GovEnergy
www.govenergy.gov

· August 15-18, 2010 · Dallas, Texas ·
· Dallas Convention Center ·

Green House Gas Track Session #7, "Carbon and Land Management

Carbon & Land Management:

Using a LiDAR Based Approach to Quantify Carbon & non-Carbon Forest Attributes for Land Management

GovEnergy Aug 18th,2010

imagetree™
The Precision Forestry Company

A Division of GeoDigital International

An EcoMarket Infrastructure For the Planet

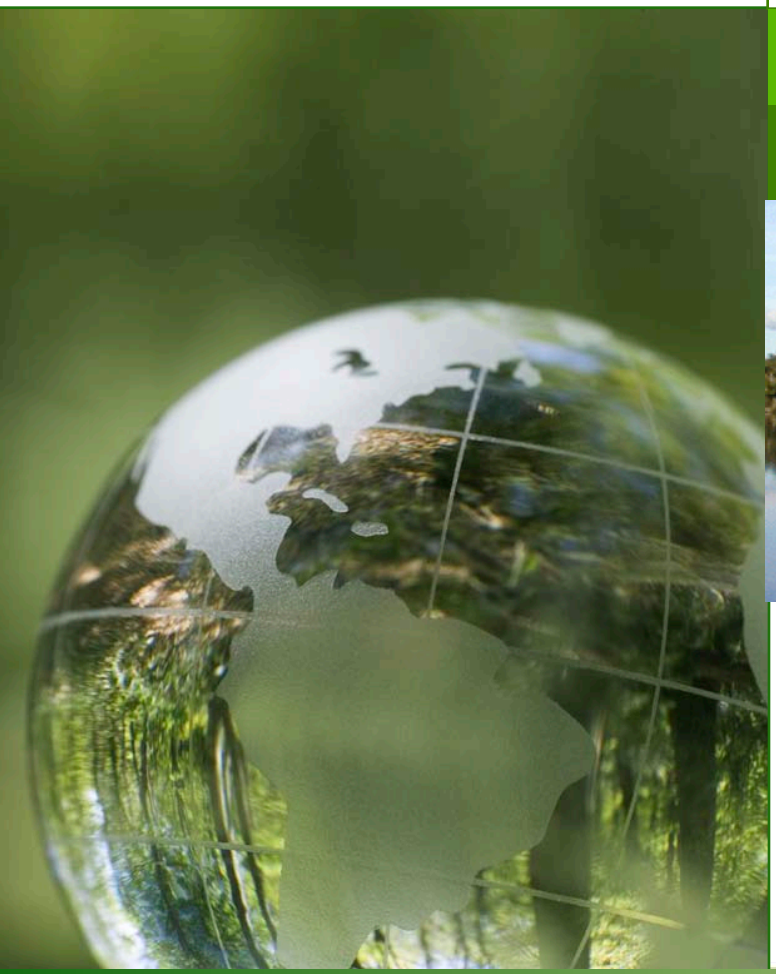



"The choice we face is not between saving our environment and saving our economy – it's a choice between prosperity and decline. We can remain the world's leading importer of oil, or we can become the world's leading exporter of clean energy. We can allow climate change to wreak unnatural havoc, or we can create jobs working to prevent its worst effects. We can hand over the jobs of the 21st century to our competitors – or we can confront what countries in Europe and Asia have already recognized as both a challenge and an opportunity: The nation that leads the world in creating new sources of clean energy will be the nation that leads the 21st century global economy."

Waxman – Markey

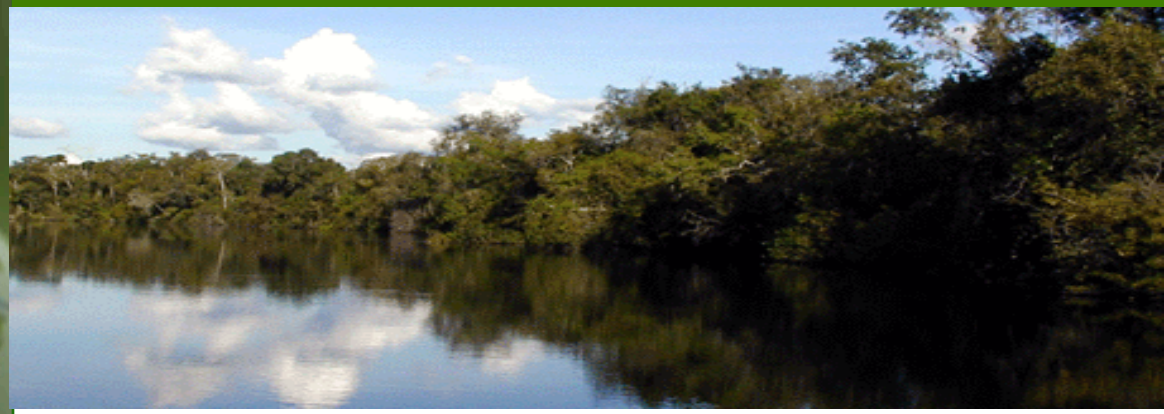
- Allows 2 billion tons of offsets annually
  - 1 billion tons domestically
  - 1 billion tons internationally

SHARED Challenges



CREATING TRADABLE COMMODITIES

STANDARDS & METHODOLOGIES



- EPA estimates the price per ton between $13-22/ton

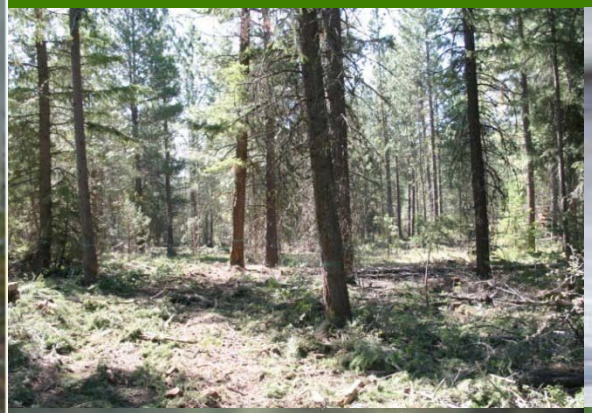
- Annual market value:
  - $26-44 Billion

