

TECHNICAL NOTES

November 18, 2003

MO-1 Technical Note Number 42

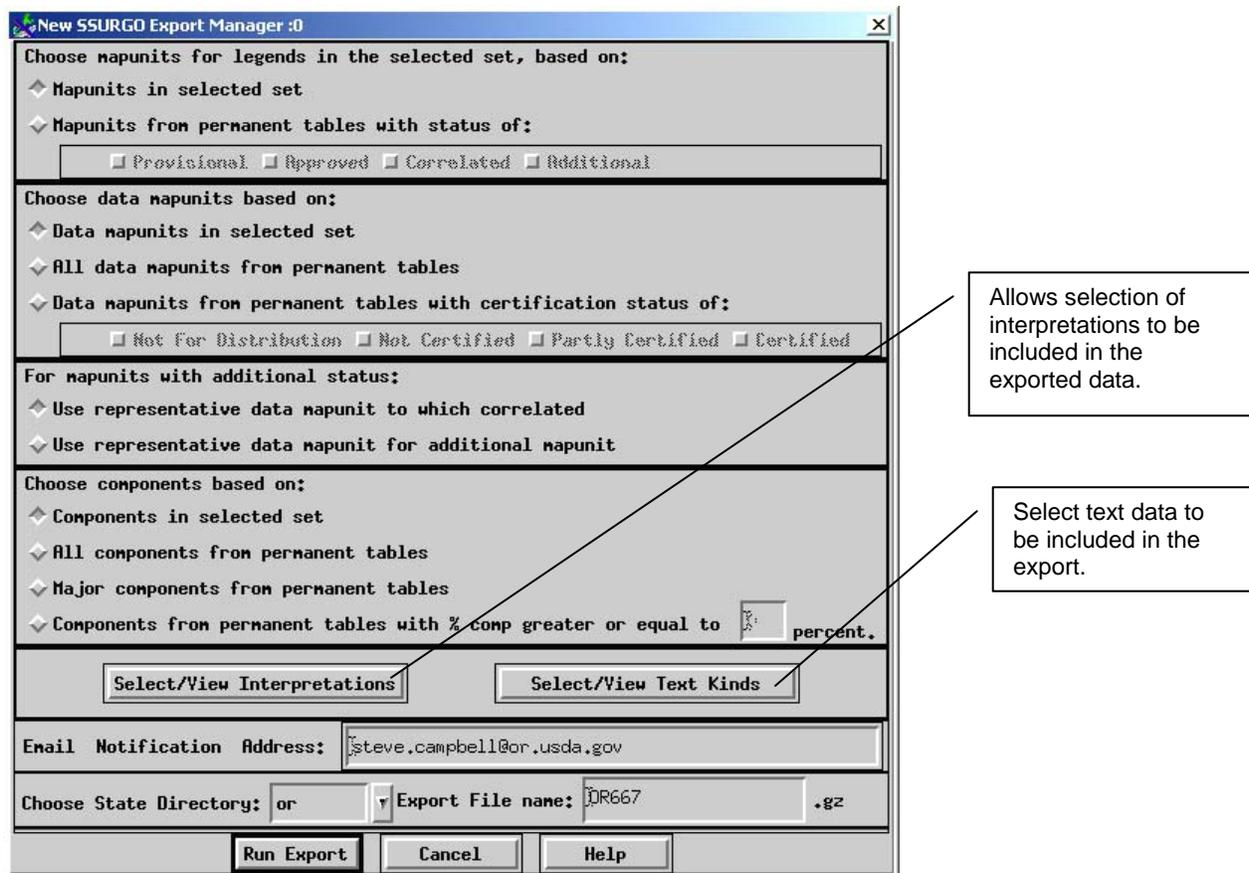
Re: SSURGO Exports from NASIS, the Access Template, and Soil Data Viewer

This technical note provides guidance on the procedures for exporting data from NASIS in the SSURGO format. It also contains information on importing the exported NASIS data into the SSURGO Access template for MO-1, and modification of Soil Data Viewer for local interpretations.

NASIS Exports in the SSURGO Format

Detailed instructions for exporting data from NASIS in the SSURGO format are in the NASIS 5.0 "Getting Started" tutorial, Chapter 5 available from the NASIS website at <http://nasis.usda.gov/documents/tutorial5/>. The following contains specific guidance for SSURGO exports in MO-1.

