USDA Natural Resources
Conservation Service

Ecological site R034AY206WY
Clayey Overflow Foothills and Basins West (CyO)

Accessed: 05/11/2025

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

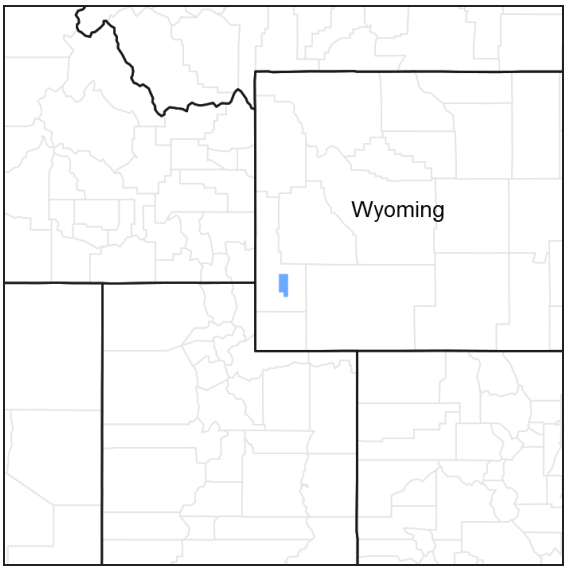


Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R034AY204WY	**Clayey Foothills and Basins West (Cy)** Clayey
R034AY228WY	**Lowland Foothills and Basins West (LL)** Lowland
R034AY230WY	**Overflow Foothills and Basins West (Ov)** Overflow

Similar sites

R034AY230WY	**Overflow Foothills and Basins West (Ov)** Overflow (Ov), 10-14W has coarser soil textures.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on gently sloping to moderately sloping flood plains, canyons, and small valley bottoms along intermittent streams. This site is found on all exposures. Elevations are mostly above 7000.

Table 2. Representative physiographic features

Landforms	(1) Alluvial fan (2) Stream terrace
Flooding duration	Very brief (4 to 48 hours)
Flooding frequency	Frequent
Ponding frequency	None
Elevation	1,981–2,286 m
Slope	1–10%
Ponding depth	0 cm
Aspect	Aspect is not a significant factor

Climatic features

Annual precipitation ranges from 10-14 inches per year. Wide fluctuations may occur in yearly precipitation and result in more dry years than those with more than normal precipitation. Temperatures show a wide range between summer and winter and between daily maximums and minimums. This is predominantly due to the high elevation and dry air, which permits rapid incoming and outgoing radiation. Cold air outbreaks in winter move rapidly from northwest to southeast and account for extreme minimum temperatures. Extreme storms may occur during the winter, but most severely affect ranch operations during late winter and spring.

Daytime winds are generally stronger than nighttime and occasional strong storms may bring brief periods of high winds with gusts to more than 50 mph.

Growth of native cool season plants begins about April 15 and continues to about August 15. Some green up of cool season plants usually occurs in September depending upon fall moisture occurrences.

For detailed information visit the Natural Resources Conservation Service National Water and Climate Center at http://www.wcc.nrcs.usda.gov/cgibin/state.pl?state=wy website. Other climate stations representative of this precipitation zone include ”Border 3 N ” and Kemmerer Wtr Trtmt” in Lincoln County; “Evanston 1 E” in Uinta County; and “Merna” in Sublette County.

Table 3. Representative climatic features

Frost-free period (average)	67 days
Freeze-free period (average)	97 days
Precipitation total (average)	356 mm

Influencing water features

Soil features

The soils of this site are moderately deep (greater than 20” to bedrock) to very deep, well-drained soils that formed in alluvium or alluvium over residuum. Layers of the soil most influential to the plant community varies from 3 to 6 inches thick. These soils have slow permeability. The surface soil will vary from 2 to 5 inches deep and have one of the following textures: silty clay, sandy clay, clay, and the finer portions of silty clay loam, clay loam, and sandy clay loam. These soils may develop severe cracks. These areas receive additional water from overflow of intermittent streams or runoff from adjacent slopes.

