

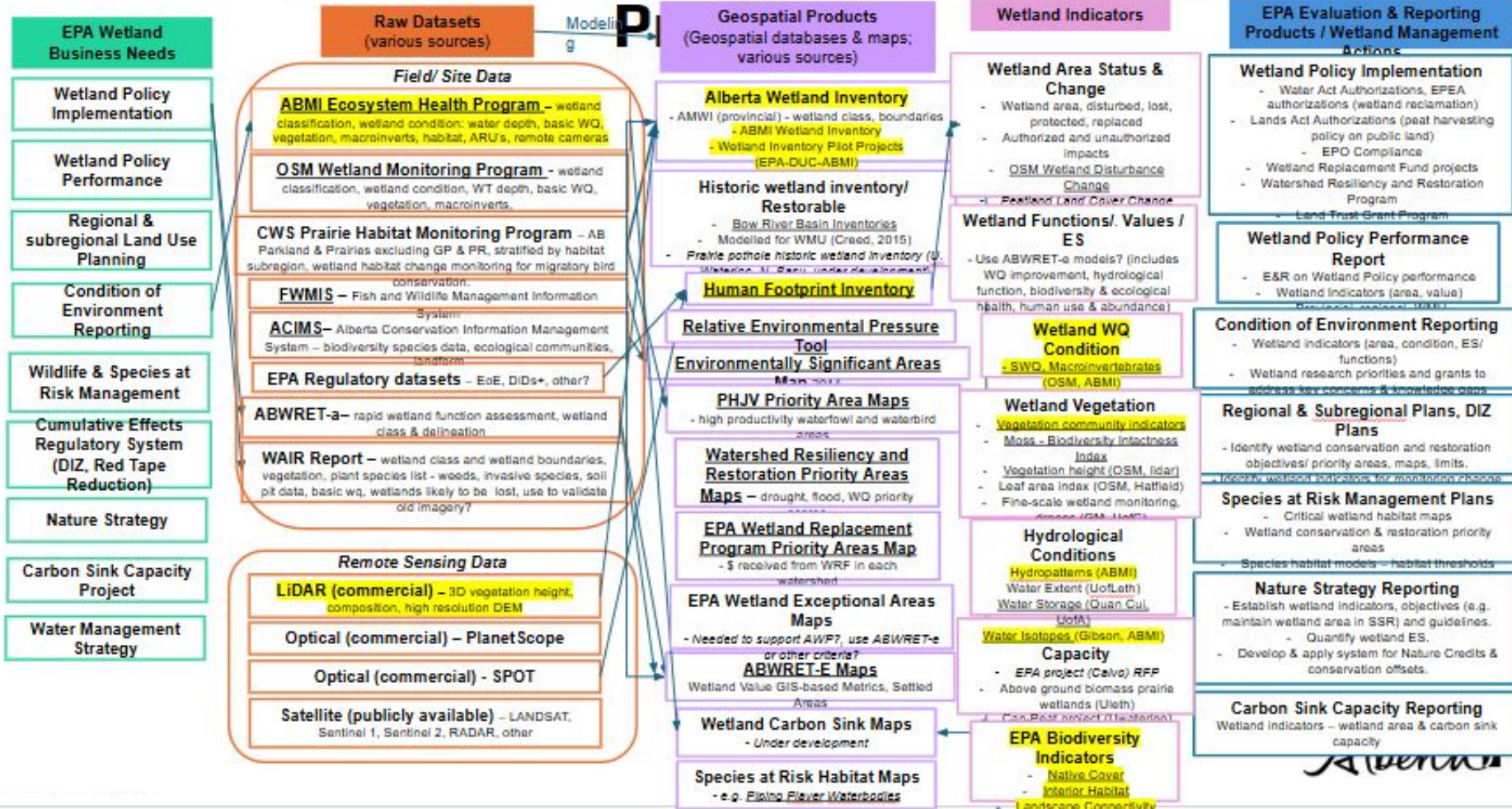


ABMI's wetland collaborations

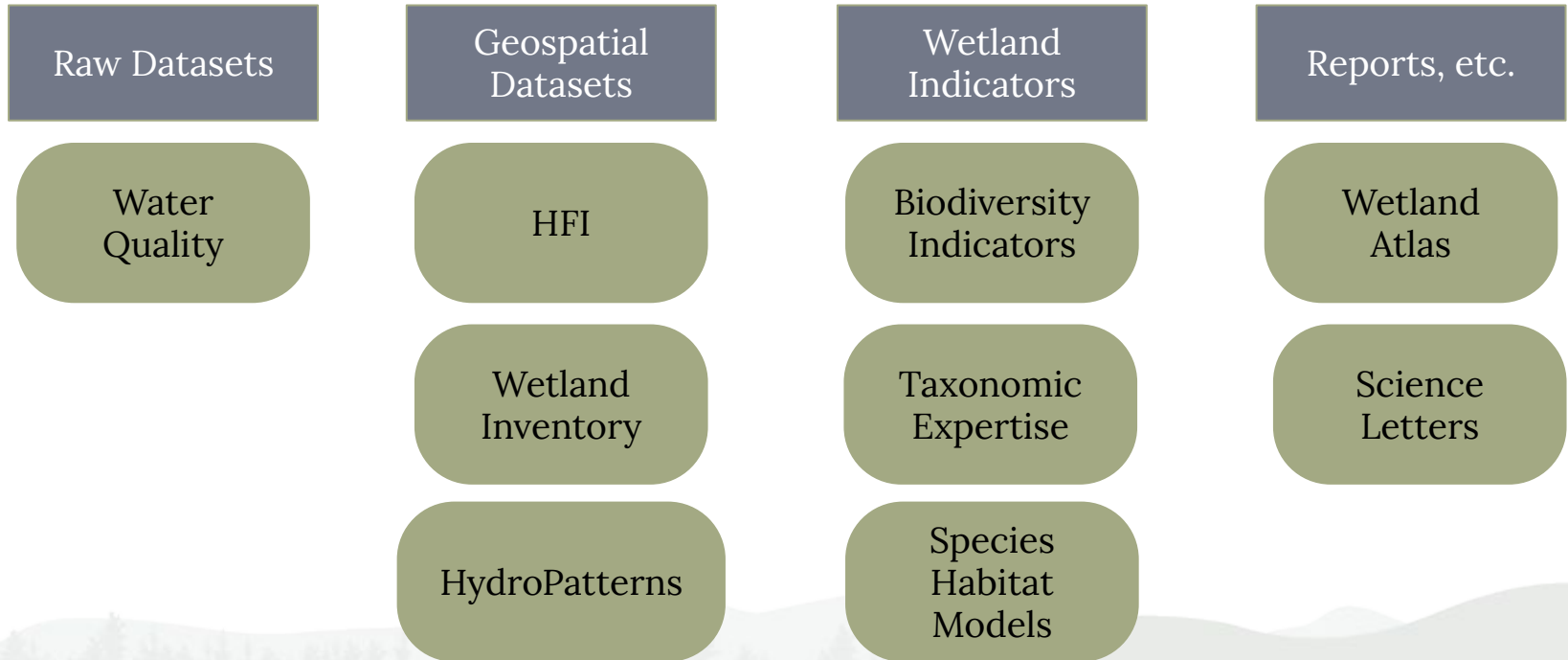
EPA Wetland MER Workshop

June 2025

EPA Wetland Business Needs → Information →



EPA Wetland Monitoring Framework



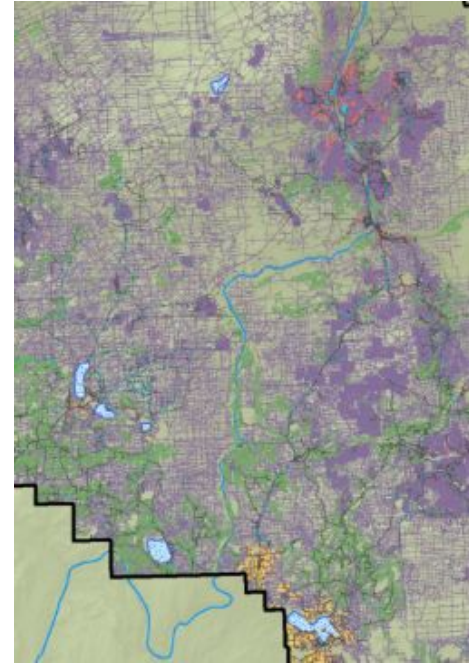
Existing Collaborations with EPA



Human Footprint Inventory

Collaboration with GoA since 2015

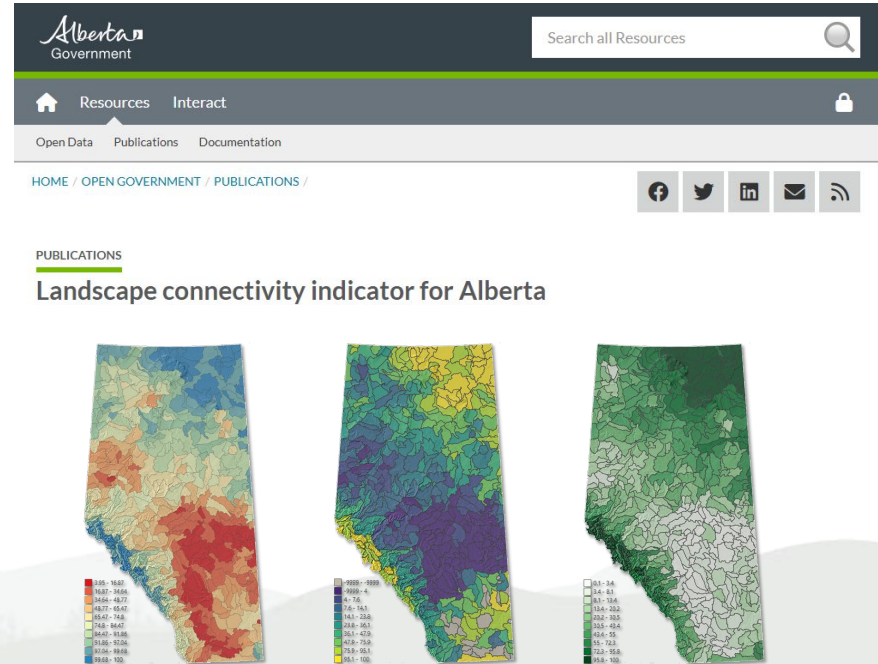
- 20 individual sublayers; 117 feature types
- OSM enhanced HFI
- Temporal HF
- Spectral harvest regeneration
- HFI is the foundation of many other products we produce with EPA & others



Alberta Biodiversity Indicators

Native cover, Interior habitat, Landscape connectivity, Stream connectivity

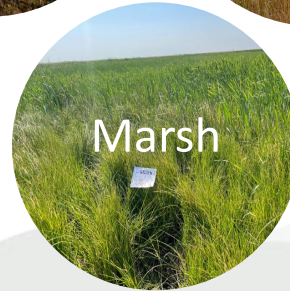
- Collaborative development with EPA Planning Branch
- Landscape level, scaleable, meant to inform management decisions, change over time
- Publicly available via Open Govt.
- Links to COP 15 Global Biodiversity Framework



Wetland Inventories

Wetland Inventory Pilot: DUC and ABMI collab under contract for EPA

- Built off DUC and ABMI wetland mapping efforts (ABMI wetland inventory, DUC enhanced wetland classification)
- Used ABMI 3x7 for training data
- Field validation protocol development and implementation