Land Management Agencies
& Private Landowners

SHARED Challenges

UN-FUNDED MANDATES

LIMITED RESOURCES



SHARED Challenges

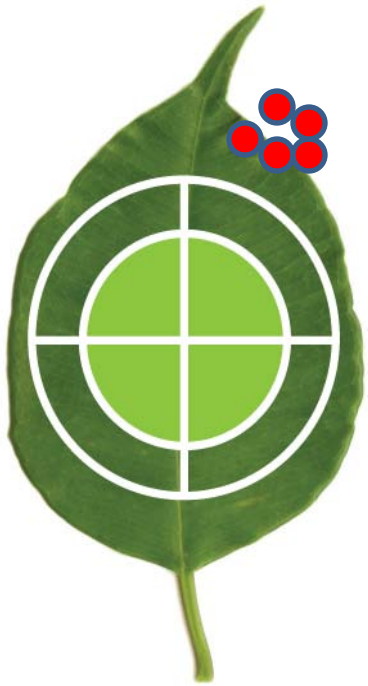
LACK OF SUFFICIENT or CURRENT DATA

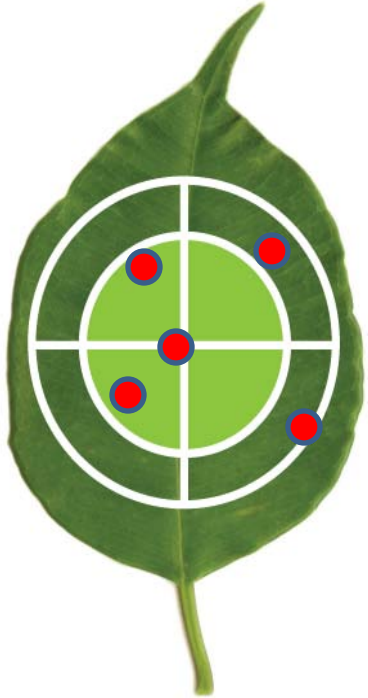
QUALITATIVE vs. QUANTITATIVE

A Shared Challenges

NEED FOR PRECISION & ACCURACY

PRECISION (Repeatability)	ACCURACY	PRECISION & ACCURACY





Solutions that provide both precision and accuracy

Offers validity and accountability to EcoMarket Projects

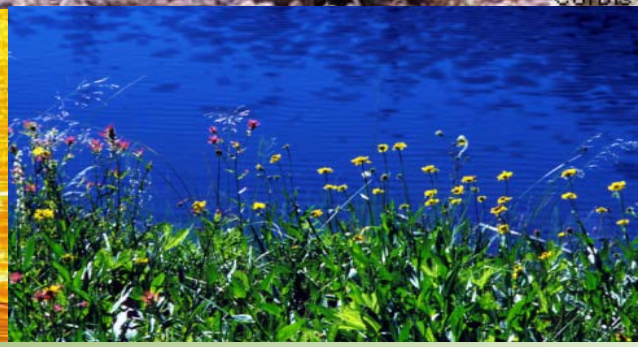


SHARED Challenges

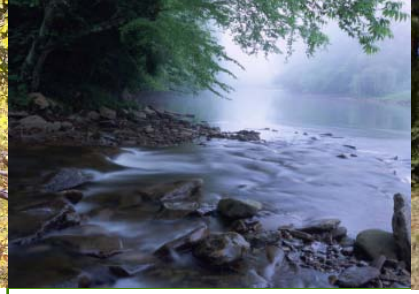
BIODIVERSITY, HABITAT & WATERSHEDS

TOOLS TO QUANTIFY & MANAGE



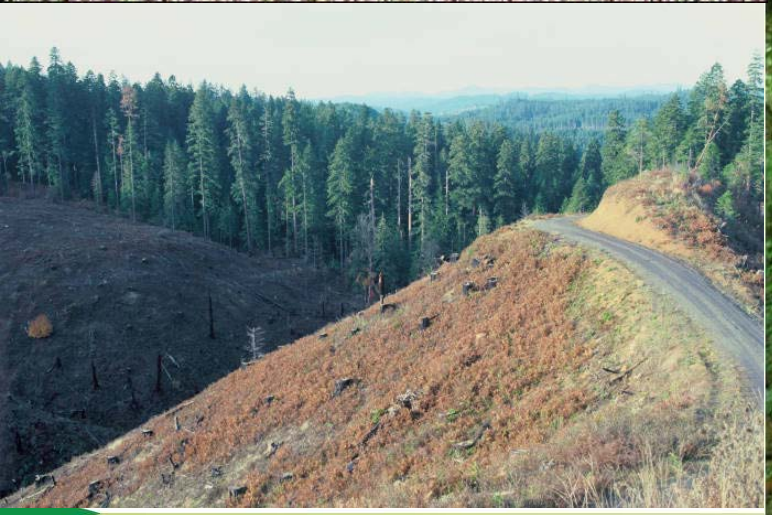




SHARED Challenges

TRANSPARENCY & VISIBILITY

COMMUNICATE





SHARED Challenges

AFFECTING REAL CHANGE

LOCAL & NATIVE COMMUNITIES


A SHARED Challenge

ENGAGING PRIVATE LANDOWNERS

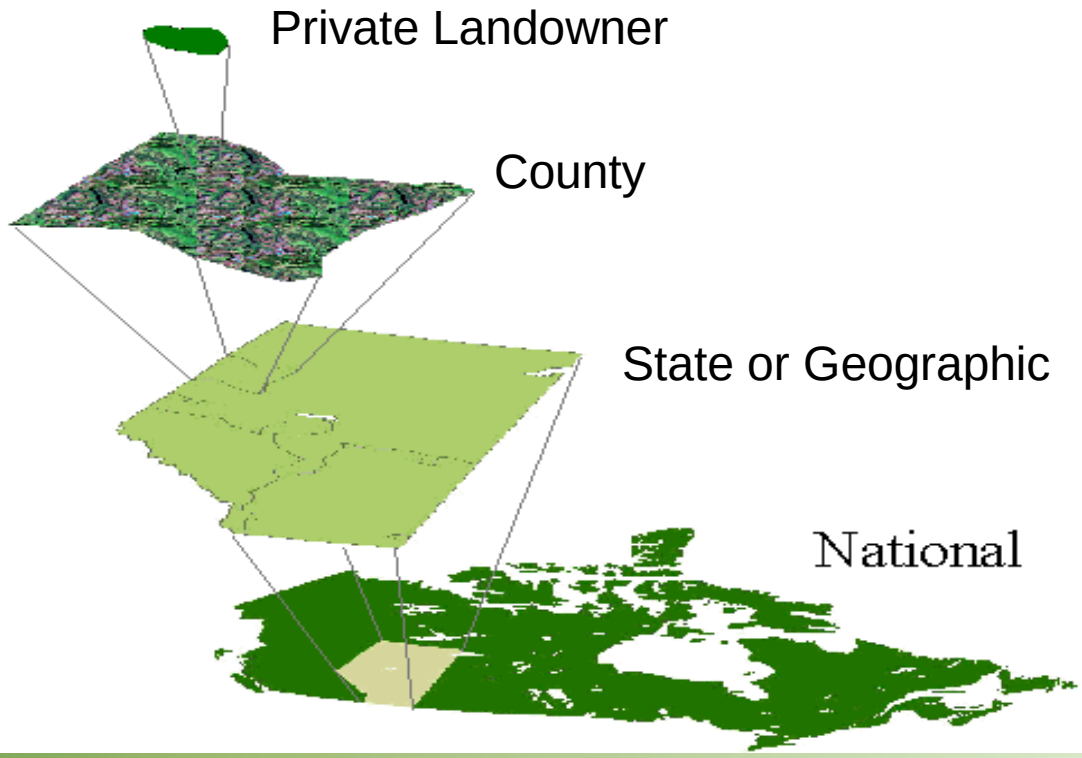
Cost Effectively: **MEASURE, REPORT & VERIFY**

