

The Project

Ducks Unlimited Canada has a conservation project partnership to enhance the waterfowl and wildlife habitat in the Haines Creek Range Unit in the vicinity of Alexis Creek, B.C. The conservation project requires the assessment of range health conditions in wetland areas and surrounding uplands. This report is a result of that assessment.

The field assessment of range health was conducted from Haines Lake west to Bulrush Lakes mainly along Haines Creek in October and November of 2010.

Both Ministry of Forests and Range methodology for range health assessments and *Cows and Fish* methodology for riparian health assessment were used to determine range health in the study area.

Assessment data has been compiled into this report and the attached addendum. A discussion of my findings is also included.

In general the area is trying to support too many cows and too many horses. Range health has been adversely affected by livestock use and many areas are unhealthy, at risk and in far from properly functioning condition.

Wetlands are definitely in better shape (health) than uplands however as water levels decline with continued drought their health will also be negatively impacted by livestock.

In summary, livestock must be better managed than they have been in the past.

Sites 1-8 – Haines Lake area

These wetlands are located at Haines Lake and west along Haines Creek. These wetlands are located in the IDFXm and IDFDk4, the BEC boundary lying just west of Haines Lake. Haines Creek flows through these wetlands till just before it enters Haines Lake, disappearing in the vicinity of the Haines Lake Range Enclosure. There is no flowing outlet on the east end of the lake even though water does flow again in the creek further down stream. These wetlands rate from unhealthy at 37% to healthy at 88%. Haines Creek itself rates at 12%, very unhealthy. (MFR Range Health assessment (2007) rated Haines Creek as Non-Functional to Highly At Risk from Haines Lake west to the corral in the South Pinegrass Pasture.)

Site 1 is primarily a large water sedge wetland surrounded by transition communities. Site 2 is Baltic rush and large water sedge marsh surrounded by transition communities. Site 3 is Haines Creek itself, a shrub-large water sedge community between sites 3 and 4. In this location Haines Creek rates at 77%. Site 4, 5, 6, and 7 are primarily 'transition' meadows with large water sedges just along the creek. At one time this area may have all been marsh, but over time as conditions have changed the plant communities have probably been affected. Site 8 is Haines Lake and the surrounding Baltic rush marsh and transition meadows.

This area is within C-1 Ranch (Alexis Creek Ranch Inc) tenure area. Fences divide this area into three separate pastures, the eastern portion is within the north and south pinegrass pastures divided by a fence that roughly follows along the creek. The area west of the 'Pinegrass' Pastures is included within the larger 'summer range' portion of C-1's tenure area. This entire area has been 'overgrazed' for decades. The North and South Pinegrass Pastures were established to encourage cattle to graze forage in the logged fir stands north and south of Haines Lake. It has been over 40 years since these stands were logged and they no longer produce the forage that they once did. As alternate water sources have dried up, cattle congregate at Haines Creek and Haines Lake and overgraze the wetlands and uplands associated with the creek. Horses and wolves were observed here this fall.

The old wagon road from Deer Creek Ranch through to Wilson Meadow travels along the north side of the lake and creek. Three corrals are found in the area.

