Ecological Site Description

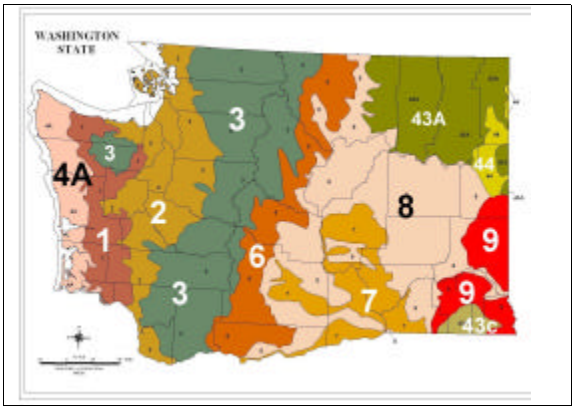
Site Type: Rangeland

Site Name: Loamy 9-15 PZ

Site ID: R008XY102WA

Major Land Resource Area: B008X

Columbia Plateau



Physiographic Features

This site usually occurs as a complex of soils, slope, direction of slope, and general topography along the side slopes of loess hills. The landscape is characterized by low hills and long slopes. Aspect is variable.

Land Form:	**(1)**	hillslope		**(2)** hillslope	
Aspect		Not Applicable		Not Applicable	Not Applicable
		MINIMUM	**AVERAGE**	**MAXIMUM**	
Elevation (feet):		848	1979	3347	
Slope (percent):		1	18	53	
Runoff Class:		None Selected		None Selected	
Water Table Depth (inches)		0		0	
Flooding	**Frequency:**	None		None	
	Duration:	None		None	
Ponding	**Depth:**	0		0	
	Frequency:	None		None	
	Duration:	None		None	

This ecological site has been documented as occuring on the following geomorphic features:

mounds on plateaus	benches in the channeled scablands	benches, ridgetops and hillslopes
dissected lake terraces	dissected terraces	footslopes, sideslopes and benches
glaciofluvial plains and terraces	glaciofluvial terraces	hills
hillslopes and ridgetops	basalt plateaus	mounds on benches and hillslopes
terraces, remnants of terraces, ridgetops, and plateaus	mounds on terraces	plateaus and benches
plateaus, ridgetops, and plains	ridgetops and hillslopes	river terraces
sideslopes, footslopes, and benches	terraces and glaciofluvial plains	terraces and terrace escarpments
terraces, hillslopes and ridges	low terraces	

Ecological Site Number	Ecological Site Name		Below	Normal	Above
R008XY102WA	Loamy 9-15 PZ	**pounds/acre/year:**	700	900	1200

Climatic Features

Growing Season

National CRA		Minimum	Average	Maximum
8.1	**Frost-free period (days):**	134	170	188
	Freeze-free period (days):	166	209	234
8.2	**Frost-free period (days):**	88	125	150
	Freeze-free period (days):	130	160	182
8.4	**Frost-free period (days):**	138	189	223
	Freeze-free period (days):	166	227	262
8.5	**Frost-free period (days):**	139	139	139
	Freeze-free period (days):	171	171	171
8.7	**Frost-free period (days):**	108	158	188
	Freeze-free period (days):	142	194	232

Average Monthly Precipitation (inches) and Temperature (degrees Fahrenheit)

Month	Min. Temp.	Avg. Temp.	Max. Temp	Min. Ppt.	Avg. Ppt.	Max. Ppt.	Avg. Snow(in.)
October	59.4	49.4	42.1	0.6	0.7	0.9	0.1
November	41.5	37.4	35.7	1.0	1.7	2.2	2.9
December	32.2	29.1	24.9	1.2	1.8	2.5	7.4
January	29.0	27.9	28.7	0.9	1.6	2.5	7.7
February	38.5	34.2	32.2	0.8	1.2	1.6	3.5
March	47.2	41.2	35.9	0.8	1.1	1.4	1.3
April	54.6	48.2	40.9	0.6	0.8	1.1	0.2
May	63.2	55.8	47.7	0.4	0.8	1.2	0.0
June	72.5	63.6	54.7	0.3	0.7	0.9	0.0
July	80.8	69.7	59.5	0.1	0.4	0.6	0.0
August	80.8	69.3	59.3	0.3	0.5	0.8	0.0
September	71.0	60.6	51.2	0.4	0.5	0.6	0.0
			Annual Totals:	**11.7**			**23.1**

