

**Natural Regions/Subregions**  
**Draft 2004 - Version2**

**Boreal Forest Natural Region**

- Central Mixedwood
- Dry Mixedwood
- Northern Mixedwood
- Sub-Arctic
- Peace-Athabasca Delta
- Lower Boreal Highlands
- Upper Boreal Highlands
- Athabasca Plain

**Rocky Mountain Natural Region**

- Alpine
- Sub-Alpine
- Montane

**Foothills Natural Region**

- Upper Foothills
- Lower Foothills

**Canadian Shield Natural Region**

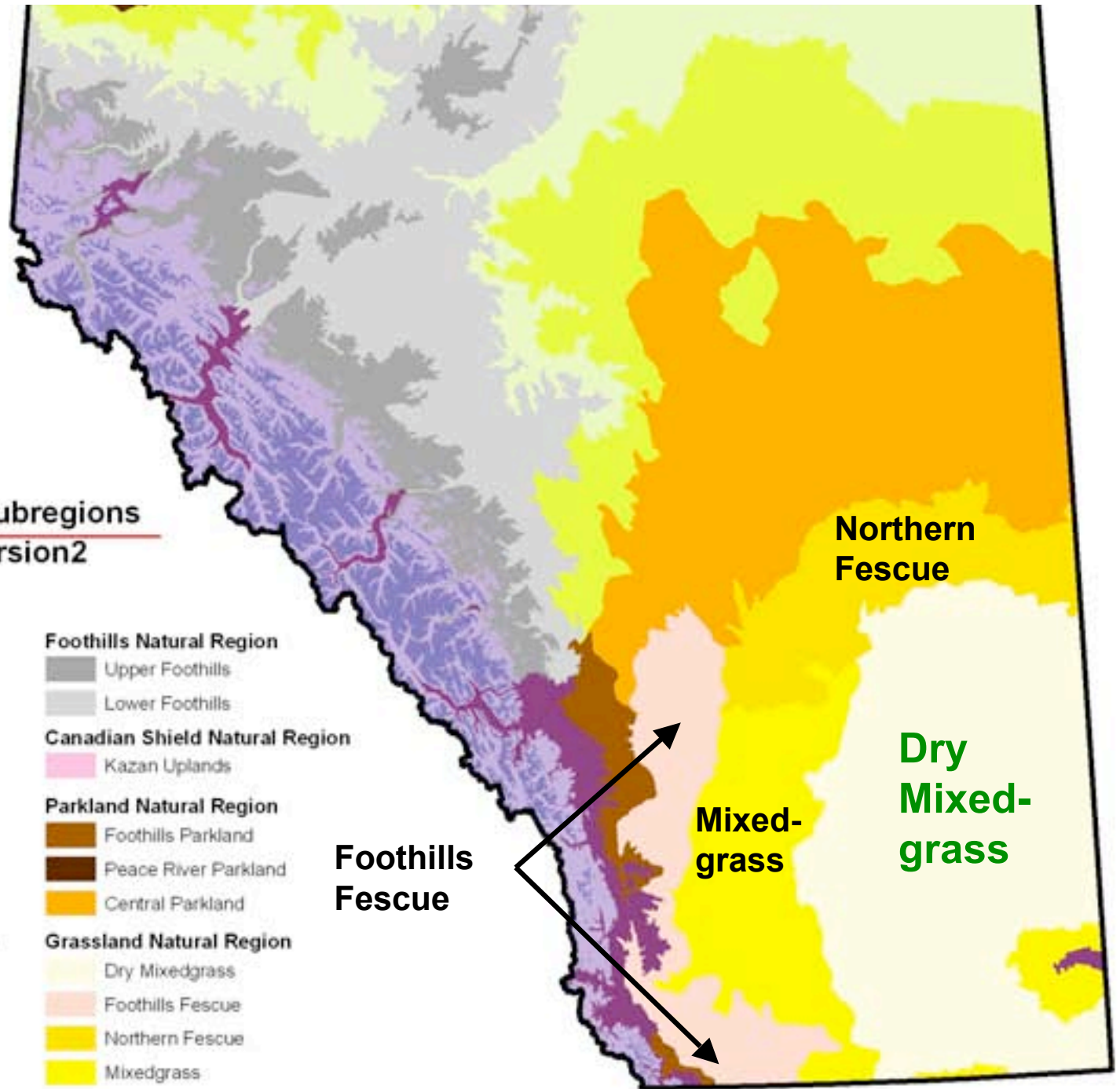
- Kazan Uplands

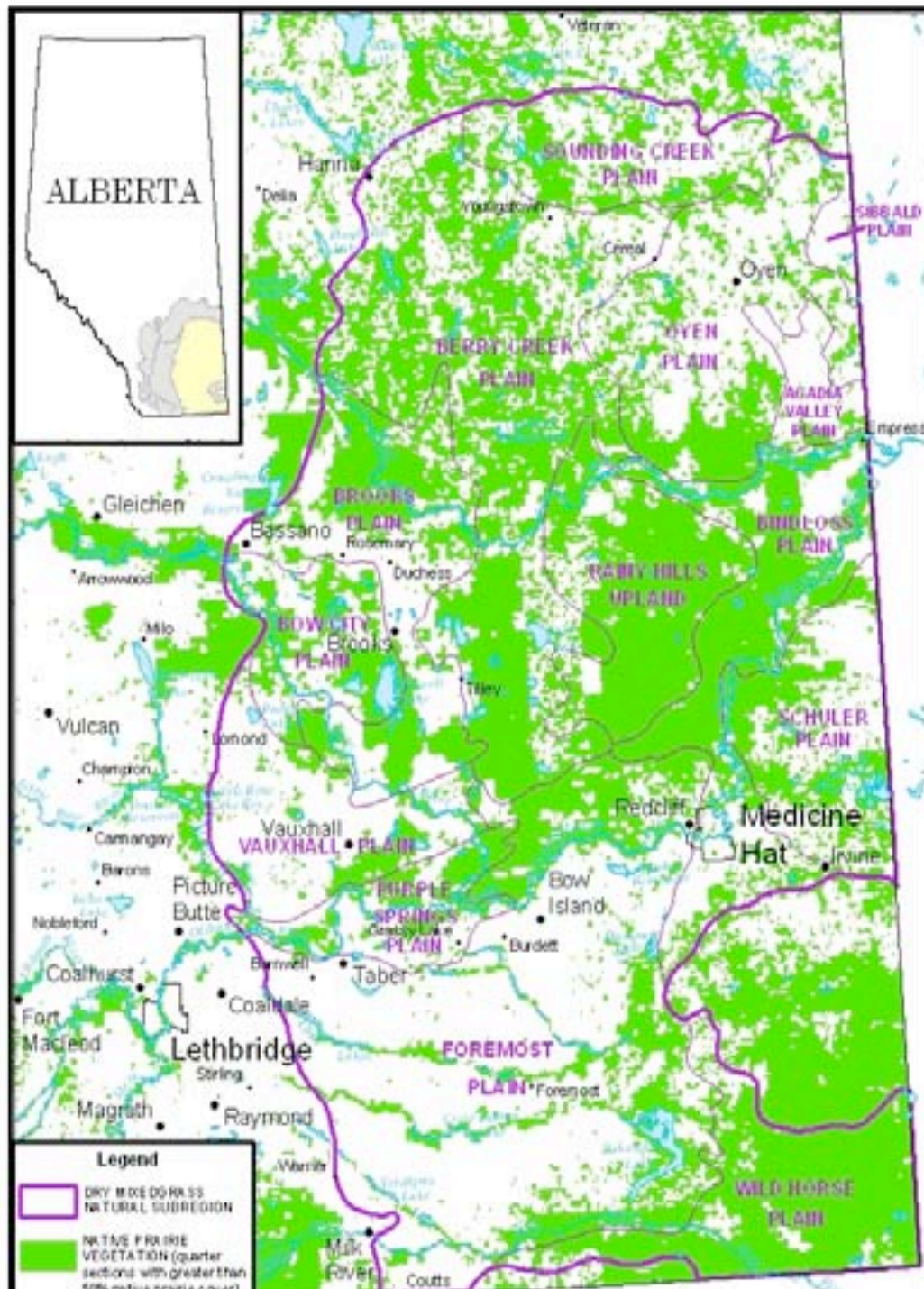
**Parkland Natural Region**

- Foothills Parkland
- Peace River Parkland
- Central Parkland

**Grassland Natural Region**

- Dry Mixedgrass
- Foothills Fescue
- Northern Fescue
- Mixedgrass





# Dry Mixedgrass

## Native Prairie Baseline Inventory and Ecodistrict Names and Boundaries



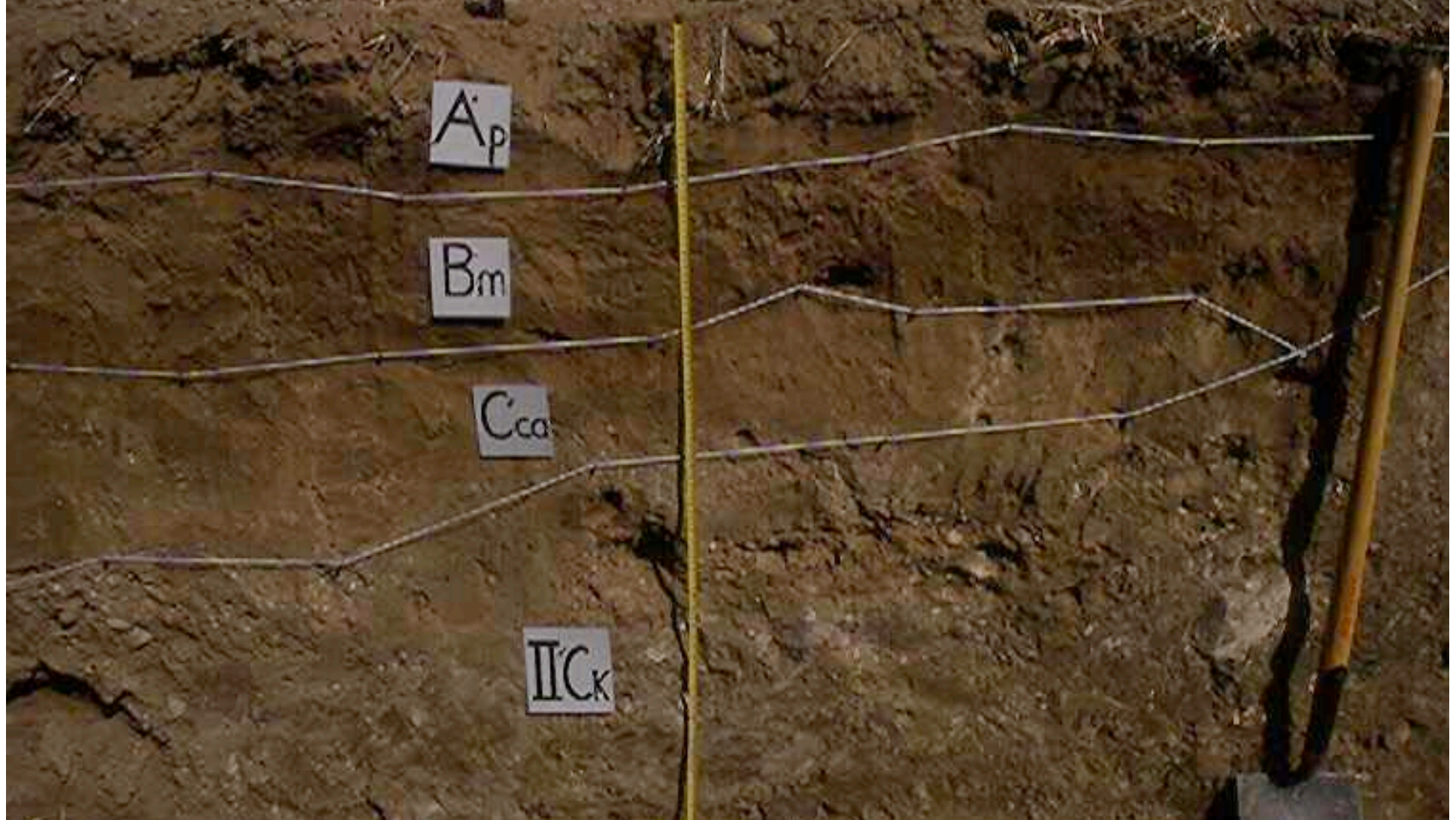
# Loamy (Lo) Range Site in the Dry Mixedgrass

This example is dominated by Blue Grama grass





**Dry Mixedgrass. Cultivated Non-Irrigated (CI); CFD  
soil;  
Orthic Brown Chernozem - loamy lacustrine veneer /  
till**