Table 4. Representative soil features

Surface texture	(1) Clay loam (2) Clay (3) Silty clay loam
Family particle size	(1) Clayey
Drainage class	Moderately well drained to well drained
Permeability class	Slow to moderately slow
Soil depth	51–152 cm
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	7.11–14.48 cm
Calcium carbonate equivalent (0-101.6cm)	0–5%
Electrical conductivity (0-101.6cm)	0–8 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0–10
Soil reaction (1:1 water) (0-101.6cm)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	0%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

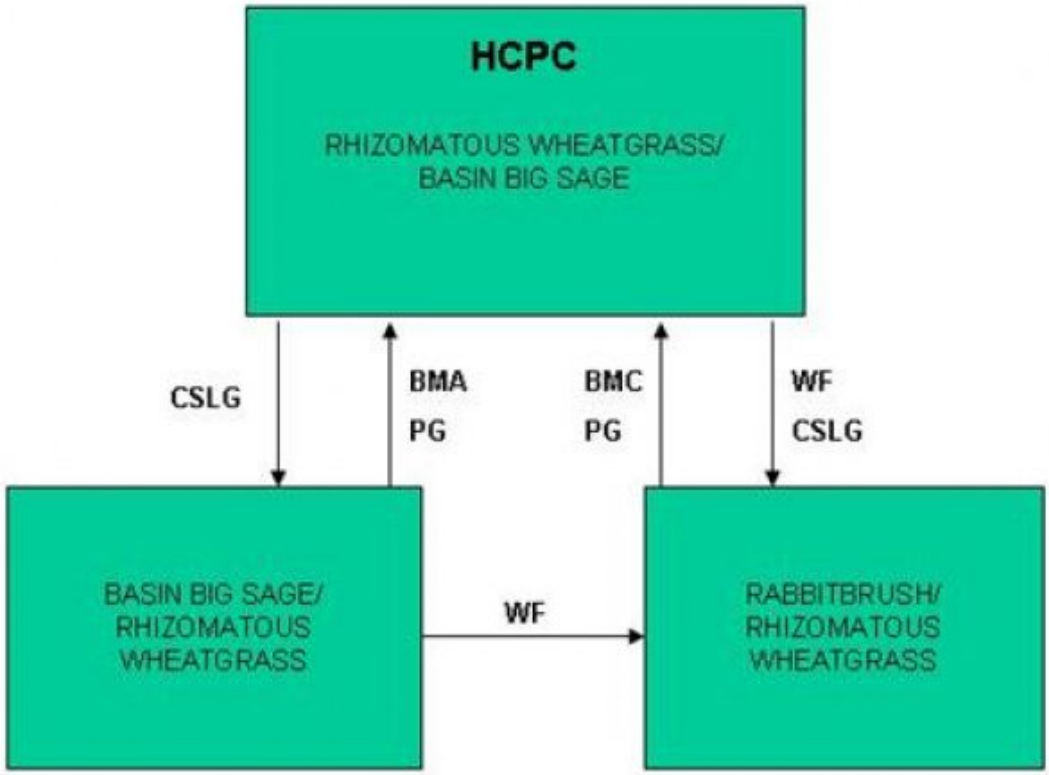
As this site deteriorates from improper grazing management, species such as rabbitbrush and basin big sagebrush will increase. Cool season bunchgrasses such as basin wildrye and muttongrass will decrease in frequency and production.

These plant communities narratives may not represent every possibility, but they probably are the most prevalent and repeatable plant communities. The plant composition tables shown above have been developed from the best available knowledge at the time of this revision. As more data is collected, some of these plant communities may be revised or removed, and new ones may be added. None of these plant communities should necessarily be thought of as “Desired Plant Communities”. According to the USDA NRCS National Range and Pasture Handbook, Desired Plant Communities (DPC’s) will be determined by the decision-makers and will meet minimum quality criteria established by the NRCS. The main purpose for including any description of a plant community here is to capture the current knowledge and experience at the time of this revision.

The Historic Climax Plant Community (description follows the plant community diagram) has been determined by study of rangeland relic areas, or areas protected from excessive disturbance. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures, and historical accounts have also been used.

The following is a State and Transition Model Diagram that illustrates the common plant communities (states) that can occur on the site and the transitions between these communities. The ecological processes will be discussed in more detail in the plant community narratives following the diagram.