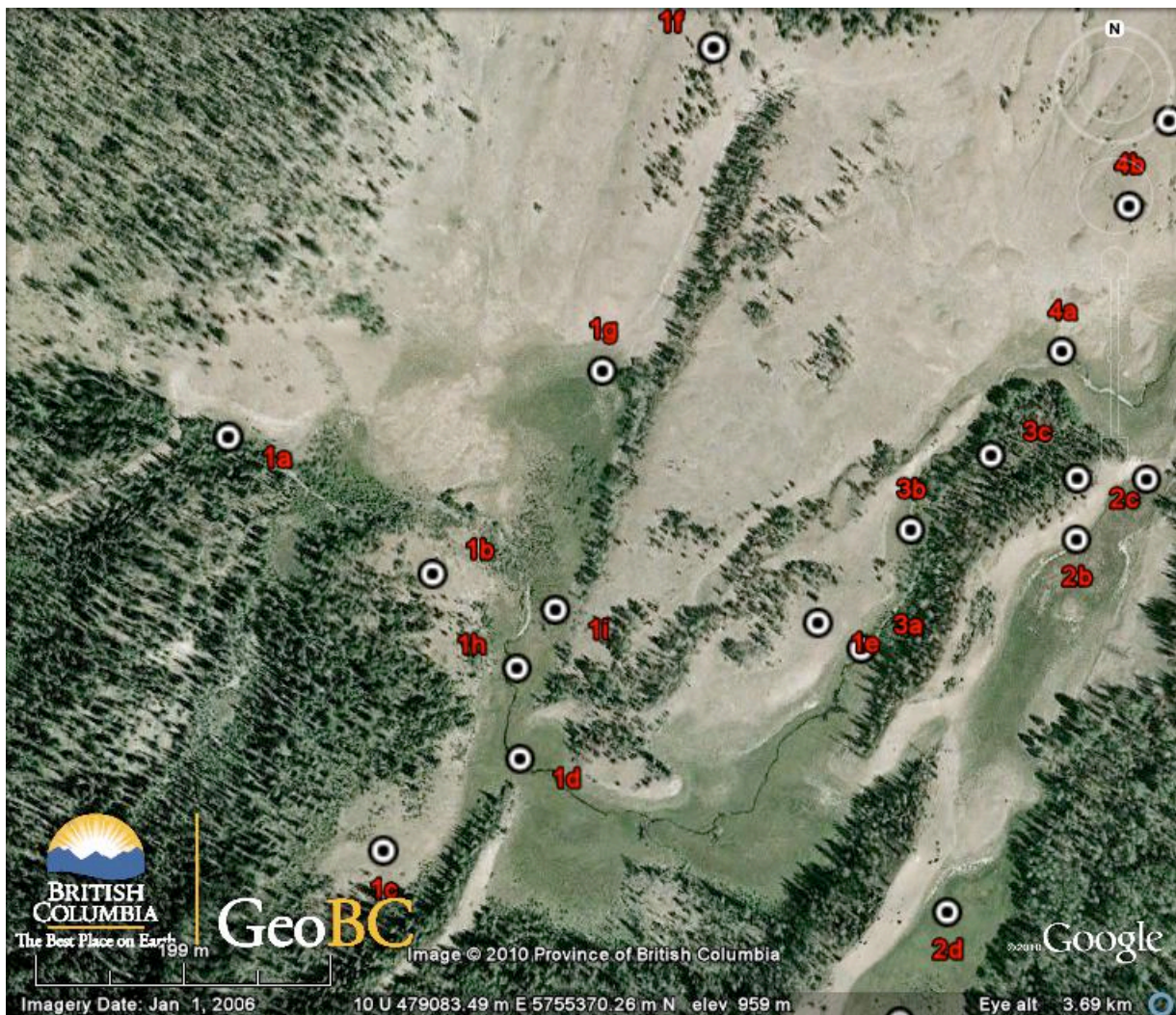
Site 1



Haines Creek flows through this wetland site. The stream is rated as healthy and in properly functioning condition (PFC) and at potential natural community (PNC) in the forested area and healthy with problems (hummocking, pugging and banks broken and eroded) through the wetland area. Adjacent transition and upland communities are unhealthy with the 'open range' communities rated as at risk (AR) or non-functioning (NF). The north side of the creek has had heavy utilization, the south side less so. Both cattle and horses camp in the area.

This site is located in the IDFdk4 BEC zone. A large water sedge (Wm01) community is present along the creek, with alkaligrass-foxtail (Gs02), field sedge (Gs03) and shrub-carr (Sc01) communities adjacent. Production of these sedge/grass communities is >500 kg/ha. Production of the shrub-carr community is rated at 100-500 kg/ha. The open range upland communities are rated at <100 kg/ha.

Maps indicate that the west side of the large water sedge wetland was at one time under water. An earthen dam does exist that could have backed up water at one time in this area.



Site	Plant Community	Health	Production Kg/ha
1	IDFdk4		
1a	stream	88% - healthy	<100
1b	upland	AR- mid seral	<100
1c	Sc01, Gs03	AR – some hummocks	100-500
1d	Stream - Wm01	74% -healthy with problems	>500
1e	Upland	NF early seral	<100
1f	Upland	NF early seral	<100
1g	Gs03, Gs02, Shrub	48% - unhealthy Severely hummocked	>500
1h	Stream – Wm01	74% - PNC	>500
1i	Gs03, Shrub	PNC	>500

See Below for a sample of the Detailed Information Plots (1A, 1H) available for each letter site on Google Earth.



