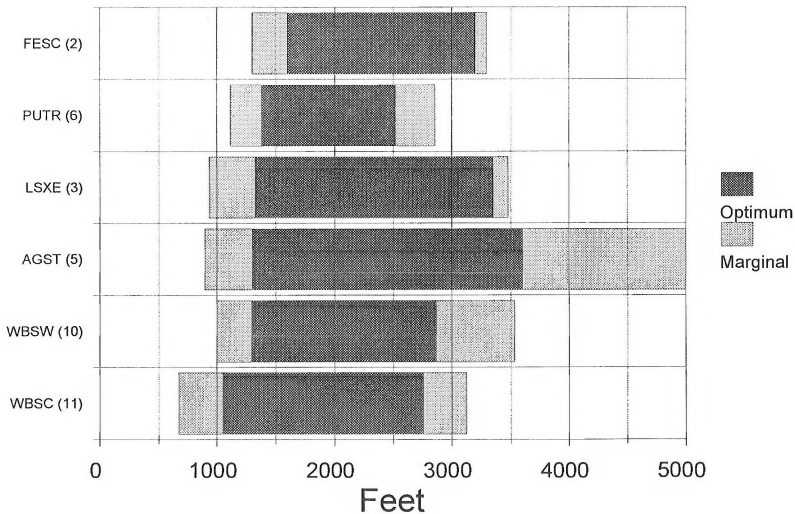
# Soil Depth (MLRA B8)



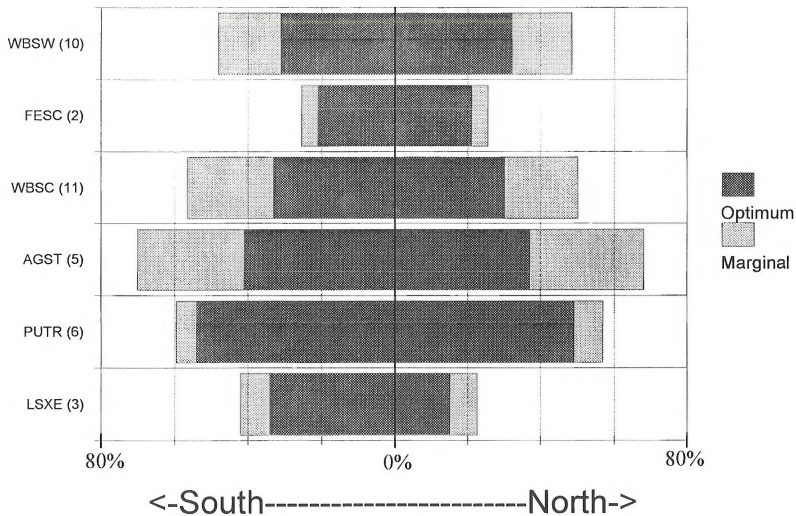
# Soil Texture (MLRA B8)



# Elevation (MLRA B8)



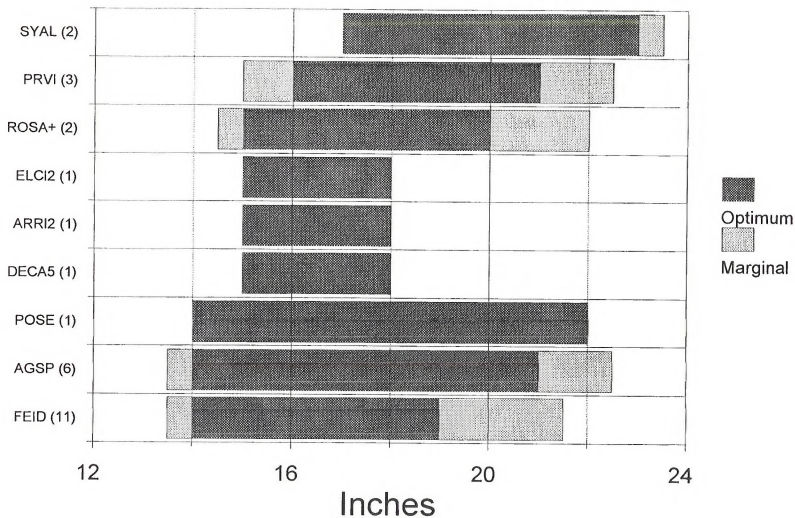
# Slope and Aspect (MLRA B8)



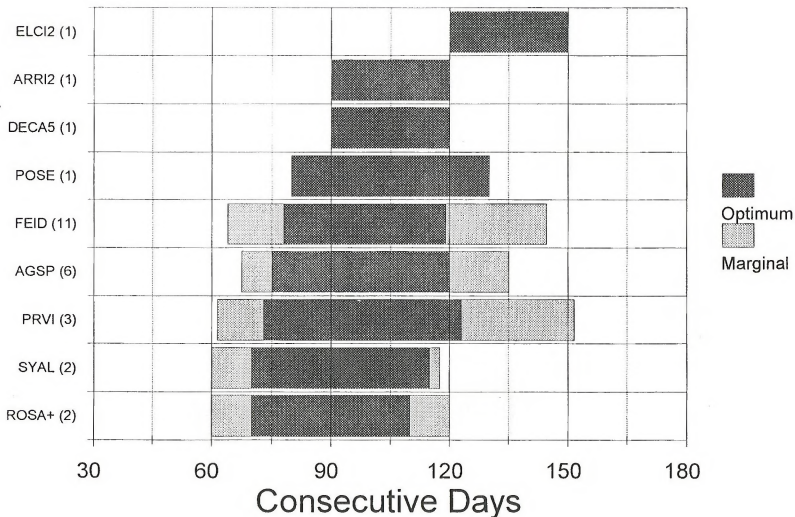




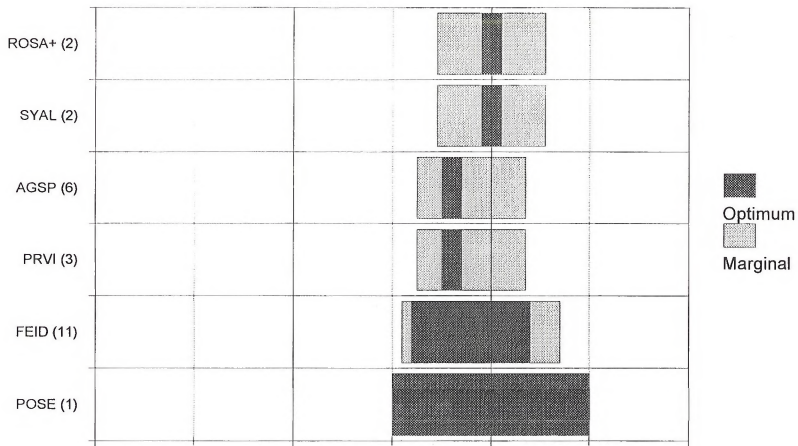
# Precipitation (MLRA B9)



# Frost Free Period (MLRA B9)

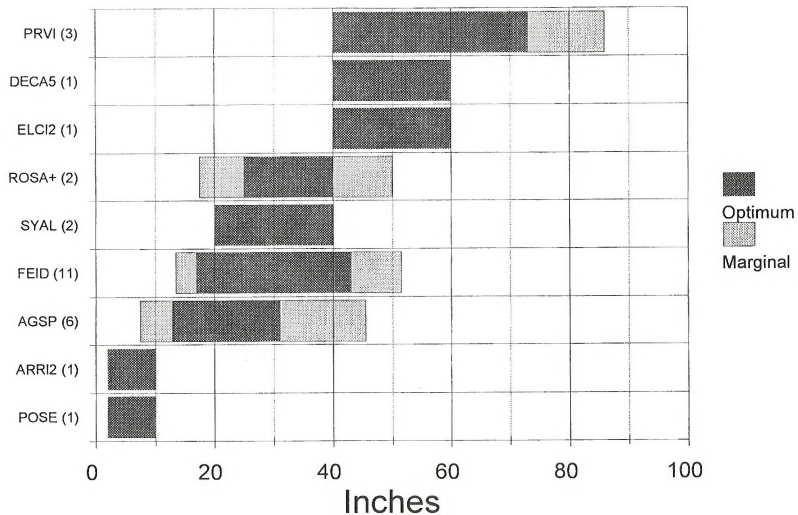


# Soil Temperature Regime (MLRA B9)

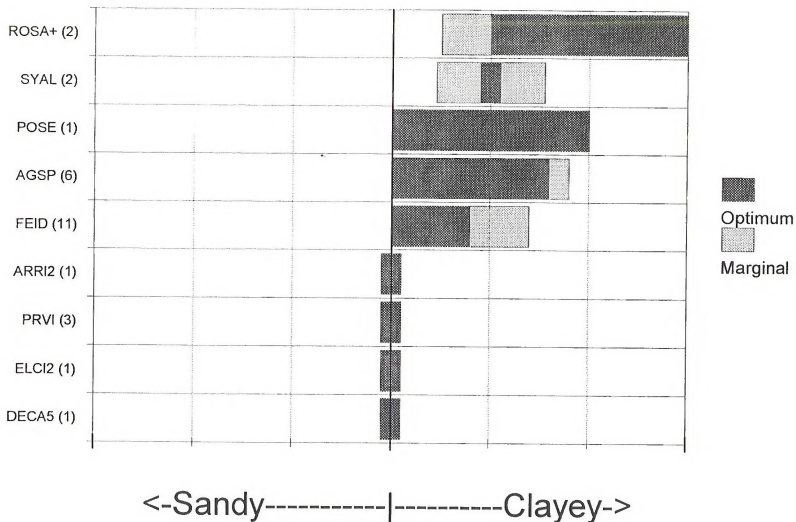


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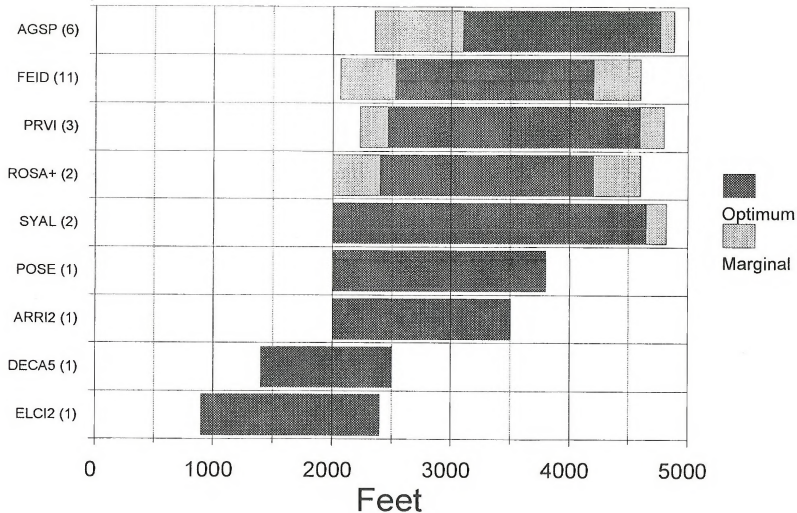
# Soil Depth (MLRA B9)



