

**Minnesota Forest Resources Partnership
Forest Inventory Discussion
Forest History Center – Grand Rapids, MN
3 June 2009**

Acronyms:

MFRC: *Minnesota Forest Resources Council*

MFRP: *Minnesota Forest Resources Partnership*

IIC: *Interagency Information Cooperative*

Meeting Attendees: Tim Aunan, Forest Resource Assessment – Minnesota Department of Natural Resources; Tom Burk, University of Minnesota; Blair Carlson, Itasca County; Kent Connaughton, Region Forester, US Forest Service; Alan Ek, UMN; Craig Engwall, Minnesota DNR; Craig Halla, Forest Capital Partners; Rob Harper, Chippewa National Forest; Larry Hegstad, Minnesota Forest Resources Council; Dave Heinzen, Minnesota DNR; Calder Hibbard, MFRC; Howard Hoganson, UMN; Becky Knowles, Leech Lake Band of Ojibwe; Bob Krepps, St. Louis County; Nancy Larson, Superior National Forest; Jim Lemmerman, Private Landowner and Board of Soil and Water Conservation Districts; Mark Liedl, Crow Wing County; Mark “Chip” Lohmeier, Becker County; Leslie McInenly, MFRC; Jim Marshall, UPM Kymmene Blandin Paper; Pat Miles, USFS - Northern Research Station; Gregg Morris, Chippewa National Forest; Tim O’Hara, Minnesota Forest Industries; Dave Parent, Private Landowner; Mike Polzin, Minnesota Power; Kathleen Preece, Minnesota Forest Resources Partnership; Joyce Rairdon, Chippewa National Forest; Jim Sanders, Supervisor – Superior National Forest; Tom Saxhaug, Minnesota State Legislature; Greg Snyder, Beltrami County; Bob Sonnenberg, MFRP Chair; Josh Stevenson, Cass County; Bob Tomlinson, MN DNR; Dave Zumeta, MFRC

Meeting Minutes

Bob Sonnenberg and Kathleen Preece welcomed MFRP members and guests. Kathleen reminded participants of antitrust issues, stating that if participants object to/are uncomfortable with a discussion they feel related to antitrust issues, they should point this out; if discussions continue, they should leave the room. This will be noted in the minutes of the meeting.

Kathleen introduced the Forest Inventory discussion, describing the Inventory Survey of 2008 as a joint project of the MFRC and MFRP. She requested that individual comments be concise, brief, and respectful of differing opinions. She introduced MFRC Information Specialist Leslie McInenly.

Leslie McInenly provided a brief overview of the impetus for the forest inventory survey distributed in 2008 by the Minnesota Forest Resources Council and Minnesota Forest Resources Partnership. She also reviewed survey results regarding the frequency and costs of forest inventory data collection, the various inventory variables that are acquired, limitations to collection and utilization of forest inventory information and opportunities to address data and analysis needs. Bob Krepps clarified that St. Louis

County estimated their inventory costs to be \$2.75/acre. Leslie then introduced Tom Burk, who facilitated the meeting discussion.

Tom noted that the general purpose of the meeting discussion was to elaborate on, and provide clarity to, the results of the forest inventory survey. He stated that providing direction to the Interagency Information Cooperative regarding how it can best assist land managers was a key objective for the day.

Tom initiated discussion on “decision-driven inventory,” i.e., identification of the decisions that need to be made and subsequently, the data required to make those decisions in an objective manner. Specifically, it is important to identify the data required by the tools (e.g., models) used to inform decision-making.

Based upon the survey results, forest inventory seems to be falling short with respect to harvest scheduling (versus harvest planning). Tom asked meeting attendees to identify why the data are not adequate. Craig Halla responded that their stand strata are too large, with too much heterogeneity, and are more appropriate for long-term (i.e., harvest planning) versus strategic planning (i.e., harvest scheduling). For example, Forest Capital’s inventory information is fine for aspen, but they run into problems with data for the mixed-forest type stands. Dave Heinzen added clarification that harvest scheduling pertains to data for individual stands whereas planning can be modeled. He noted that before one can get to a 10-year stand exam, specific acres must be identified, and this is where the strategic planning comes in. Bob Tomlinson commented that problems in harvest scheduling occur when the stand has changed and is not what was intended or expected as a result of 20-year-old inventory data. Blair Carlson stated that Itasca County inventory was collected in the early 1980’s and they are running into the same problem. The county has lost a great deal of balsam and birch and he doesn’t have the data required to support decisions regarding allowable cut. He felt that the only way to address that problem is through more frequent inventory. Managers don’t have the data needed to run a scheduling model.