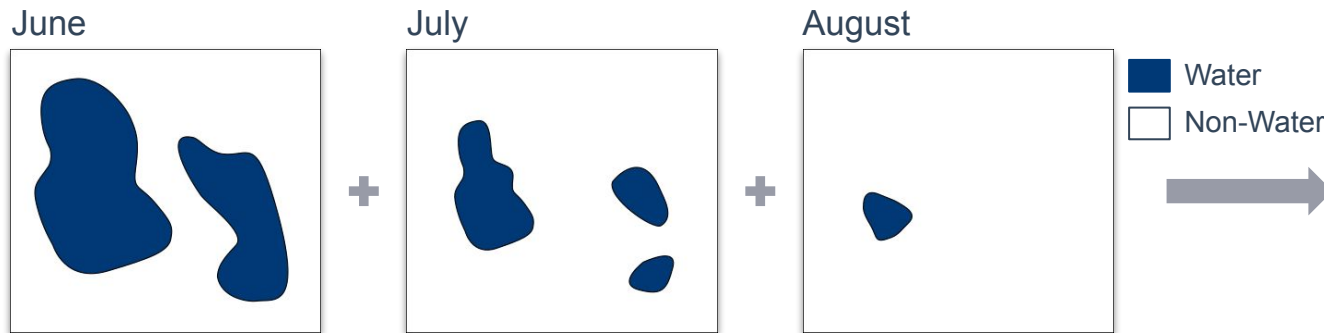
HydroPatterns

ABMI Webinar on
June 24 @ noon!

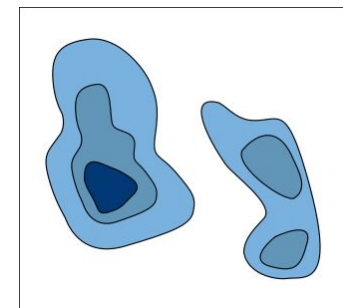


Newer collaboration

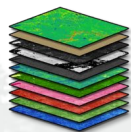
Step 1: Mapped open water in each month



Step 2: Combined these maps
into one map - HydroPatterns



Permanent water
Semi-permanent water
Seasonal water



*Repeated mapping over multiple months with
satellite images*



Water Quality Data

Basic multiprobe parameters; isotopes; TN; TP; turbidity



Contents lists available at ScienceDirect

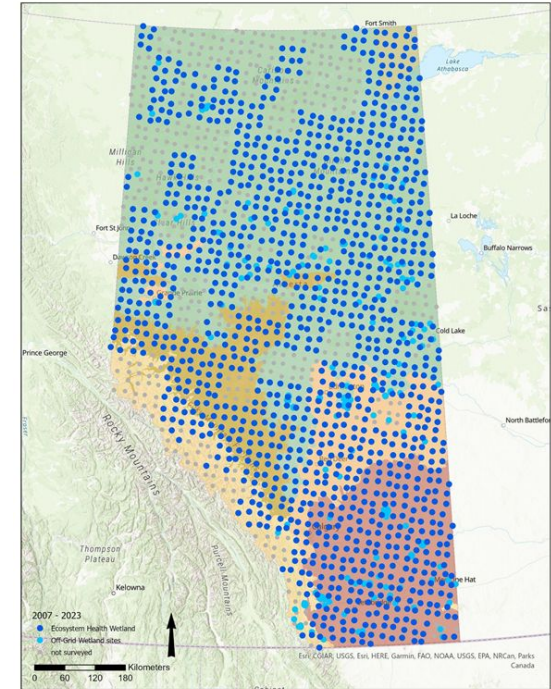
Journal of Hydrology: Regional Studies

journal homepage: www.elsevier.com/locate/ejrh



Isotope-based water balance assessment of open water wetlands across Alberta: Regional trends with emphasis on the oil sands region

J.J. Gibson^{a,b,*}, P. Eby^a, S.J. Birks^{b,c}, C. Twitchell^d, C. Gray^e, J. Kariyeva^e



Taxonomic Expertise

Aquatic macroinvertebrates, Bryophytes, Vascular plants

- **In-house taxonomic expertise**
 - Field collection
 - Identification (traditional and eDNA R&D)
- **Extensive datasets & specimen collections**



Tool: Species habitat models

Opportunity: Potential Indicator Development



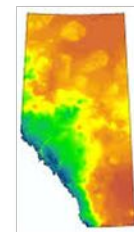
Field-collected
species data

Field collected
habitat data



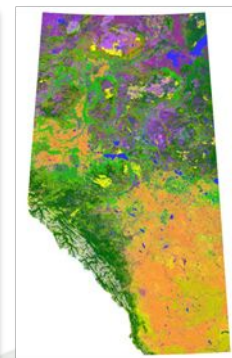
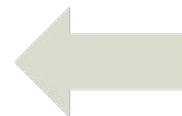
Species-habitat
associations