# Dry Mixedgrass, Etzikom Coulee

**Lentic Semi to Permanent  
80%: LenW 20%**

**Water Body;  
LenW 100%**

**Loamy and Limy:  
Brown Chernozemic**

**Cropland, non-irrigated**

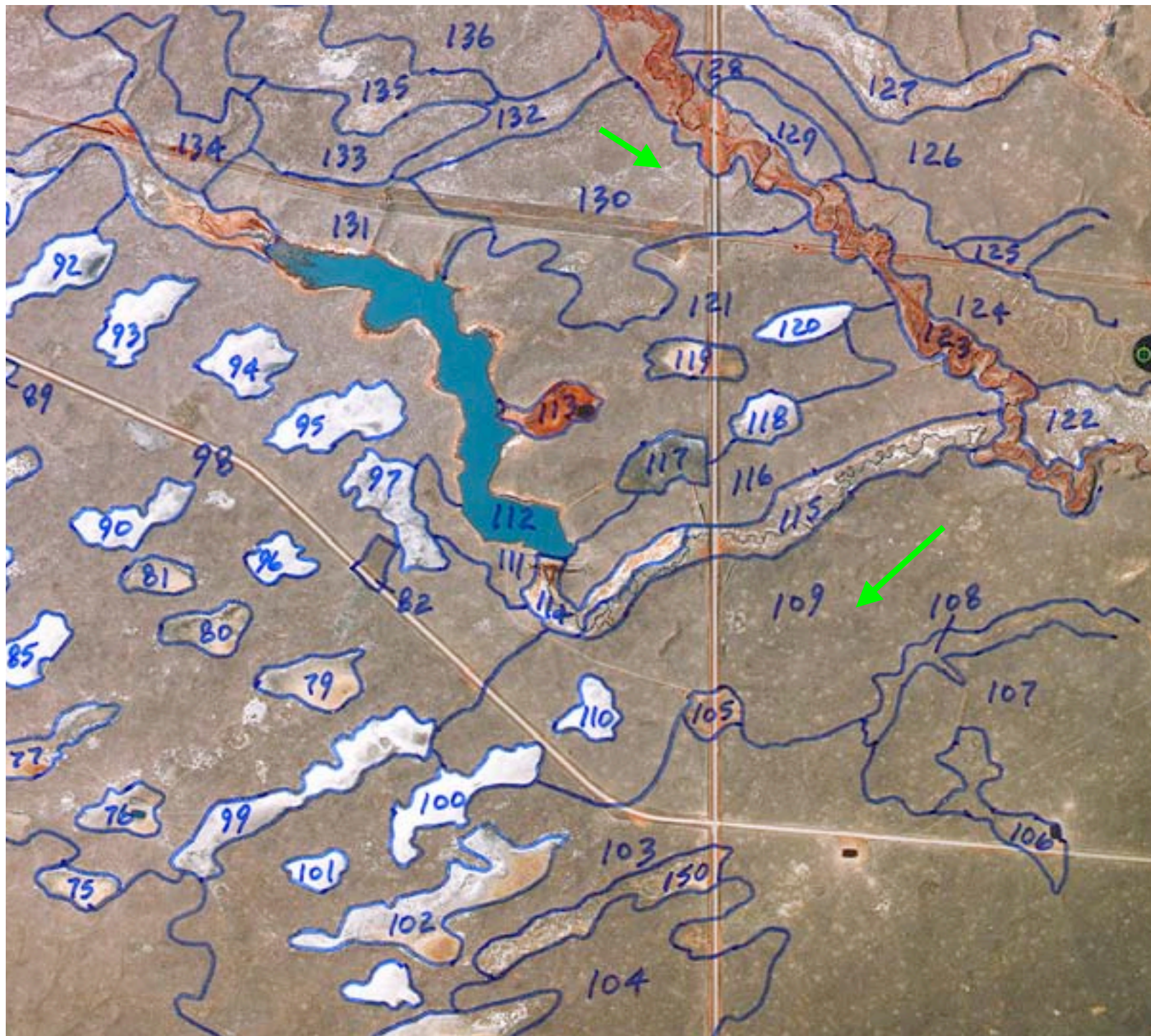
**Limy and Gravels:  
Regosolic Order and Rego Brown Chernozem**











# Bare Creek

Line 6  
# 178



## **Dry Mixedgrass: Sage Creek Floodplain west of Hwy. 41**

**Overflow 40%, Loamy 30%, Blowouts 20%, Lotic Shrub 10%.  
Up to 40% silver sagebrush cover.**







Lotic  
herbaceous—(Sedge-  
herb)

**Overflow with Silver sagebrush at approximately 30% cover on levee (above active floodplain) of Canal Creek.**

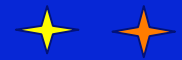


# **Dry Mixedgrass; Classic Overflow example following a Storm Event**

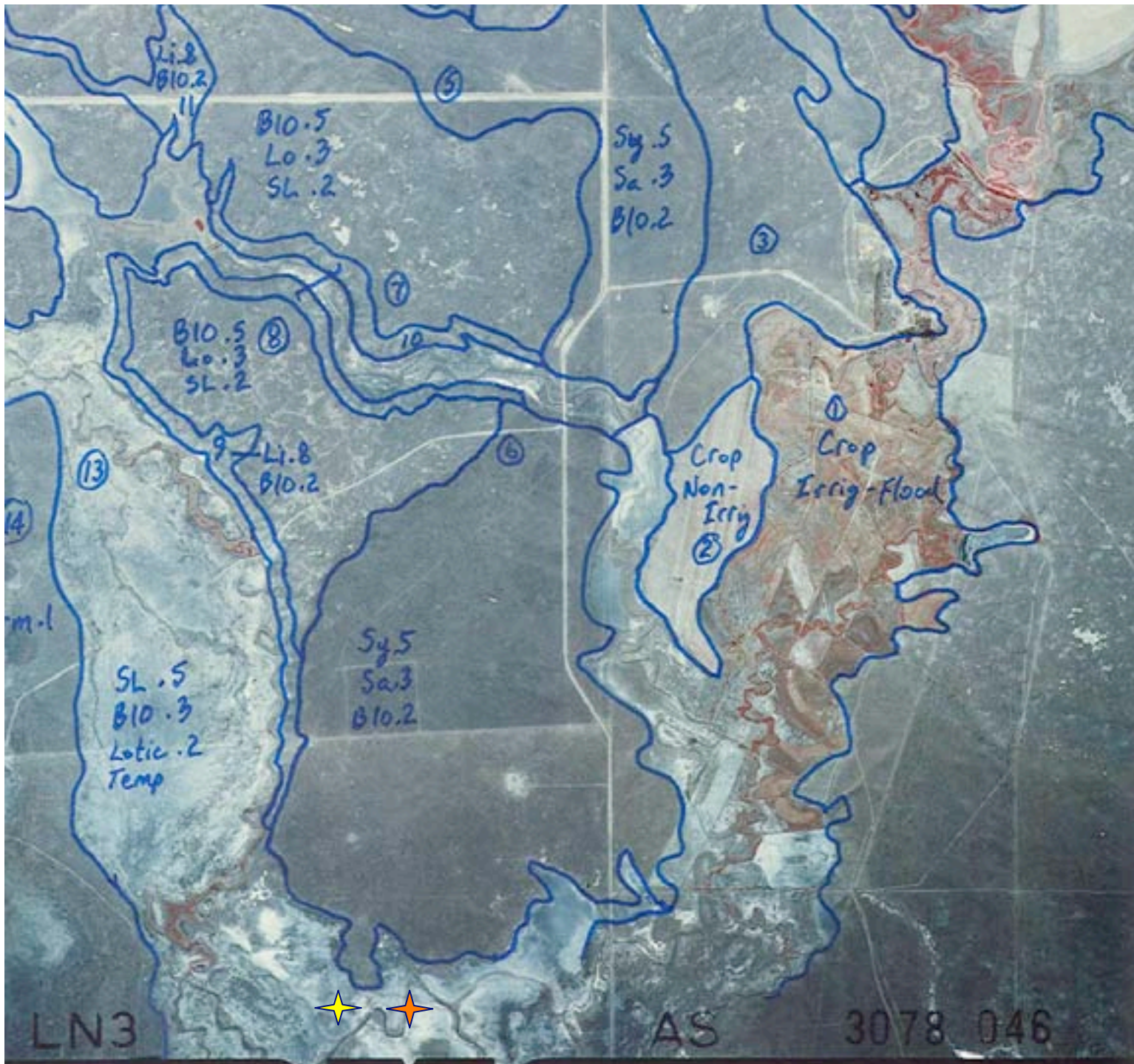




# Wild- horse Pilot 1984



Point  
locations for  
slides  
representing  
the  
northeast  
corner of the  
Wildhorse  
Pilot  
Township.





# ★ Overflow and Saline Lowland Range Sites after a runoff event; Dry Mixedgrass

**Sodic and Saline Orthic Regosol**  
**Moderately fine textured valley fill sediments**







★ 40 to 70% bare ground in foreground. Drying and curling sodium-enriched muds are derived from overflow waters.





## **Low gradient overflow channel of Sage Creek.**

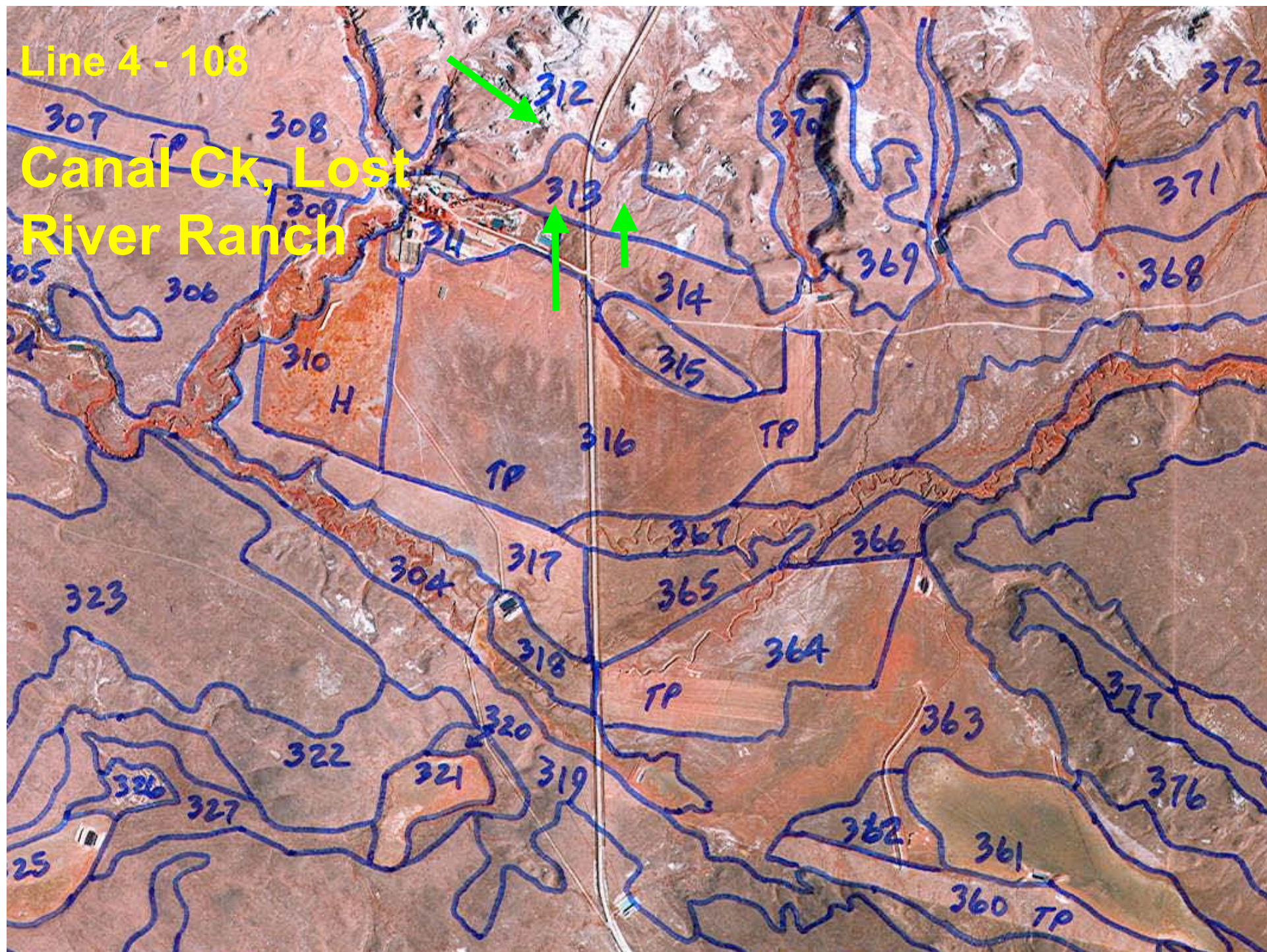
**Shallow evaporative pond of channel at right. Channel boundary is visible in left and middleground. Channel ranges from 5 to 35 m wide (avg. 10 m) and 10 to 35 cm deep (avg. 20 cm).**





Line 4 - 108

Canal Ck, Lost  
River Ranch





**Canal Ck: Source of Overflow; with TB and BdL in back.**

**Issues:** Initial site type calls and % of Ov was varied.

**Decision:** Mappers need more info re separation of Ov vs. Lo

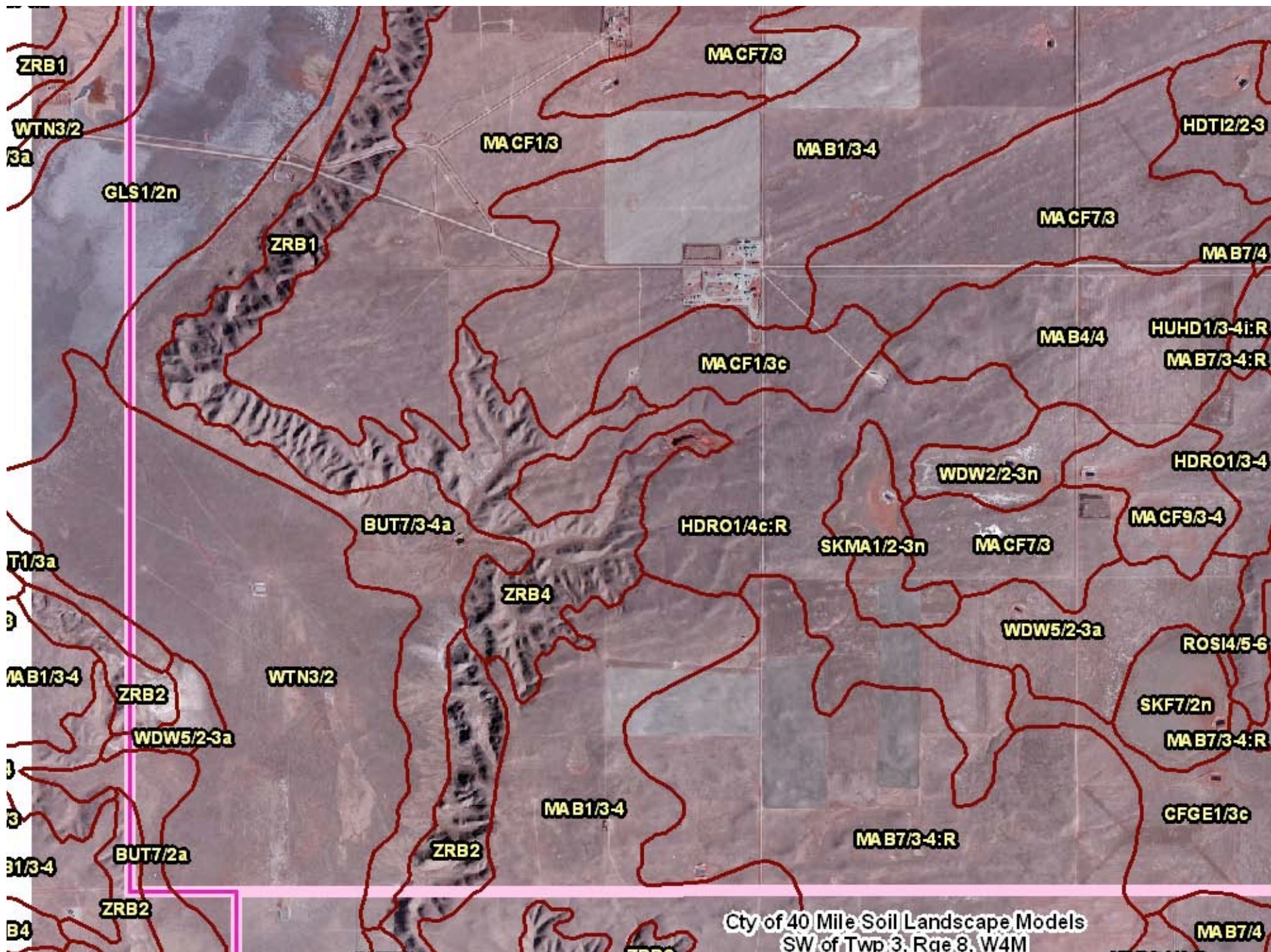




## **DMG: Overflow on Broad Apron in Bryant Coulee**









## DMG: Overflow Unit Patterns in Sage Creek Valley





# Dry Mixedgrass – Manyberries Area



**Sporadic 10-cm high silver sagebrush. Looking upslope (1 to 1.5%). Site is an overflow (Ov) fan with secondary limy (Li) and blowout (BIO) site types.**



## **Dry Mixedgrass, Manyberries Area**

- Channel with terraces and fan deposits, characterized by Overflow 50%, Loamy 30%, Lotic Shrub 20%; latter with silver sagebrush and snowberry.
- Upland areas ( background) are a complex of Loamy (Lo) and Thin Breaks (TB).