Tom Burk then asked whether managers apply the same inventory methods everywhere within their ownerships. Responses indicated yes and no.

Tom Burk asked attendees how often they believe they need to visit a stand to have an up-to-date inventory. Craig Halla responded that they often just do a walk-through, and indicate a “w” visit in their database. They tend to sample plots approximately five years before a planned harvest, but noted that the type and frequency of visits really depends upon the species within a stand. Tom Burk responded that that approach makes a lot of sense and he questioned how often we really need to visit a stand with plots. Blair Carlson indicated that the problem with respect to collecting inventory data is not personnel, it is funding.

Becky Knowles commented that she feels the purpose of inventory is to do the habitat typing, soil classification, etc., so that whatever management action is planned is proper for the type. She asked attendees to comment on collection of that information and whether it is a problem. Craig Halla responded that they have done quite a bit of habitat typing and 90% of their ownership is natural regeneration. He stated that they put a lot of money into habitat typing but it wasn’t well spent for

management purposes in specific. Bob Krepps added that he doesn't believe collecting ECS information through inventory works (e.g., St. Louis county collects inventory throughout the year), but the county looks at ECS during sale/reconnaissance. Bob Krepps noted that ECS typing will be very important for regeneration, but that information is site-specific. Jim Marshall concurred, commenting that UPM-Blandin is very involved with habitat typing but that information is not used for harvest scheduling, it is used for site-level planning.

Larry Hegstad stated that planning at the landscape-level is where mixed ownership comes in. He commented that commonality in information would be very helpful and incompatibility becomes a real barrier for broader planning efforts. Larry was not advocating specifically for common inventory, but at least some links.

Dave Heinzen added that ECS is used when considering desired future conditions, whereas forest inventory is for the present. Becky Knowles responded that inventory information is used to inform managers whether those long-term goals are being met.

Tom Burk stated that some decisions don't require measuring trees. He asked how money should be efficiently allocated, based upon a fixed amount of funding. What can the Interagency Information Cooperative contribute?

Jim Marshall responded that they rely on Dave Heinzen and Resource Assessment for the acquisition of up-to-date imagery. The imagery is a tool used daily by forestry organizations.

Dave Heinzen commented that he would like to see a follow-up to this inventory survey to address why current stand compositions aren't matching expectations. Is it die-off, problems with characterizing mixed-species stands, etc?

Craig Halla stated that inoperable stands are a problem for many reasons, such as market conditions, logging capacity, and spatial configuration (e.g., dispersed 3-acre stands of 75-year-old aspen). Howard Hoganson added that a difficulty is projecting all of those conditions into the future. Craig Halla concurred, noting that with biomass utilization, what was once inoperable may now be operable. Larry Hegstad added that part of the challenge in designing inventory is that the data needs to be adaptable for future needs.

Becky Knowles commented that ownership doesn't often change and asked whether the older-age fragments are adjacent to fragments on other ownerships. Craig Halla responded that leaving legacy stands is creating more problems for planning in the future.

Josh Stevenson commented that much of this inventory concern was driven by industry folks who want information on available volumes. Cass County manages acres of cover type, not by volume. He suggested that meeting attendees need to come to consensus regarding managing on a volume, versus area, basis. The counties don't have volume measures because inventory isn't good enough. Jim Marshall responded that there is interest in volume, with industry needing to know whether volume is

within procurement range and how much is available. Dave Heinzen added that no public agencies in attendance use volume control, all are using do area control.

Howard Hoganson commented that modeling can help with the volume concerns, but the modeling needs to be based on inventory information. He asked folks to consider what is required to do harvest schedules and whether the Interagency Information Cooperative should be trying to help managers with both area and volume control. [Attendees responded with a resounding “yes”.]