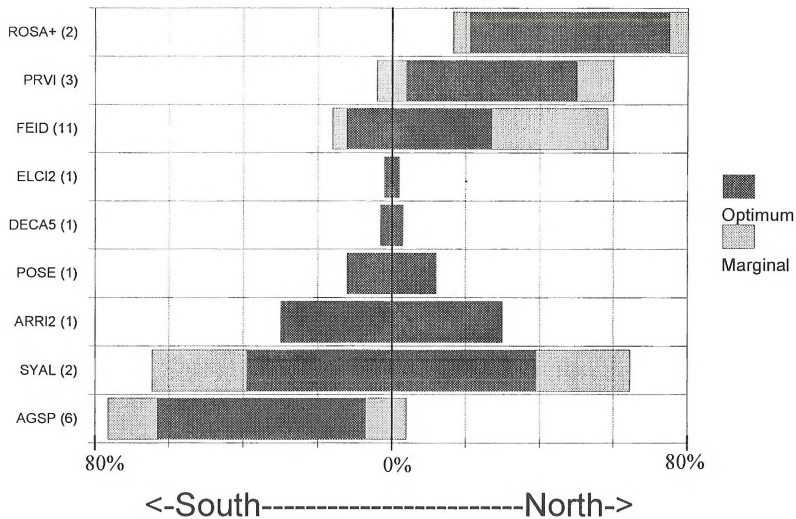
# Soil Texture (MLRA B9)



# Elevation (MLRA B9)



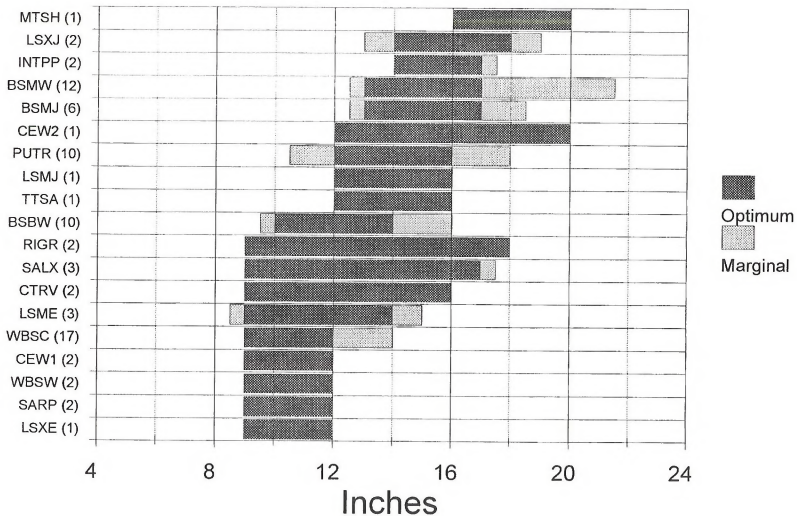
# Slope and Aspect (MLRA B9)



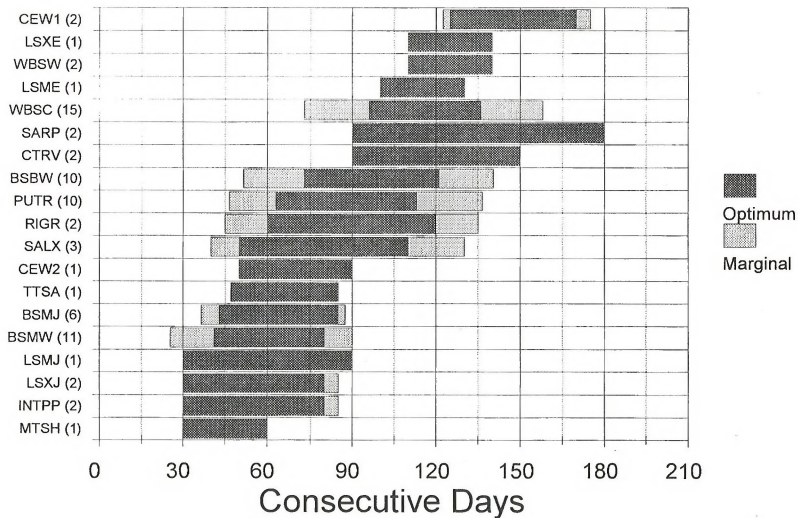




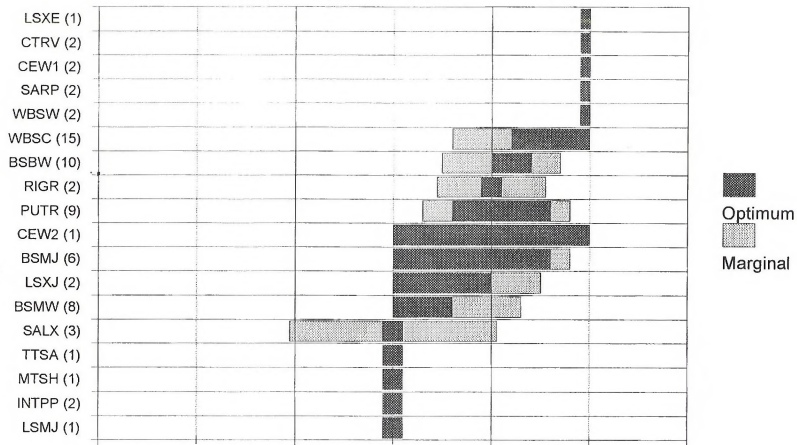
# Precipitation (MLRA B10)



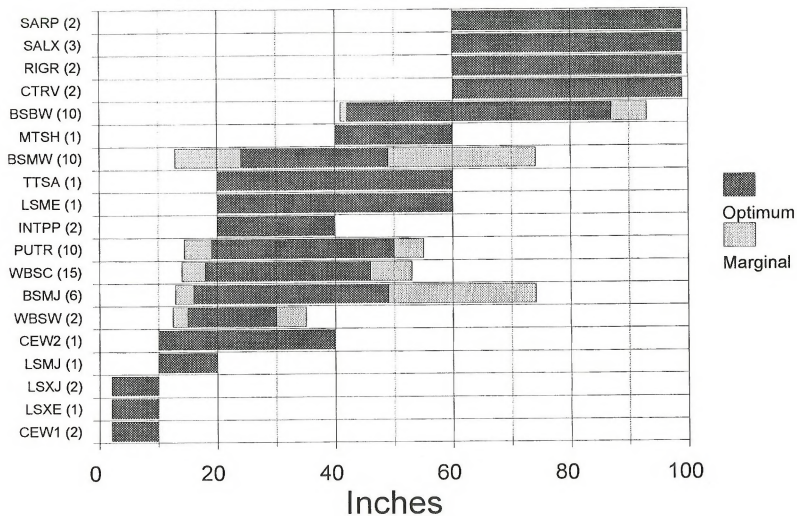
# Frost Free Period (MLRA B10)



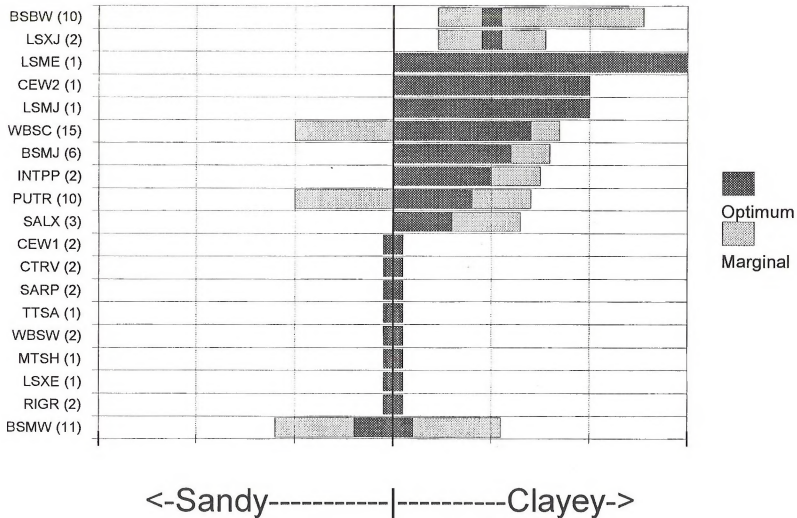
# Soil Temperature Regime (MLRA B10)



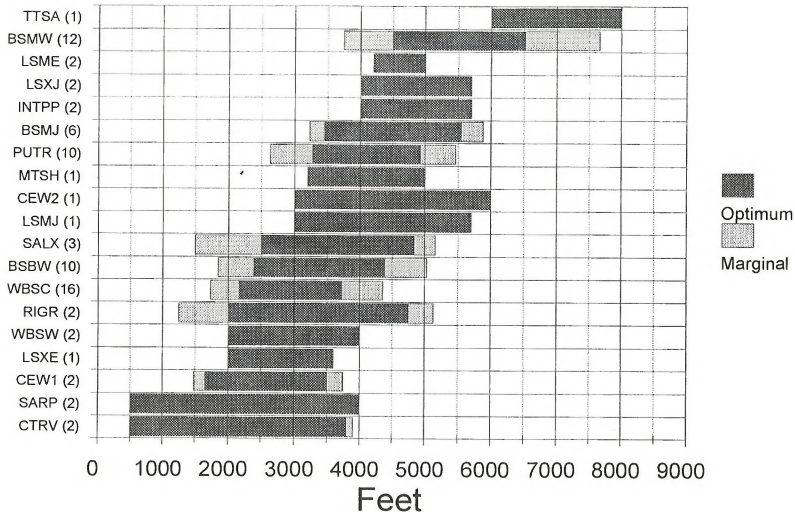
# Soil Depth (MLRA B10)



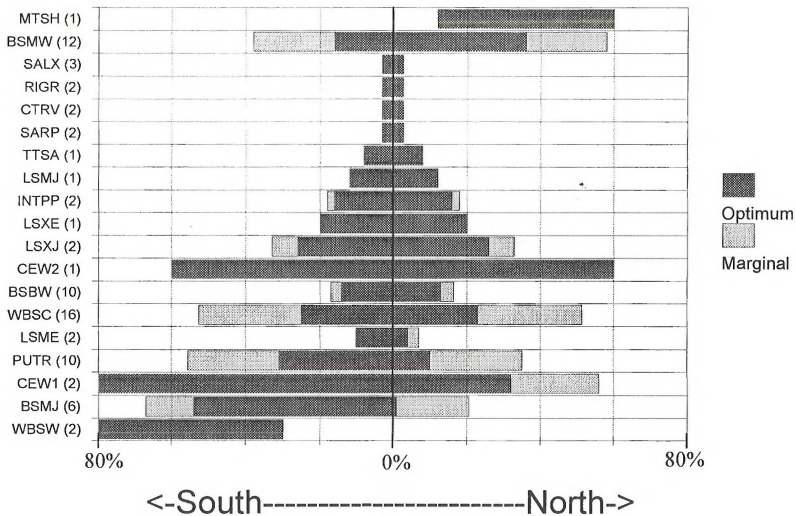
# Soil Texture (MLRA B10)



# Elevation (MLRA B10)



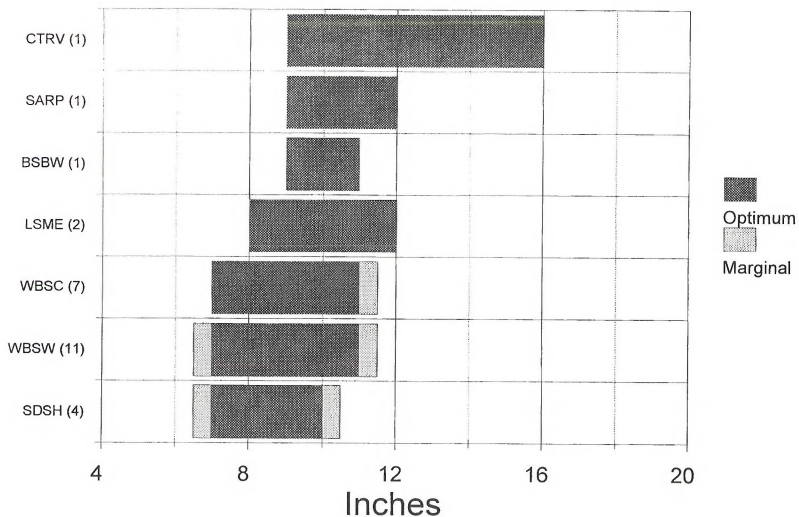
# Slope and Aspect (MLRA B10)