MONETIZING CARBON, WATER & BIODIVERSITY

11 million private forest owners

Who collectively control 56% of the forest land (423 million acres) in the United States

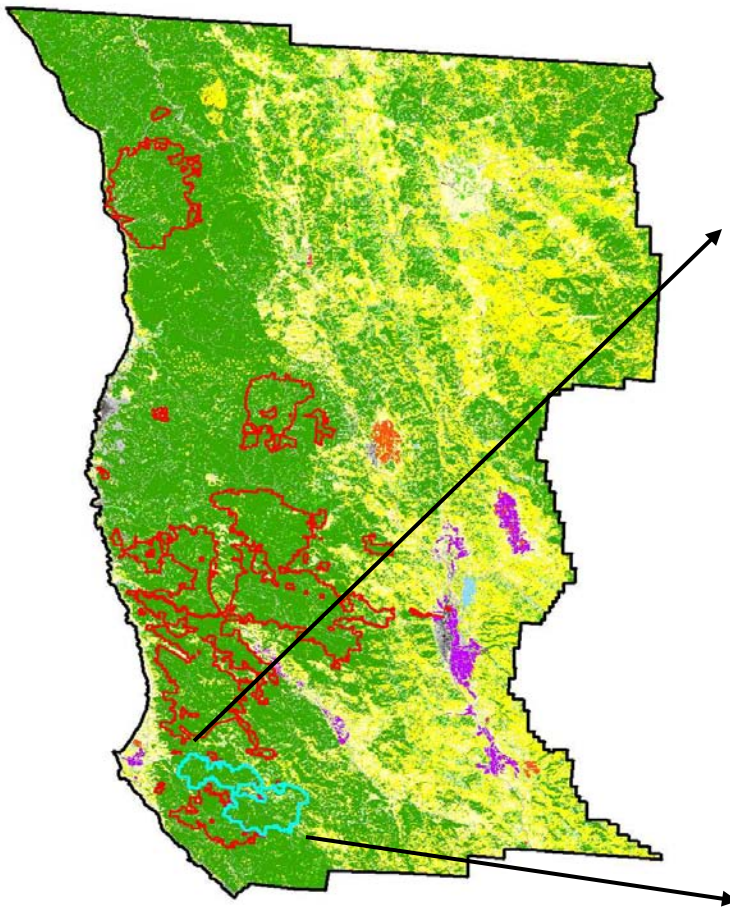
Critical from both environmental and political perspectives

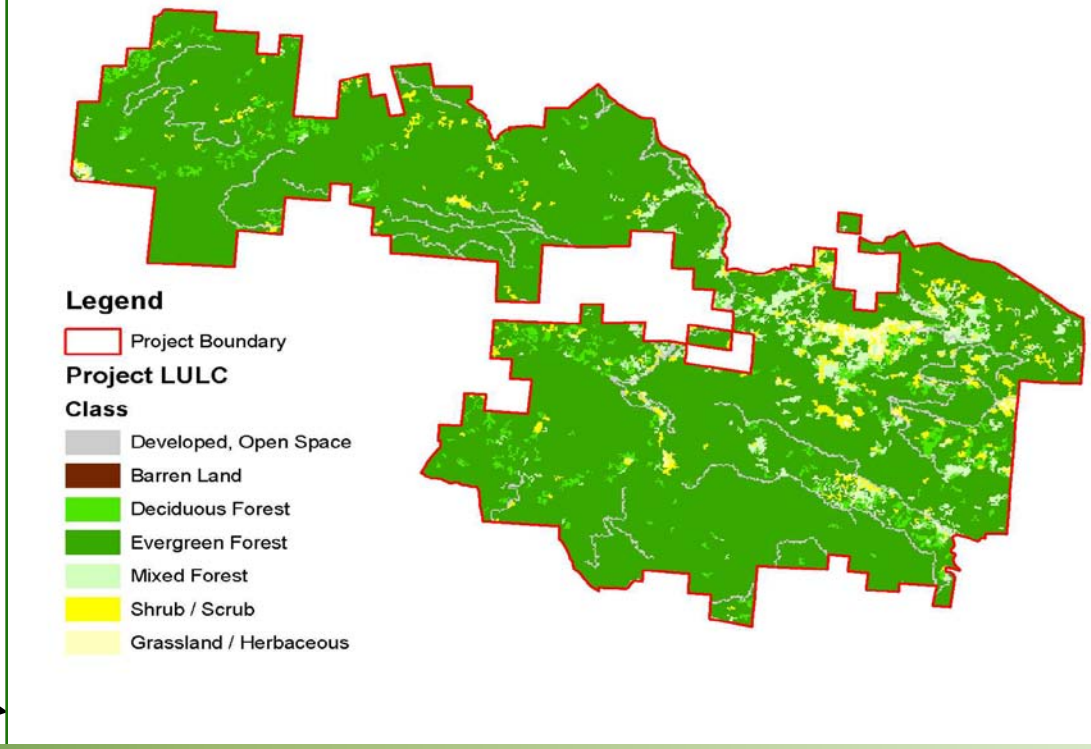


ONE STEP To Solving the Challenge

Build: A 3-DIMENSIONAL, SPATIALLY ENABLED, SCALEABLE, PLATFORM

An EcoMarket Infrastructure





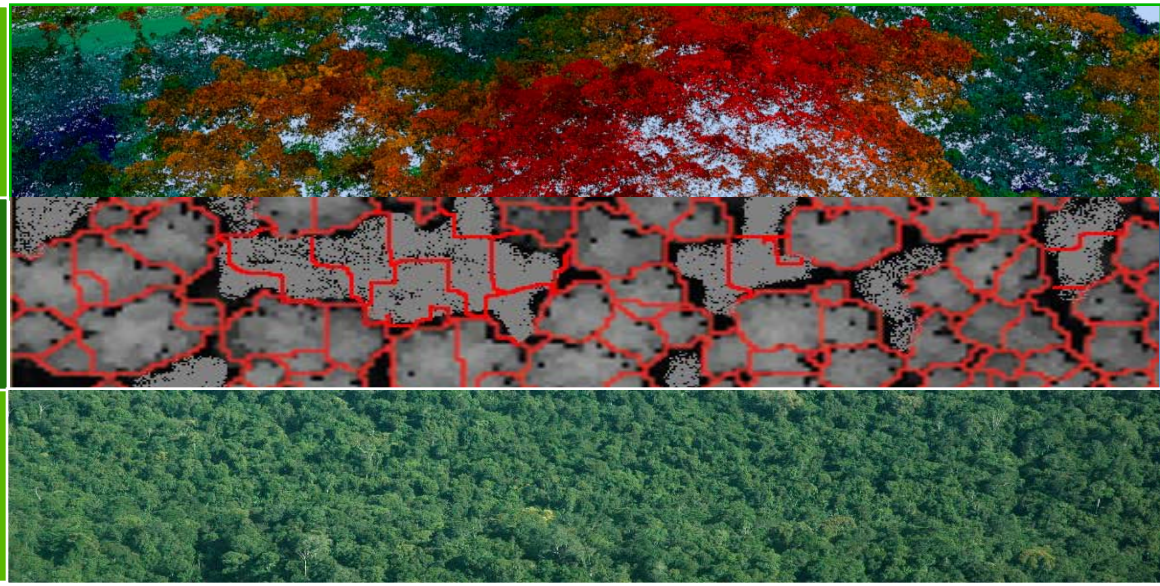
Core Value Proposition:

