



➔ **Observations and Lessons
Learned Through Successes and
Failures in Reclamation Projects**

Kalina Noel, M.E.Des., P.Biol., RPBio.,
May 4, 2022

global **environmental** and **advisory** solutions



Overview

- 🌲 What was the Reclamation Plan that was completed – being the consultant that assesses that site years later.
- 🌲 Some things I have observed and applied:
 - 🌲 Reducing use of herbicides on non-invasive weed species – how to incorporate weeds into reclamation
 - 🌲 What is the new receiving environment - A thought into selection of plantings
 - 🌲 Natural recovery and propagation – what is already there, what can the plants tell you, and what can you get for free

When I hear someone in public talk about plants.



What was the Reclamation Plan that was completed – being the consultant that assesses that site years later

**SOMETIMES I WONDER...
DO MY PLANTS THINK ABOUT ME TOO?**



You really hope it's a thriving, self-maintaining cover...or

What you were hoping for



Sometimes what ends up happening



Reducing the Use of Herbicides - Use of Weeds in Reclamation

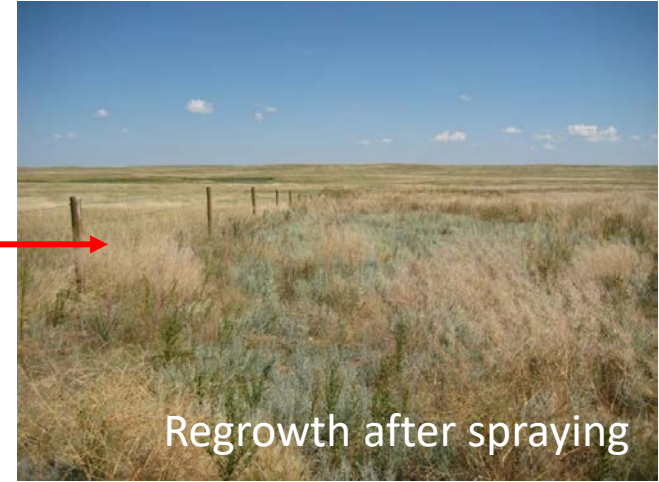
BOTANIST CONFESSIONS:



I'm really into weeds.

Yalls from the Field

Use of herbicide



What happened??

- ✦ Crested wheatgrass of concern in native prairie BUT, also included:
 - Blue grama
 - June grass
 - Needle-and-thread
 - Western wheatgrass
 - Sedges, club mosses, crocus, and pussy toes.

- ✦ What was left after spraying:
 - More crested wheatgrass and its five year seed bank
 - Flixweed
 - Artemisia sp.
 - Goat's beard
 - Bare ground



Why spray and then try and plant when there is no topsoil?



I know they are weeds but they are juicy and full of good organic topsoil developing material



Grow – Disc - Repeat

Allow a suitable species that is already there to take over



The Receiving Environment – Selection of Plantings

- 🌲 What is the end goal for the site?
- 🌲 What was it before?
- 🌲 What is the topography now?
- 🌲 How much time do you get to complete your restoration?
- 🌲 Are these plants on their own after a round of planting?

Plants in the wild



I grow on a rock and had to drink rain water to survive

Plants in my backyard Reclamation area



Nooo you didn't give me fertilizer and bottled water. I am dead

MemeZilla.com

Why did the plants you selected not survive?

Me, furious when the natives I planted fail



Change in topography – now you have a wetland at the bottom



Change in exposure – now you have very dry, open slopes



Change in slope and texture – now you have a slide for seeds



Consider What is Most Suitable Before Buying all the Plants



A lot of time and effort go into growing plants



Use of Different Type of Planting Method Where it has Failed Before



Unused or Dead Plantings (Sad Plant Noises)



Don't waste any – save them and use them in other places



What do the Existing Plants Have to Tell You and the Application of Natural Recovery