State and transition model



BMA – Brush Management (all methods)
BMC – Brush Management (chemical)
BMF – Brush Management (fire)
BMM – Brush Management (mechanical)
CSP – Chemical Seedbed Preparation
CSLG – Continuous Season-long Grazing
DR – Drainage
CSG – Continuous Spring Grazing
HB – Heavy Browse
HCSLG – Heavy Continuous Season-long Grazing
HI – Heavy Inundation
LPG – Long-term Prescribed Grazing
MT – Mechanical Treatment (chiseling, ripping, pitting)

NF – No Fire
NS – Natural Succession
NWC – Noxious Weed Control
NWI – Noxious Weed Invasion
NU – Nonuse
P&C – Plow & Crop (including hay)
PG – Prescribed Grazing
RPT – Re-plant Trees
RS – Re-seed
SGD – Severe Ground Disturbance
SHC – Severe Hoof Compaction
WD – Wildlife Damage (Beaver)
WF - Wildfire

State 1
Rhizomatous Wheatgrass/Basin Big Sagebrush (HCPC)

Community 1.1
Rhizomatous Wheatgrass/Basin Big Sagebrush (HCPC)

The interpretive plant community for this site is the Historic Climax Plant Community. This state evolved with grazing by large herbivores and is suited for grazing by domestic livestock. Potential vegetation is estimated at 70% grasses or grass-like plants, 15% forbs, and 15% woody plants. The major grasses include rhizomatous wheatgrass, basin wildrye, Canby and mutton bluegrass, and Letterman needlegrass. Other grasses may include bluebunch wheatgrass, Indian ricegrass, bottlebrush squirreltail, slender wheatgrass, Sandberg bluegrass, needleleaf sedge, and prairie junegrass. Woody plants include basin big and low sagebrush, snowberry, serviceberry, and green rabbitbrush. A typical plant community consists of rhizomatous wheatgrass 25-40%, basin wildrye 10-25%, Canby bluegrass 5-15%, mutton bluegrass 1-10%, Letterman needlegrass 1-10%, other perennial grasses 10-20%, perennial forbs 10-20%, and 10-20% woody plants. Ground cover, by ocular estimate, varies from 60-70%. The total annual production (air-dry weight) of this state is about 1800 pounds per acre, but it can range from about 1200 lbs./acre in unfavorable years to about 2200 lbs./acre in above average years. This plant community is extremely stable and well adapted to the Cool Central Desertic Basins and Plateaus climatic conditions. The diversity in plant species and additional moisture allows for high drought tolerance. This is a sustainable plant community (site/soil stability, watershed function, and biologic integrity). Transitional pathways leading to other plant communities are as follows. • Continuous Season-long Grazing will convert this plant community to the Basin Big Sagebrush/Rhizomatous Wheatgrass State. • Wildfire followed by Continuous Season-long Grazing will convert this plant community to the Rabbitbrush/Rhizomatous Wheatgrass State.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	942	1412	1726
Shrub/Vine	202	303	370
Forb	202	303	370
Total	**1346**	**2018**	**2466**

Figure 5. Plant community growth curve (percent production by month). WY0302, 10-14W, Extra Water Sites - LL, Ov, CyO, SL. LL. OV, CYO, SL Extra Water Sites.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			5	15	35	35	10				

State 2
Basin Big Sagebrush/Rhizomatous Wheatgrass

Community 2.1
Basin Big Sagebrush/Rhizomatous Wheatgrass

This plant community is the result of continuous season-long grazing. Western wheatgrass, bottlebrush squirreltail, Sandberg bluegrass, and needleleaf sedge are dominant grasses and grass-like plants. Often Kentucky bluegrass will invade. Basin big sagebrush is a dominant shrub, often exceeding 20% of the annual production on the site. Green rabbitbrush is also a conspicuous element of the plant community. The total annual production (air-dry weight) of this state is about 1000 pounds per acre, but it can range from about 400 lbs./acre in unfavorable years to about 1400 lbs./acre in above average years. The state is moderately stable and somewhat vulnerable to excessive erosion. The biotic integrity of this plant community is usually intact. However, it can be at risk depending on how far a shift has occurred in plant composition toward basin big sagebrush. The watershed is usually functioning. However, it can become at risk when canopy cover of big sagebrush and/or bare ground increases. Transitional pathways leading to other plant communities are as follows. • Brush Management followed by deferment for 1 to 2 years as part of a Prescribed Grazing plan will result in a plant community very similar to the

Historic Climax Plant Community (Rhizomatous Wheatgrass/Basin Big Sagebrush State). However, invading species such as cheatgrass and Kentucky bluegrass will persist in the understory. Care should be taken when planning brush management to consider wildlife habitat and critical winter ranges. • Wildfire will convert this plant community to the Rabbitbrush/Rhizomatous Wheatgrass State.