Downscaled
climate



Species distribution
models

Geospatial
landcover & HFI



Intactness

Sector
effects

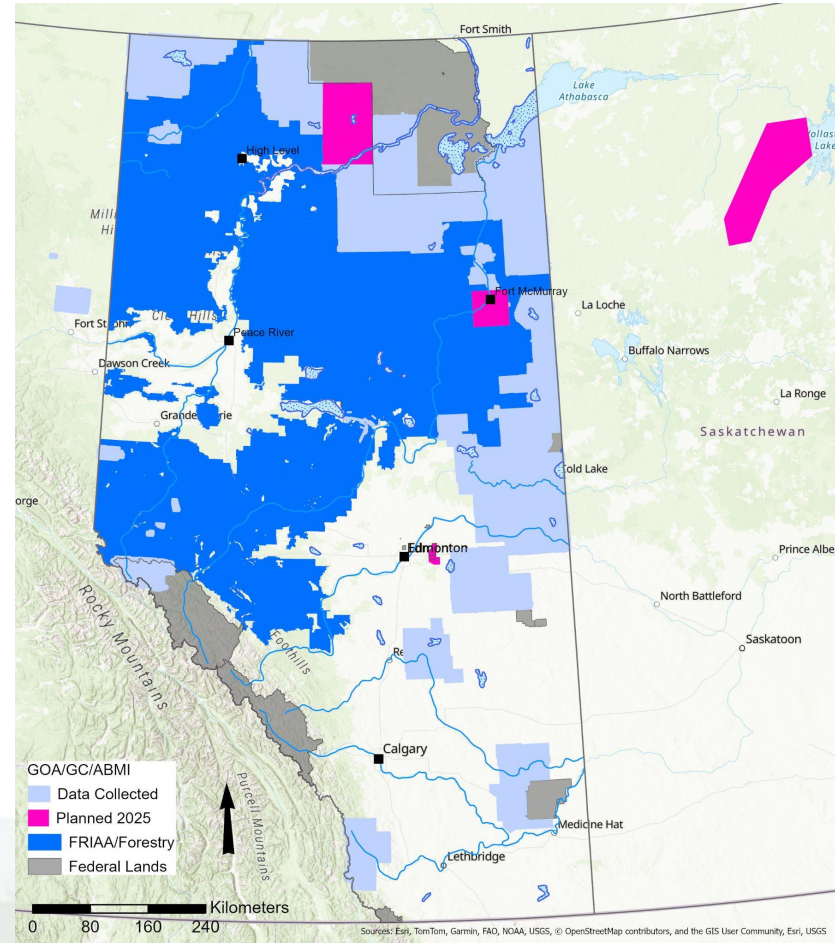
Attribution



Lidar

In-house collection and processing abilities

- Data from forest industry and ABMI collected
- Products
 - DEMs
 - Canopy estimates (cover, height)
 - Veg heights
 - Tree tops



Community Based Monitoring and Engagement

CBME Vision: We support Indigenous-led biodiversity monitoring through meaningful partnerships with Indigenous communities to advance their own self-determined monitoring approaches.



ABMI Reporting



Wetland Atlas

ABMI and collaborator wetland work in Alberta

Updated twice a year - new beaver section with Glynnis Hood coming soon!

Three chapters (Regional wetland summaries, Pressures, Biodiversity)

VERSION 1.4 | UPDATED: 2025-01-31

Wetland Atlas of Alberta

Summary of wetland distribution in Alberta, human footprint pressures, and research spotlights on biodiversity

Science Letters



ABMI Science Letters | EFFECTS OF 2023 WILDFIRES IN ALBERTA

ISSUE 8: MARCH, 2024

Effects of 2023 Wildfires in Alberta

Huggard, D., B. Allen & D.R. Roberts, Alberta Biodiversity Monitoring Institute



ABMI SCIENCE LETTERS

Factors Affecting Nutrient Variation in Alberta Prairie Wetlands. | Issue 3: May, 2015

Factors Affecting Nutrient Variation in Alberta Prairie Wetlands

M-C Roy
Alberta Biodiversity Monitoring Institute.



Thank You!