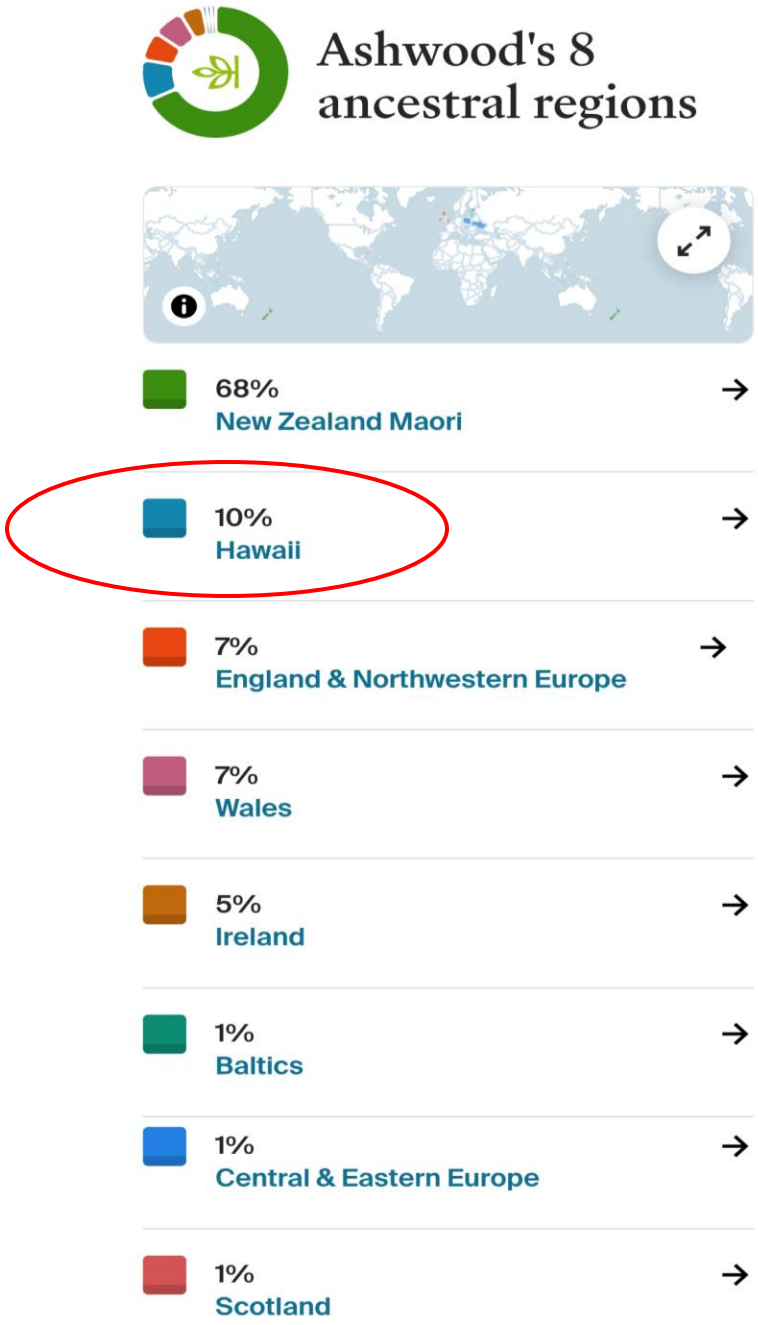
Gottstein Fellowship Study Tour USA/Canada 2025 – CAFS Presentation

Ashwood Caesar – GIS Manager

the creative fibre group

One Forty One

Aloha


Ashwood's 8 ancestral regions
68%
New Zealand Maori
10%
Hawaii
7%
England & Northwestern Europe
7%
Wales
5%
Ireland
1%
Baltics
1%
Central & Eastern Europe
1%
Scotland