Tom Burk asked people to comment on why they are concerned with acres. Josh Stevenson responded that he is merely asking folks to identify the preferred option and move toward all doing the same thing. Howard Hoganson added that the volume issue goes back to the Governor’s task force report (Competitiveness of the Primary Forest Products Industry - 2006), in which there were recommendations based upon cords, but he noted that ecologists are concerned about cover types.

Tom Burk asked folks to comment on needs that the IIC should pursue. Dave Heinzen responded that the IIC should consider whether the current techniques are okay. He noted that a lot of that state inventories are good shape, but there are some problems. Why? Why are managers deciding that there are problems? Is it just the mixed-stands are giving difficulty? Is the technique giving us good results or not? We suspect not. If the inventory system is inadequate, what are the suggested alternatives or modifications?

Tom Burk summarized some of the needs, including: consideration of techniques; better identification of the source of (and solutions for) inventory problems; how might models be helpful; and identification of cost-effective ways to acquire defensible numbers.

After an intermission, Tom Burk asked for a round of comments from all participants to identify inventory needs. Josh Stevenson reported that, overall, the Cass County inventory is quite good. There are deficiencies with regard to estimating volumes (e.g., responding to from industry folks asking about the volumes that can be expected in 2015). The county is also in need of opportunities to get out in the field on regeneration checks.

Dave Heinzen stated that the quality of inventory varies across the state. Staff for inventory is limited. Inventory is always stated as important, but it is one of the most difficult things to prioritize. With respect to challenges, Dave described difficulties identifying where the stand lines change, problems associated with forest health, determining the age in relation to the type, potential errors associated with identification during the initial inventory (one plot can make a big difference in cover type label).

Greg Snyder commented that Beltrami County used area control to regulate harvest and utilizes basic models for harvest scheduling. The only inventory at one level: the stand. In 2003 they started a 4-year process to have various contractors go and collect stand-level data, adapted from the CSA. He commented that as Land Commissioner, this discussion helping as a start. He stated he, and his staff, could use a refresher course on the other levels of inventory and how they could be used. Beltrami County manages 147,000 acres, of which approximately 103,000 are managed for commercial purposes.

Mark Liedl reported that Crow Wing County manages approximately 70,000 acres. He stated that their inventory practices are similar to other counties. Inventory problems are related to staffing, not just for regeneration but also just checking the stands. The county collected information on acres treated. He noted that the issue of volume estimation is relevant and can be frustrating. The county is currently reorganizing the division to dedicate staff for inventory and they are trying to identify regional partnerships with other inventories. He would like to know what everybody is doing (i.e. a survey of practices from counties). What is the standard for inventory? How does inventory fit into certification? What are best practices for inventory?

Nancy Larson echoed the sentiment that the inventory survey was a good start. SNF staff members feel very good about their inventory data. In the last three years, more data has been included and the USFS is using many methods (e.g., satellite interpretation, walk-through, quick plots), so sometimes they don't need to do the full-bore sampling. The National Forest also taps into information collected by other partners, e.g., FIA info, MN DNR relevé plots. They are interested in participating and sharing information. They are also doing some landscape planning with local partners.

Craig Halla reported that Forest Capital Partners has an extensive history of inventory. In 2005, they evaluated their inventory to specifically identify the age at which inventory should be collected in a concentrated manner. They use a strata-type inventory in which sample stands are inventoried. The inventory is used to develop a long-term 50-year plan. Samples are based upon 3-year periods. Forest Capital Partners also has a model-based, strategic plan [for harvest scheduling]. The current problem with the model is the inclusion of economic factors. Ninety percent of their lands have been habitat-typed, and the information is used for some situations but rarely for harvest planning. They are quite active in planning with neighbors and are involved with three of the MFRC landscape committees.

Gregg Morris stated that 23% of the Chippewa National forestland has been inventoried as of last year. **Is this right????** He noted that not all inventory needs are the same for the different ownerships. The Chippewa National Forest conducts inventory harvest planning but also for landscape analyses. The challenge for this group is common terminology and recognizing different needs. He is interested in identifying common threads, e.g., geospatial mapping across ownerships, but noted that level of mapping isn't adequate for harvest planning.

