



FACILITATING THE IDENTIFICATION OF WETLAND RESTORATION LOCATIONS USING A RAPID DESKTOP PROTOCOL

Sarah Gallaway, Dan Dvoretz, Brooks Tramell
Oklahoma Conservation Commission

Background

- ❑ 2/3 of historic wetland area in Oklahoma lost
- ❑ Wetlands only cover ~2% of Oklahoma
- ❑ Wetlands provide critical hydrologic, biogeochemical and biotic functions

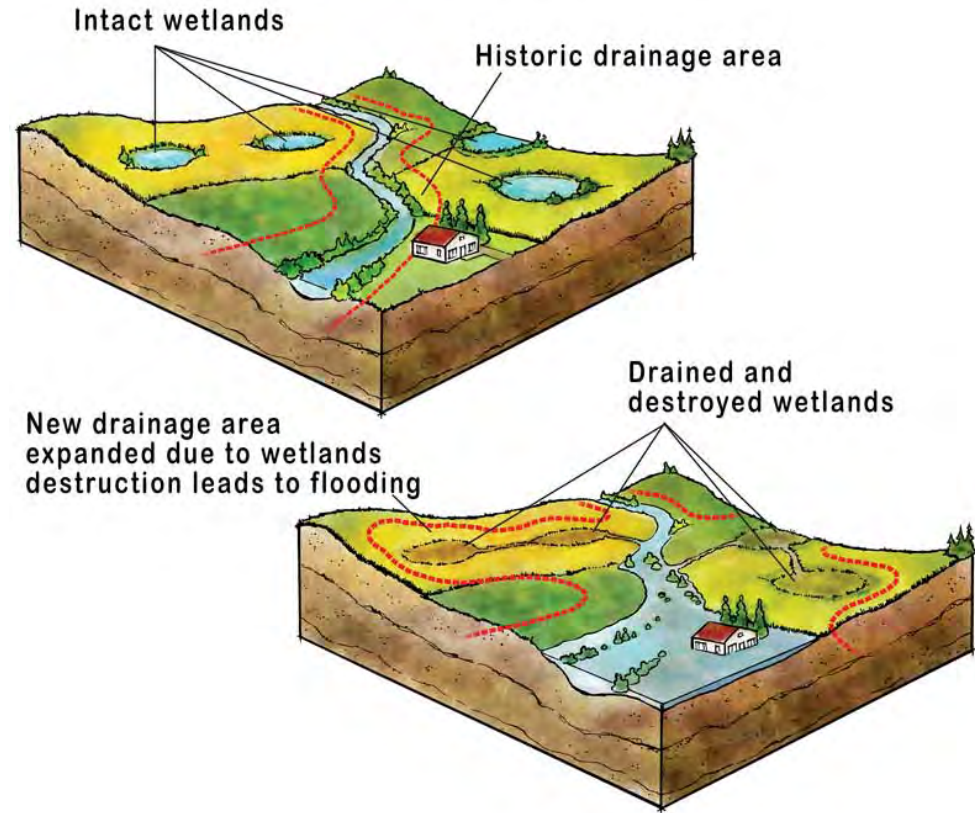


Image credit: Ducks Unlimited, Canada

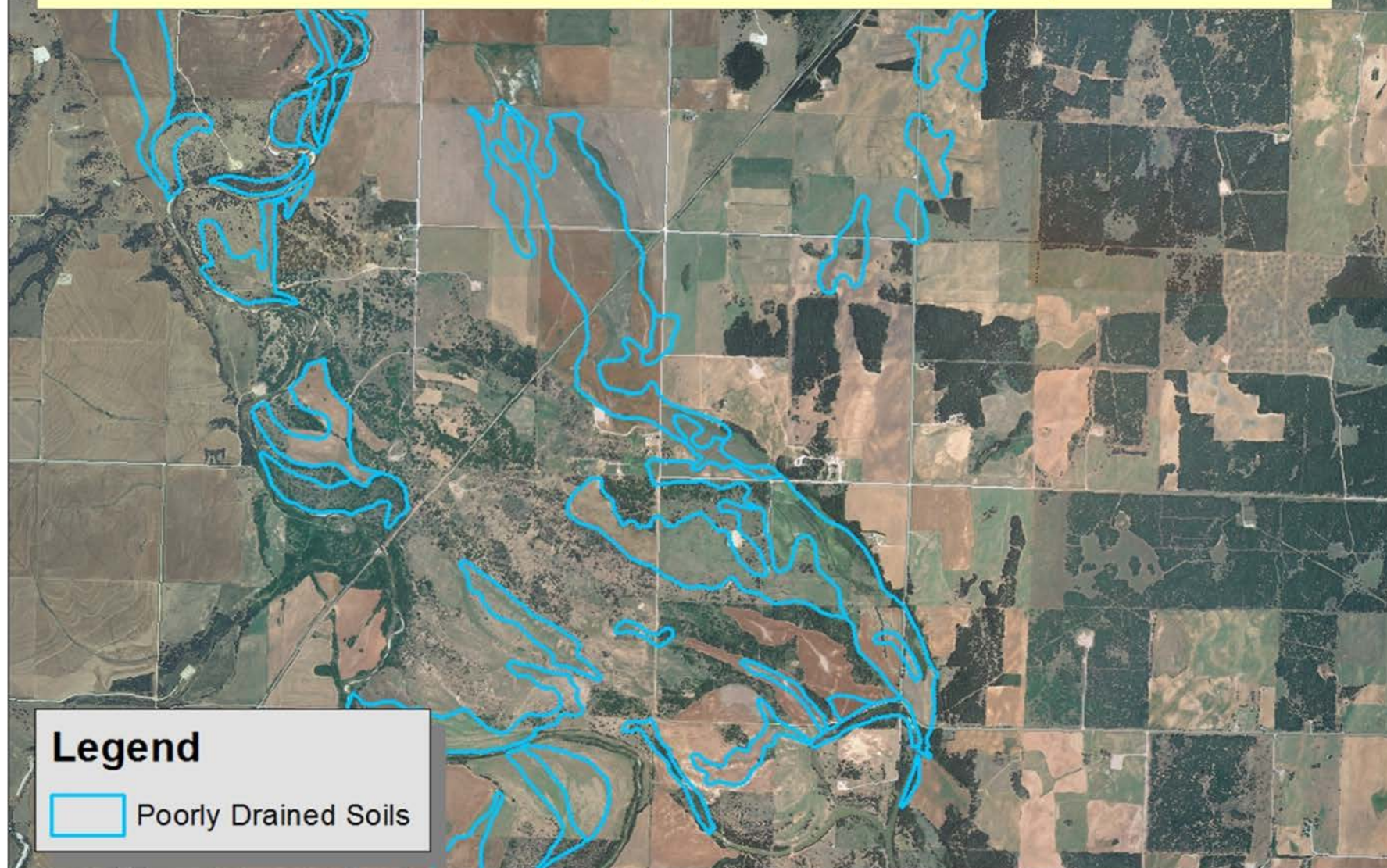
Background

- ❑ Demand for wetland restoration from CWA (§404)
- ❑ Success restoring wetland functions is variable
- ❑ Goal of the Oklahoma Wetlands Program is to:
“Conserve, enhance, and restore the quantity, **quality** and biological diversity of all wetlands in the state”
- ❑ Need for tools to identify restoration location, and assess potential for functionality

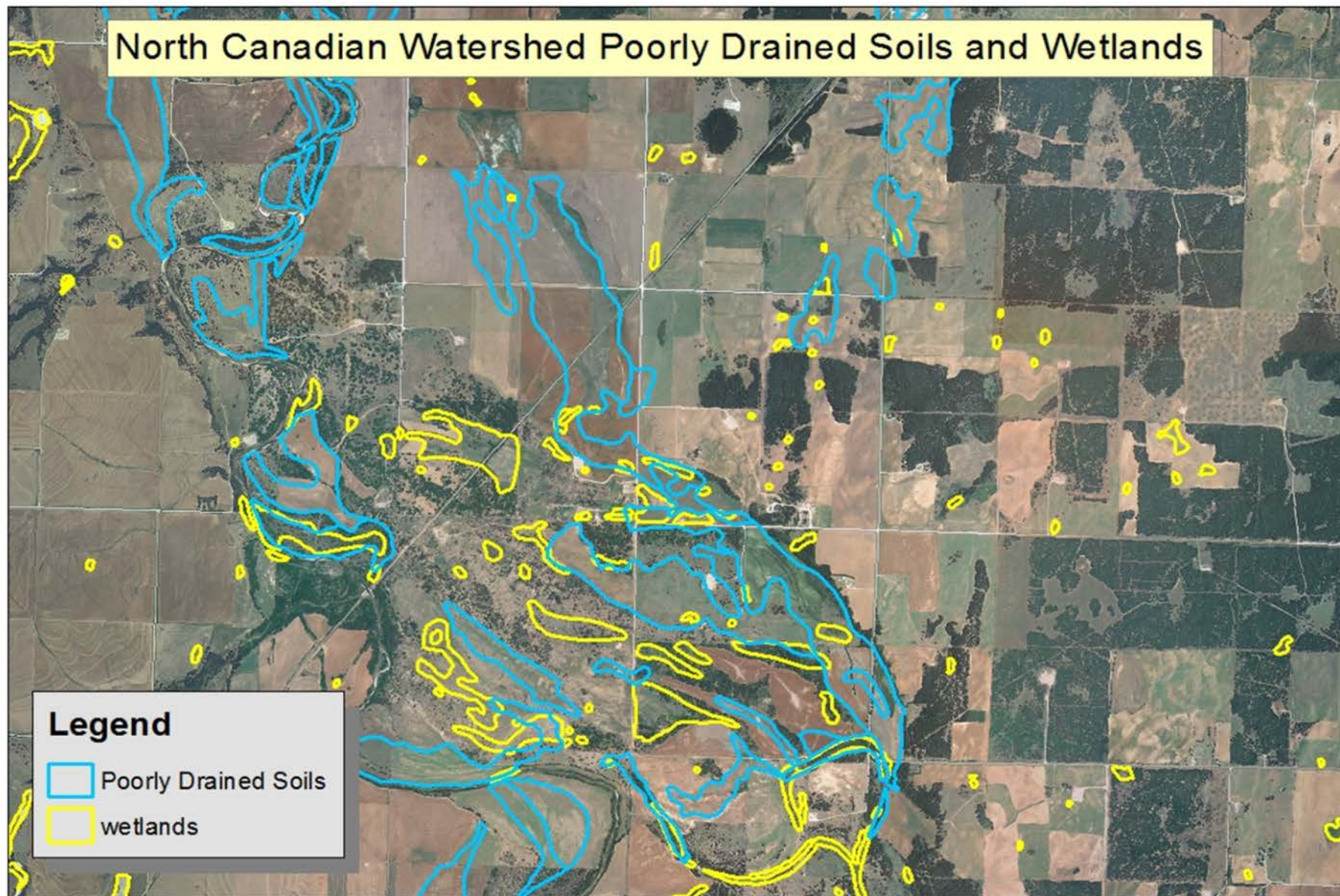
Restorable Wetlands Identification Protocol (RWIP)