Figure 6. Plant community growth curve (percent production by month). WY0302, 10-14W, Extra Water Sites - LL, Ov, CyO, SL. LL. OV, CYO, SL Extra Water Sites.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			5	15	35	35	10				

State 3
Rabbitbrush/Rhizomatous Wheatgrass

Community 3.1
Rabbitbrush/Rhizomatous Wheatgrass

This plant community is a result of wildfire after continuous season-long grazing. The understory is mostly made up of rhizomatous wheatgrass, bottlebrush squirreltail, and cheatgrass. Rabbitbrush often exceeds 25% of the annual production. The total annual production (air-dry weight) of this state is about 600 pounds per acre, but it can range from about 200 lbs./acre in unfavorable years to about 1000 lbs./acre in above average years. The biotic integrity is threatened by the invasion of noxious weeds. The soil of this state is not protected. The watershed may produce excessive runoff. Transitional pathways leading to other plant communities are as follows: • Brush Management followed by deferment for 1 to 2 years as part of a Prescribed Grazing plan will result in a plant community very similar to the Historic Climax Plant Community (Rhizomatous Wheatgrass/Basin Big Sagebrush State). However, invading species such as cheatgrass and Kentucky bluegrass will persist in the understory. Care should be taken when planning brush management to consider wildlife habitat and critical winter ranges.

Figure 7. Plant community growth curve (percent production by month). WY0302, 10-14W, Extra Water Sites - LL, Ov, CyO, SL. LL. OV, CYO, SL Extra Water Sites.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			5	15	35	35	10				

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1				504–807	
	western wheatgrass	PASM	*Pascopyrum smithii*	504–807	–
2				202–504	
	basin wildrye	LECI4	*Leymus cinereus*	202–504	–
3				101–303	
4				20–202	
	muttongrass	POFE	*Poa fendleriana*	20–202	–
5				20–202	
	Letterman's needlegrass	ACLE9	*Achnatherum lettermanii*	20–202	–
6				202–404	
	Grass, perennial	2GP	*Grass, perennial*	0–101	–
	Indian ricegrass	ACHY	*Achnatherum hymenoides*	0–101	–
	needleleaf sedge	CADU6	*Carex duriuscula*	0–101	–

	squirreltail	ELEL5	*Elymus elymoides*	0–101	–
	slender wheatgrass	ELTR7	*Elymus trachycaulus*	0–101	–
	prairie Junegrass	KOMA	*Koeleria macrantha*	0–101	–
	Sandberg bluegrass	POSE	*Poa secunda*	0–101	–
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	0–101	–
	Forb, perennial	2FP	*Forb, perennial*	0–56	–
	common yarrow	ACMI2	*Achillea millefolium*	0–56	–
	agoseris	AGOSE	*Agoseris*	0–56	–
	textile onion	ALTE	*Allium textile*	0–56	–
	rosy pussytoes	ANRO2	*Antennaria rosea*	0–56	–
	milkvetch	ASTRA	*Astragalus*	0–56	–
	water-starwort	CALLI6	*Callitriche*	0–56	–
	castilla	CASTI	*Castilla*	0–56	–
	mouse-ear chickweed	CERAS	*Cerastium*	0–56	–
	bastard toadflax	COUM	*Comandra umbellata*	0–56	–
	tapertip hawksbeard	CRAC2	*Crepis acuminata*	0–56	–
	larkspur	DELPH	*Delphinium*	0–56	–
	fleabane	ERIGE2	*Erigeron*	0–56	–
	buckwheat	ERIOG	*Eriogonum*	0–56	–
	aster	EUCEP2	*Eucephalus*	0–56	–
	granite prickly phlox	LIPU11	*Linanthus pungens*	0–56	–
	desertparsley	LOMAT	*Lomatium*	0–56	–
	lupine	LUPIN	*Lupinus*	0–56	–
	bluebells	MERTE	*Mertensia*	0–56	–
	beardtongue	PENST	*Penstemon*	0–56	–
	phlox	PHLOX	*Phlox*	0–56	–
	buttercup	RANUN	*Ranunculus*	0–56	–
	stonecrop	SEDUM	*Sedum*	0–56	–
	scarlet globemallow	SPCO	*Sphaeralcea coccinea*	0–56	–
	groundsel	TEPHR3	*Tephroseris*	0–56	–
	clover	TRIFO	*Trifolium*	0–56	–
	American vetch	VIAM	*Vicia americana*	0–56	–
	violet	VIOLA	*Viola*	0–56	–
	deathcamas	ZIGAD	*Zigadenus*	0–56	–
Forb					
7				202–404	
	Forb, perennial	2FP	*Forb, perennial*	0–101	–
	common yarrow	ACMI2	*Achillea millefolium*	0–101	–
	agoseris	AGOSE	*Agoseris*	0–101	–
	textile onion	ALTE	*Allium textile*	0–101	–
	rosy pussytoes	ANRO2	*Antennaria rosea*	0–101	–
	milkvetch	ASTRA	*Astragalus*	0–101	–
	water-starwort	CALLI6	*Callitriche*	0–101	–
	castilla	CASTI	*Castilla*	0–101	–