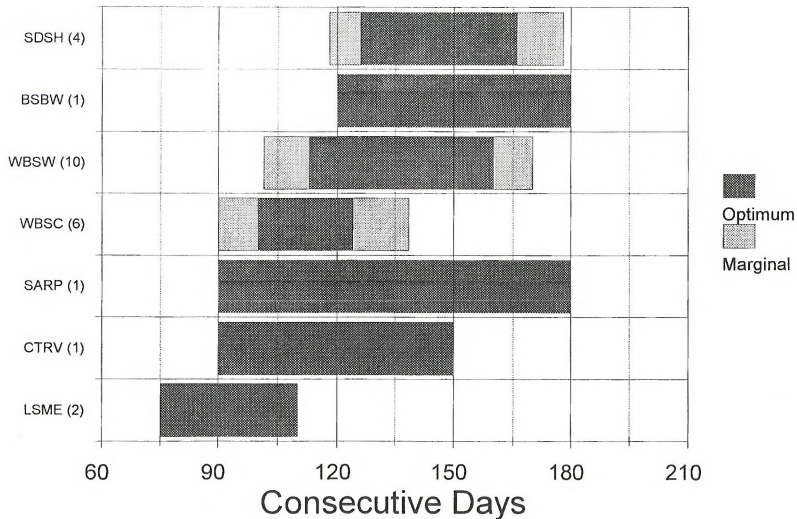




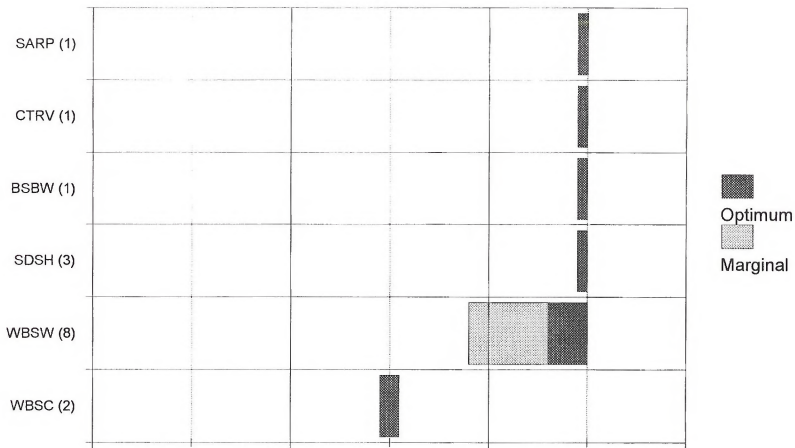
# Precipitation (MLRA B11)



# Frost Free Period (MLRA B11)

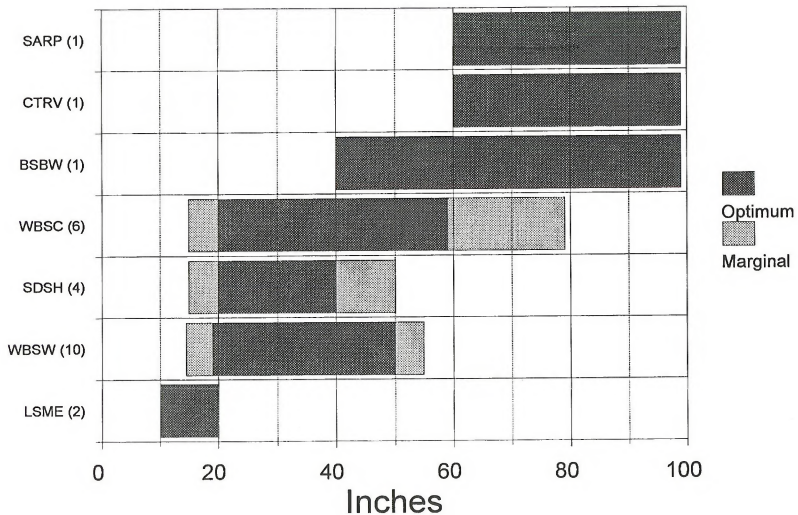


# Soil Temperature Regime (MLRA B11)

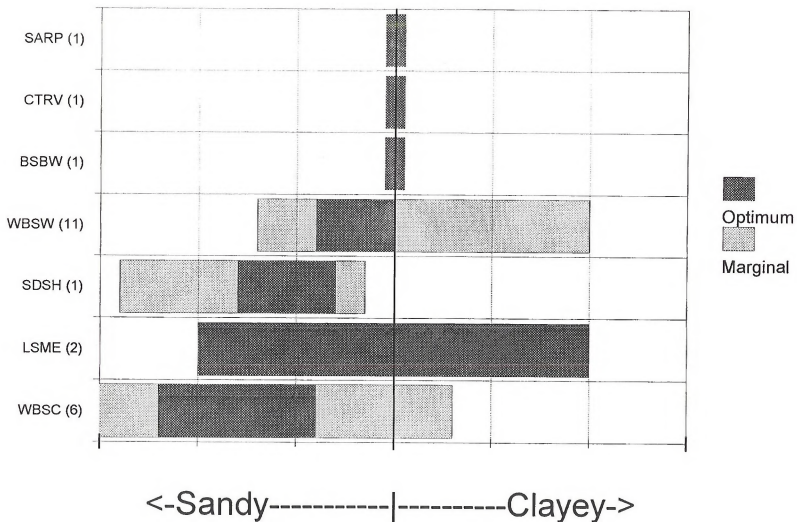


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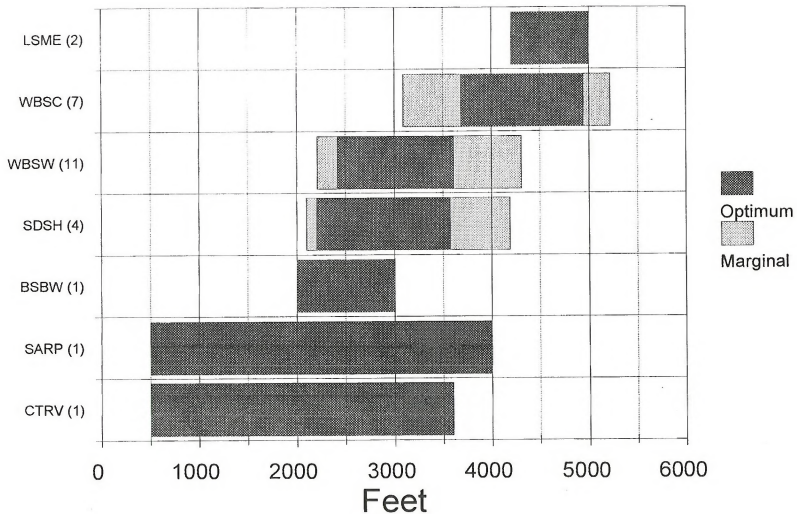
# Soil Depth (MLRA B11)



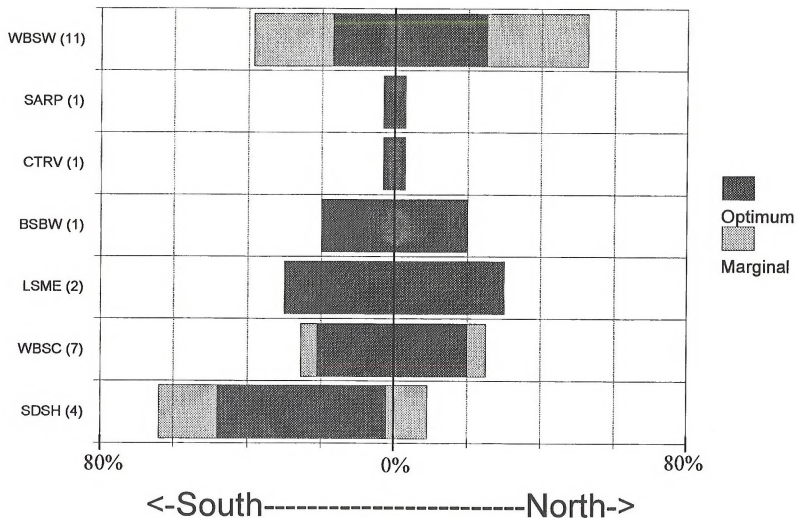
# Soil Texture (MLRA B11)



# Elevation (MLRA B11)



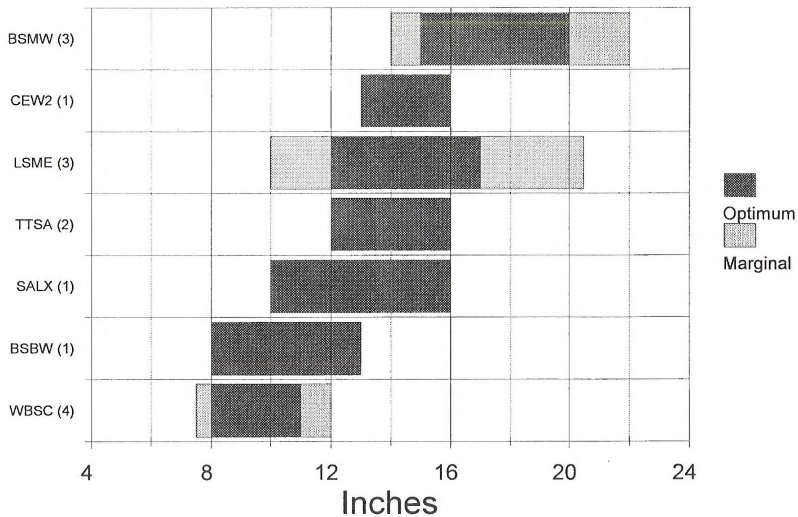
# Slope and Aspect (MLRA B11)



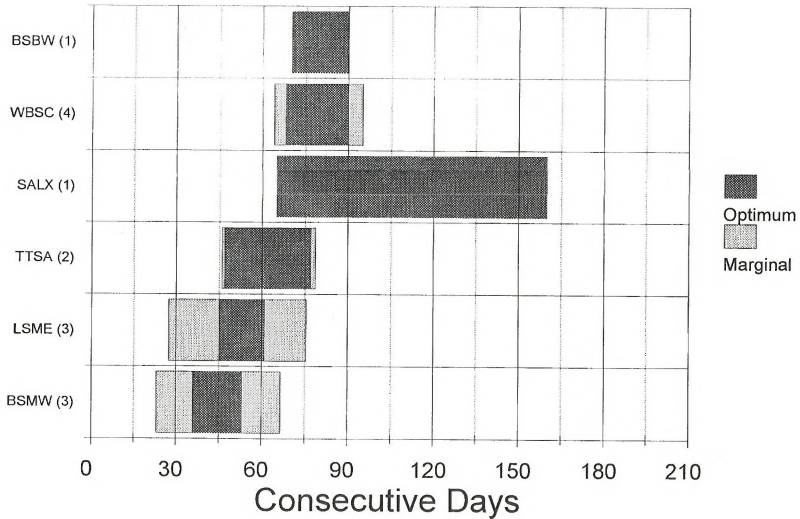




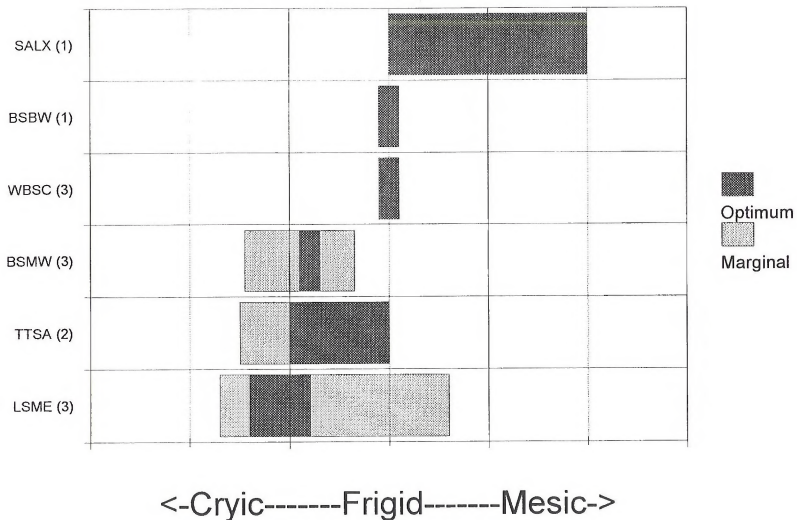
# Precipitation (MLRA B12)