- ❑ Desktop protocol completed in GIS
- ❑ Locate areas of greatest restoration potential quickly
- ❑ Hydric soils
 - Not wetlands
 - In topographic basins
 - Not paved or under water
 - With water source
 - Greater than 0.5 acres

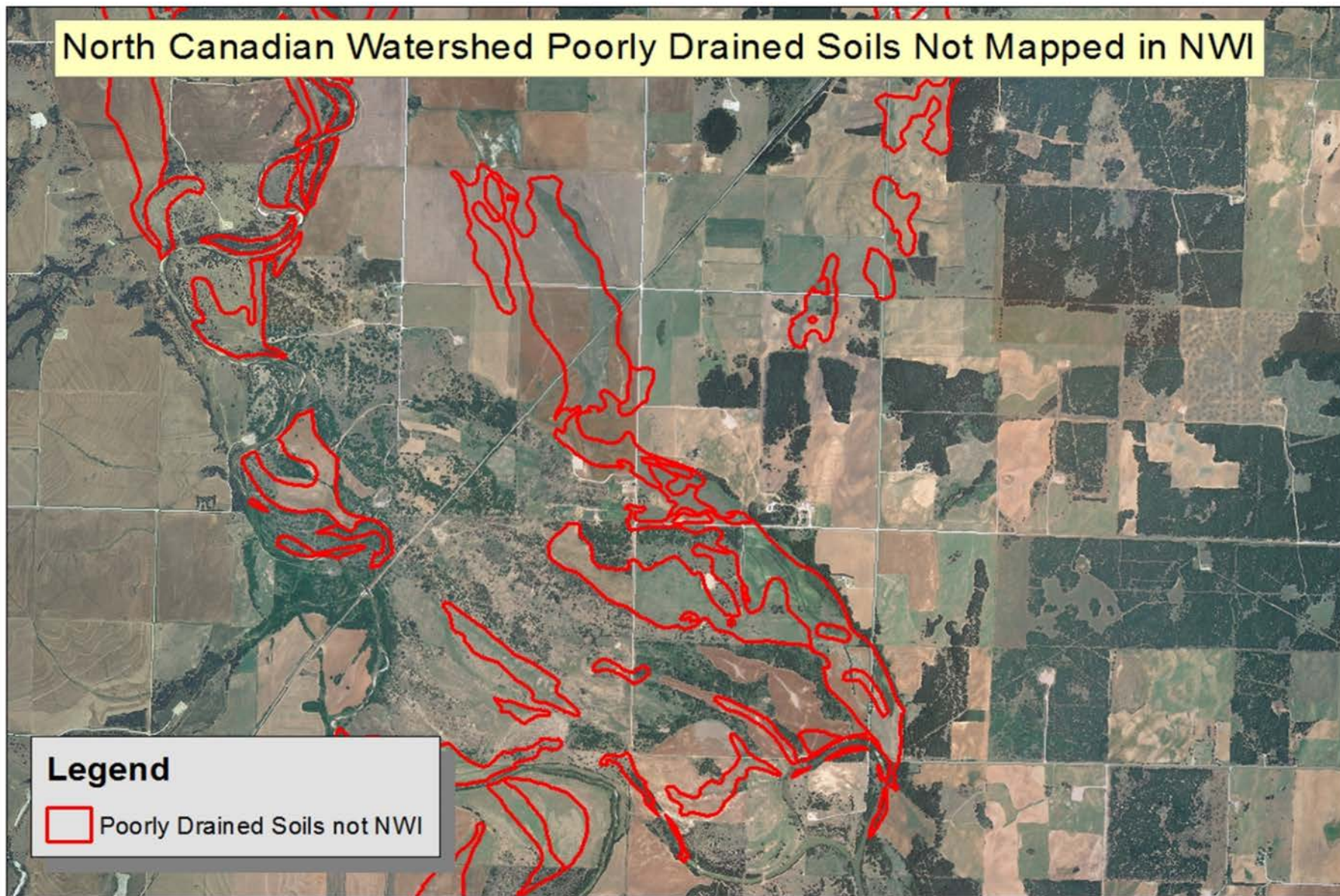
North Canadian Watershed Poorly and Somewhat Poorly Drained Soils



