LANDMARK
Spatial Solutions, LLC

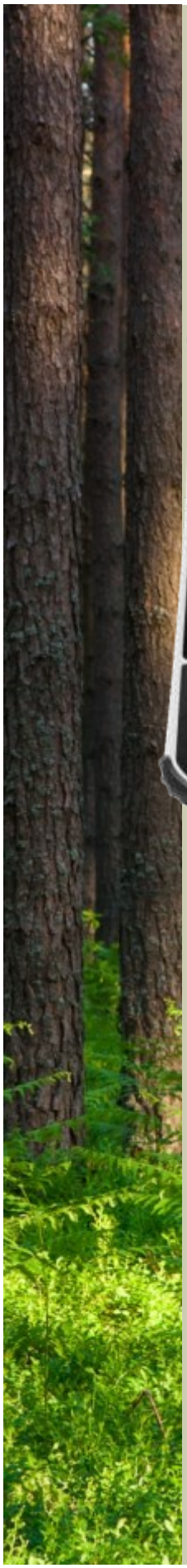
INTRODUCTION

Thank you for your interest in **LandMark Spatial Solutions**. Our simple goal in business is to help companies like yours become more profitable through the use of technology. We have developed industry-leading **GPS and Forest Inventory** solutions that are helping our clients minimize errors and be **more ACCURATE** in their acreage and timber volume estimations, tree count, and tree measurements, be **more EFFICIENT** in the field and office, and achieve **more PROFESSIONAL results** at the end of the day. Please keep reading if you need help or are interested in any of the following areas:

- Using a GIS to help manage and inventory your forest and make better maps
- Using GPS under dense forest canopy to get accurate acres and navigate to cruise plots
- Cruising more timber per day
- Getting accurate tree heights and borderline tree measurements
- Electronic Load Ticketing and Reporting to expedite weekly reconciliations
- Fast and Accurate Chip pile and log deck estimations

For the past 15 years, we have been helping design, sell, train, and support technology-based solutions that have helped over 1400 forestry and resource management companies and agencies all across the US be more competitive and profitable. We have formed significant partnerships with companies that make rugged and compelling products that integrate together to form our solutions. Most recently, LandMark Spatial Solutions has begun supporting and working with all of the former clients of Forestech Resource Solutions located in the Northern US.

We appreciate you taking the time to read this document and believe it will be well worth the effort. If you have any questions, would like to talk to us, or would like for us to come and show you what our solutions can do for you, please do not hesitate to contact us via the information on the last page. Thank you very much.



IF YOU BUY TIMBER,

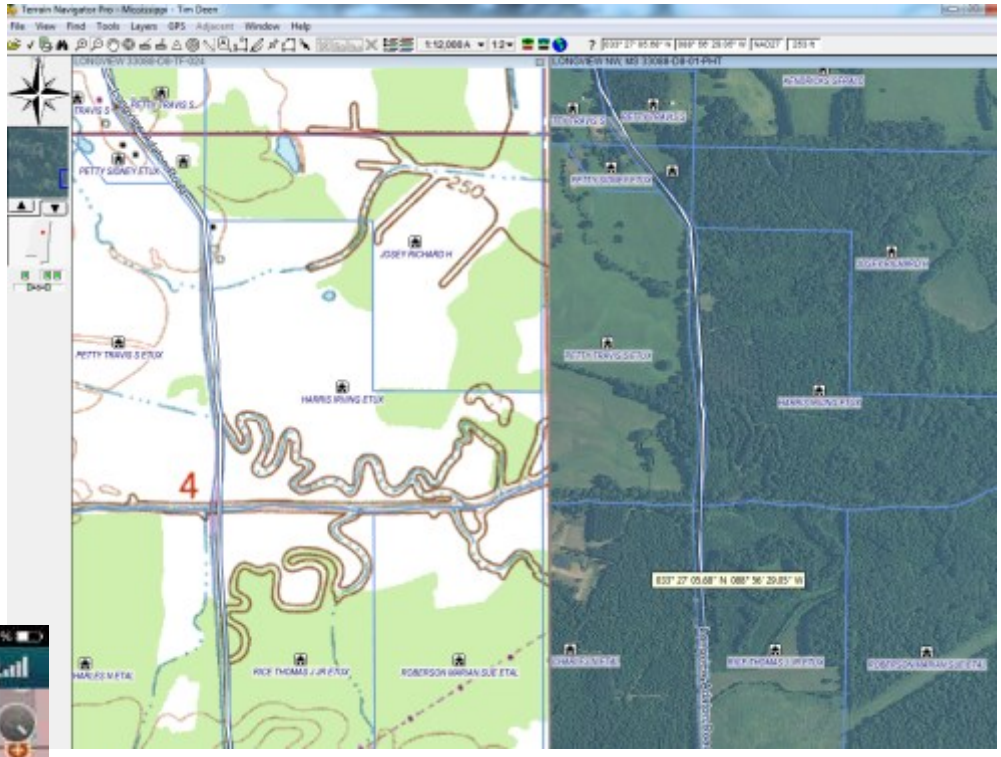
the **first** and most important way we can help you is to **eliminate most of the variability and uncertainty in your bids or negotiations caused by acreage estimation**. Week in and week out, our solutions are helping our customers accurately estimate acres in stands, SMZs, roads, bug spots, etc. For example, if you bought 2000 acres worth of timber next week with an average value of $1500/acre and our GPS equipment helped you be even 1% more accurate in your acreage estimates, you could either save money by not buying 20 acres of timber that wasn't there but still cost you $30,000 or you could be more successful in your procurement by increasing your bids to match the total volume of timber that actually was there. In most cases, our equipment can help you be even more accurate than 1%, so the savings are even larger. Either way, our customers tell us that most systems pay for themselves in the first 4 sales, and that **using GPS for acreage determination is the fastest return on any investment that they have ever had**. Moreover, we have solutions that work very well under any forest canopy so you don't have to sacrifice productivity for accuracy. Just how accurate are we talking about? In a large, 3 state GPS test, our 1-3 meter GPS solutions averaged 0.9% difference from survey acres on stands that were an average of 33 acres. If you have tried to use GPS in the past and are frustrated by not being able to track satellites under canopy or by having to post-process your data before you know your acreage, you need to try one of our systems. They work!!

A **second** way our solutions can help you is to **be more efficient in how you cruise.** Our RTI system allows you to use GPS to navigate to your cruise plots so you can take the path of least resistance and avoid thick, brushy areas. Moreover, RTI lets you see both your data as you collect it and yourself moving on top of digital photos or topos in the field instead of having to guess where you are on a paper map. Recently, one company told us that they were able to cruise an area in 5 hours that would have normally taken them 1.5 days. Our systems also give you the ability to quickly tally or enter cruise data in the field on a plot by plot basis, eliminating the need to reenter it in the office and giving you a better estimate of the variability in your cruises.

Back in the office, we can help you generate cruise volumes and make great-looking maps in a few clicks of the mouse. There's more about RTI on page 5.

Terrain Navigator Pro with Parcel Data

Besides GPS, we also carry a great mapping program called Terrain Navigator Pro. This application is available on a state by state basis and includes multiple years of NAIP photography, high quality topo maps, Google Earth high res imagery, and an option to include parcel boundaries and ownership info for $100/state. If you are a procurement forester, this application is a dream come true because you can easily look to see not only how big a tract is, but also who owns it and who you might need to cross to get to it. (Note: For most states in the Southeastern US, we have 100% coverage, but for some, the ownership data is limited to the counties that have digital tax maps already available.)