The SSURGO Export Manager dialog box (below) contains criteria that determine which data will be exported. The user determines which interpretations and text data are included in the export.

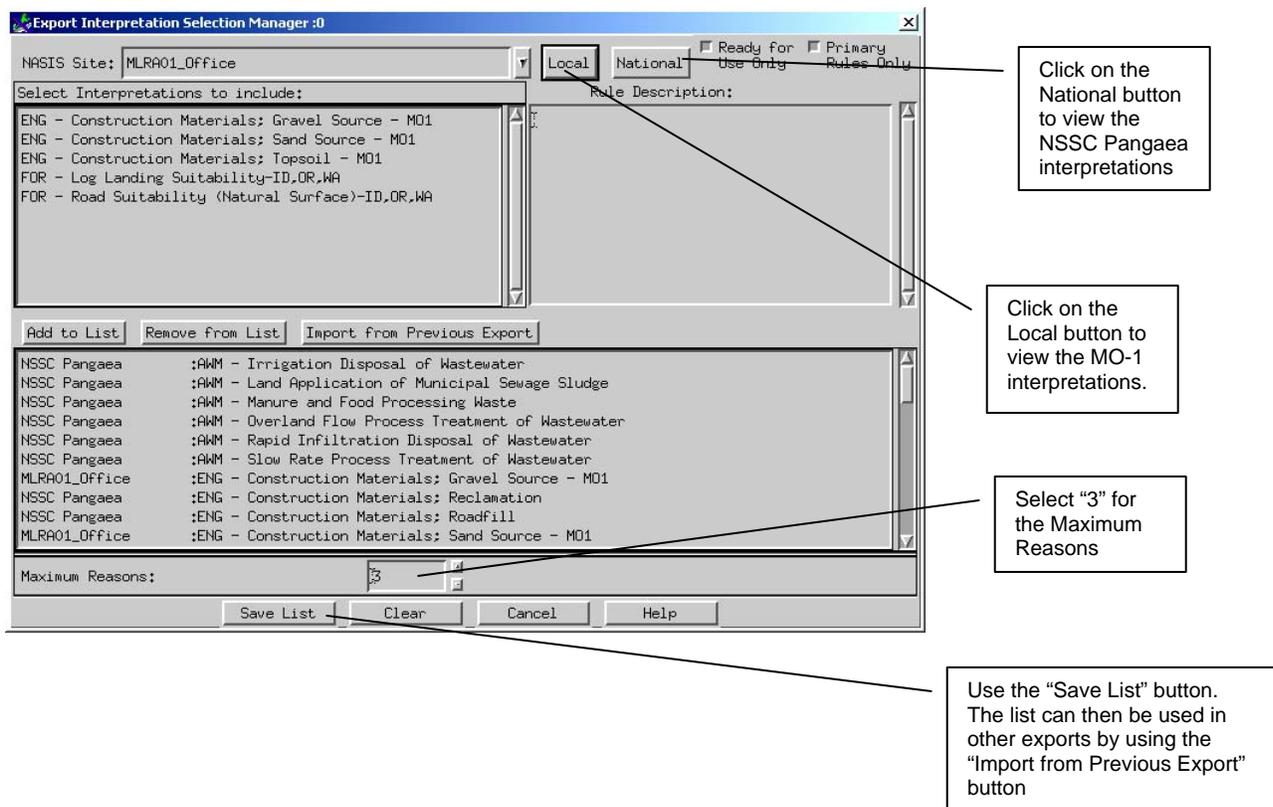


We have developed a number of local interpretations in NASIS for MO-1. The following table includes the recommended NASIS interpretations to be included in SSURGO exports in MO-1. There may be additional interpretations that you want to include for local needs.