Jim Lemmerman commented that he represents private forest landowners, which account for six million acres of forestland in the state. Only three counties have any type of inventory on private lands (Aitkin, Carlton and Itasca). He stated that the lack of inventory on private lands is a large information gap.

Blair Carlson reported that Itasca County could benefit from newer technology such as software growth programs for our inventory and perhaps the acquisition of newer data recorders to speed up the collection process. The foresters know how many acres there are but don't have the size class or volume data. With respect to technology he advocated that each forester should have data recorders in their district.

Becky Knowles reported that the Leech Lake Band of Ojibwe manages approximately 20,000 acres of forestland. The BIA funds their forestry activities and has a particular type of stand exam. The inventory

provides good basic silvicultural data and has a 10-year return cycle, but there is a gap on the habitat typing.

Bob Krepps stated that St. Louis County has 874,000 acres under management, of which about 620,000 are considered under forest management. The inventory is old and was conducted 20-25 years ago and they are still using those data. They experience many of the same problems as Blair Carlson described (e.g., stands that are falling apart). The county is working on getting up to date. When he took his position a few years ago, they didn't have a system for tracking a stand birth to harvest. They now have a process in place to track management activities and update the inventory. The county contracted with Pro-West for development of a harvest implementation model using the old inventory data. The 2010 stands identified for harvest had spatial configuration problems and they are currently trying to work through that problem. The county is also in the process of implementing data recorders, and anticipates that all foresters will be using them by the end of the year. He recommended that the 1997 IIC report that identified common attributes of forest inventory databases be used as a foundation for future direction.

Tim Aunan stated that the state inventory is in good shape in many areas and rough shape in others, which is a matter of personnel and time. With respect to the issues of area control and volume control, he agreed with Howard Hoganson's questioning whether management ought to be merely one or the other.

Jim Marshall complimented the University of Minnesota on the inventory that was developed for Blandin years ago. He stated that Blandin switched to a strata-type inventory over a decade ago. While the company still has permanent plots, for reasons of efficiency, they update their inventory every quarter by re-running the stands on the computer. They use different types of inventory for different purposes and the system works quite well. The company still delineates stands, but they don't re-visit them. In the field foresters visit the stands before the harvest. They no longer have modeling capabilities and foresters make harvest decisions based upon what is found in field.

Senator Tom Saxhaug stated that the SFIA program is very popular in the state and noted that the five million acres of private, non-industrial forests will be of increasing importance.

Mike Polzin commented that, from the power company perspective, he is interested in good, accurate, consistent inventories. Minnesota Power produces renewable energy from biomass and needs to know what the fuel source will be. There will eventually be a point in which the available woody biomass will not meet the volume needed for energy production. Craig Halla responded that historically biomass hasn't been estimated and there is a need for direction with respect to biomass measures. Dave Heinzen added that available biomass is also subjective as it includes a value judgment.

Chip Lohmeier reported that Becker County manages about 75,000 acres, of which 61,000 acres are considered commercial forest land. The county inventory is about 30 years old and they have a very small staff. There is a time crunch with respect to staffing and are also in the western part of the state dealing with mixed hardwood stands. The greater the species mix, the less accurate the inventory. He also noted that as stands near harvest age they are finding greater unpredictability, and this is

particularly true for jack pine stands. There are also problems with knowing how to manage the data and handle remnants after a stand is harvested. He noted that training is also an issue and doesn't recall any recent inventory training being provided for counties.

Larry Hegstad stated that, from the landscape-planning and coordination perspective, the problem has to do with mixed ownerships and data formats. While he didn't suggest a common inventory, he stated that some common elements would be beneficial. He requested technical assistance regarding the use of mixed data sets, particularly in model applications, and noted the need for assistance on private lands.

Howard Hoganson commented that inventory information is the basis for looking at opportunities and acknowledged the importance of forestry in Minnesota. He suggested that while managers collectively consider their inventory needs, they also should consider how the information may be used by other entities. As we pull together here ... questions of using our inventory not just for our uses, but also for other folks to use.