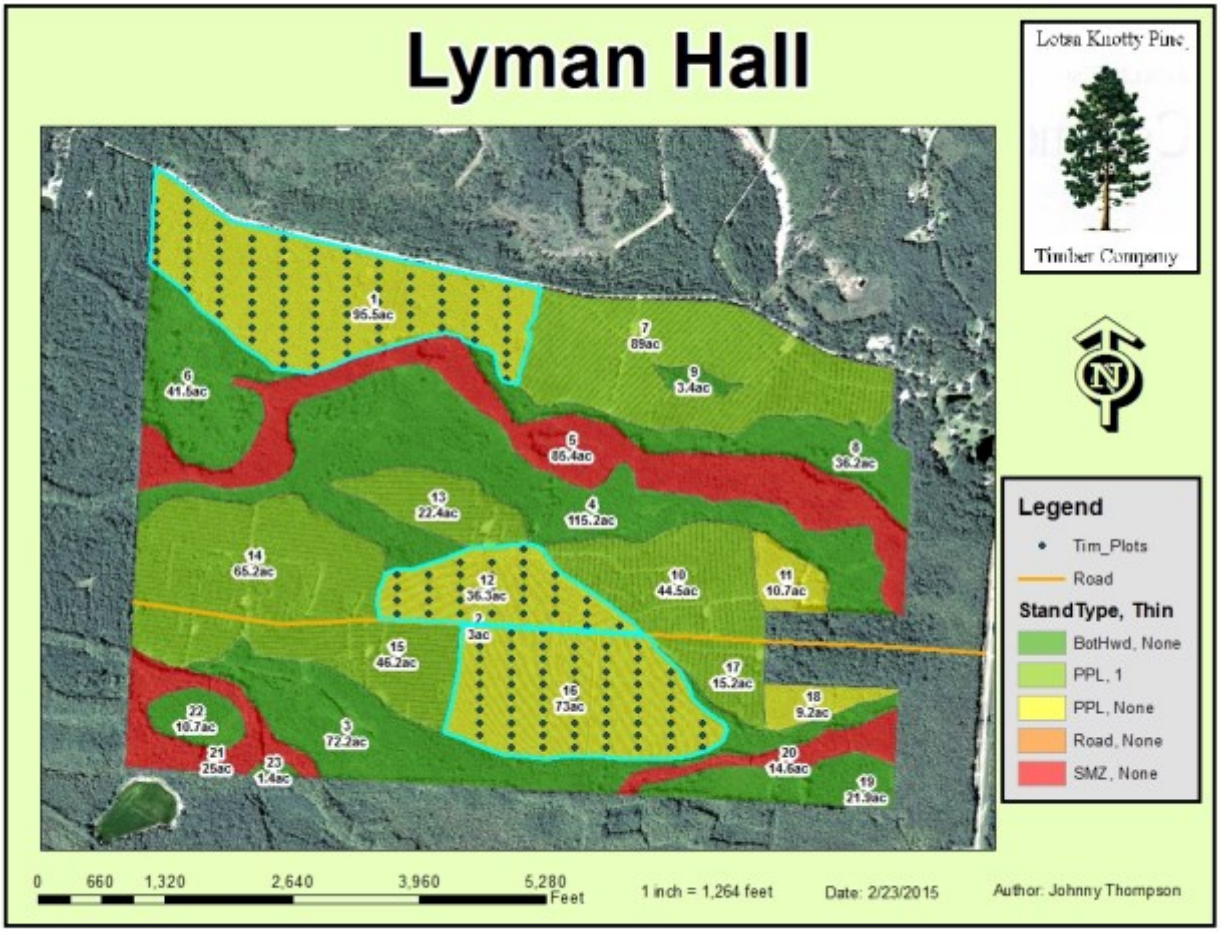
Included with your annual subscription to the TNP desktop program is a mobile login for the TNP mobile app that works on any iOS or Android device. This allows you to automatically sync your PC maps with your phone or tablet computer and sync any GPS data you collect in the field back to your office projects. For an extra $100, you can also purchase an SD card and load the TNP topos and parcel data on your phone or tablet for use in the field in connected or disconnected environments.

Call us for a TNP web demo.

IF YOU MANAGE TIMBER,

we can teach you have to make meaningful maps that tell a story and deliver constructive info to your clients. Our SilvAssist toolbar, featured on Page 8, gives any forester the opportunity to turn ArcGIS into a Spatial Inventory Management System, complete with stand delineation, plot allocation, inventory reporting, stats, and stand event management routines. Our GPS systems allow you to take your GIS layers to the field and map out accurate acres on site prep, food plots, smzs, roads and other silviculture applications.

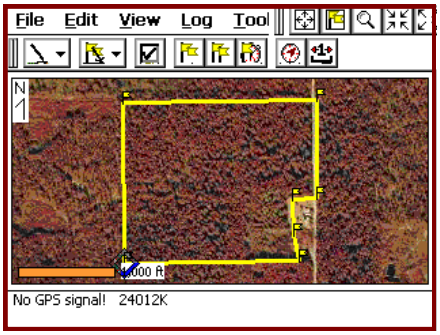
ArcGIS is the industry standard GIS program, and the current version allows you to stream in high-res photos, topos, road layers, and hundreds of other layers from ESRI's warehouse of GIS info on ArcGIS Online. You can even upload your data to the cloud and make meaningful maps that your clients can download and use on their mobile devices.

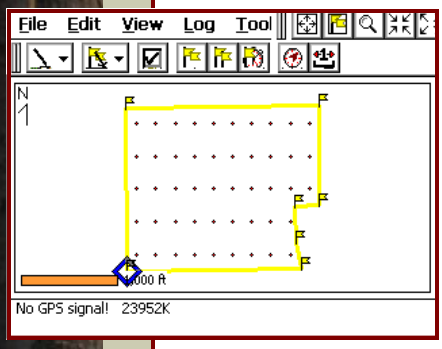


WHAT IS REALTIME INVENTORY?

F4 Tech's premier product is **RTI**, or RealTime Inventory. In a nutshell, RTI is the integration between the industry-leading, field inventory software, TCruise, and Trimble's GPS data collection/verification software, Solo Forest. It is the **only** forestry solution that allows you to do both GPS and inventory work on the same data collector and have the data from both programs linked to each other. It is a patented process, so there won't be anything else like it for a long time. Here's how RTI works.

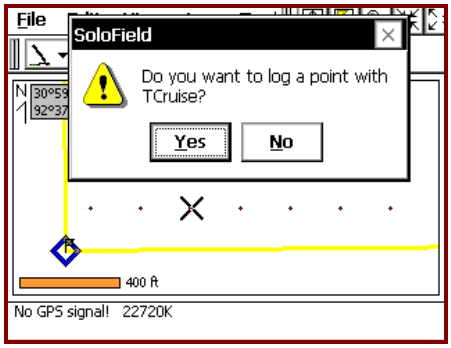
1. Create a Stand Boundary—This can be done in the office **or** field by digitizing on a photo, **or** by using our GPS systems to traverse the stand in question.

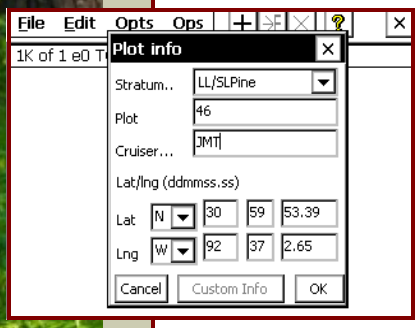




2. Create a Cruise Grid—In the office or field, you can specify the grid spacing and orientation and even begin the grid 1/2 the distance over and up from a known corner.

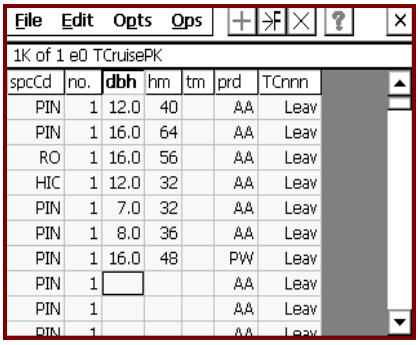
3. Navigate to a Plot—Select which plot you want to go to and use GPS to navigate there. When you get within a specified distance from plot center, Solo Field will automatically alert you that you are near plot center and ask you if you want to collect data with TCruise.





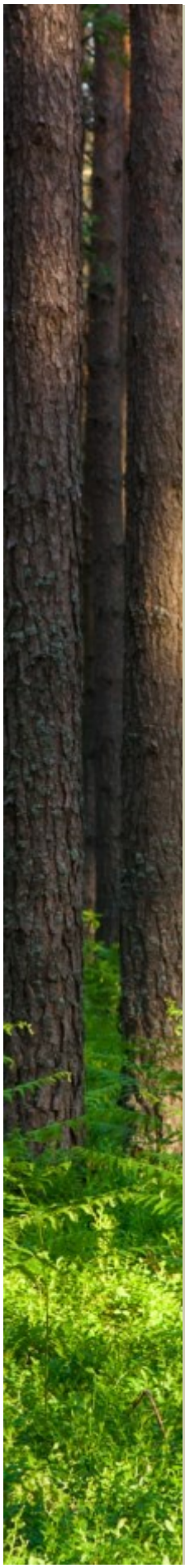
4. Enter Plot Data—If you answer "YES", a link will be established between SoloField and TCruise, the plot ID and Lat./Long. will be sent to TCruise, and you will be automatically "switched" to TCruise. You can then enter Plot Info and then go to the data entry screen.