North Canadian Watershed Poorly Drained Soils and Wetlands



North Canadian Watershed Poorly Drained Soils Not Mapped in NWI



North Canadian Watershed Filled DEM

Legend

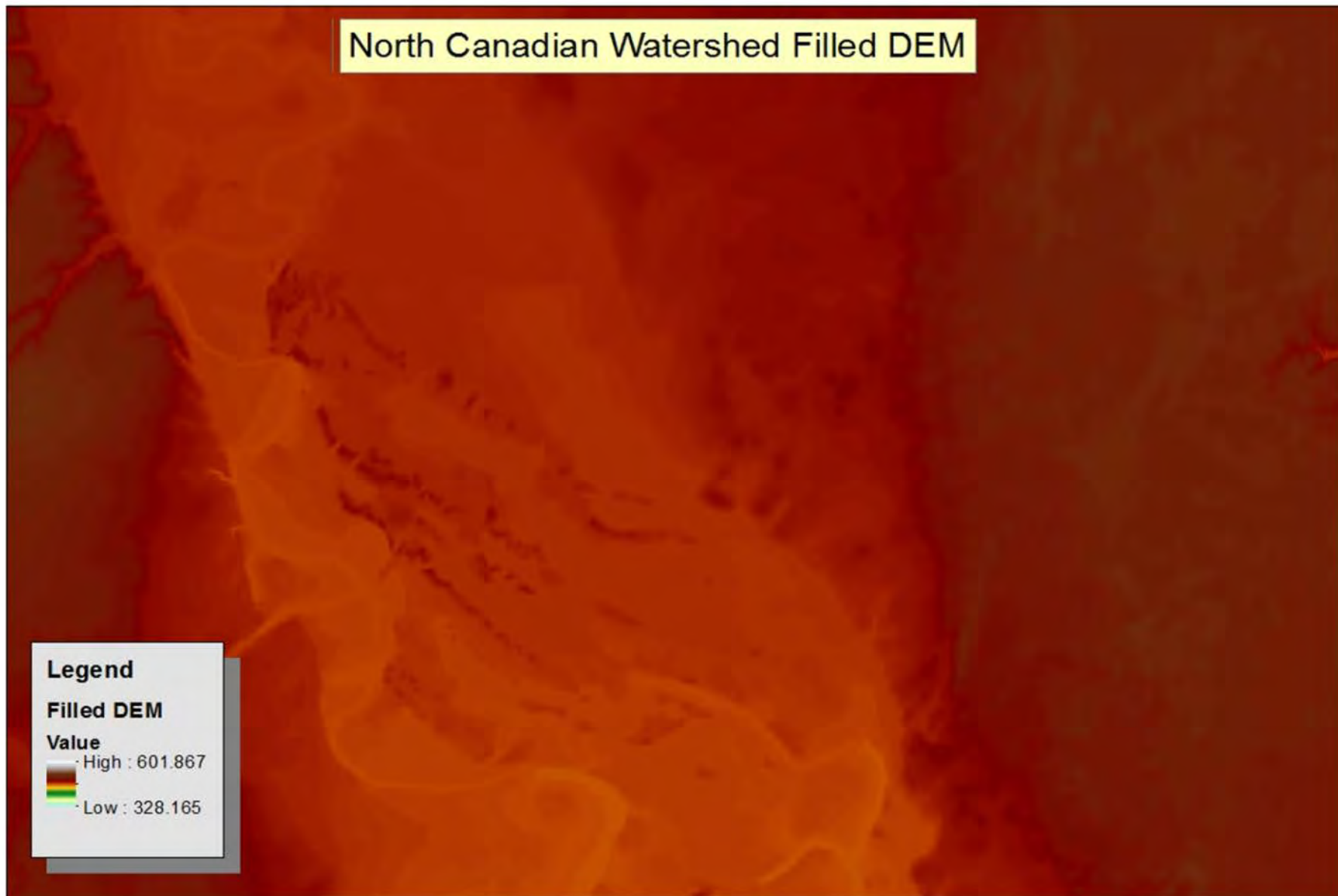
Filled DEM

Value

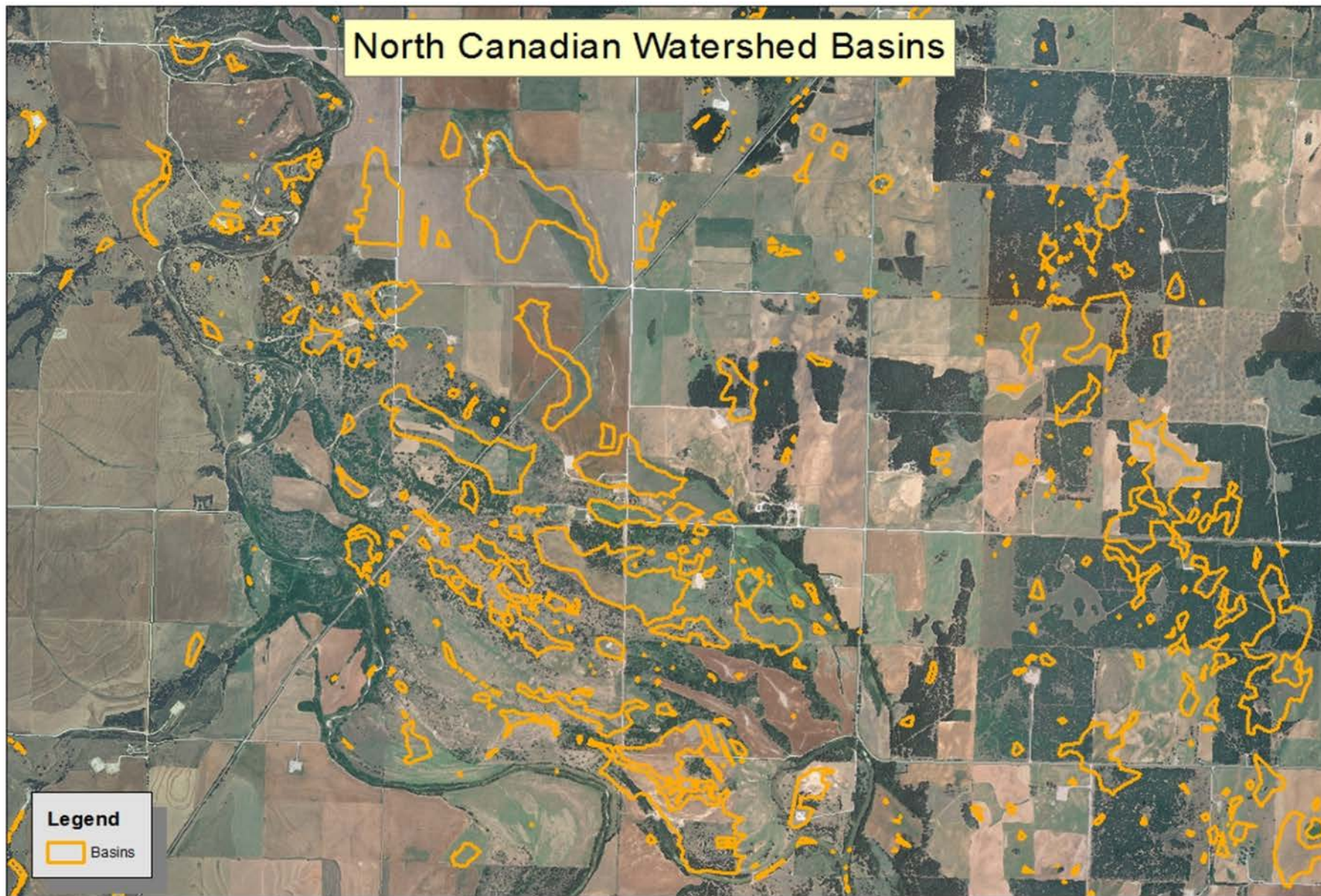
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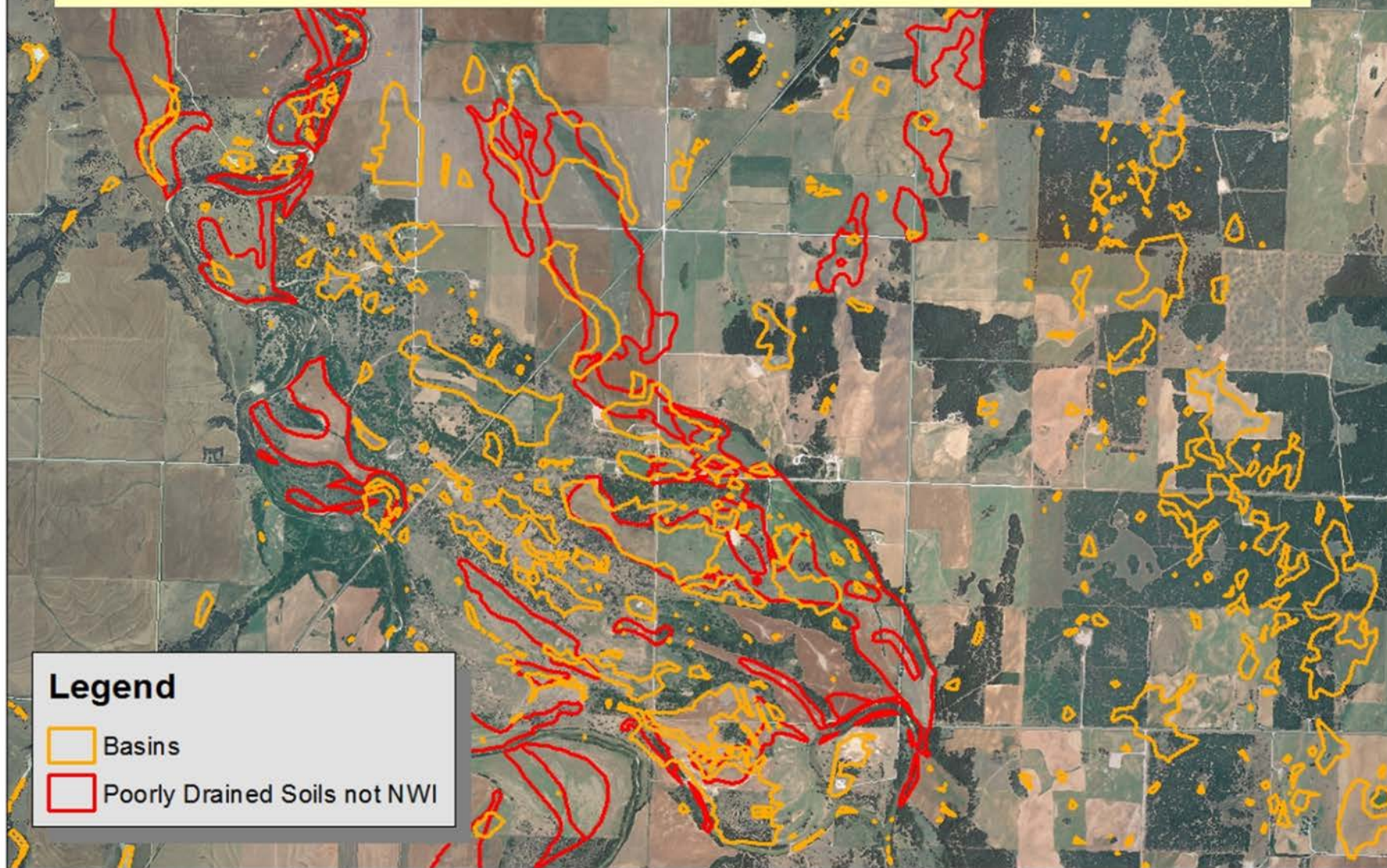
Low : 328.165