	castilla	CASTI	*Castilla*	0–101	–
	mouse-ear chickweed	CERAS	*Cerastium*	0–101	–
	tapertip hawksbeard	CRAC2	*Crepis acuminata*	0–101	–
	larkspur	DELPH	*Delphinium*	0–101	–
	fleabane	ERIGE2	*Erigeron*	0–101	–
	buckwheat	ERIOG	*Eriogonum*	0–101	–
	aster	EUCEP2	*Eucephalus*	0–101	–
	American licorice	GLLE3	*Glycyrrhiza lepidota*	0–101	–
	desertparsley	LOMAT	*Lomatium*	0–101	–
	lupine	LUPIN	*Lupinus*	0–101	–
	bluebells	MERTE	*Mertensia*	0–101	–
	beardtongue	PENST	*Penstemon*	0–101	–
	phlox	PHLOX	*Phlox*	0–101	–
	American bistort	POBI6	*Polygonum bistortoides*	0–101	–
	buttercup	RANUN	*Ranunculus*	0–101	–
	clover	TRIFO	*Trifolium*	0–101	–
	violet	VIOLA	*Viola*	0–101	–
Shrub/Vine					
8				202–404	
	Saskatoon serviceberry	AMAL2	*Amelanchier alnifolia*	0–101	–
	little sagebrush	ARAR8	*Artemisia arbuscula*	0–101	–
	big sagebrush	ARTR2	*Artemisia tridentata*	0–101	–
	yellow rabbitbrush	CHVI8	*Chrysothamnus viscidiflorus*	0–101	–
	western snowberry	SYOC	*Symphoricarpos occidentalis*	0–101	–

Animal community

Animal Community – Wildlife Interpretations

Rhizomatous Wheatgrass/Basin Big Sagebrush Plant Community (HCPC): The high degree of plant species and structural diversity, additional moisture, and woody plants in this community favors a large variety of wildlife. Basin big sage provides suitable thermal and escape cover for mule deer, elk, and antelope. This plant community provides brood rearing/foraging areas as well as important wintering habitat for sage grouse. This community provides habitat for a wide array of small mammals such as jackrabbits, cottontail rabbits, mice, and voles so diverse prey populations are available for badgers, fox, coyotes, and raptors such as red-tail and Swainson’s hawks. Birds such as sage sparrow, Brewer’s sparrow, and the sage thrasher will utilize this community for nesting and foraging.

Basin Big Sagebrush/Rhizomatous Wheatgrass Plant Community: This plant community may be useful for the same wildlife that would use the Historic Climax Plant Community. However, the plant community composition is less diverse, and thus, less apt to meet the seasonal needs of these animals.

Rabbitbrush/Rhizomatous Wheatgrass Plant Community: The plant community composition is much less diverse, and thus, less apt to meet the seasonal needs of many wildlife dependent on big sagebrush.

Animal Community – Grazing Interpretations

The following table lists suggested stocking rates for cattle under continuous season-long grazing under normal growing conditions. These are conservative estimates that should be used only as guidelines in the initial stages of the conservation planning process. Often, the current plant composition does not entirely match any particular plant

community (as described in this ecological site description). Because of this, a field visit is recommended, in all cases, to document plant composition and production. More precise carrying capacity estimates should eventually be calculated using this information along with animal preference data, particularly when grazers other than cattle are involved. Under more intensive grazing management, improved harvest efficiencies can result in an increased carrying capacity.

Plant Community Production (lb./ac) and Carrying Capacity* (AUM/ac)

Rhizomatous Wheatgrass/Basin Big Sagebrush (HCPC) 1200-2200 lb./ac and .6 AUM/ac

Basin Big Sagebrush/Rhizomatous wheatgrass 400-1400 lb./ac and .3 AUM/ac

Rabbitbrush/Rhizomatous Wheatgrass 200-1000 lb./ac and .15 AUM/ac

* - Continuous, season-long grazing by cattle under average growing conditions.

