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Timber Tips

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FOREST PRODUCTS MODERNIZATION

The purpose of the Forest Products Modernization (FPM) effort is to define the actions we need to take as an agency to move our forest products program and its delivery into an era that is in alignment with current needs of the customers we serve. It is designed to align our traditional volume-focused timber culture, policies, and procedures with the realities of today's forest restoration needs.

To help achieve these goals, the FPM Group reached out to both internal and external partners. For internal outreach, solution teams were created to allow agency experts to explore issues, create recommendations, and define solutions for six key areas within FPM. Engagement sessions were held to allow our external partners to provide valuable input into the FPM effort.

Successes

- Purchased and distributed over 125 handheld data recorders, 100 tablets, and 150 lasers to streamline field data collection. We are now at nearly 90% use of digital technology for cruising, versus 50% use just five years ago.
- Released an Android version of TwoTrails survey program.
- Standardized sampling error for all Scaled Sales above \$10,000 to 30%.
- Increased the use of DxP for timber sales.
- Expanded opportunities for comprehensive forest management training.

On the Horizon

- Developing an Android version of the FScruiser data collection software.
- Geo-Fence procedures for designating unmarked unit boundaries.
- AddVolume Android program to assist Sale Administrators in the field.
- FPM team is working to expand internet bandwidth and Wi-Fi availability at district offices.
- Updating handbooks and manuals to reflect changes in laws and regulations and modernization efficiencies. Six handbooks and manuals are being submitted to ORMS for final review in early 2019.
- Making unmanned aircraft systems (UAS) available for Forest Management use.

For additional information, please visit the [Forest Products Modernization](#) SharePoint site.

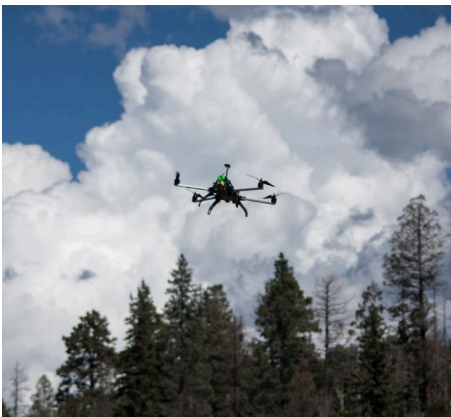


Photo: UAS testing for forest management

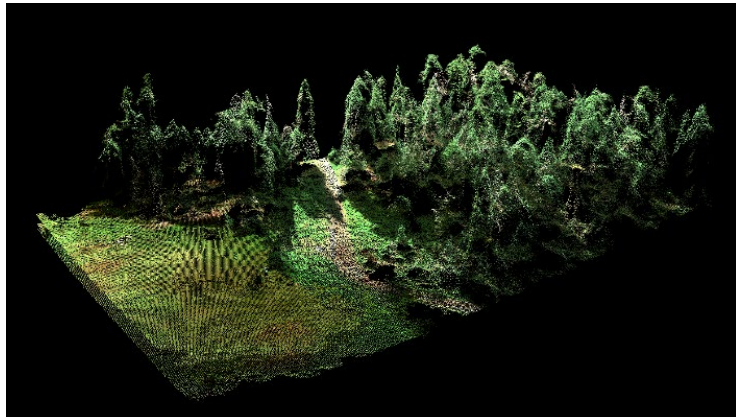


Photo: UAS composite 3D data for forest management

FIELD BASED TIPS

To Paint or Not to Paint?

Have you been painting every part of every boundary on your timber sales?

According to FSH 2409.12 (Chapter 71.22), “Boundaries may be left unmarked if natural or constructed features are so conspicuous that they can be identified from the sale area map alone, and if using those features would not cause mistakes to be made when the trees are cut.”

Painting boundaries is one of the more costly practices associated with sale prep.

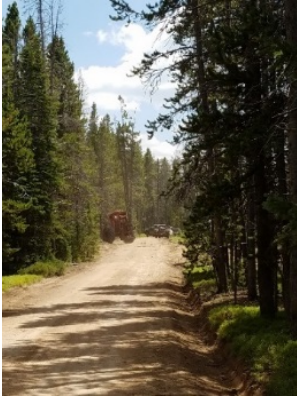


Photo: Road as boundary



Photo: Previous clearcut as boundary

These costs can be reduced by utilizing the direction provided in FSH 2409.12. So next time you use a road, a dry meadow, or any discernible boundary, save yourself some time and money and leave it unpainted. In the future, we will have the ability to use a geo-fence for some unit boundaries as well.

Regeneration Surveys without Fixed Plots

If you have a harvested site that is fairly homogeneous but questionably re-stocked, try a nearest neighbor method instead of a fixed plot. Run lines through your unit and stop at predetermined intervals (for areas greater than 25 acres we recommend 5 evenly spaced lines with samples at intervals of 1 chain).

At each sample point, measure the distance to the nearest regenerating tree. Tally measured trees in 1-foot distance bins up to the maximum distance (see left table below). The percent of tallied distances below the cutoff is the percent of the stand that is stocked. The median of the distances can be converted to trees per acre. Below are some examples of stocking based on distance. For more information, see the [Alaska Department of Natural Resources Reforestation Handbook](#).

