

Building a Native Ecosystem at Larch Park's Storm Water Management Facility

Michael Rawson Clark, M.Sc.

Clark Ecoscience and Sustainability

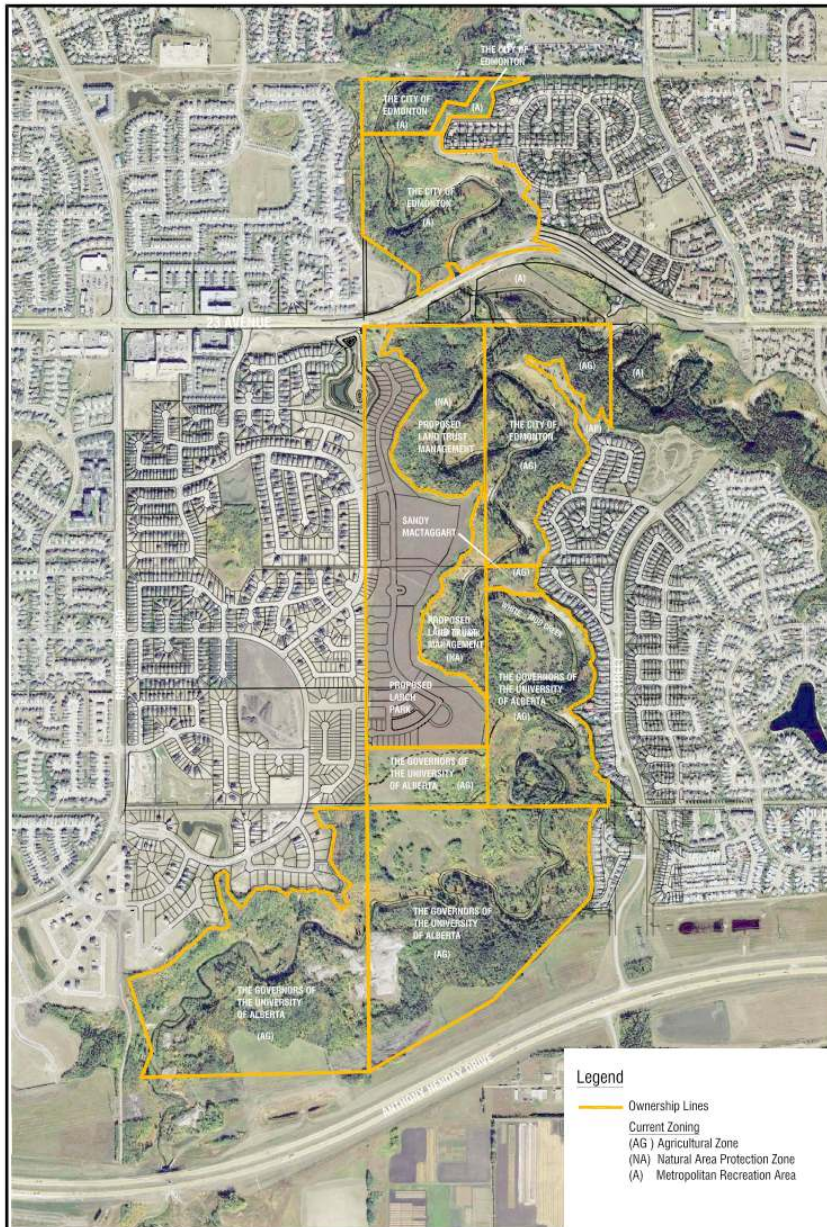
780.862.0920

michael@clarkecoscience.com

www.clarkecoscienceandsustainability.com



Larch Park, Edmonton Alberta



DRAFT

Larch Park
Ownership

DECEMBER 2009
N.T.S.