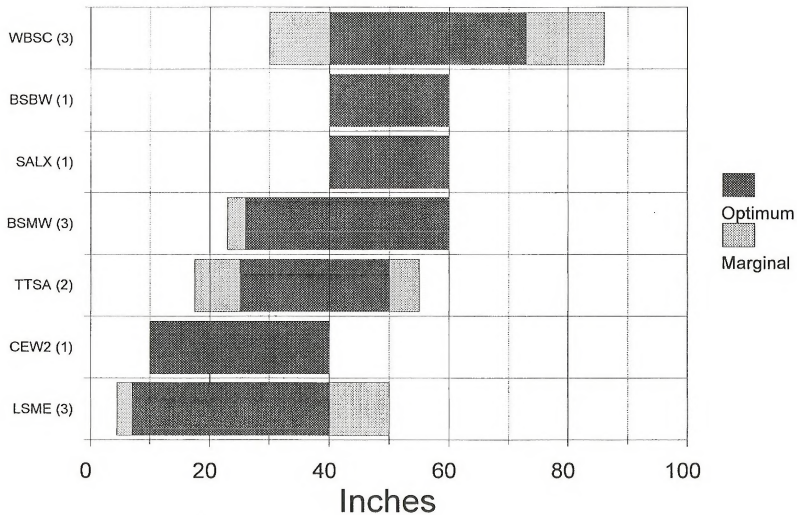
# Frost Free Period (MLRA B12)



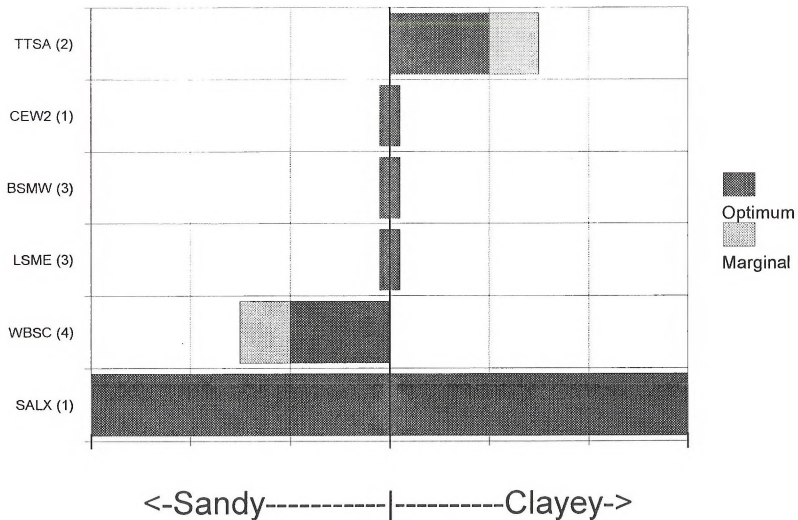
# Soil Temperature Regime (MLRA B12)



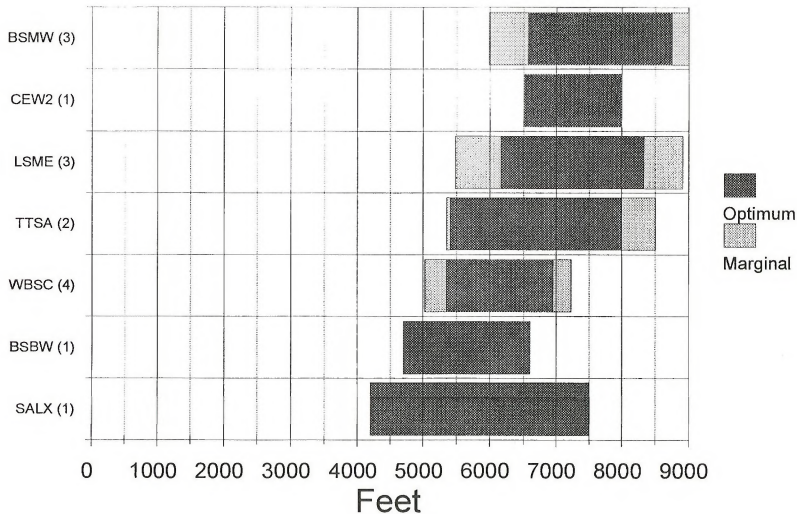
# Soil Depth (MLRA B12)



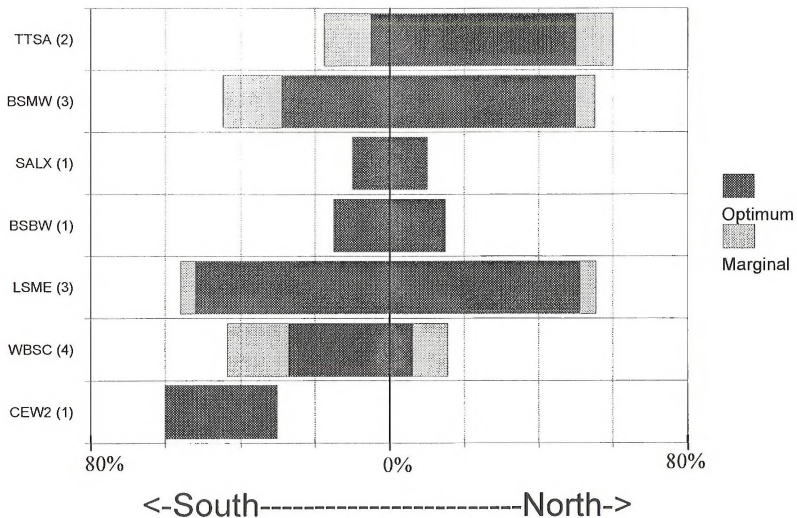
# Soil Texture (MLRA B12)



# Elevation (MLRA B12)



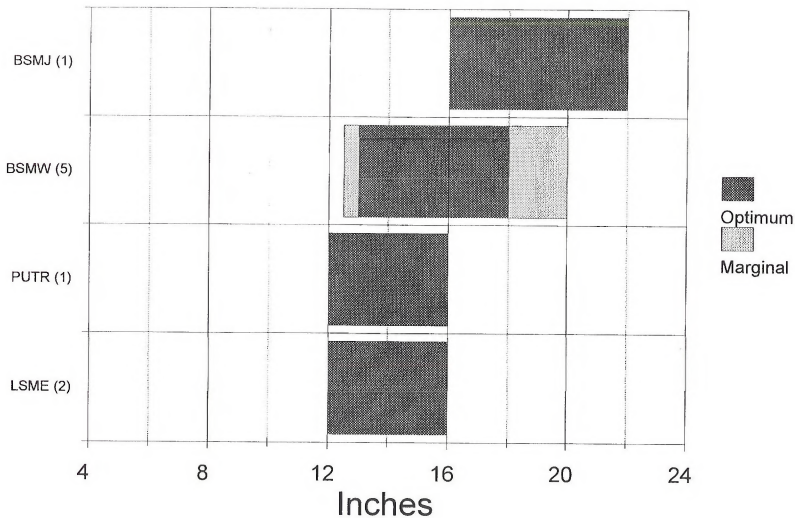
# Slope and Aspect (MLRA B12)



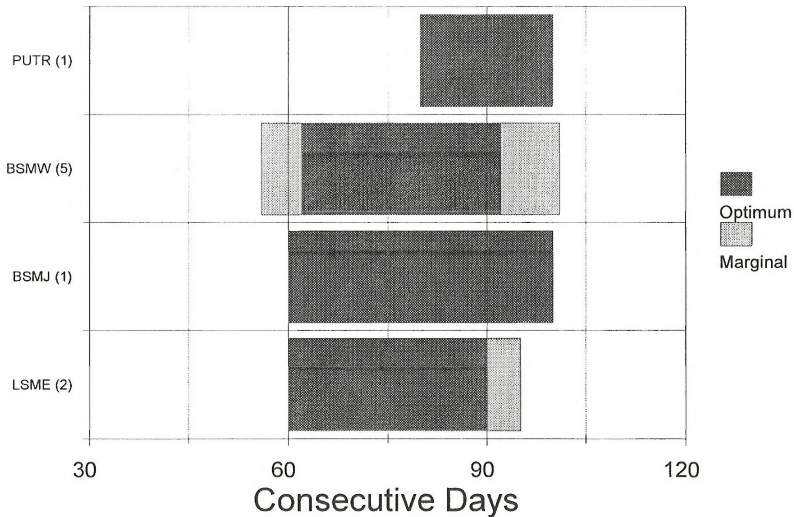




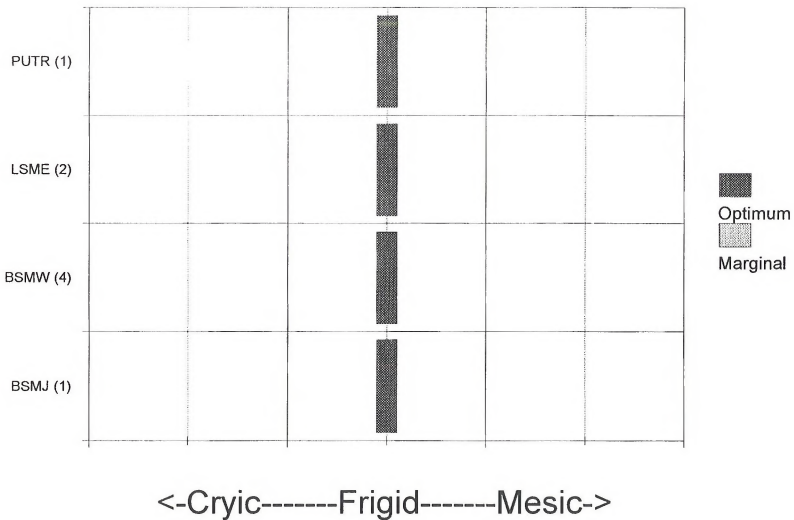
# Precipitation (MLRA 13)



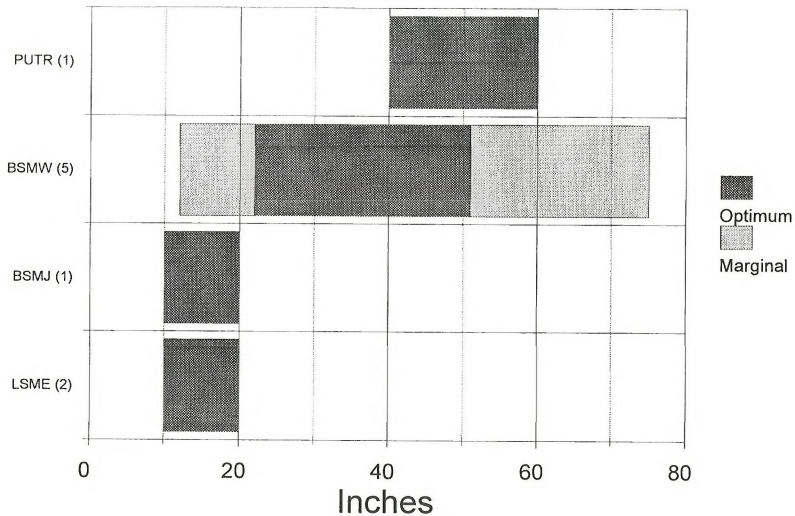
# Frost Free Period (MLRA B13)



