Blowout and Loamy Range Site Association; Dry Mixedgrass
Blowout (BIO) Characteristics

- Dominated by Wheatgrass.
- Irregular micro-topography.
- Relief generally ranges from 10 to 50 cm.
- Often in association with Loamy site types but can occur with Sandy, Clayey, Overflow, Thin Breaks, and occasionally with Sands and Badlands.
<table>
<thead>
<tr>
<th>Brown Solodized Solonetze</th>
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<td>Ah</td>
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<td>Ae</td>
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<td>Bnt</td>
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<td>BCks</td>
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Classic Subgroup Associated with Blowouts
Complex of Blowouts (BIO) and Loamy (Lo)

Association of dominant (BIO 80%) and significant (Lo 20%)

Polygon properties:
• BIO have more bare soil.
• Silver Sagebrush occurs in both BIO and Lo.
  Provide estimates on silver sagebrush shrub height, cover and distribution pattern.
Blowouts (BIO) with Bare Soil

Provide a visual estimation of the percentage of non-vegetated for the Blowouts and Loamy site types.
Complex of Blowouts (BIO) and Loamy (Lo)

Provide an estimate of the % grass within each site type
Blowout site types (BIO) may hold water after precipitation and/or runoff events

How to deal with the temporal differences that may occur due to seasonal or annual differences? **Answer: Base on image assessment**
DMG: Developed, Oil and Gas (Dev-OG). Tributary to Sage Ck.
Primary Class: Anthropogenic  Site Type: Developed (Dev)
Land Class: Industrial  Modifier: Oil or Gas Facilities (OG)

Facilities must be $\geq 5$ ha
Wellsite development in the Dry Mixedgrass

Oil or gas wellsites, approximate 1 ha (100 m x 100 m). This does not meet the minimum sized GVI polygon requirements (5 ha) so not mapped in GVI.

Numerous plants, including foxtail and kochia, indicate soil salinity.

Ltc H with SL
Active Gravel Pit in the Dry Mixedgrass

**Primary Class:** Anthropogenic  
**Land Class:** Industrial  
**Site Type:** Pits (Pit)  
**Modifier:** Gravel

The Pits Site Type has either of current or historic use.

Reclaimed areas $\geq 5$ha are usually Tame Pasture (PN). If native species are becoming dominant then Primary Class will be Native/Natural, and usually a Gravel (Gr) or Shallow to Gravel (SwG) Site Type.
Pits (Pit) and Gravel (G) modifier

Limy (Li) and Thin Breaks (TB) Native Natural Site Type

Gravels native natural site type beyond the pit
DMG: Developed – Confined Feeding Operation.
Feedlot north of Medicine Hat
DMG Site Types North of Medicine Hat: Cropland Irrigated; Developed – Confined Feeding Operation; Rural; Sands; Thin Breaks; Badlands
Hutterite Brethren in the Dry Mixedgrass

Primary Class: Anthropogenic
Land Class: Industrial

Site Type: Developed (Dev)
Modifier: Confined Feeding Operations (CFO)

Living quarters and infrastructure not related to livestock production is delineated or described as Rural (Ru).
Crop Non-irrigated (CN) with Shrub Shelterbelts
Shelterbelts in the Dry Mixedgrass

**Tame pasture, non-irrigated (PN)**

**Caragana, 100% shrubs, >3m height**

**Russian olive, 100% deciduous trees, 3-6 m ht.**

**Cropland, non-irrigated (CN) - canola stubble**
Crop Non-irrigated (CN) with Caragana shrub shelterbelts

GVI attribution: length in meters
percent shrub (100%)
shrub height (e.g. choice of 1-3m or >3m)
Country Residential Holdings in the Dry Mixedgrass

Primary Class: Anthropogenic
Land Class: Settled
Site Type: Rural (Ru) Country Residential or Multi-Lot Subdivision
DMG: Settled, with both Urban and Rural at Taber
DMG: Medicine Hat and Trans-Canada Highway Urban; Developed – Transportation; Cropland Irrigated

Lentic Open Water
DMG: Developed; Modifier- Industrial Processing (Dev-IP)
Methanex Plant at Medicine Hat
DMG: Cropland Irrigated (CI) using Flood Irrigation
Crop Non-Irrigated (CN)
Annual Cereal
DMG South of Taber: Cropland Non-Irrigated (CN), Salinity in Cropland (CN-Sn), and Shelterbelts
Possible Steps to Delineate and Map this view:
1) Delineate Cropland Non-irrigated (CN) areas that do not have salinity.
2) Delineate recognizable patterns of salinity >5 ha in cropland. Eg. Have separate polygons for dominant vs. significant salinity.
3) Describe the salinity distribution pattern for each CN-Sn polygon.
Cropland, Non-irrigated

Cropland with Salinity; Strongly Affected
Possible Steps to Delineate and Map this view:
1) Delineate Cropland Non-irrigated (CN) areas that do not have salinity.
2) Delineate the forage fringe as a separate polygon (described as PN-Sn) with possible Distribution Pattern 6 (a single patch plus several sporadic occurrences).
3) Describe the central area as Crop Non-Irrigated (CN-Sn) with dominant salinity, with possible Distribution Pattern 11.
DMG; Lentic Alkali (LenA)
Lentic Alkali (LenA)
Lentic Alkali near Bare Creek, with 85% bare soil.