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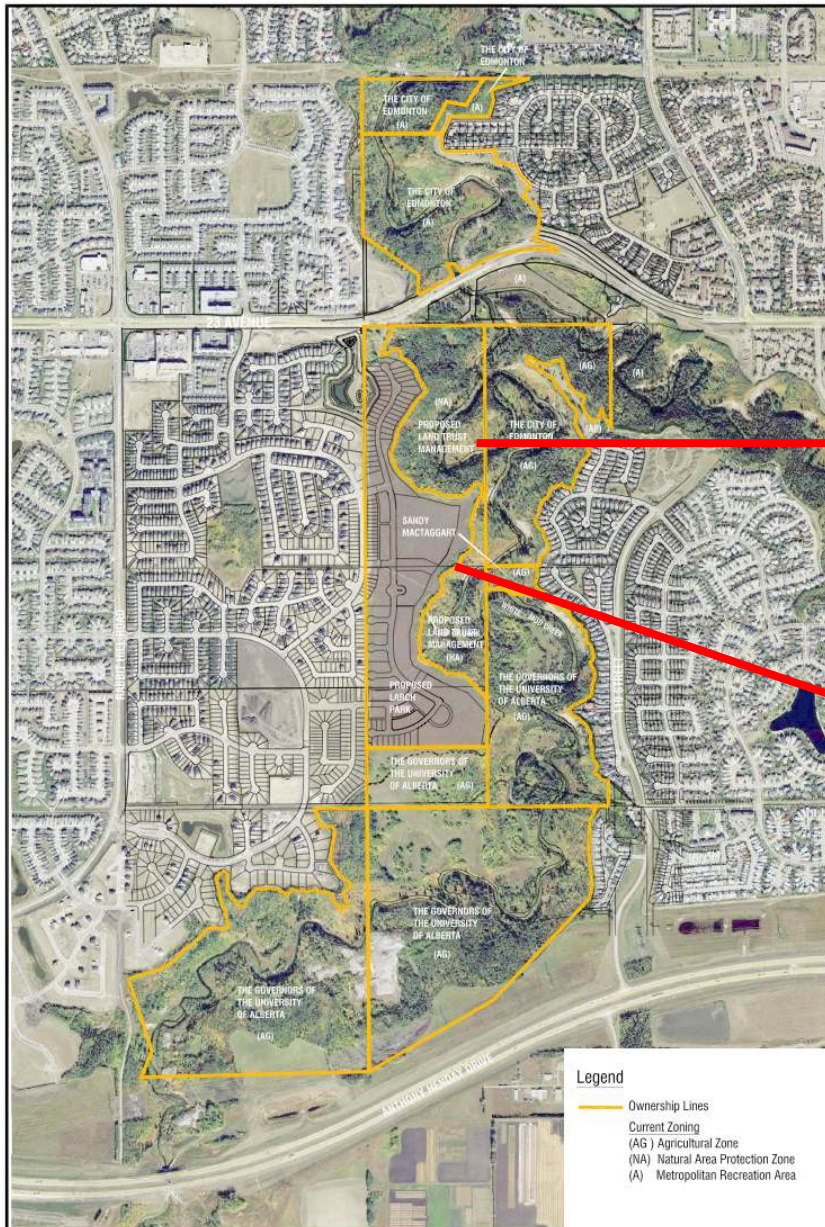


