# Digital Solutions for Post-Remediation and Reclamation Vegetation Management

## A Case Study from Northeastern Alberta

SustainTech 2026
March 4th, 2026

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# Introductions

Matt Wilkinson, MGIS
Associate GIS Analyst
mwilkinson@montrose-env.ca

 

# Agenda

- Project Context and the “Why”
- Scoping a Solution
- Mobile Data Collection
- Web Mapping & Exploring Your Data
- Where Do We Go From Here?

 

# Project Context and the Why

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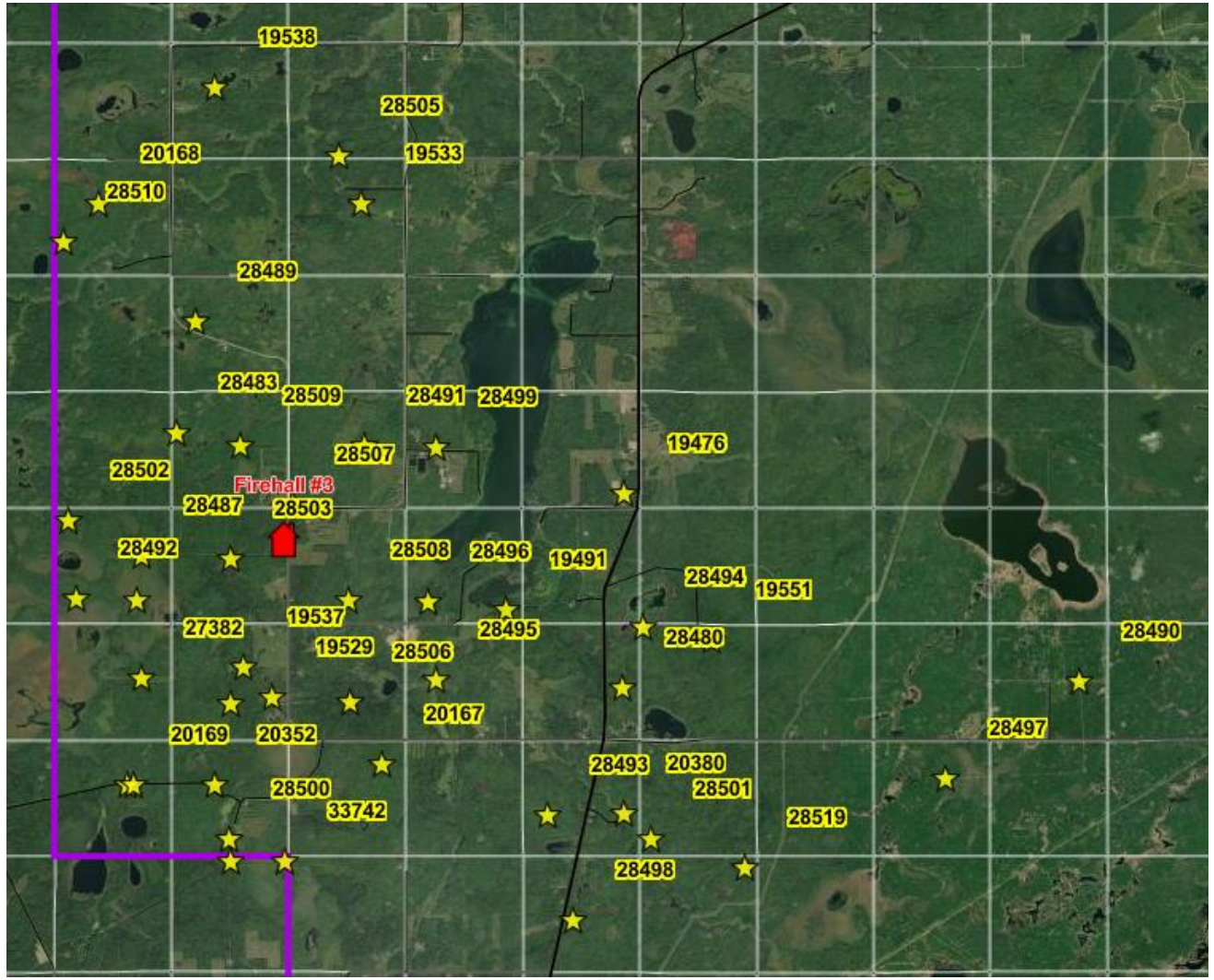
# Project Overview

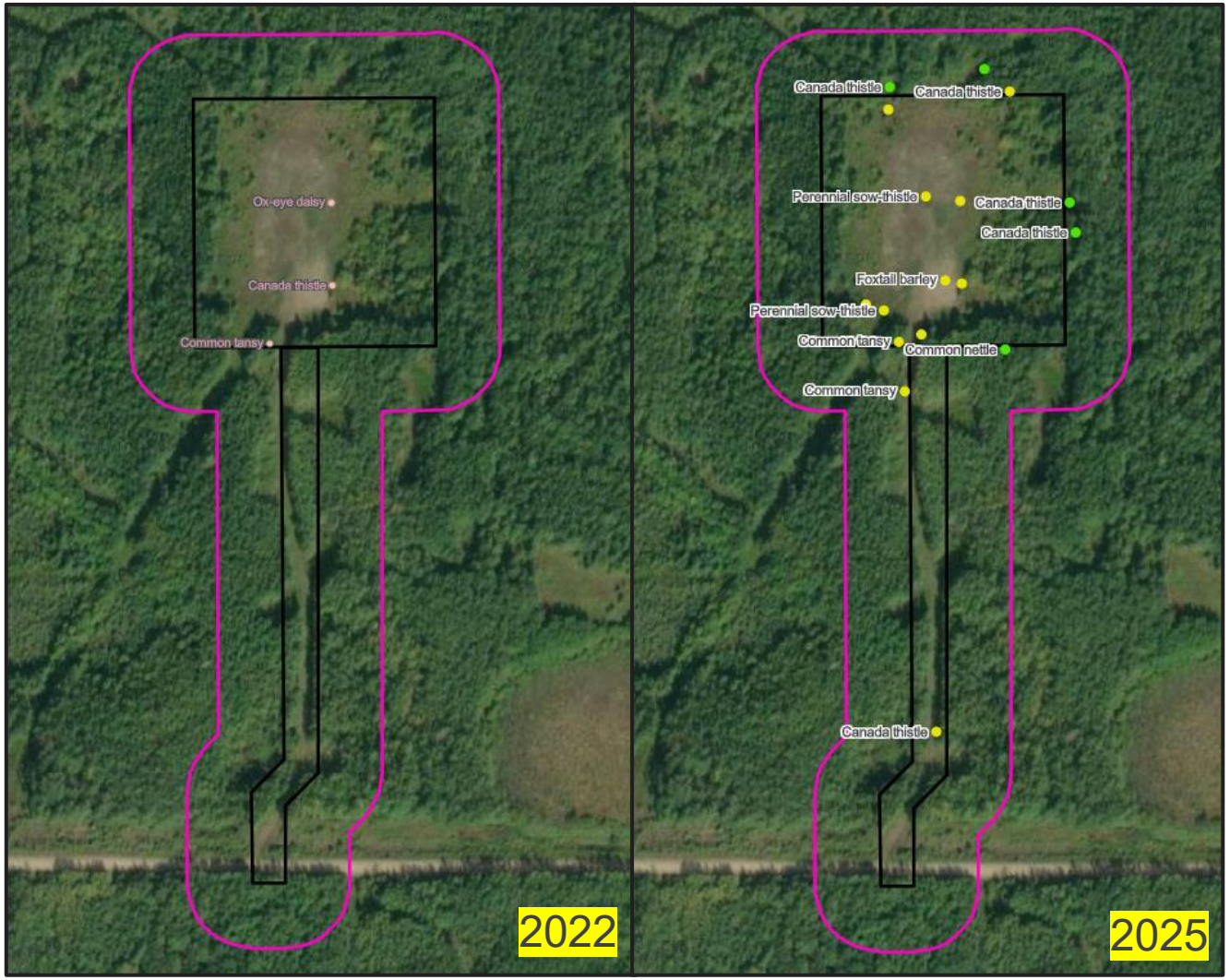
- Northeastern Alberta Portfolio
- Wellsites Including Forested, Tame Pasture, and Peatland Land Types
  - Approximately 50 sites
  - Supported portfolio since 2013
  - Lots of field notes!
- Vegetation Management
  - Site condition documentation
  - Weed control documentation
  - Determining readiness for DSA



