RANGELAND

HEALTH

ASSESSMENTS

FOR

ARAGONITE ALLOTMENT

STANDARDS AND GUIDELINES ASSESSMENT
ARAGONITE., NO 04023

Utah's Standards for Rangeland Health were evaluated on the Aragonite Allotment on June 16 -17, 1999. An interdisciplinary team consisting of Rangeland Specialists, Wildlife Biologists, and Natural Resource Specialists utilized the Rangeland Health Assessment Method to determine attainment of the Standards. A Map and Photographs of the Aragonite assessment sites are included in Appendices A and B, respectively.

PART 1. - CONFORMANCE REVIEW

STANDARD #1 Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate and landform.

RESOURCE CONDITIONS IN THE ALLOTMENT MEET THE STANDARD?

YES - 70%
NO - 30%

RATIONALE: Soils along the Cedar Mountain bench area are typically clay loam to loam and have not been subject to compaction. Soils on the desert flats are silty and probably sodic. Moderate to severe crusting is evident in many areas and infiltration is slightly slower than that expected for the site. Erosional features are scattered and result in minimal soil movement along benches.

STANDARD #2 Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform..

RESOURCE CONDITIONS IN THE ALLOTMENT MEET THE STANDARD?

YES - N/A
NO -

RATIONALE: No significant riparian/wetland areas occur on the affected area

STANDARD #3 Desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved..

RESOURCE CONDITIONS IN THE ALLOTMENT MEET THE STANDARD?

YES - 50%
NO - 50%

RATIONALE: Much of the bench and desert flat areas around the Cedar Mountains have been repeatedly burned. Native salt desert shrub and sagebrush communities along the benches have been largely lost. In their place along the benches are stands of mixed native and invasive grasses and on the flats is a cheatgrass and salt desert shrub community. Grasses dominate the majority of the benches. Along the bench, the NRCS Ecological Site Description for Semidesert Loam (Wyoming Big Sagebrush) indicates that shrubs should make up 20% of the canopy cover and 40% of air-dried biomass. This is clearly not the case.

The desert flat (shadscale) type is largely intact throughout it's range. Dwarf shadscale and native grasses are present to some degree throughout the dry flats.

STANDARD #4 BLM will apply and comply with water quality standard established by the state of Utah (R.317-2) and the Federal Clean Water and Safe Drinking Water Acts. Activities on BLM Lands will fully support the designated beneficial uses described in the Utah Water Quality Standards (R.317-2) for surface and groundwater.

RESOURCE CONDITIONS IN THE ALLOTMENT MEET THE STANDARD?

YES - N/A
NO -

RATIONALE: No water bodies within this allotment are listed in Utah's 303(d) list.

PART 2 - ARE LIVESTOCK A CONTRIBUTING FACTOR TO NOT MEETING THE STANDARDS?

STANDARD #1: NO, Current livestock management is not a contributing factor.

RATIONALE: The areas that are not meeting this standard have been repeatedly burned and soil crusting has resulted on these clay soils. Infiltration of the limited annual precipitation is slowed as a result of the surface crusting.

STANDARD #3: NO, Livestock is not a major contributing factor.

Non-attainment of the vegetation standard is mainly due to the lack of species diversity within much of the allotment. Although historic livestock impacts likely lead to the initial distribution of cheatgrass, the current fire situation has lead to near monocultures of cheatgrass across much of the allotment. On the mountain benches, where wide-spread seeding has occurred, underutilized crested wheatgrass seedings have resulted a similar lack of species diversity.

PART #3 - GUIDELINES TO IMPLEMENT

1. Timing and duration of grazing will be managed in a manner that provides for control of cheatgrass fuel loads. This will be done in a way that also minimizes utilization of native perennial species during spring green-up.

2. Cheatgrass will be managed in a manner to make progress toward potential native plant communities, especially the salt desert shrub vegetative type.

3. Management will be aimed to increase utilization of seeded areas to decrease plant "wolfiness" and to break the soil crust and allow for incorporation of native seed.