5. Enter Tree Data—The last step is to tally the trees and save the plot in TCruise. You can enter trees in a tally card or spreadsheet format, both of which have your species, products, and merchandizing specs built in to them. Your products will be automatically assigned by dbh unless you override and assign them manually.



spcCd	no.	dbh	hm	tm	prd	TCnnn
PIN	1	12.0	40		AA	Leav
PIN	1	16.0	64		AA	Leav
RO	1	16.0	56		AA	Leav
HIC	1	12.0	32		AA	Leav
PIN	1	7.0	32		AA	Leav
PIN	1	8.0	36		AA	Leav
PIN	1	16.0	48		PW	Leav
PIN	1				AA	Leav
PIN	1				AA	Leav
PIN	1				AA	Leav

6. Do It Again—When you finish the first plot, you simply go back to Solo Forest, select the next plot and keep going. All cruised plots are marked in Solo Forest as "Visited".

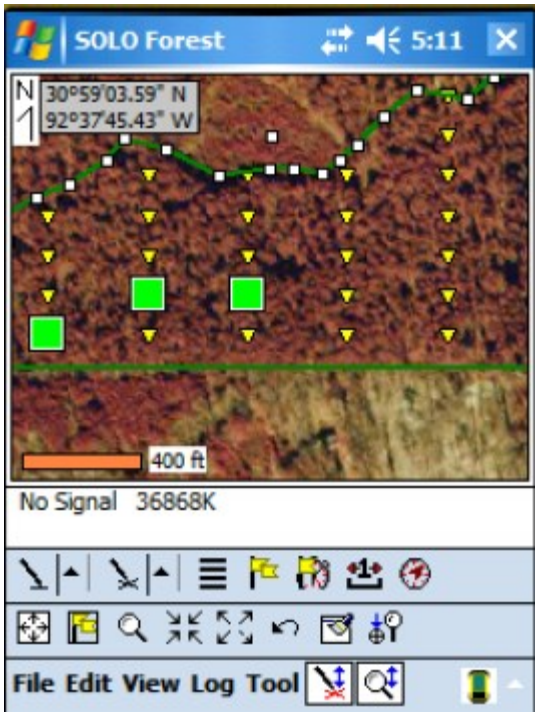


WHAT ABOUT OUR SOFTWARE?

We have integrated 2 fully independent software programs to create RTI. If you only want to do GPS, you only have to buy Solo Forest. If you only want to cruise timber, you only have to buy TCruise. If you want to do one now and add the other on later, it is simply downloading another program to your field computer and getting trained.

WHAT DOES SOLO FOREST DO?

In our opinion, Trimble's Solo Forest software is the **BEST** GPS data-collection software on the market today. It is very easy to learn and has intuitive menus and dialog boxes like your Windows system. The following is a partial list of what you can do in Solo Forest:

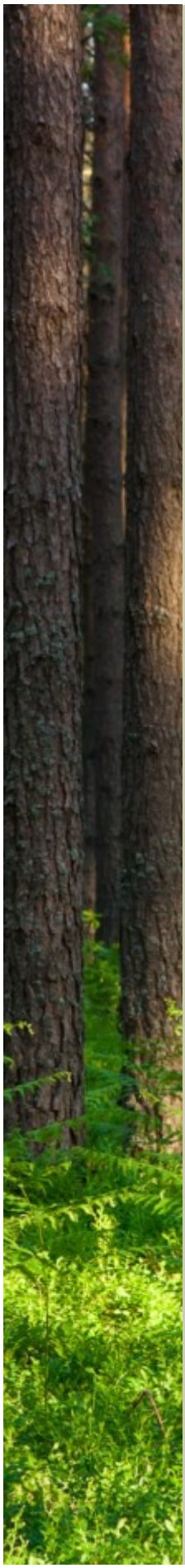


· Map points, lines and areas
· View data as it's collected
· Map offset points, lines and areas
· View static "spread" as the data is collected
· Log dynamic features by time or distance
· Log lines/areas statically, dynamically or both
· Average point data
· Edit data in the field
· Quick in-field calculation of distances and areas
· Heads-Up-Digitize in the field
· Create custom cruise grids in the field
· Navigate to plots using GPS
· Direct data export to shapefiles, DXF or ASCII
· Send plot ID and Lat/Lon to TCruise in the field
· Split and merge polygons and create buffer zones in the field
· Display shapefile, photo, or topomap basemaps and position yourself on them

WHAT DOES TCRUISE DO?

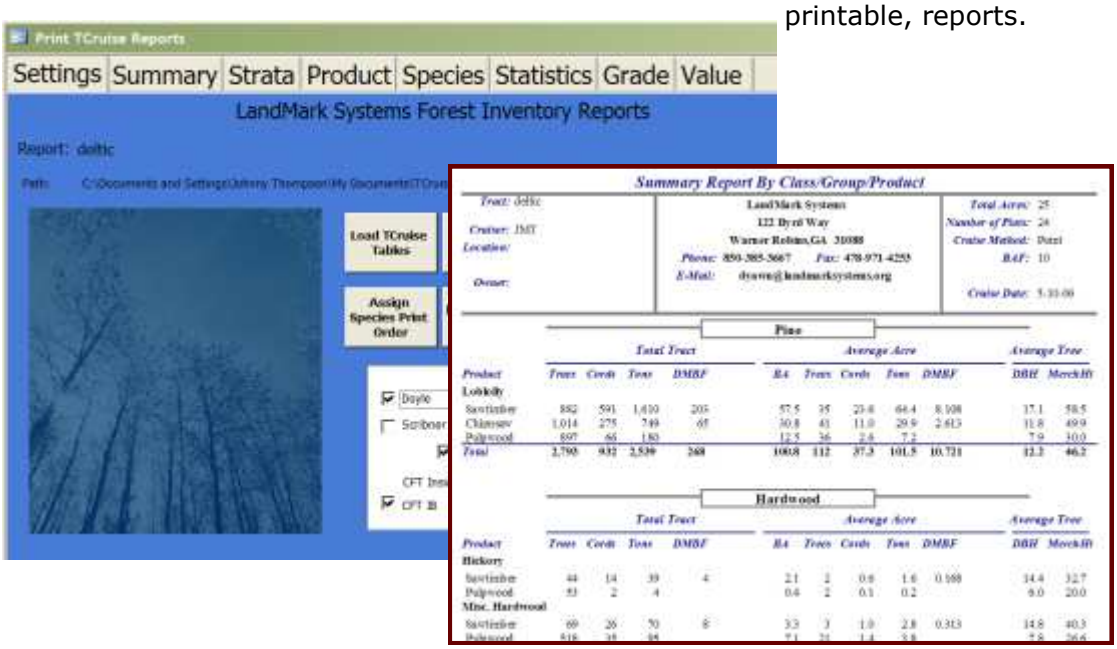
In our opinion, TCruise is the **BEST and Most Complete** cruising software on the market today. It is powerful and very flexible. The following is a partial list of what you can do with it:

· Specify an alpha/numeric species code up to 5 characters in length
· Auto-assign products based on DBH classes, eliminating the need for specifying product
· Perform any plot, point, double-point (VBAR), 100%, strip, or stump cruising method
· Turn any columns on or off
· Automatically perform height subsampling
· Use built-in profile functions for over 100 species or user-defined equations
· Define capabilities for DBH-Merchantable height equations, DBH growth equations, Form Class equations, or stump diameter to DBH equations
· Specify stand, tract or any strata and a unique plot ID for each plot
· Generate custom reports and a variety of industry-standard reports
· Generate value reports and statistics based on user-defined prices
· Conduct multi-product grading of individual trees
· Collect age and growth information for site index and growth calculations
· Automatically do in-field error checking
· Accept Lat/Lon and plot ID for each plot from Solo Forest
· Conduct audit or remeasurement cruises
· Automatically export all data to Access with our LandMark Export Module
· Calculate tree or log average cruises



