CFTM (Committee on Forest Land Taxation Methodology)
Minutes of meeting held June 14 & 15, 2007
Held at the University Inn Moscow, Idaho

Tom Katsilometes opened the meeting. He welcomed everyone and asked them to introduce themselves.

In attendance:

Name	Representing	E-Mail
Tom Katsilometes	ISTC Commissioner (Chair)	tkatsilometes@tax.idaho.gov
Jane Wittmeyer	IFA – Boise	jane@intforest.org
Daniel G. Chadwick	IAC	dchadwick@idcounties.org
Teresa Jeffrey	Benewah Cty Assessor	tjeffrey@BenewahCounty.org
Dave Ryals	Boundary Cty Assessor	dryals@boundarycountyid.org
Stan Leach	Clearwater Cty Commissioner	commissioners@clearwatercounty.org
Jerry White	Shoshone County Assessor	jwhite@co.shoshone.id.us
Michael G. McDowell	Kootenai Cty Assessor	mmcdowell@kcgov.us
Brett Bennett	Bennett Lumber	Brett@BCPI.com
Dr. John Mandzak, PhD	Potlatch Corporation	John.mandzak@potlatachcorp.com
John Currin	Potlatch Corporation	John.currin@potlatchcorp.com
Kevin Boling	Forest Capital	kboling@forestcap.com
John Eikum	Idaho Rural Schools	jjikum@aol.com
Steve Fiscus	ISTC	sfiscus@tax.idaho.gov
Gregory Cade	ISTC	gcade@tax.idaho.gov
Rod Brevig	ISTC	rbrevig@tax.idaho.gov
Dr. Bill Schlosser, PhD	Northwest Mngt. Inc.	schlossar@consulting-foresters.com
Dr. Kelsey Milner, PhD	Univ. of Montana	Kelsey@forestbiometrics.com
Dr. Jim Arney, PhD	Forest Biometrics Research Inst	JDArney@forestbiometrics.com
Tom Richards	Northwest Mngt. Inc.	richards@consulting-foresters.com
Vincent Corrao	NW Management	corrao@consulting-foresters.com
Halli Hemingway	Bennett Lumber	halli@blpi.com
Tom Biltonen	Bennett Lumber	tbiltonen@blpi.com
Patrick Vaughan	Latah County Assessor	pvaughan@latah.id.us
Mellisa Stewart	Clearwater County Assessor	mstewart@clearwatercounty.org
Michael Goodwin	Clearwater County	Mgoodwin@clearwatercounty.org

Tom Katsilometes asked Jane to proceed with her opening remarks.

Jane Wittmeyer said that she feels that the CFTM is the place to discuss this topic that they have grave concerns about. The process should be changed to be a more accurate transparent methodology that will accomplish uniformity between the counties. The presenters will provide a background for a new methodology that she feels will

accomplish this purpose. Jane went through the agenda for today and the field trip for tomorrow.

John Mandzak gave his power point presentation. One of the highlights was at slide 21 when John cited the example of loblolly pine in the SE US going from 1 cord to 2.5 cords per acre of productivity with careful management of the stand as it grows.

Rod Brevig asked John Mandzak to define what he meant by the term "found forest".

John Mandzak responded that it was a term that John Currin had coined in reference with a natural stand that had not received management inputs to regenerate or grow.

John Currin added that it is a natural forest stand versus a managed stand. Since the management costs adopted by the CFTM in 2004 were custodial costs then the growth rates needed to reflect that level of management also.

Jane Wittmeyer added that management will heavily impact the forest growth that takes place on a site.

John Mandzak added that it is difficult in the SE US to find a site that is natural. Most of the land has been changed in some way and a lot of the land that is now in forests was at one time in agricultural uses like raising cotton.

Bill Schlosser provided his power point presentation. The title he chose was "Forest Productivity Determinations a Science Based Approach". The basis for forestland productivity according to Idaho Code is a site's "natural" productivity and it should not include enhancements to that growth due to management, genetics, fertilizer, etc. Once this "natural" productivity is measured it should not need to be revisited as it represents the inherent productivity of a site.

(1) We first use forest growth modeling software to determine the Mean Annual Increment (MAI) in discrete locations. It can be determined as a function of elevation, precipitation, soils, habitat type, etc. Make these discrete determinations across the state.