Larch Park, Edmonton Alberta

Conservation:
Larch Sanctuary

Restoration:
Top-of-bank edges

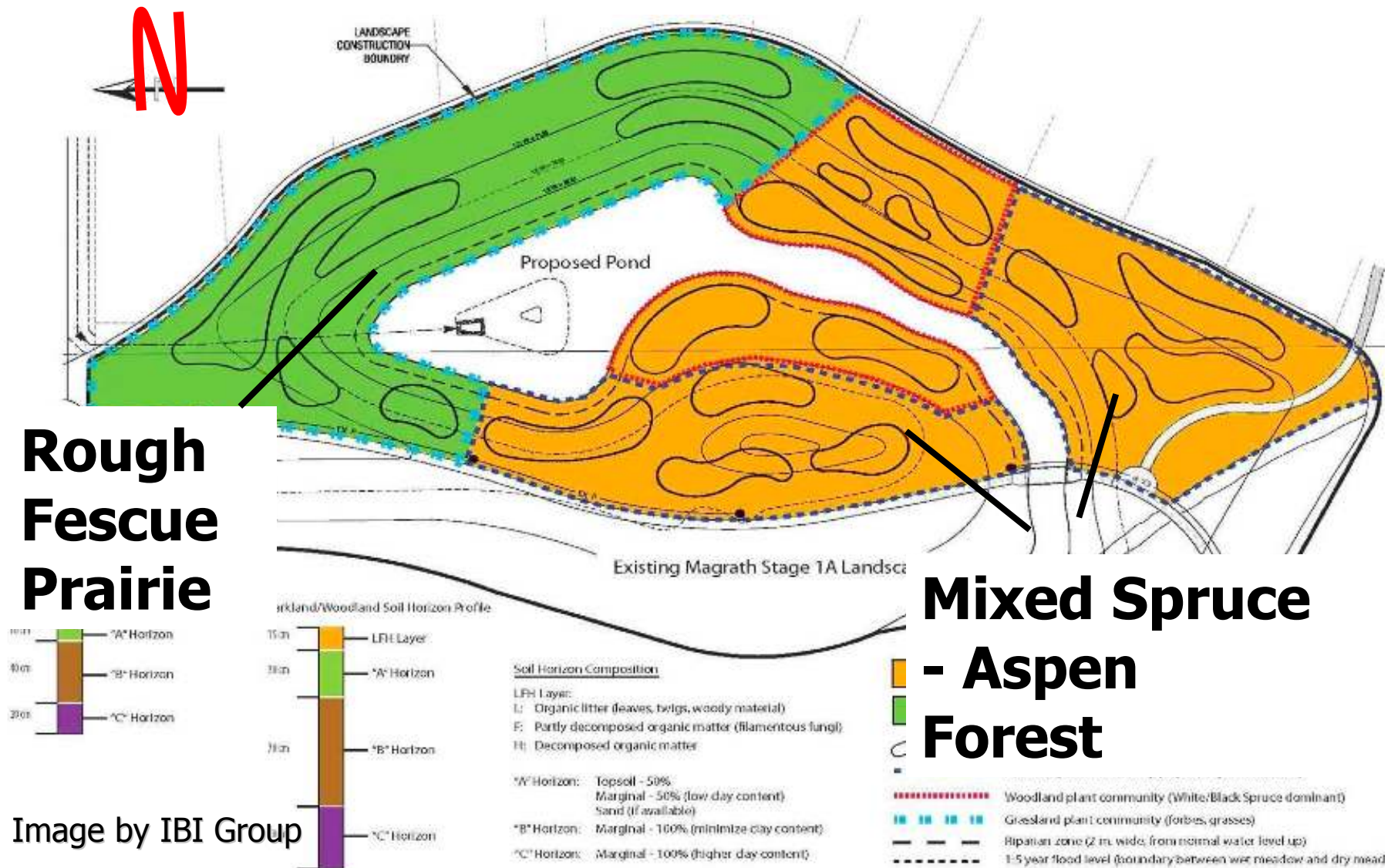
Rebuilding:
SWMF



Rebuilding in Larch Park: Starting with the SWMF



Larch Park: Aspen Parkland Rough Fescue Prairie Recreation



**Rough
Fescue
Prairie**

**Mixed Spruce
- Aspen
Forest**

Image by IBI Group