Site 1A) Detailed Plot Imagery on Google File

12/10/10

UTM - 478804 m E 5755431 m N

IDFdk4 - Haines Creek

88% - Healthy



Site 1H)
2/10/10

UTM - 479022 m E 5755247 m N

IDFdk4 - Haines Creek

74% - Healthy with problems

Site 2



This site lies just west of the South Pinegrass Pasture. The wetland is dry and scores at 62%, healthy with problems. Much of the area is hummocked and pugged.

Large water sedge (Wm01) and Baltic rush (Wm06) communities are present with alkaligrass and field sedge communities adjacent (Gs02, Gs03). Production for these communities is >500 kg/ha. Foxtail barley has increased into, invaded, the now dry wetland area.

A saltgrass community is located at the base of the west facing slope and has moved uphill into the upland bluebunch wheatgrass community. Production for these communities is < 100 kg/ha and they are considered to be at risk to non-functioning.

A shrub-carr (Sc01) community is located at the top end (south end) of the wetland. Browsing has been severe in the past, but some recovery of shrubs is evident. Production is rated at 100-500 kg/ha.



Site	Plant Community	Health	Production
2	IDFdk4	62% - Healthy with Problems	Kg/ha
2a	Wm07, Gs02, Gs03	PNC, AR - Hummocked	>500
2b	Gs01	AR-NF	<100
2c	Upland - WG	NF – early seral 40% pussytoes, 30% BG	<100
2d	Wm01	Trampling and hummocks in all areas that were wet	>500
2e	Sc01	Lots of dead shrubs, only occasional use now, PFC, PNC	100-500

Site 3



This site is located between Sites 1 and 3 and is a shrub – sedge- spruce community located at and adjacent to Haines Creek. Health of the wetland is 77%, healthy with problems, and production is rated at 100-500 kg/ha. There is an abundance of litter as there has been no grazing this year. There has been little use of the shrubs.

The west side of the creek is heavily trampled and hummocked, the east side less so. The upland area to the west is at risk to non-functioning, the pine-aspen upland community to the east is in properly functioning condition and at potential natural community.

The creek is well armoured with boulders and cobbles and ranges in width from 1-3 metres.



Site 3	Plant Community IDFdk4	Health 77% Healthy with Problems	Production Kg/ha
3a	Wm01, Shrub	PNC, AR	100-500
3b	Shrub, At	Heavy pugging, hummocking west side of creek	100-500
3c	Upland – Pl, At	PFC, PNC	<100