Representative Climate Station

National CRA Numbe	Station	record from	record to
8.1	RITZVILLE	1961	1990
8.2	CONNELL 1 W	1961	1990
8.2	HARRINGTON 4 ENE	1962	1990
8.2	LA CROSSE	1961	1990
8.2	ODESSA	1961	1990
8.4	DALLESPORT FCWOS AP	1961	1990
8.5	BICKLETON 3 ESE	1961	1990
8.7	CHIEF JOSEPH DAM	1961	1990
8.7	WINTHROP 1 WSW	1961	1990

For local climate stations that may be more representative, refer to http://www.wcc.nrcs.usda.gov

Ecological Site Number	Ecological Site Name		Below	Normal	Above
R008XY102WA	Loamy 9-15 PZ	pounds/acre/year:	700	900	1200

Representative Soil Features

The soils correlated to this site have the following general characteristics:

Gravelly silt loam surface layer 12 inches thick. The subsoil is gravelly silt loam to a depth of 28 inches. Fractured basalt is at a depth of 28 inches. Depth to basalt ranges from 20 to 40 inches.

Loam surface layer 8 inches thick. The subsoil is loam 8 inches thick. The substratum is gravelly loam 8 inches thick over very gravelly coarse sand to a depth of 60 inches or more.

Silt loam surface layer 13 inches thick. The subsoil is silt loam 13 inches thick over a lime-silica-cemented hardpan at a depth of 29 inches. Depth to a lime-silica cemented hardpan ranges from 20 to 40 inches.

Silt loam surface layer 8 inches thick. The subsoil is silt loam 28 inches thick. The substratum is calcareous silt loam to a depth of 60 inches or more.

Silt loam surface layer 8 inches thick. The upper subsoil is gravelly loam to a depth of 18 inches. The lower subsoil is gravelly loam and very gravelly loam to a depth of 20 to 40 inches. The substratum is calcareous very gravelly basalt sand.

Silt loam surface layer 8 inches thick. The upper subsoil is silt loam to a depth of 32 inches. The lower subsoil is silt loam to a depth of 53 inches. The next subsoil layer to a depth of 60 inches or more is calcareous silt loam.

Silt loam surface layer and loam subsoil over hardpan and dense till at 29 inches.

REPRESENTATIVE SOIL FEATURES

Moderately deep to deep soils with a loamy surface texture without coarse fragment modifiers in the control section of the soil series description. Usually on the more mesic aspects and topographic positions. These soils are characterized by the following soil surface horizon textures: very fine sandy loam, loam, silt loam, silt, silty clay loam, sandy loam, fine sandy loam.

	FROM	TO
surface fragments > 3 in.	0	8
drainage class	Somewhat poorly drained	Excessively drained
permeability class	None selected	None selected
frost action class	High	Low

	MINIMUM	AVERAGE	MAXIMUM
soil depth (inches)	23	46	58
organic matter %	0.8	1.7	3.0
electrical conductivity	0	0	1
sar	0	0	0
ph	5.8	6.9	8.2
available water capacity	2	4	7
caco3	0	0	9

Characteristic Soils

Refer to specific soil survey reports and databases for soil mapping units that include the following series. Major soils series that have been correlated to this site include:

ACHELAKE	ACHIMIN	ACKNA
Alpowa	ALSASH	ALSTOWN
Anders	ARGIXEROLLS	Asotin
BADGE	BADGERMONT	BAGDAD
Bakeoven	BECA	Benge
BENWY	Bjork	Bolicker
BOYLESTON	BROADAX	BRYSILL
CACHEBUTTE	Chard	COLOCKUM
CONCONULLY	CONCONULLY, BEDROCK SUBSTRATUM	Condon
Cowiche	DEERCUT	Disautel
DOUGVILLE	DULEYLAKE	DUTCHENRY
EBADLOW	ELLISFORDE	ELVEDERE
Endicott	FARMER	Farrell
FISHERHILL	GINNIS	Harwood
Hum	JORDY	KAHLOTUS
Kartar	KESTER	Magallon
MALOTT	MAXHILL	MCCUE