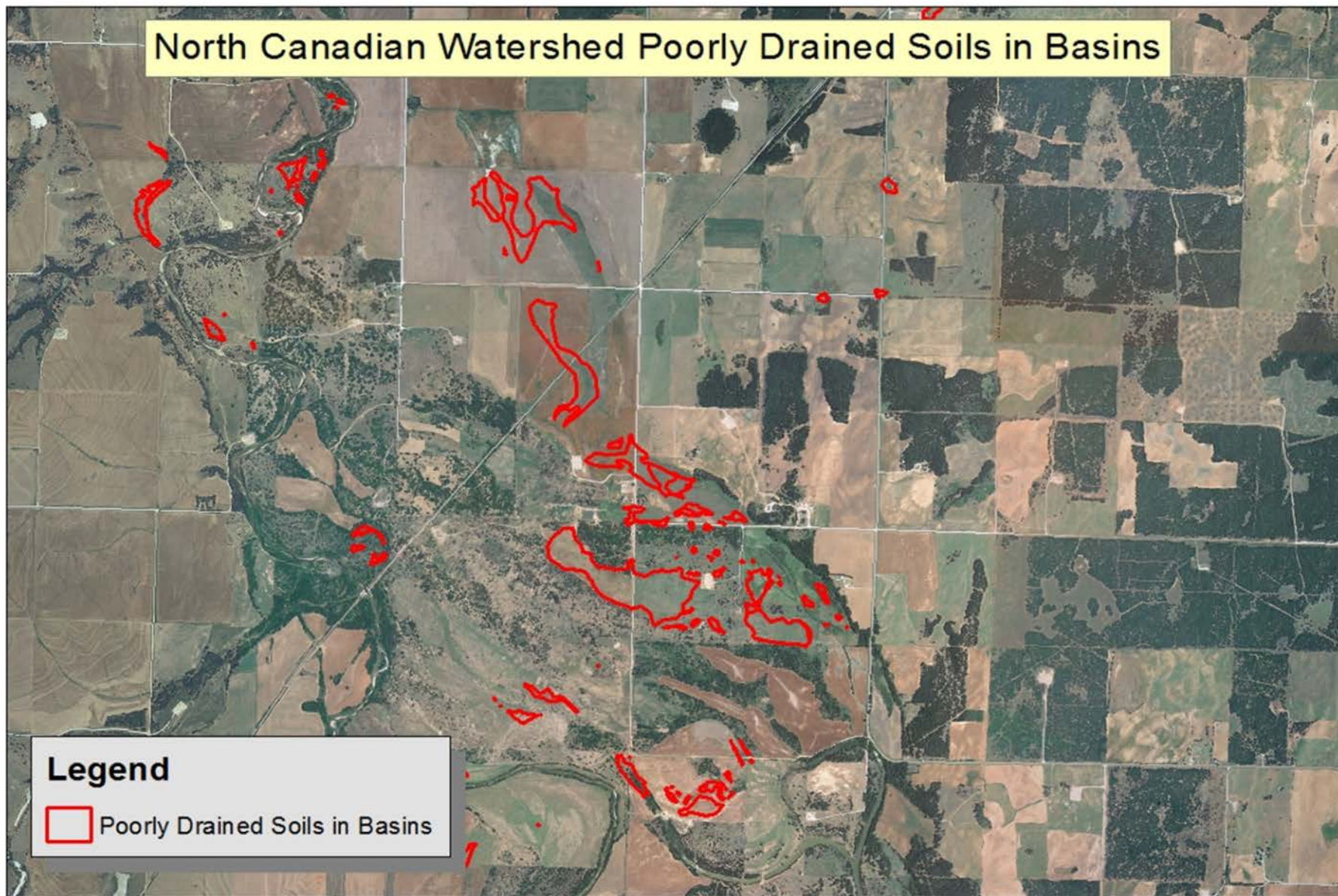
North Canadian Watershed Basins



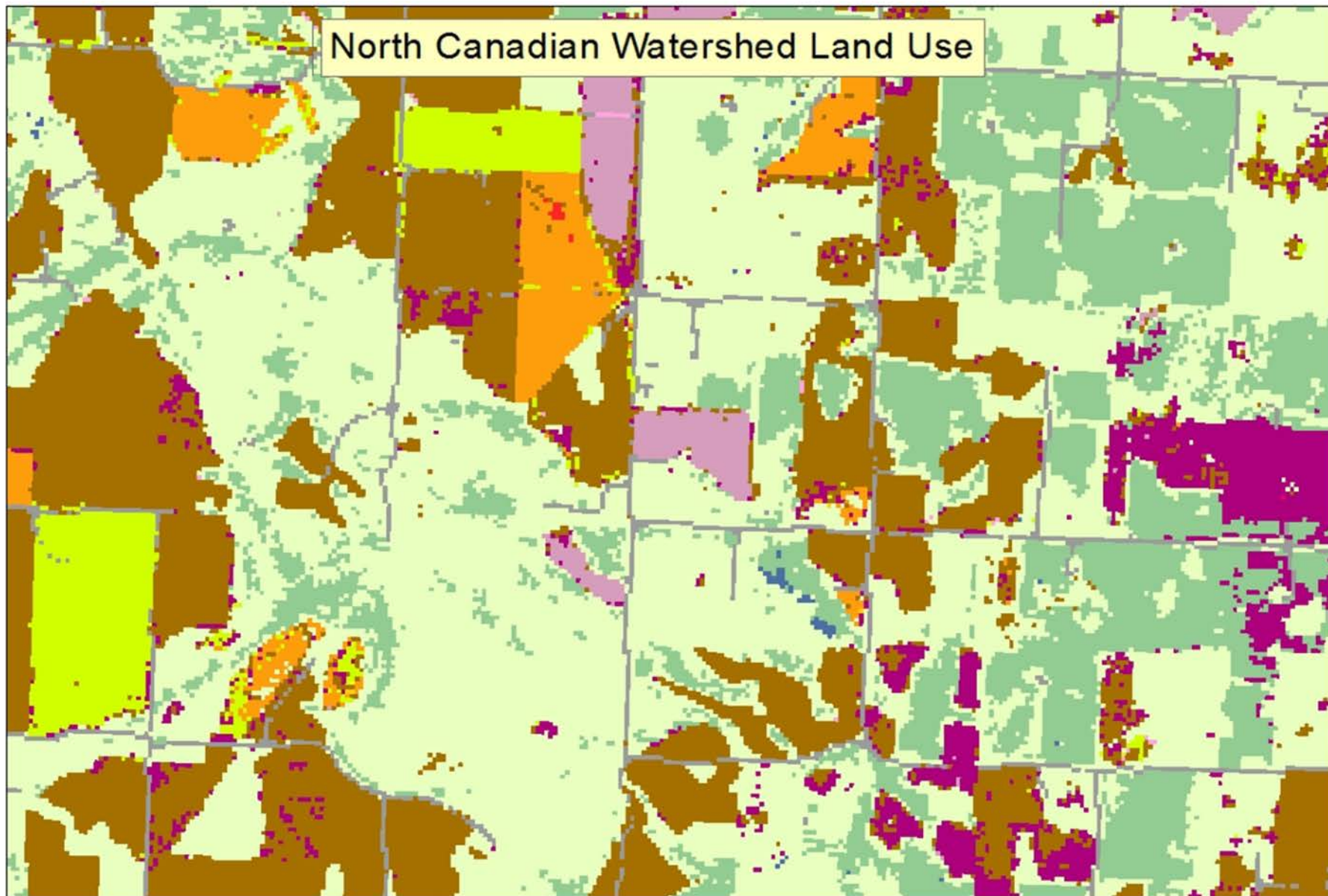
North Canadian Watershed Poorly Drained Soils not NWI and Basins



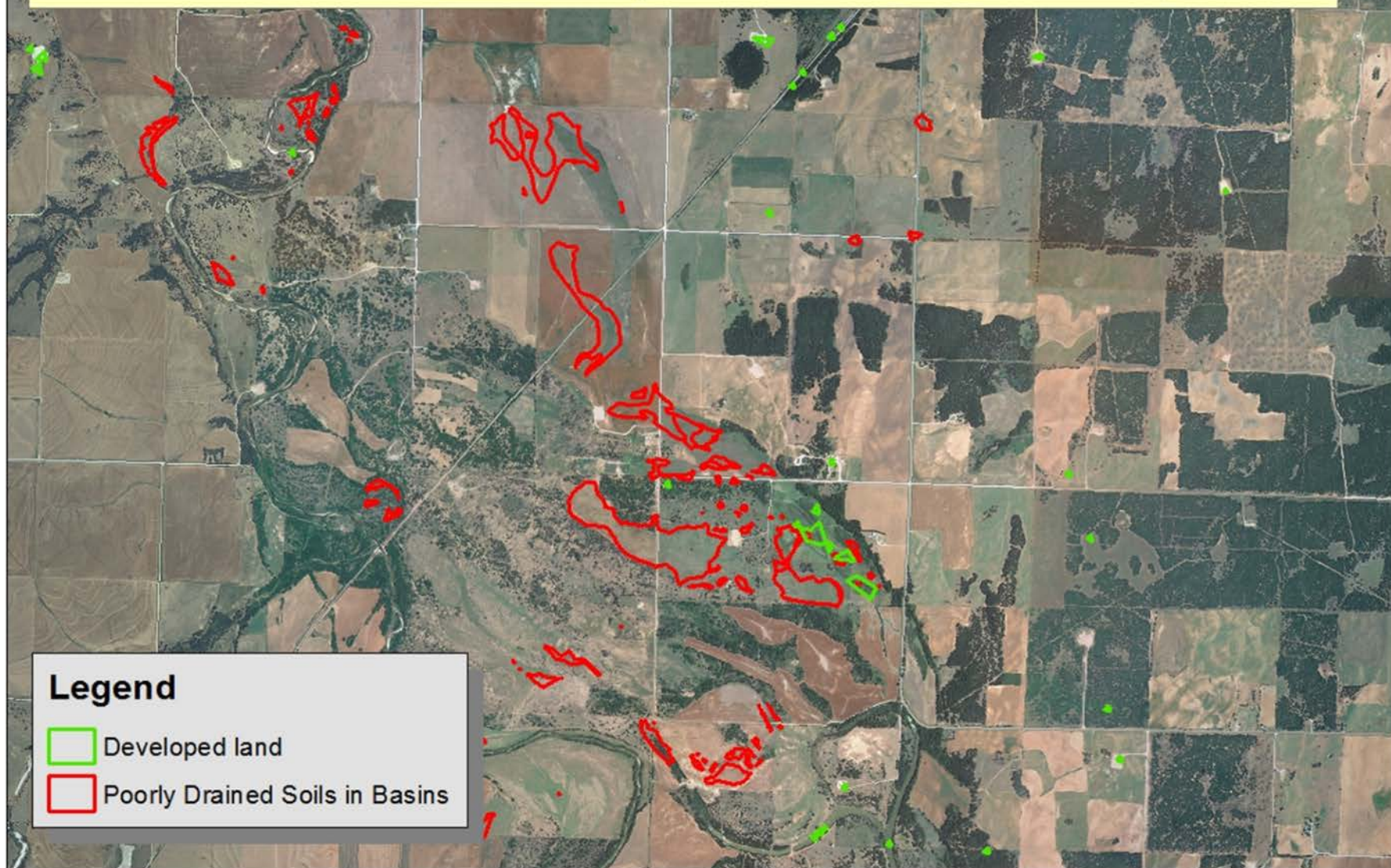
North Canadian Watershed Poorly Drained Soils in Basins