Fusing the Sciences of Remote Sensing, Biometrics & Geospatial Information Systems with Field Validation for Quantification, Analysis & Management of Terrestrial Resources

BASELINE INVENTORY

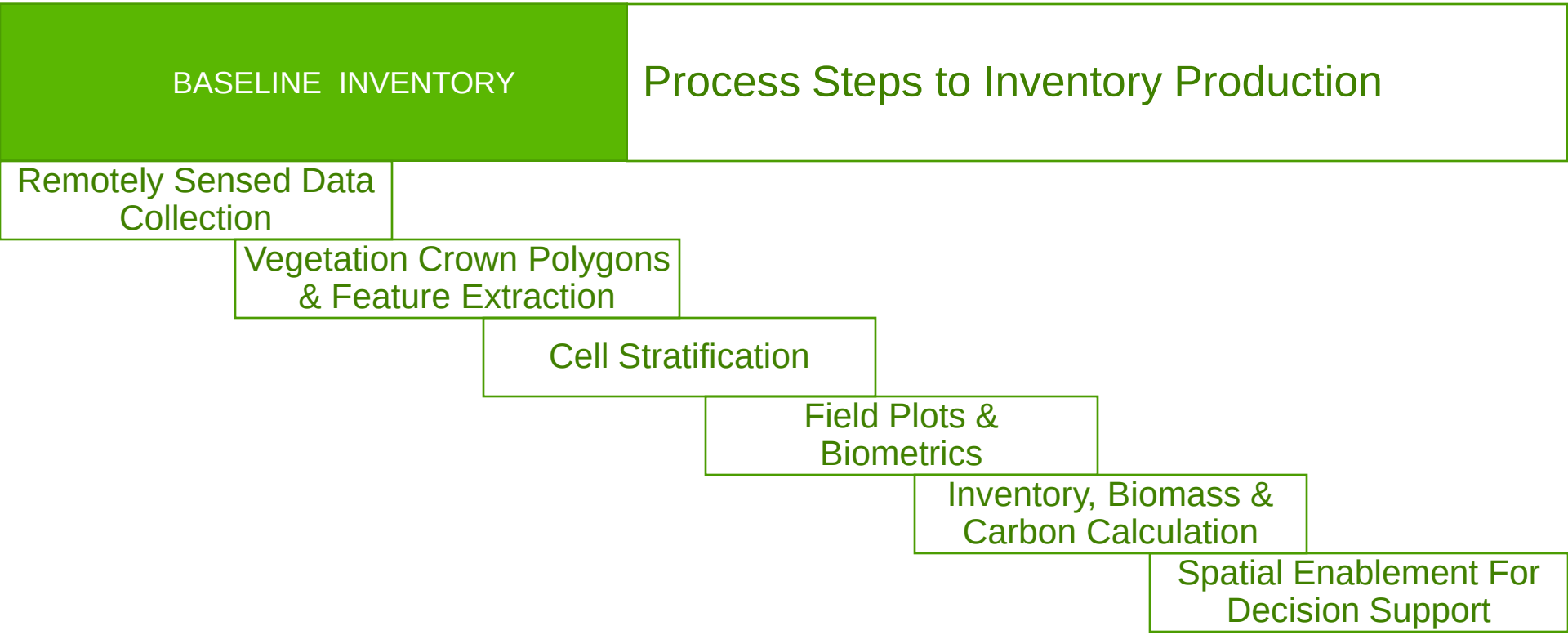
DIGITAL CANOPY METRICS

DECISION SUPPORT