About

OneFortyOne

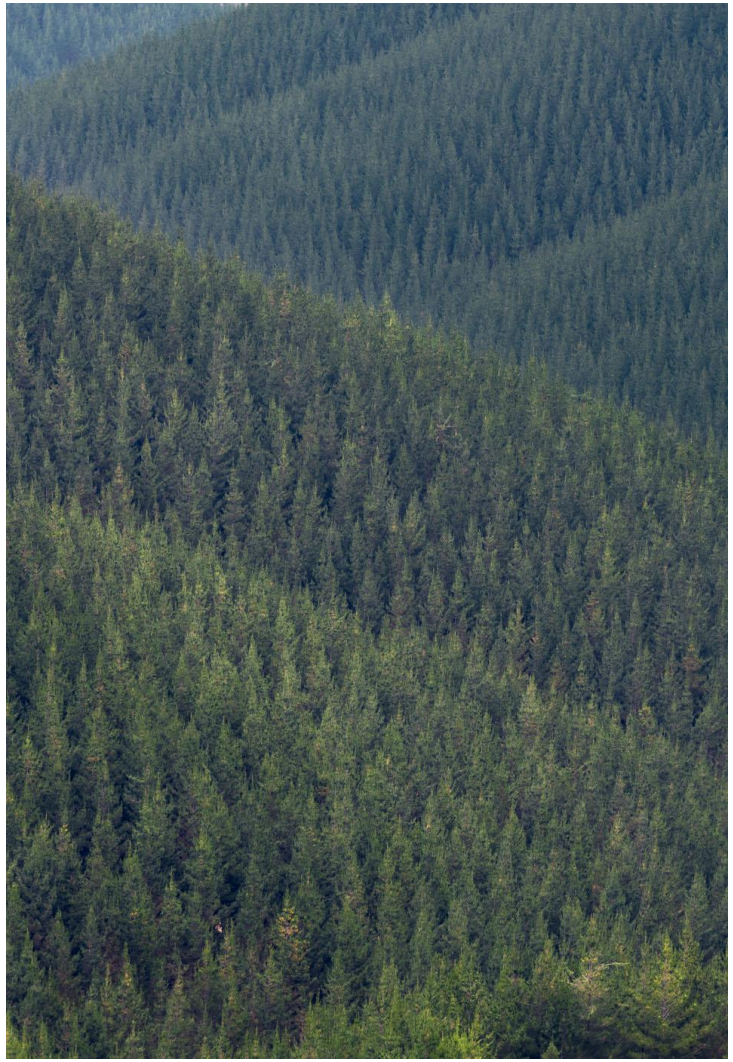
OneFortyOne is a trans-Tasman business that owns and manages softwood plantation forests and operates sawmills in Australia and New Zealand.

We manage over 140,000 ha (~346,000 acres) of plantation and conservation areas and operate two sawmills in the Green Triangle region of Australia and Nelson/Marlborough region of New Zealand.

We produce and distribute timber and forest products across Australia, New Zealand, and internationally.

Nelson Forest

New Zealand



Green Triangle Forest

Australia

GIS Operations

Current OFO GIS Data Supply (External):

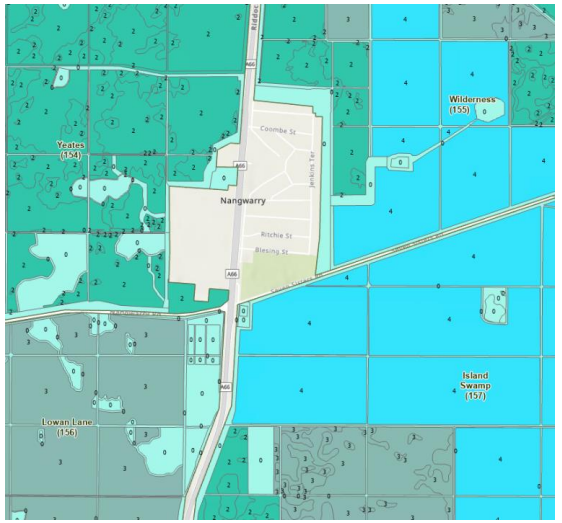
- Fire Maps
- Department of Agriculture, Fisheries and Forestry - Federal
- Department of Environment, Land, Water and Planning - VIC
- GT Fire Alliance

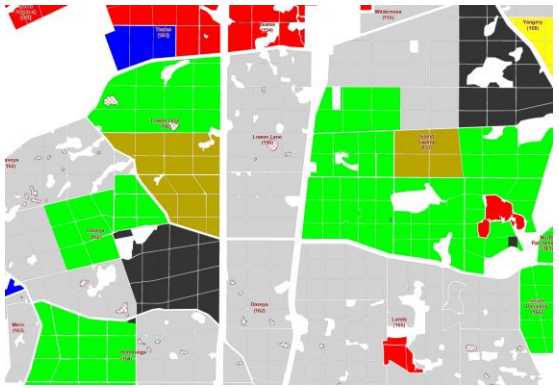
Current OFO GIS Data Supply (Internal):

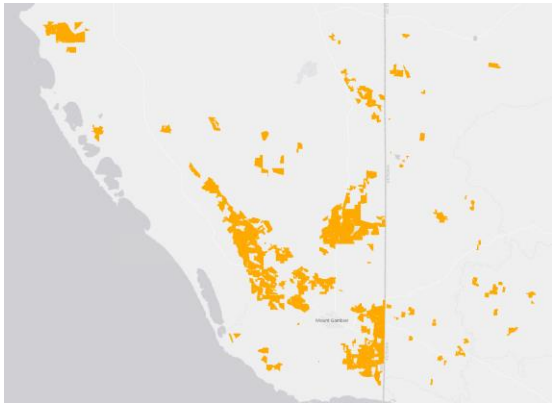
- Cadastre
- Stocking
- Roads
- Base
- NEA/DFA
- LRM Datasets as required
- Research data
- Other