# Soil Temperature Regime (MLRA B13)

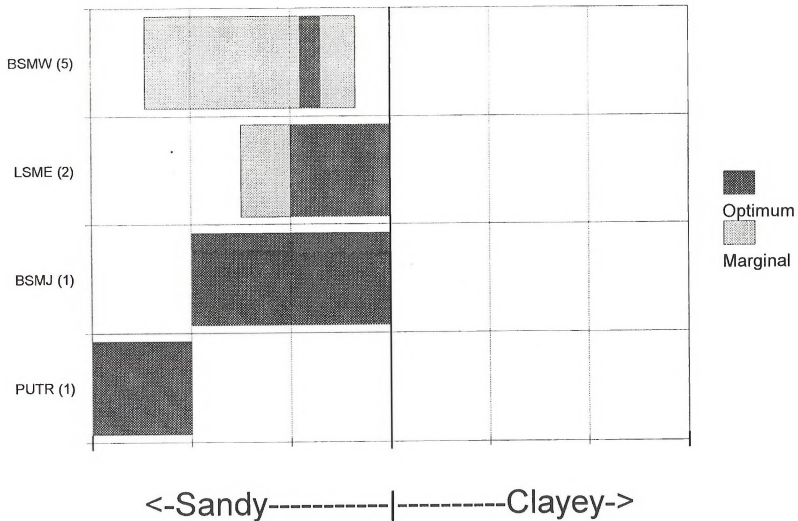


# Soil Depth (MLRA B13)

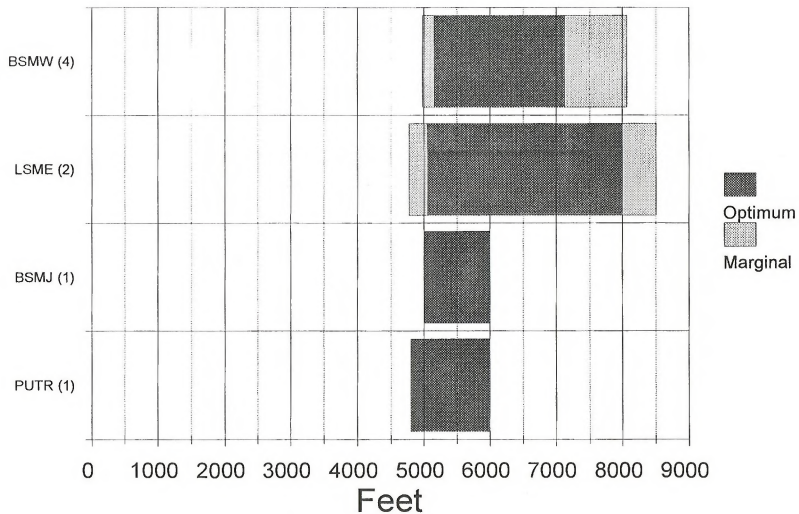


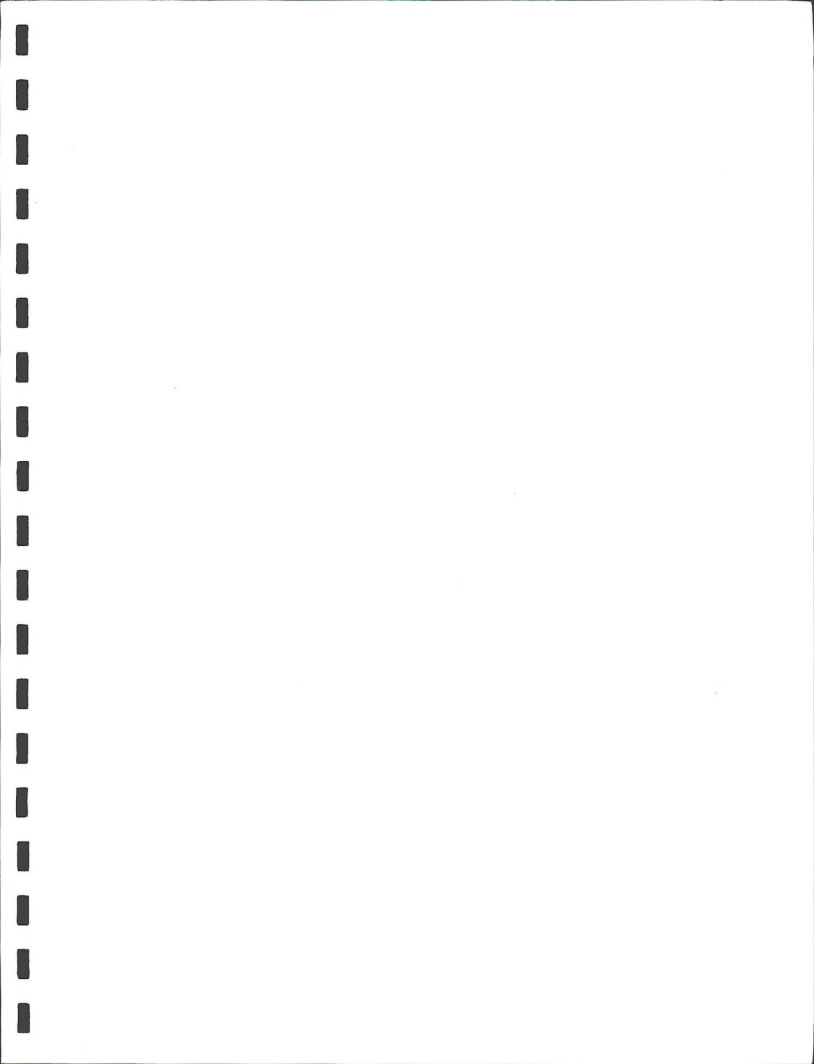
100

# Soil Texture (MLRA B13)



# Elevation (MLRA B13)

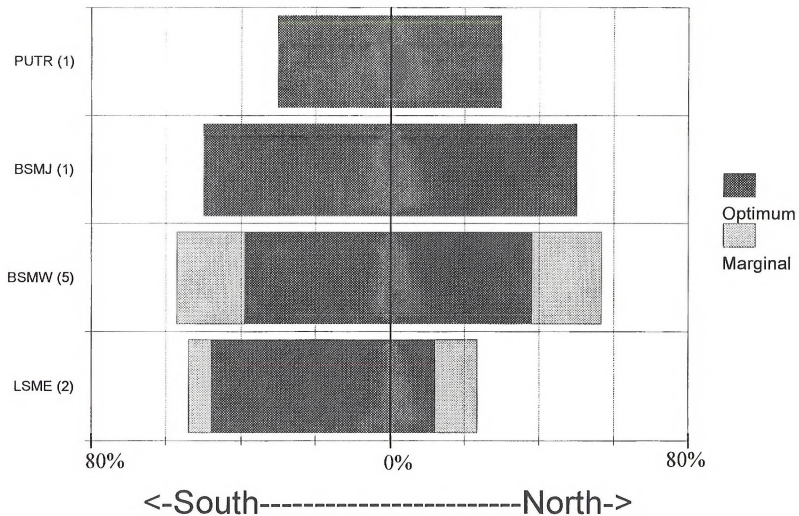






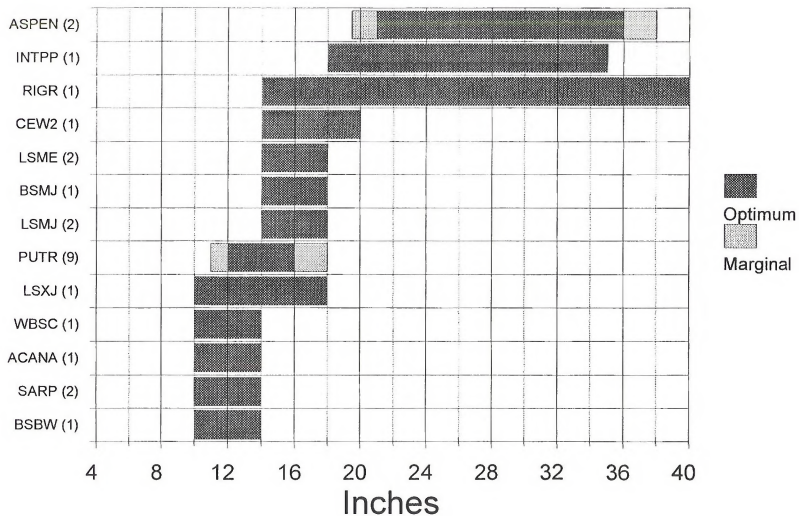


# Slope and Aspect (MLRA B13)

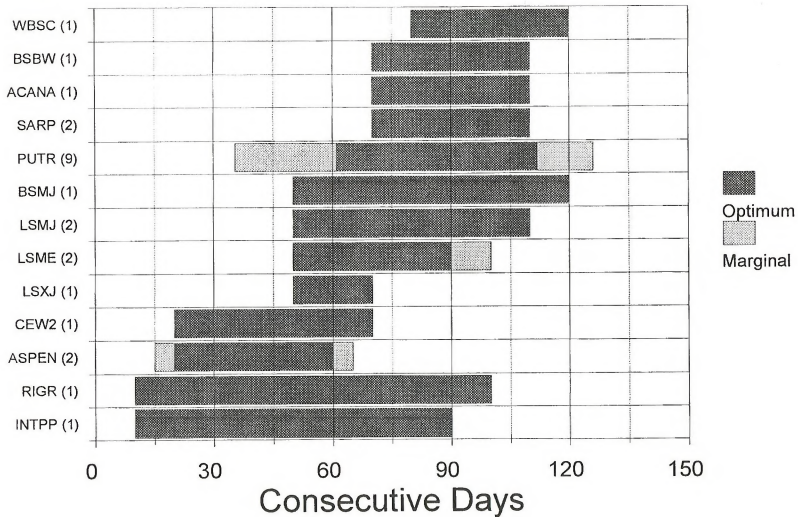




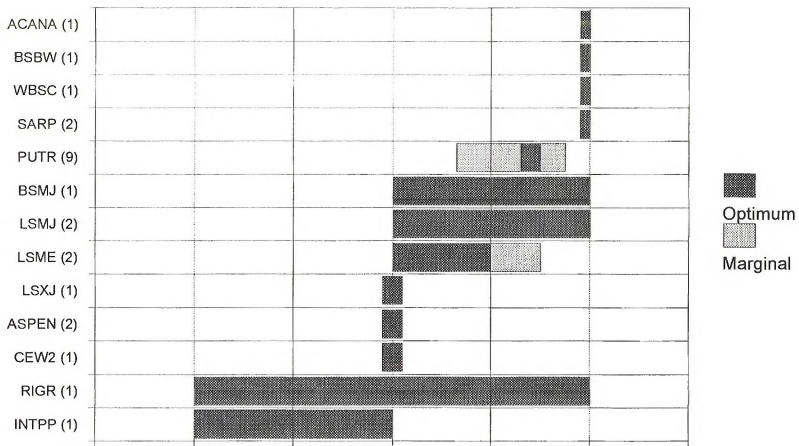
# Precipitation (MLRA D21)