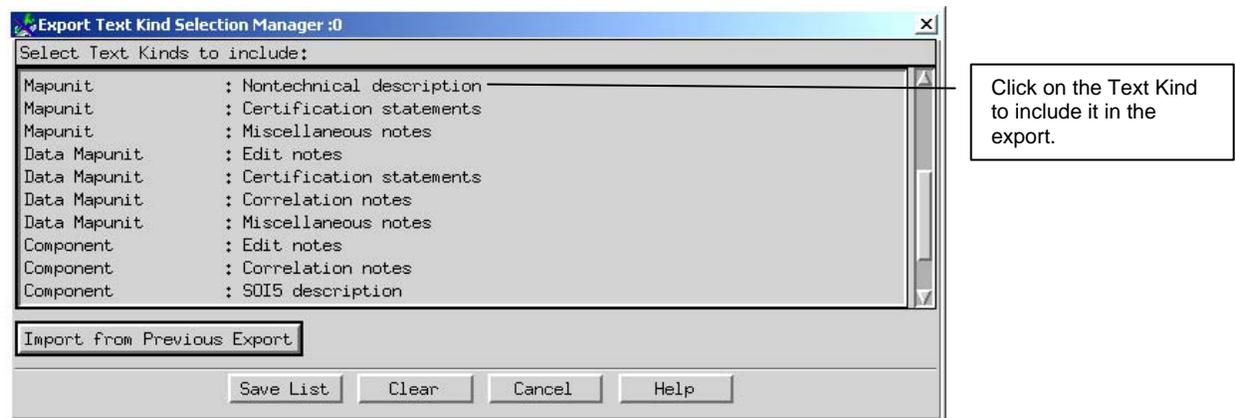
Recommended NASIS Interpretations for SSURGO Exports in MO-1

Interpretation Category	Interpretation Name	NASIS Site
Engineering	ENG - Construction Materials; Gravel Source – MO1	MLRA_01 (Local)
Engineering	ENG - Construction Materials; Reclamation	NSSC Pangaea (National)
Engineering	ENG - Construction Materials; Roadfill	NSSC Pangaea (National)
Engineering	ENG - Construction Materials; Sand Source – MO1	MLRA_01 (Local)
Engineering	ENG - Construction Materials; Topsoil – MO1	MLRA_01 (Local)
Engineering	ENG - Daily Cover for Landfill	NSSC Pangaea (National)
Engineering	ENG - Dwellings W/O Basements	NSSC Pangaea (National)
Engineering	ENG - Dwellings With Basements	NSSC Pangaea (National)
Engineering	ENG - Lawn, Landscape, Golf Fairway	NSSC Pangaea (National)
Engineering	ENG - Local Roads and Streets	NSSC Pangaea (National)
Engineering	ENG - Sanitary Landfill (Area)	NSSC Pangaea (National)
Engineering	ENG - Sanitary Landfill (Trench)	NSSC Pangaea (National)
Engineering	ENG - Septic Tank Absorption Fields	NSSC Pangaea (National)
Engineering	ENG - Sewage Lagoons	NSSC Pangaea (National)
Engineering	ENG - Shallow Excavations	NSSC Pangaea (National)
Engineering	ENG - Small Commercial Buildings	NSSC Pangaea (National)
Forest Management	FOR - Construction Limitations for Haul Roads/Log Landings	NSSC Pangaea (National)
Forest Management	FOR - Hand Planting Suitability	NSSC Pangaea (National)
Forest Management	FOR - Harvest Equipment Operability	NSSC Pangaea (National)
Forest Management	FOR - Log Landing Suitability-ID,OR,WA	MLRA_01 (Local)
Forest Management	FOR - Mechanical Planting Suitability	NSSC Pangaea (National)
Forest Management	FOR - Mechanical Site Preparation (Deep)	NSSC Pangaea (National)
Forest Management	FOR - Mechanical Site Preparation (Surface)	NSSC Pangaea (National)
Forest Management	FOR - Potential Erosion Hazard (Off-Road/Off-Trail)	NSSC Pangaea (National)
Forest Management	FOR - Potential Erosion Hazard (Road/Trail)	NSSC Pangaea (National)
Forest Management	FOR - Potential Fire Damage Hazard	NSSC Pangaea (National)
Forest Management	FOR - Potential Seedling Mortality	NSSC Pangaea (National)
Forest Management	FOR - Road Suitability (Natural Surface)-ID,OR,WA	MLRA_01 (Local)
Forest Management	FOR - Soil Rutting Hazard	NSSC Pangaea (National)
Urban / Recreation	URB/REC - Camp Areas	NSSC Pangaea (National)
Urban / Recreation	URB/REC - Off-Road Motorcycle Trails	NSSC Pangaea (National)
Urban / Recreation	URB/REC - Paths and Trails	NSSC Pangaea (National)
Urban / Recreation	URB/REC - Picnic Areas	NSSC Pangaea (National)
Urban / Recreation	URB/REC - Playgrounds	NSSC Pangaea (National)
Waste Management	AWM - Irrigation Disposal of Wastewater	NSSC Pangaea (National)
Waste Management	AWM - Land Application of Municipal Sewage Sludge	NSSC Pangaea (National)
Waste Management	AWM - Manure and Food Processing Waste	NSSC Pangaea (National)
Waste Management	AWM - Overland Flow Process Treatment of Wastewater	NSSC Pangaea (National)
Waste Management	AWM - Rapid Infiltration Disposal of Wastewater	NSSC Pangaea (National)
Waste Management	AWM - Slow Rate Process Treatment of Wastewater	NSSC Pangaea (National)
Water Management	WMS - Embankments, Dikes, and Levees	NSSC Pangaea (National)
Water Management	WMS - Excavated Ponds (Aquifer-fed)	NSSC Pangaea (National)
Water Management	WMS - Pond Reservoir Areas	NSSC Pangaea (National)