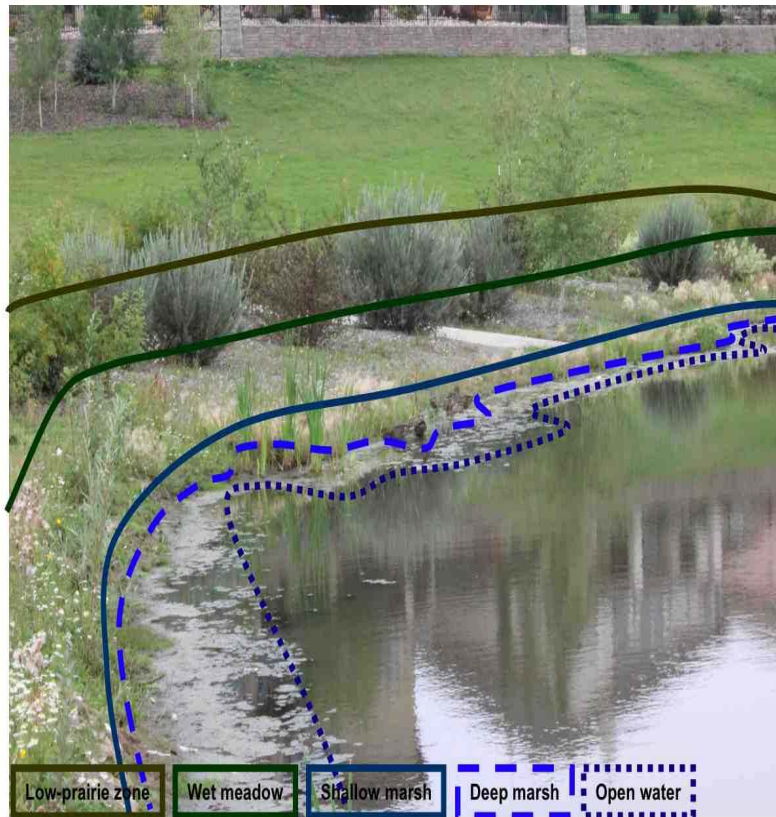
Wetlands



Wetland Options: Conventional or Restored Ecosystems



Issues of conventional SWMF

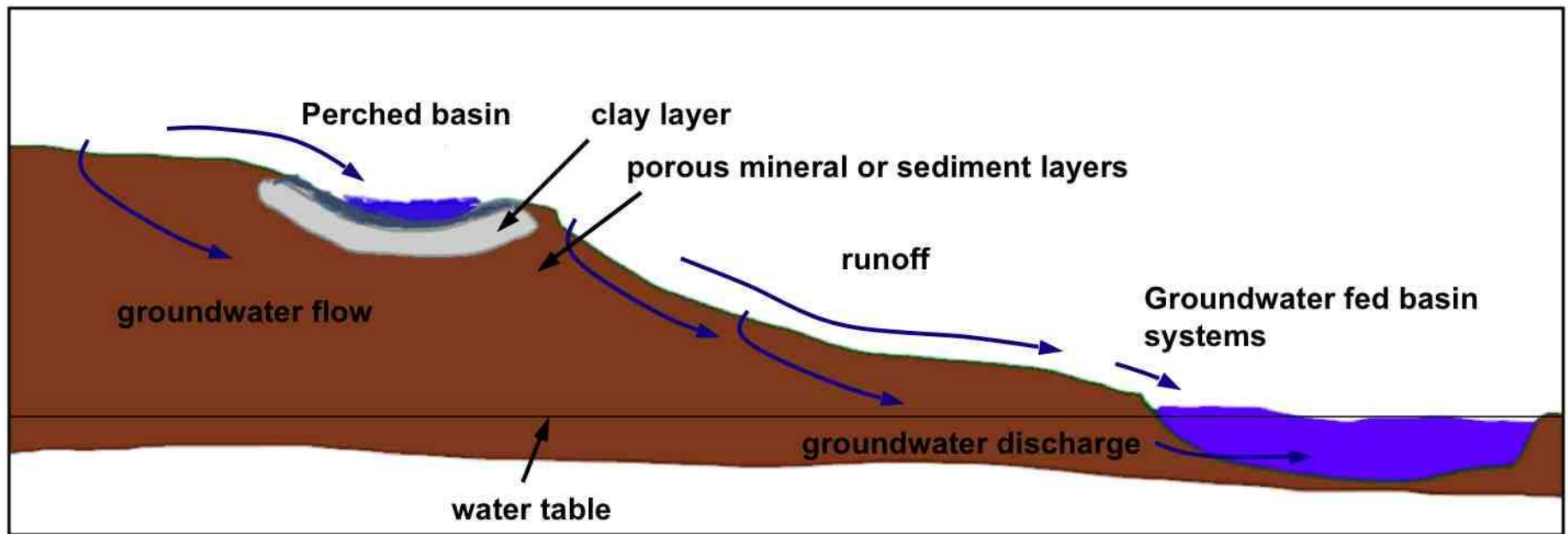


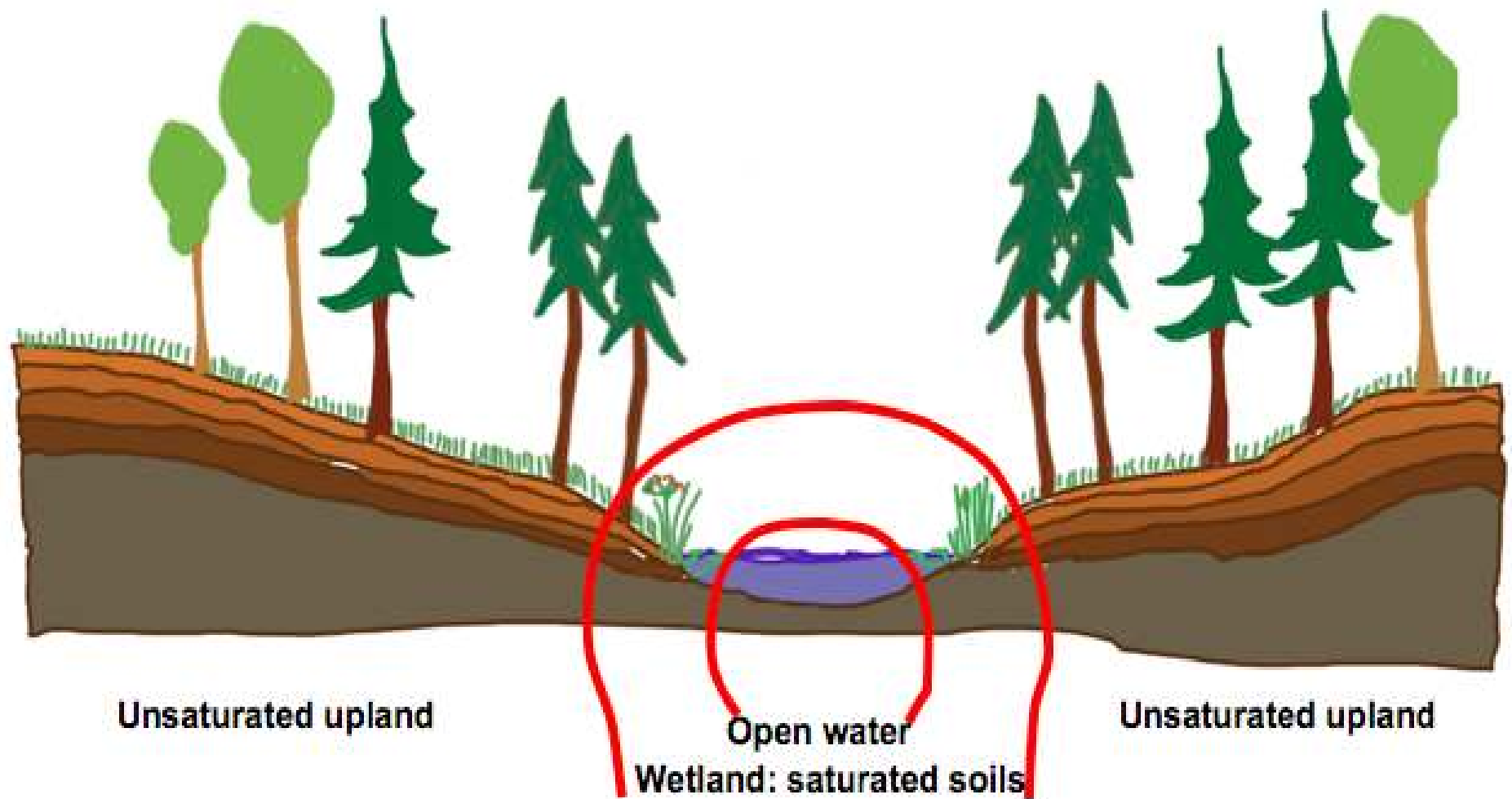
- Little heterogeneity
- No sources of native diversity
- No connectivity
- ‘Strange’ water flow
- Dense soils affect water flow
- High maintenance and chemical use

