

# INCREASING SITUATIONAL AWARENESS

## Through the use of ArcGIS Enterprise

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# ORGANIZATION OVERVIEW

- **Eacom Timber Corporation is a major Eastern Canadian wood products company. Its operations include the manufacturing, marketing and distribution of lumber and wood-based value-added products, and the management of forest resources**
- **7 sawmills ( 5 in Ontario; 2 in Quebec)**
- **1 Remanufacturing facility in Quebec and 1 engineered I-joist plant in Ontario**
- **Currently has 1,100 employees**
- **Production capacity of 900 million board feet of lumber and holds Crown logging rights of approx. 3.5 million cubic meters annually**

# EACOM OPERATIONS



# EACOM OPERATIONS ON ONTARIO FORESTS



# **GIS ENVIRONMENT @ EACOM**

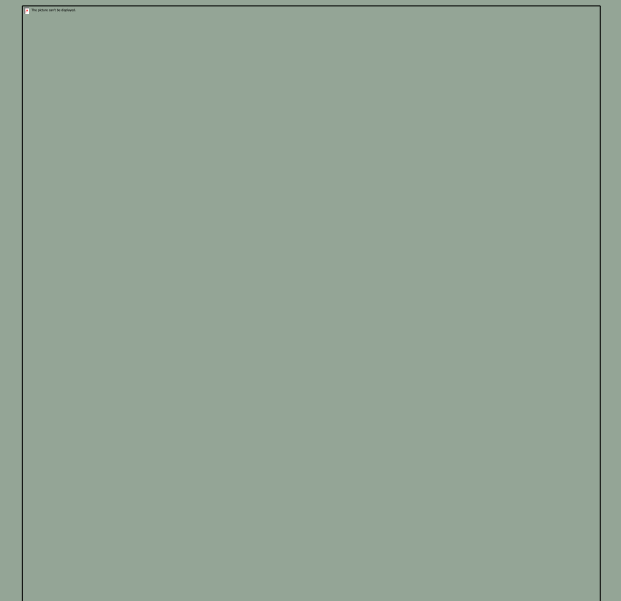
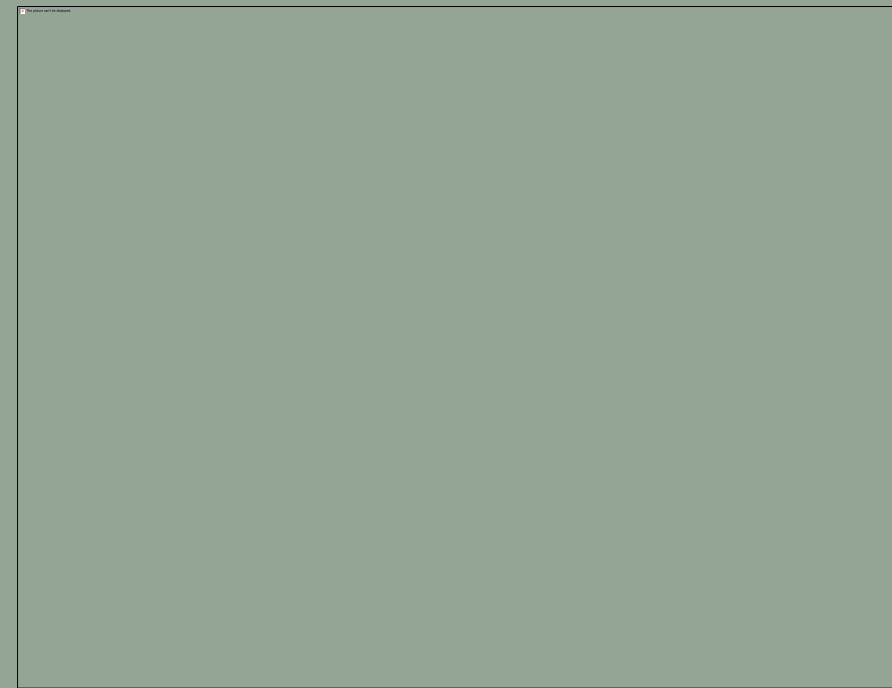
- **Enterprise GIS since 2000**
  - **Centralized system at Head Office in Montreal**
  - **Currently on 4<sup>th</sup> generation of servers**
  - **ArcGIS 10.4.1 production environment**
  - **Microsoft SQL RDBMS**
  - **Access through Windows Remote Desktop Services**
- **50+ GIS users**
- **Team of 3 to administer and support system**
- **Enterprise License Agreement with ESRI Canada since 2010**