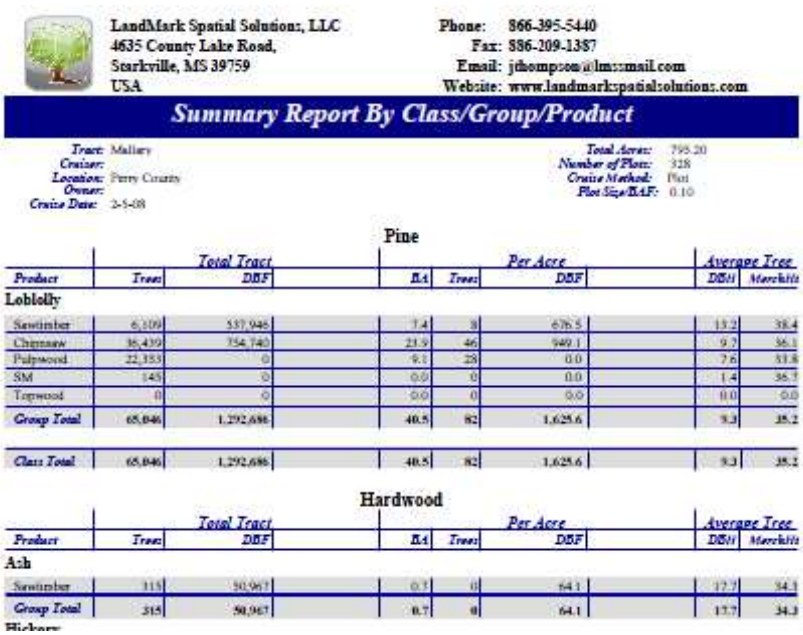
Non-Spatial Reporting Options

LandMark TCruise Reports— Access-based reporting module that formats simple, printable, reports.



HAGLOF MANAGEMENT SYSTEM

For those that do not need ArcGIS, we offer a great TCruise + Inventory Reports + Map making module called Haglof Management System. This simple-to-learn and easy-to-use program allows you to digitize stands on photos, allocate cruise plots, crop out basemap layers for use in Solo, print simple maps, and run about 20 preformatted reports. Here is an example of a Summary by Class/Species Group/ and Product.



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Summary Report By Class/Group/Product

Tract: Mallary
Cruiser:
Location: Perry County
Owner:
Cruise Date: 2-5-08

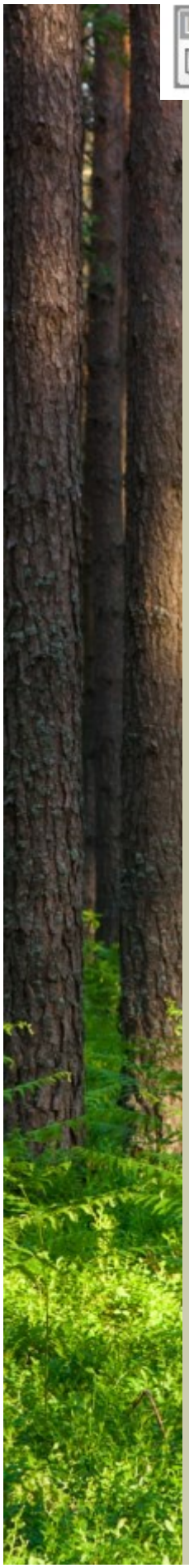
Total Acres: 795.20
Number of Plots: 328
Cruise Method: Plot
Plot Size/BAF: 0.10

Pine

Product	Total Tract Trees	Total Tract DBF	Per Acre BA	Per Acre Trees	Per Acre DBF	Average Tree DBH	Average Tree Merch Ht
Loblolly							
Sawtimber	6,109	537,946	7.4	8	676.5	13.2	38.4
Chainsaw	36,439	754,740	23.9	46	949.1	9.2	36.1
Pulpwood	22,353	0	9.1	28	0.0	7.6	33.8
SM	145	0	0.0	0	0.0	1.4	36.7
Topwood	0	0	0.0	0	0.0	0.0	0.0
Group Total	65,046	1,292,686	40.5	82	1,625.6	9.3	35.2
Class Total	65,046	1,292,686	40.5	82	1,625.6	9.3	35.2

Hardwood

Product	Total Tract Trees	Total Tract DBF	Per Acre BA	Per Acre Trees	Per Acre DBF	Average Tree DBH	Average Tree Merch Ht
Ash							
Sawtimber	315	50,967	0.7	0	64.1	17.7	34.3
Group Total	315	50,967	0.7	0	64.1	17.7	34.3



SilvAssist 3.x Toolbar for ArcGIS

SilvAssist is a Forestry Toolbar designed by F4 Tech that works exclusively inside of ArcGIS. Here is what it can do:

Standard Tools

- **Plot Allocator**: a flexible batch tool for creating cruise or sample grids in polygons (stands, management units, etc).
- **Waypoint Creator**: allows user to create Solo waypoint files from points created in allocator.
- **Plot Loader**: a tool to load forest inventory tree and plot data into the geodatabase associated with stands
- **SilvAssist Reports:** using stands, plot and tree data loaded with Plot Loader, allows creation of standard reports through Crystal Reports and Excel pivot tables. Outputs can also be generated for specific client needs by strata or stand in Excel format using client stands and plot data.
- **Growth-n-Yield Utility:** Forest Vegetation Simulator (FVS) table creator so users can easily convert TCruise inventory data to the format for FVS, the U.S. Forest Service's free growth and yield program.
- **Event Management:** allows user to easily enter and historical stand data and future planned prescriptions and then track those events as they are accomplished.

EZ-Plot Toolbar for ArcGIS

LandMark Spatial Solutions is proud to announce our very own EZ-Plot Toolbar for ArcGIS. This easy-to-use solution for ArcGIS 9.x and 10.x provides inventory planners with the following tools for plot allocation and waypoint conversion:

- Work with Shapefiles or Feature Classes
- Allocate plots on one or multiple stands
- Specify units
- Specify chain by chain spacing, exact number of plots, or read the number of plots from the stand attribute table
- Control grid orientation, outputs, and anchor points
- Easily convert grids to Solo Waypoint files for use with RTI applications in TCruise

The price for the EZ-Plot Toolbar is $400 for one copy or $350 for two or more. Call us for a demo or to request a quote.

WHAT ABOUT OUR HARDWARE?

GPS CONFIGURATIONS

The 2 big decisions here are whether or not you want a numeric keyboard and how accurate you need to be. We have 1-3 meter or a sub-meter GPS systems. Most 1-3 m configurations perform similarly under canopy, and all of them either have built-in antennas or use built-in Bluetooth wireless technology to eliminate any wires from getting snagged on vines and briars.

1-3 Meter GPS OPTIONS

A. Nautix X8—This new rugged unit by the Handheld Group is significantly raising the bar on how to collect data efficiently in the woods. Right out of the box you can see it is different:
- Huge 4.7", sunlight-readable, capacitive touch screen that is chemically strengthened to prevent breakage and reduce downtime - IP 67 = RUGGED - USB Host, micro USB, and RS-232 ports for easy data transfer and external device integration - Lightning fast 1.5 GHz dual core processor (most other units only have 800 MHz) - Industry-leading 1 GB RAM (2-4 times what other units have) - 8 MP autofocus camera with LED flash - Accurate U-Blox GPS that averaged 3.5 meters off mark in our latest GPS test under dense canopy

B. Trimble T-41G—The T41 G uses SBAS and a GPS Accuracy Algorithm to provide dramatic improvement termed Enhanced GPS. Under the correct conditions, Enhanced GPS allows data collection with 1-2 meter accuracy in real-time, and using the GPS L1 band, offers reliable performance in reduced signal environments. The T1 series has a large 4.1" Gorilla Glass display that is virtually indestructible. This unit is perfect for those that want really accurate data, but cannot afford submeter.

C. Juniper Systems Archer 2– The Archer 2 GPS unit with integrated GPS+Glonass antenna has a large 4.1", high-visibility screen, a glove-friendly numeric keypad, a 20 hour battery, a 1 GHz processor, and a super rugged IP 68 rating. This handheld is very easy to use and see in all lighting conditions.

D. F4 Devices Forge Echo is the first forestry specific handheld ever developed. It is extremely rugged (IP67), has an internal GPS that tracks great under canopy, a 5 MP camera, 8 GB storage, an integrated **ULTRASOUND sensor** for determining distance from plot center (ie. works like a Haglof DME), and a **G-Sensor** for measuring heights digitally. This one-of-a kind unit is a true game-changer.