Wetland Goals

- Maximize wetland space
- Maximize water flow and storage
- Maximize carbon and nutrient flow
- Ensure nutrient processes match natural ecosystems
- Maximize heterogeneity and biodiversity
- Study Larch Park with other groups through the Urban Ecology Committee (e.g., University of Alberta)

Perched Basin Hydrology

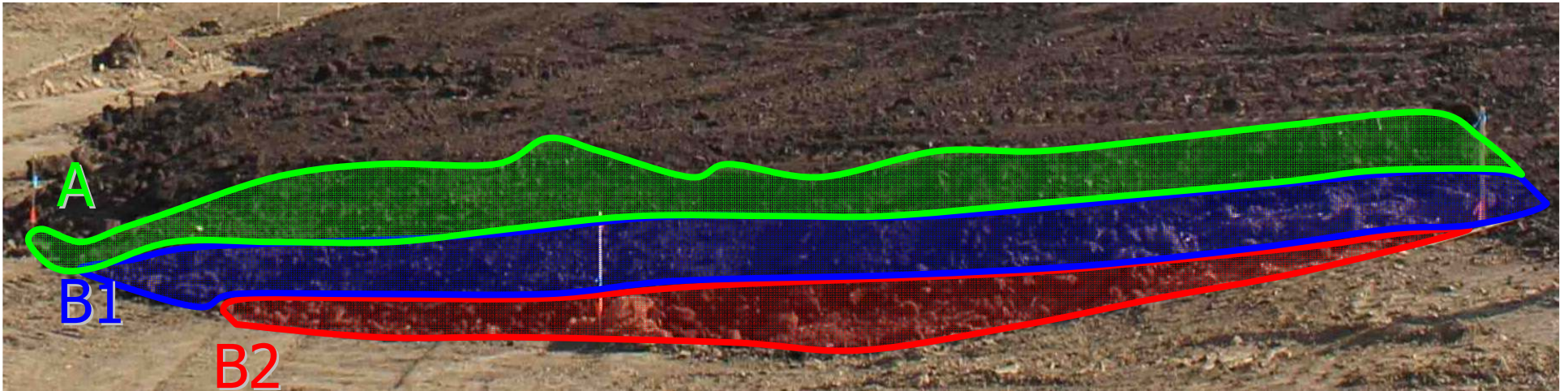




Restored ecosystems with very little overland flow!



Three horizons based on pre-site disturbance



- Minimized compaction
- Maximized marginal soils recycled
- Rough finish
- Used wood chips

Larch Sanctuary pond: < 5% weeds, no maintenance.