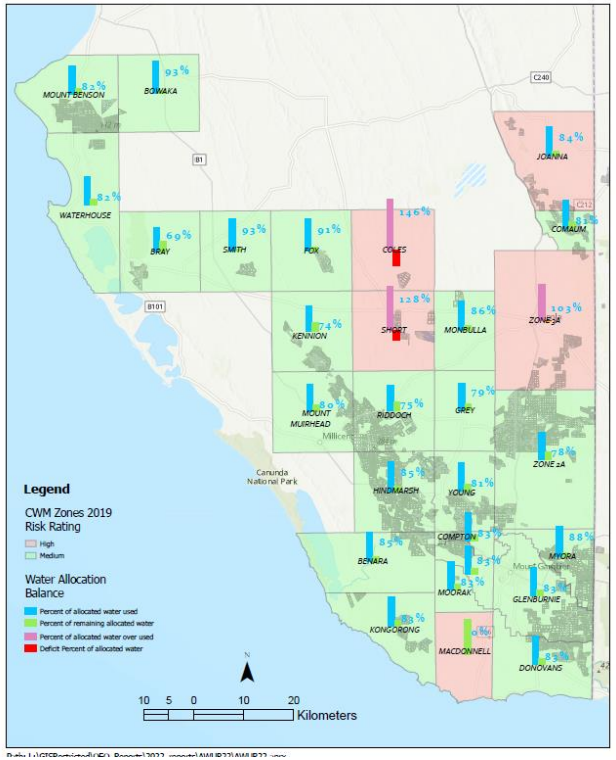
Table 1. Comparison between 2021and 2022 Defined Forest Areas

CATEGORIES	2021 Area (ha)	2022(ha)	Variance (ha)
PLANTATION RADIATA	77,369.0	77,657.5	288.5
PLANTATION BLUE GUM	28.8	22.1	-6.7
PLANTATION OTHER SPP	81.3	81.3	
CLEARFELL/FALLOW	4,522.6	4,435.6	-87.1
Total Plantable Area	**82,001.7**	**82,196.4**	**194.7**
FIREBREAKS	7,635.2	7,706.7	71.5
PROTECTION BUFFERS	392.6	402.0	9.3
Total Protection Buffers	**8,027.9**	**8,108.7**	**80.8**
AIRSTRIPS	86.4	86.0	-0.4
BIODIVERSITY CORRIDORS	92.9	92.9	
CULTURAL SITES	8.3	8.3	
DAMS	13.9	13.8	-0.1
EASEMENTS	635.3	638.1	2.8
FAUNA CONSERVATION	0.2	0.2	
HEATH SPP.	94.6	86.0	-8.6
HISTORIC SITES	6.8	6.8	
HQ SITES/STRUCTURES	79.9	79.8	-0.1
NATIVE VEGETATION	1,629.5	1,644.0	14.5
NOTPRODUCTIVE DUE TO SF	966.2	960.8	-5.3
NY/ORCHARDS	220.5	220.5	
OPEN/GRASS	129.3	129.3	
QUARRIES	130.5	130.4	-0.2
RECREATION SITES	9.4	9.4	
ROCKY/KARST	37.1	37.1	
RUBBISH DUMPS	8.0	8.0	
SWAMP VEGETATION	1,090.3	1,114.1	23.8
UNSUITABLE AREAS	200.5	200.5	
WATERCOURSES	11.3	11.3	
Total Nonproductive Areas	**5,450.6**	**5,477.1**	26.5
Total Area	**95,480**	**95,782.2**	**302.0**









Current OFO Annual Corporate Reports:

- At a Glance Statistics
- Mean Clear-fell Age
- Defined Forest Area
- Annual Water Use Returns
- Emergency Service Levy
- Council Rates – SA
- Council Land Tax - VIC
- PLA Compliance Report (PIRSA)
- Australian Tax Office

Strategy Outcome & Vision 2022-2025

Spatially Empowered Workforce

“We’ve got your back, wherever you are”

Design

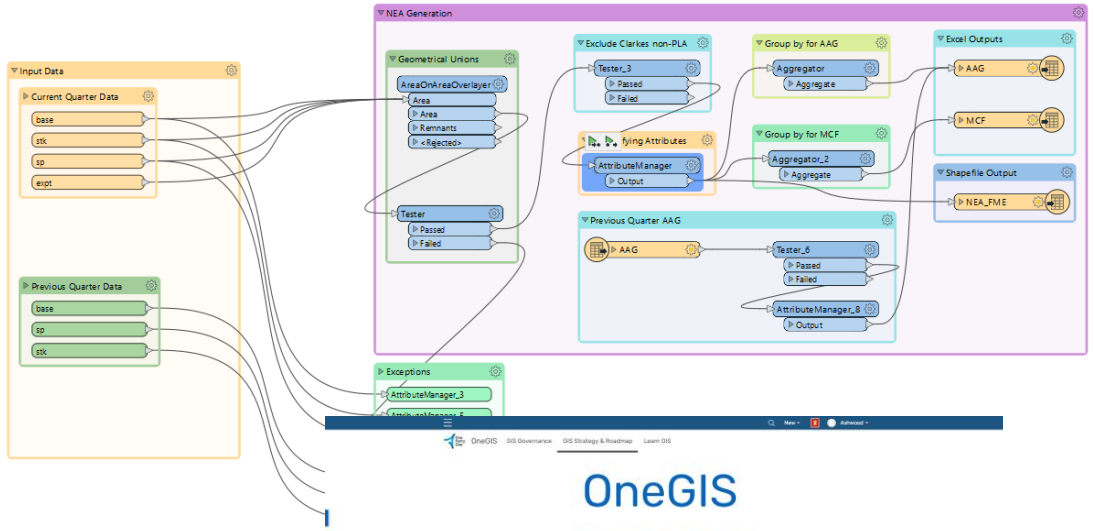
- Design and critique solution architecture
- Confirm systems are secure
- Interrogate data and processes
- Check in with the business and endorse tactical plan