Sub-Meter GPS OPTIONS

A. Trimble 7 with Floodlight, combines **submeter** or decimeter GPS that tracks GPS and GLONASS with a high quality photo capture system into one rugged unit. This system lets you concentrate on what's important: collecting and maintaining high-quality data for your GIS. No cables or vests to wear, just you and the handheld! A great solution where accurate acreage is essential. The new 7 model also has an optional integrated laser rangefinder for the hard to reach locations.

B. Trimble PG200 - rugged, submeter, GNSS, external receiver that connects to Windows, Windows Mobile, iOS, and Android devices. The PG200 tracks the GPS and GLONASS constellations, and even allows operators to achieve global submeter accuracy real-time if they subscribe to optional cellular or satellite corrections.

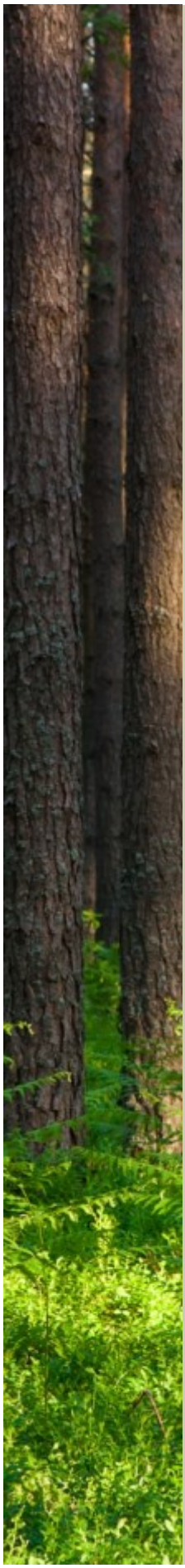
C. Juniper Systems Geode is a the newest sub-meter solution that we recommend for forestry applications. It works with Windows, Windows Mobile, and Android and really performed well in our latest GPS test under canopy. Call for pricing and info.

2016 LMSS Mapping Grade GPS Handhelds

2016 LandMark Spatial Solutions Mapping Grade Handheld Matrix

11/1/2016

LANDMARK Spatial Solutions, LLC	F4 Devices Forge 912 	Handhelds Nautiz X8 	Trimble Juno T41 C  25% off for limited time	Trimble Nomad 1050 B with Holux 	F4 Devices Forge 912 ECHO 	Juniper Systems Archer 2 Geo 	Trimble Juno T41 CG  25% off for limited time
Pros:	Numeric Keypad, Good GPS	Biggest screen, fastest processor, most RAM, Numeric Keypad, Best Warranty	Small size, Bigger Screen, Gorilla Glass Screen, Very Rugged	Brand new model of proven technology.	Numeric Keypad, Echo Location for borderline tree measurement, G-Sensor for tree height measurement	Numeric Keypad, Big Screen, Brightest Screen, GPS + Glonass, 20 hr battery, Fast Processor, Very Rugged	Most Accurate GPS, Big Screen, Fast Processor, Gorilla Glass Screen, Most Memory, Very Rugged
Cons:	Slower operation	Screen is sensitive to excess rain or sweat, but special case solves problem.	Less accurate GPS	Extenal Bluetooth GPS under Extended Cap	Slower operation	none	No numeric or directional keys.
Price:	$1,299	$1,399	~~$1499~~ $1124	$1,699	$1,699	$1,995	~~$2099~~ $1575
Processor:	800 MHz	1.5GHz, dual core	800 MHz	1 GHz, Texas Instruments DM3730	800 MHz	1.0GHz ARM Cortex A8 i.MX53 processor	1 GHz, Texas Instruments DM3730
Internal Memory	8 GB Non-volatile Flash	4 GB Non-volatile flash	8 GB Non-volatile flash	8 GB Non-volatile Flash	8 GB Non-volatile Flash	8 GB Non-volatile flash	32 GB Non-volatile flash
RAM	512MB	1 GB	512MB	512MB	512MB	512MB	512MB
Display Size/Type	3.5" Color LCD Transmissive, 480x640 Full VGA , resistive touch	4.7" FWVGA capacitive touch display, chemically strengthened glass	4.3" WVGA sunlight-readable Corning® Gorilla® Glass display	3.5" Color Full VGA, , resistive touch	3.5" Color LCD Transmissive, 480x640 Full VGA , , resistive touch	4.3" WVGA LCD TFT (800x480) High visibility backlit LCD, Scratch-resistant, capacitive touch	4.3" WVGA sunlight-readable Corning® Gorilla® Glass display, capacitive touch
Camera:	5MP Auto focus	8 megapixel camera with autofocus and LED flash	8 megapixel camera with geo-tagging and dual LED flash	None	5MP Auto focus	5MP autofocus	8 megapixel camera with geo-tagging and dual LED flash
IP Rating:	IP 67	IP 67	IP 68	IP 68	IP67 with Plug, 65 without	IP 68	IP 68
Standard Warranty:	2 years	1 Year	2 Years	1 Year	2 years	2 years	2 years
No Down Time Warranty:	Yes	No	No	No	Yes	No	No
Extended Warranty:	$595 for 2 years	$329 for 3 years - Includes Accidents	$487	$438 for 2 years	$775 for 2 years	$390 for 2 years	$487 for 2 years
Battery	Li-Ion 11.1v, 3800mAH	Li-Ion 11.1 V, 2500 mAh	Li-Ion 11.1 V, 2500 mAh	Li-Ion, 5200 mAh	Li-Ion 11.1v, 3800mAH	Li-Ion 3.7VDC 10600mAh	Li-Ion 11.1 V, 2500 mAh
AC charge time:	4 hours	4 hours	4 hours	4 hours	4 hours	2 -4 hours	4 hours
Battery life:	9-11 hours	12 hours	8-10 hours	15 hours	9-11 hours	up to 20 hours	8-10 hours
GPS Receiver Type	UBLOX 52 channel L1, C/A Code	UBLOX	UBLOX L1, C/A Code	MTK MT3329, 66 channel L1, C/A Code	UBLOX 52 channel L1, C/A Code	NVS Tech NVS08C 32 channel High-sensitivity GPS/GLONASS receiver - L1, C/A code	UBLOX L1, C/A Code, with Additional Ground Plane Antenna
SBAS:	WAAS, EGNOS, MSAS, GAGAN	WAAS, EGNOS	WAAS, EGNOS	WAAS, EGNOS	WAAS, EGNOS, MSAS, GAGAN	WAAS, EGNOS	WAAS, EGNOS
Accuracy (Autonomous)	1-3 meters	1-3 meters	2-5 meters	>3 meters	1-3 meters	2-4 meters	1-3 meters
Accuracy with SBAS (Open Sky):	1-3 meters	1-3 meters	2-4 meters	>3 meters	1-3 meters	2-4 meters	1-2 meters
GPS Filtering	Yes	Yes	N/A	None	Yes	Yes	N/A
Echo Location:	No	No	No	No	Yes	No	No
Intergrated 1D or 2 D Laser Scanner:	No	No	No	No	No	No	Optional
G-Sensor Height Measurement:	No	Yes	No	No	Yes	No	No
Measurements (in):	7.9 in x 3.7 in x 1.7 in	7.5 in x 3.1 in x 1.3 in	6.1 in x 3.2 in x 0.9 in	6.9 in x 3.92 in x 1.96 in	7.9 in x 3.7 in x 1.7 in	7.25 in x 3.6 in x 1.5 in	8.26 in x 3.2 in x 1.26
Weight (oz):	15.6 oz	17.3 oz	13.5 oz	25 oz	15.6 oz	19 oz	16.7 oz
Ports:	MiniUSB, headphone jack, 9 pin Serial	Micro USB, USB Host, 9 pin Serial, headphone	3.75mm audio jack, MCX GPS antenna port, custom port that supports USB 2.0 Host, USB Client	Mini USB, Host USB, headphone jack	MiniUSB, headphone jack, 9 pin Serial	Micro USB, USB Host, 9 pin Serial, headphone	3.75mm audio jack, MCX GPS antenna port, custom port that supports USB 2.0 Host, USB Client
Additional memory	MicroSD Card up to 32GB	MicroSD Card	MicroSD Card	SD and CF Card up to 32 GB	MicroSD Card up to 32GB	MicroSD Card	MicroSD Card
802.11	802.11 b/g 54 Mb/s	802.11 b/g/n	802.11 b/g/n	802.11 b/g 54 Mb/s	802.11 b/g 54 Mb/s	802.11b/g/n with extended range	802.11 b/g/n
Bluetooth:	Class II, v2.1 EDR	Class 2.1 with Enhanced Data Rate	Class 2.1 with Enhanced Data Rate	Class II, v2.0 EDR	Class II, v2.1 EDR	Class 1.5, v 2.1 EDR	Class 2.1 with Enhanced Data Rate
Operating System:	Windows Embedded Handheld 6.5	Windows Embedded Handheld 6.5 or Android	Windows Embedded Handheld 6.5	Windows Mobile 6.5	Windows Embedded Handheld 6.5	Windows Embedded Handheld 6.5.3	Windows Embedded Handheld 6.5 or Android
Operating Temp.:	-4 to 140F	-22 ºF to 140 ºF	-22 ºF to 144 ºF (-30 C to 60 C)	-22 to 140F	-4 to 140F	-22 F to 144 F	-22 ºF to 144 ºF



WHAT ABOUT CRUISING TOOLS?