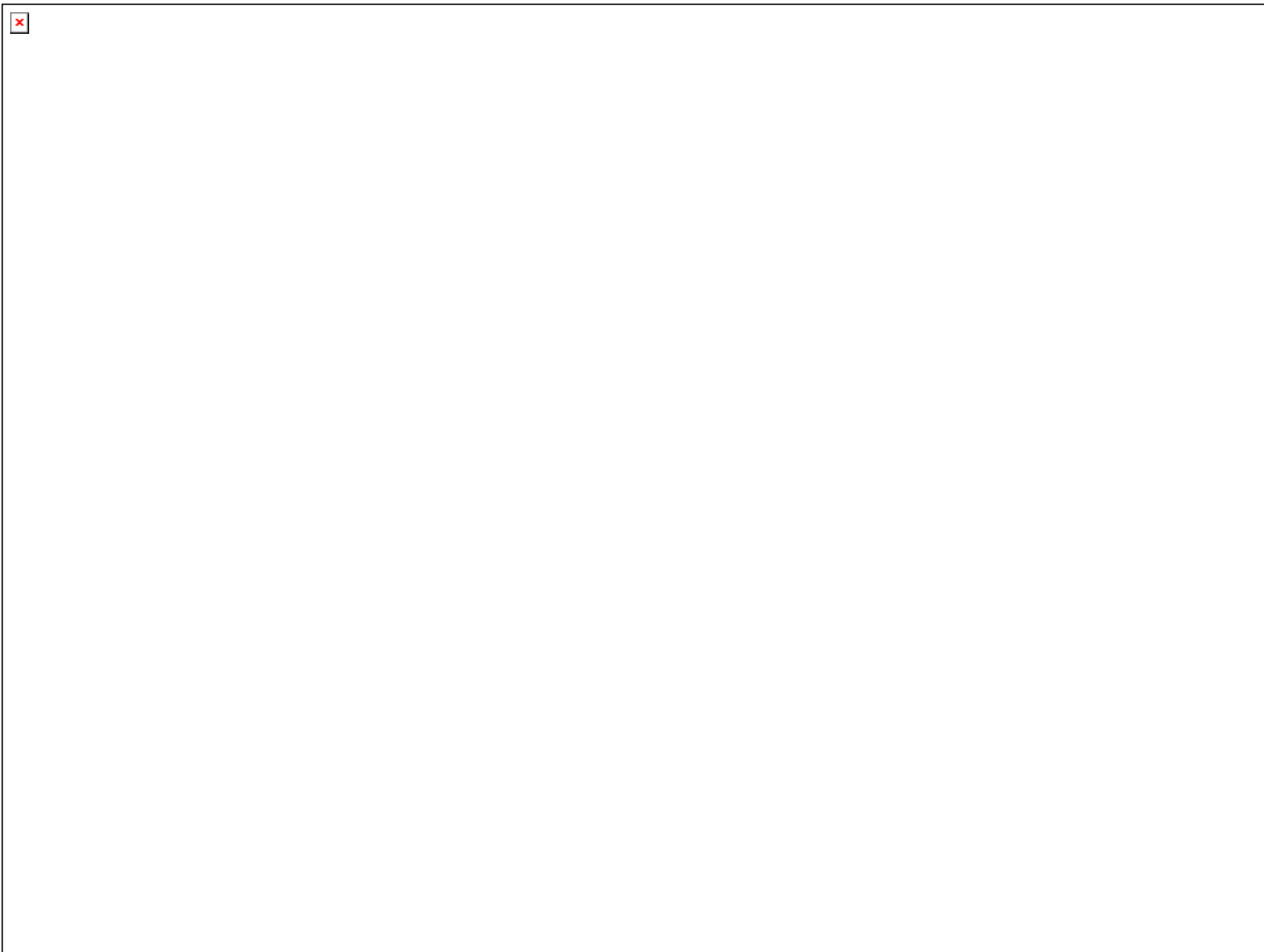


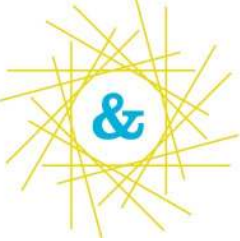










ARCTOS  BIRD

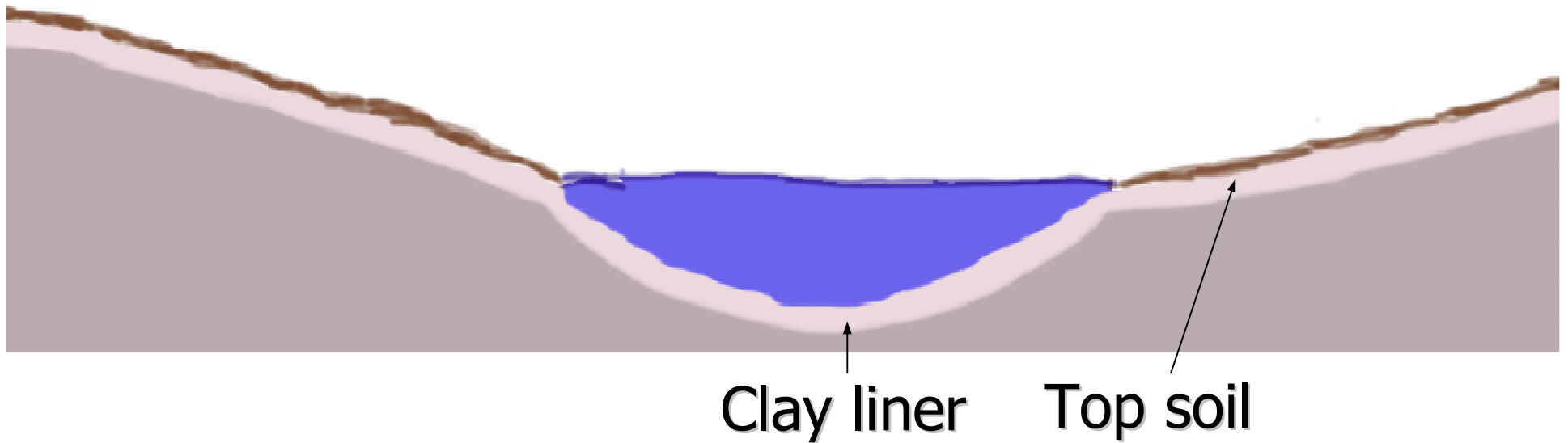