I concur with the preceding assessment of the Utah Standards for Rangeland Health on the Skull Valley Allotment.

Authorized Officer

Date 9/28/99

Appendix 1.

Rangeland Health Evaluation
Site Documentation Worksheet

#015

State UT **District/Region/Field Office** SLFO

Management Unit (Allotment) N Cedar / Aragonite **Watershed** _____

Pasture Representative Both **Reference Area**: Yes____ or No____

Major Land Resource Area _____

Identification Number (if applicable) 15 **Photo(s) Taken**: Yes ____ or No____

Location: _____

Legal T. 15 S, R 10 W, Sec. 14, ~~SE~~ SW 1/4, ~~SW~~ NW 1/4.

Latitude _____, Longitude _____ or UTM Coordinates _____

Size and **Topographic Position** of Evaluation Area _____

_____

Observers: Bill Kim **Date:** 6/17/99

SITE CHARACTERISTICS

Existing community different than description
Ecological Site 220

Soil Map Unit Name _____

Geology or Parent Material _____ Aspect _____

Slope _____ Elevation _____ ft. Topographic position _____

Annual Precip. _____ **Recent climate**: 1)Drought___, 2) Normal____, or 3) Wet____

SITE USES

Describe wildlife and livestock use in the area of the evaluation area
winter livestock, _____

_____

_____

Describe evidence of recent disturbance (wildfire, recreation, grasshoppers,etc. _____

_____

_____

Bold items are to be require completion, other information is optional.

Appendix 2.

Cover Worksheet

COVER CLASSES (% Canopy)	0	0-1	1-5	6-15	16-30	31-50	51-75	75-100
May have multiple Canopies >100% **LIFE FORMS**								
I - GRASS								
Annuals					32			
Native Perennial					40			
Exotic Perennial	X							
II - FORB								
Annual					24			
Perennial		1						
III - SHRUB		1						
IV - TREE	X							
V - SUCCULENT	X							
VI- BIOLOGICAL SOIL CRUST		1						
GROUND COVER =100%								
I- LITTER				15				
II- BARE GROUND		8	4					
III- ROCK/GRAVEL		81						
IV- BIOLOGICAL CRUST		1						
V- VASCULAR PLANTS								80

Life Form Cover- Record multiple canopy cover classes; total plant canopy may exceed 100%.

Ground Cover- All ground cover in Categories I.-IV. are estimated from **interspace** areas only. Category V. is an estimate of total vascular plant cover; overlapping canopies are counted as only one canopy.

Appendix 3.

Species Abundance Worksheet

The dominant species, noxious weeds (state listed), invasive natives, invasive exotics (non noxious) are ranked according to abundance (cover ☐ or weight ☐). These are required components while the "Dominant Species by Life Form" is recommended but is optional.

Dominant Species on Site

1. Spai
2. Stco
3.
4.

Noxious Weeds

1. —
2.
3.

Invasive Natives

1. Grsa (few present
2.
3.

Invasive Exotics

1. Brte
2.
3.

Optional- Dominant Species by Life Form

The dominant species are ranked according to abundance (cover ☐ or weight ☐) by life form.

Annual Grasses.

1. Brte
2.
3.

Annual Forbs.

1. Lactuca
2. bur buttercup
3.

? Thistle ? skeletons

Perennial Grasses

1. Spai Stco
2. Pose Orhy
3. Krlo Slender wg.

Perennial Forbs

1. ~~Grsa~~ Curlycup gumweed
2. Salsify
3. Spco

Shrubs and Trees

1. low rabbitbrush
2. Grsa
3.

Succulents

1.
2.
3.

Biological Crust (rate by component not species--(e.g.lichen, moss, algae, cyanobacteria)

1. lichens
2. moss
3.

Appendix 4.