Pat Miles reported the data that is collected and used at the Northern Research Station. The FIA data represents information collected on a grid across the country with one plot for every 6,000 acres. In Minnesota, there is one plot for every 3,000 acres. The Forest Service has a new program called the National Inventory and Monitoring Applications Center (NIMAC). NIMAC has developed inventory methods and tools to supplement FIA data and bring it down to a mid-scale inventory with a plot every 40 acres. Pat reported that six states are currently involved with NIMAC and recommended that folks contact Vern Everson, Wisconsin DNR, to see how it is working out for Wisconsin.

Dave Zumeta stated that he is familiar with the report to which Bob Krepps referred and is not sure how useful the information would be to current efforts, adding that the problem with the common inventory at that time is that it was brought down to the level of the least-intense county inventory.

Alan Ek commented that early on, the IIC made a significant effort in developing a common inventory dataset and some of the nagging problems from that time are still present. He noted that they made a lot of progress with respect to the spatial data but not as much with the on-the-ground data. He stated that this is a time to think about what we really need, but also what we can afford to get done, adding that people are now focusing more on the tools to use the available data.

Tom Burk asked whether the problem of dated inventory is due to the time required to collect data within a unit or whether it is a matter of the time required to get around and visit units. Responses from attendees included both, some are just not getting out and for some (e.g., USFS), per unit inventory is quite intense and requires a crew of people instead of one or two foresters.

Alan Ek asked to what extent the group is interested in data sharing. There may also be real possibilities associated with a common format, with cost saving, improved volume projections, etc. Mark Liedl responded that Crow Wing County would be very interested in sharing data. He noted that they have started the process with Cass and Aitkin counties. They also have a 5-county co-operative for the certification process. Dave Zumeta stated that there is also the question regarding the required

investment into county inventory. Sharing data is great but we need bodies out there to get the information. Folks need to have data to share.

Larry Hegstad added that counties do a bit of inventory when they do timber sales; he inquired about the opportunities to enter data from timber sales. Tom Burk responded that managers would still have to overcome the other data needed to characterize a stand.

Dave Heinzen stated that the major challenge is one of priority. Often inventory data satisfies our needs, but many inventories probably don't have a measure of confidence or error. He added that current data requires a forester to visit the stand in order to make a harvest decision, noting that three out of seven times, what we expect is not out there.

Becky Knowles recommended an analysis be made to determine the causes for the unexpected composition.

Alan stated that there have been several attempts over the last few years to create funding support for county inventory but funding has not come through. Alan felt that there are two primary reasons for the lack of funding. The first is that counties have not been on the same page with respect to the identified cost, products, etc. Second, the counties have not been able to come together to articulate what the inventory was going to accomplish and what would be gained from investment.

Larry Hegstad asked whether the IIC funding is stable and, if so, what is the anticipated role of the IIC. Alan Ek responded that funding is in the budget for the next biennium and that there is pretty explicit direction in statute for the IIC to work towards the common inventory format. Senator Tom Saxhaug added that a collective voice from the counties would be quite powerful. Becky Knowles suggested the counties clearly articulate the reasons they conduct inventory and identify what type of inventory is needed for each purpose.

Discussion regarding the changing uses of inventory over time, and the recognition that inventory needs are still changing, ensued.

Greg Snyder stated that he has been working for Beltrami County for eight years. When he started, they were using phase 2 forest inventory (now called CSA). When Beltrami County considered re-inventory, they were interested in a strata-based method but got pressed for time and fell back on the old phase 2. He commented that at one time the state and county were together with respect to inventory, but since then the counties have just gone in their own directions. He noted that he and other counties are interested in going back to using a standard inventory. A problem for the counties is that while they want to be part of the conversation, they need direction. They don't have the expertise. Greg Snyder stated that he doesn't know what is available in order to articulate what is needed; he'd rather not pay the contractors to collect information based on techniques from 25 years ago.

Senator Tom Saxhaug suggested the IIC may be better off developing a proposal to LCCMR to help counties identify what they need.