MENDIAN	MIKKALO	MORICAL
MORROW	MOZEN	NEMIRE
NESPELEM	NEVIOT	Newbon
Nighthawk	NORAX	NOROD
OKANOGAN	OLEX	Oliphant
PALERF	PESHASTIN	PICARD
RALLS	RALOCK	RENSHIGH
Renslow	RITZCAL	RITZVILLE
Ritzville variant	ROLLINGER	Roloff
ROOSEVELT	Selah	SEVAR
Shano	Simcoe	SIWEEKA
SIWEEKA, BASALT SUBSTRATUM	SLICKEAR	SLUSSER
Spofford	SPRAUER	STACKER
Strat	Stratford	TIMENTWA
TITCHENAL	TOLER	TOUHEY
VAN NOSTERN	VOLINGER	WACOTA
Walla Walla	WALVAN	WANNACOTT
Willis	WILLOCK	WILLOCK, BEDROCK SUBSTRATUM
WILLOCK, CEMENTED SUBSTRATUM	WINBLOW	Yaxon
Zen		

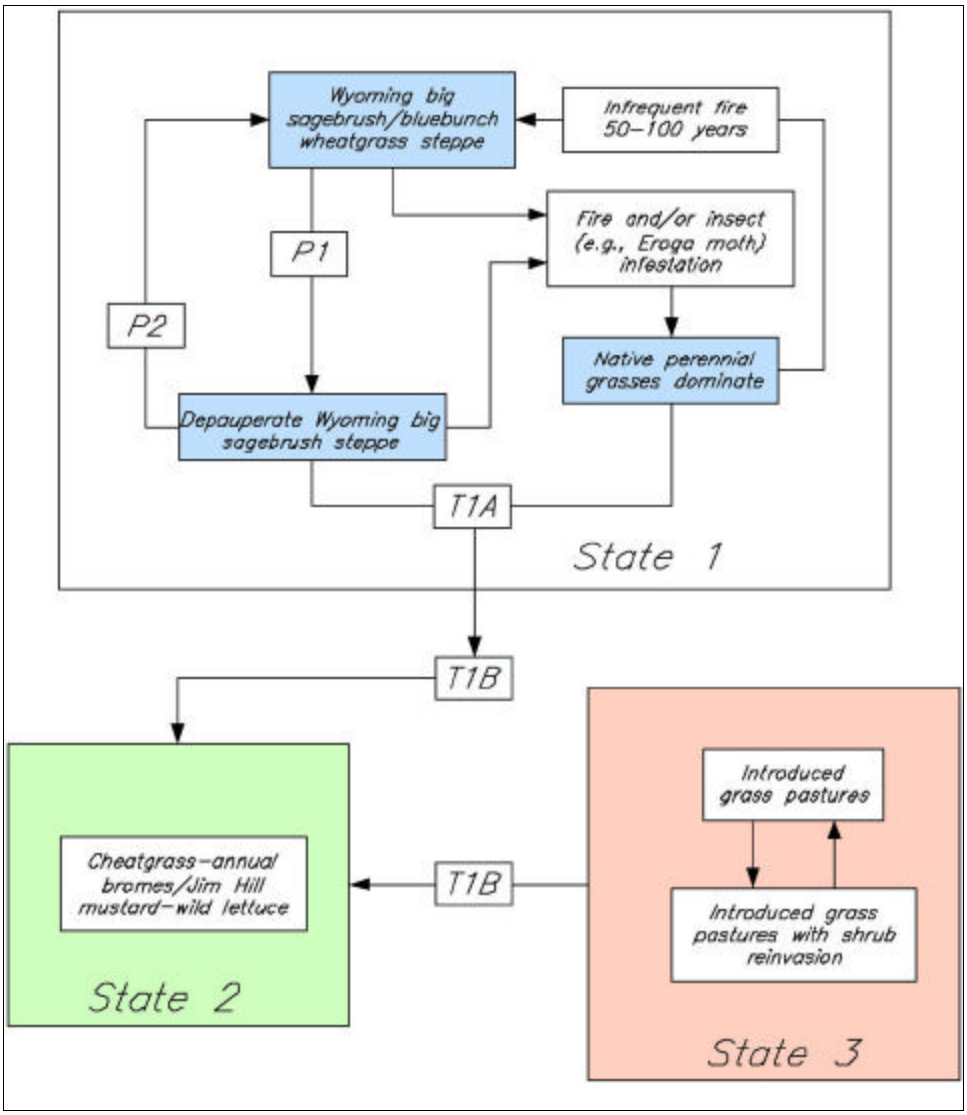
Influencing Water Features

Plant Communities

Ecological Dynamics of the Site

State-Transition Model

The historic climax plant community (description follows the State-Transition diagram) has been determined by study of rangeland relic areas, areas protected from excessive disturbance and historical accounts. The following diagram illlustrates the common plant communites that can occur on the site and the transition pathways (arrows among communities. Bold lines surrounding each State represent ecological thresholds. The predominant plant communities within State 1 are sustainable plant communities in terms of soil stability, watershed function and biologic integrity.
P1 is poor grazing practices such as overutilization and/or poor timing of grazing (during the critical period of the desired grasses).
P2 is prescribed grazing that meets the needs of the desired grasses.
T1A and T1B is the expression of (P1) poor grazing practices that are pushed by drought, poorly designed brush management or wildfire into State 2 that is dominated by cheatgrass, medusahead and other annual grasses and forbs.
State 2 is characterized by excessive litter accumulations, reduced watershed function, and low biologic integrity.



Historical Climax Plant Community

Plant Group Type

Perennial Cool Season Mid-Grass Decreasers — pound

Count Each Listed Species up to the listed pounds for the Species

