# Enabling Better Forestry Decisions at Scale

The intelligence layer for global forestry

Kevin Lim · Global Forestry Conference '26

GLOBAL TRENDS

# Four forces reshaping today's global forestry industry

## Climate-Driven Disruption

Wildfires and forest loss are accelerating beyond any historical precedent

## Regulatory Pressure

Mandatory digital compliance and shift towards transparent supply chains

## Market Volatility & Supply Tightening

Wood demand grows 4–5× faster than sustainable supply through 2050

## Digitization, Automation & the Rise of AI in Forestry Operations

Accelerated shift from manual to digital operations

# Climate Driven Disruption

## Wildfire Escalation & Forest Degradation

**2x** increase in wildfire activity compared to 20 years ago

**13.5M** hectares burned in 2024, a new world record

**63%** above the pace needed to halt deforestation by 2030

# The shift from reactive to proactive...

# Regulatory Shockwave

## Global Traceability & Deforestation Compliance

**EU** Approaching EUDR compliance deadline for all operators

**30%** of companies have EU ready traceability systems

**4%** fines no less than 4% of global EU annual turnover

# Moving to a digital forest

# Market Volatility

## Supply Tightening in Timber & Wood Products

**37-49%** wood use structural demand growth up by 2050

**4-8%** roundwood supply growth projected over the same period

**17%** North American lumber price rise in 12 months to Jan 2025

# Forest intelligence is no longer an option it is a core asset

# Global Forestry Trends

## Digitization, Automation & the Rise of AI in Forestry Operations

# Digitization, Automation & the Rise of AI in Forestry Operations

**60%** Global adoption of digital forestry tools and workflows

**$10.8B** Growth in forestry equipment demand expected by 2027

**AI** AI-enabled optimization, scanning, yield management, and defect detection

# Remsoft Technology

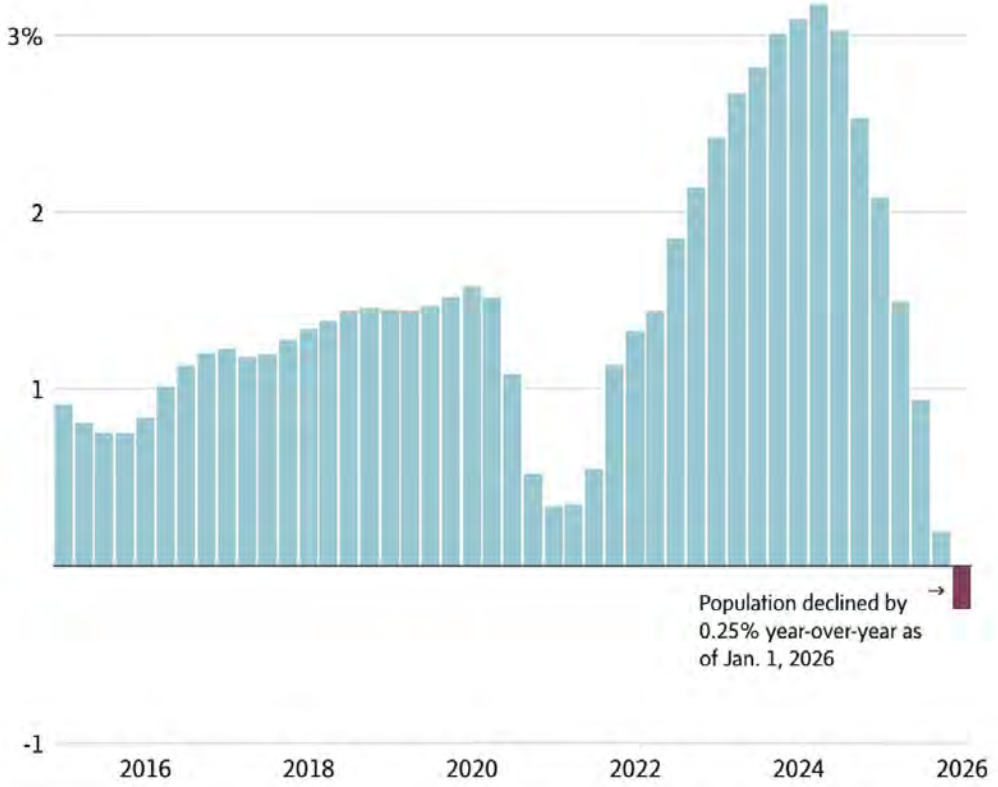
Digitization, automation, and AI are transforming forestry from the ground up.