# Documentation

- Track site conditions, vegetation growth, and weed control over time.
- Historical documentation included hand-written field notes, Avenza, and photos.
- Lots of time spent during technical review!
- Mobile Data Collection:
  - 2022 | 75 field observations
  - 2023 | 181 field observations
  - 2024 | 487 field observations
  - 2025 | 427 field observations



# Benefits of a Data Management Solution

"One-Stop Shop"

Review content and data spatially

Can tease out trends and quantify

# Motivation and Why

- Does the landscape, soil, and vegetation meet the Reclamation Criteria?
- Can we demonstrate the site is on a suitable trajectory towards the target vegetation community?
- Key Question: Have we controlled weeds to the point that the desirable vegetation will outcompete weeds?

**Post-Remediation and Reclamation Vegetation Management** → **(1) Weeds controlled (2) Meet Reclamation Criteria set out by AER** → **(1) Complete DSA (2) Apply for Reclamation Certificate**

# Scoping a Solution

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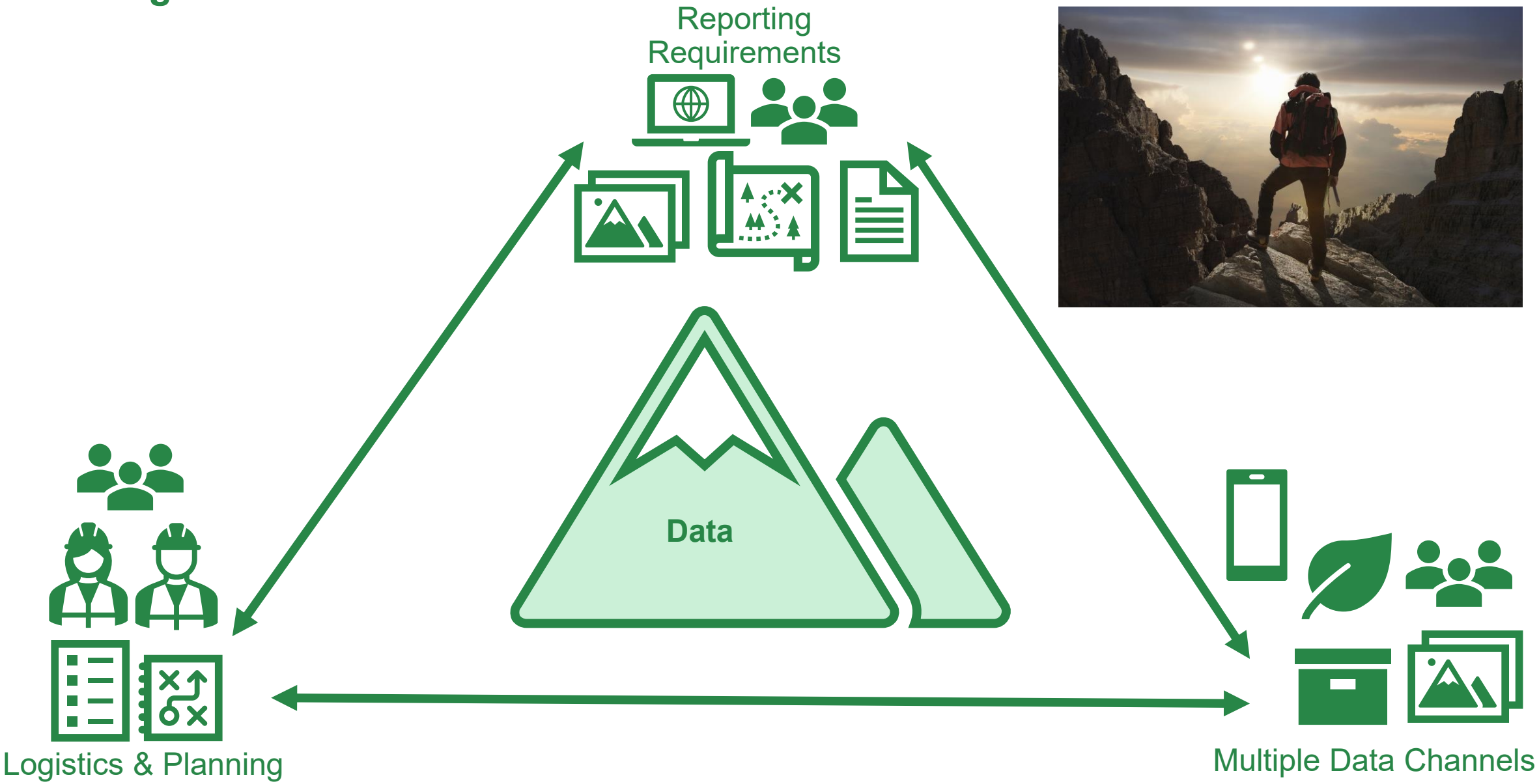
# Scaling the Mountain