Site 4

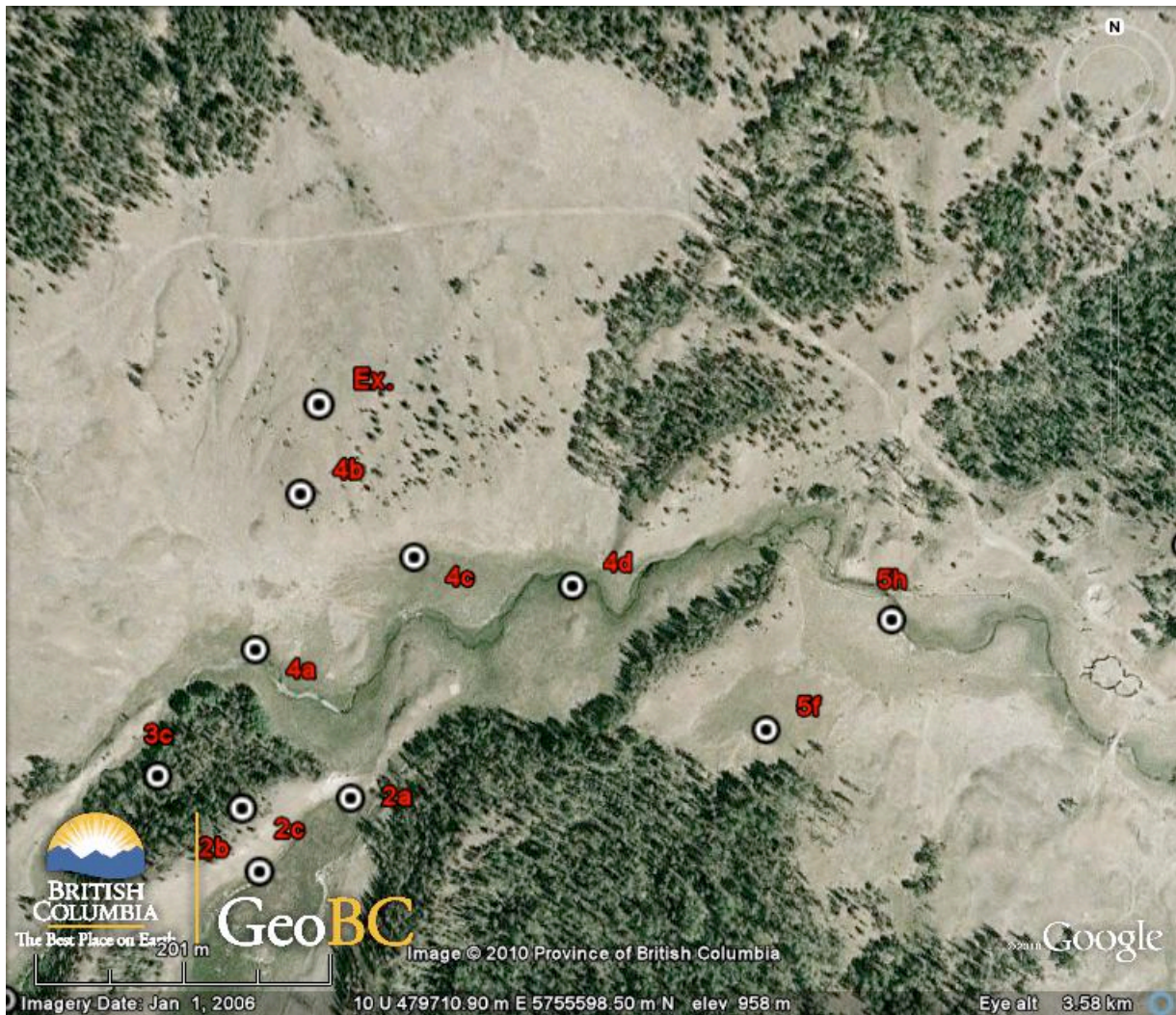


This site lies to the west of the Pinegrass Pastures and is included in the larger 'summer range' portion of C-1 Ranch's tenure area. Both the creek and upland plant communities have been severely impacted by cattle. Horses also make use of the area. The Upper Haines Lake Range Exclosure is located on this site.

The riparian area along the creek, although well-vegetated, is hummocked and pugged with the bank broken and eroded. This is generally a field sedge (Gs03) community with remnant large water sedge at the creek. Production is >500 kg/ha. A saltgrass community lies between the Gs03 and OR upland area. Overall, the wetland is rated at 55%, unhealthy.

The south facing upland community is early seral and non-functioning. Nodding thistle and weedy species are present with up to 80% bare ground. Production is < 100kg/ha. These uplands should be characterized by bluebunch wheatgrass and spreading needlegrass, not cinquefoil and pussytoes.

Cows have camped here and it appears that cows have been salted here.



Site	Plant Community	Health	Production
4	IDFdk4	55% Unhealthy	Kg/ha
4a	Creek – Gs03	Mid seral, AR – Hummocked, eroded	>500
4b	Upland – Fdi, WG NR:bb	NF, early seral – up to 80% BG, cows camp here	<100
4c	GS01	Mid seral, NF - 50% BG, weedy	<100
4d	Wm01,Gs03	AR - Severely hummocked	>500