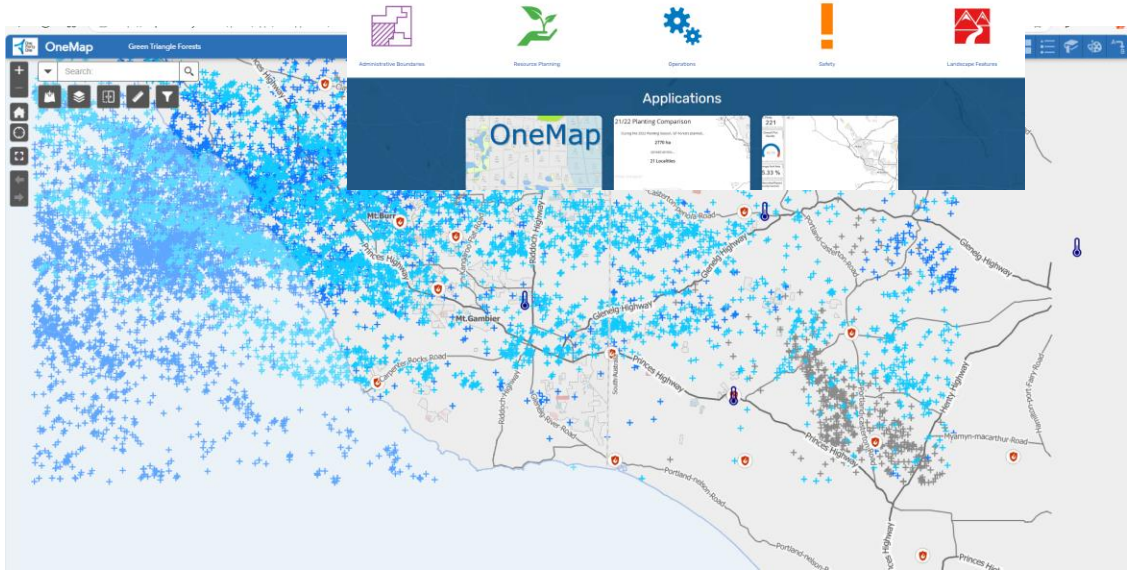
Build

- Establish governance & standards
- Enhance development tools and products (FME/Apps)
- Improve core datasets
- Upgrade LRM/ArcGIS

Enable

- Launch OneMap Aug 2022
- Lone Worker App & Automated core processes via FME Jan 2024
- Lightning on OneMap March 2024
- Sep 24 Launched OneGIS our one stop shop for everything GIS





Young Digital Twin

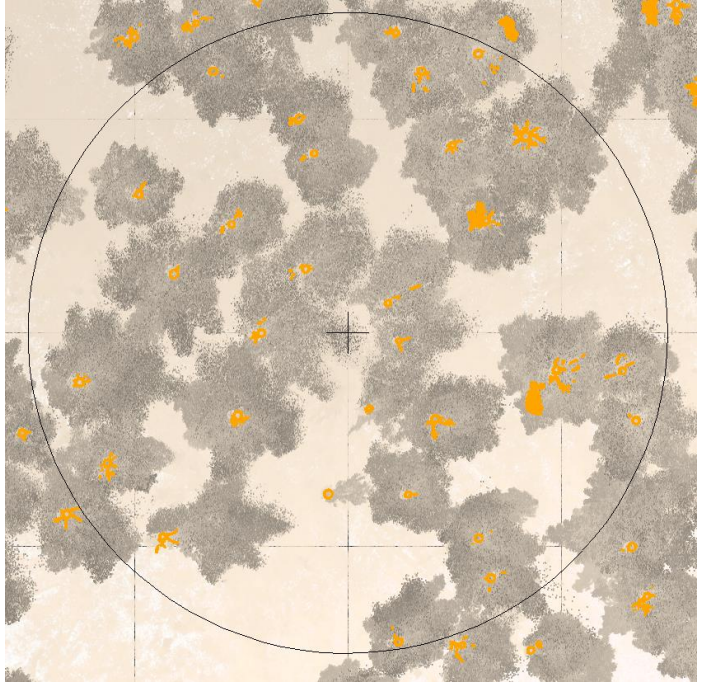
- This project facilitated area detection of younger plantations to create an orthophotos of complete compartments.