PSSP6	bluebunch wheatgrass	648	72%
FEID	Idaho fescue	72	8%
ACNED	Nelson needlegrass	9	1%
POCU3	Cusick's bluegrass	9	1%

Perennial Cool Season Mid-Grass Increasers — pound

Count Each Listed Species up to the listed pounds for the Species

POSE	Sandberg bluegrass	60	7%
ACTH7	Thurber needlegrass	12	1%
HECOC	needleandthread	12	1%
KOMA	prairie Junegrass	9	1%
ELEL5	bottlebrush squirreltail	9	1%

Perennial Cool Season Tall-Grass — pound

Count Each Listed Species up to the listed pounds for the Species

LECI4	basin wildrye	9	1%

Warm Season Grass — pound

Count Each Listed Species up to the listed pounds for the Species

SPCR	sand dropseed	9	1%

Annual Grasses — pound

Count Each Listed Species up to the listed pounds for the Species

VUOC	sixweeks fescue	9	1%

Perennial Grasslike-Tufted — pound

Count Each Listed Species up to the listed pounds for the Species

CAFI	threadleaf sedge	12	1%

Perennial Grasslike-Rhizomatous — pound

Count Each Listed Species up to the listed pounds for the Species

EQAR	field horsetail	9	1%

Shrubs/Deep Rooted/Non-Sprouters — **12** pound **1%**

Count any Listed Species Up to the Listed Pounds for the Group

ARTRW Wyoming big sagebrush
ARTR2 big sagebrush

Plant Group Type

Perennial Forbs/Fibrous-rooted — **9** pound **1%**

Count any Listed Species Up to the Listed Pounds for the Group

LIRU4 western gromwell
MAST4 starry false Solomon's seal
MELO4 small bluebells
ERPU2 shaggy fleabane
CLPU pinkfairies
ERCO5 longleaf fleabane
GAAR common gaillardia
ARCO5 ballhead sandwort

Perennial Forbs/tap-rooted — **9** pound **1%**

Count any Listed Species Up to the Listed Pounds for the Group

NOTR2 weevil microseris
PHHO spiny phlox
CRAT slender hawksbeard
PHSP showy phlox
PHLOX phlox
PENST penstemon
AGGL pale agoseris
DENU2 Nuttal's larkspur
COLI2 narrowleaf mountaintrumpet
PHLO2 longleaf phlox
CRAC2 longleaf hawksbeard
COGR4 largeflower mountaintrumpet
SEIN2 lambstongue groundsel
ARHO2 Holboell's rockcress
HIERA hawkweed
CREPI hawksbeard