# Why Digitization & Automation Now?

We no longer have a choice (or it's inevitable)...

- Labour shortages and aging workforce accelerating automation adoption
- Climate, wildfire, and supply chain volatility driving real-time decision needs
- Digitally-native tools reaching maturity: sensors, connectivity, edge compute, AI copilots/agents

# Canada's First Year-Over-Year Decline in Population




Population estimates reflect the first day of the quarter in question.
THE GLOBE AND MAIL, SOURCE: STATISTICS CANADA

# What about the promises from the Big Data era?

Digitization in the 2010s (the “Big Data wave”) was fundamentally about:

- Converting analogue information into digital form
- Collecting massive datasets (imagery, LiDAR, telematics, ERP logs)
- Storing and organizing that data in modern systems
- Beginning to use dashboards and BI tools
- Cloud adoption and basic automation of reporting

Forestry’s version at the time was:

- Adopting GPS and ESRI-based GIS
- Early LiDAR collection
- First-gen telematics in machines
- Scattered mobile data capture (tablets, handhelds)
- Centralizing data in GIS/ERP/supply chain systems

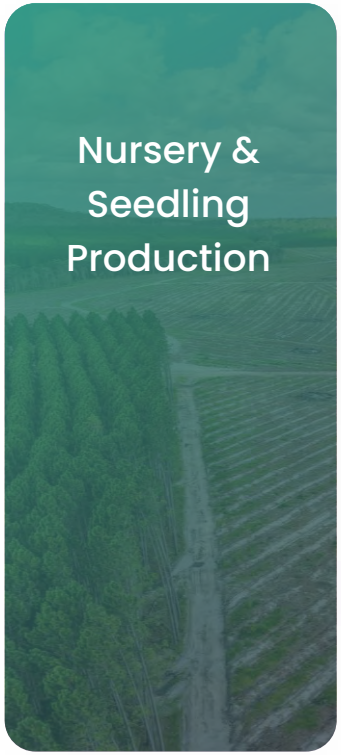
THE FIRST WAVE

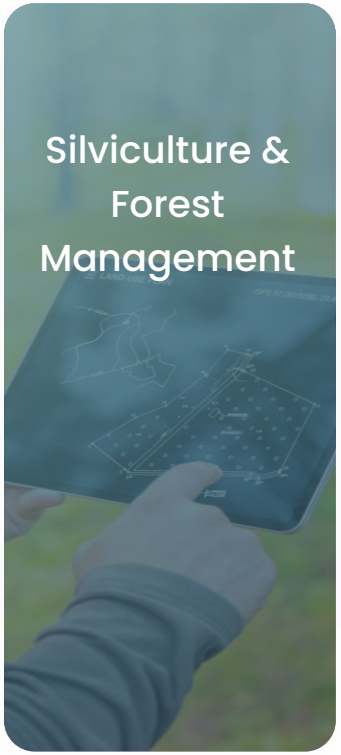
# Digitized Data.

THIS WAVE

# Digitizes the Work.

# Forestry Value Chain






# Four High-Friction Phases Being Transformed by Digitization


## Forest Inventory

Automating data collection + AI interpretation

## Harvest Operations

Assisted/semi-autonomous machines, real-time visibility

## Transport & Logistics

Automated dispatch, routing, mill allocation

## Mill & Compliance

Digital tickets, reconciliation, traceability, compliance

# When friction is Intelligence.

# Remsoft Technology

## Geolocation-Based Traceability & Supply Chain Transparency

# Why Traceability Now?

Every stick of wood must know where it came from, where it is now, and how it got there.

# How Traceability Maps to the Forestry Value Chain

| | |
|---|---|
| Nursery | Geotagged seed sources, digital seed batch tracking and allocation |
| Inventory | Stand boundaries, age classes, sustainable harvest eligibility baseline |
| Harvest | Machine-level geotagging of every extraction event — stump to roadside |
| Logistics | Timestamped route verification, digital chain-of-custody handoffs |
| Mill | Provenance-verified input, carbon-traceable SKU outputs for customers |

# The New Standard: End-to-End Traceability

## What Does This Look Like

- A single digital identity for each stand and each load
- Continuous geolocation data from machines, sensors, and transport systems
- Automated digital chain-of-custody between every actor
- Immutable audit trails for certifications (FSC/PEFC/etc.)
- Carbon accounting tied to specific spatial locations and events