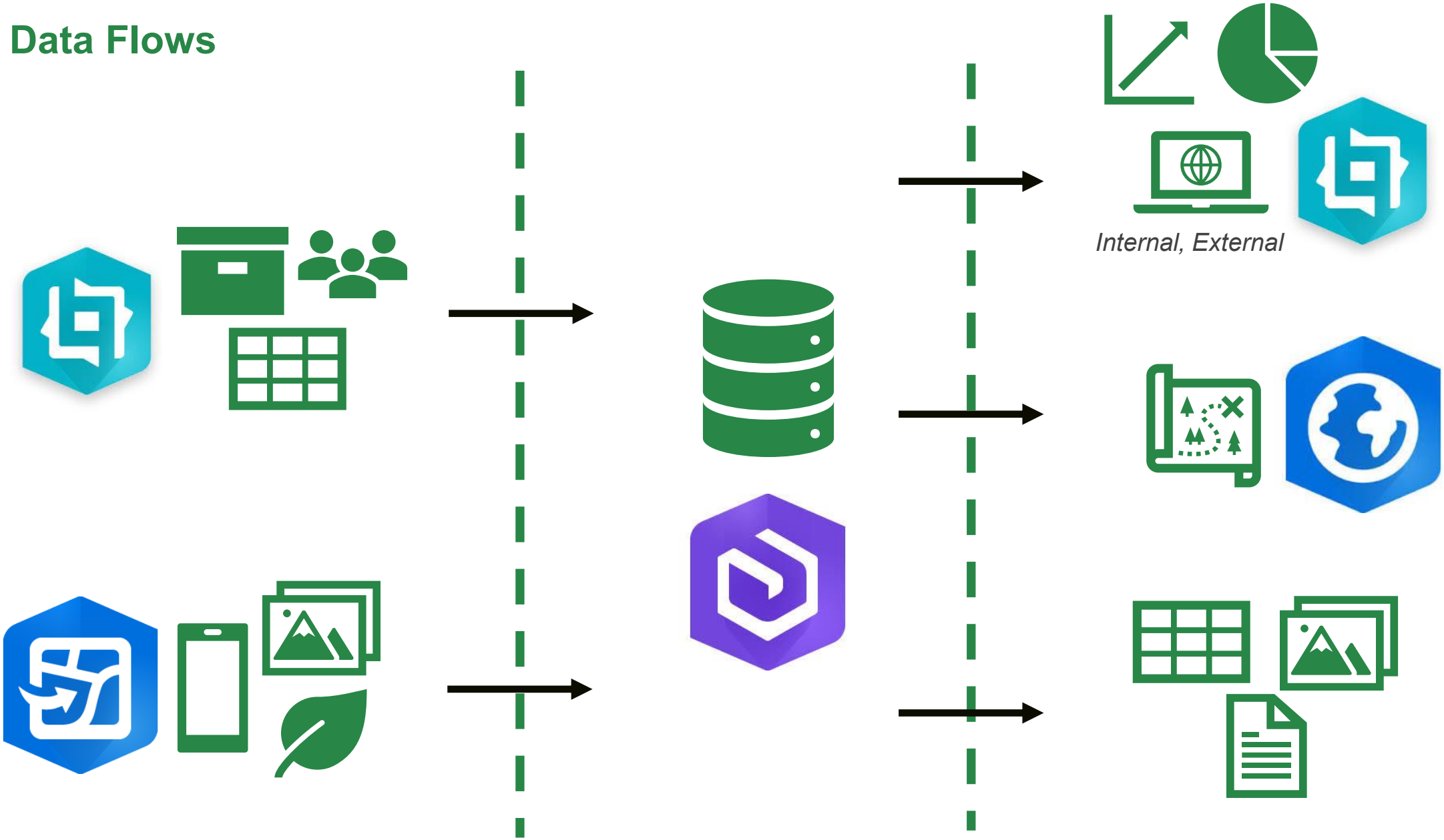


# Scoping It Out

- What do you need collect? What background information do you need? Offline? Do we have contractors?
- What do you need to report? How do you need to report? What are we trying to improve? What are we trying to eliminate (e.g., transcription, file management)?
- Attributes and data constraints?
- Off-the-shelf applications (e.g., ESRI) available? Does our client need access?
- Making It Right-Sized