Dave Zumeta stated that Greg Snyder was speaking well to the vision of the IIC. Counties may not be aware of the cutting edge stuff. The IIC provides opportunities for managers to interface with the University and get access to people like Howard Hoganson for modeling expertise.

Chip Lohmeier supported a collaborative approach, noting that counties can't afford to go it alone any more. He stated that there is a need to identify the information everybody needs and find a way to get the data and tools. Dave Zumeta commented he believes that Bruce Cox, Clearwater County, would echo that sentiment. Blair Carlson stated that Itasca County has discussed in past years the idea of collaboration with other agencies but there was not a coordinated effort for a follow-up. Tom asked whether working together to pursue funding would be an incentive for counties to collaborate. Becky Knowles responded that agencies are enthusiastic, but there is a need for someone to coordinate efforts.

Tom Burk reviewed some potential next steps, including: 1) follow-up on the initial survey to get more detail (perhaps face to face) regarding what people are doing and what are needs, 2) a review of the common inventory format for both cross-ownership planning and data sharing ... what is involved, what information is relevant, whether agencies have the data necessary to update a common inventory, and 3) a refinement of cost estimates to move forward with a common voice on average inventory costs and the benefits of investment in survey.

Bob Sonnenberg suggested that we need to identify one leader within the state to develop a standard data gathering package to support standard inventory needs. He suggested the University is an appropriate place to seek direction.

Dave Heinzen reiterated that a problem with common inventory is still that much of the information is dated. Bob Sonnenberg added that there are also problems with inconsistencies with how data are collected. Further discussion regarding who should lead/direct a collaborative effort ensued.

Dave Heinzen added that, from a landscape planning perspective, he is surprised that folks aren't using FIA data to the extent they could be. Pat Miles responded that FIA can provide good planning information, particularly when supplemented with good data from the counties.

Alan Ek stated that both strong leadership and strong support is required to carry an idea like this forward, noting that it would be beneficial to get some folks to commit more energy into this (e.g., have some volunteers to go back to the counties regarding inventory costs). With a better understanding of options, we could get to the point of following Bob Sonnenberg's suggestion and providing leadership. Greg Snyder responded that he would follow up with the counties. Dave Heinzen suggested it is also important to acknowledge the time frame from which cost estimates were developed because costs have changed considerable in the past year. Becky Knowles requested that the tribe be included in this effort. Dave Heinzen asked for clarification regarding inclusion of walk-through data in cost estimates. Tom Burk responded that the walk-through data should be included in the cost estimates, recognizing that that piece doesn't cost as much. Alan Ek stated that the cost estimates need to also reflect the acreages covered and information on what repercussions if the inventory data isn't collected.

Howard Hoganson questioned whether legislators would look at the financial returns per acre from harvest and wonder why counties can't come up with the funding internally. Dave Zumeta responded that counties boards often don't support inventory work. Greg Snyder added that inclusion of biomass measures/estimate in inventory methods would be a selling point with respect to economic development for county boards.

Chip Lohmeier stated that one of the problems is that inventory is a continuing need and requires continuous funding, not one time appropriations. If there were a long-term funding mechanism, contractor prices probably wouldn't shoot up as they may with short-term appropriations.

Tom Burk reviewed the next steps as listed above. Greg Snyder commented that he doesn't even know how to provide information for the DNR's data-deli. Tom Burk responded this is likely a problem many counties have. Tim Aunan added he could provide assistance. Dave Heinzen reiterated the area-versus-volume concerns and requested that the IIC provide information and assistance to make agencies more comfortable with volume estimates. Alan Ek recommended additional follow-up with respect to understanding how different counties are currently collaborating with each other.

Kathleen Preece noted that minutes to the discussion would be sent to all participants and interested parties. She said that the Information Management Committee of the MFRC would be taking the recommendations and concerns expressed in the day's discussion and providing follow-up and 'next steps.

Kathleen Preece adjourned the meeting at 3:15 p.m.

Minutes submitted June 8, 2009, by:

Leslie McInenly, Information Specialist, Minnesota Forest Resources Council

Kathleen Preece, Coordinator, Minnesota Forest Resources Partnership