# INCREASING SITUATIONAL AWARENESS

- **Paradigm shift from knowing where you were to knowing where you are now**
- **How do we effectively monitor our operations?**
  - **Live tracking of equipment**
  - **Timely update of GIS layers to represent the most current information**
  - **Keep staff informed by making information ready available**
  - **Sending out alerts when certain events happen**

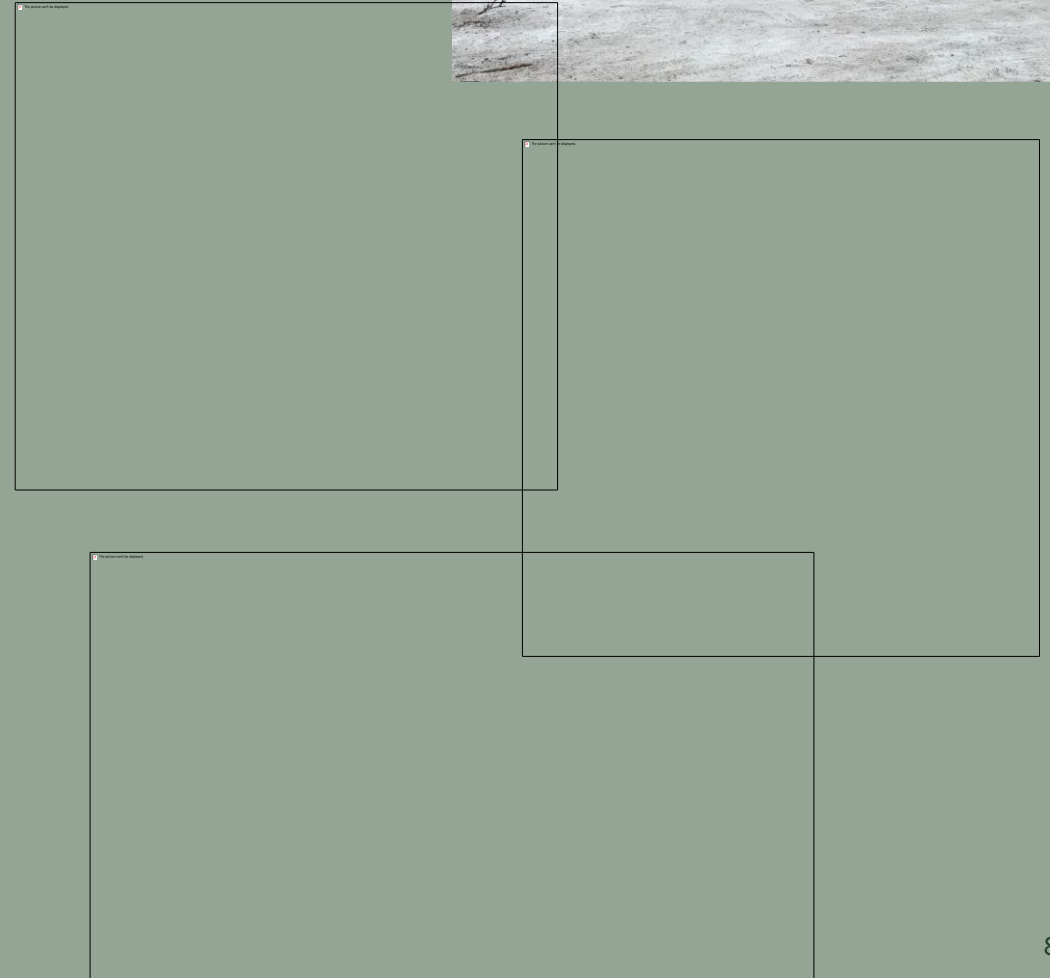
# LIVE TRACKING OF EQUIPMENT

- **GPS tracking devices with satellite communication**
  - Spot Trace
  - Geotab (2019)
  - FP Innovation devices (2019)
- **Implementation of GeoEvent Server to tap into data streams of devices**
  - Future introduction of GeoFences and enabling alert notifications



# ELECTRONIC BILLS OF LADING (EBOL)

- Loaders equipped with Trimble Nomad and barcode printer
- Bill of lading printed with GPS coordinates and timing information
- Load details entered into weighscale system at the mills
- Data gets sent to central weighscale system on a nightly basis
- Exported to MS SQL database
- Scheduled Python script to:
  - Update features in GIS layer
  - Validate data to ensure proper selections
  - Send out email notifications identifying potential errors