# Data Flows



# Mobile Data Collection

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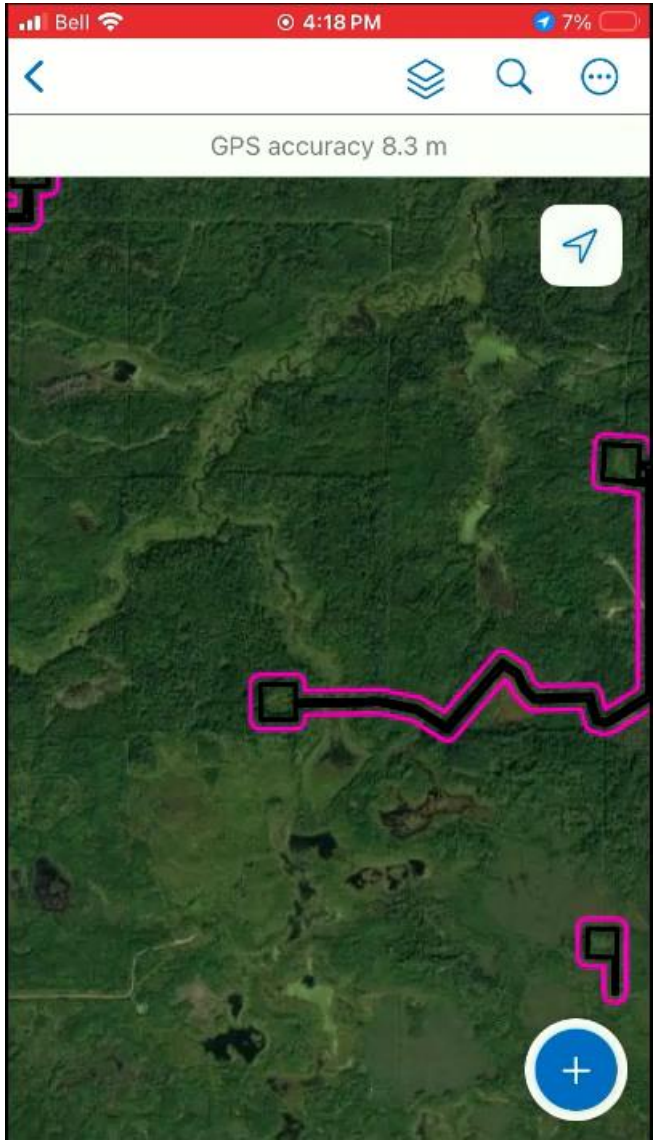
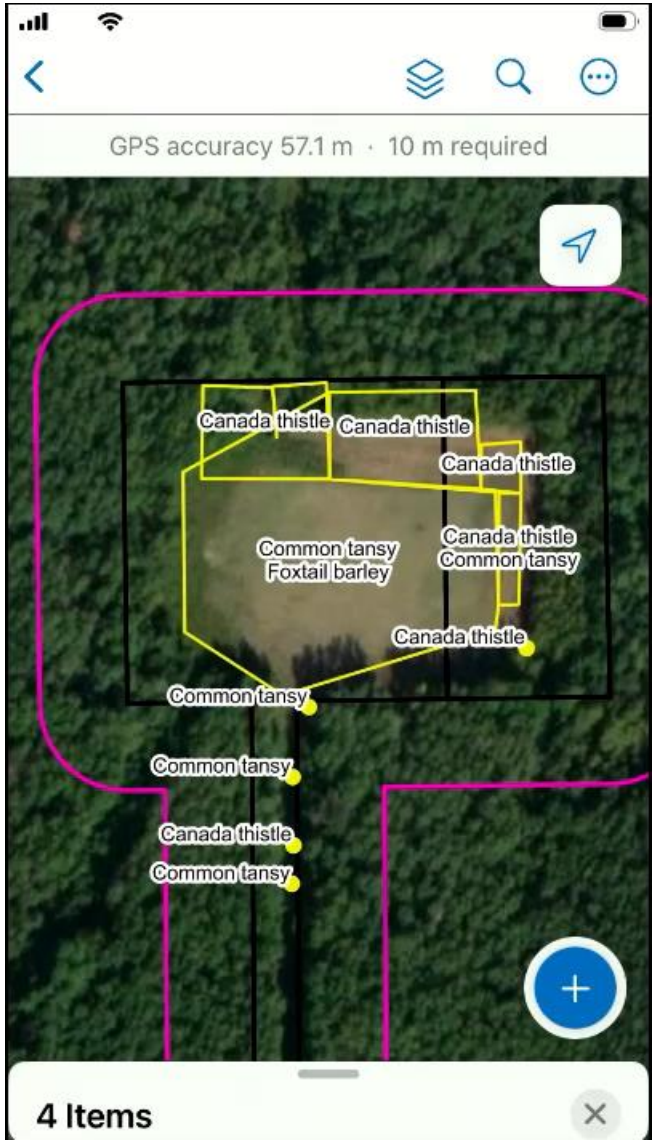
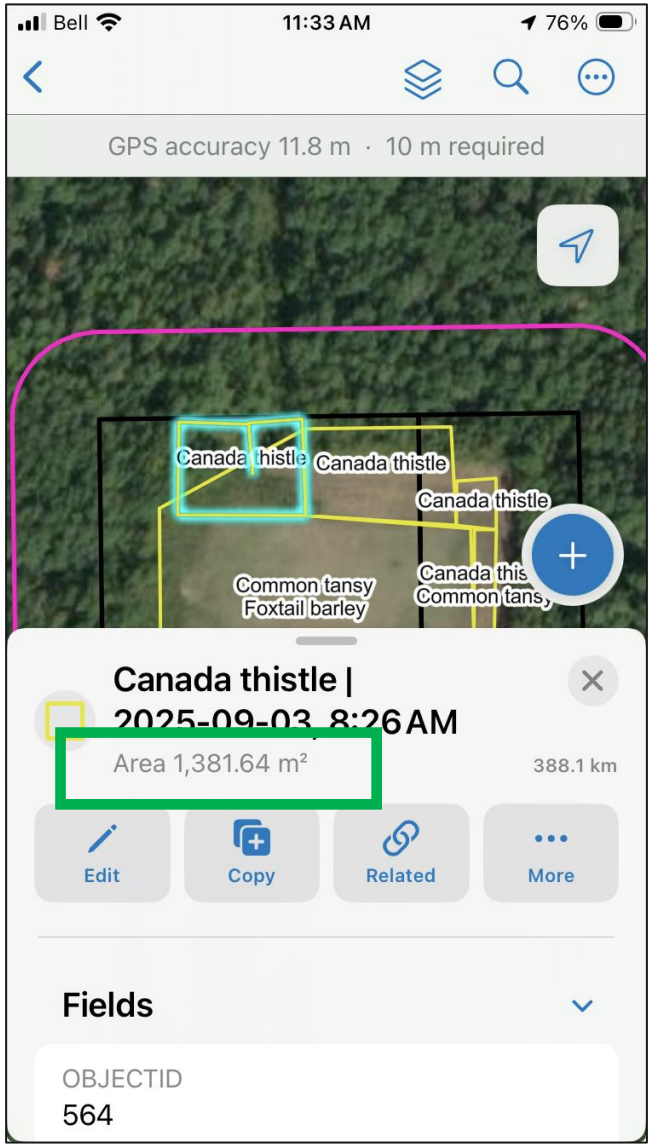
# Assessment Areas





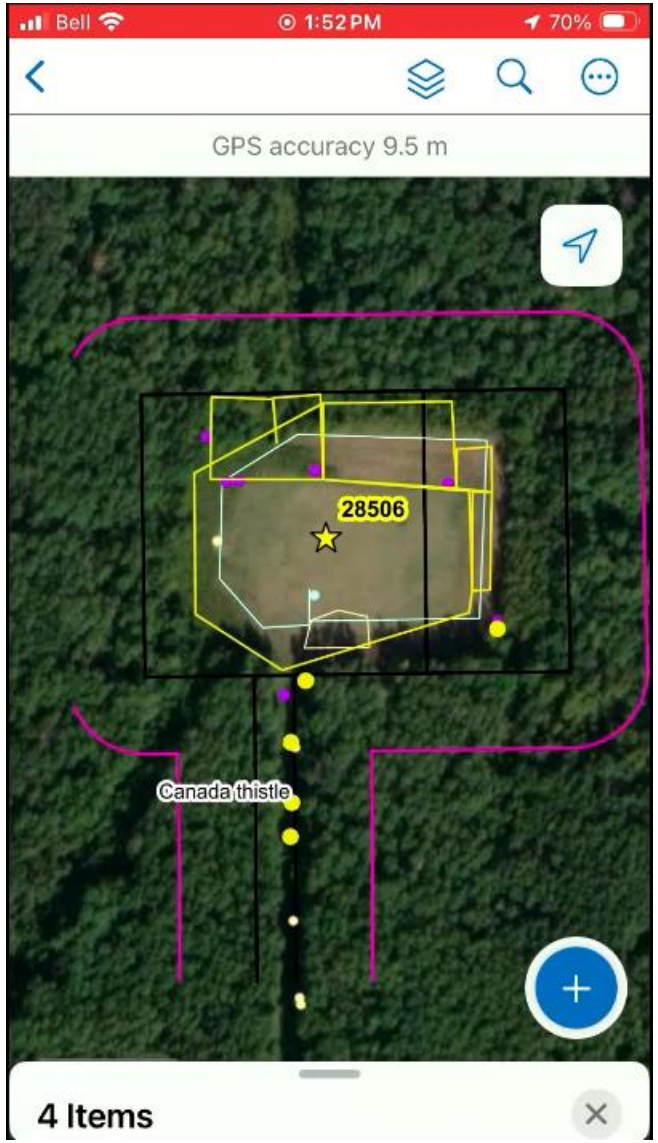
# Points or Polygons?