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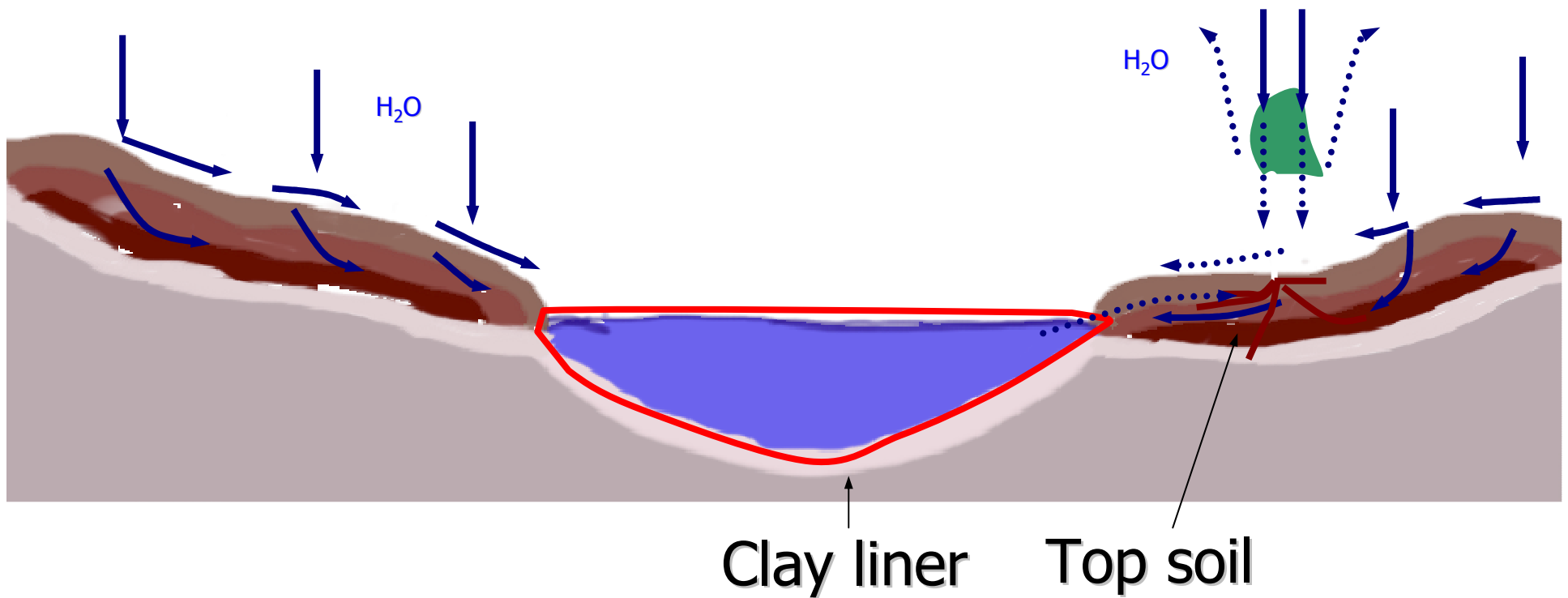
Takla Management Corporation