Site 5

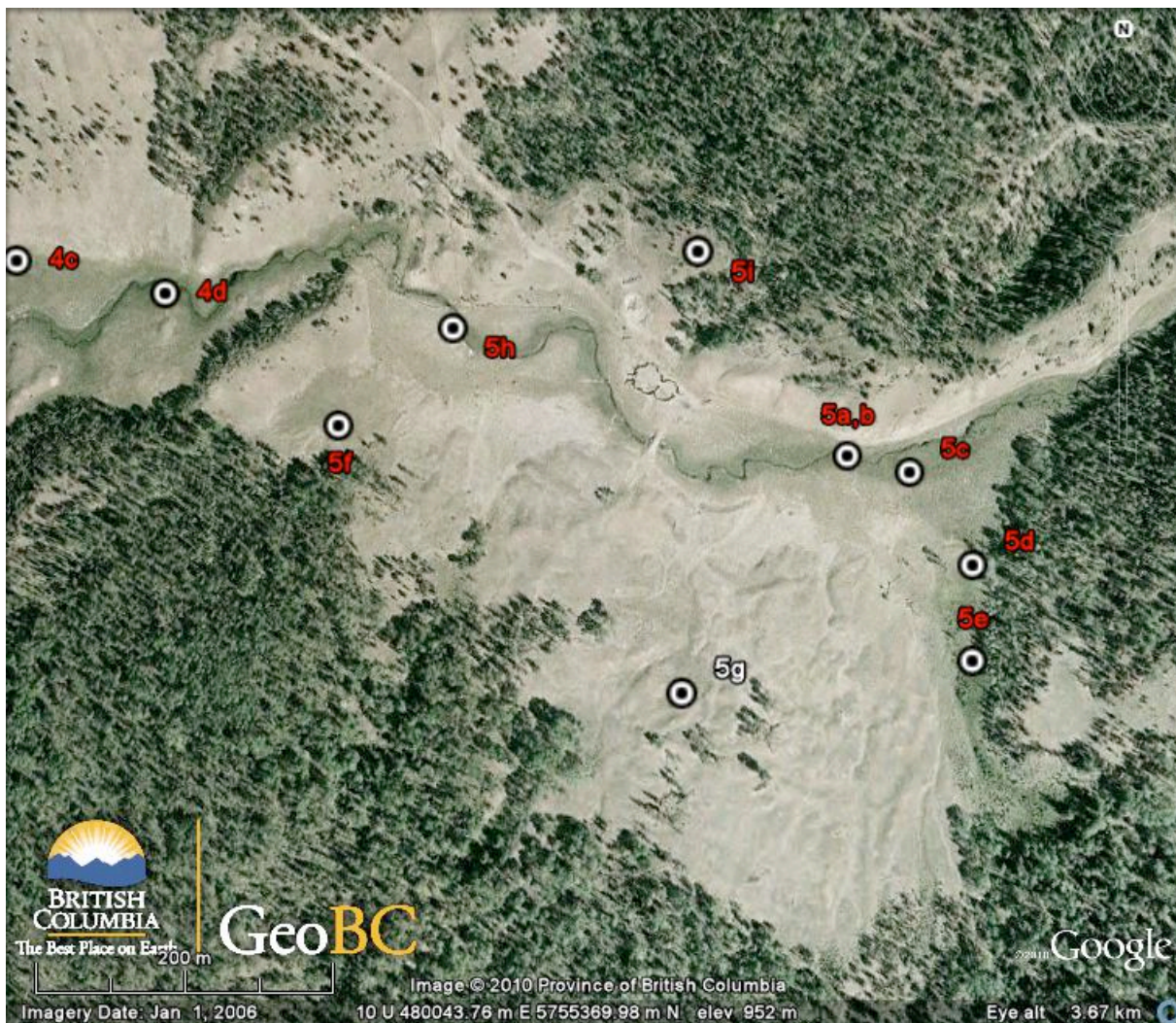


For the most part this site lies within the South Pinegrass Pasture. Three pastures 'corner' here and a corral is also located here. The fence follows along the creek, and the creek and plant communities have been severely impacted by cattle. Horses also make use of the area.

The entire riparian area is hummocked and pugged, and the entire bank area is broken and eroded. Large water sedges are found along the creek, with shrub-carr (Sc01) and field sedge (Gs03) communities adjacent. These communities are rated as unhealthy. Production is >500 kg/ha.

The south facing upland open range community is characterized by bluebunch wheatgrass, kinnickinick and pussytoes, is early seral and non-functioning, with production < 100kg/ha.

The north facing upland area is a complex of Spreading Needlegrass-Baltic Rush, Kentucky Bluegrass seral association and Gs03. The community is at risk with production rated at 100-500 kg/ha.