- Detailing the Status, Health and Density of the trees in a given plantation at this 3.5 years old.

One Forty One

Backpack PHI

Utilising a LiDAR Scanner Mounted we are collecting an inventory of our forest and store this as a replicable snapshot of the forest, enabling accurate data.



Under Canopy Drone

- By flying a drone though the forest we can collect inventory data from both above and below the canopy.
- This also allows us to collect inventory in hazardous environments in a safe manner.
- The drone flies in using a semi autonomous by a waypoint-based system to guide it to critical locations without the need for a GPS.

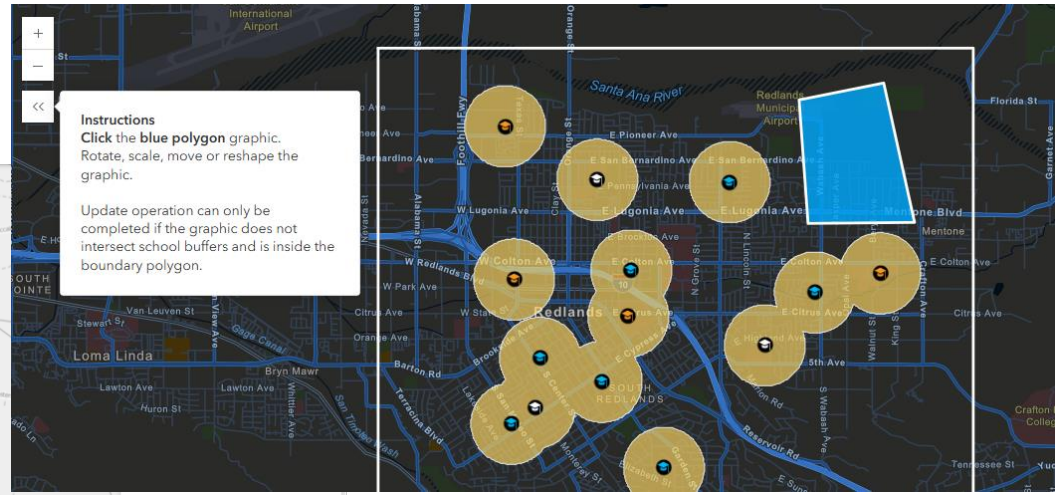
One Forty One

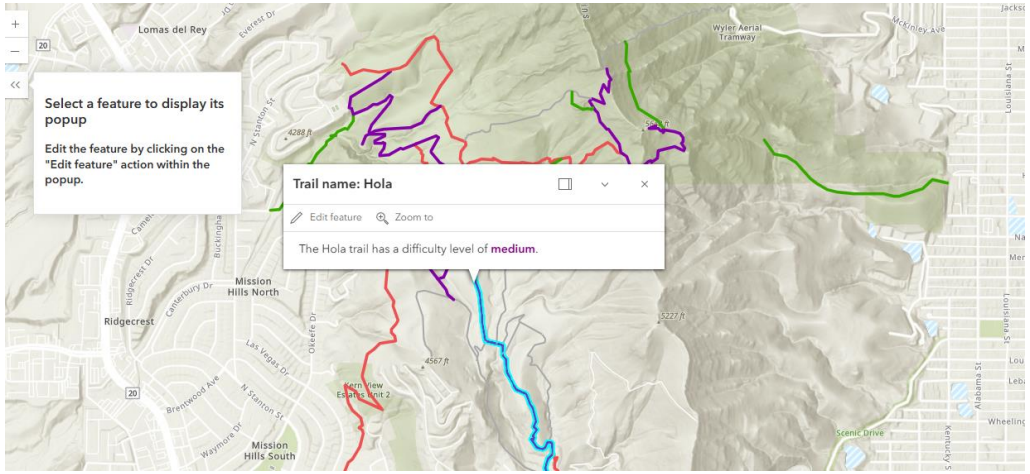
Strategy Outcome & Vision 2025-2028

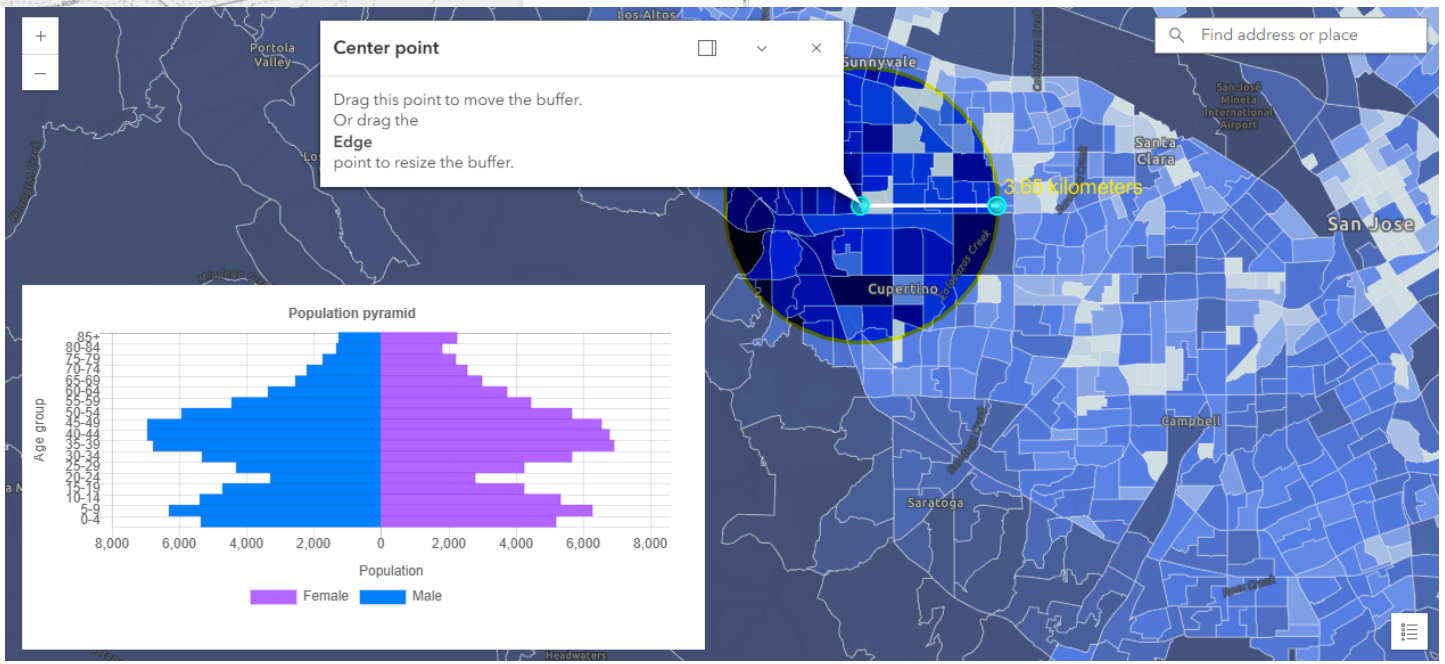
"Cultivating Spatial Knowledge, Growing Forests"

"Learning from Data, Smarter Forestry"

- **Allowing users to add new data to their map**
- **Drawing of lines at a bearing and distance from fire tower locations**
- **Printing of pre-defined map templates**
- **Shared map annotation between staff**
- **Dynamic querying of data by geometry**
- **Digital twin plot view and AI tools**







Strategy Outcome & Vision 2025-2028

"Cultivating Spatial Knowledge, Growing Forests"

“Learning from Data, Smarter Forestry”

Data → Information → Knowledge → Wisdom

- **Design solutions centered on existing corporate information systems**
- **Retrieve operational history in a compartment**
- **Discover statistics/trends on weather & disease events**