Critical Thinking about Conventional SWM Ponds



Deep soils = deep roots



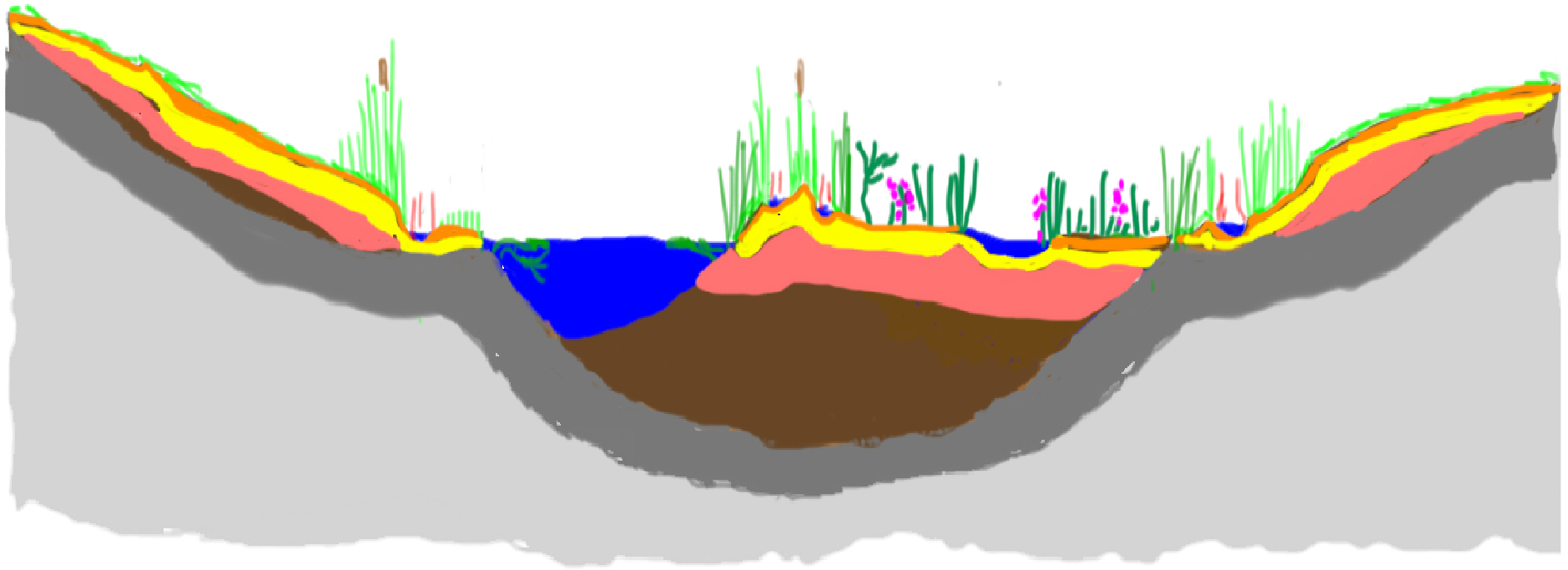
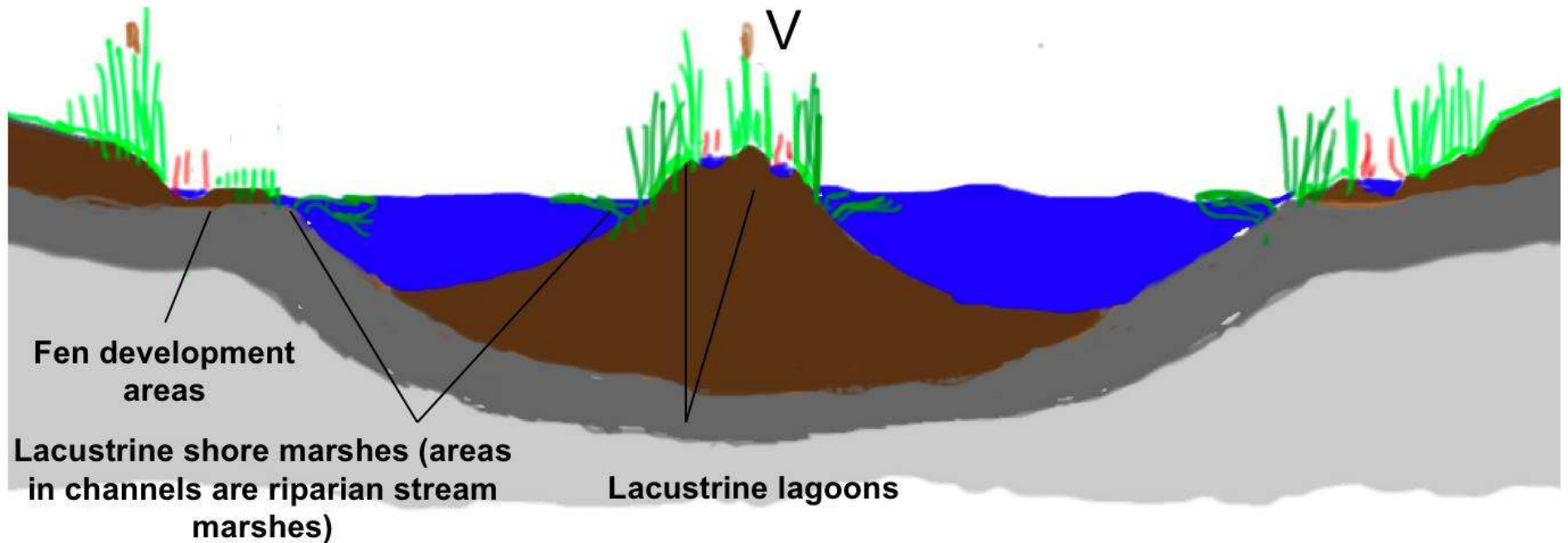


Figure 6. Schematic of Walker Lakes constructed wetland. This cross section bisects one pond and one channel that will connect two ponds, as well as two exterior edges. Orange represents topsoil (or Horizon A), yellow is dark marginal soils (Horizon B1), salmon is clayey marginal (Horizon B2) and brown is either dark marginal soils (B1) or clay, depending upon material availability at the site.

Option 5: Natural Constructed Wetland



Wetland zones maximize habitat space