Haglof EC-II Clinometer

A revolutionary technique allows you to measure the heights and inclination that you need, using an instrument so small, that you will never notice carrying it. The New Haglöf Electronic II Clinometer features your measuring results directly in a display, processed by the instrument, eliminating any risk of calculation errors.

Haglof DME 360

The omni-directional capacity (360 degrees) makes the Vertex III instrument ideal for measuring fixed radius plots. By placing the transponder at plot center you are able to quickly and accurately determine if the object is "in" the plot. By allowing you to work the plot from the outside in, your production per plot is greatly increased not to mention eliminating the error of misjudging "borderline" trees.

Haglof Vertex 360 Hypsometer

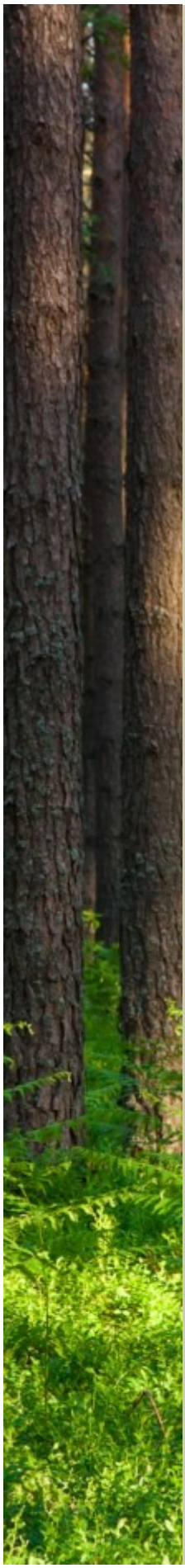
Vertex III-60, fasten the T3 transponder to the tree at any height, walk a distance of your choice and measure up to six different heights on the tree. With the new "Reverse Prism" function you are able to use the Vertex III on prism cruises as well. By selecting one of the built in BAF's you are able to be at the tree and determine its minimum diameter to be included in the point. This function allows you the ability to Prism cruise on tracks with thick underbrush that you could not do with a standard prism.

Haglof Vertex Laser VL5

With the proven accuracy of the Vertex hypsometer and the advantages and speed of laser technology, this multi-functioning instrument is the only device you will need for your height, distance and angle measuring work. Measuring tree heights and plot radius in dense vegetation and rough undergrowth - perfect timing for the Vertex! When sighting is clear and you need to measure longer distances, the Laser method is superior in speed and simplicity. The NEW VL5 unit has an improved laser that can now measure close trees and far trees with greater accuracy.

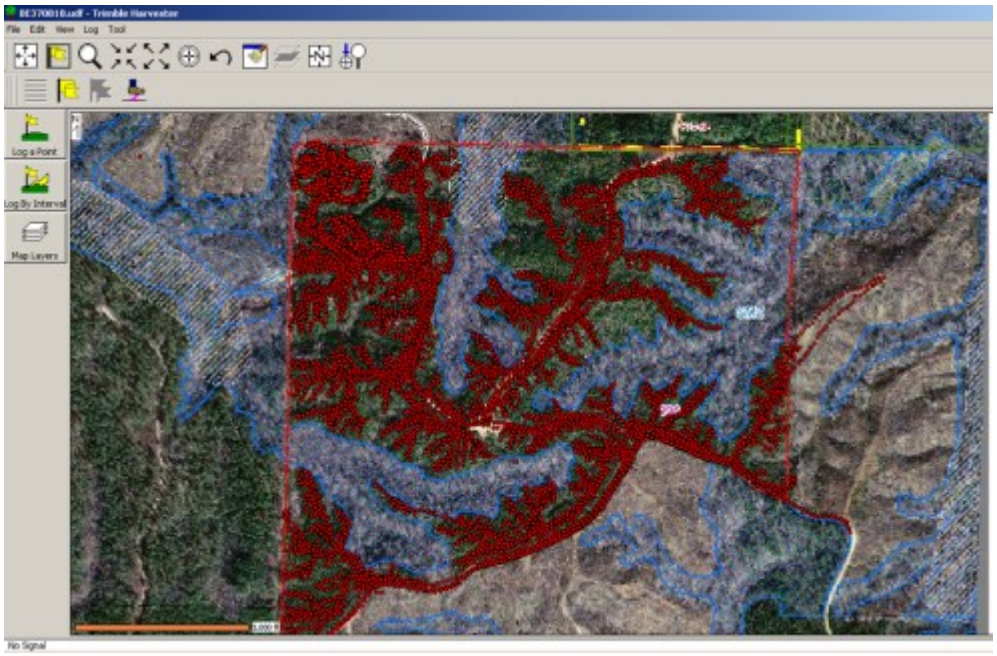
LTI Trupulse Laser (200 and 360B)

Compact and lightweight, the TruPulse™ 200 features "thru-the-lens" viewing so you know the laser energy is traveling directly along your line of sight. Because measurements are shown in the display, you never have to take your eyes off the target! Take distance measurements up to 3,280' (1,000m) away without a reflective target. An integrated tilt sensor allows you to measure horizontal or vertical distance and calculate an object's height instantly by using the built-in three-shot routine.



TimberPilot for GPS Harvesting

TimberPilot provides a 7" tablet display of the harvest site and helps improve harvest efficiency and accuracy by displaying the cutting machine location in relation to tract boundaries and other environmentally sensitive areas (such as streamside management zones). TimberPilot will give both an audible and visual alert to the cutter operator if the cutting machine encroaches on an area where it should not go. TimberPilot has a immediate return on investment to loggers who use the system since cutting timber over property line boundaries or in restricted environmental areas often lead to high fines.