Channel ranges from 6 to 15 m wide. Silver sagebrush mainly occupies overflow terraces 0.5 to 1 m above channel and cover ranges from 5-20%.





# **Dry Mixedgrass, Ketchum Creek Near Manyberries**

**Moderate overflow frequency in area of bare ground, with Blowouts 40%, Overflow 30%, Saline lowland 20%, Lotic shrub 10%.**

**Channel (left foreground) is downcut to 3 m (avg. depth 1.5 m) and width ranges from 3 to 12 m (avg. 6 m).**

**Lotic shrub has patchy Silver Sagebrush up to 1.5 m height.**

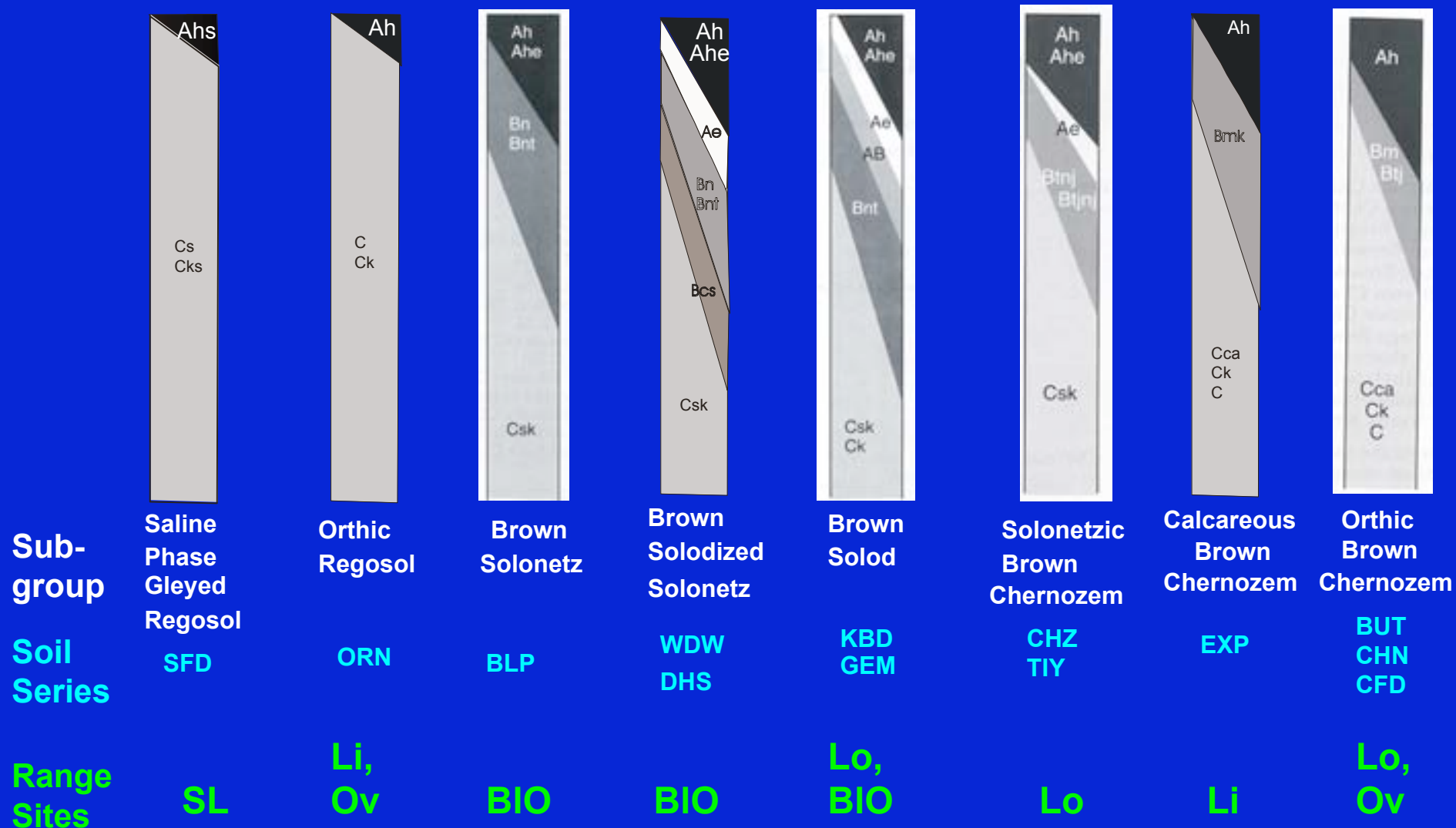




# Dry Mixedgrass Valley or Basin Soil Series

Least Mature → Most Mature

Lowering of Water Table →





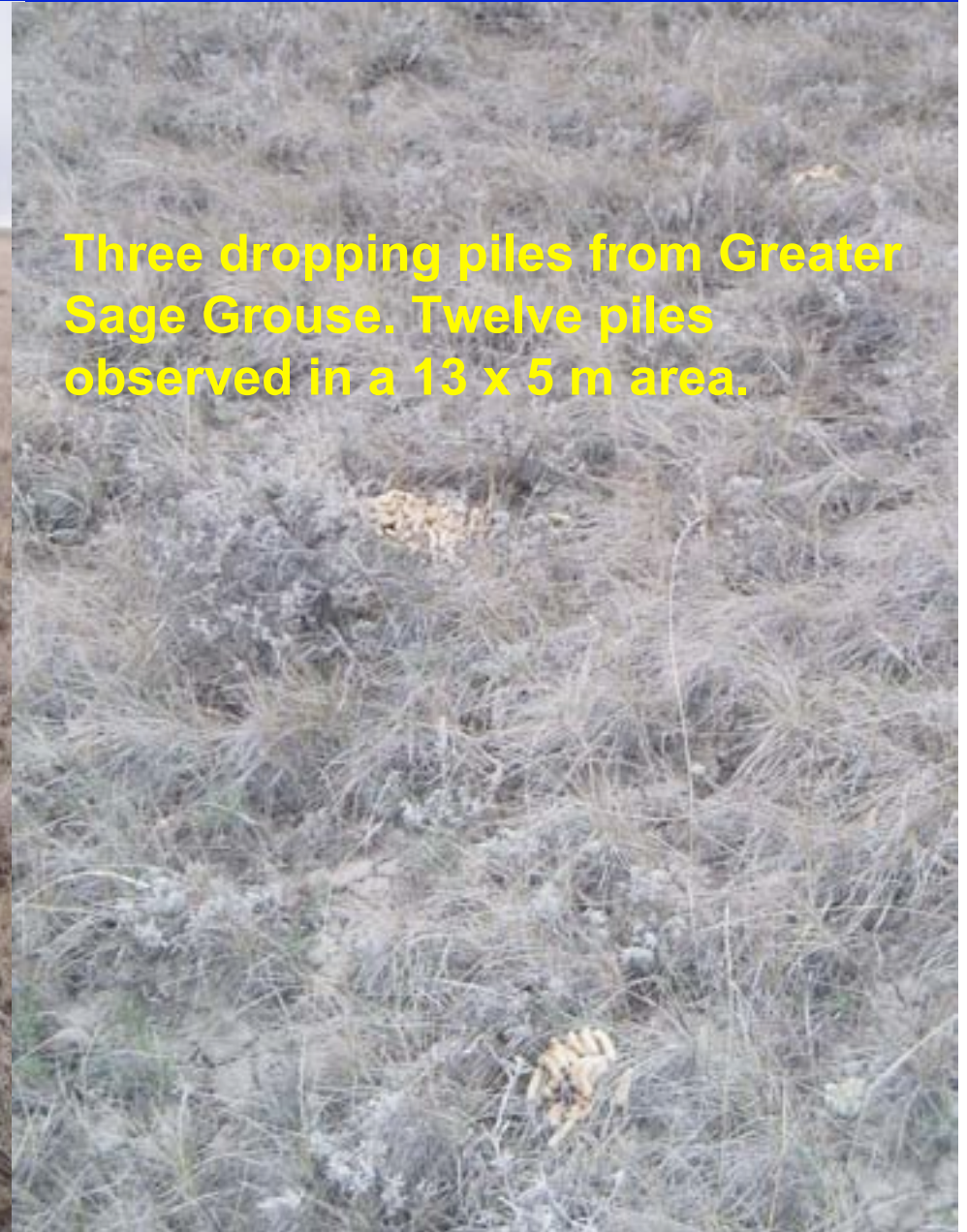
## Basin in the Dry Mixedgrass

**Immature Soils Dominated by the Regosolic Order:  
Can include Limy, Saline Lowland, Blowouts or Overflow**



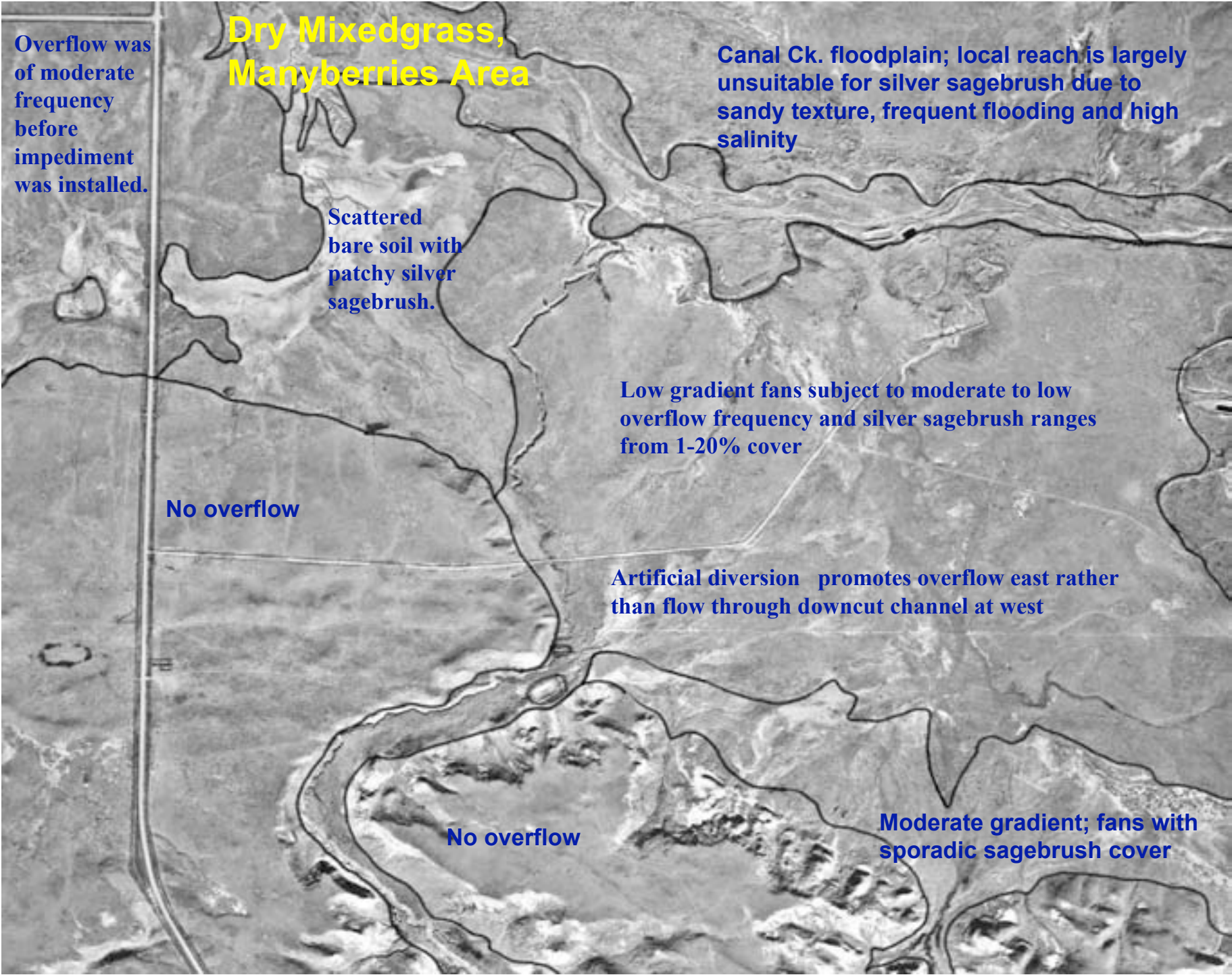


**Bain area N of 501. Overflow with 30 cm Silver Sagebrush of 30% cover and with 15% bare soil. Possible Sage Grouse wintering area.**



**Three dropping piles from Greater Sage Grouse. Twelve piles observed in a 13 x 5 m area.**





Overflow was of moderate frequency before impediment was installed.