# Through Time?




# Web Mapping & Exploring Your Data

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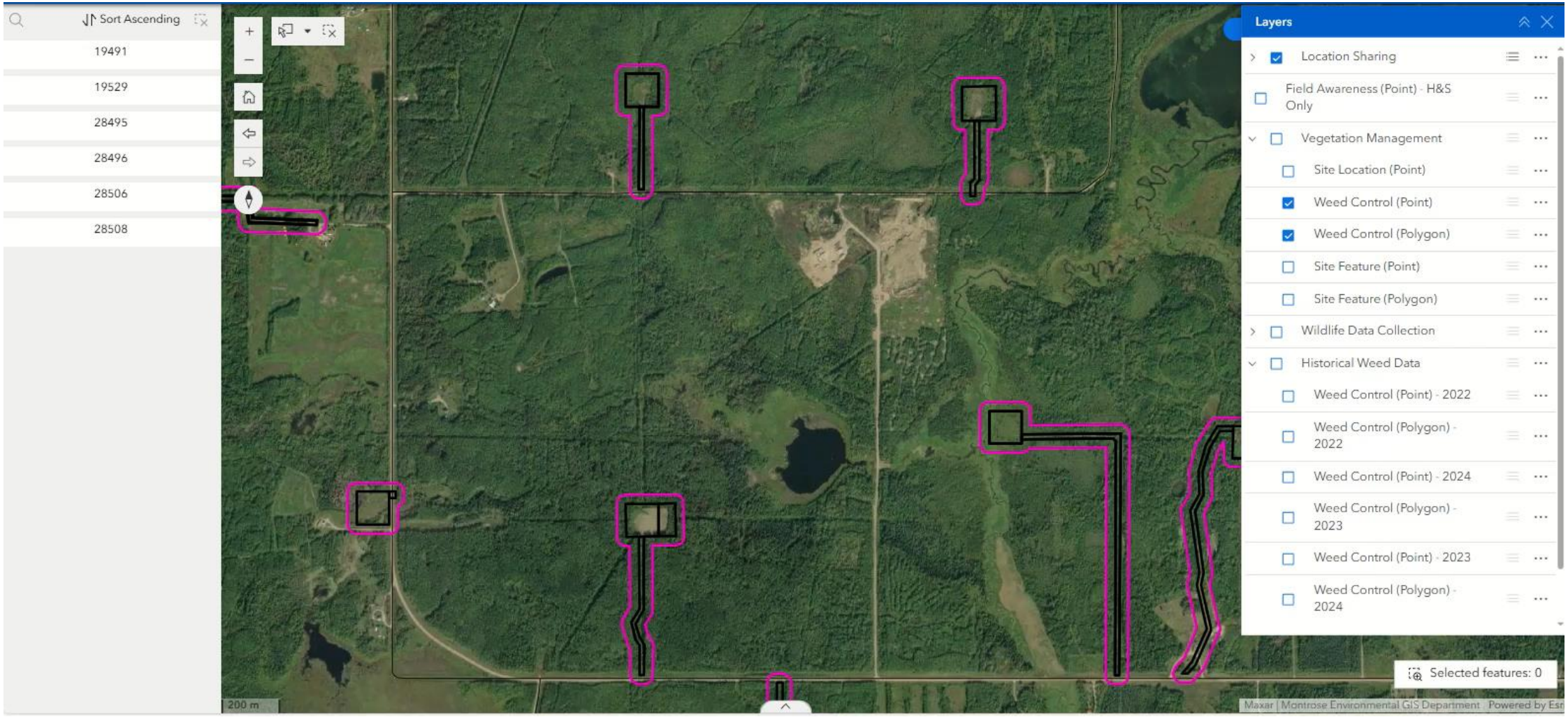
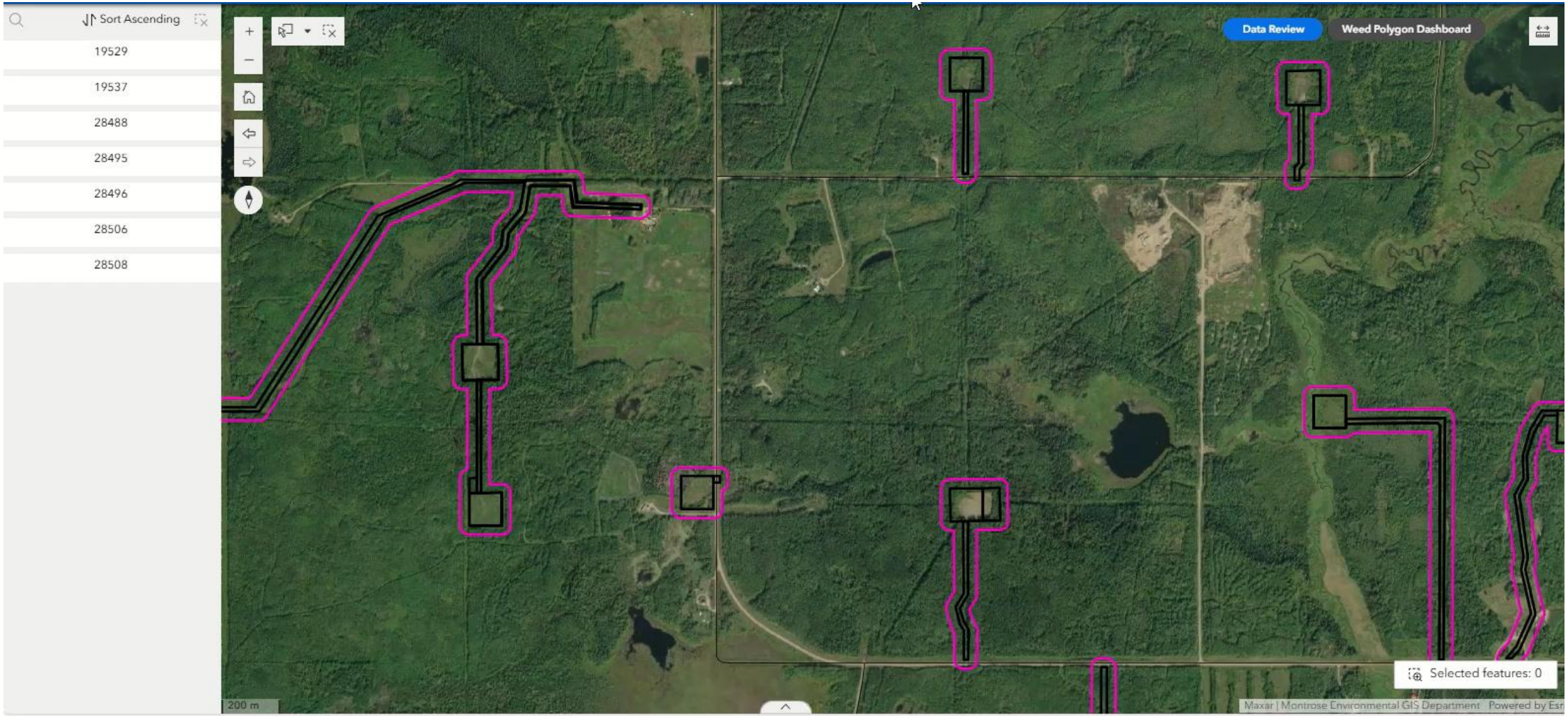
# Observations Through Time