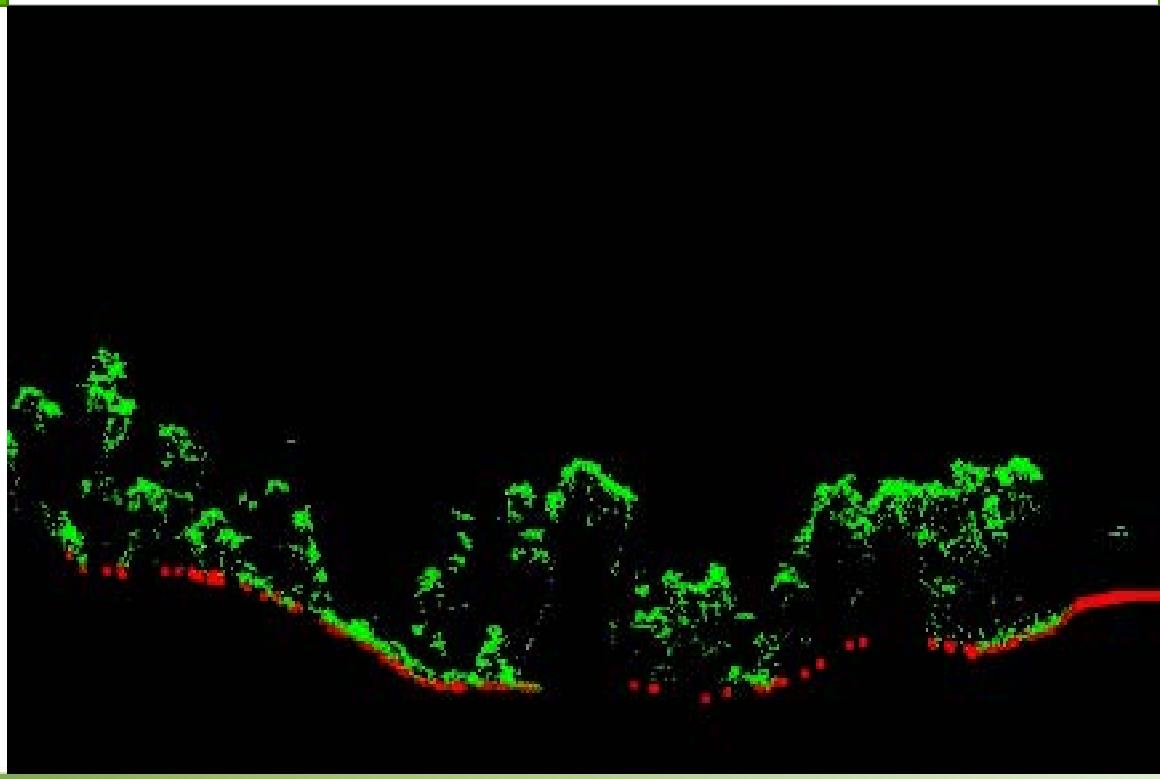
Our Approach

Leveraging the Power of 3-D Data



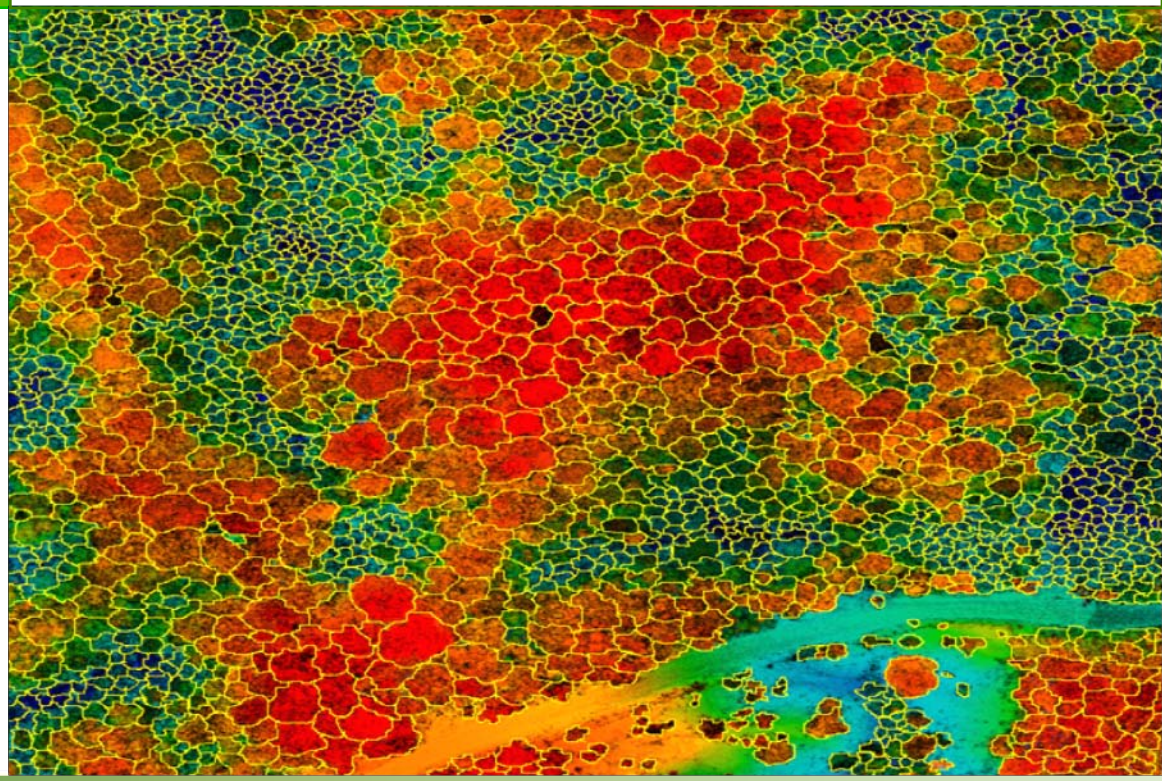
BASELINE INVENTORY

Remotely Sensed Data Collection



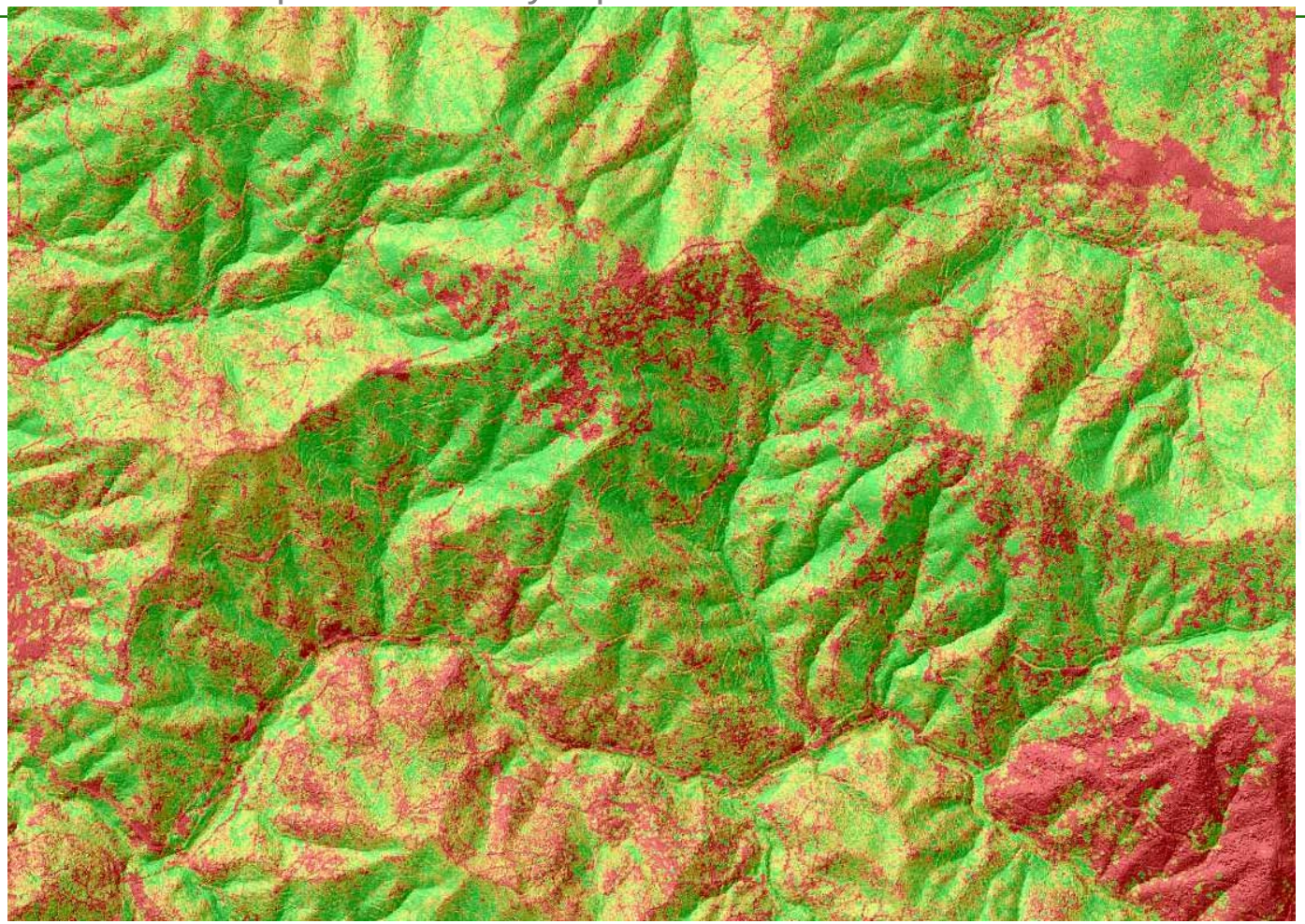
BASELINE INVENTORY