## Dry Mixedgrass, Manyberries Area

Canal Ck. floodplain; local reach is largely unsuitable for silver sagebrush due to sandy texture, frequent flooding and high salinity

Scattered bare soil with patchy silver sagebrush.

Low gradient fans subject to moderate to low overflow frequency and silver sagebrush ranges from 1-20% cover

No overflow

Artificial diversion promotes overflow east rather than flow through downcut channel at west

No overflow

Moderate gradient; fans with sporadic sagebrush cover



# Dry Mixedgrass – Manyberries Area

Site Type Associations: Blowouts 60%, Loamy 40% with both greasewood and silver sagebrush; and Lotic Herbaceous 100%





**Canal Creek Overflow with dense litter of Agropyron.  
CIR olive signature can suggest dense short shrub cover.**

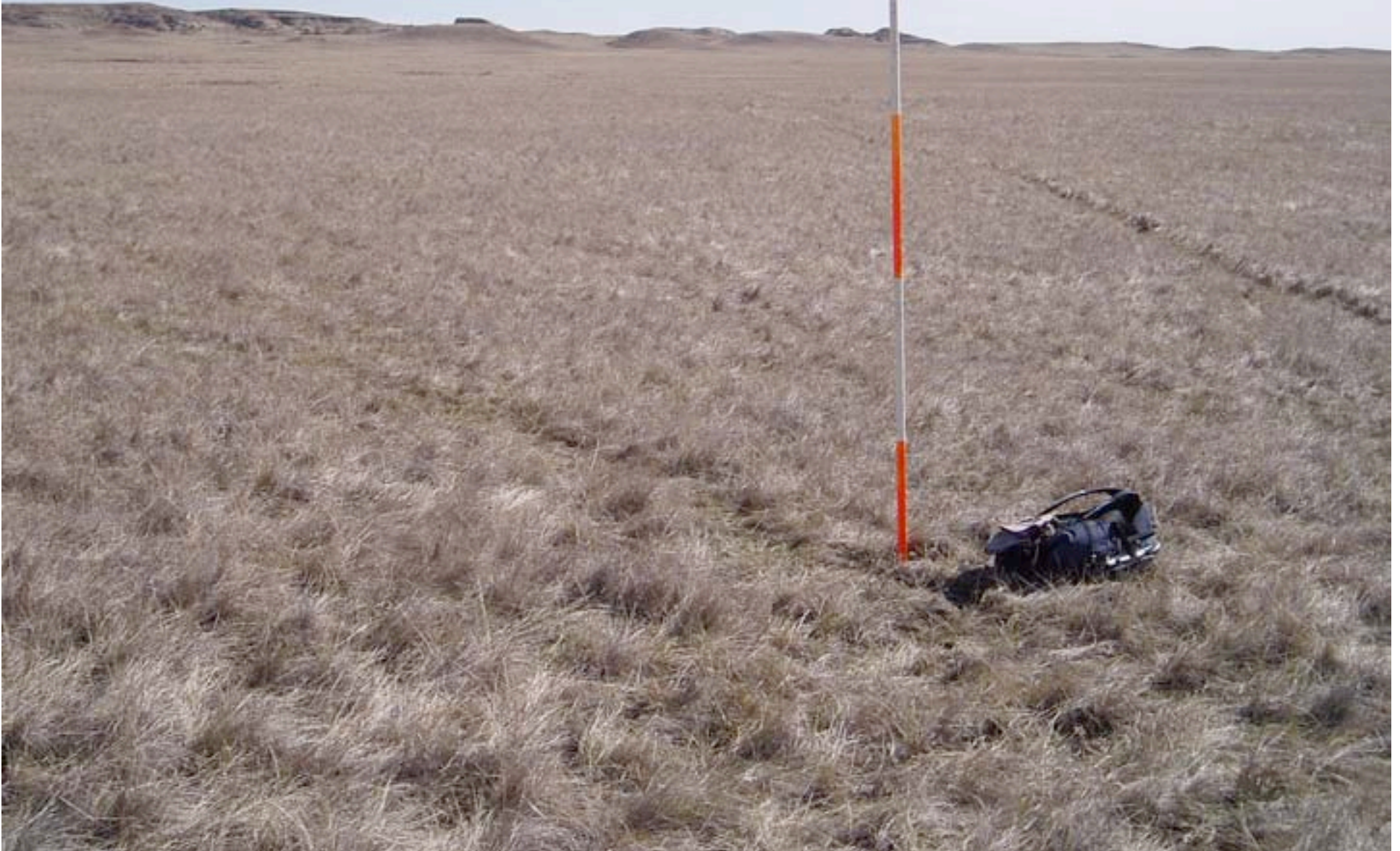




## Canal Creek Ov and Cy: No bare soil and > 35% clay

**Issue:** Confusion due to different areas with similar signatures.

**Decision:** Mappers could supply georeferenced field points with GVI attributes and site photographs specific to EcoD or NSR.





## **DMG: Extensive Choppy Sandhills Interspersed with Sands**





**DMG: Longitudinal and Parabolic Dunes (Choppy Sandhills)  
in NWA Suffield. Deciduous trees indicate shallow groundwater.**





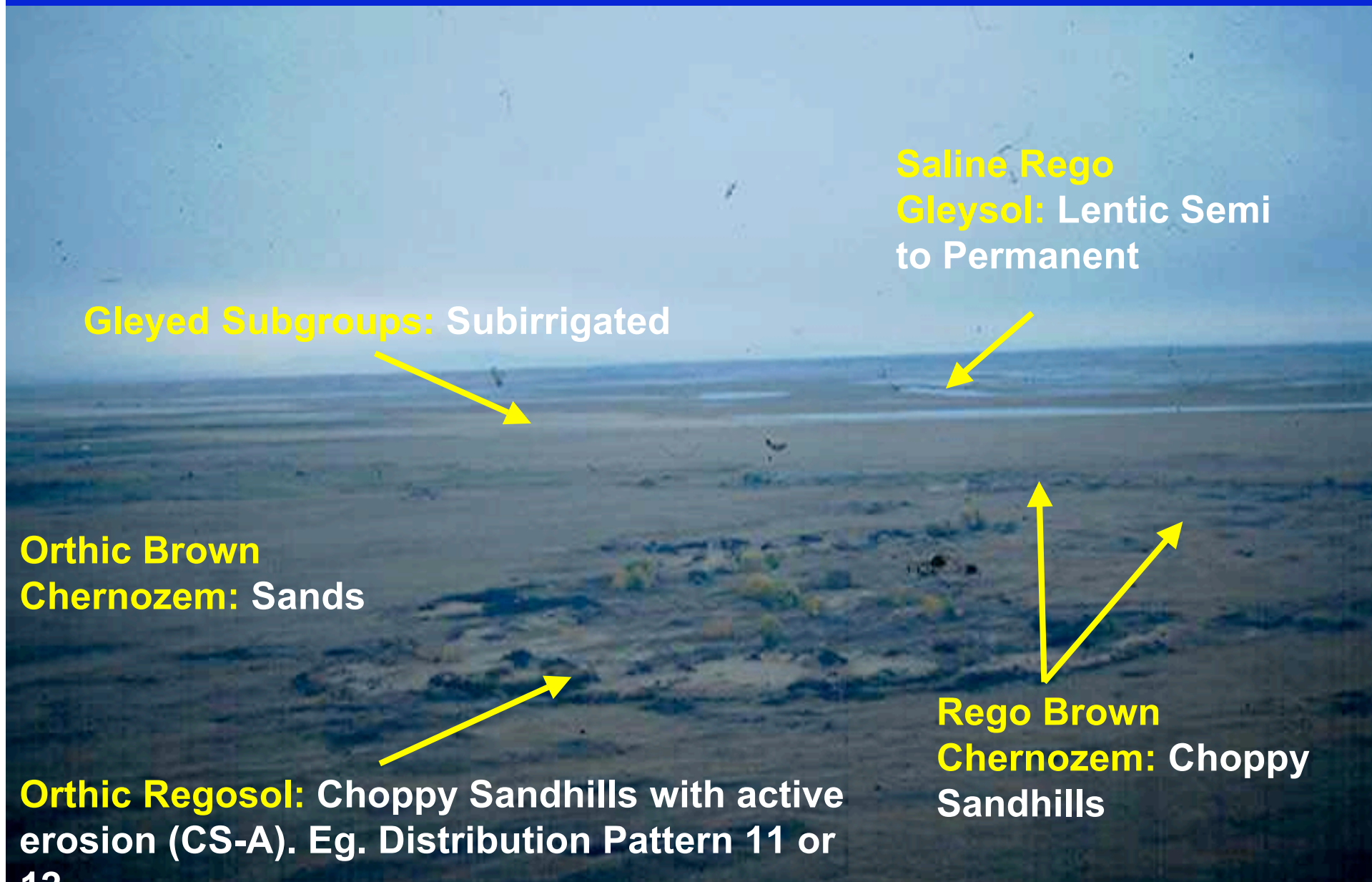
**DMG: Dunes (Choppy Sandhills) in NWA Suffield.  
Subirrigated (Sb) at Deciduous Trees in lower middle to right.**





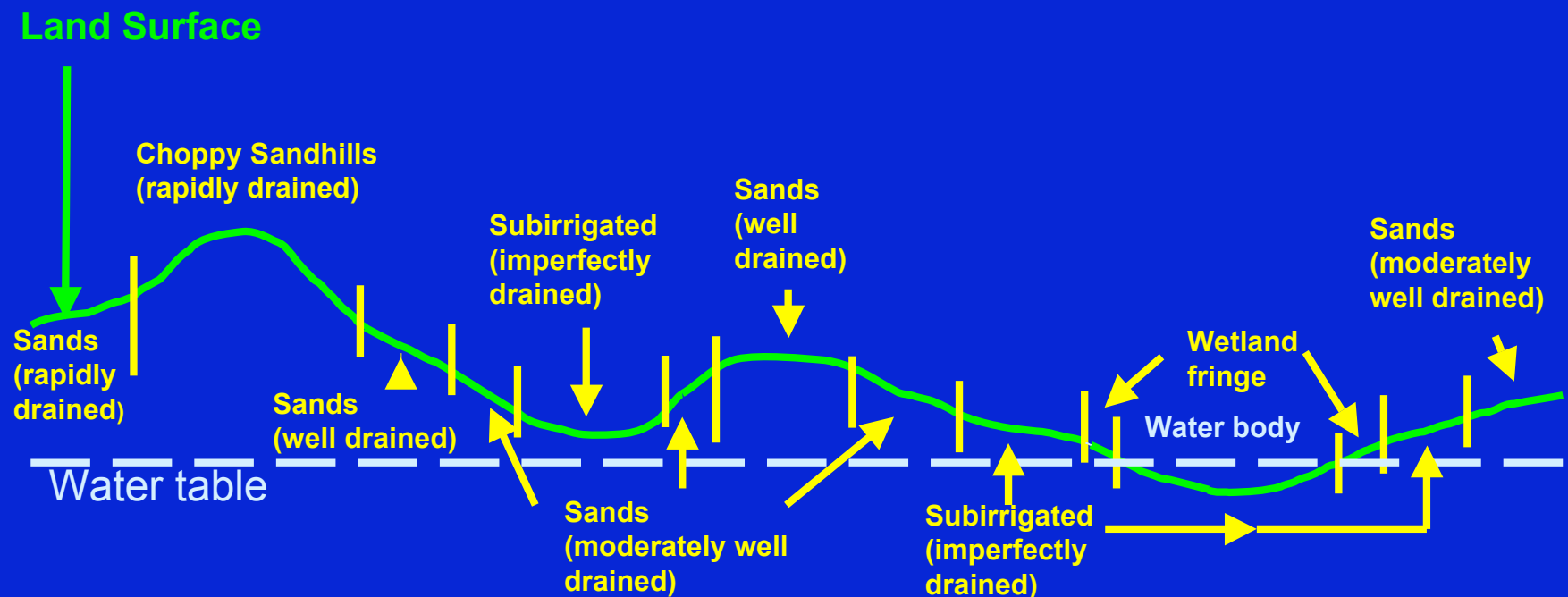
# Dry Mixedgrass Sand Plain:

## Typical Soil Subgroup - Range Site Association



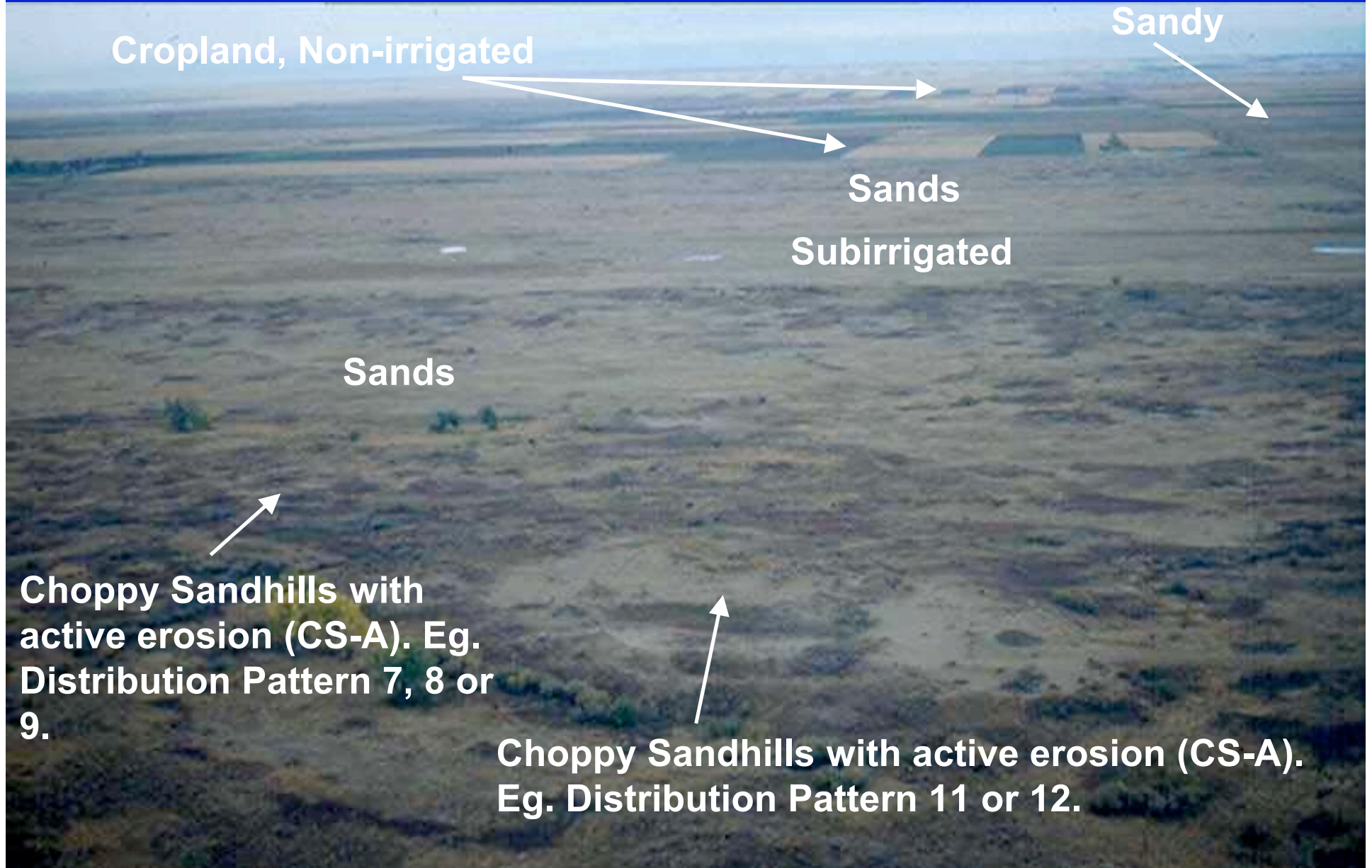


# Typical Association of Soil Drainage and Ecological Range Sites in an Area with Sand Dunes and a High Water Table.





# Dry Mixedgrass Sand Plain: Typical Range-Site or Site-Type Pattern





# Choppy Sandhills in the Dry Mixedgrass

**CS;** Rego Brown Chernozem  
(Stable dunes)



**CS-A;** Orthic Regosol (Active  
dunes)



**DMG: Steep North-facing Dune in Choppy Sandhills, NWA Suffield**





## **Choppy Sandhills (CS) in the Dry Mixedgrass; Dunes with immature and rapidly drained soils.**

**Plant Community DMGC5 – Wild rose / Needle and Thread –  
Sandgrass – Low Sedge.**

**20% less production than the typical range  
site for the area (Sands).**







## **Dry Mixedgrass; Sands to Choppy Sandhills**

**10% less production than  
the typical range site for  
the area (Sands).**

**Building a drift layer at the soil  
surface and unit has numerous  
increaser plants including  
Pasture Sage.**



# Sand Dunes in the Dry Mixedgrass

Choppy Sandhills (CS) showing deflation hollows



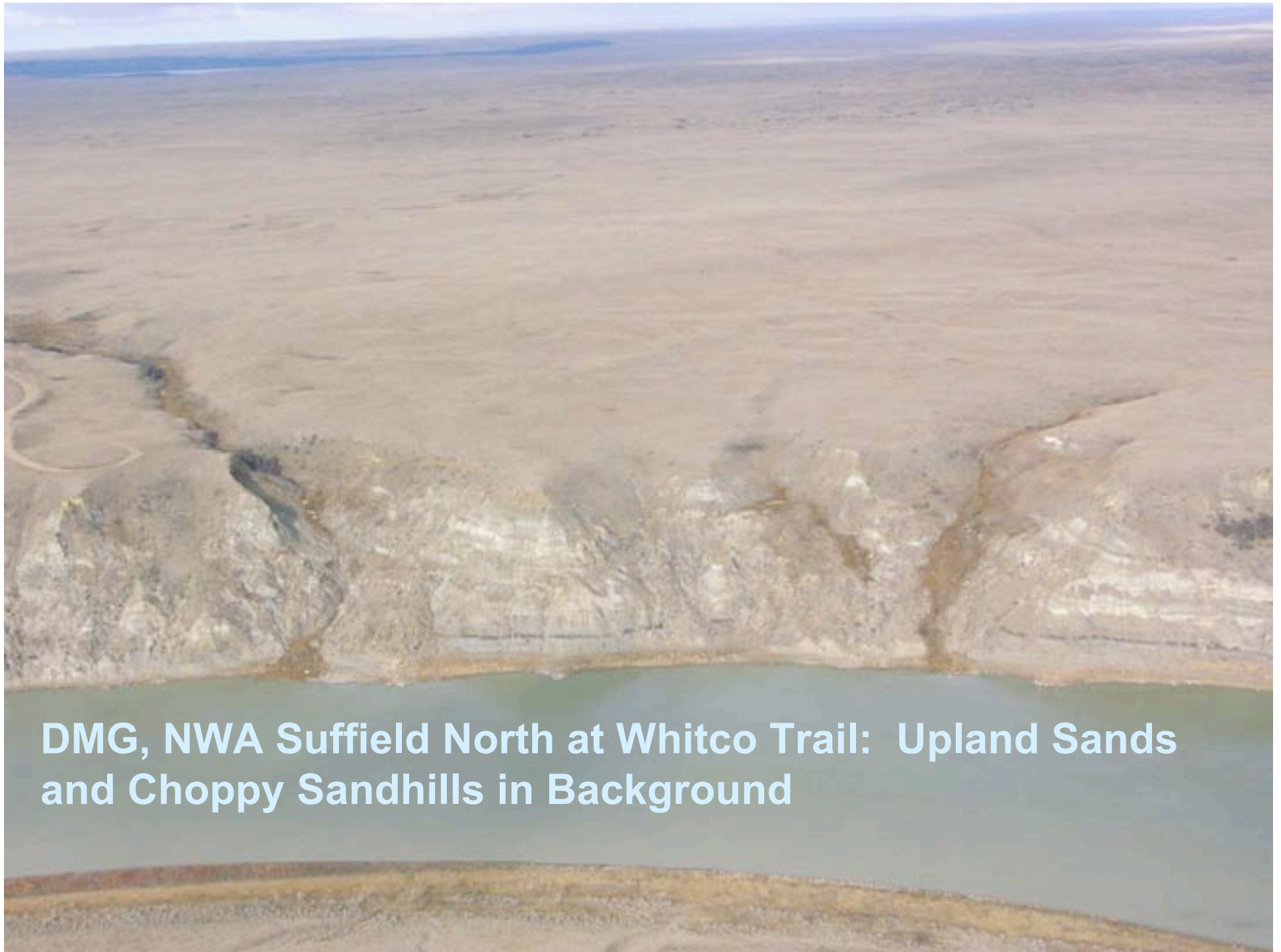
Sands (Sa)



Rose bushes, a common indicator of sandy or sands site types







**DMG, NWA Suffield North at Whitco Trail: Upland Sands and Choppy Sandhills in Background**



# Sand Plain Example in the Dry Mixedgrass

- Roses indicate sandy textures
- Use soil surveys or AGRASID to separate loamy sand (Sand - Sa range sites) from sandy loam (Sandy - Sy range sites)





**Plant Community DMGA43**  
**– Needle and Thread – Low**  
**Sedge - Sandgrass**



**Sands Range Site in  
the Dry Mixedgrass;  
rapidly drained.**

**A typical plant  
community of the  
Sands site type.**





## **Dry Mixedgrass Sands: Trending to a low prairie plant community**

**Moderately well drained  
in swale setting.**

**About 10% more  
production than the  
typical range site for  
the area (Sands), due  
to the internal soil  
drainage class.**



**Dry Mixedgrass- Sandy.** Moderately well drained (foreground).

**Plant Community DMGA14**  
– **Western Wheatgrass and**  
**Needle and Thread**

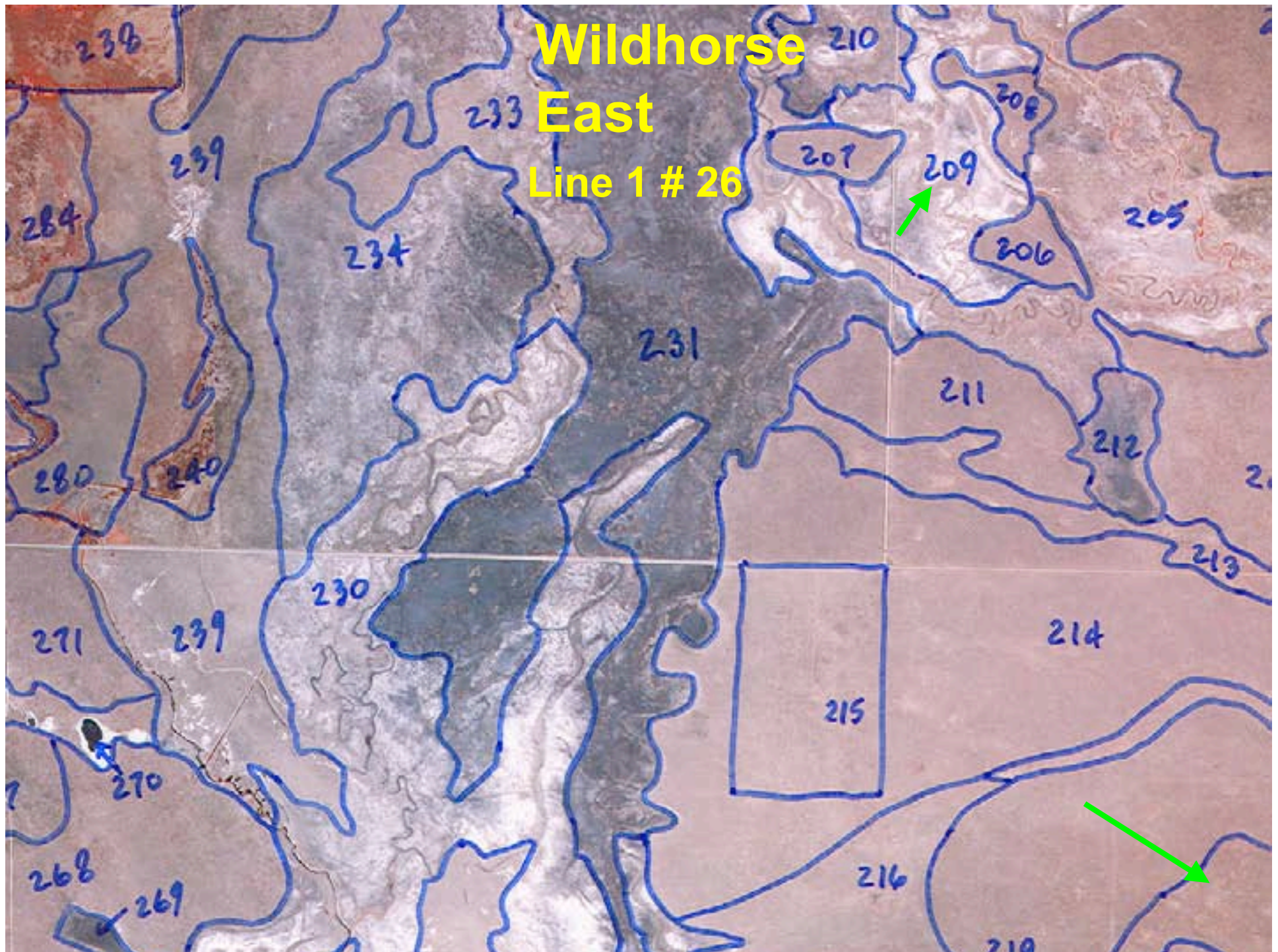
10% more production  
than the typical range  
site for the area (Sands  
in background).





# Wildhorse East

Line 1 # 26





**East of Wildhorse: Sands & patchy *Calamovilfa longifolia***





**East of Wildhorse: Sands (Sa) with *Calamovilfa longifolia*.  
AGRASID info suggests Sandy (Sy). Patchy tonal variation on CIR  
indicates significant Sands.**







## **Dry Mixedgrass; Sandy**

**Moderately well drained  
with significant Saline  
Lowland range sites.**

**10% less production  
than the typical range  
site for the area (Sands),  
due to the presence of  
some salophytes.**





**Dry Mixedgrass;  
Sandy,  
Blowouts,  
Saline Lowland**

**Plant Community  
DMGA15: Western  
Wheatgrass - Sedges -  
Needle and Thread**

**10% less production  
than the typical range  
site for the area (Sands),  
due to the presence of  
sodium and salts.**





## **Dry Mixedgrass; Subirrigated**

**Plant Community:**  
Sedges – Kentucky  
Bluegrass – Sandgrass.

**Imperfectly drained;  
distinct mottles and lime  
at 45 cms.**

**30% more production  
than the typical range  
site for the area (Sands),  
due to the high water  
table.**





## **Dry Mixedgrass; Subirrigated**

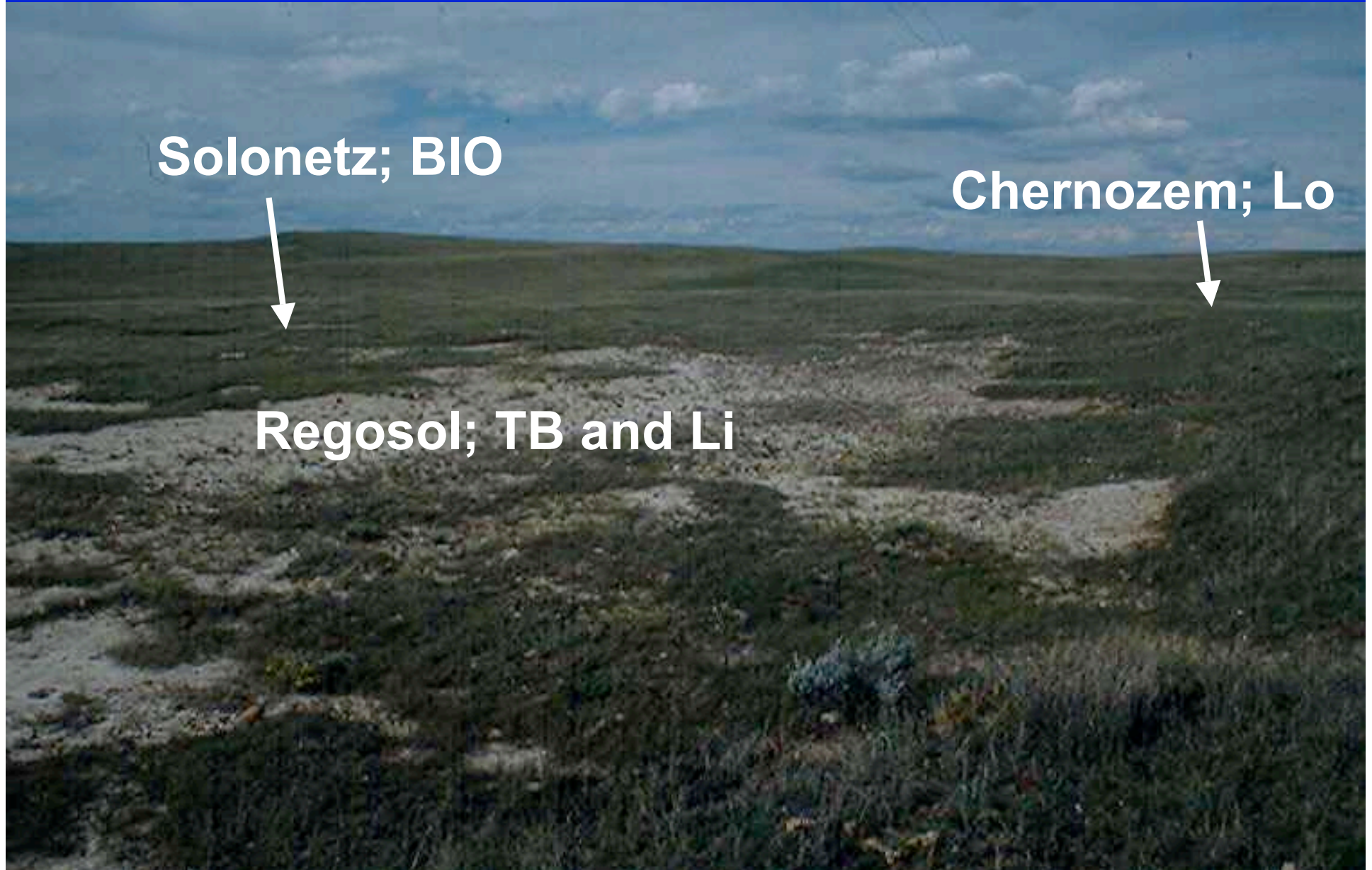
**Plant Community:** Sedges –  
Kentucky Bluegrass – Wild  
Licorice