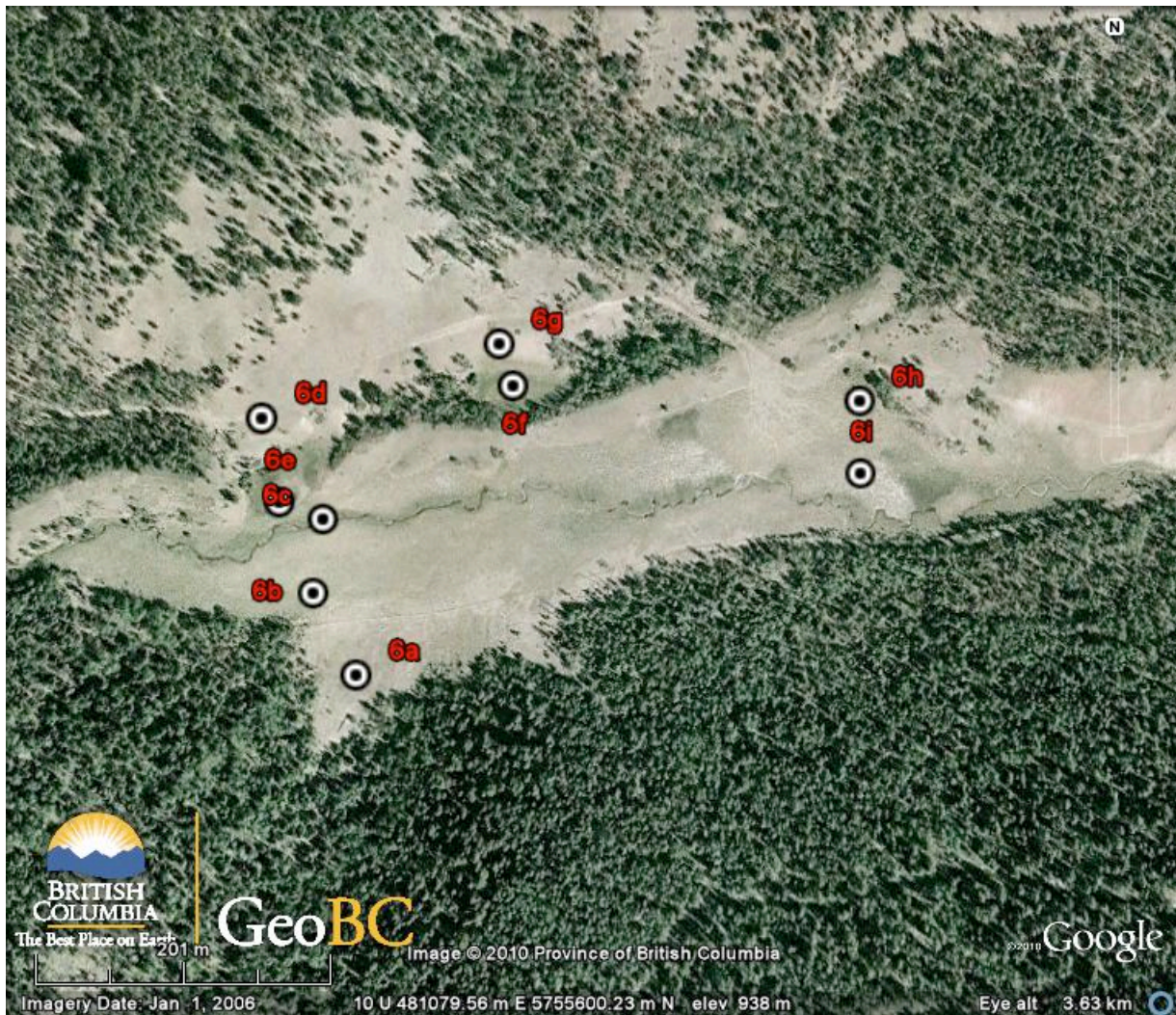
Site	Plant Community	Health	Production
5	IDFdk4	37% - Unhealthy	Kg/ha
5a	Wm01	Mid seral, AR - 100% of banks eroded	>500
5b	Wm07	Mid seral, AR - Severely hummocked	100-500
5c	Sc01	Mid seral, AR - Severely hummocked	100-500
5d	Gs03 - Upland	AR - Compaction and hummocking Healthier than along creek	>500
5e	Sc01	AR-PNC Late seral	100-500+
5f	Gs03	Mis seral, AR - 80-90% mat muhly	100-500
5g	Upland –Needlegrass, Gs03	Mid seral, AR Area subject to seepage	<100
5h	Wm01, Wm07	Mid seral, AR - unhealthy	>500

Site 6



The entire site has been severely impacted by cattle. The wetland is rated at 40%, unhealthy. Haines Creek flows through the wetland. Banks are 100% eroded and broken. Drying and trampling have changed the plant communities with transition (Gs) species increased at the expense of wetter (marsh) species. South facing uplands are non-functioning, north facing uplands, at risk. Shrubs have been so severely browsed that only remnant patches remain.