Interrogation



by Audrie Roeder

Painful practices from the past - planting with bunchgrasses in forested land



Painful practices from the past - planting with bunchgrasses in grassland



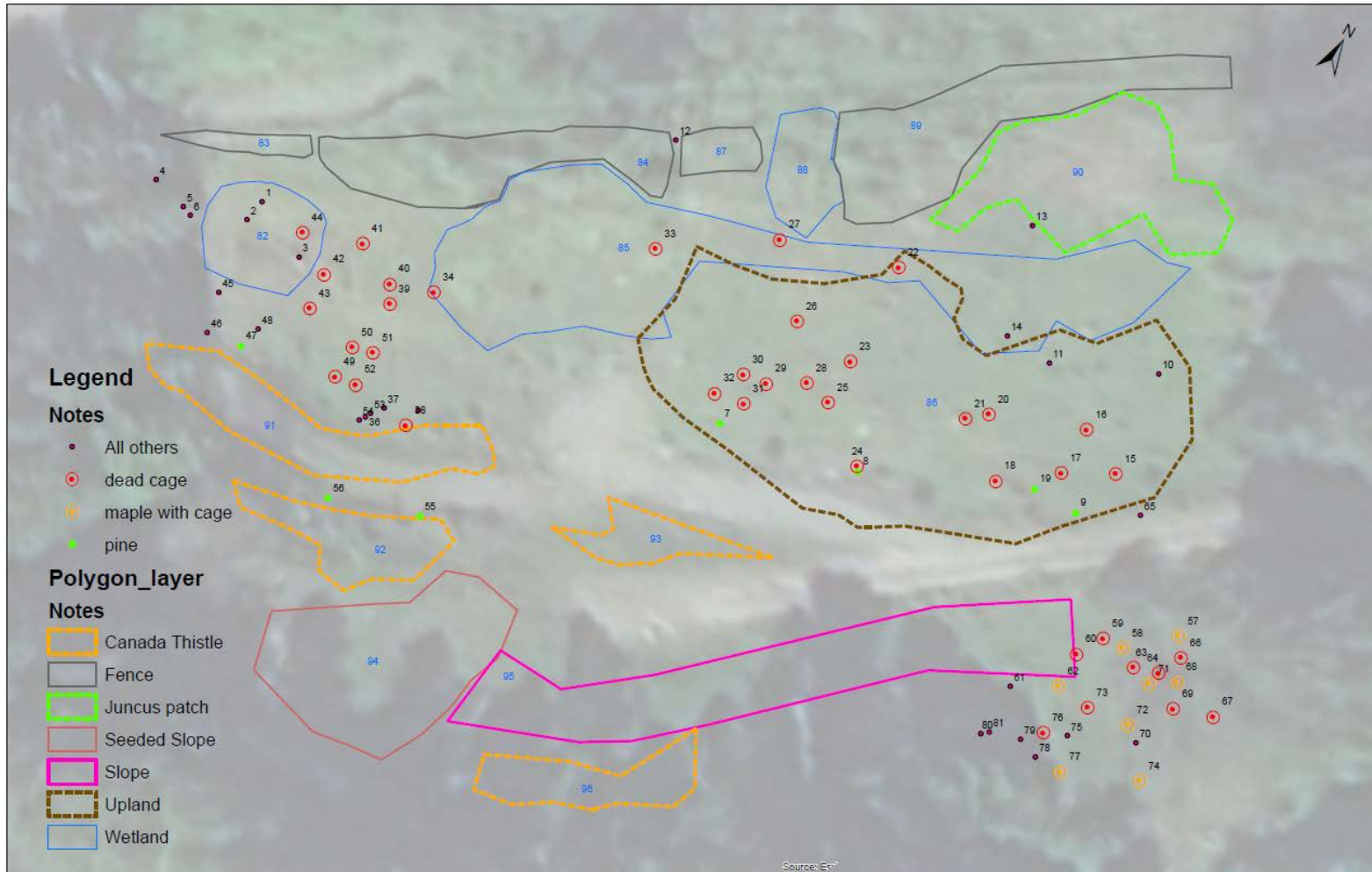
Natural recovery where seeding failed and on edges



Natural recovery – getting plants for free



What's already there and what the plants are telling you



- 🌲 North has become wetter – failed plants were suitable for drier sites that had been present before excavation
- 🌲 What is growing now:
 - 🌲 Willows
 - 🌲 Alders
 - 🌲 Douglas Fir
 - 🌲 Sedges

THANK YOU



Kalina Noel, M.E.Des., P.Biol., RPBio.
Senior Ecologist – SLR Consulting

- t +1 (250) 888 2725
- e knoel@slrconsulting.com
- w www.slrconsulting.com