The diagram below shows the NASIS Export Interpretation Selection Manager



Text data can also be included in the NASIS export. If nontechnical descriptions are available in the NASIS Mapunit Text table, they can be included in the export. The Mapunit Text and Component Text Miscellaneous notes should also be included in the export if these NASIS tables have been populated with text for the MO-1 map unit description generator (MUG). The diagram below shows the NASIS Export Text Kind Selection Manager



Importing the NASIS SURGO Export into MO-1 SSURGO Access Templates

Detailed instructions for importing NASIS SSURGO exports into an Access template are available on the NASIS website at <http://nasis.usda.gov/products/>. Click on the link “Using NASIS Exports”.

We have developed local SSURGO Access templates for MO-1. These templates have been modified to include additional reports that are not available in the national templates from the NASIS website. The MO-1 SSURGO Access templates have also been modified so that the local construction materials and forest management interpretations will appear in the standard reports. If you use a national version of the SSURGO Access template, the local interpretations will not appear in the standard reports.

The MO-1 SSURGO Access templates can be downloaded from our website at http://www.or.nrcs.usda.gov/pnw_soil/mo1_templates.html. Templates have been prepared for two types of data:

- soil survey areas that are SSURGO certified and/or have gone through final correlation and the data has been reviewed and validated.
- soil surveys in progress or other uncertified data where review and validation is incomplete. Reports in this template will display “DRAFT – Subject to Change” at the top of each page.

E-mail notifications of updates to the templates will be periodically sent to MO-1 soil scientists.

Six local reports have been developed for the MO-1 SSURGO Access templates. The following section contains names and brief descriptions of the local reports. Additional reports may be added to future versions of the templates.

1. **Map Unit Descriptions - MO1:** designed to produce an abbreviated semi-tabular map unit description. The intent is to serve as a partial replacement for the single-phase interpretation sheets that were available when SOILS-5 forms were used for soils data.
2. **MANU MO1 - Table B6 - Land Capability Classification:** displays both the nonirrigated and irrigated land capability subclasses by component with percent composition.
3. **MANU MO1 - Table C3. Eco. Site/Plant Assoc. w/ Production & Forest Understory:** displays either the Component Ecological Site or Component Other Vegetative Classification name and ID number with range or forest understory production and composition.
4. **MANU MO1 - Table C4 Ecological Site / Plant Assoc. and Vegetation:** displays either the Component Ecological Site or Component Other Vegetative Classification name and ID number with common trees from the Component Forest Productivity table and composition.
5. **MANU MO1 - Table E1a - Forest Productivity w/ base age:** displays common trees, site index, site index base age, CMAI, and trees to manage. The national report Table E1 does not display the site index base age.
6. **MANU MO1 – Table Y2 - Prime and Important Farmland:** displays map units that are prime farmland by category, unique farmland, farmland of statewide importance, and farmland of local importance. The national report Table Y only displays prime farmland.

Examples of these local reports are in the Exhibits at the end of this technical note.

Modifying Soil Data Viewer for Local MO-1 Interpretations

Soil Data Viewer must be modified in order to create maps and reports using local MO-1 Interpretations. These modifications must be made on each computer workstation where Soil Data Viewer is installed.

Detailed instructions are available for modifying Soil Data Viewer at the following web site: http://www.itc.nrcs.usda.gov/soildataviewer/user_guides.htm. Click on the link “Modifying Soil Data Viewer 3.0 Rules File for Local Interpretations”.