Table 1: Regen Surveys without Fixed Plots

| Median distance (ft) | Trees per Acre |
|----------------------|----------------|
| 8.6 | 100 |
| 6.1 | 200 |
| 3.8 | 500 |



From the Archives

Chalk to Count Rings

“Hard to read increment cores?” asks Robert Maeglin of the F.S. Forest Products Lab.

“Position the core with grain vertical, rub the core with soft chalk and then wipe it clean. Rings will show up much better.” Issue 78, January 1970.

TRAINING SPOTLIGHT

Be sure to check out the new Forest Products Modernization website where you can access the new Training Calendar. New website: [Forest Management Training](#).

Upcoming training courses include:

- 2019 National Silviculture Workshop
- 2019 Sale Administration Academy

Are you a new forester looking for a crash course on harvest systems? Do you have an employee who is? Check out some of the following resources:

- Visit the [Forest Operations page](#) on the San Dimas Technology and Development Center website to find information about forest road design and forest operations equipment.
- The [Region 8 Logging Systems website](#) has more information about forest operations equipment and bridges.
- If you have a little bit of time and travel money, try an Inter-Regional Harvest Systems and Project Design Workshop. These Workshops were recently initiated to provide a short course for new foresters, specialists, or line officers who need to know more about harvest operations. Contact your Forest Operations Specialist for more information.
- Sale Area Layout and Harvesting Institute (SALHI) is the most comprehensive harvest operations training offered by the Forest Service. *This course was cancelled in 2019; look for a revamped SALHI in 2020.*

SAFETY

Many parts of the country have recently experienced or are experiencing large-scale mortality events due to insects, fire, and disease. When you find yourself in stands full of dead trees, here are some things to keep in mind:

- Scan your areas - Before you park your vehicle, set up your tent, or sit down for lunch, look around. Don't park your truck or yourself under a dead leaner or a widow maker when you could move an extra 100 feet to a patch of regen or an opening.
- Stay alert for changing conditions - Wind shifts, changes in soil moisture, and newly downed trees can all be signals that the likelihood of trees falling is changing.
- Know your area - How long have the trees been dead? Are they newly exposed to higher wind levels? Are they prone to butt rot or root decay? This can change within one project area if you move to a different aspect or hit a stand with different species composition. Downed trees limit your ability to escape an area, so trigger points may need to be different where this is an issue.
- Be prepared - Discuss evacuation plans and establish communications. Make sure everyone on your crew is ready to react if something goes wrong.



Photo: Tree with rot

CONTRACTS AND APPRAISALS

Taking the tablet to the woods: hand-held tablets are being used across all Regions to assist foresters in administering sale contracts. These Samsung S3 tablets are another step in the modernization process occurring across the contracts and appraisals group. These tablets allow for the ability to access a wide variety of applications to assist in sale administration and sale layout. When used in conjunction with a Bluetooth keyboard, they also give Sale Administrators the option of typing Timber Sale Inspection Reports and other forms in the field.



Photo: Tablet used for reporting

Mapping applications such as [TwoTrails](#), Avenza, and Collector 123 allow Sale Administrators to quickly and clearly see a sale or unit area. Using a mapping application, an Administrator can easily bring up a previously downloaded georeferenced sale map when a contractor has a question. This allows an Administrator to find their location on the map within the sale area and allows for navigation throughout the stand. Features include the ability to create lines, mark points, make notes, and navigate. [TwoTrails](#) is our nationally supported mapping and area determination application. It is free to download and use. The TwoTrails hotline number is (970) 295-5767.

Tips:

- Download or import georeferenced sale-area maps before heading to the field. PDF contract maps can be saved to the tablet and opened in the field for review.
- Use the GPS tracking feature on your mapping application to help mark skid trails, landings, or temporary roads.
- Use the marking feature to make notes about key features, stand boundaries, or reserve trees. These maps can then be saved with your inspection report or can be printed and attached to your report.
- Utilize the camera feature to document work on the sale area for future reference



Photo: Tablet with mapping application



Photo: Sale area

Other exciting prospects for the tablet include the addition of various applications designed to improve efficiency in sale and contract administration. A new AddVolume application, currently being field tested, will assist foresters when needing to add or subtract volume from a timber sale. This application is scheduled for release in April, 2019. This, and other applications will help with the modernization transition in Sale Administration and will give foresters the option to utilize more technology in everyday work.

REGIONAL SUCCESS STORIES

Using D x P in Region 8

As discussed in the May 2015 edition of Timber Tips, the 2014 Farm Bill authorized Designation by Prescription (DxP) as a valid method for designating timber in sales authorized under NFMA. The Ouachita NF is one of two forests in the Southern Region using DxP. Sales Forester, Jeff High, has come up with several unique ways to measure volume and inspect these sales.

The Ouachita has found DxP to be a very useful tool to efficiently designate timber and achieve superior results in harvesting by allowing the purchaser to select trees that optimize harvest efficiencies while meeting prescription requirements. The Ouachita is currently using DxP in well-stocked pine plantations that have never been thinned. Prescriptions rely on residual stand basal area (BA), individual tree quality, and a diameter limit.