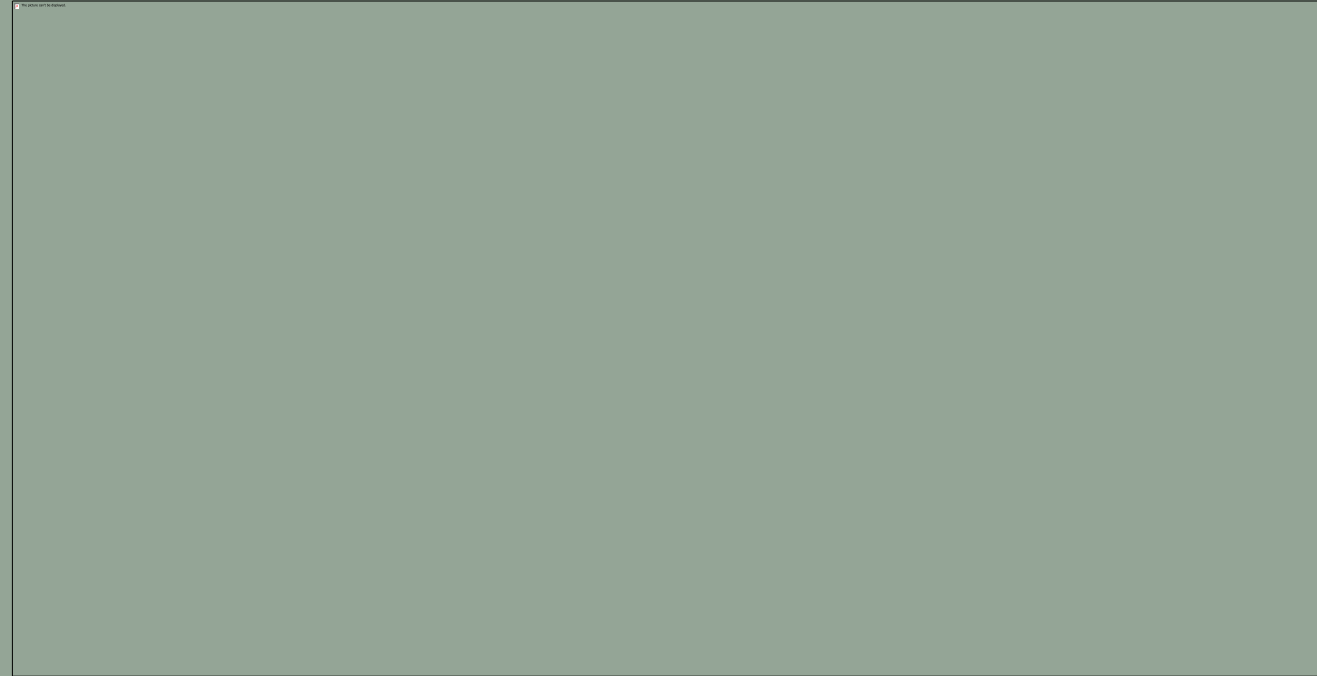
# GPS ROADS

- **Web-based Road Invoicing tool to capture newly constructed and maintained roads**
- **Tool allows for upload GPX files of road segments**
  - **GIS Layer gets updated**
  - **Map produced as attachment to invoice**
- **Data used to help update roads layer and incorporated into the Annual Report of Forest Operations to the MNRF**



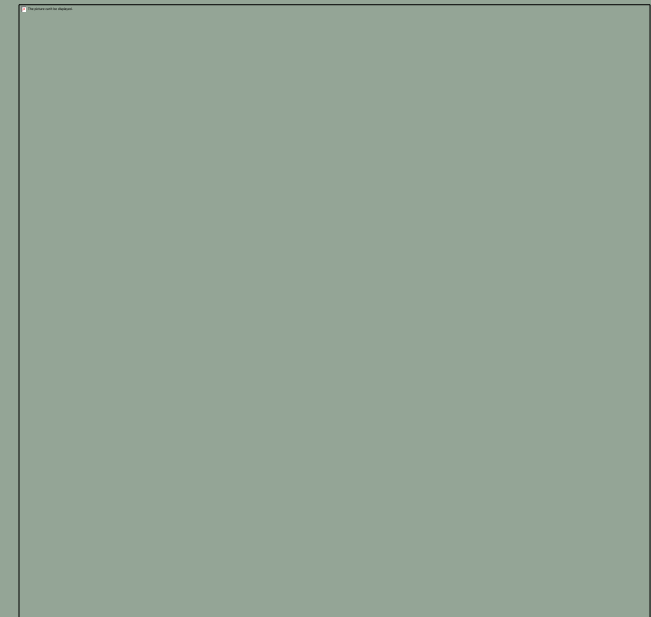