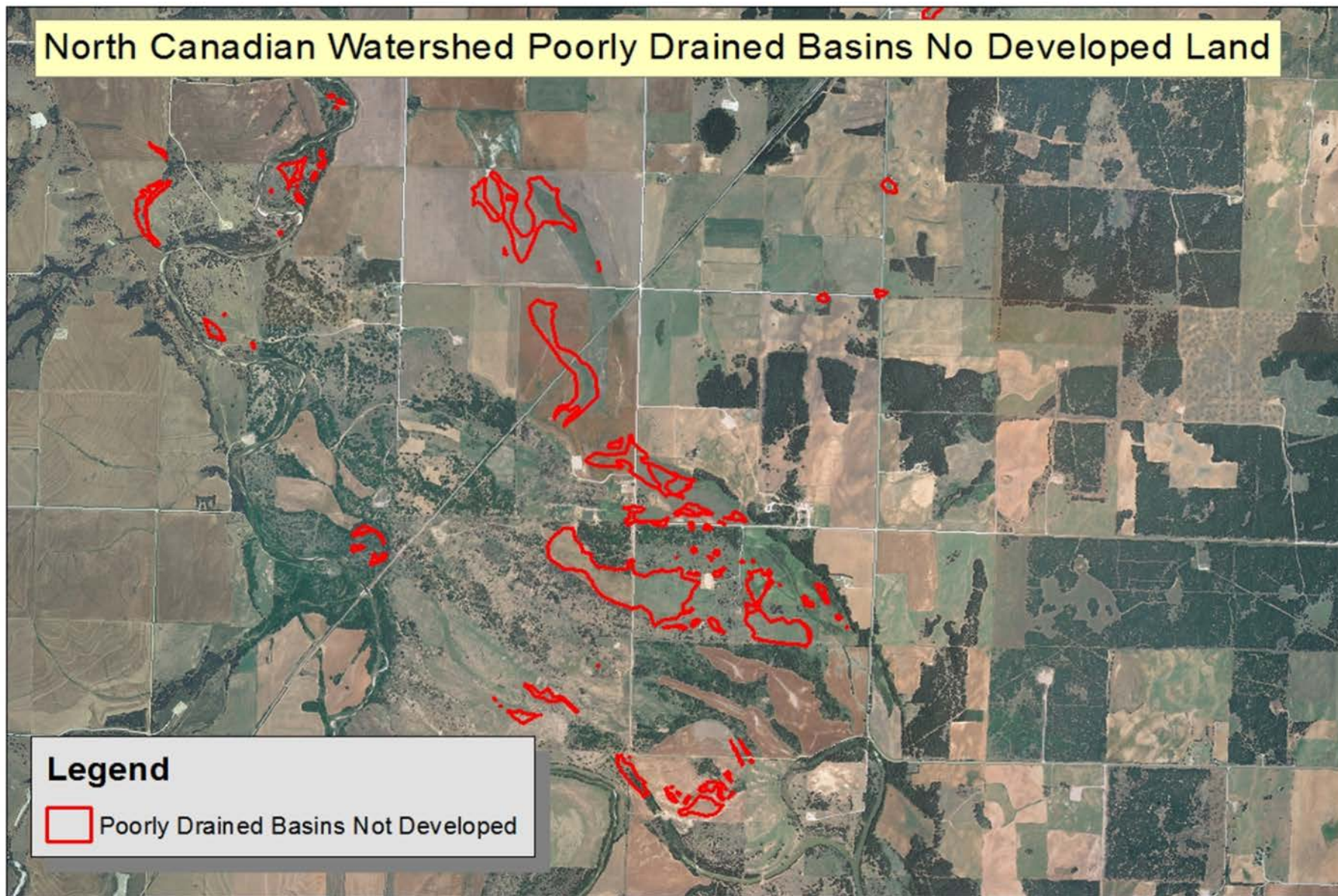
North Canadian Watershed Land Use



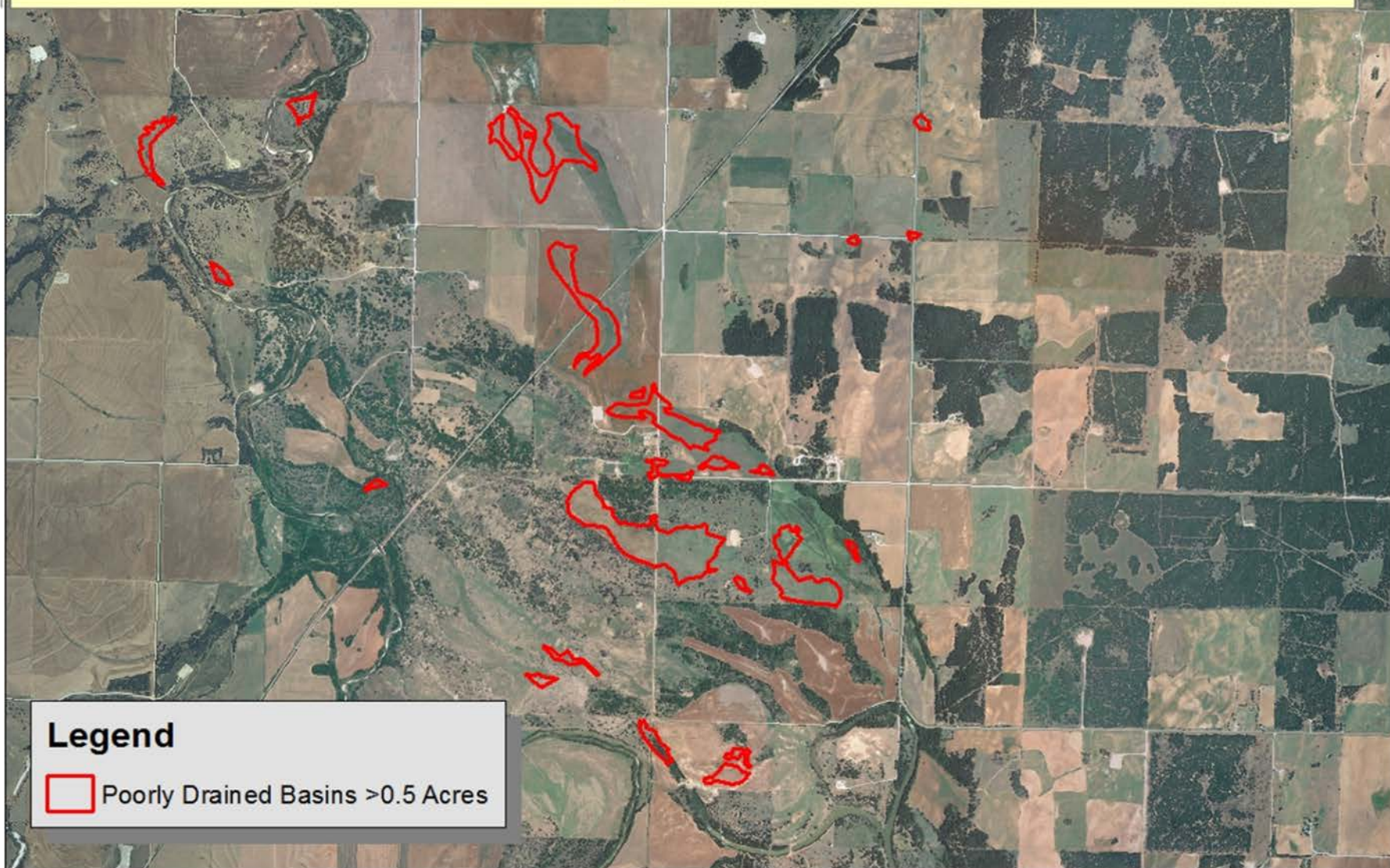
North Canadian Watershed Poorly Drained Basins and Developed Land



North Canadian Watershed Poorly Drained Basins No Developed Land



North Canadian Watershed Poorly Drained Basins Greater than 0.5 Acres



North Canadian Watershed Filled DEM

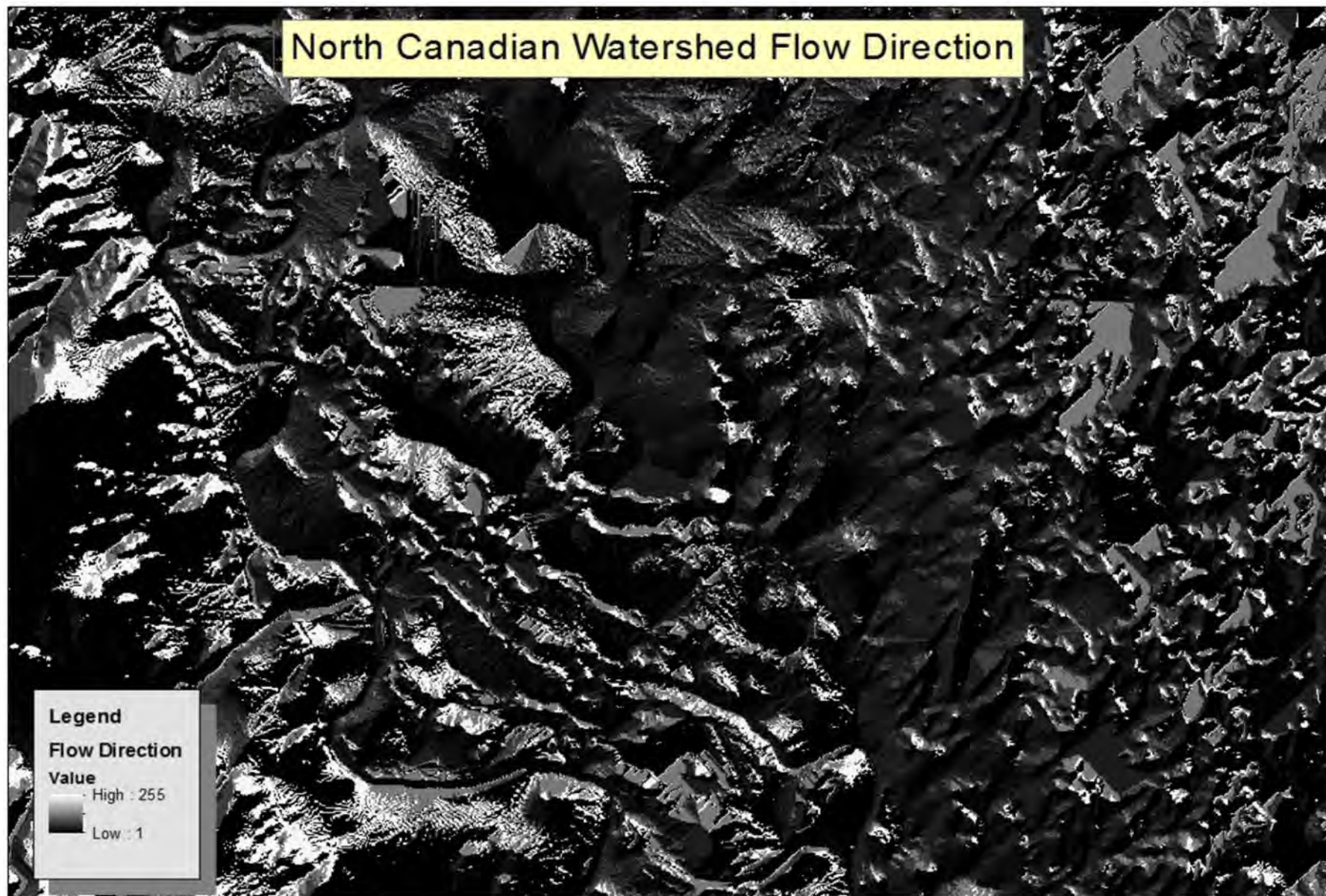
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Filled DEM