One immediate challenge was establishing a reliable process to estimate the volume that would be harvested by implementing the prescription. It was decided that DxP sales would be sold as a single product (Non-Saw) using weight scale. In this case, all that is needed is merchantable volume in CCF and a conversion from CCF to tons. The total stand volume and BA were obtained using Point Count Measure (PCM) cruising with an appropriate BAF. Next, the volume to basal area ratio (VBAR) was estimated (stand volume per acre/BA per acre). The harvest volume was then calculated using the harvest BA (stand BA/acre – residual BA/acre) * VBAR.

One of the reasons DxP was chosen over other available tools such as Designation by Spacing was to account for tree quality in tree selection and retention. The objective was to leave the best available tree, not necessarily the biggest DBH. Tree quality was incorporated into the inspection procedures by establishing pre-harvest plots ahead of the cutting and revisiting the plots after the trees were cut to measure how well the prescription was implemented. Quality plots are completely independent of basal area plots and utilize 10 trees per plot that are evaluated by the FS as a cut or leave tree. After the trees are cut, the FS scores the plot giving 0 for incorrect and 1 point for a correct decision. The plot score is determined by summing the tree scores and multiplying by 10. A plot where a tree that is greater than the max DBH (expressed as stump DBH) has been cut is automatically given a score of 0%. Plots scores are averaged to determine contract compliance.

Using DxP has proven to leave a better residual stand and it saves time and money by reducing the amount of time and paint used on these low value stands. More importantly this process is very attractive to purchasers. This is the process that many purchasers use on private and industry land and they are very good at choosing the correct tree to cut. This will be a much-used designation process on the Ouachita for future sales.

For more information about the Ouachita DxP process contact Jeff High at jeffreychigh@fs.fed.us.

Region 9 Timber Strike Team

The Region 9 Timber Strike Team (TST) was established in fiscal year 2017 as a means to address multiple agency level issues, to recruit and train new employees into the field of forestry, and to add capacity to meet the needs of Forests in R9. The first full year of operations based on agreements between the TST and Forests occurred in fiscal year 2018 (FY18).

The work force on the TST has grown from one pod to a total of four pods in different geographic locations (Gladstone, MI; Duluth, MN; Murphysboro, IL; and now Warren, PA) and now includes an additional 15 forestry technician positions and 3 professional forester positions. The Region 9 TST showed success in training through the placement of 6 individuals from the team into positions on National Forests across the United States.

The main focus of the R9 TST in FY18 was to assist in the accomplishment of Forest level Timber Sale Preparation activities while providing training to the TST staff. In FY18 the crews completed work within R9 that included:

- Common stand exam plots
- Timber sale stand delineation
- Boundary marking
- GPS work in Terra Sync and Two Trails
- Cut-tree and leave-tree marking
- Timber cruising via multiple methods (frequency based, plot based, and 3P sample).

In FY18, the TST assisted with the preparation or portions of preparation on a total of 51 timber projects as well as work on 3 separate Common Stand Exam projects. This work was completed on 10 National Forests within the Eastern Region.



Photo: Region 9 and Region 1 cooperative work on the Hiawatha National Forest

In FY18 the TST planned project work for the upcoming FY19 field season including work on all the National Forests within the Eastern Region, as well as a combined work effort in Region 8 (Florida) that will include members from TSTs in Regions 1, 8, and 9. Work requests are prioritized by type of sale/target, sale advertisement date, salvage and hazard tree sales, seasonal restrictions for implementation, and level of experience and training opportunity for the TST. The Region 9 TST has planned FY19 work in combination with the Region 1 TST, as well as to assist with establishing a work items in Region 8 for their developing TST model. This cohesive approach with all three regions is planned to occur across 5 pay periods with multiple individuals from the Region 1 team that will join the Region 9 staff. The emphasis of this plan is to continue to add work opportunities for individuals

on the Region 1 Team, while adding capability to Region 9 for work requests, as well as to utilize this as a training opportunity for all the TST organizations. – Matthew McGiffin, Timber Strike Team Lead, Region 9.

Don't Burn Yourself Out

It is well-known that overworking or overstressing yourself can lead to decreased productivity while on the job. This is especially easy to do when days get very busy or stressful. It can be easy to get into a rut and before you know it your whole week has passed by. Many of us work in the Forest Service because we love the outdoors and enjoy working to keep them healthy and productive for this and future generations. Remember to take time to slow down and “smell the roses”. There is always something interesting to see or learn about in our National



Photo: Gnarly limber pine



Photo: *Sedum lanceolatum* Succulent



Photo: Old tree stump

Forests and Grasslands. Whether you are at work or are out enjoying a weekend hike, taking notice of even the simplest joys can make all the difference in your attitude and well-being. Practicing species identification, getting a picture of a weathered old tree stump, or identifying a bird are simple things you can do each time you're out in the field! Simple moments like these can help you regain focus and excitement for your job, which will lead to greater job satisfaction and improved productivity. – Colin Bowser, Fort Collins, CO

DOCTOR FUN

2 May 2000



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The Enchanted Forest 5K