- **Track productivity of the estate over time**
- **Close the planning to doing loop**
- **Spatial awareness “where and when” including geofencing**

Image source: Esri

Gottstein Fellowship

About

- **Gottstein Trust:** the national educational trust for Australia's ultimate renewable industry – wood products grown in forests and plantations.
- Awarded Gottstein Fellowship ($20kAUD) to conduct my project titled: "**Advancing Sustainable Forestry GIS Platforms for Future Challenges**."

Photo: OneFortyOne Estate – Pinus radiata

Objectives

- Learn how organisations can scale up for growth
- Understand what drives capability
- Gather insights on addressing future challenges and opportunities
- Experience examples of excellence

Confirmed Participants

- Centre of Advanced Forestry Systems – Annual Conference Kona, Hawaii
- Rayonier – Yulee Florida
- Campbell Global – Port Angeles
- Alberta-Pacific – Athabasca AB Canada
- Campbell Global – Portland

Mural

Your status is set to do not disturb. You'll only get notifications for urgent messages and from your priority contacts. Change settings

Mural Murals Chat

GIS Forestry Workshop

Facilitate Share

What are your pain points?

1. Start brainstorming (10 min)

Select one panel and replace [Participant #] with your name. Begin ideation on the first row of sticky notes in your panel.

Hunter Stanke

Ryan Mayo

Chad - AlPac

What are your opportuniti

1. Start brainstorming (10 min)

2. Cluster and vote (20 min)

Bring your ideas to the box on the left. Add your ideas to either existing clusters or create new

problem statement.