When Soil Data Viewer is installed, a file named “SDVRulesV2.mdb” is placed in the C:\Program Files\USDA\Soil Data Viewer\Databases folder. This is an Access database file and must be modified in order to use local interpretations in Soil Data Viewer. The following steps need to be followed to modify this file:

1. Make a copy of the “SDVRulesV2.mdb” file and give it another file name. This is done in case the file is damaged during the next steps.
2. Open the “SDVRulesV2.mdb” file by double clicking the file name. It will open in Access. If you are using Access 2002, you will need to convert the database to either Access 2000 or 2002 in order to make edits. To do this, click on “Tools, Database Utilities, Convert Database” and save the file with a new name.
3. Open the “Attributes” table by double clicking the table name or clicking the “Open” button. Locate the column named “SQLWhere”
4. Make the following modifications to the SQLWhere data. Add the text in bold.

Original SQLWhere Name	Modified SQLWhere Name
ruleddepth=0 and mrulename='ENG - Construction Materials; Sand Source '	ruleddepth=0 and mrulename='ENG - Construction Materials; Sand Source - MO1 '
ruleddepth=0 and mrulename='ENG - Construction Materials; Gravel Source'	ruleddepth=0 and mrulename='ENG - Construction Materials; Gravel Source - MO1 '
ruleddepth=0 and mrulename='ENG - Construction Materials; Topsoil Source'	ruleddepth=0 and mrulename='ENG - Construction Materials; Topsoil Source - MO1 '
ruleddepth=0 and mrulename='FOR - Log Landing Suitability'	ruleddepth=0 and mrulename='FOR - Log Landing Suitability- ID,OR,WA '
ruleddepth=0 and mrulename='FOR - Road Suitability (Natural Surface)'	ruleddepth=0 and mrulename='FOR - Road Suitability (Natural Surface)- ID,OR,WA '

5. Save the edited Access file and rename it as “SDVRulesV2.mdb”.

Mapunit Descriptions

Crater Lake National Park, Oregon

22 - Grousehill gravelly medial loam, 0 to 25 percent slopes

Mean annual precipitation: 50 to 70 inches

Frost-free period: 10 to 35 days

Mean annual temperature: 38 to 42 degrees F

Farmland class: Not prime farmland

Grousehill and similar soils

Extent: about 85 percent of the unit

Landform(s): ground moraine

Slope gradient: 0 to 25 percent

Parent material: volcanic ash derived from dacite over till derived from andesite

Restrictive feature(s): duripan at 20 to 40 inches

Seasonal high water table: approximately 10 inches

Flooding frequency: none

Ponding frequency: none

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, non-irrigated: 6e

Land capability class, irrigated:

Drainage class: moderately well drained

Hydric soil class: no

Hydrologic group: C

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available Water Capacity</i>	<i>pH</i>	<i>Kw</i>	<i>Kf</i>
Oi --	0 to 3 in	slightly decomposed plant material	----				
A --	3 to 10 in	gravelly medial loam	moderate	2.3 to 3.0 in	6.1 to 6.5	.15	.32
Bw1 --	10 to 31 in	very cobbly medial loam	moderate	5.3 to 8.5 in	6.1 to 6.5	.10	.43
Bw2 --	31 to 39 in	very cobbly medial loam	moderate	2.0 to 3.1 in	6.1 to 6.5	.10	.43
Bqm --	39 to 56 in	cemented material	slow				

Ecological Site / Plant Association: Tsuga mertensiana/Vaccinium scoparium/Chimaphila umbellata (F003XY701OR)

Table B6 - Land Capability Classification

Wallowa County Area, Oregon

NIRR is for nonirrigated conditions. IRR is for irrigated conditions.

Map Symbol: Mapunit Name and Soil Name	Percent Composition	Land Capability Subclass - NIRR	Land Capability Subclass - IRR
21: BALM-CATHERINE COMPLEX, 0 TO 3 PERCENT SLOPES			
BALM	50	4c	2w
CATHERINE	40	2w	2w
25: BOCKER-ANATONE-ROCK OUTCROP COMPLEX, 15 TO 30 PERCENT SLOPES			
BOCKER	60	7s	---
ANATONE	15	7s	---
ROCK OUTCROP	10	8s	---
45: CHESNIMNUS SILT LOAM, 0 TO 3 PERCENT SLOPES			
CHESNIMNUS	85	3c	3c
46: CHESNIMNUS GRAVELLY LOAM, 0 TO 3 PERCENT SLOPES			
CHESNIMNUS	85	3c	3c
47: CHEVAL SILT LOAM, 0 TO 2 PERCENT SLOPES			
CHEVAL	85	4w	4w
50: CONLEY SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES			
CONLEY	90	3w	3w
51: CONLEY SILTY CLAY LOAM, 2 TO 8 PERCENT SLOPES			
CONLEY	90	3w	3w
52: COPPERFIELD-THIESSEN COMPLEX, 30 TO 60 PERCENT NORTH SLOPES			
COPPERFIELD	50	6e	---
THIESSEN	35	7s	---
82: FREELS SILT LOAM, 0 TO 3 PERCENT SLOPES			
FREELS	85	3c	3c
84: GELSINGER SILT LOAM, 2 TO 8 PERCENT SLOPES			
GELSINGER	85	2e	3e
130: HERSHAL SILT LOAM, 0 TO 2 PERCENT SLOPES			
HERSHAL	85	3w	3w