# Frost Free Period (MLRA D21)

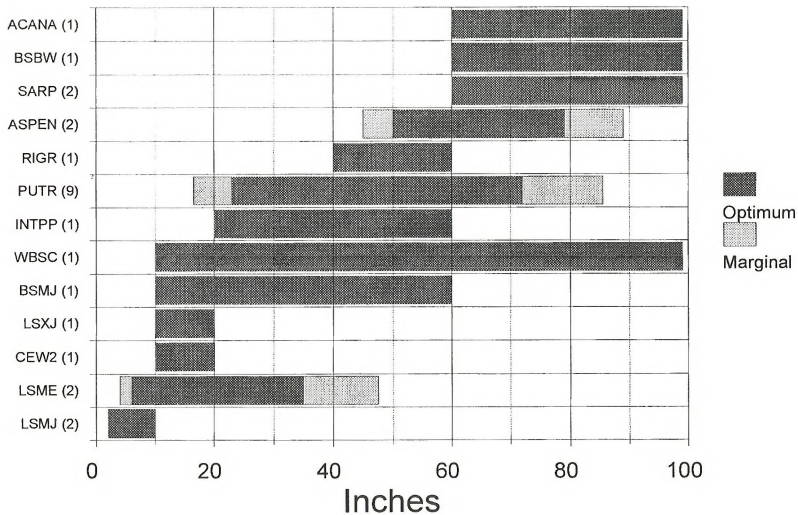


# Soil Temperature Regime (MLRA D21)

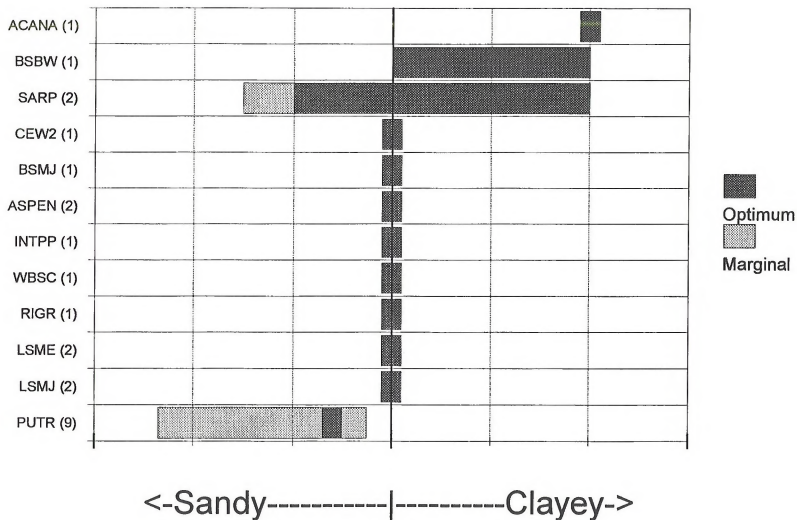


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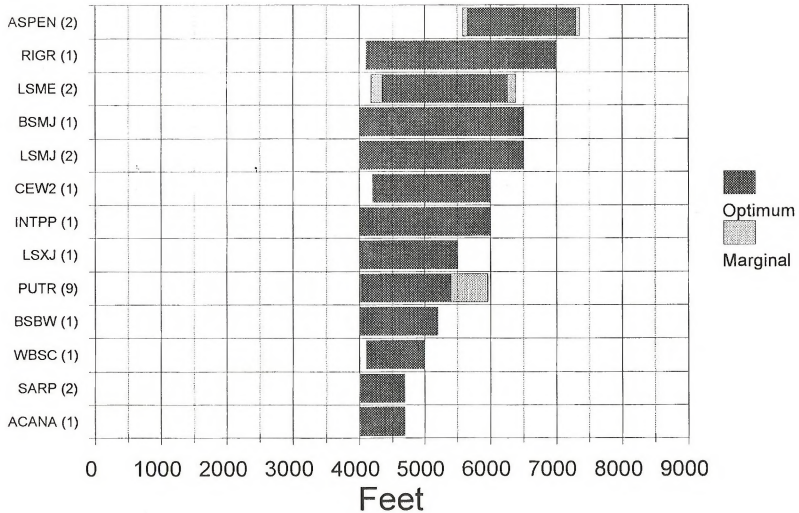
# Soil Depth (MLRA D21)



# Soil Texture (MLRA D21)

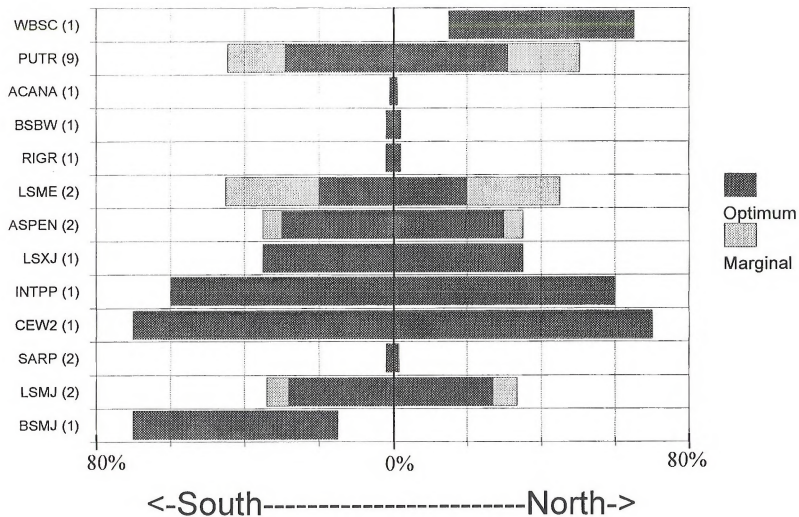


# Elevation (MLRA D21)



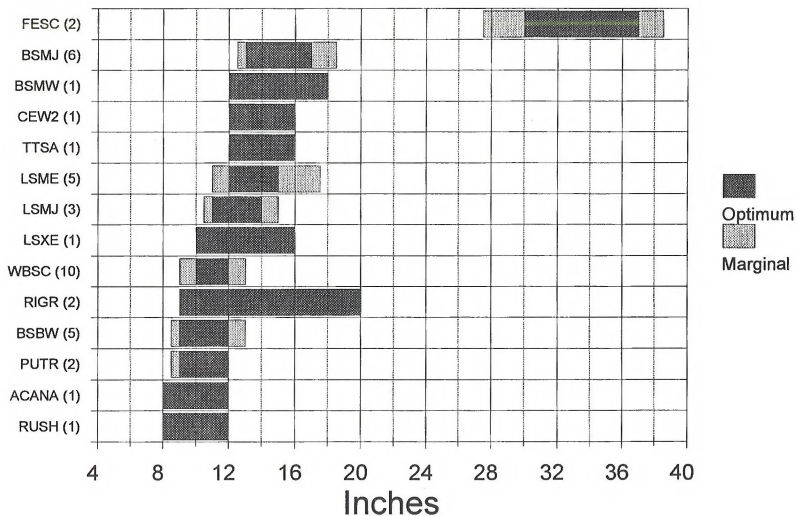


# Slope and Aspect (MLRA D21)

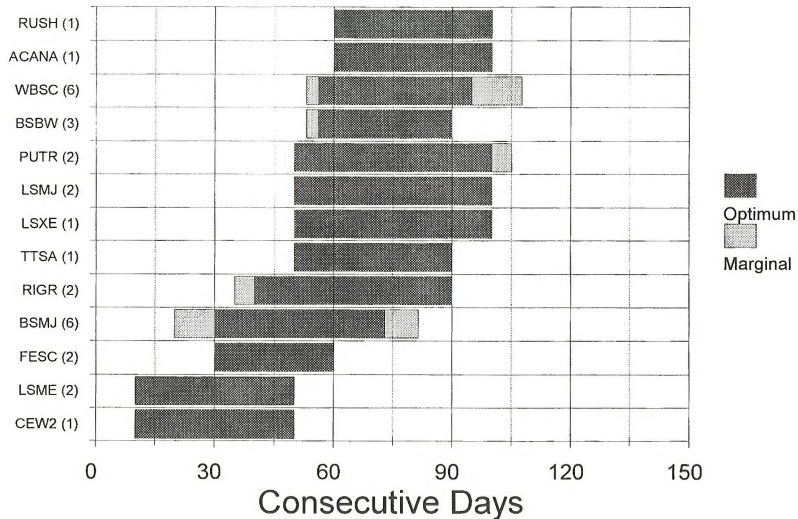




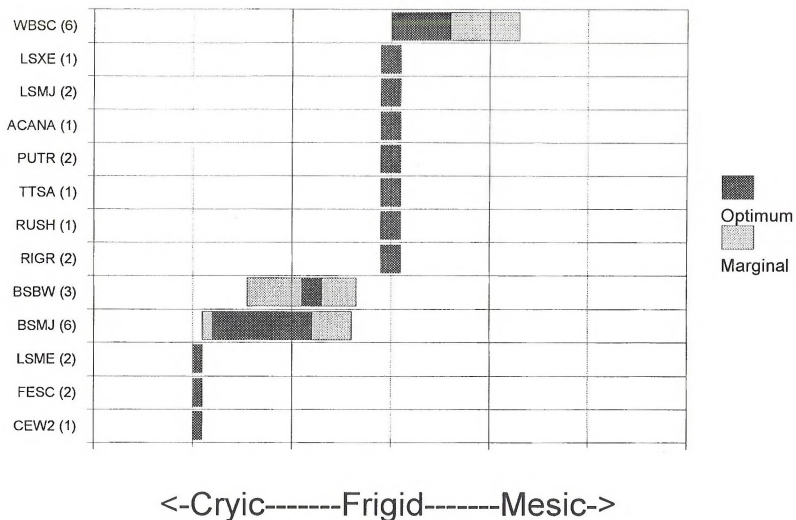
# Precipitation (MLRA D23)



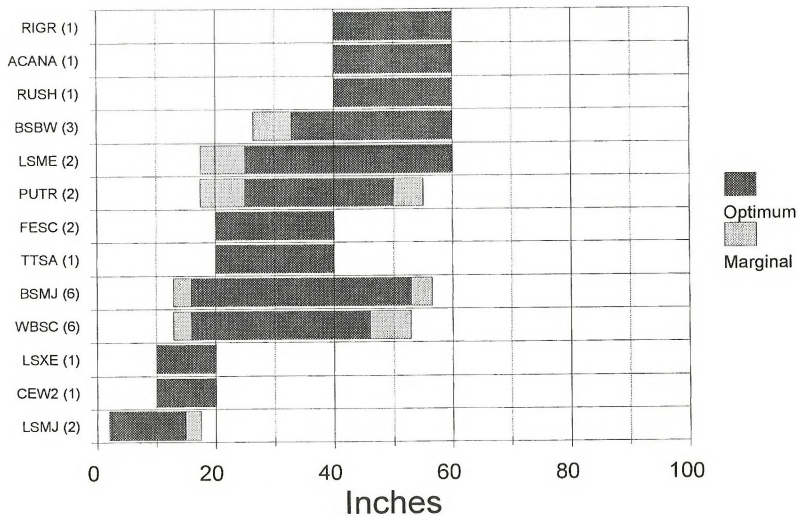
# Frost Free Period (MLRA D23)