GIS/IT Relations

Data Quality

Cluster name

11%

Ashwood Caesar

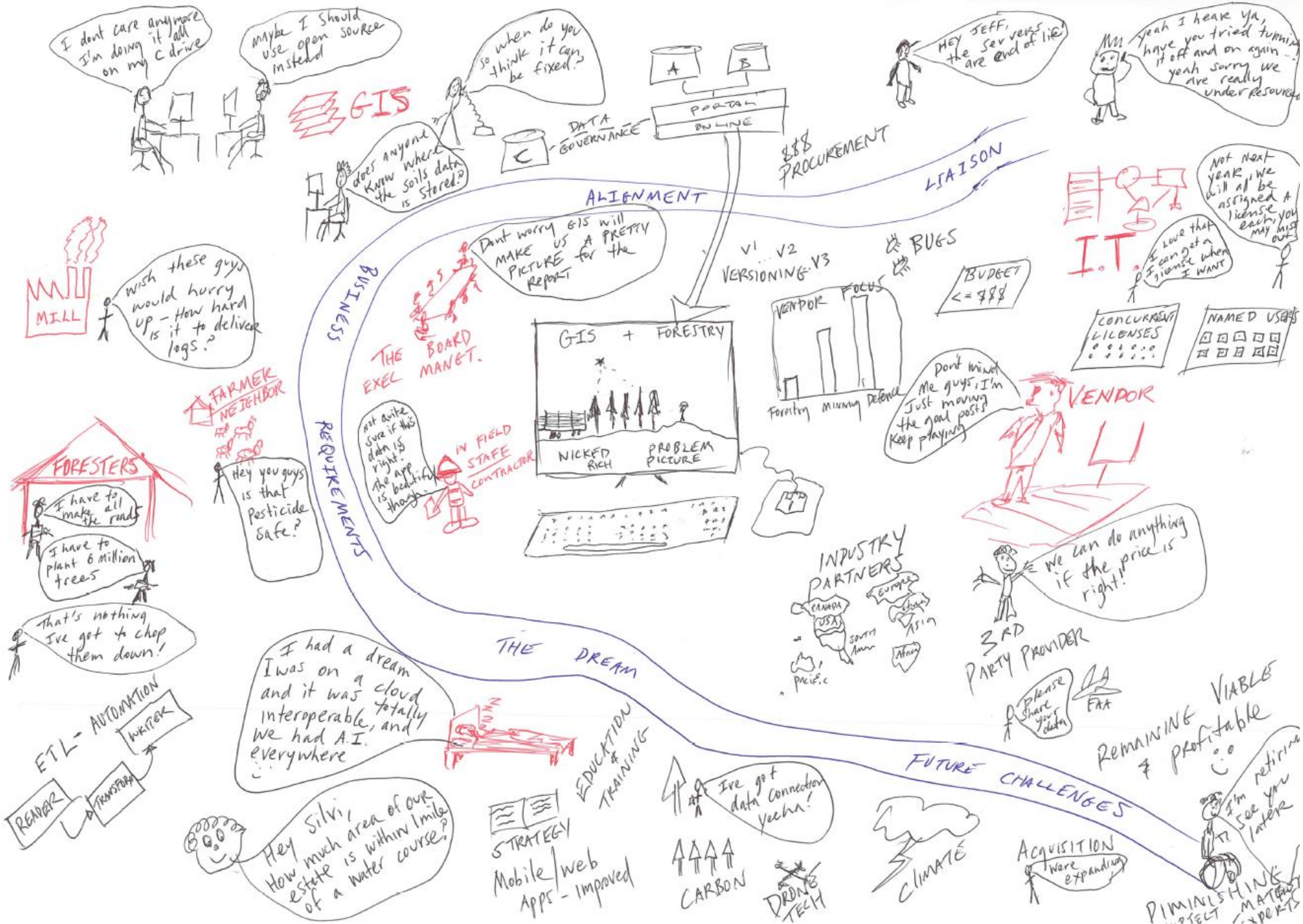
Duncan Wilder - RYN

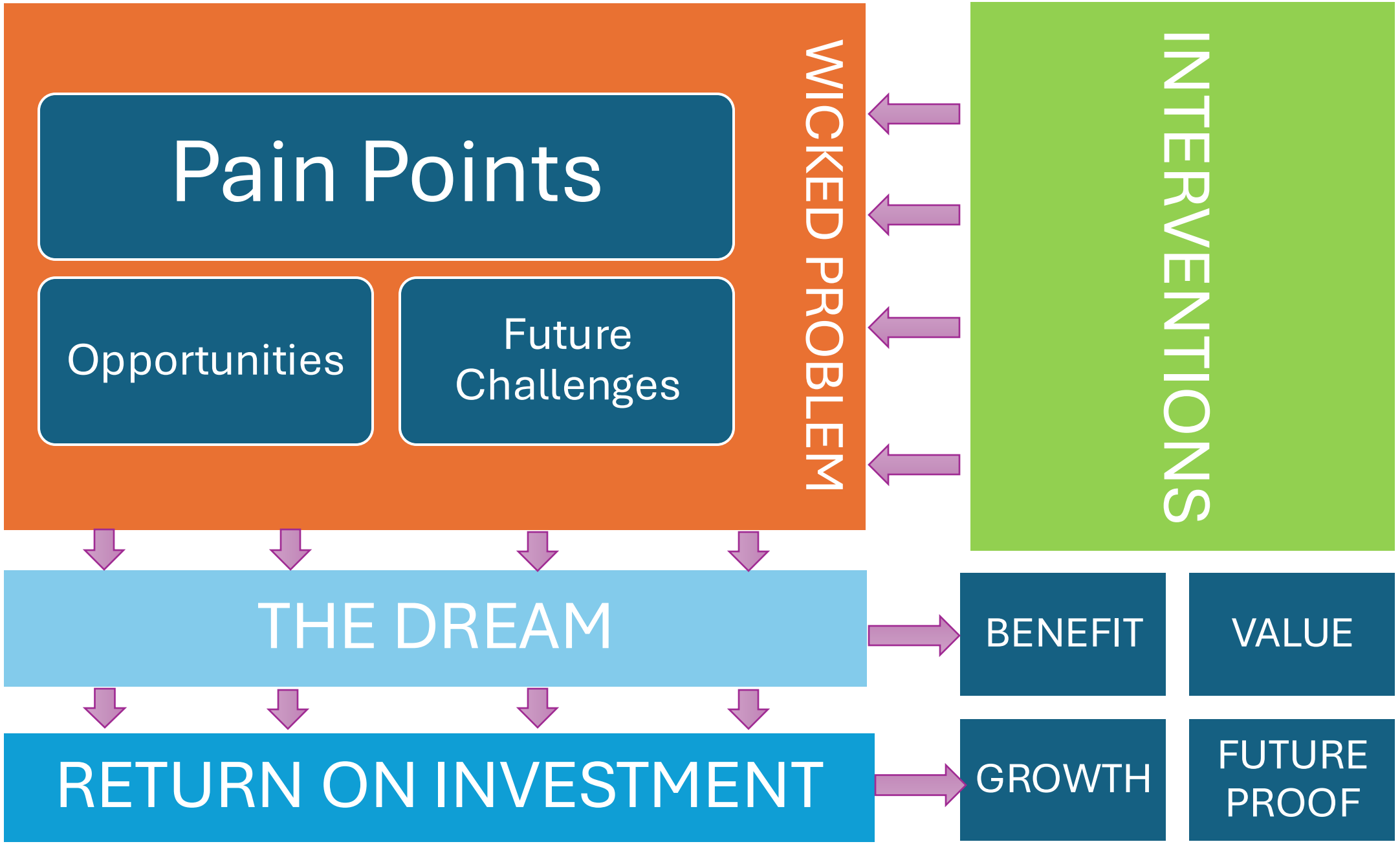
John Bryant (Rayonier)

DC

Christian...

+6


I dont care anymore I'm doing it all on my C drive
maybe I should use open source instead
GIS
so when do you think it can be fixed?
does anyone know where the soils data is stored?
A
B
PORTAL ON LINE
C - DATA GOVERNANCE
HEY JEFF, the servers are end of life
yeah I hear ya, have you tried turning it off and on again... yeah sorry we are really under resourced
$$$ PROCUREMENT
LIAISON
ALIGNMENT
BUSINESS REQUIREMENTS
THE DREAM
FUTURE CHALLENGES
I.T.
Not next year, we will all be assigned A license each, you may miss out
I love that I can get a license when I want
CONCURRENT LICENSES
NAMED USERS
MILL
wish these guys would hurry up - How hard is it to deliver logs?
Dont worry GIS will MAKE US A PRETTY PICTURE for the REPORT
THE BOARD EXEL MANET.
V1 V2 VERSIONING V3
BUGS
BUDGET <= $$$
GIS + FORESTRY
NICKED RICH
PROBLEM PICTURE
VENDOR FOCUS
Forestry Mining Defence
Dont mind me guys, I'm just moving the goal posts! Keep playing
VENDOR
FARMER NEIGHBOR
Hey you guys is that Pesticide safe?
not quite sure if this data is right. The app is beautiful though
IN FIELD STAFF CONTRACTOR