Table C3. - Ecological Site or Plant Association Productivity and Characteristic Plant Communities

Wallowa County Area, Oregon

Composition of forest site understory is based on canopy cover. Composition of range sites is based on dry weight.

Map Symbol and Soil Name	Ecological Site or Plant Association	Rangeland or Forest Understory					
		Total Dry-Weight Production			Characteristic Vegetation	Composition	
		Favorable Year	Normal Year	Unfavorable Year			
		Lb/Acre	Lb/Acre	Lb/Acre		Pct	
1:							
AKERITE	grand fir/grouse huckleberry (blueberry) (CWS811)	---	---	---	grand fir	40	
					grouse blueberry	25	
					pinegrass	20	
					Douglas fir	10	
					Engelmann's spruce	10	
					elk sedge	5	
					heartleaf arnica	5	
					prince's pine	5	
					shinyleaf spirea	5	
7:							
ANATONE	MOUNTAIN SHALLOW 13+PZ (R009XY022OR)	1,300	900	500	Idaho fescue	70	
					bluebunch wheatgrass	25	
BOCKER	MOUNTAIN VERY SHALLOW 13+PZ (R009XY027OR)	600	400	200	bluebunch wheatgrass	45	
					Sandberg bluegrass	25	
					onespike oatgrass	10	
					Idaho fescue	5	
45:							
CHESNIMNUS	MOUNTAIN LOAMY 13-17PZ (R009XY017OR)	1,600	1,200	900	Idaho fescue	65	
					bluebunch wheatgrass	25	
152:							
KLICKEK	ponderosa pine/common snowberry (CPS522)	---	---	---	ponderosa pine	40	
					common snowberry	30	
					pinegrass	20	
					elk sedge	10	
					shinyleaf spirea	10	
					heartleaf arnica	5	

Table C4. - Ecological Site or Plant Association and Characteristic Vegetation

Olympic National Forest Area, Washington (parts Of Clallam, Grays Harbor, Jefferson, And Mason Counties)

Composition of forest site understory is based on canopy cover. Composition of range sites is based on dry weight.

Map Symbol and Soil Name	Ecological Site or Plant Association	Common Trees	Forest Understory or Rangeland Characteristic Vegetation	Composition (Pct)
405C0: Louella	PSME/GASH (CDS2 55)	Douglas fir Pacific dogwood western hemlock western white pine	salal cascade Oregongrape vine maple western swordfern creambush oceanspray northern twinflower western fescue baldhip rose broadleaf starflower common beargrass prince's pine red huckleberry Saskatoon serviceberry trailing blackberry western rattlesnake plantain white hawkweed	56 12 10 3 2 2 2 1 1 1 1 1 1 1 1 1
506N7: Fircreek	TSHE/GASH/POMU (CHS1 37)	bigleaf maple cascara buckthorn Douglas fir Pacific dogwood Pacific silver fir Pacific yew red alder western hemlock western redcedar	salal vine maple western swordfern cascade Oregongrape red huckleberry northern twinflower deerfoot vanillaleaf Pacific trillium trailing blackberry	39 19 17 10 8 3 1 1 1