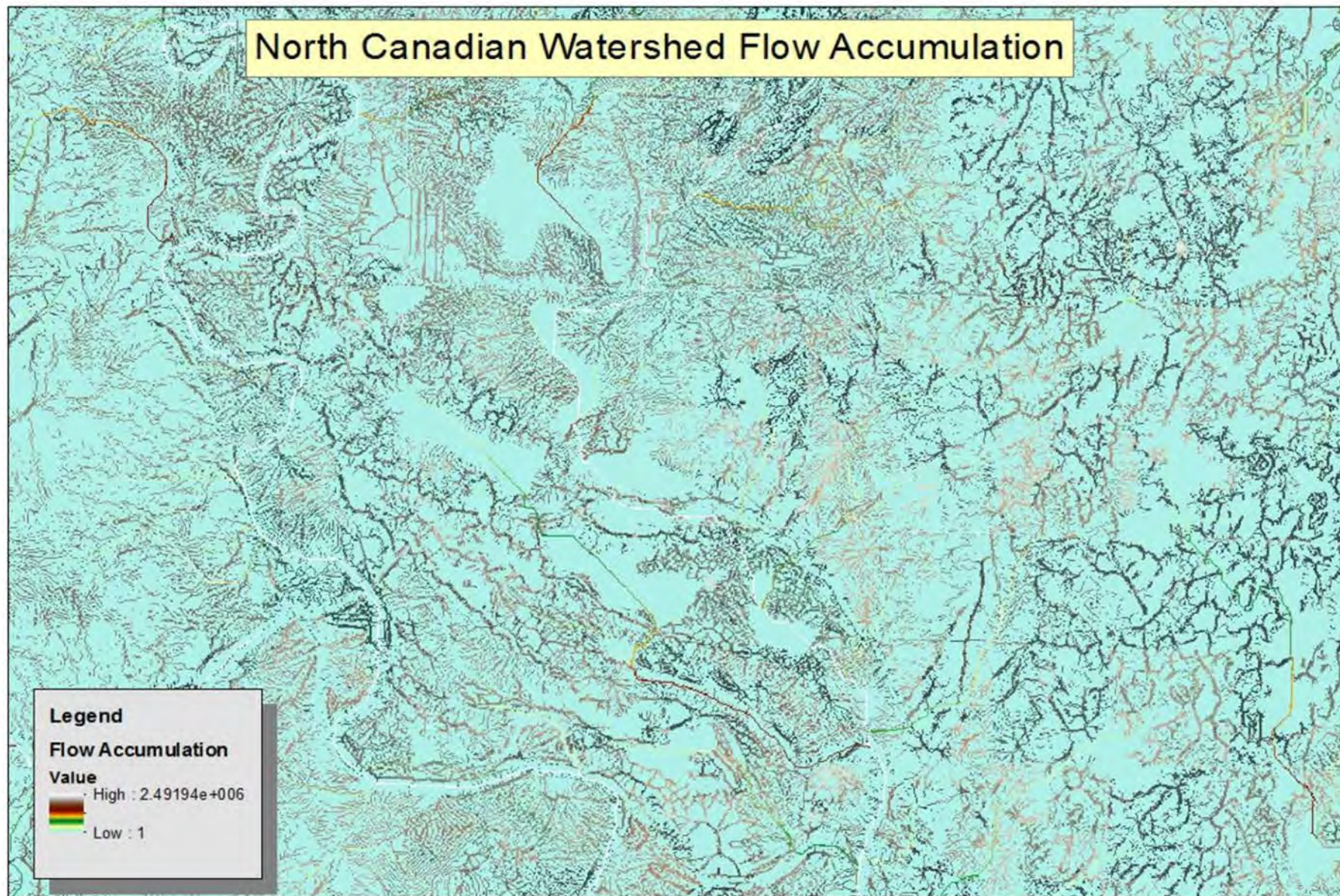
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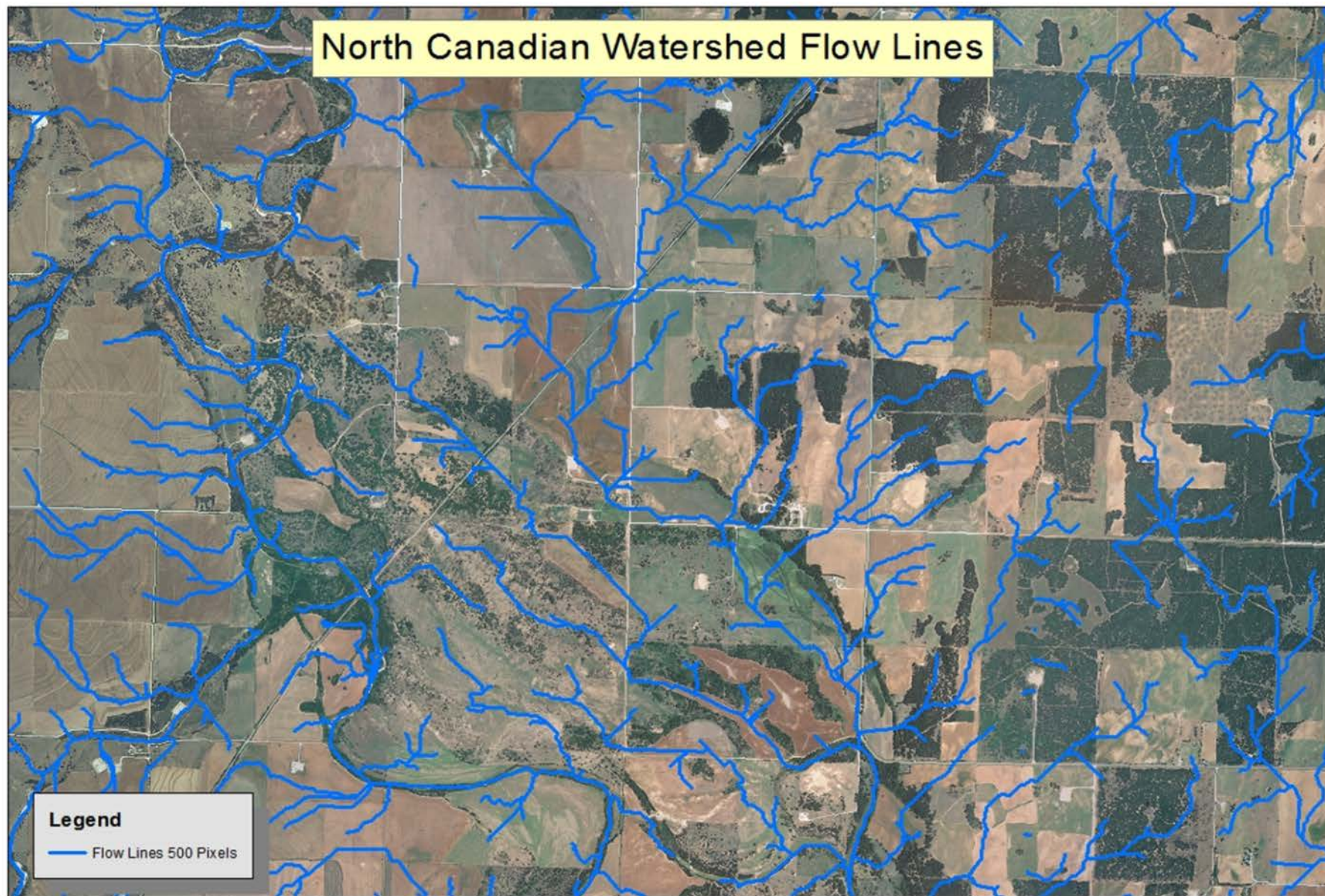
North Canadian Watershed Flow Direction