Plant Functional/Structural Groups Worksheet

Functional Groups	Potential Comp.[1]	Actual Comp.	Species List for Potential Functional Groups
Per Grass	55	~~80~~ ~~75~~	Spai & Stco
Forbs	5	~~5~~ 2	few scattered
Shrubs	40	~~40~~ 41	
Brte		17 ~~14~~	
Biological Crusts[2]		1	

Potential Comp.[1] is based on per cent composition by weight from site description or estimated/measured from ecological reference area.

Biological Crusts[2] are evaluated based upon cover not composition by weight.

Appendix 6

Rangeland Health Evaluation Summary

Descriptors/Rating Classes

Departure from Ecological Site Description/Reference Area

Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1. Rills					X
2. Water Flow Patterns				X	
3. Pedestals or Terracettes					X
4. Bare Ground					X
5. Gullies			X		
6. Wind Scoured Areas					X
7. Litter Movement					X
8. Physical & Chemical Soil Crusts				X	
9. Soil Surface Organic Matter				X	
10. Plant Community Composition & Distribution- Relative to Infiltration & Runoff				X	
11. Compaction Layer					X
12. Plant Functional/Structural Groups			X		
13. Plant Mortality					X
14. Litter Amount					X
15. Annual Production					X
16. Noxious & Invasive Plants		X			
17. Perennial Plant Reproductive Capability					X
Indicator Summary	**Extreme**	**Moderate to Extreme**	**Moderate**	**Slight to Moderate**	**None to Slight**
Soil/SiteStability (Indicator #'s 1-11)			1	4	6
Hydrologic Function (Indicator #'s 1-11 & 14)			1	4	7
Biotic Integrity(Indicator #'s 9 &11-17)		1	1	1	5

1 big one

high positive

few shrubs but grass

Initial Rating Pending Consideration of Other (Quantitative) Information

Soil/Site Stability	Hydrologic Function	Integrity of the Biotic Community
Stable-------☒	Functioning--------☒	Intact --------☒
At Risk------☐	At Risk ----------☐	At Risk ------☐
Unstable---☐	Non-Functioning-- ☐	Not Intact ---☐