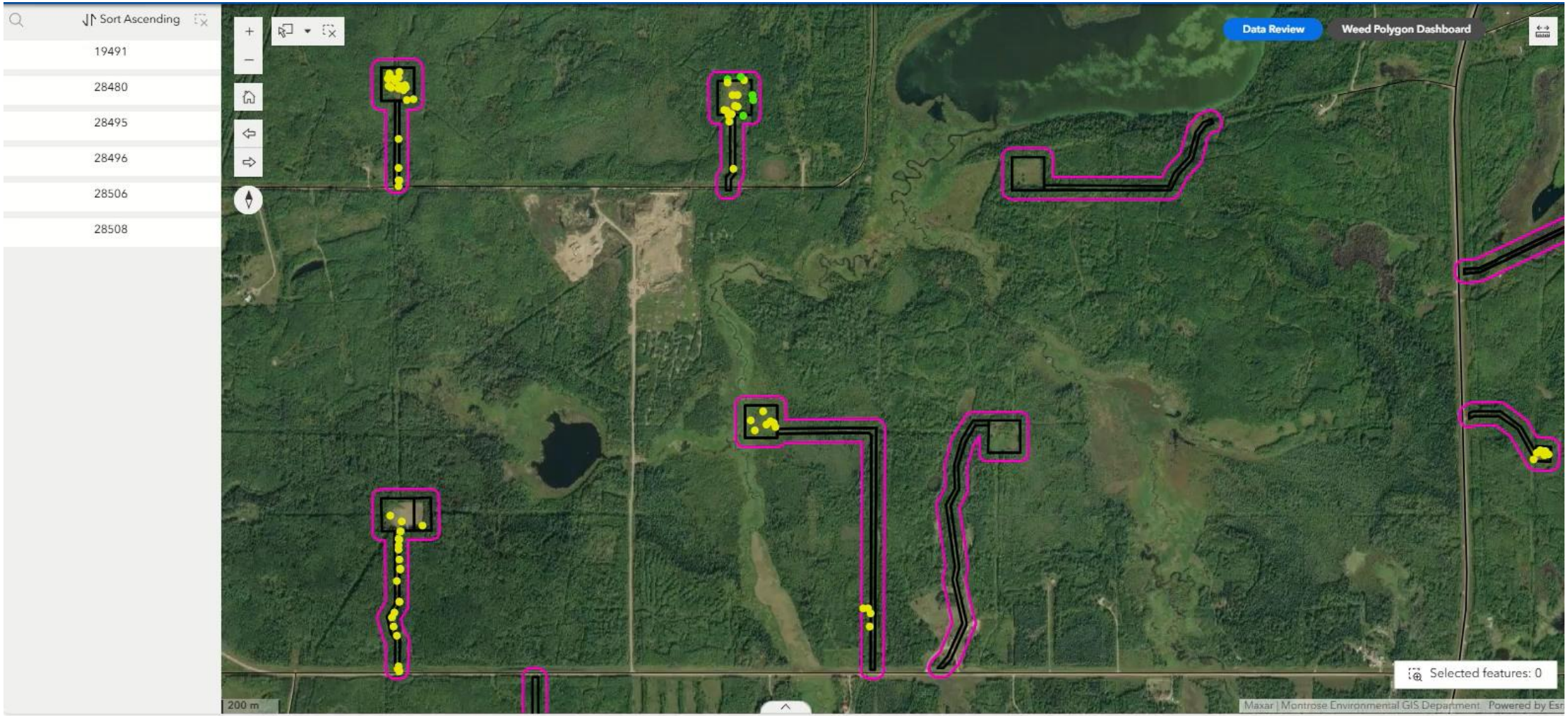

 