The creek has remnant large water sedge and sloughgrass but is dominated by *Juncas*. Transition communities make up the majority of the wetland area, primarily Gs03 – field sedge, but also alkaligrass - Gs02, and saltgrass - Gs01. Again, saltgrass has invaded upslope into what I believe should be an upland wheatgrass community.



Site	Plant Community	Health	Production
6	IDFxm	40% - Unhealthy	Kg/ha
6a	Upland - needlegrass	AR – mid seral	100-500
6b	Gs03	AR –mid – late seral	100-500
6c	Creek - Wm07	100% of banks eroded	>500
6d	Upland - wheatgrass	NF – early seral, 'weedy' species	<100
6e	Gs02	hummocked	>500
6f	Wm-Gs	AR	>500
6g	Gs01	NF, 50% BG	<100
6h	Sc01	Severely impacted by overgrazing	100-500
6i	Gs02, Gs03	AR-NF 'weedy species'	100-500

Site 7

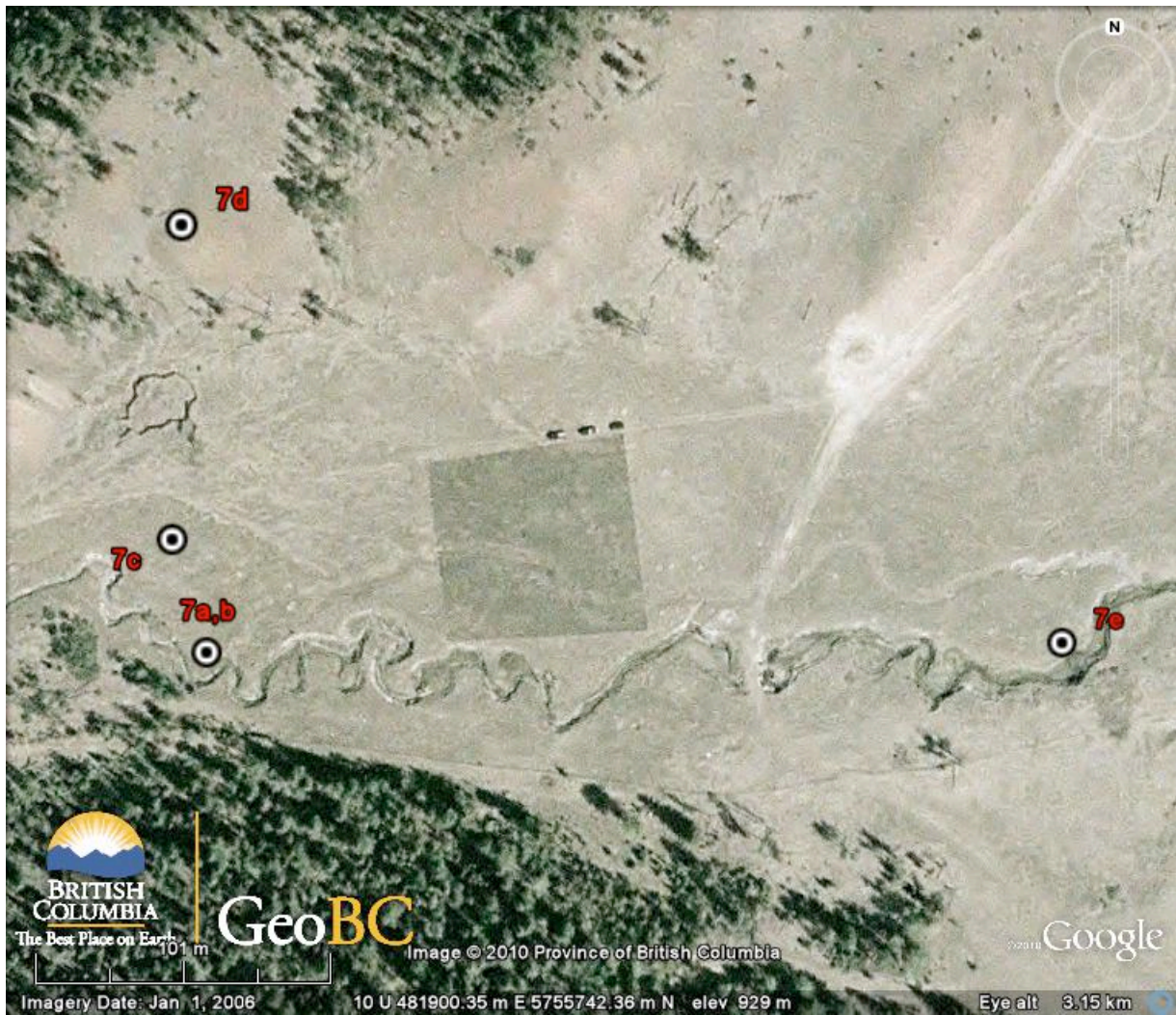


This site is located just west of Haines Lake with Haines Creek flowing through the site. The old wagon road travels along the north side of the creek. The South Pinegrass Pasture is accessed here by a culvert crossing just below the Haines Lake Range Enclosure. The creek is dry from the culvert on down to the lake. A corral is also located on this site.

This site is located in the IDFxM BEC zone. Transition communities are primarily field sedge (Gs03) and saltgrass (Gs01). Saltgrass is found far up the south facing slopes. These communities are at risk to non-functional with many 'weedy' patches. Livestock use has been excessive. Forage production is rated at 100-500 kg/ha. The bluebunch wheatgrass upland community is generally early seral with production rated at <100 kg/ha.

Haines Creek is entrenched, confined, and rated as unhealthy (12%) in this location. 100% of streambanks are breaking off or eroded. Species present in the creek include sedges, rushes, sloughgrass, bentgrass, and reedgrass. Some sow thistle was observed. Even with only a year of rest some willows are showing signs of recovery.

The Haines Lake Enclosure is located here and is visible in the above photo.



Site	Plant Community	Health	Production
7	IDFxm		Kg/ha
7a, 7e	Stream	12% - Unhealthy 100% of banks breaking off Entrenched, confined	100-500