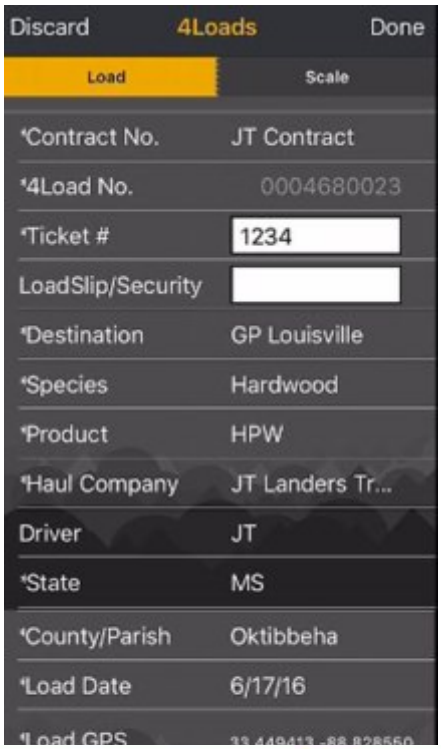


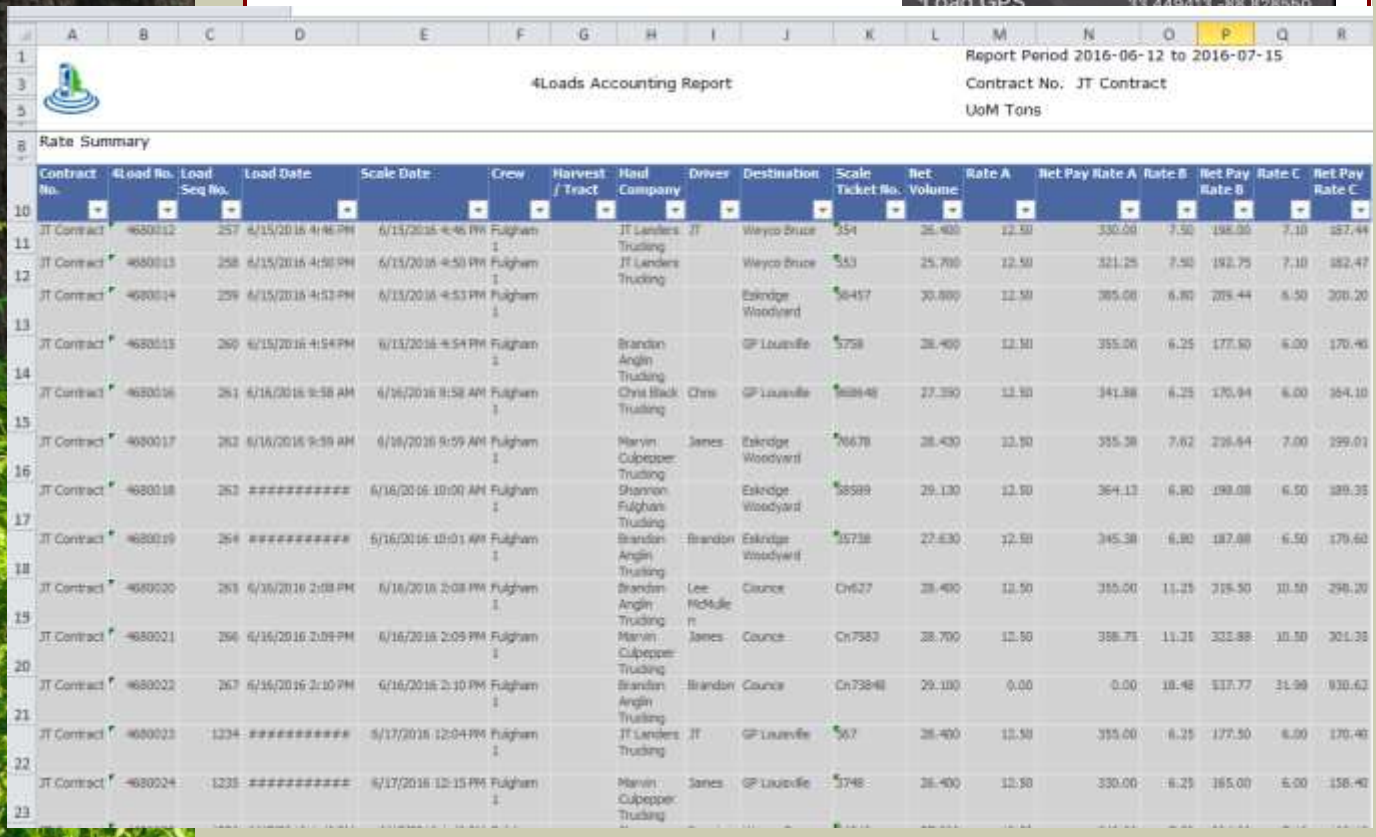
4Loads Electronic Load Ticketing Application

4Loads™ forestry application is a mobile ticketing solution that simplifies the creation, access and sharing of harvested timber data for timber dealers, loggers, foresters, and haulers. The newest version of the program allows a timber dealer or TIMO to set up multiple loggers on multiple contracts going to multiple destinations by multiple haulers all at the same time.

Harvest operators enter load data on their iOS or Android mobile devices in the field, which automatically synchronize with the Trimble mobile cloud service for timely access to data via the Trimble Forestry Mobile Website. Forestry stakeholders can log in to the mobile site to view data, run reports and customize mobile form menus. 4Loads provides real-time access to harvest load data that historically has been captured via slower manual processes that can take weeks or months to produce data. This real-time insight into remote operations can shorten reconciliation cycles and provide clear load traceability.

Call Paul or Johnny for a web demo. We can get set you up on a 30 Day Trial in about 1 hour. This exciting new product is easy to use and extremely cost effective.