## The Benefits

- Massive reduction in compliance risks
- Higher market premiums for verified sustainable products
- Faster audits and simplified reporting
- Strong insurance and investor confidence
- Better optimization decisions when data is accurate, time-stamped, and geospatial

# How Technology Enables This Trend

## Key Technology Drivers:

- IoT-enabled harvesters, forwarders, trucks → automatic geotagged events
- Low-cost GNSS + RTK technologies → sub-meter positional certainty
- Global satellite constellations (Planet, Maxar, ICEYE, NASA missions)
- Digital ID systems for logs, loads, and stands
- Blockchain / distributed ledgers for immutable chain-of-custody
- AI for anomaly detection → spotting illegal harvest, route deviations, inventory inconsistencies

# Remsoft Technology

## Remote Sensing, Lidar and Environmental Monitoring for Real-Time Risk Management



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# Forests Are Becoming Digital Assets (Twin)

## Inventory & Planning

LiDAR · Satellite · Multispectral

- AI-driven stand segmentation and volume estimation
- Change detection and continuous health monitoring
- More accurate LP/MIP inputs, reduced planning uncertainty

## Harvest & Field Operations

UAV · Machine Vision · IoT

- Real-time biomass and fuel condition monitoring
- Proximity-to-hazard alerts for operators and equipment
- Supports semi-autonomous and remote-assisted operations

## Roads, Access & Planning

LiDAR DEMs · Hydrology · Weather

- Slope risk and road washout prediction
- Real-time weather windows for operational decisions
- Resilient road network planning for changing conditions

## Compliance & Reporting

Satellite · Environmental Sensors

- Remote sensing validation of load quality and species
- Carbon accounting tied to specific spatial locations
- Audit-ready environmental compliance data on demand

# Forestry is AI's “perfect" industry.

Chronic labour shortages

Repetitive planning tasks

Multi-party coordination

A forester is a professional who manages, develops, and cares for forests and related renewable resources. Their overarching purpose is to balance ecological, social, and economic values, ensuring the health, sustainability, and productivity of forest ecosystems for current and future generations.

Example Tasks:

- Forest Management & Planning
- Timber Cruising & Appraisal
- Supervising Operations
- Reforestation & Restoration
- Fire & Health Management
- Using Technology & Mapping
- Environmental Monitoring & Protection
- Stakeholder Consultation & Public Relations

# AI: From Copilot to Colleague

# AI Employees

## Web 3.0 → Decentralized Ownership

- Web 3.0 is defined as a decentralized internet built on blockchains, smart contracts, and user-owned digital identities. It's the "read-write-own" era that moves power away from centralized platforms and toward individuals and distributed organizations.

## Web 4.0 → AI Agents That Act

- Web 4.0 is already being defined (2025–2026) as the era of AI agents that can autonomously plan, decide, transact, and execute.
- AI doesn't just answer — it acts. It can execute tasks, orchestrate workflows, interact with services, and perform transactions autonomously.
- Agentic AI implies the AI has agency.

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# An AI Employee is an autonomous, software-defined worker that can:

- plan, schedule, dispatch
- interact with machines, sensors, and humans
- negotiate constraints
- re-plan when disruptions occur
- submit compliance records
- monitor risk
- trigger smart-contract transactions
- operate continuously, reliably, explainably


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## AI Harvest Planner

*Autonomous planning agent*

- Reads all data sources: inventory, weather, equipment telemetry
- Creates and updates the weekly harvest plan automatically
- Adjusts in real time for wildfire alerts and road conditions
- Pushes updated plans to crews with explainable reasoning

## AI Dispatcher

*Logistics coordination agent*

- Routes trucks and rebalances mill allocations dynamically
- Avoids downtime and bottlenecks across the supply chain
- Handles 90% of dispatch exceptions automatically
- Escalates only the edge cases requiring human judgment

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# The Intelligence Layer Enabling Better Forestry Decisions

Remsoft becomes the intelligence layer enabling better forestry decisions at global scale — from seedling to mill.

### Source of Truth

Definitive digital record linking planned harvest with actual field operations.

### Optimization Engine

Strategic planning linked to geotagged field feedback — from model to mill intake.

### Compliance Platform

AI-driven audit prep, anomaly detection, and monitoring across the value chain.


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