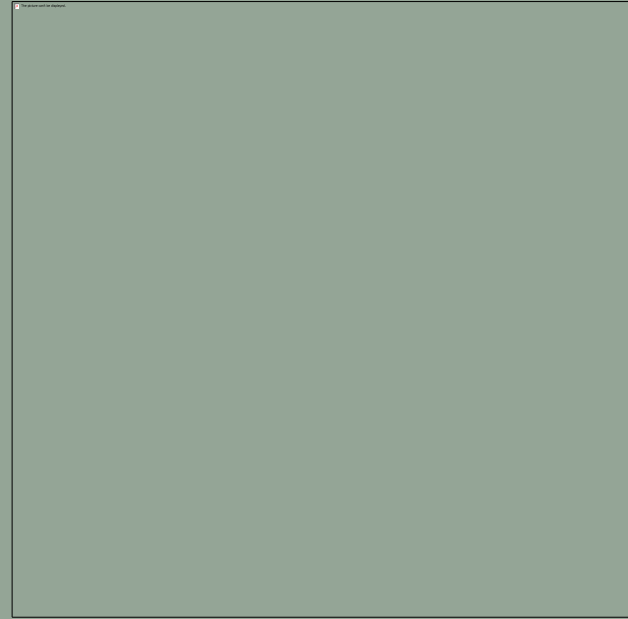
# LOG QUALITY SURVEYS

- **Survey123 used to record log quality observations in the field**
  - Record mechanical and natural defects
- **Results are compiled in Dashboard**
  - Identify potential problems prior to receiving logs at the mill
- **Looking into Web Hooks in order to send out email notifications when quality is below a certain threshold**