# Tracking Progress (Sweep Requirements for Wildlife Act)



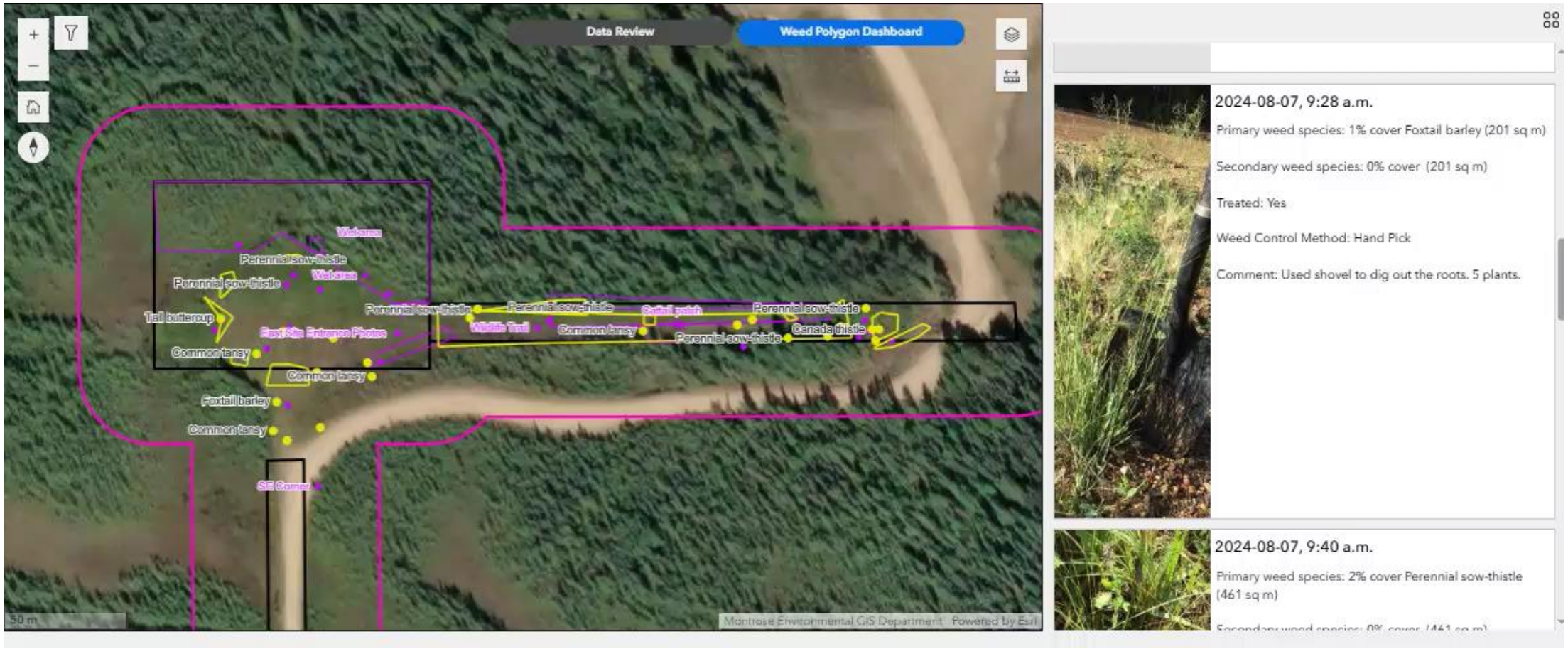

 

# Attributes & Metadata



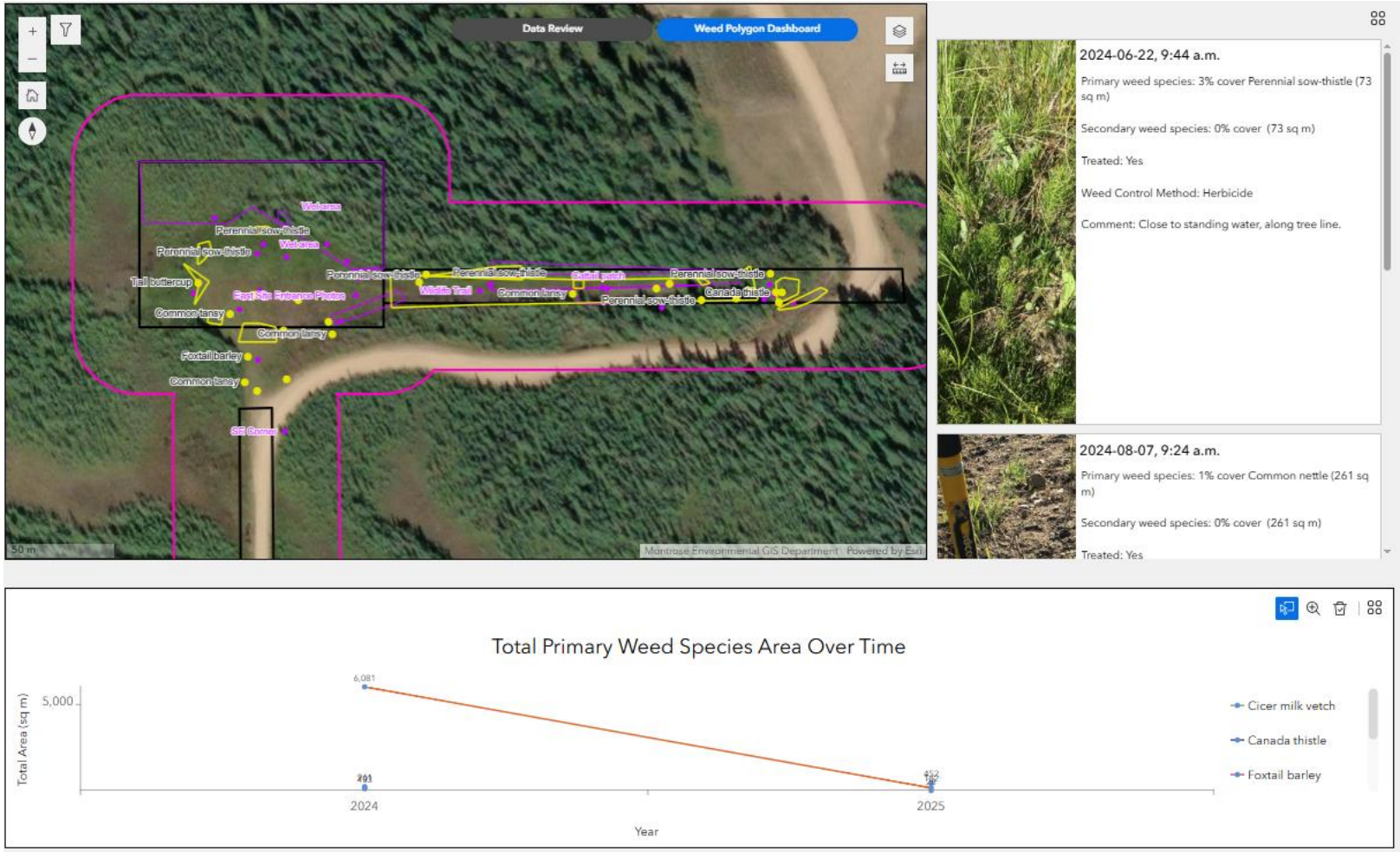
# Photos & Attributes



# Trends

- Primary Weeds = Dominant Weed Species
- Area over time
- Demonstrated under control in area of perennial sow thistle over time
- **All done without compiling notes, moving files around, etc**