North Canadian Watershed Flow Accumulation



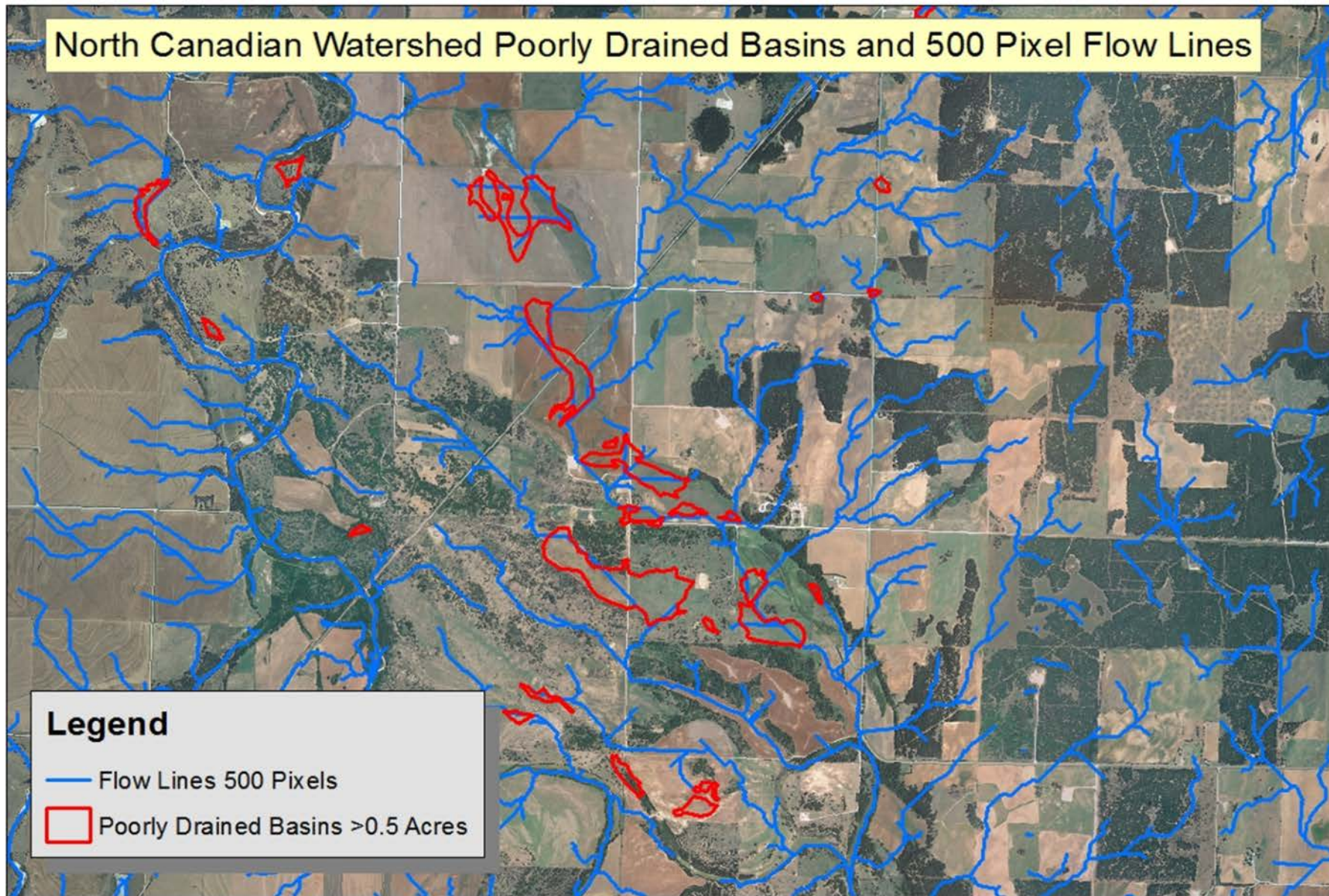
North Canadian Watershed Flow Lines



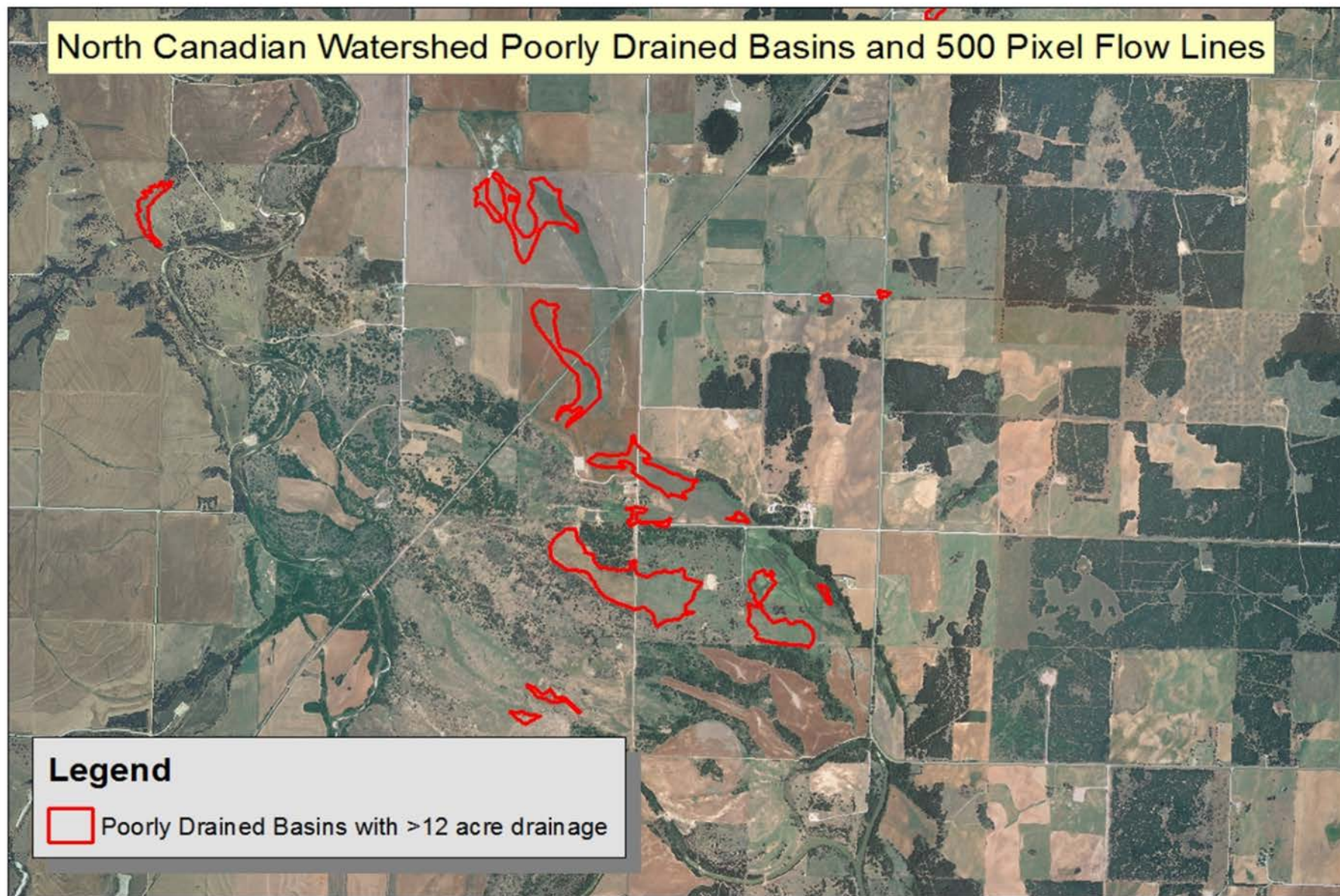
Legend

— Flow Lines 500 Pixels

North Canadian Watershed Poorly Drained Basins and 500 Pixel Flow Lines



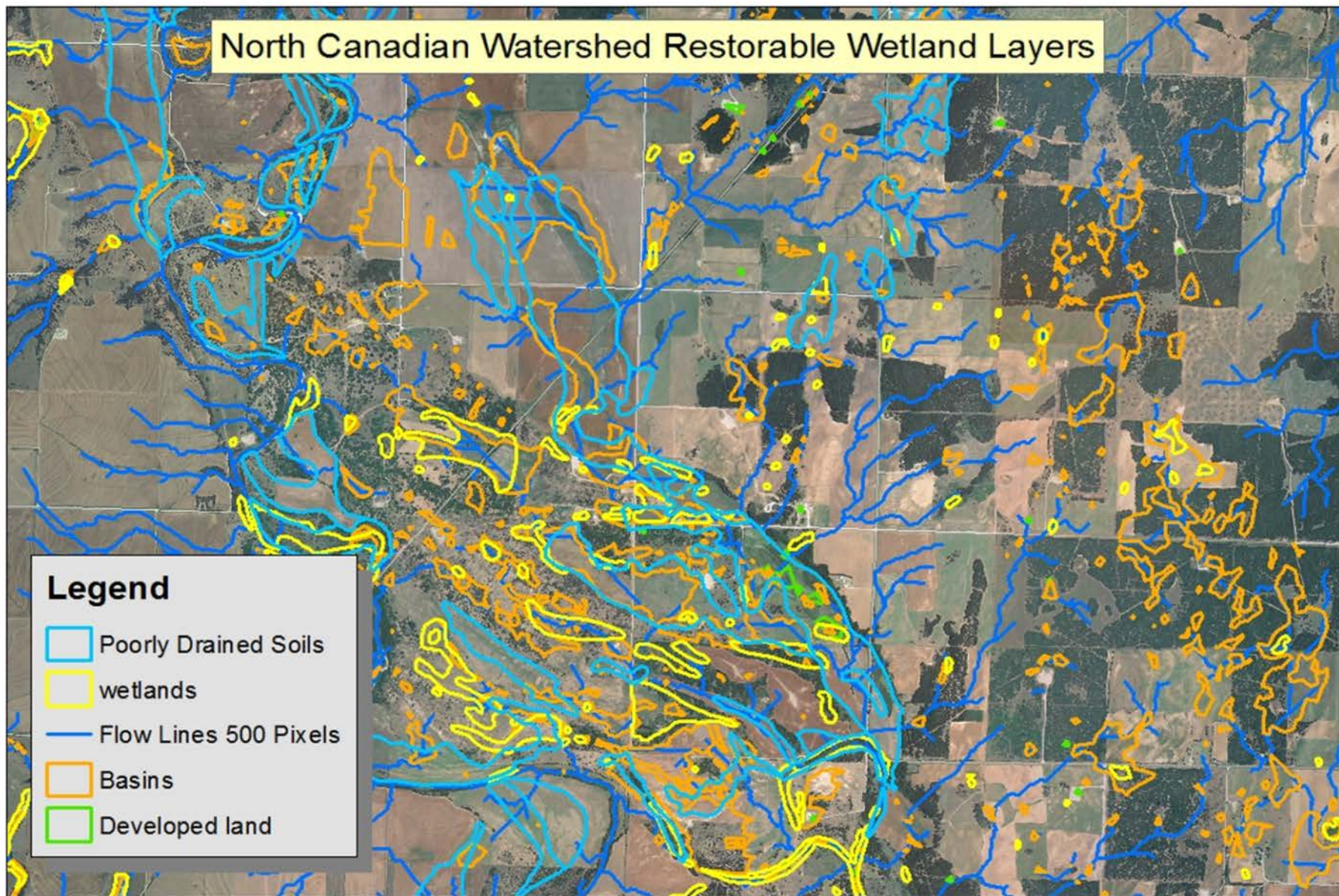
North Canadian Watershed Poorly Drained Basins and 500 Pixel Flow Lines