(2) Integrate permanent plot information from forestland owners. (Federal, State, Industry, Private)

(3) Next pull the data together into a GIS system to manage and interpret the data. Then conduct a Kriging and Variography analysis to make predictions of MAI. The data can cover all industry and private forestlands in the state. The analysis will include statistical predictions of accuracy.

(4) Finally, create a map of each county showing boundaries of each productivity class.

The disadvantages of a Habitat Type Approach are that it can involve current management bias problems inherent in measuring site trees, or increment boring what is on the site. Habitat typing is a subjective process but this is mitigated by the assistance of

the ISTC Forester. However even experienced professionals will come to different conclusions on the same site. Habitat types are only one factor in determining site productivity. When taken alone, there is a potentially weak correlation between annual or mean productivity and can create a bias in the estimates. The ability of the Assessors to consistently assign habitat type to a site is limited. There is low consistency.

The advantages of the science based approach is that it eliminates the current management bias problem inherent when measuring site trees, or increment boring what is on the site. We have the ability to determine the site's inherent productivity (Dr. Arney will detail this part of the process). Once the process is completed the results will be available for the assessor's to use. It is efficient and can be done within a reasonable cost and time frame. It is more reliable because it uses stand level factors which determine MAI.

Bill cited an example in Boundary County, Idaho. He showed field sample plots that had been put in for inventory and to determine growth. He showed an example of Kriging and Variography that he had used to extrapolate point estimates into a continuous coverage of the area.

Bill cited another example of fuel modeling that his firm had done for the Yakima Nation and another for a portion of Benewah County, Idaho in which he used GIS data to provide a map of a DEM (Digital Elevation Model), Aerial Photography, Land Ownership, Crown Competition Factor, Canopy Closure, Forest Type Groups, Total Volume, and Volume Growth.

In conclusion Bill cited these advantages of working with his firm. Northwest Management's GIS lab has experience completing these types of projects. Dr. Schlosser is a pioneer in the use of Kriging and Variography in forestry growth and yield applications. NW Mngt. can work with Jim Arney's growth modeling and predictions, then integrate them into the GIS analysis. The ISTC and Counties will receive GIS data and county maps of forest productivity classes. This is something the ISTC can do to improve tax equity and accuracy of forest productivity determinations. This is a scientifically defensible process. This is a reliable process.

Rod Brevig asked Bill to describe Kriging and Variography in greater detail.

Bill Schlosser said that Mr. Kriging was a graduate student in South Africa in 1960 that developed a statistical procedure for determining how point measurements can be integrated across landscapes to provide indications of what is in between. Mr. Kriging was working for the gold mining industry in South Africa and was trying to determine the course of gold veins underground. Bill said that this technology was not available even five years ago in the forest management field and some who have tried to find information on the subject will come back to him and tell him that his company website is the only area on the web that has information on the subject. Bill said that he is pioneering this work in the forest management area.

Mike McDowell asked Bill if there will be pockets that will not be accurate on small ownership because in the forest tax law we have recognized parcels as small as five acres in size.

Bill Schlosser said that there may be instances when that is true because we cannot be completely accurate at each point because it would cost many millions of dollars to create that much detail.

Dave Ryals asked if Bill was proposing more productivity classes.

Bill Schlosser said that he is not suggesting more productivity classes. What he envisions is a map with basically three colors on it for good, medium and poor.

Dave Ryals asked if the original good, medium and poor was for natural or managed stands.

Bill Schlosser said that he intends to work only with natural stands.

Jim Arney said that there will be holes in the data where small owners will haul out the Assessor and say that what is being shown is not true.

Steve Fiscus asked what authority the BOE (Board of Equalization) will have if someone questions this procedure and complains about how they are being treated.

Bill Schlosser said that he thought there would be little for them to complain about.

Kelsey Milner said that in Montana the problem is understanding the difference between potential productivity and current actual productivity. He said that they have had three hearings on this subject in Montana that he has been hauled into.

Mike McDowell asked if there is a chance with this type of system to create a greater density of plots where more variation takes place either in ownership or productivity.

Bill Schlosser said that there will be areas where we have had agricultural ground that has not been in trees for a very long time. There will not be any data available on these tracts. Bill went to his computer and demonstrated that there are five different types of Kriging depending on the data that you are working with. The software that he was using is a special edition of ArcMap by ESRI.