7b	Wm07	AR - compacted	100-500
7c	Gs01, Gs03	AR - 30-50% BG	100-500
7d	Upland – Wheatgrass/Needlegrass	AR-NF 40% BG 'weedy' species dominate	<100

Site 8 – Haines Lake



Haines Lake was used for water storage when the dam at the east end of the lake was functional. Water levels have dropped significantly and the wetland area has been drying out ever since the dam blew out in the late '80's. At one time, the boundary fence between the North and South Pinegrass Pastures tied into both ends of the lake, but both ends are now high and dry. The entire area has been negatively impacted by cattle.

This site is located in the IDFxM BEC zone. Shrub-carr (Sc01), field sedge (Gs03), alkaligrass and foxtail (Gs02) and saltgrass (Gs01) communities border the wetland area. Foxtail barley has increased dramatically as the wetland has dried. Production for these communities is rated at >500 kg/ha, except the saltgrass communities where production is rated at between 100-500 kg/ha. The wetland area is a Baltic rush (Wm07) community and production is > 500 kg/ha. All of the edge of the wetland and riparian area has been severely trampled. Livestock use of the entire area has been excessive. Bluebunch wheatgrass uplands are generally early seral and at risk to non-functioning with production rated at <100 kg/ha. All plant communities at Haines Lake are considered to be unhealthy and at risk to non-functional. Both nodding thistle and Canada thistle are present. Cheatgrass is visible in the picture above, taken from the west end of the lake.



Site	Plant Community	Health	Production
8	IDFxm	37% - Unhealthy	Kg/ha
8a	Lake edge - Foxtail	AR	<100
8b	Wm07, Wm01	AR - hummocked	>500
8c,d	Wm07 Gs03	AR - Severely pugged Was lake edge at one time	100-500
8e	Gs03	AR – NF Weedy with numerous bare patches	<100
8g	Wm07	AR - 100% of edge trampled 37% - unhealthy	100-500
8h	Upland – Gs01, Wheatgrass	NF –severely impacted by livestock	<100
8i	Gs03	AR - Bluegrasses, Canada thistle Severely impacted due to low H2O	100-500



Site 8H)23/10/10

UTM - 483370 mE, 5755776 mN

Gs01-Gs03 to upland

NF