Perennial Forbs/thickened taproot — **12** pound **1%**

Count any Listed Species Up to the Listed Pounds for the Group

BALSA balsamroot
BASA3 arrowleaf balsamroot
LOMAT lomatium
LODI fernleaf buscuitroot
BACA3 Carey's balsamroot

Plant Group Type

Shrubs/Deep Rooted/Sprouters — 9 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

ERNAN rubber rabbitbrush
CHRYS rabbitbrush
CHVI8 green rabbitbrush
CRDOD Douglas' hawthorn
PRVI common chokecherry
CRDO2 black hawthorn

Shrubs/Shallow Rooted/Sprouters — 24 pound — 3%

Count any Listed Species Up to the Listed Pounds for the Group

ARTR4 threetip sagebrush
AMAL2 Saskatoon serviceberry

Shrubs/N-fixers — 12 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

PUTR2 antelope bitterbrush

Shrubs/Rhizomatous — 9 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

ROSA5 rose
RIBES currant
SYAL common snowberry

Half Shrub — 12 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

ERMI4 Weyth buckwheat
ERUM sulphur wildbuckwheat
ERNI2 snow buckwheat
ERHE2 parsnipflower buckwheat
ERIOG buckwheat

Plant Group Type

Perennial Forbs/N-fixers — 36 pound — 4%

Count any Listed Species Up to the Listed Pounds for the Group

LUSE4 silky lupine
LUPIN lupine
ASPU9 woollypod milkvetch
ASMI9 weedy milkvetch
LUSU5 sulphur lupine
ASTRA milkvetch
ASPUG gravel milkvetch
OXYTR crazyweed

Spring bulbs & Ephemerals — 9 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

ALAC4 tapertip onion
CALOC Mariposa lily
LIGL2 bulbous woodlandstar
DOCO Bonneville shootingstar

Perennial Forbs-parasitic to semi-parasitic — 9 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

CATH4 Thompson's Indian paintbrush
CASTI2 Indian paintbrush
COUM bastard toadflax

Perennial Forbs-rhizomatous — 9 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

GERO2 Ross' avens

Annual Forbs — 9 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

COPA3 smallflower blue eyed Mary
EPMI small willowweed
ORTHO orthocarpus
MICRO microseris
ERIGE2 fleabane
ERLI desert yellow fleabane
CRYPT cryptantha
EPBR3 autumn willowweed

Perennial Forbs-Stoloniferous — 9 pound — 1%

Count any Listed Species Up to the Listed Pounds for the Group

ANDI2 low pussytoes

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Ground cover and structure

Ground Cover

VEGETATION %	LITTER %	ROCK %	BARE %	MULCH (pounds/acre)
75	14	1	10	1605

Structure of Canopy Cover

This section is in the data collection phase and under construction.

Ecological Site Interpretations

Animal Community:

Wildlife Interpretations

Animal Preferences

	Cattle				Sheep				Horses				Deer				Elk			
Quarter:	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
big sagebrush	U	N	U	U	D	U	U	D	U	N	U	U	P	U	D	P	D	U	U	P
biscuitroot	U	D	U	U	U	D	D	U	U	D	U	U	U	D	D	U	U	D	D	U
bluebunch wheatgrass	U	P	D	D	P	P	P	P	U	P	D	D	D	D	D	D	U	P	D	D
bottlebrush squirreltail	U	D	U	U	N	D	U	N	U	D	U	U	N	D	U	N	U	D	U	N
cactus	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Columbia needlegrass	U	P	U	D	N	P	N	P	U	P	U	D	N	P	N	P	U	P	U	P
Cusick bluegrass	U	D	U	D	N	D	N	U	U	D	U	D	N	D	N	U	U	D	U	U
fringed sagewort	U	U	U	U	U	U	U	U	U	U	U	U	U	D	D	U	U	U	U	U
Hoods phlox	U	D	U	U	U	P	P	U	U	D	U	U	U	P	P	U	U	P	P	U
Idaho fescue	U	P	D	D	P	P	P	P	U	P	D	D	D	D	D	D	U	P	D	D
Indian ricegrass	U	D	U	D	N	D	N	U	U	D	U	D	N	D	N	U	U	D	U	U
Louisiana sage	U	U	U	U	U	U	D	U	U	U	U	U	U	U	D	U	U	U	D	U
milkvetch	U	U	U	U	U	D	U	U	U	U	U	U	U	D	U	U	U	D	U	U
needleandthread	U	D	U	D	N	D	N	U	U	D	U	D	N	D	N	U	U	D	U	U
Nuttalls violet	U	D	U	U	U	P	P	U	U	D	U	U	U	P	P	U	U	P	P	U
prairie junegrass	U	D	U	D	N	D	N	U	U	D	U	D	N	D	N	U	U	D	U	U
prairie smoke	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N
rose	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U	U	D	D	U
rose pussytoes	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
rubber rabbitbrush	N	N	N	N	D	U	U	D	N	N	N	N	D	U	U	D	D	U	U	D
rush skeletonweed	U	U	U	U	N	N	N	N	U	U	U	U	N	N	N	N	N	N	N	N
sand dropseed	N	U	N	N	N	U	N	N	N	U	N	N	N	U	N	N	N	U	N	N
Sandberg bluegrass	N	U	N	N	N	D	N	N	N	U	N	N	N	D	N	N	N	U	N	N
scarlet globemallow	U	U	D	U	U	D	D	U	U	U	D	U	U	D	D	U	U	D	D	U
scurfpea	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N
sedge	U	D	U	D	U	P	N	D	U	D	U	D	U	D	U	D	U	D	U	D
sticky cinquefoil	U	U	U	U	U	U	D	U	U	U	U	U	U	U	D	U	U	U	D	U
tapertip hawksbeard	U	U	D	U	N	D	U	N	U	U	D	U	N	D	U	N	N	D	U	N
thickspike wheatgrass	U	D	D	U	N	D	N	N	U	D	D	U	N	D	N	N	U	D	D	N
thistle	U	U	U	U	N	N	N	N	U	U	U	U	N	N	N	N	N	N	N	N
threeawn	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
wild buckwheat	U	U	D	U	U	U	U	U	U	U	D	U	U	U	U	U	U	U	U	U
wild onion	U	D	U	U	U	D	D	U	U	D	U	U	U	D	D	U	U	D	D	U
woolly Indianwheat	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N
yarrow	U	U	U	U	N	U	U	N	U	U	U	U	N	U	U	N	N	U	U	N

NC=not consumed; U=undesireable; D=desireable; P= preferred; T=toxic

Quarters: 1-Jan., Feb., Mar.; 2-Apr., May, Jun.; 3-Jul., Aug., Sep.; 4-Oct., Nov., Dec.

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Grazing Interpretations

Guide to Suggested Initial Stocking Rate: Carrying capacity is highly dependent on plant community, specific site characteristics (elevation, aspect, slope, etc.) and management practices (the type of grazing system planned or being applied, water developments, fences, etc.). Because of this, a field visit is recommended, in all cases, to document plant composition and production and to inventory supporting practices. More valuable carrying capacity estimates are developed using specific site characteristics in conjunction with an evaluation of past stocking rates and resultant utilization.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area provide forage under prescribed grazing for cattle, sheep, horses and other herbivores.

CName	Beginning of Critical Management Period	End of Critical Management Period	CRA
bluebunch wheatgrass	4/26/1900	6/13/1900	8.7
bluebunch wheatgrass	4/30/1900	6/20/1900	8.2

Grazing systems need to be designed to meet the needs of jointed grasses (see NRCS-WA Range Technical Notes 34 & 35 during the critical period of plant growth. The above values are averages for the Common Resource Area listed. Choose the appropriate value for the location being evaluated in the Major Land Resource Area.

Specific dates depend on aspect, elevation, and growing season. Specific information for each supported climate station is available from the NRCS-WA technical note system on the web.