Grazing by domestic livestock is one of the major income-producing industries in the area. Rangeland in this area may provide yearlong forage for cattle, sheep, or horses. During the dormant period, the forage for livestock use needs to be supplemented with protein because the quality does not meet minimum livestock requirements.

Hydrological functions

Water is the principal factor limiting forage production on this site. This site is dominated by soils in hydrologic group C, with localized areas in hydrologic groups B and D. Infiltration rate is moderately slow to slow. Runoff potential for this site varies from moderate to high depending on soil hydrologic group and ground cover. In many cases, areas with greater than 75% ground cover have the greatest potential for high infiltration and lower runoff. Areas where ground cover is less than 50% have the greatest potential to have reduced infiltration and higher runoff (refer to Part 630, NRCS National Engineering Handbook for detailed hydrology information).

Rills and gullies should not typically be present. Water flow patterns should be barely distinguishable if at all present. Pedestals are only slightly present in association with bunchgrasses. Litter typically falls in place, and signs of movement are not common. Chemical and physical crusts are rare to non-existent. Cryptogrammic crusts are present, but only cover 1-2% of the soil surface.

Recreational uses

This site provides hunting opportunities for upland game species. The wide variety of plants which bloom from spring until fall have esthetic values that appeal to visitors.

Wood products

No appreciable wood products are present on the site.

Other products

None noted.

Inventory data references

Information presented here has been derived from NRCS clipping data and other inventory data. Field observations from range trained personnel were also used. Those involved in developing this site include: Bill Christensen, Range Management Specialist, NRCS; Karen Clause, Range Management Specialist, NRCS; and Everet Bainter, Range Management Specialist, NRCS. Other sources used as references include: USDA NRCS Water and Climate Center, USDA NRCS National Range and Pasture Handbook, and USDA NRCS Soil Surveys from various counties.

Contributors

Karen Clause

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	K. Clause, E. Bainter
Contact for lead author	karen.clause@wy.usda.gov or 307-367-2257
Date	03/16/2007
Approved by	E. Bainter
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rare to nonexistent.

---

2. **Presence of water flow patterns:** Water flow patterns sometimes evident in ephemeral floodplain zone where this site occurs.

---

3. **Number and height of erosional pedestals or terracettes:** Rare to nonexistent.

---

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground can range from 5-20%.

---

5. **Number of gullies and erosion associated with gullies:** Active gullies should not be present.

---

6. **Extent of wind scoured, blowouts and/or depositional areas:** Minimal to nonexistent.

---

7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter expected to move in water flow patterns.

---

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil Stability Index ratings range from 2 (interspaces) to 6 (under plant canopy), but average values should be 2.5 or greater.

---

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil data is limited for this site. Described A-horizons vary from 1 to 2 inches (3-5 cm). Organic matter is typically 1 to 2%.

---

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Plant community consists of 60-75% grasses, 20% forbs, and 5-20% shrubs. Moderate plant canopy (50-70%) and litter plus slow to moderately slow infiltration rates result in slight to moderate runoff. Basal cover is typically around 2-3% for this site and does not effectively reduce runoff on this site.

---

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** No compaction layer exists.

---

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional: cool season rhizomatous grasses>>mid-size, cool season bunchgrasses=tall, cool season bunchgrasses>perennial shrubs=perennial forbs>short, cool season bunchgrasses

---

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimal decadence, typically associated with shrub component.

---

14. **Average percent litter cover (%) and depth (in):** Litter ranges from 20-40% of total canopy measurement with total litter (including beneath the plant canopy) from 75-90% expected. Herbaceous litter depth typically ranges from 10-25 mm. Woody litter can be up to several inches (>8 cm).

---

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** English: 1200-2200 lb/ac (1800 lb/ac average); Metric: 1344-3136 kg/ha (2016 kg/ha average).

---

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:** Bare ground greater than 40% or noxious weed invasion are the most common indicators of a threshold being crossed. Rabbitbrush and basin big sagebrush are common increasers. Annual weeds such as pepperweed and blue mustard are common invasive species on disturbed sites.

---

17. **Perennial plant reproductive capability:** All species are capable of reproducing, except in drought years.