FORESTERS
I have to make all the roads
I have to plant 6 million trees
That's nothing I've got to chop them down!
INDUSTRY PARTNERS
CANADA
USA
EUROPE
CHINA
ASIA
SOUTH AMERICA
AFRICA
PACIFIC
3RD PARTY PROVIDER
We can do anything if the price is right!
Please share your data
FAA
REMAINING VIABLES & profitable
I'm retiring see you later
ETL - AUTOMATION
READER
TRANSFORM
WRITER
I had a dream I was on a cloud and it was totally interoperable, and we had A.I. everywhere
Hey Siri, How much area of our estate is within 1 mile of a water course?
EDUCATION & TRAINING
STRATEGY
Mobile/Web Apps - Improved
Ive got data connection yeahs!
CARBON
DRONE TECH
CLIMATE
ACQUISITION were expanding
PIMINISHING


Pain Points
Opportunities
Future Challenges
WICKED PROBLEM
INTERVENTIONS
THE DREAM
BENEFIT
VALUE
RETURN ON INVESTMENT
GROWTH
FUTURE PROOF

Would love your support and to share my report with you

1. What do you perceive as the main barriers and opportunities in transforming and improving the use of GIS data and technology in forestry?

2. In your opinion, what steps are necessary to overcome these barriers and accelerate the adoption of GIS data and technology in forestry?

3. How do you feel about the role of AI and future technologies in the forestry industry? What impact do you think they will have?