Plant Community Growth Curves - % by month

growth curve description	*jan*	*feb*	*mar*	*apr*	*may*	*jun*	*jul*	*aug*	*sep*	*oct*	*nov*	*dec*
HCPC	0	1	16	43	35	5	0	0	0	0	0	0
PG-Shrub	0	1	13	38	30	10	3	2	0	3	0	0
Annuals	0	2	31	55	11	1	0	0	0	0	0	0
AG-Shrubs	0	1	26	43	15	8	3	2	0	2	0	0

Hydrologic Interpretations:

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groupings

Hydrologic Group From	Hydrologic Group To
B	D

Recreational Uses:

This site provides hunting, hiking, photography, bird watching and other opportunities. Recreation potential is limited largely by the cool, wet winters and spring. This site provides hunting opportunities for upland game species. The wide varieties of plants, which bloom in the spring, have an esthetic value that appeals to visitors. Photography and bird watching can be worthwhile, especially during migration seasons. Suitability for camping and picnicking is fair.

Wood Products:

No appreciable wood products are present on the site.

Other Products:

Seed harvest of native plant species can provide additional income on this site.

Other Information:

Supporting Information

Associated Sites:

Similar Sites:

State Correlation:

Inventory Data References:

Type Locality:

Relationship to Other Established Classifications:

Other References:

Site Description Approval

Gerald Rouse	6/10/2004
Author	**Date**
INTERIM-for use and comment for one year	6/10/2004
State Range Management Specialist	**Date**

Site Description Revision

Author	**Date**
State Range Management Specialist	**Date**

Ecological Site Number	Ecological Site Name				Below	Normal	Above
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1	Rills	Rill formation is severe and well defined throughout most of the area.	Rill formation is moderately active and well defined throughout most of the area.	Active rill formation is slight at infrequent intervals, mostly in exposed areas.	No recent formation of rills; old rills have blunted or muted features.	None
2	Water Flow Patterns	Extensive and numerous; unstable with active erosion; usually connected.	More numerous than expected; deposition and cut areas common; occasionally connected.	Nearly matches what is expected for the site; erosion is minor with some instability and deposition.	Matches what is expected for the site; some evidence of minor erosion. Flow patterns are stable and short.	None
3	Pedestals and/or Terracettes	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled; exposed plant roots are common.	Moderate active pedestalling; terracettes common. Some rocks and plants are pedestalled with occasional exposed roots.	Slight active pedestalling; most pedestals are in flow paths and interspaces and/ or on exposed slopes. Occasional terracettes present.	Active pedestalling or terracette formation is rare; some evidence of past pedestal formation, especially in water flow patterns and/or on exposed slopes.	None
4	Bare Ground	Much higher than expected for the site. Bare areas are large and generally connected.	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected.	Slightly to moderately higher than expected for the site. Bare areas are small and rarely connected.	Amount and size of bare areas nearly to totally match that expected for the site.	10 % bare ground; bare patches should be less than 16-20 inch diameter. Larger patches are usually associated with rodent disturbance.
5	Gullies	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active.	Moderate to common with indications of active erosion; vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent.	Moderate in number with indications of active erosion; vegetation is intermittent on slopes and/or bed. Occasional headcuts maybe present.	Uncommon with vegetation stabilizing the bed and slopes; no signs of active headcuts, nickpoints, or bed erosion.	None
6	Wind Scoured, Blowouts and/or Deposition Areas	Extensive.	Common.	Occasionally present.	Infrequent and few.	None
7	Litter Movement	Extreme; concentrated around obstructions. Most size classes of litter have been displaced.	Moderate to extreme; loosely concentrated near obstructions. Moderate to small size classes of litter have been displaced.	Moderate movement of smaller size classes in scattered concentrations around obstructions and in depressions.	Slightly to moderately more than expected for the site with only small size classes of litter being displaced.	None
8	Soil Surface Resistance to Erosion	Extremely reduced throughout the site. Biological stabilization agents including organic matter and biological crusts virtually absent.	Significantly reduced in most plant canopy interspaces and moderately reduced beneath plant canopies. Stabilizing agents present only in isolated patches.	Significantly reduced in at least half of the plant canopy interspaces, or moderately reduced throughout the site.	Some reduction in soil surface stability in plant interspaces or slight reduction throughout the site. Stabilizing agents reduced below expected.	Stability class (Herrick et al. 2001) anticipated to be 5-6 at surface and subsurface under vegetation and 4-5 at surface and subsurface in the interspaces.
9	Soil Surface Loss or Degradation	Soil surface horizon absent. Soil structure near surface is similar to, or more degraded than, that in subsurface horizons. No distinguishable difference in subsurface organic matter content.	Soil loss or degradation severe throughout site. Minimal differences in soil organic matter content and structure of surface and subsurface layers.	Moderate soil loss or degradation in plant interspaces with some degradation beneath plant canopies. Soil structure is degraded and soil organic matter content is significantly reduced.	Some soil loss has occurred and/or soil structure shows signs of degradation, especially in plant interspaces.	9 inch very dark brown A horizon with medium granular structure.