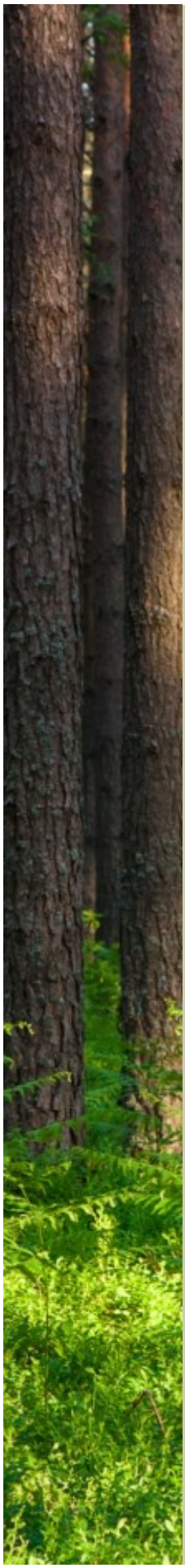


4Loads Accounting Report

Report Period 2016-06-12 to 2016-07-15
Contract No. JT Contract
UoM Tons

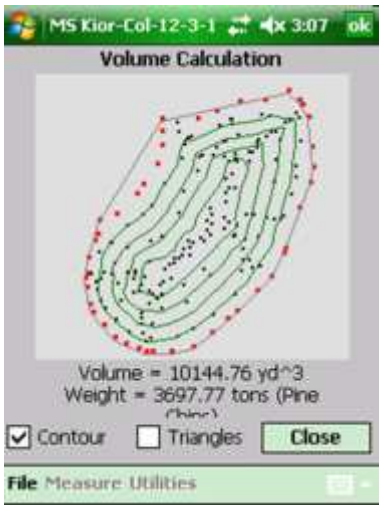
Rate Summary

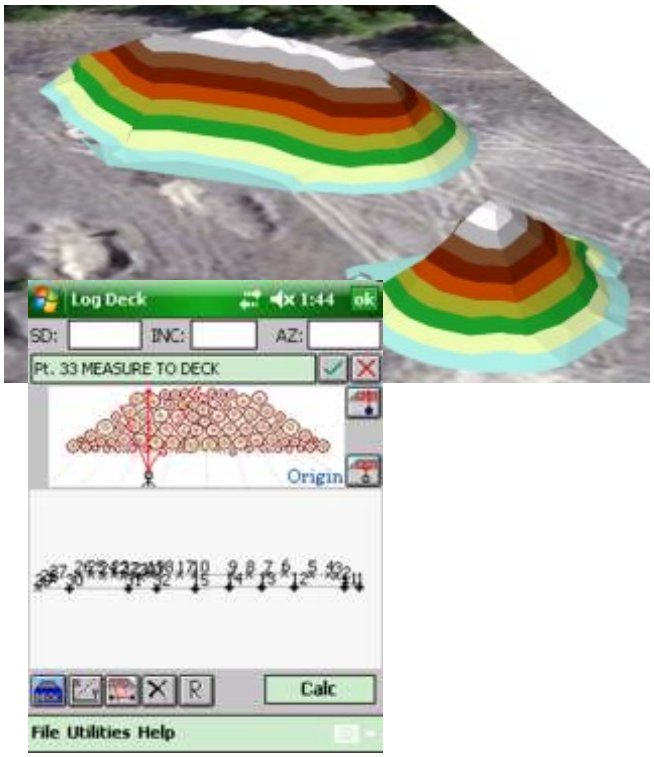
Contract No.	4Load No.	Load Seq No.	Load Date	Scale Date	Crew	Harvest / Tract	Haul Company	Driver	Destination	Scale Ticket No.	Net Volume	Rate A	Net Pay Rate A	Rate B	Net Pay Rate B	Rate C	Net Pay Rate C
JT Contract	4680012	257	6/15/2016 4:46 PM	6/15/2016 4:46 PM	Fulghum 1		JT Landers Trucking	JT	Weyco Bruce	554	26.400	12.50	330.00	7.50	198.00	7.10	187.44
JT Contract	4680013	258	6/15/2016 4:50 PM	6/15/2016 4:50 PM	Fulghum 1		JT Landers Trucking		Weyco Bruce	553	25.700	12.50	321.25	7.50	192.75	7.10	182.47
JT Contract	4680014	259	6/15/2016 4:53 PM	6/15/2016 4:53 PM	Fulghum 1				Eskridge Woodyard	56457	30.800	12.50	385.00	6.80	209.44	6.50	200.20
JT Contract	4680015	260	6/15/2016 4:54 PM	6/15/2016 4:54 PM	Fulghum 1		Brandon Anglin Trucking		GP Louisville	5758	28.400	12.50	355.00	6.25	177.50	6.00	170.40
JT Contract	4680016	261	6/16/2016 9:58 AM	6/16/2016 9:58 AM	Fulghum 1		Chris Black Trucking	Chris	GP Louisville	608648	27.390	12.50	341.88	6.25	170.94	6.00	164.10
JT Contract	4680017	262	6/16/2016 9:59 AM	6/16/2016 9:59 AM	Fulghum 1		Marvin Culpepper Trucking	James	Eskridge Woodyard	56678	28.430	12.50	355.38	7.62	216.64	7.00	199.01
JT Contract	4680018	263	###########	6/16/2016 10:00 AM	Fulghum 1		Shannon Fulghum Trucking		Eskridge Woodyard	56589	29.130	12.50	364.13	6.80	198.08	6.50	189.35
JT Contract	4680019	264	###########	6/16/2016 10:01 AM	Fulghum 1		Brandon Anglin Trucking	Brandon	Eskridge Woodyard	55738	27.630	12.50	345.38	6.80	187.88	6.50	179.60
JT Contract	4680020	265	6/16/2016 2:08 PM	6/16/2016 2:08 PM	Fulghum 1		Brandon Anglin Trucking	Lee McMullen	Counce	Cn627	28.400	12.50	355.00	11.25	319.50	10.50	298.20
JT Contract	4680021	266	6/16/2016 2:09 PM	6/16/2016 2:09 PM	Fulghum 1		Marvin Culpepper Trucking	James	Counce	Cn7583	28.700	12.50	358.75	11.25	322.88	10.50	301.35
JT Contract	4680022	267	6/16/2016 2:10 PM	6/16/2016 2:10 PM	Fulghum 1		Brandon Anglin Trucking	Brandon	Counce	Cn73848	29.100	0.00	0.00	18.48	537.77	31.98	930.62
JT Contract	4680023	1234	###########	6/17/2016 12:04 PM	Fulghum 1		JT Landers Trucking	JT	GP Louisville	567	28.400	12.50	355.00	6.25	177.50	6.00	170.40
JT Contract	4680024	1235	###########	6/17/2016 12:15 PM	Fulghum 1		Marvin Culpepper Trucking	James	GP Louisville	5748	26.400	12.50	330.00	6.25	165.00	6.00	158.40

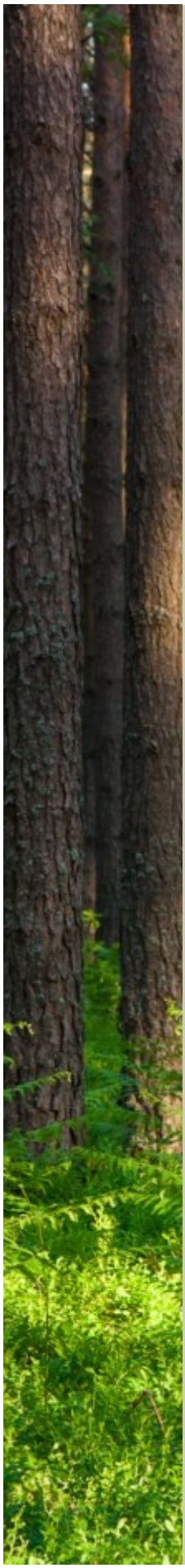


Stockpile and Log Deck Measuring

Measuring stockpile volume using Landmark Spatial Solutions Stockpile Inventory Solution is by far the quickest, safest, most cost effective, and most accurate methods available. The LMS Solution employs reflectorless laser technology in the form of a TruPulse 360R electronic rangefinder and compass manufactured by LaserTech International (LTI). Whether it's aggregate, coal, wood chips, log decks or anything else you need to inventory, this system has the ability to accurately measure almost any surface without the need of a reflector and the additional crew member required to hold it.





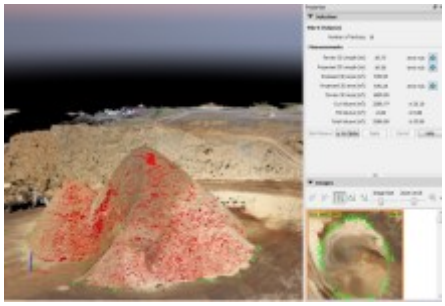


UAV/Drone Solutions for Forestry

LMSS has been working with several different UAV hardware and software providers since 2015 to help determine the viability and effectiveness of drones in the forest industry. Basically their use seems to follow three distinct paths:

1. **Inspections**—it is very easy and cost-effective to buy a simple quad copter like the DJI Phantom 4 and fly missions to inspect or help in the following areas:
   - Forest Health
   - Logging Inspections
   - SMZ Compliance
   - Planting/Regen
   - Drainage/Beaver
   - Pre-Cruise
   - Controlled Burns

Call us for pricing on this easy-to-use system.

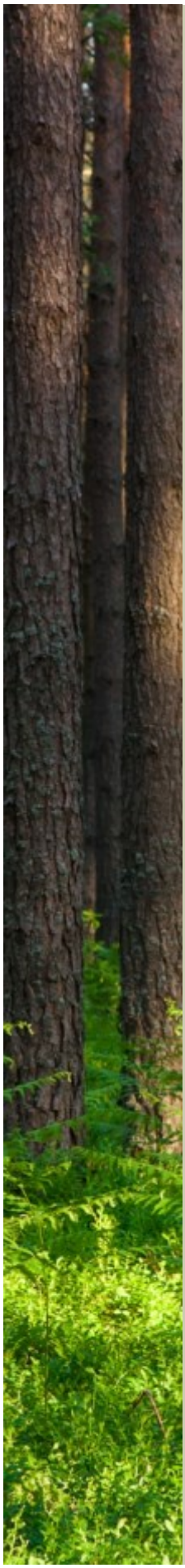


2. **Mapping for Stockpile Volumes** —The DJI Phantom 4 quad copter is also a very effective tool for mapping log deck and chip piles to determine inventory volumes. The Issue here is that the data must be processed through some mapping software of some sort to determine 3D volumes. The software that we believe is most effective for this is the Pix4D software which we sell and use. Call us for more info on how this works.

3. Mapping for GIS— Quads like the Phantom 4 can be used for simple mapping situations, but if you are wanting to fly your forest and then use that data in your GIS to aid in digitizing and updating your photography, you need to be able to map larger areas faster. **Introducing the BirdsEyeView Firefly6 Pro**—This fixed wing UAV can fly ~450 acres in about 40 minutes and provide 1" pixel resolution… and the best part is that it has **Vertical Take Off and Landing** like a quad copter, so you never have to crash land it like all of fixed wing drones.

The resulting data can be processed in several different ways, but we sell and recommend both the Pix4D Pro and AgiSoft PhotoScan image processing solutions.

Call us for a pricing and a demo.



WHAT ABOUT TRAINING AND TECHNICAL SUPPORT?

LandMark Spatial Solutions offers cost-effective **bimonthly training sessions** for Solo Forest, TCruise, and ArcGIS in both MS and GA. If you buy technical support, training at one of our facilities is generally included. We can also do specialized on-site trainings upon request, but these are more costly. We have very detailed training manuals that come with your equipment.

Technical Support is an area to which we pay special attention. Many other technology-based companies have gone under because they did a lousy job supporting the "great" product that they developed. We have professional foresters on staff who handle all of our tech support calls, so you can talk to someone who understands your application. We offer several different competitively-priced tech support packages, depending upon what level of technical and computer skills you already have.

WHO ARE OUR BUSINESS PARTNERS?

To make our solutions as successful as possible, we have partnered with the following companies that are leading the industry in their respective fields. We rely most heavily on these partners, but are constantly developing new solutions to stay abreast of the current technology.

HOW CAN I GET MORE INFORMATION?

Please go to **www.landmarkspatialsolutions.com** to get additional info, or call or e-mail us if you have questions or need a **web** or **on-site demo**.

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