But

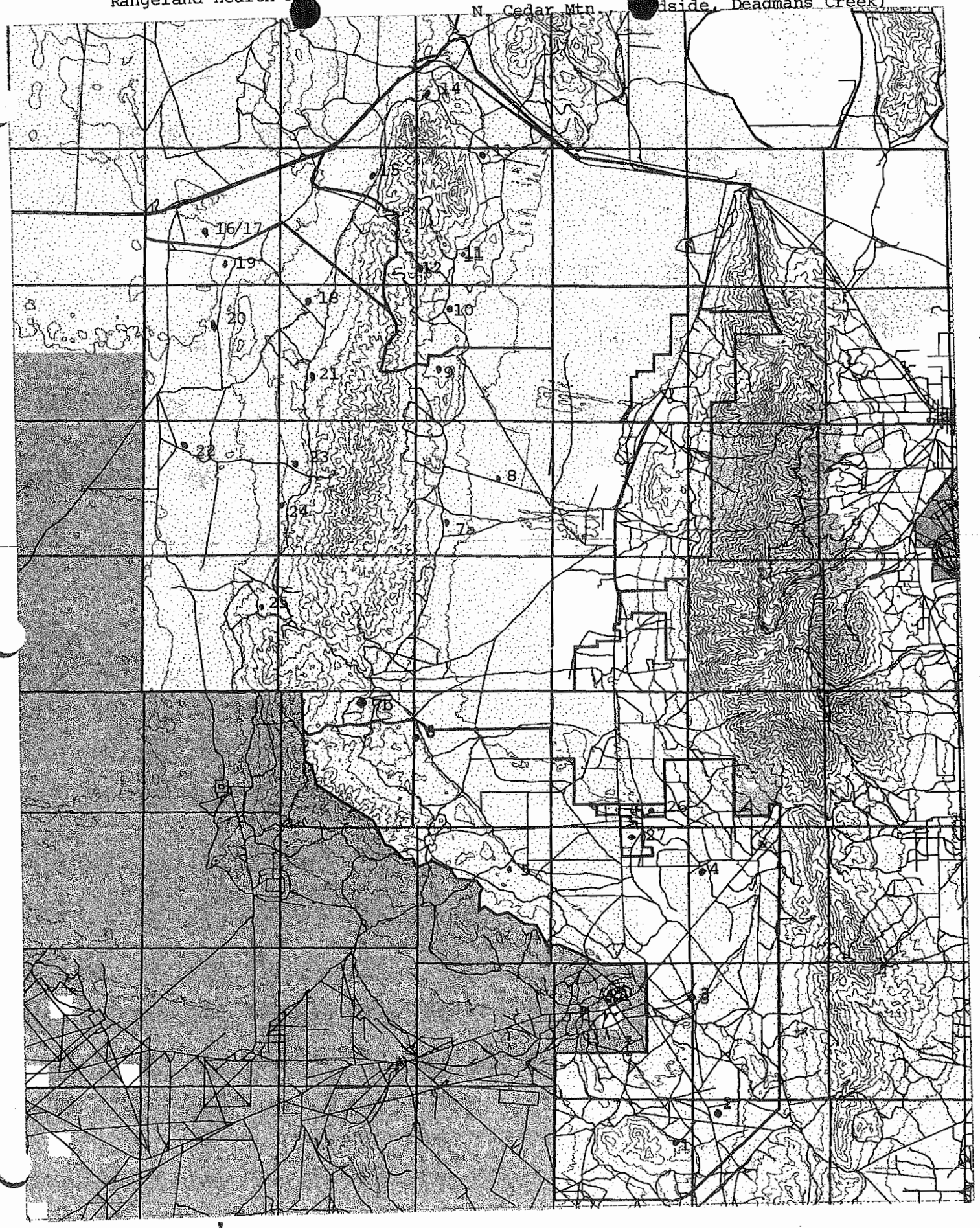
1 active gully w/ headcuts

But

Spai & Sleat Brte dominant species almost no shrubs

Comments on Indicator(s) on other side of this page

Rangeland Health Evaluation Sites (Skull Valley, S. Skull Valley, Aragonite, N. Cedar Mtn., [illegible]ide, Deadmans Creek)



Skull Valley Area

Appendix 1.

Rangeland Health Evaluation
Site Documentation Worksheet

State UT **District/Region/Field Office** SLFO

Management Unit (Allotment) Aragonite Watershed _____

Pasture _____ **Reference Area**: Yes____ or No____

Major Land Resource Area _____

Identification Number (if applicable) 017 **Photo(s) Taken**: Yes ____ or No____

Location: _____

Legal T. 1S ,R. 1W Sec. 21 , SW1/4, SW 1/4.

Latitude _____ , Longitude _____ or UTM Coordinates _____

Size and **Topographic Position** of Evaluation Area _____

_____

Observers: Bill D. & Kim K. **Date:** 6/17/99

SITE CHARACTERISTICS

Ecological Site 119

Soil Map Unit Name _____

Geology or Parent Material _____ Aspect _____

Slope _____ Elevation _____ ft. Topographic position _____

Annual Precip. _____ **Recent climate**: 1)Drought___, 2) Normal____, or 3) Wet____

SITE USES

Describe wildlife and livestock use in the area of the evaluation area

_____

_____

_____

Describe evidence of recent disturbance (wildfire, recreation, grasshoppers,etc. _____

_____

_____

Bold items are to be require completion, other information is optional.

Appendix 2.

Cover Worksheet

COVER CLASSES (% Canopy)	0	0-1	1-5	6-15	16-30	31-50	51-75	75-100
May have multiple canopies >100% **LIFE FORMS**								
I - GRASS								
Annuals		[illegible]	12					
Native Perennial		1						
Exotic Perennial	0							
II - FORB								
Annual			3					
Perennial	0							
III - SHRUB					24			
IV - TREE	0							
V - SUCCULENT	0							
VI- BIOLOGICAL SOIL CRUST						50		
=100% **GROUND COVER**								
I- LITTER		3 14						
II- BARE GROUND		~~60~~ 20						
III- ROCK/GRAVEL		1						
IV- BIOLOGICAL CRUST						40 ~~50~~		
V- VASCULAR PLANTS					~~20~~ 25			

Life Form Cover- Record multiple canopy cover classes; total plant canopy may exceed 100%.