Mike Goodwin asked how we measure MAI.

Jim Arney said that there is the capability to measure all growth instead of the traditional measuring process that used board feet Scribner. Now for many of his projects he is measuring biomass because the biofuels industry is becoming important in the minds of his clients.

Bill Schlosser responded again to Mike McDowell's question concerning holes in the data and said that with this system it can be improved as time goes along. There is an opportunity to incorporate better information as this is developed.

Steve Fiscus asked the counties if they all have the ownership data layer available in their counties.

Bill Schlosser said that he knows for a fact that they are not.

Dave Ryals said that he doesn't have them available in Boundary County.

Bill Schlosser asked how the county will calculate acres on ownerships now.

Dave Ryals said that they use a dot grid.

Mike McDowell asked what they did with their plenimeter.

Bill Schlosser asked if Kootenai County has a GIS data layer completed for ownership.

Mike McDowell responded that the county will have their system completed by the time that Bill has his data sets put together for this study.

Kelsey Milner asked if they will go out and sub sample in areas where there are problems.

Bill Schlosser responded that they will do that.

Tom Katsilometes asked if the process has just become available in the last couple of years.

Bill Schlosser responded that they have gotten better at it since it was originally put together. Bill said that really no one else is using this technique in forestry applications. NW Mngt. has been using this technology for about a year now.

Kelsey Milner said that his question was created because in Montana they are developing their data base using a raster approach. Kelsey asked how the Kriging process works compared to their raster approach.

Bill Schlosser said that he is confident that this approach would be more accurate.

Kelsey Milner said that you can be measuring error in the system rather than error in the data set if the statistics are not developed correctly.

Bill Schlosser responded that it may be true but he is confident that the data is more accurate and that their error measure will be better.

Vincent Corrao said that they (at NW Mngt.) are getting better all the time and they are able to put in more plots in weak areas and improve the process as time goes along.

Kelsey Milner presented on his study in the State of Montana. He introduced himself to the group as a biometrician for Champion and then the University of Montana. He said that the process that is being suggested for Idaho is exactly what they are using in the State of Montana. They did their first study in 1992 and 1993 so why do they have to do it again now? There was a problem with the old Statsgo soils information because the polygon would start in the valley bottom go up the slope and over into the next drainage without changing. Now they have better data so they needed to update what had been done in the past. He said that first they have to establish the relationships between site index and their other inputs such as climate, elevation, precipitation etc.

(1) First they establish the relationship of site index with their other attributes.

(2) They apply the information and field check it to determine the accuracy of the information.

(3) They have 3 two person crews that they have used to establish 250 site tree locations for the DOR (Department of Revenue).

(4) They incorporate 109 locations from Champion's data set.

(5) They have 3,000 site tree locations from the NRCS located all over the state of Montana. Some of these records are old and they are having some problems establishing where the site trees were located when the data was collected.

(6) He has gone recently to the Fire Lab in Montana to glean data from their records.

(7) He has developed a regression model to determine what the prediction of Douglas fir site index would be from other species that may be on the site. His model looks like this: Douglas fir site index = f (slope, aspect, elevation, precipitation, growing degree days, PAR, temperature) The R^2 = 50% and the SE (standard error) = 7.5'.

Kelsey indicated that these statistical results are about normal for measures of site index. He indicated that their data set suggests the need to have four productivity classes for the State of Montana not the six productivity classes that the state wants to have. He plugs the data into the FPS (Forest Projection System) that Al Stage has developed and grows the stand (under natural conditions) to the culmination of mean annual increment or CMAI.

Kelsey said that their sampling costs to establish 250 sample points are:

(1) Travel	$32,900
(2) Equipment	$ 6,000
(3) Salaries	$35,700
(4) Supervision	$ 7,000

Total project cost is around $175,000.

Mike McDowell asked how much change had occurred from their first to their second study.

Kelsey Milner said that they have not completed their second study yet so he cannot answer that question. He said that all the DOR has to do is turn the knob to get the result that they want.

Greg Cade asked what Kelsey meant by all the DOR has to do is turn the knob to get the result that they want.

Kelsey Milner said that the first time they did the study it was agreed that the result was a zero sum game. The result would not generate more dollars of revenue than had been generated previously from all the timberland acres in Montana.