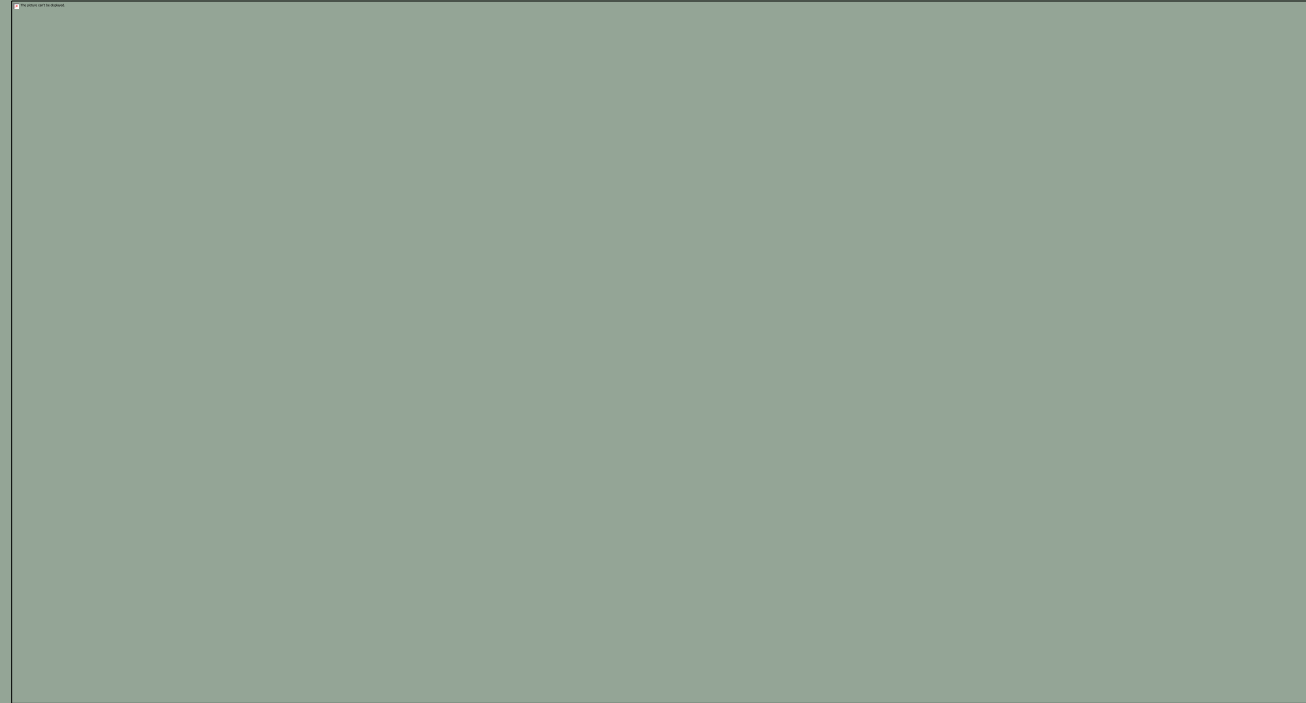
# TIMELY SATELLITE IMAGERY

- **Addition of Sentinel-2 Views to our collection of imagery**
  - Satellite imagery available from ESRI's Living Atlas
  - multispectral (13 bands)
  - multitemporal
  - 10 m resolution on visual color bands
  - 5 day revisit time
- **Ability to monitor operations within the last couple of weeks (or sooner)**
  - Road construction
  - Harvest progression



# USE OF ARCGIS ONLINE

- **Web Map created to consume data published to our ArcGIS server**
  - Tracking locations
  - GPS roads
  - eBOL loads
- **Web App showing all data and Imagery**
  - Available on any Internet ready device



# FUTURE PLANS

- **Increase use of ESRI mobile apps (ie. Collector and Survey123)**
- **Expand capabilities of GeoEvent Server**
- **Leverage ArcGIS online for distributing information**
- **Potential collaboration and sharing of data with MNRF (ie. identification of new forest values)**
- **Keep tabs on emerging technologies and evaluate potential use**
- **The end goal is to INCREASE SITUATIONAL AWARENESS**