# Where Do We Go From Here

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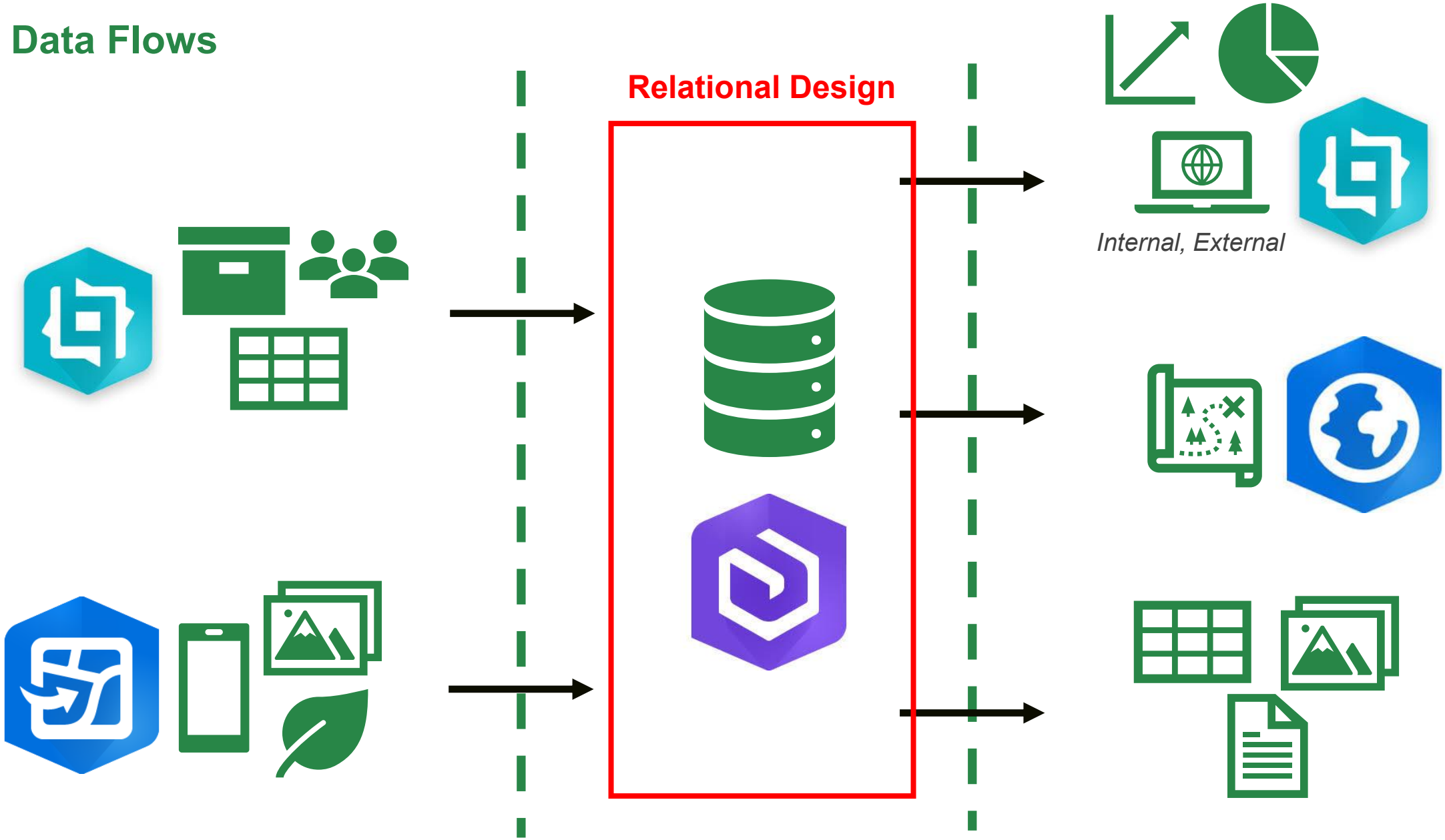
# Benefits and Challenges

- Minimizing transcribing & error, navigation
- Sample design and observation
- Constraints and topology
- Self-serve Reports
- Backend Database Design To Accommodate
  - 1 → Many relationships
- Relatively “Free-form”

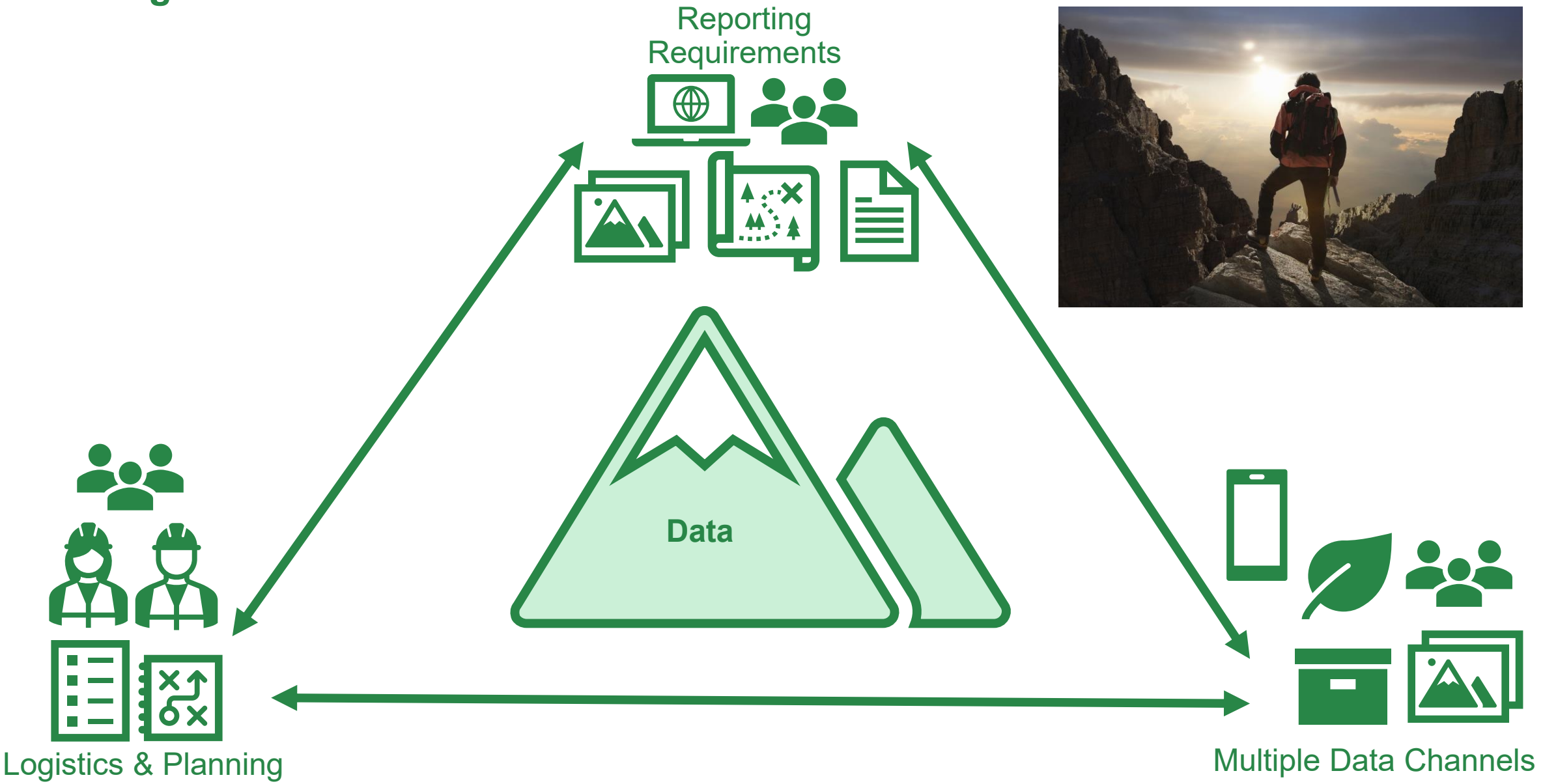

 

# Data Flows



# Scaling the Mountain





# Acknowledgements


- Thank you to our colleagues Cassandra McKenzie, Sheila Luther, Sandy Lam and Janet Therrien for their project leadership, guidance, and technical contributions to this talk. This talk would not have been possible without their support.

# Questions?

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# For More Information

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