Feature Extraction & Digital Canopy Metrics



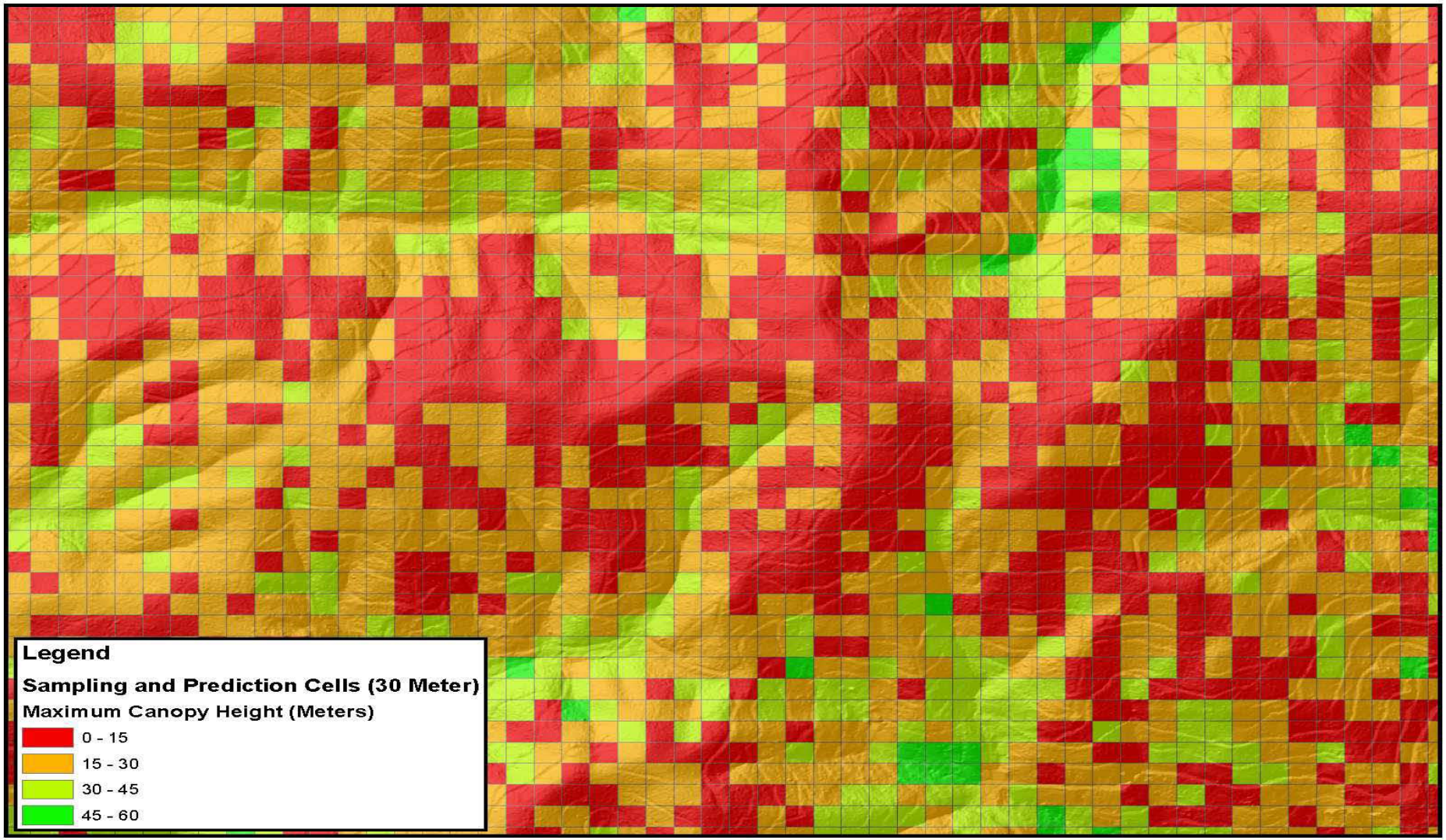
Leveraging the Power of 3-D Data

Digital canopy metrics generated from high resolution remotely sensed data allow for new methods of stratification which will improve accuracy & precision