Ground Cover- All ground cover in Categories I.-IV. are estimated from **interspace** areas only. Category V. is an estimate of total vascular plant cover; overlapping canopies are counted as only one canopy.

A lot of shrub litter

Appendix 3.

Species Abundance Worksheet

The dominant species, noxious weeds (state listed), invasive natives, invasive exotics (non noxious) are ranked according to abundance (cover ☐ or weight ☐). These are required components while the "Dominant Species by Life Form" is recommended but is optional.

Dominant Species on Site

1. Hco Save
2. _____
3. _____
4. _____

Noxious Weeds

1. _____
2. _____
3. _____

Invasive Natives

1. _____
2. _____
3. _____

Invasive Exotics

1. Brte
2. _____
3. _____

Optional- Dominant Species by Life Form

The dominant species are ranked according to abundance (cover ☐ or weight ☐) by life form.

Annual Grasses.

1. Brte
2. _____
3. _____

Annual Forbs.

1. Pepperweed Mustard
2. Salsola
3. _____

Perennial Grasses

1. Orhy Sihy
2. _____
3. _____

Perennial Forbs

1. _____
2. _____
3. _____

Shrubs and Trees

1. Little horsebrush Shadscal
2. Greasewood Arsp
3. ?

Succulents

1. _____
2. _____
3. _____

Biological Crust (rate by component not species--(e.g.lichen, moss, algae, cyanobacteria)

1. _____
2. _____
3. _____

Appendix 4.

Plant Functional/Structural Groups Worksheet

Functional Groups	Potential Comp.[1]	Actual Comp.	Species List for Potential Functional Groups
Per Grass	15	1	
Per Forbs	5	~~0~~	
Shrubs	80	95	Atco + Save
Ann grass		1	
Ann forbs		3	
Biological Crusts[2]		40	

Potential Comp.[1] is based on per cent composition by weight from site description or estimated/measured from ecological reference area.

Biological Crusts[2] are evaluated based upon cover not composition by weight.

Appendix 6

Rangeland Health Evaluation Summary

Descriptors/Rating Classes

Departure from Ecological Site Description/Reference Area

Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
1. Rills					X
2. Water Flow Patterns					X
3. Pedestals or Terracettes					X
4. Bare Ground				X	
5. Gullies					X
6. Wind Scoured Areas			X		
7. Litter Movement					X
8. Physical & Chemical Soil Crusts	X				
9. Soil Surface Organic Matter				X	
10. Plant Community Composition & Distribution- Relative to Infiltration & Runoff				X	
11. Compaction Layer		X			
12. Plant Functional/Structural Groups				X	
13. Plant Mortality		X			
14. Litter Amount				X	
15. Annual Production			X		
16. Noxious & Invasive Plants				X	
17. Perennial Plant Reproductive Capability			X		
Indicator Summary	**Extreme**	**Moderate to Extreme**	**Moderate**	**Slight to Moderate**	**None to Slight**
Soil/SiteStability (Indicator #'s 1-11)	1	1	1	3	5
Hydrologic Function (Indicator #'s 1-11 & 14)	1	1	1	4	5
Biotic Integrity(Indicator #'s 9 &11-17)		2	2	4	

Initial Rating Pending Consideration of Other (Quantitative) Information

Soil/Site Stability	Hydrologic Function	Integrity of the Biotic Community
Stable-------☒	Functioning--------☒	Intact --------☐
At Risk-----☐	At Risk ----------☒	At Risk ------☒
Unstable---☐	Non-Functioning-- ☐	Not Intact ---☐

a few of wind scour sites

a lot of hard crusting

not enough per. grass

Comments on Indicator(s) on other side of this page