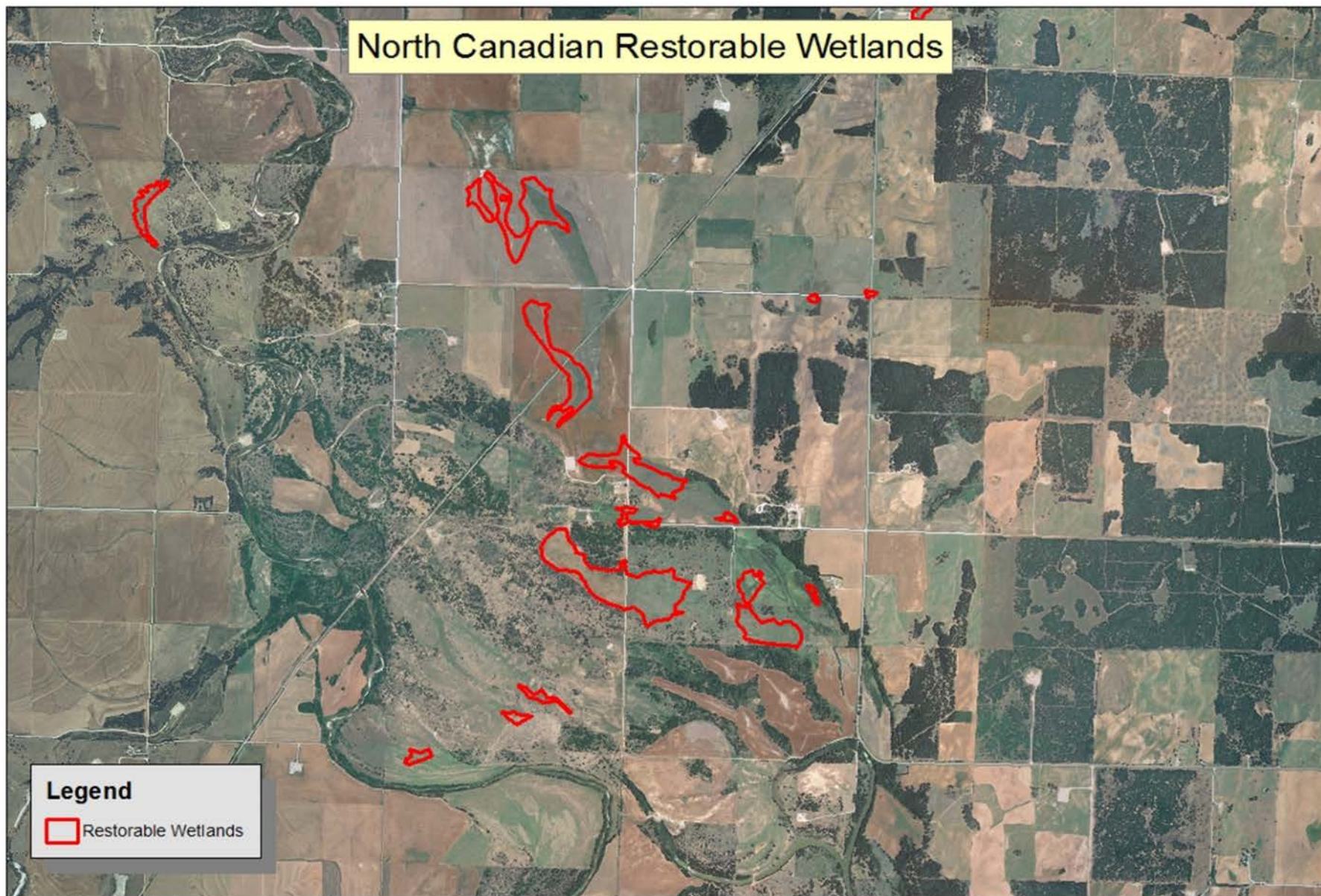
North Canadian Watershed Restorable Wetland Layers

Legend


- Poorly Drained Soils
- wetlands
- Flow Lines 500 Pixels
- Basins
- Developed land



North Canadian Restorable Wetlands



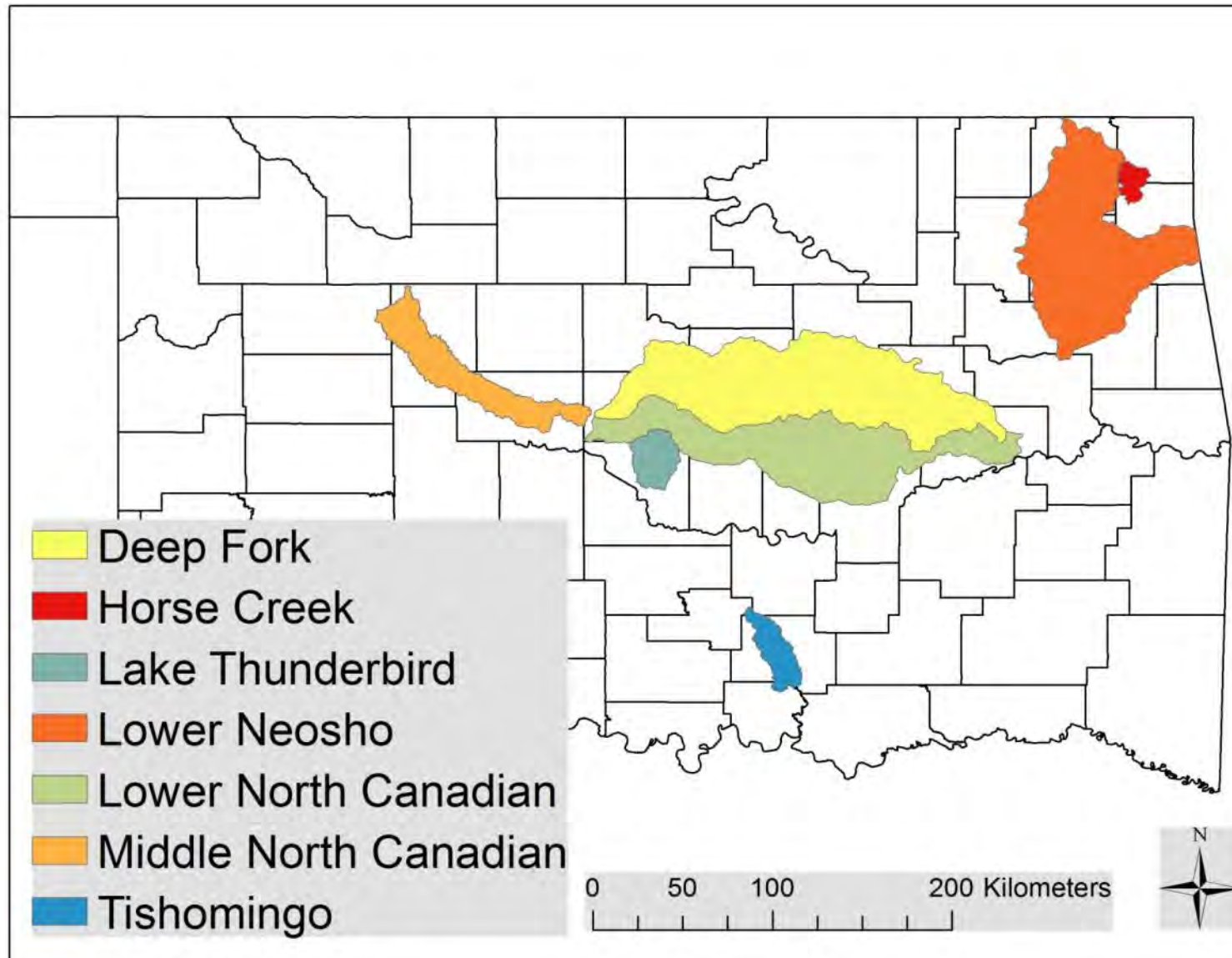
Legend

 Restorable Wetlands

Restoration Prioritization

- ❑ Sites can then be ranked based on their ability to provide a specific function
- ❑ Water Quality improvement to downstream waters
 - Basin Size
 - Watershed to Wetland Ratio
 - Land-use in the Watershed
- ❑ Characteristics ranked (1-4) based on quartiles and summed (overall score 3-12)

Completed Watersheds



RWIP Results

- ❑ 1354 potential wetlands identified
- ❑ 246 ranked 10-12
- ❑ Field verification Middle North Canadian
 - ~30% success



Wetland Registry

- ❑ Database storing information on potential wetland restoration locations
 - Populated with RWIP results
 - Designed to link those with restoration opportunities with those needing/wanting restoration
 - Citizens can submit requests to add a site or search available sites on the Oklahoma Wetland Program Website

Registry on the Web

Submit a Restoration Site

* Indicates Required Field

*Name

*Phone Number

(no dashes e.g. 5554443333)

Email

*Wetland or Stream

*County

Site Watershed

Approximate Size

*Please provide a brief description of why you believe your site is suitable for restoration.

Find a Restoration Site

* Indicates Required Field

*Name

*Phone Number

(no dashes e.g. 5554443333)

Email

*Are you seeking wetland or stream restoration?

*In what county are you seeking restoration?

In what watershed are you seeking restoration?

What is the approximate size of the restoration you are seeking?

Please provide any additional pertinent details about the restoration you are seeking.

Next Steps

- ❑ Apply RWIP to entire state
- ❑ Update Registry with RWIP results
- ❑ Create an interactive web map of all potential historic wetlands
- ❑ Increase awareness of RWIP and Registry
 - www.ok.gov/wetlands

Questions



Sarah Gallaway: Sarah.Gallaway@Conservation.ok.gov