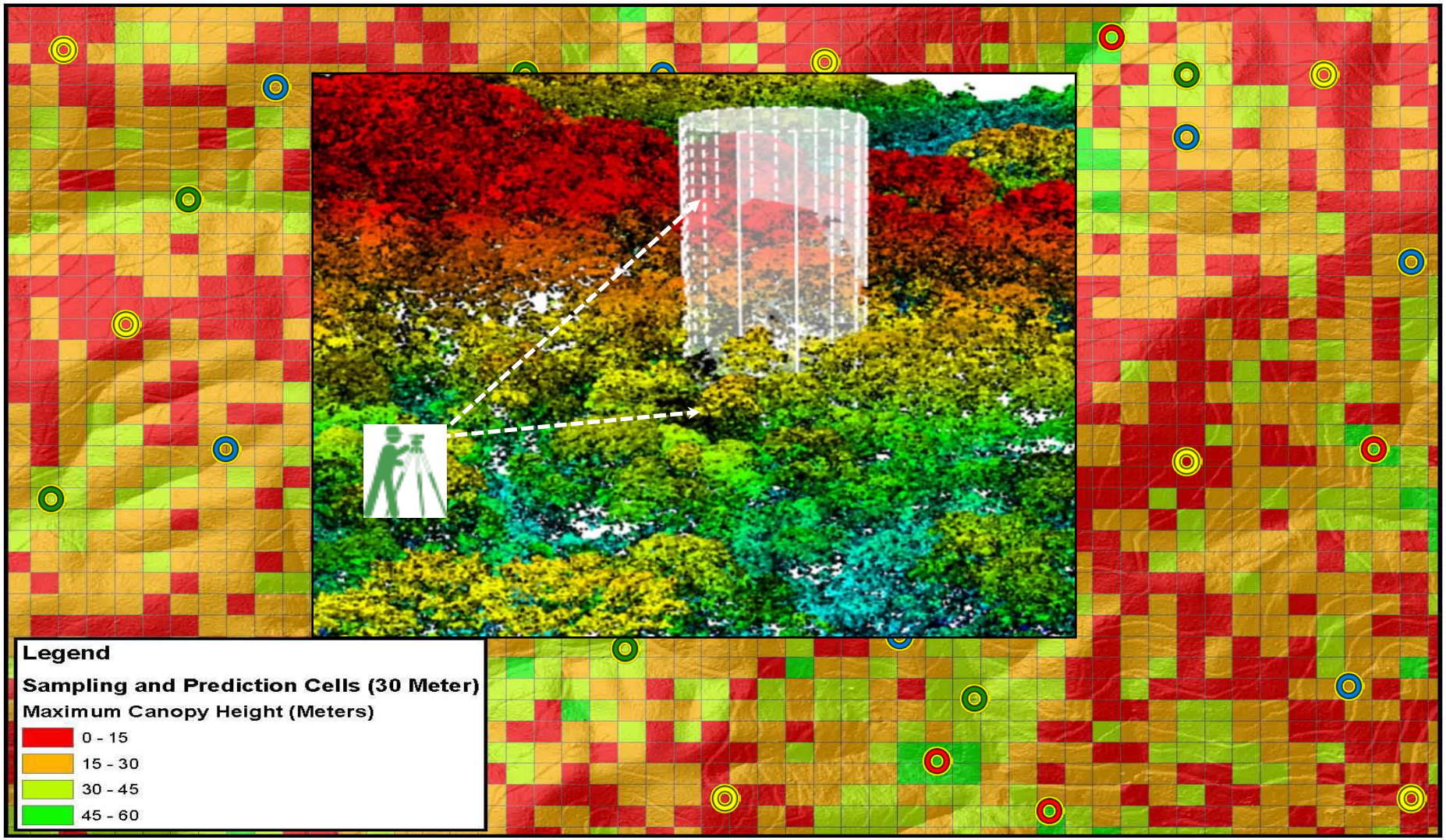
Leveraging the Power of 3-D Data

Cell Stratification using Digital Canopy Metrics



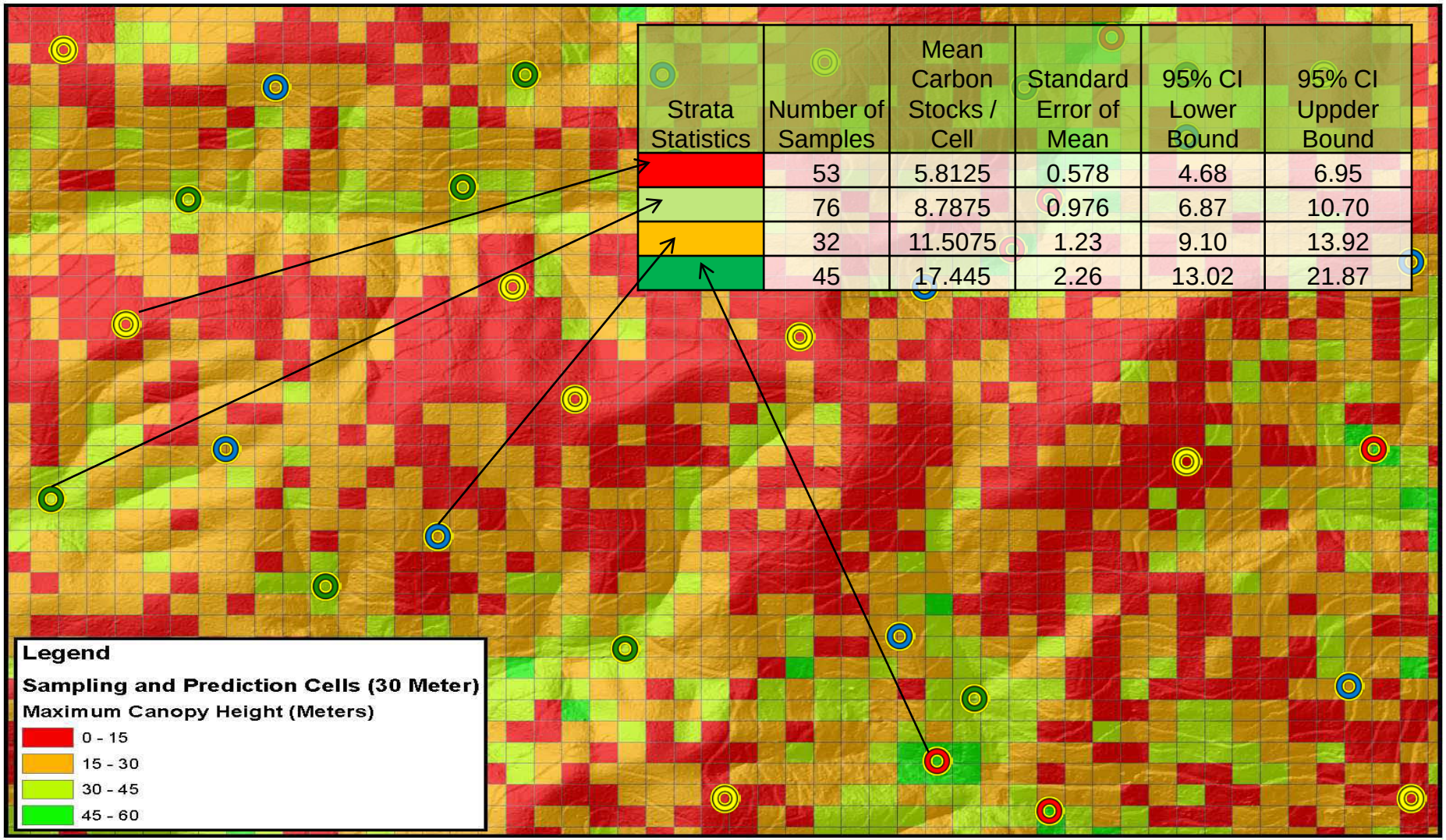
Leveraging the Power of 3-D Data

Statistical Sample Design within each Strata, then expanded



Leveraging the Power of 3-D Data

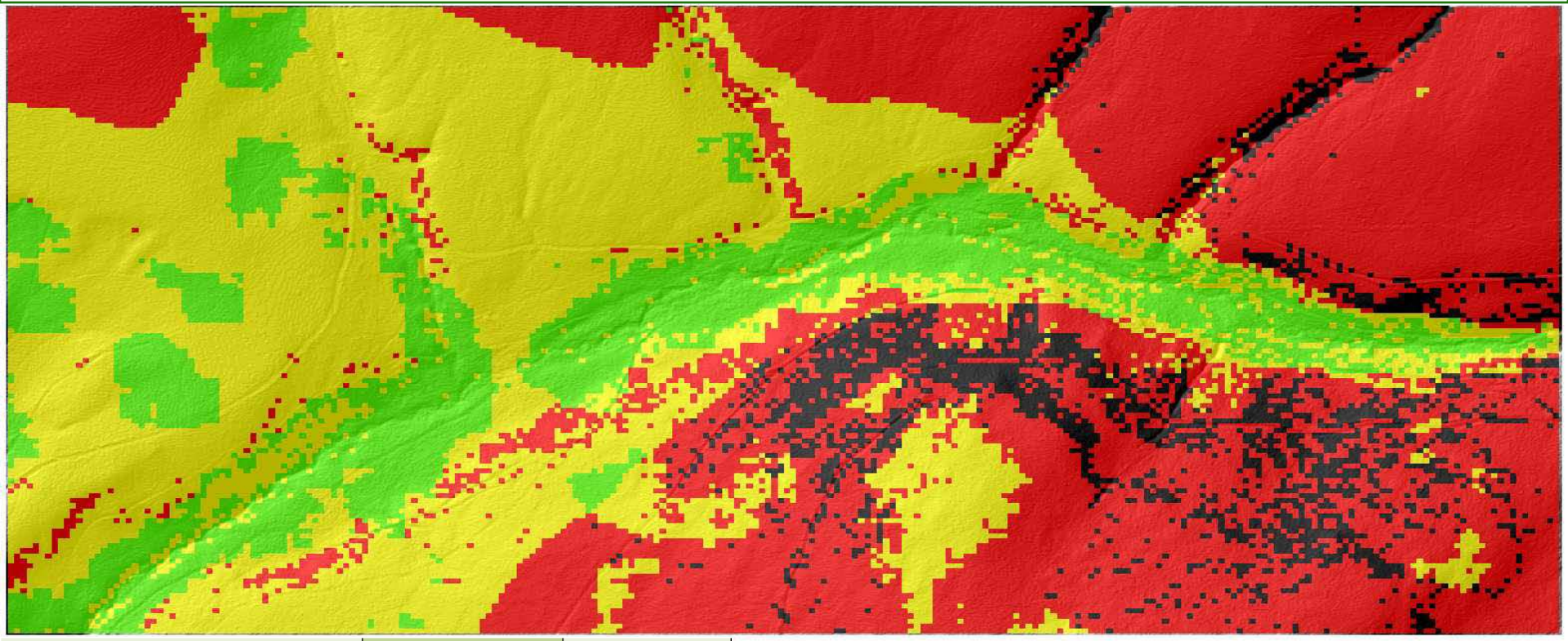
Statistical Sample Design within each Strata, then expanded



Resource Managers are used to working with Imagery & GIS
But NOT the combined power of Digital Canopy Metrics provided by LiDAR

Leveraging the Power of 3-D Data

Quantifying non-Carbon Forest Attributes: **Habitat Suitability**

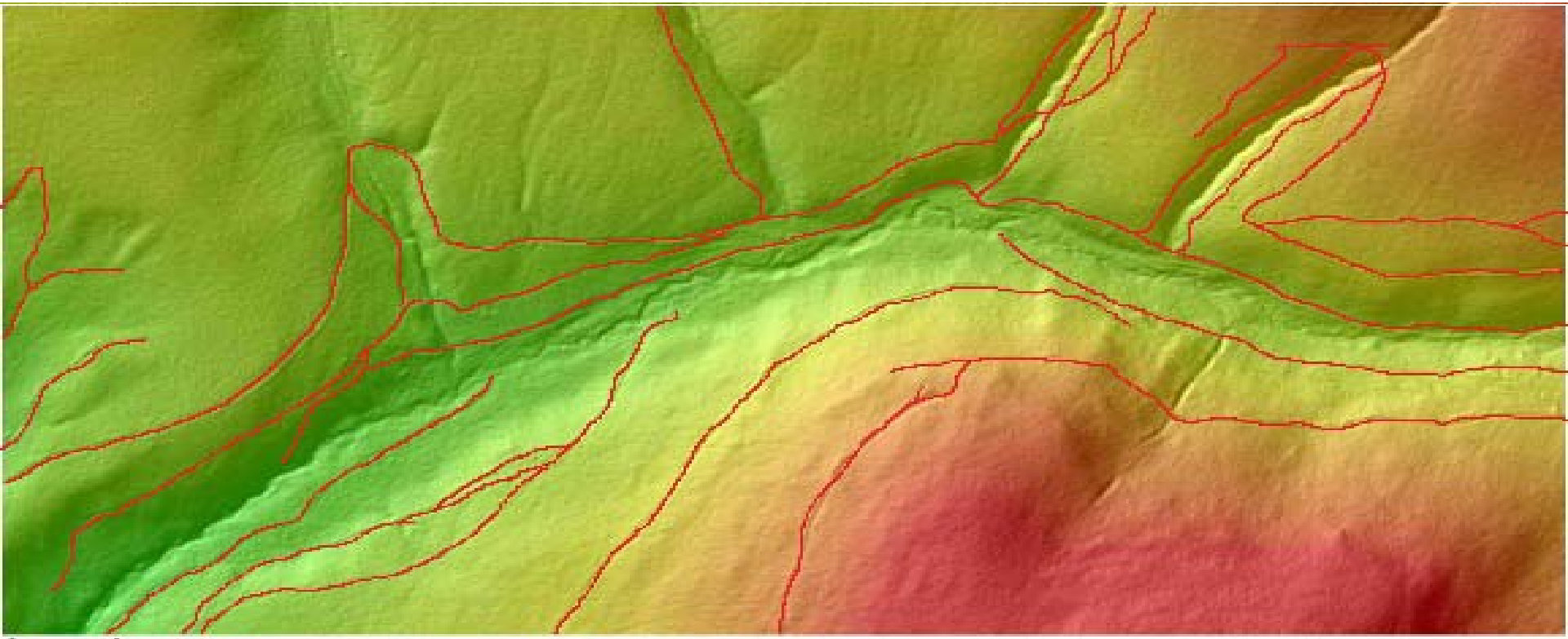


Legend	Suitability Model	Map Area Displayed: Acres by Suitability Type	Map Area Displayed: Percent by Suitability Type	Project Area Total: Acres by Suitability Type	Project Area Total: Percent by Suitability Type
	None	0.15	7%	72.3	36%
	Low	0.78	36%	86.5	43%
	Medium	0.75	34%	34.9	17%
	High	0.51	23%	8.2	4%
		2.19	**100%**	**201.9**	**100%**

Example: Tree Height > 20 ft.
Slope <20 %
Elevation < 3,600 ft.
Canopy variability STD >20

Leveraging the Power of 3-D Data

Quantifying non-Carbon Forest Attributes: Hydrology & Road Networks



Legend

Digital Elevation Model

Feet

High : 3960

Low : 3415

Input values for Hydrology models

Finding existing & abandoned road networks beneath the canopy

Value Proposition

- Highest Level of Precision & Accuracy Available
- Spatially Enabled, Scalable & Transparent
- Forest Inventory, Carbon & Biofuels, Habitat & Watershed
- Reporting, Auditing & Verification Efficiencies
- Single Platform for all users
- Most Cost Effective Solution at Scale
- Potential to Create a Whole New Class of Jobs and Transition Paths Toward a Green Economy

Why Haven’t We Done This Already?

- Lack of Understanding of Potential
- Inter-Agency / Private Landowner Coordination
- Perception that Current Practices are “Good Enough”
- Funding
- Leadership

An EcoSystem Infrastructure For Land Management

Thank You

Chuck Anderson
Vice President of
EcoMarket Development