Ecological Site Number	Ecological Site Name		Below	Normal	Above
R008XY102WA	Loamy 9-15 PZ	**pounds/acre/year:**	700	900	1200

10	Plant Community Composition & Distribution Relative to Infiltration & Runoff -	Infiltration is severely decreased due to adverse changes in plant community composition and/ or distribution. Adverse plant cover changes have occurred.	Infiltration is greatly decreased due to adverse changes in plant community composition and/or distribution. Detrimental plant cover changes have occurred.	Infiltration is moderately reduced due to adverse changes in plant community composition and/ or distribution. Plant cover changes negatively affect infiltration.	Infiltration is slightly to moderately affected by minor changes in plant community composition and/or distribution.	648-810 pounds/acre of the dominant functional/structural group (see Indicator #12)-in combination with 75 % vegetative canopy cover and 14 % litter cover in interspaces should provide sufficient soil quality for optimal infiltration.
11	Compaction Layer	Extensive; severely restricts water movement and root penetration.	Widespread; greatly restricts water movement and root penetration.	Moderately widespread; moderately restricts water movement and root penetration.	Rarely present or is thin and weakly restrictive to water movement and root penetration.	None
12	Function/Structural Groups	Number of F/S groups greatly reduced; and/ or relative dominance of F/S groups has been dramatically altered; and/ornumber of species within F/S groups dramatically reduced.	Number of F/S groups reduced; and/or one dominant group and/or one or more subdominant groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups significantly reduced.	Number of F/S groups moderately reduced; and/ or one or more subdominant F/S groups replaced by F/S groups not expected for the site; and/or number of species within F/S groups moderately reduced.	Number of F/S groups slightly reduced; and/or relative dominance of F/S groups has been modified from that expected for the site; and/ or number of species within F/S groups slightly reduced.	Perennial Cool Season Mid-Grass Decreasers >40% Perennial Cool Season Mid-Grass Increasers >3% & <10% Perennial Forbs/N-fixers >3% & <10%
13	Plant Mortality/Decadence	Dead and/or decadent plants are common.	Dead and/or decadent plants are somewhat common.	Some dead and/ or decadent plants are present.	Slight plant mortality and/or decadence.	Grasses will nearly always show some mortality and decadance
14	Litter Amount	Largely absent or dominant relative to site potential and weather.	Greatly reduced or increased relative to site potential and weather.	Moderately more or less relative to site potential and weather.	Slightly more or less relative to site potential and weather.	14 % litter cover associated with bunchgrasses. The litter is decomposing in place and in contact with the soil surface.
15	Annual Aboveground Production	Less than 20% of potential production.	20-40% of potential production.	40-60% of potential production.	60-80% of potential production.	700-1200 pounds/acre.
16	Invasive Plants	Dominate the site.	Common throughout the site.	Scattered throughout the site.	Present primarily on disturbed sites.	Absent
17	Reproductive Capability of Perennial Plants	Capability to produce seed or vegetative tillers is severely reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is greatly reduced relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is somewhat limited relative to recent climatic conditions.	Capability to produce seed or vegetative tillers is only slightly limited relative to recent climatic conditions.	All species are free of insect, disease, fungal impairments; display high vigor; and are producing abundant seed or multiple replacement tillers