Strong correlation amongst mappers on site type and attributes.
Lentic Alkali + Blowouts at edges
Lentic Alkali Site Types in Background. Complex of Blowouts, Loamy and Lentic Semi to Permanent in Right Foreground. Badlands in background.
DMG: Hypersalinity on the West Side of Verdigris Lake
DMG: Hypersalinity features on the salt and mud flats of Verdigris Lake.

Lentic Alkali
DMG: Verdigris L.; Lentic Alkali & Saline Lowland Discharge
Provide estimates for shrub %, shrub height class, shrub cover, and distribution pattern for the upland Native Natural site type.
Lentic Temporary near Canal Ck. area—*Hordeum jub.* and *Agrostis sp.*  Moderate degree of correlation.

**Issue:** Possible overlap to Lentic Seasonal

**Decision:** Supply tables & figures for mappers on Lentic separation.
Canal Creek
East
Line 4 # 109

Lentic T

Cr (Cy)
DMG: Lentic Seasonal (Len S) North of Lost River Ranch
Dry Mixedgrass: Wetland Site Types

Lentic
Semi to Permanent Wetland (LenSP),
>1 ha

Lotic herbaceous channel
DMG: Lentic Semi to Permanent Habitats S. of Murray Lake
DMG: Shrub edge South of Murray Lake
Lowland Area Example in the Dry Mixedgrass

Saline Lowland (SL)

Subirrigated (Sb) is indicated by the presence of wild licorice (GLYCLEP)
Saline Areas in the Dry Mixedgrass

Saline Channel, Lotic Herbaceous

Saline Lowland (SL) or seep is a component of the surrounding unit
Saline Lowland (SL) Example in the Dry Mixedgrass

Foxtail barley (*Hordeum jubatum*)

Red Samphire
(*Salicornia europa*)
Saline Lowland (SL)

Foxtail Barley or other salophytes
Saline Orthic Humic Regosol

Organic staining; salt and carbonate enriched

Saline Lowland (SL) if native vegetation
Example of Irrigated Pasture (PI) in the Dry Mixedgrass

Rose, indicating sandy textures

Irrigation delivery ditches

Salinity in PI; with foxtail barley

Drainage ditch to reduce salinity
Example of Irrigated Pasture (PI) in the Dry Mixedgrass

- Rose, indicating sandy textures
- Irrigation delivery ditch
- Foxtail barley, indicating salinity
DMG: Saline Lowland Dominated by Salophytes
DMG: Saline Lowland with Areas of 100% Bare Soil
DMG: Lentic Alkali, Saline Lowland and Overflow in Milk River Valley NW of Aden
DMG: Saline Flows from West into Verdigris Valley
DMG: Lotic Herbaceous, Overflow & Blowouts in Verdigris
DMG: Shrubs Indicate Shallow Groundwater and may be subject to occasional runoff flows; S of Murray Lake
Lotic Deciduous (Ltc D) in the Dry Mixedgrass

GVI Attribution:
- Percent trees
- Percent grass
- Percent non-vegetated
- Tree height (8 - 15 m)
- Tree cover
- Tree distribution pattern (12, continuous & dense)

Populus deltoides)
Stream Channel Example in the Dry Mixedgras

Limy (Li)

Overflow (Ov) terrace ringed by shrubs

Lotic Herbaceous (Ltc H)
Lotic Herbaceous (Ltc H) in the Dry Mixedgrass Cropland Non-irrigated (CN)

*Phalaris arundinaceae (Reed Canary Grass)*
Lotica Herbaceous (Ltc H) with *Phalaris arundinacea*ae

Shrub fringe at lower edge of Limy (Li) slope.
Why is the Limy site type expected on this slope?
Example of Numerous Site Types Near Taber in the Dry Mixedgrass

- Loamy (Lo)
- Limy (Li)
- Thin Breaks (TB)
- Lotic Shrub (Ltc S)
- Lotic Herbaceous (Ltc H)
Canal Ck area. Ov with each of Lotic-H and Lotic-S

**Issue:** Consistency between mappers to be stressed.
Oldman River Valley in the Dry Mixedgrass

Lotic Shrub and Lotic Herbaeous (Ltc S and Ltc H)

Limy (Li)

Badlands

Lotic Deciduous

Overflow (Ov) with western porcupine grass

Overflow (Ov) with rose and snowberry shrub cover

Silverberry
Lotic River (Ltc R), Oldman River NE of Taber

- Limy (Li)
- Thin Breaks (TB)
- Badlands (BdL)
- Lotic Herbaceous (Ltc H)
- Overflow (Ov)
DMG: NWA Suffield at River Sentry Trail. Thin Breaks, Badlands and Limy
DMG: Lotic and Upland Site Type Complex in Western Part of Milk River Canyon
Array of Site Types in Milk R. Canyon; If you identify nine unique GVI site types in this picture, you have a good understanding of GVI.
DMG: Oxbow and Lentic ? in the Milk River Canyon
Lost River Overflow and Saline spring issues - SL or Lotic H; OR point symbol? Agreed on Ltc H as springs are an origin for flow.
Lost River Overflow area with springs or seeps; What site types? Agreed on Ov 65, TB 20, LtcH 15.
DMG: Lotic and Upland Site Type Complex in Oldman River Valley North of Purple Springs
DMG: Lotic Complex in Milk River Valley North of Aden
DMG, Milk River Canyon Overflow (Ov) in Twp. 2, Rge. 6 with Lotics near river
DMG: Police Coulee at the Junction with the Milk River