**Imperfectly drained.  
Distinct mottles at 40 cm**

**30% more production  
than the typical range  
site for the area (Sands),  
due to the high water  
table.**



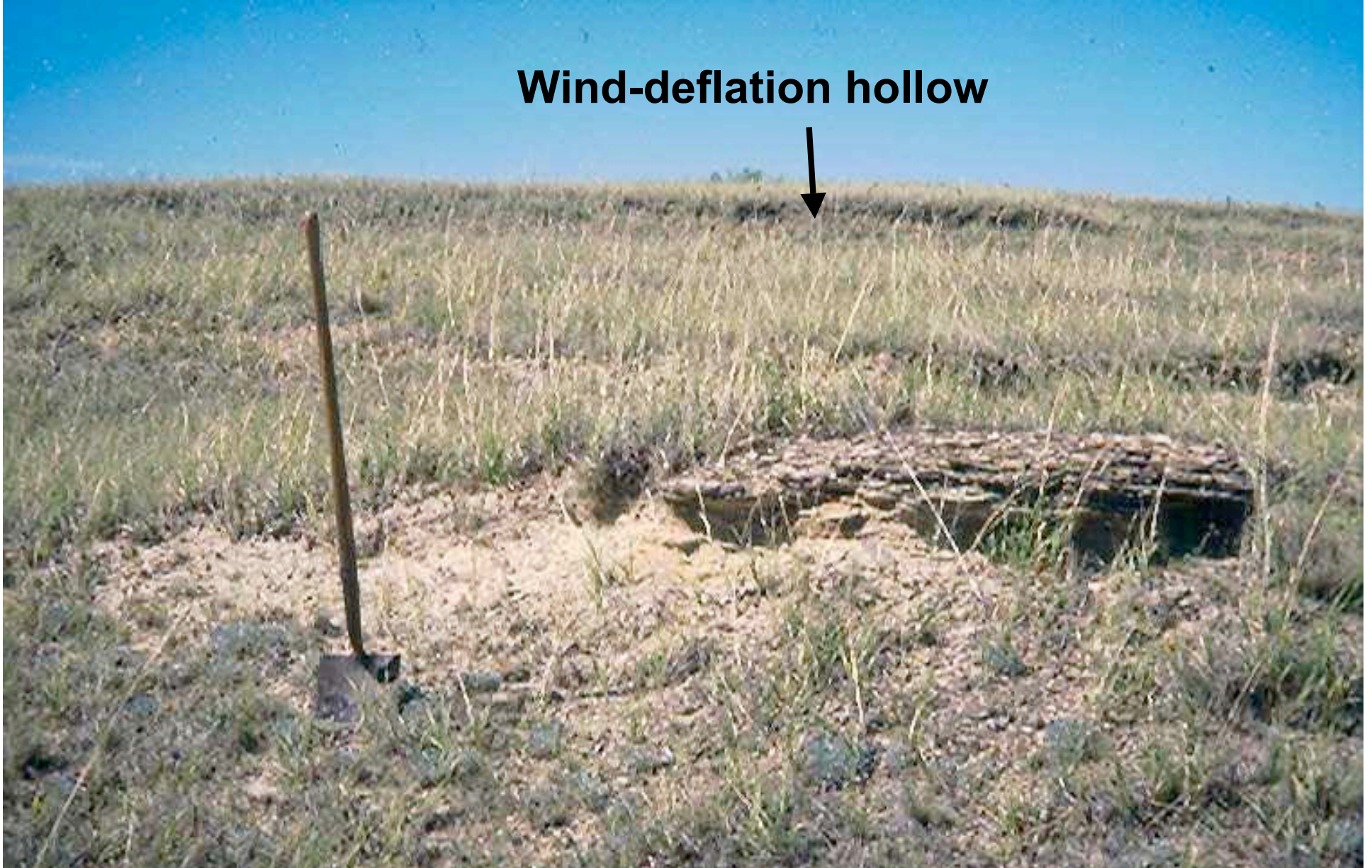
# Dry Mixedgrass: Bedrock-Controlled Landscape with complex soil patterns





**Orthic and Rego Brown Chernozem developed on  
weathered sandstone (Thin Breaks) in the Dry Mixedgrass**

**Wind-deflation hollow**





# Thin Breaks (TB) in the Dry Mixedgrass

Thin Breaks (TB), with  
<10% bedrock exposure

Siltstone and sandstone exposure





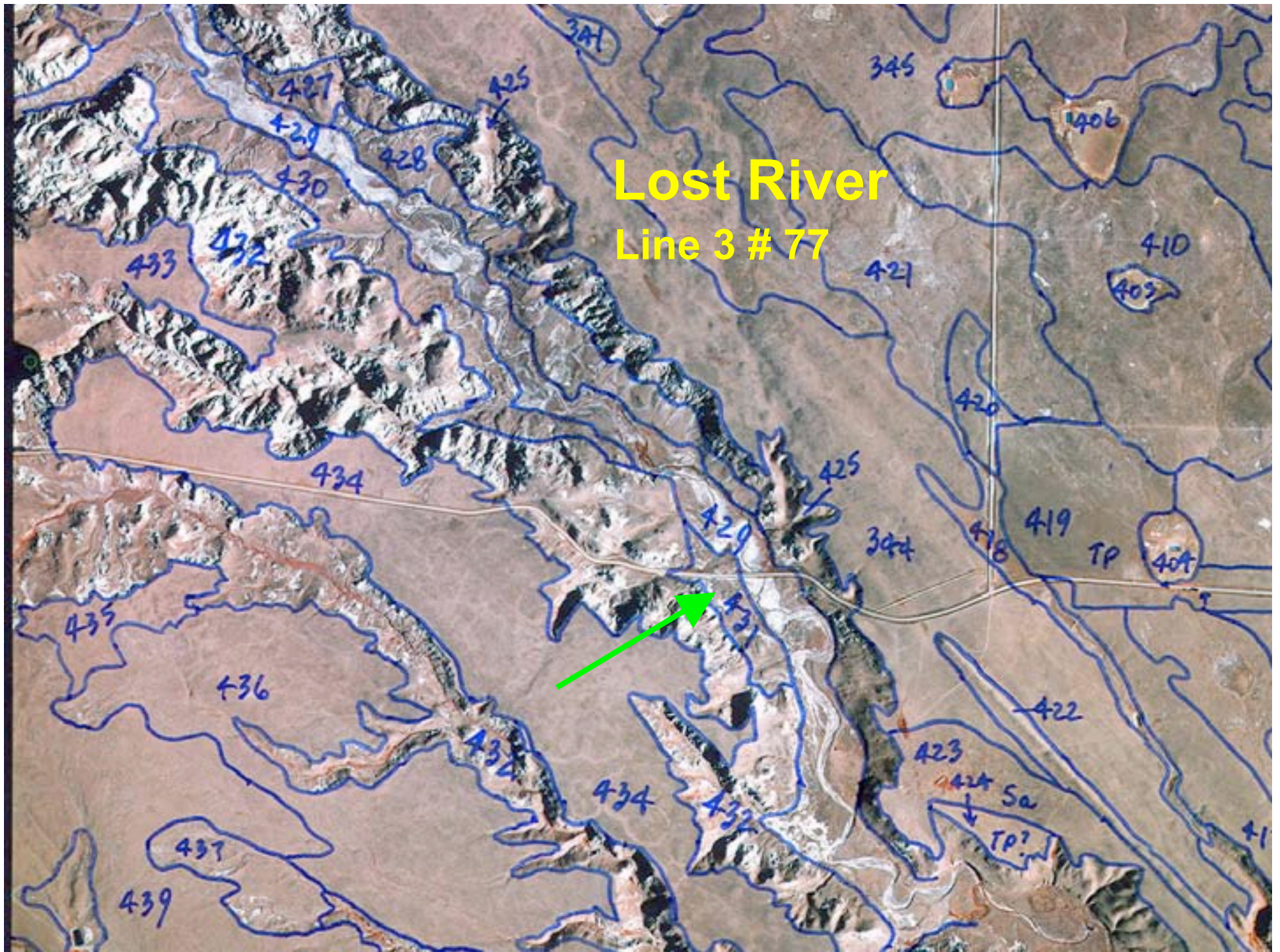
**Lost River Badlands.  
Issue of cover percentages**





# Lost River

## Line 3 # 77





# Canal Creek Badlands

**Issue:** BdL's have varying ranges of cover.

**Decision:** Correlators will expect percent veg. cover to increase as percent TB or Li increases.





# **Badlands (BdL) 100% in the foreground; Bearpaw Shale Bedrock in the Dry Mixedgrass**





## DMG: Sandstone Bedrock and Hoodoos Van Cleeve Coulee





## **DMG, NW of Bain: Juniper on Bearpaw Shale Badlands**

**Active Erosion (Wind Deflation Hollows) with Example Distribution Pattern 10 (Continuous Uniform Occurrence, Significant - up to 30%).**





## Wildhorse Black Alkali – Any of Saline Lowland, Thin Breaks, or Badlands?





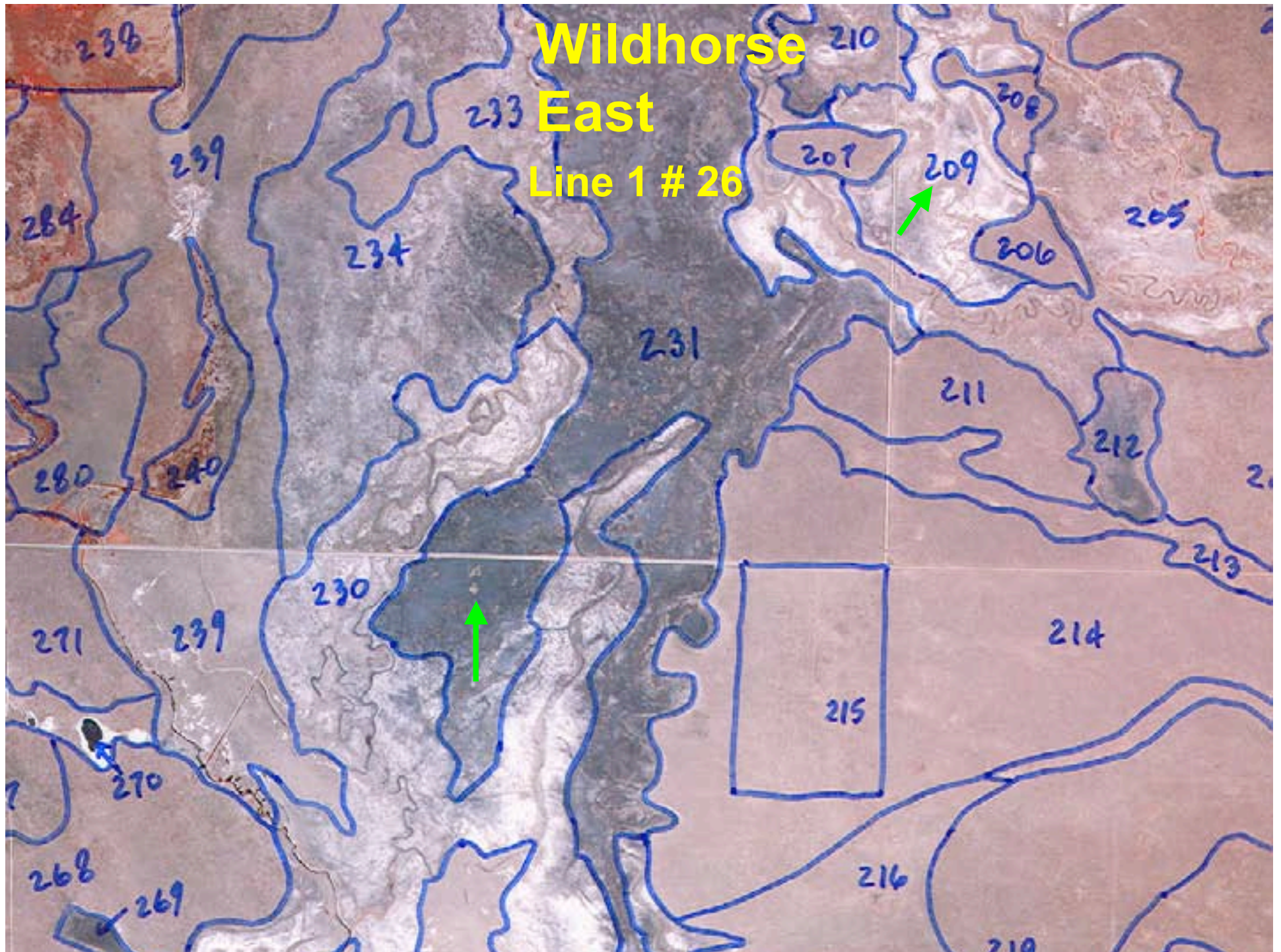
**Wildhorse Black Alkali; Badlands if derived of Shale weathered in-situ; with 5% BIO at sagebrush and graminoids.**