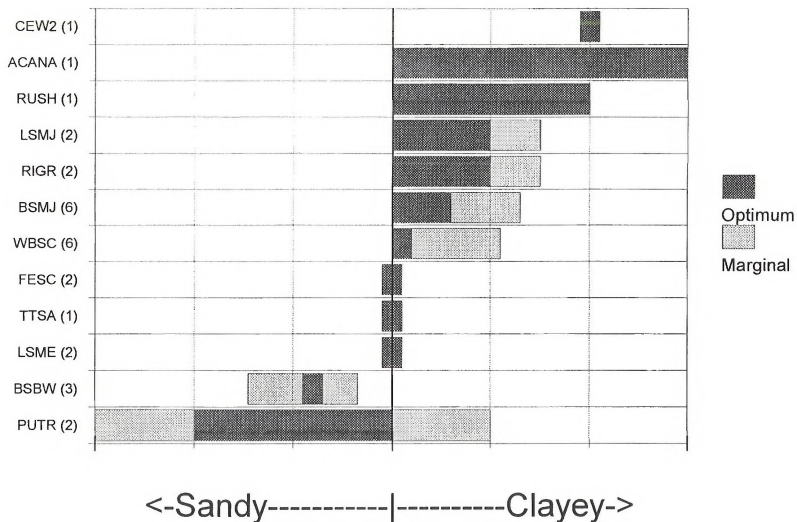
# Soil Temperature Regime (MLRA D23)



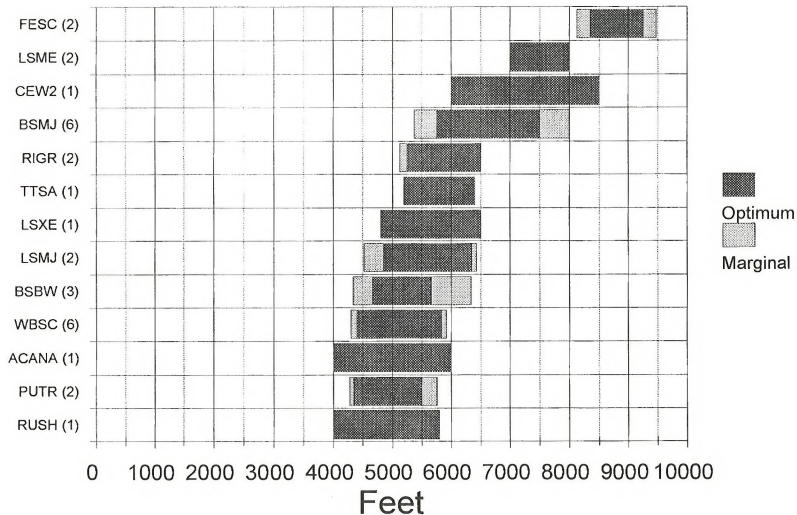
# Soil Depth (MLRA D23)



# Soil Texture (MLRA D23)

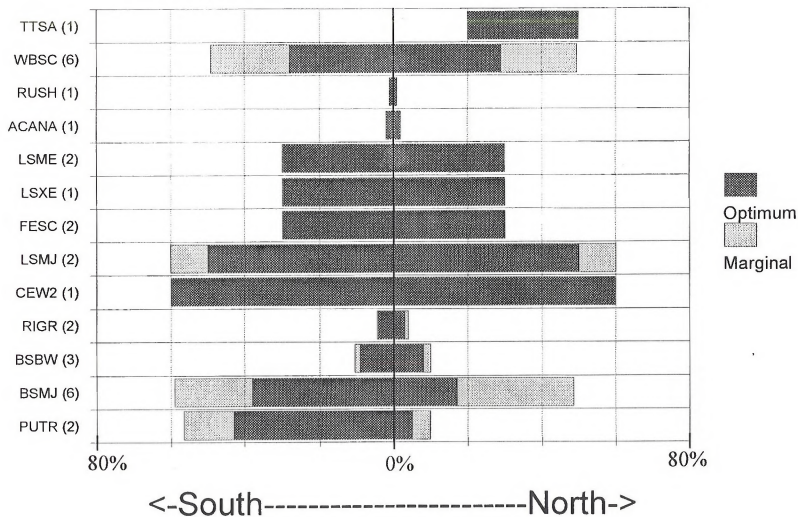


# Elevation (MLRA D23)



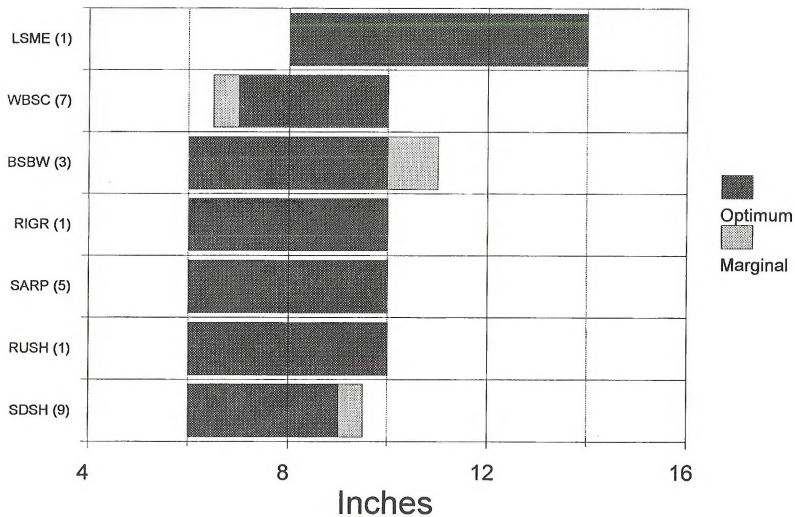


# Slope and Aspect (MLRA D23)

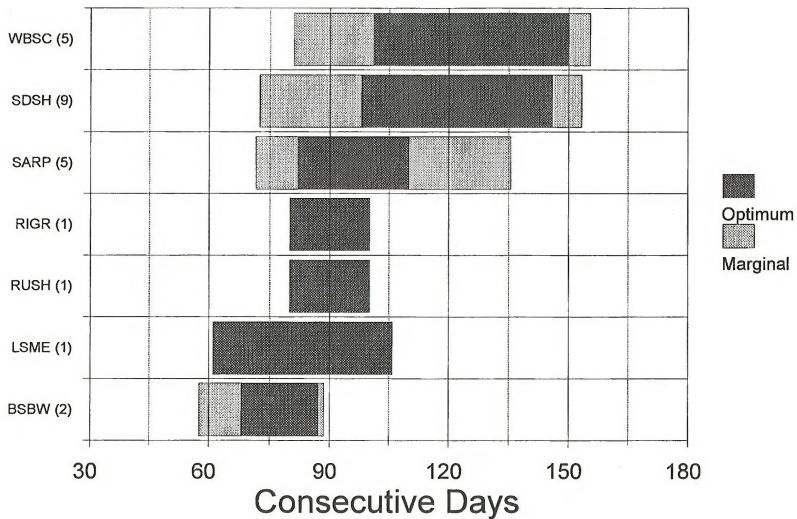




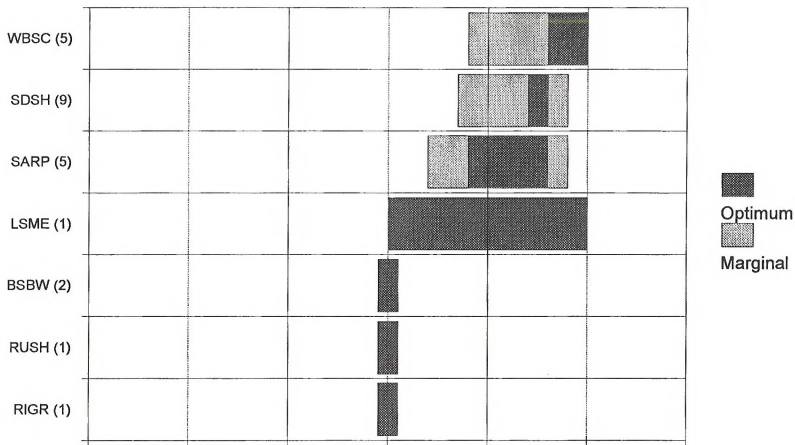
# Precipitation (MLRA D24)



# Frost Free Period (MLRA D24)

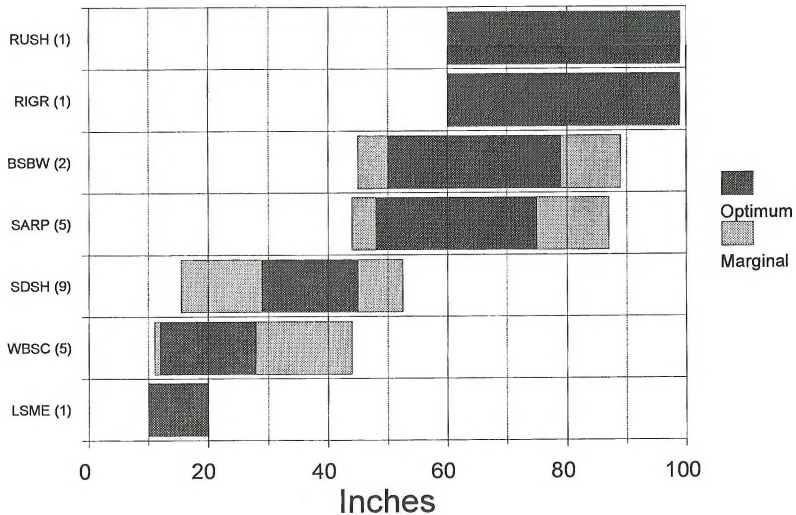


# Soil Temperature Regime (MLRA D24)

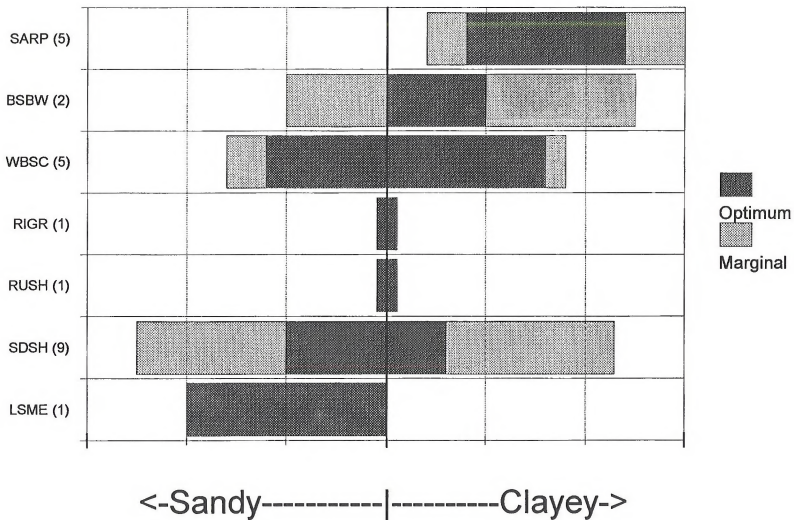


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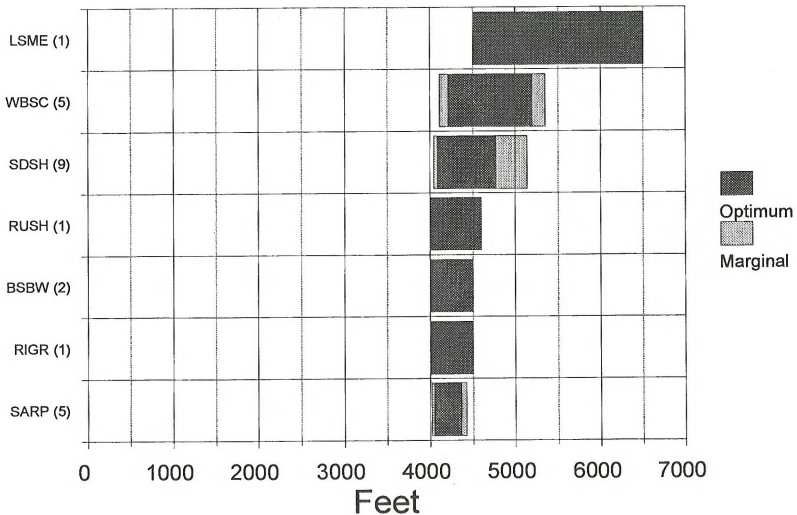
# Soil Depth (MLRA D24)