Table E1a. - Forest Productivity

Wallowa County Area, Oregon

Map Symbol and Soil Name	Potential Productivity				Trees to Manage
	Common Trees	Site Index (ft)	Base Age (yrs)	Volume of Wood Fiber (CMAI)	
Cu Ft/Acre/Yr					
1: AKERITE	Douglas fir	75	50	51	Douglas fir
	grand fir	---	---	---	grand fir
	lodgepole pine	100	100	102	ponderosa pine
	ponderosa pine	104	100	110	western larch
	western larch	64	50	89	
14: ANATONE					---
KAMELA	Douglas fir	60	50	44	Douglas fir
	grand fir	54	50	64	ponderosa pine
	ponderosa pine	70	100	55	western larch
	western larch	47	50	58	
29: BTREE	Douglas fir	58	50	41	Douglas fir
	Engelmann's spruce	---	---	---	grand fir
	grand fir	65	50	85	western larch
	western larch	55	50	72	
FLYCREEK	Douglas fir	60	50	44	Douglas fir
	grand fir	53	50	62	grand fir
	lodgepole pine	---	---	---	ponderosa pine
	ponderosa pine	76	100	63	western larch
	western larch	52	50	67	
54: COWSLY	Douglas fir	76	50	73	Douglas fir
	ponderosa pine	86	100	78	ponderosa pine
	western larch	---	---	---	western larch
74: FERGUSON	Douglas fir	72	50	65	Douglas fir
	Engelmann's spruce	101	100	111	Engelmann's spruce
	grand fir	59	50	74	grand fir
	lodgepole pine	---	---	---	western larch
	western larch	63	50	87	
86: GETAWAY	Douglas fir	---	---	---	Douglas fir
	ponderosa pine	91	100	87	ponderosa pine
	western larch	57	50	76	western larch

Table Y2 - Prime and Important Farmland

Marion County Area, Oregon

Only the soils considered prime farmland, unique farmland, and farmland of statewide importance are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parenthesis after the soil name.

Map Symbol	Soil Name
AbA	Abiqua silty clay loam, 0 to 3 percent slopes (All areas are prime farmland)
AbB	Abiqua silty clay loam, 3 to 5 percent slopes (All areas are prime farmland)
Am	Amity silt loam (Prime farmland if drained)
Ba	Bashaw clay (Farmland of statewide importance)
Ca	Camas gravelly sandy loam (Farmland of statewide importance)
CeC	Cehalem silt loam, 2 to 12 percent slopes (Farmland of statewide importance)
Ch	Chehalis silty clay loam (All areas are prime farmland)
Ck	Clackamas gravelly loam (Prime farmland if drained)
Cm	Cloquato silt loam (All areas are prime farmland)
Co	Concord silt loam (Farmland of statewide importance)
Cu	Courtney gravelly silty clay loam (Farmland of statewide importance)
Da	Dayton silt loam (Farmland of statewide importance)
HaB	Hazelair silt loam, 2 to 6 percent slopes (Farmland of statewide importance)
HaD	Hazelair silt loam, 6 to 20 percent slopes (Farmland of statewide importance)
Ho	Holcomb silt loam (Prime farmland if drained)
HTD	Hullt clay loam, 2 to 20 percent slopes (Farmland of statewide importance)
HTE	Hullt clay loam, 20 to 30 percent slopes (Farmland of statewide importance)
HuB	Hullt clay loam, 2 to 7 percent slopes (All areas are prime farmland)
HuD	Hullt clay loam, 7 to 20 percent slopes (Farmland of statewide importance)
JoB	Jory silty clay loam, 2 to 7 percent slopes (All areas are prime farmland)
JoC	Jory silty clay loam, 7 to 12 percent slopes (Farmland of statewide importance)
JoD	Jory silty clay loam, 12 to 20 percent slopes (Farmland of statewide importance)
JoE	Jory silty clay loam, 20 to 30 percent slopes (Farmland of statewide importance)
La	Labish silty clay loam (Farmland of unique importance)
MaA	McAlpin silty clay loam, 0 to 3 percent slopes (All areas are prime farmland)
MaB	McAlpin silty clay loam, 3 to 6 percent slopes (All areas are prime farmland)
Mb	McBee silty clay loam (All areas are prime farmland)
McB	McCully clay loam, 2 to 7 percent slopes (Farmland of statewide importance)
McC	McCully clay loam, 7 to 12 percent slopes (Farmland of statewide importance)
McD	McCully clay loam, 12 to 20 percent slopes (Farmland of statewide importance)
McE	McCully clay loam, 20 to 30 percent slopes (Farmland of statewide importance)
MID	McCully stony clay loam, 2 to 20 percent slopes (Farmland of statewide importance)
MUE	McCully clay loam, 2 to 30 percent slopes (Farmland of statewide importance)