# Wildhorse East

Line 1 # 26





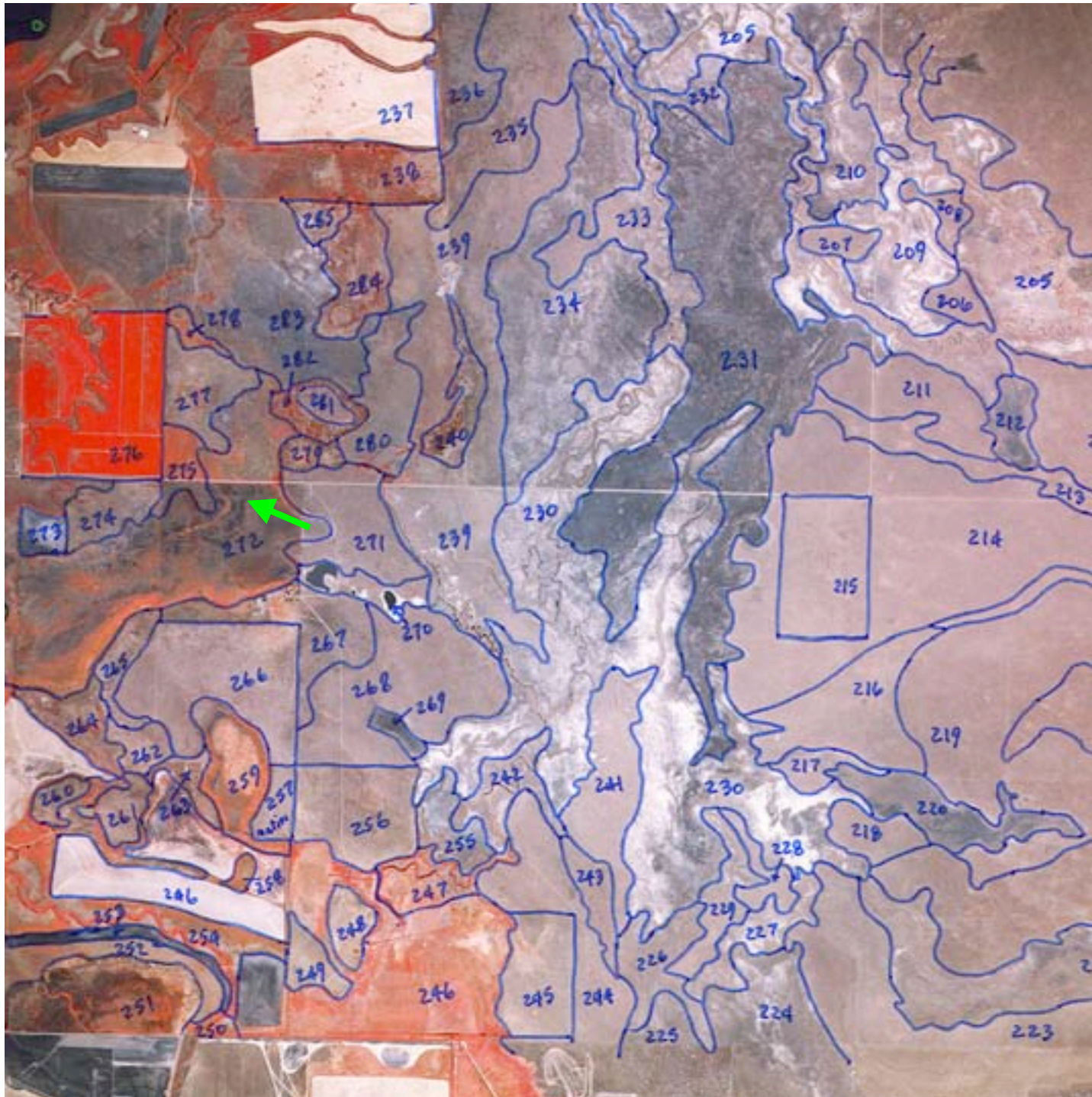
## East of Wildhorse: Saline Lowland, Overflow and Blowouts.





# Wildhorse East

Line 1 # 26

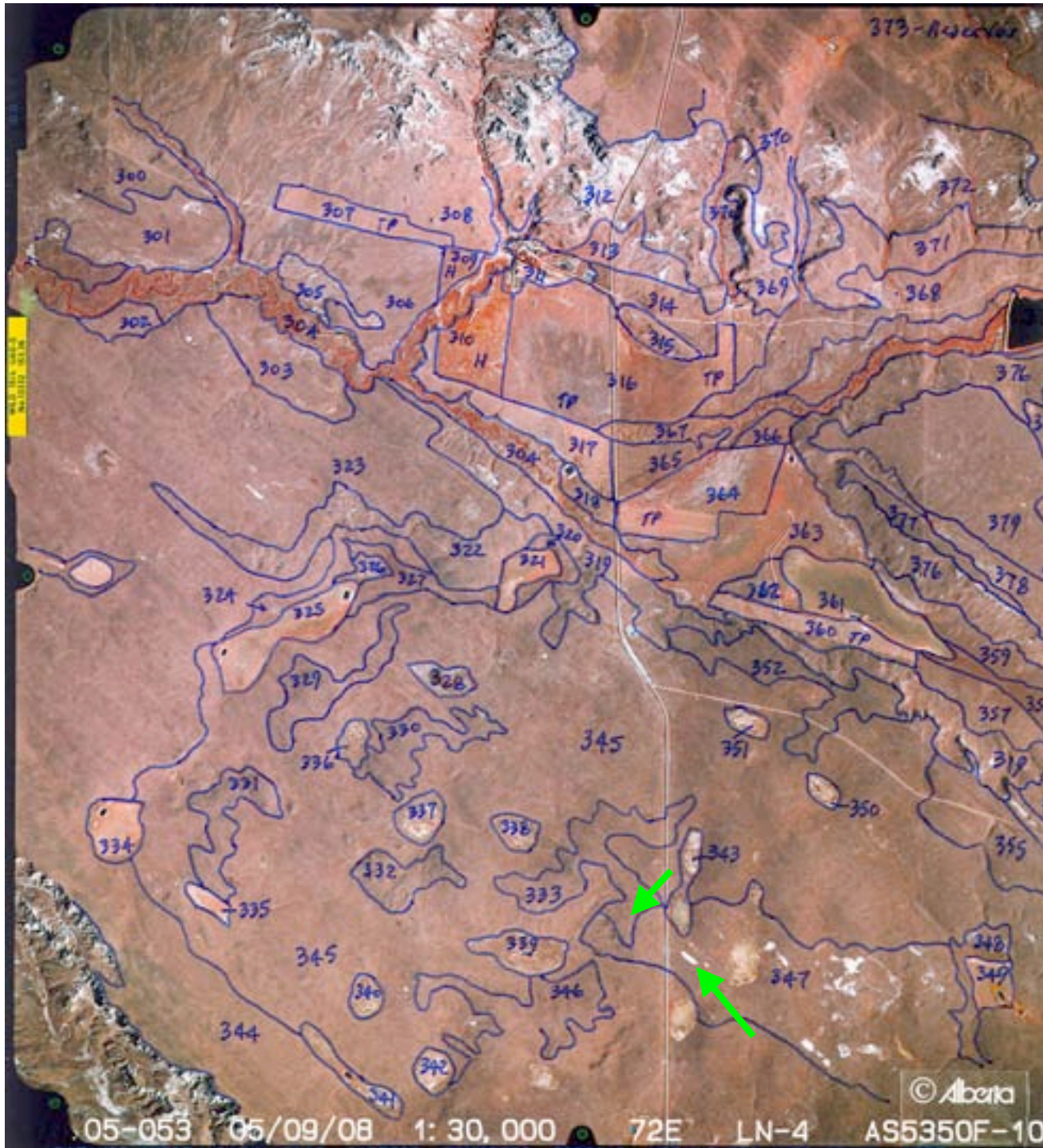




## Wildhorse Clayey showing Vertic Characteristics







# Canal Creek Central (Lost River Ranch)

Line 4 # 108



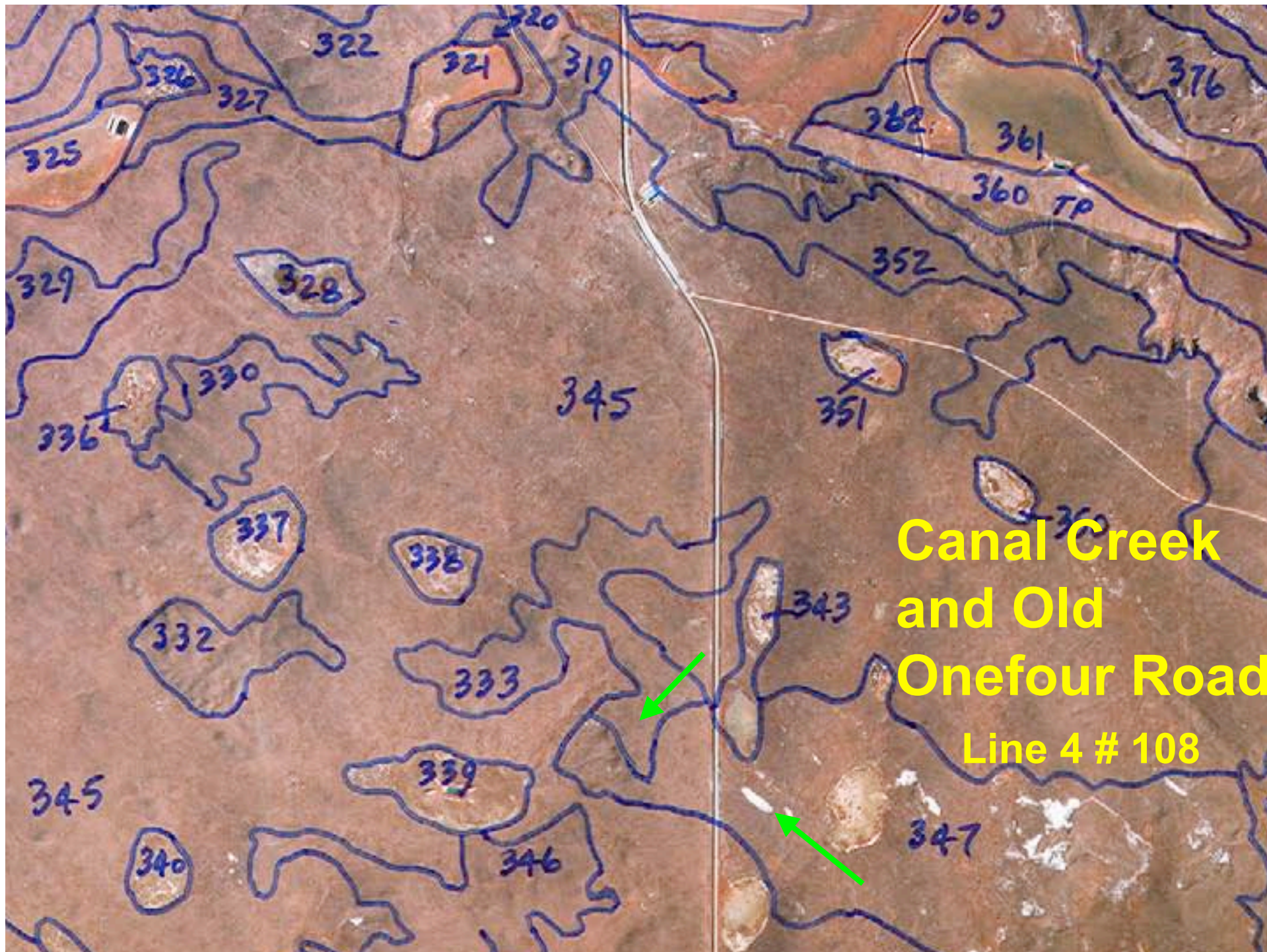
## South of Canal Ck: TB exposure on Upland Plain