# Soil Texture (MLRA D24)

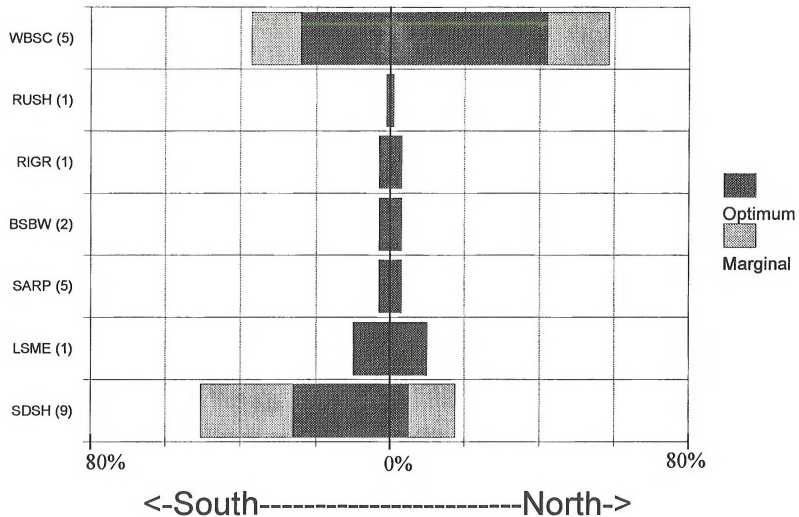


# Elevation (MLRA D24)



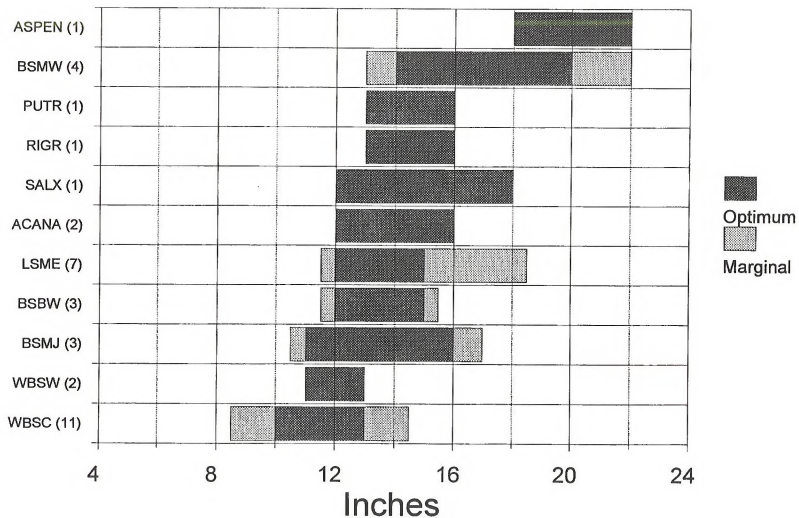


# Slope and Aspect (MLRA D24)

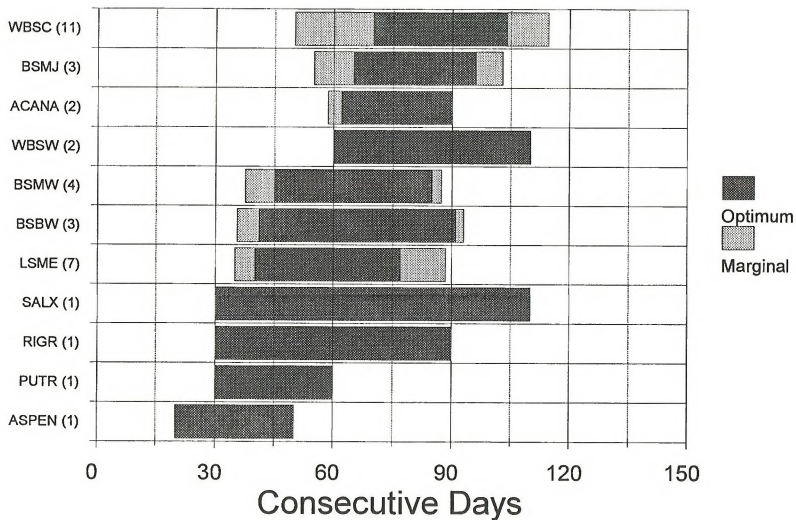




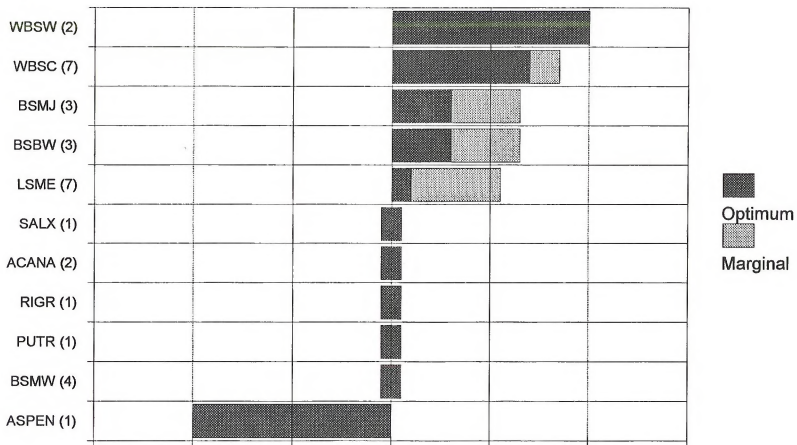
# Precipitation (MLRA D25)



# Frost Free Period (MLRA D25)

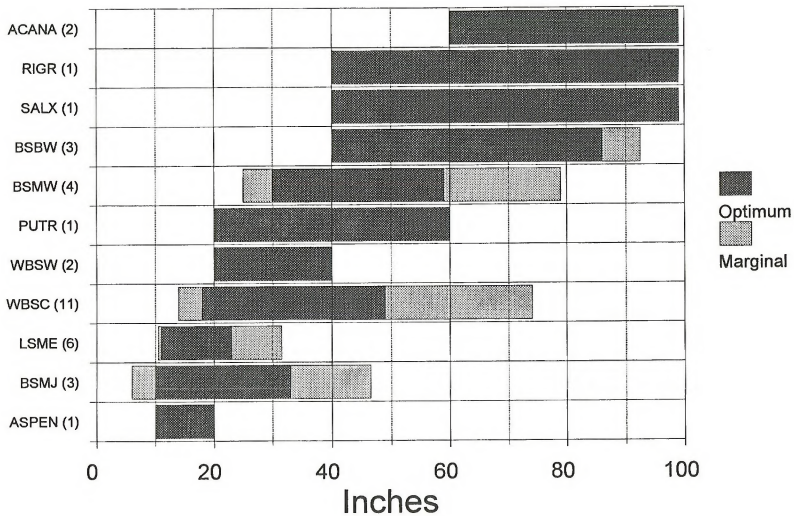


# Soil Temperature Regime (MLRA D25)

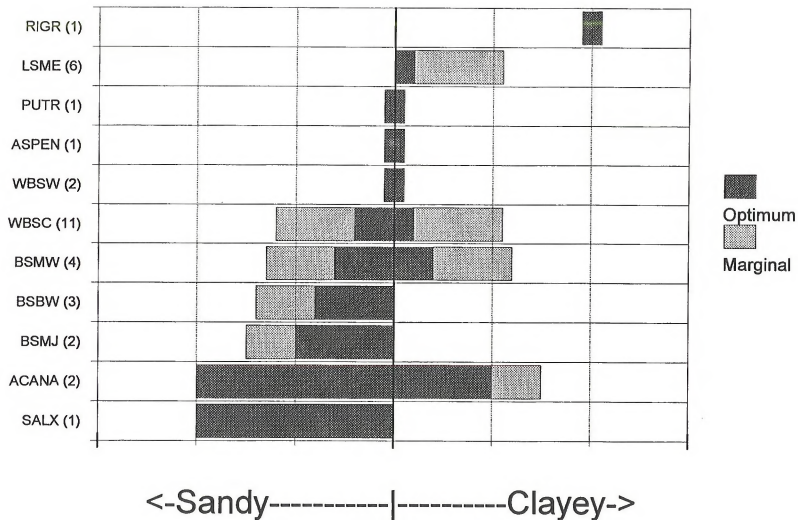


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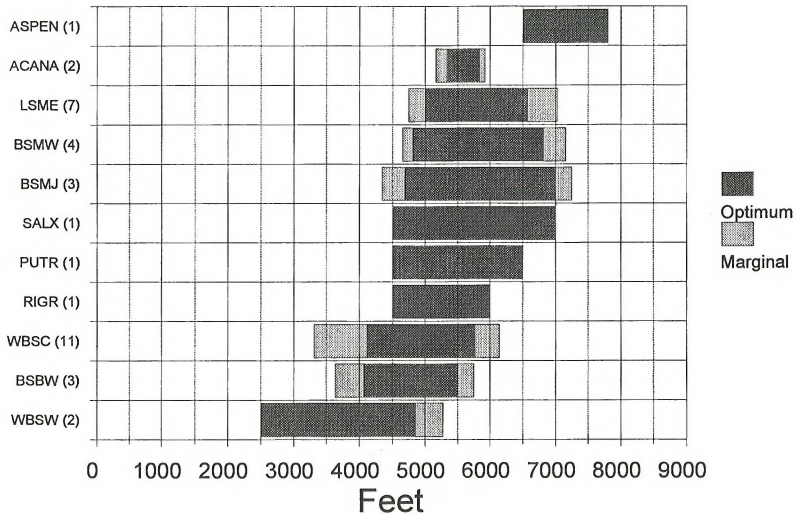
# Soil Depth (MLRA D25)



# Soil Texture (MLRA D25)

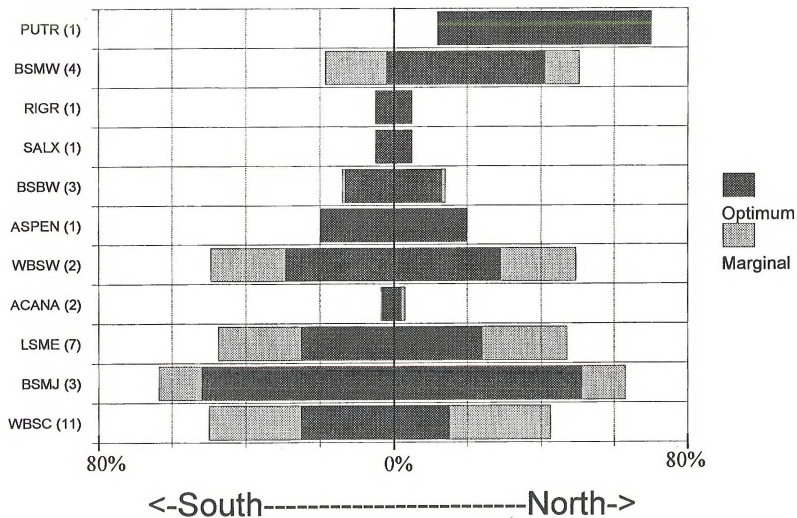


# Elevation (MLRA D25)





# Slope and Aspect (MLRA D25)



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