**Issue:** Some site types may occur in non-typical settings

**Resolution:** Emphasis during GVI training and product development.









## Canal Creek area. Loamy upland with Solonetz

**Issue:** Visibly contrasting areas should be separate polygons.

**Decision:** Emphasis at training and by auditors throughout the GVI product development process.





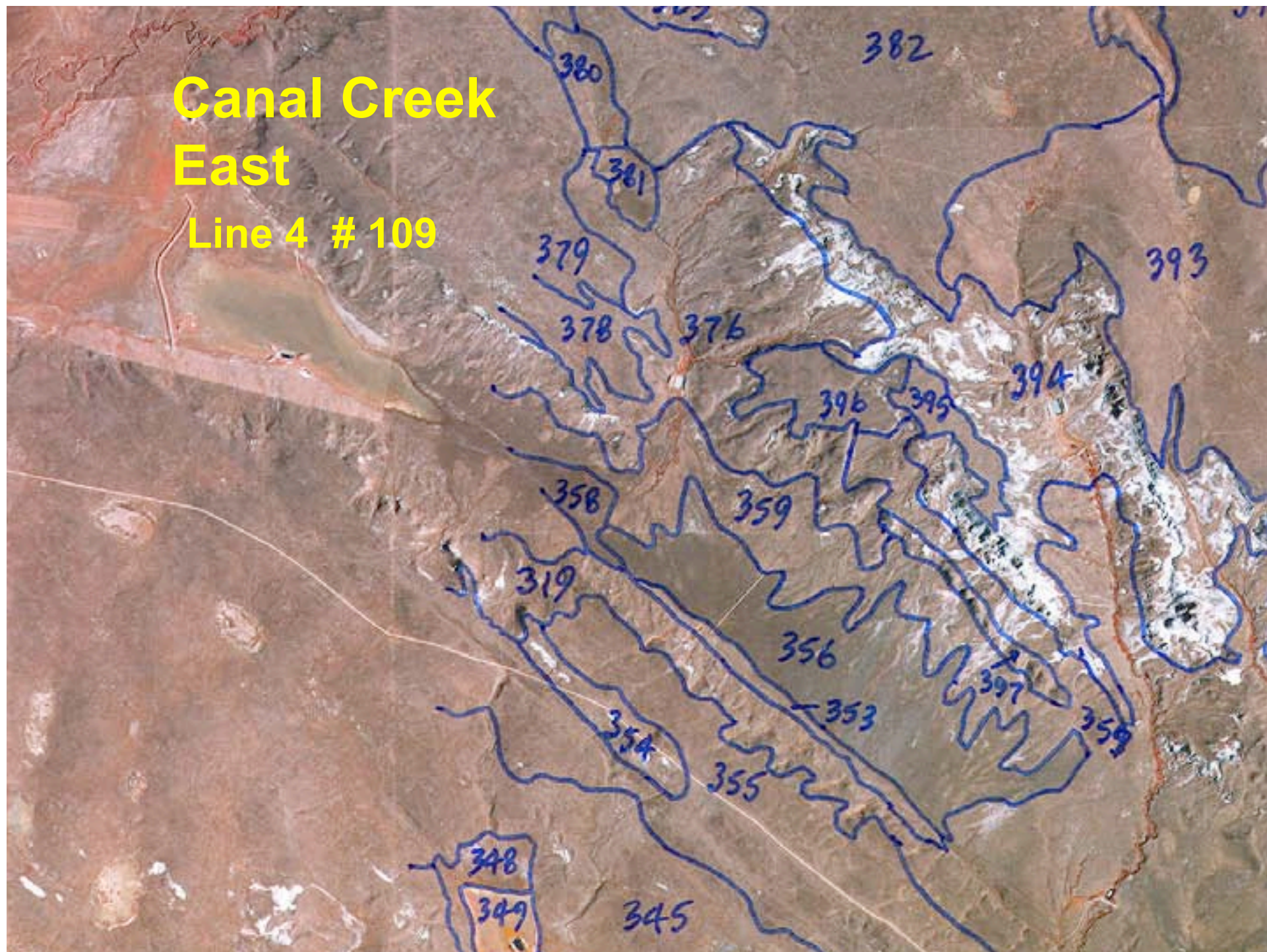
## **DMG: Softrock Exposures in the Cripple Creek Drainage**



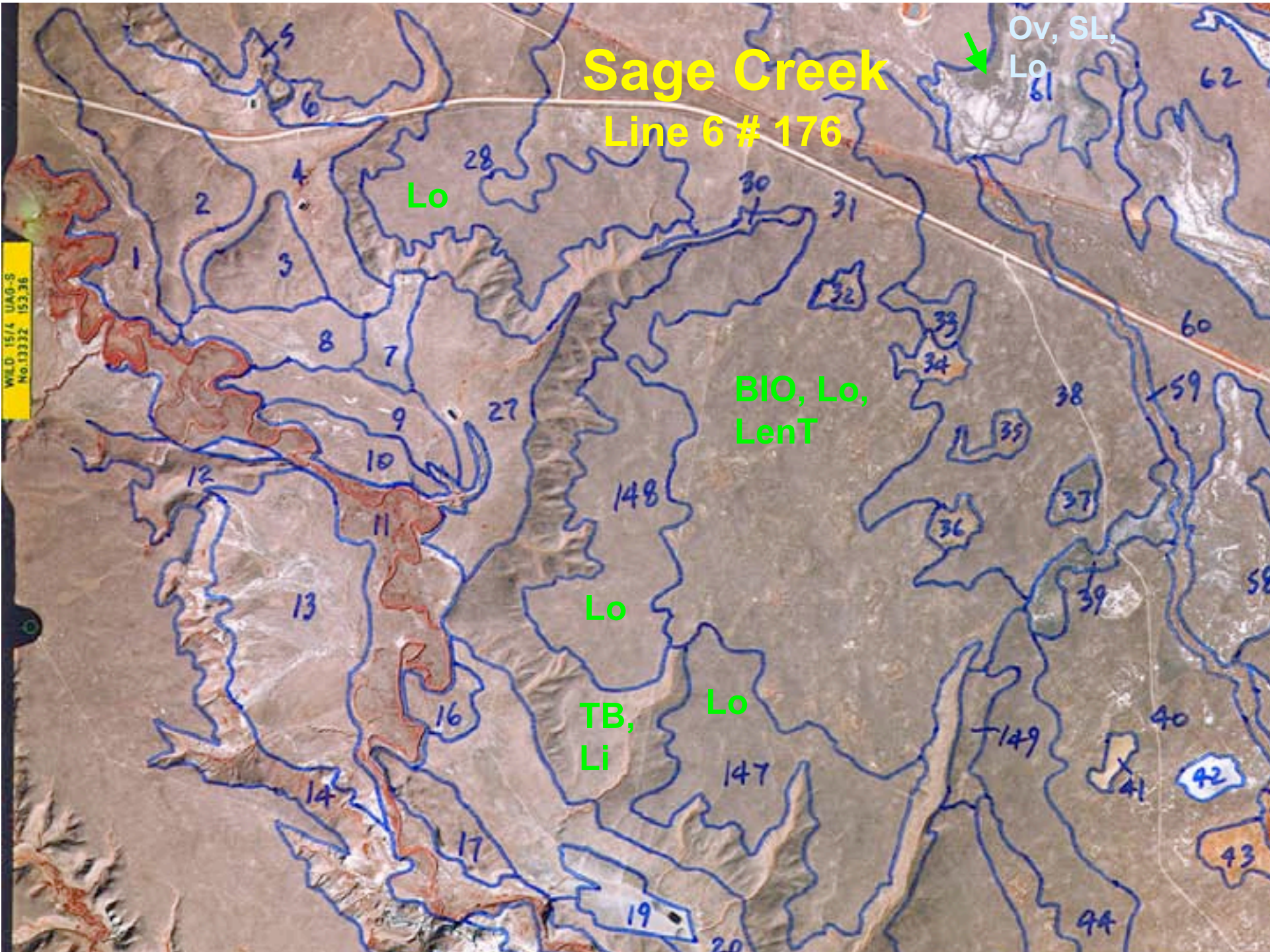


# Canal Creek East

Line 4 # 109









**DMG: Historic Cultivation NE of Comrey on Sy and Lo Site Types. Native species comprise >50% so use Native/Natural types.**





## **DMG: Contrast Between Native and Introduced Pasture**





# Pasture Non-Irrigated (PN)

## Crested Wheat Grass



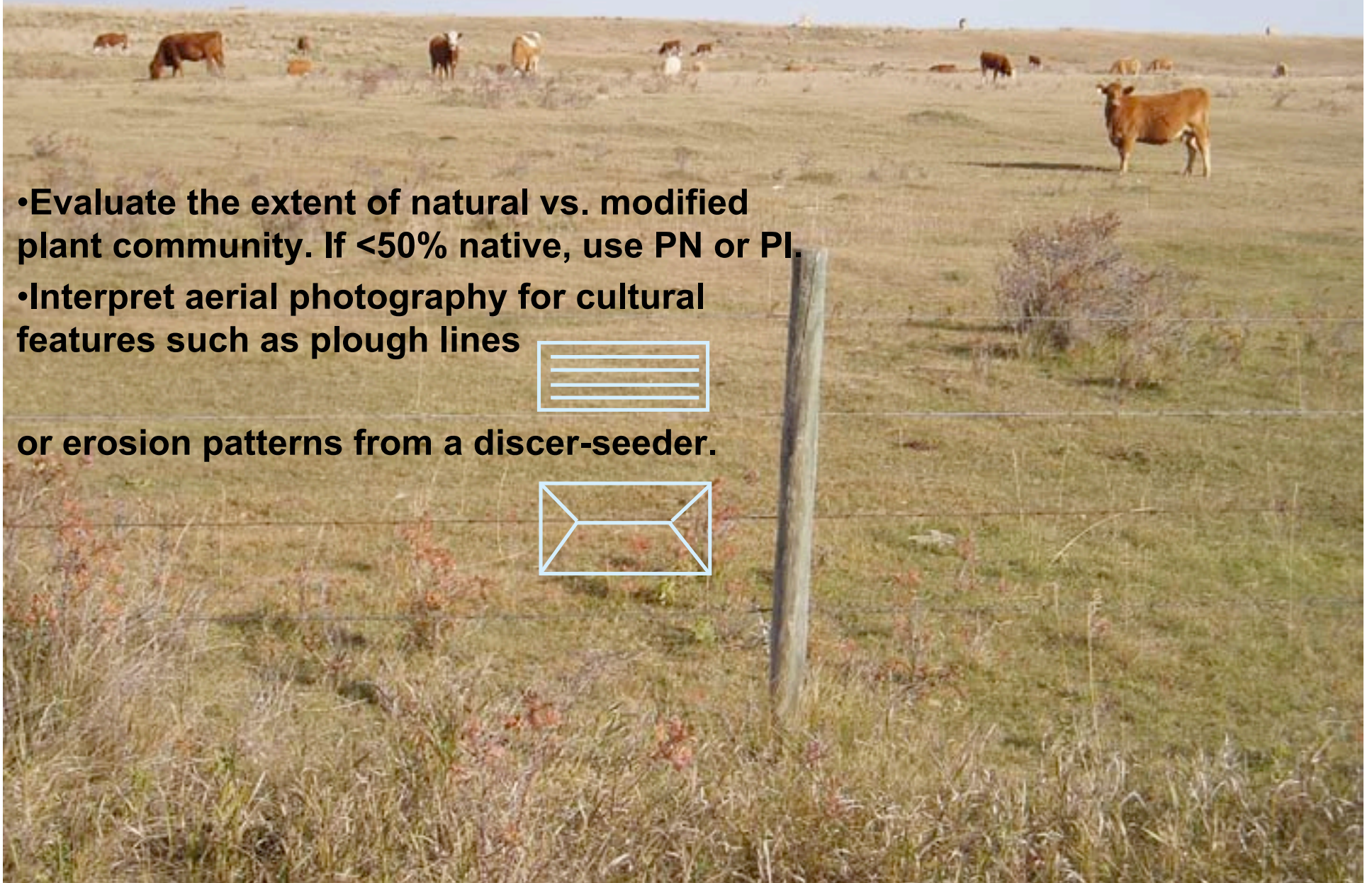


# Is this site type within the Native Natural Primary Class, or is it Pasture Non-irrigated (PN)?

- Evaluate the extent of natural vs. modified plant community. If <50% native, use PN or PI.
- Interpret aerial photography for cultural features such as plough lines



or erosion patterns from a discer-seeder.

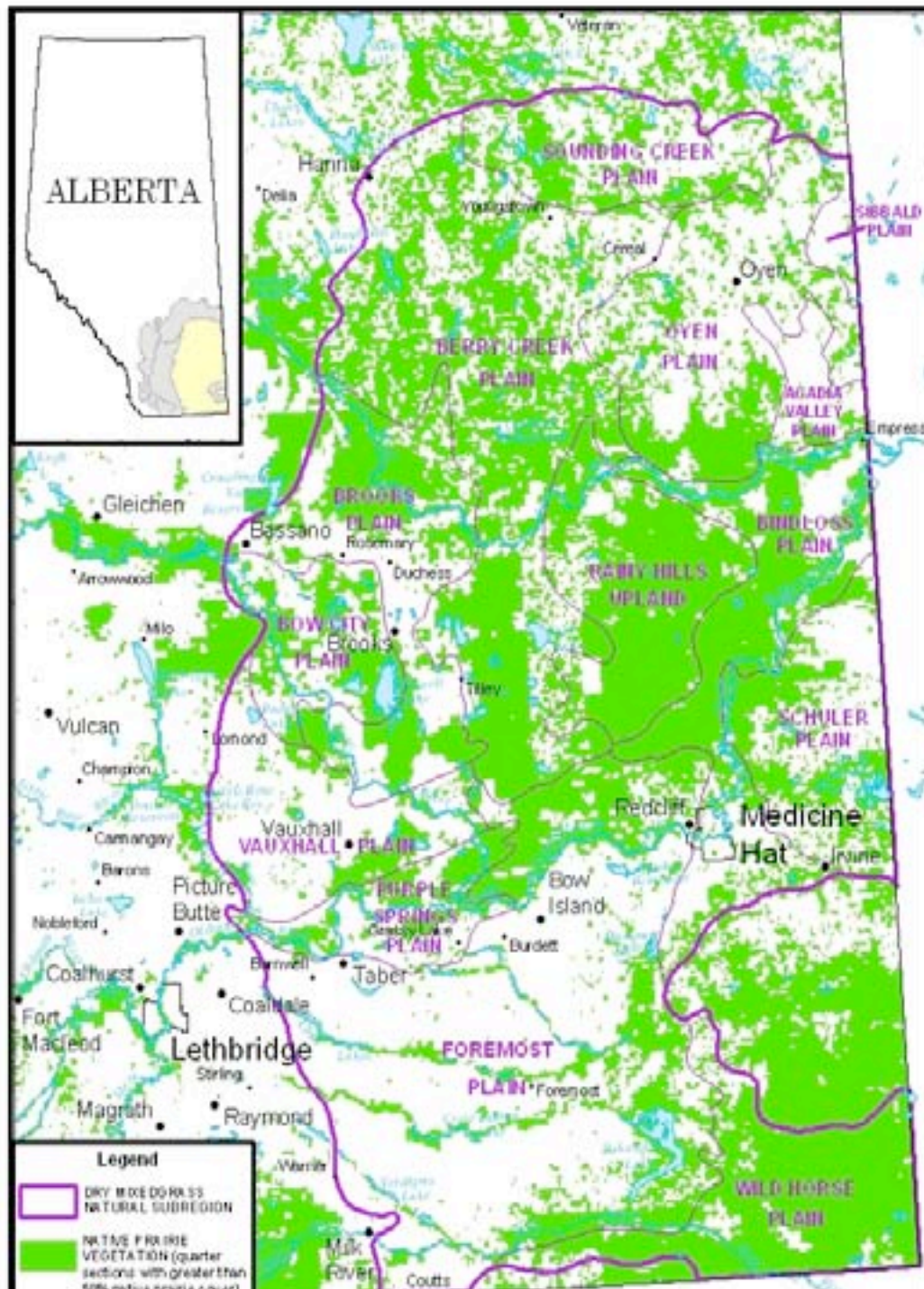




## **DMG: Newly Broken Prairie Near Sedalia**







# Dry Mixedgrass

## Native Prairie Baseline Inventory and Ecodistrict Names and Boundaries