Jim Arney began his presentation. He said that he developed FBRI (Forest Biometrics Research Institute) to fill in the gap left with the loss of most of the research biometricians who worked for the Forest Experiment Stations that had been run by the USDA Forest Service. He said that he has gone back and re-measured many of the growth plots that had been put in by former researchers in the area of forest growth and yield. He said that at his institute he has all of the data from the entire western US that had been developed by the Forest Experiment Stations. He mentioned Kim Iles who works at the arboretum in Nanaimo, British Columbia who wrote a recent textbook on conducting the inventory process on forest land.

Jim had a second power point presentation that was titled How to Measure Site Index. He explained that Boris Zeide proposed a two point process to develop site index. The first measurement point is taken at 10 meters or 35 feet up a tree to have a point of measuring growth that is past the time when a tree had to deal with all of the competition to establish itself in the stand. When a tree is young it is competing with other young trees, brush, grass, gophers, deer and elk, etc. When a tree has attained a 10 meter height it is normally at canopy closure when the trees have fully occupied the site and a truer measure of site index can be obtained. Jim pointed out that if a tree has been released by commercial thinning it will stop its height growth and put its energy into buttressing itself against the wind. Another caution that Jim offered in taking site trees is that if the tree only has the current years needles present it is about to die. The tree needs to have two or three years needle retention to be healthy. If the tree has retained five or more years of needles it is being fertilized or something, because it's not normal for a tree to retain its needles that long. Jim said that they are able to answer 70 to 80% of the variation in stands with their system whereas Kelsey is only able to explain 50% with traditional methods of measurement.

The CFTM took a 15 minute break to talk and get refreshments.

Tom Katsilometes called the committee back together again.

Mike McDowell asked if the presenters could answer two questions.

(1) What will it cost?
(2) How much will things change from the present?

Tom Richards responded that the total cost should come in at about $250,000.

Jim Arney said that he needs about 30 locations and about fifteen days of office time to perform his modeling and measurement part of the work.

Tom Katsilometes suggested that the cost may come in at much more than that perhaps as much as $500,000. Tom asked if Mike had his second question answered.

Mike McDowell said that he would still like to know how much his county is likely to be impacted by the implementation of this new system.

Jim Arney said that he doesn't know how much his county will be impacted but he does know that the information will have to be specific to each site.

Kevin Boling said that he doesn't know how things will come out but the project could be done on a county by county basis. He said that the companies are sensitive to sharing company information.

John Currin said that he wanted to go back to the original CFTM meeting and express his concerns with:

(1) The correlation between habitat type and site index.
(2) The specificity for boundaries by productivity class and ownership.
(3) The dependence on Irvin Haig's yield tables which were taken in 1934.

Kelsey Milner said that he has problems with habitat typing because while the prediction of site index within a habitat type may be good the opportunity to map that is poor. He said that in the work he did for Champion there was nothing but ecotones and he had difficulty in identifying habitat types on their ownership.

Jane Wittmeyer said that her folks are moving to this system on their own and when the system is in place they will question the productivity classifications that are currently in place based on their new information. She said that her opinion is that the state general fund should pay for the work because the state saves the cost of administering the current system. The counties also save money because they will have less field questions.

Dave Ryals said that if every acre in the state goes from good to poor the counties will still get the same amount of money so the outcome does not matter to them from that standpoint. He said what does make a difference is who pays the money. But he said that doesn't even trouble him that much because he can always blame the tax shift on the forest products industry.

Mike McDowell asked again what the process would take to create this change. He said it may be good to look at Clearwater County because they could be heavily impacted by this change.

Kevin Boling said that he has problems because he doesn't see that the present system of developing productivity classifications is defensible.

Mike McDowell said that he has problems with that because he has a forester who has performed this process for ten years in Kootenai County and has enjoyed a great deal of success in performing the work.

Jim Arney said that he is convinced that the current process used in Idaho is wrong because it cannot be defended. The primary reason is that the current process uses Haig's yield tables which cannot be determined or verified today.

Rod Brevig clarified that the current process is identified in code and rule and is entirely defensible because the law describes the way that the work should be performed. The state and counties are following the law and the law is defensible.

Tom Katsilometes asked Jim Arney not to interrupt Rod and allow him to finish his statement, which he did. Then Tom asked if the Idaho Legislature might approve a levy on all of the forestland in Idaho to pay for this type of a project.

Jane Wittmeyer said that it is doubtful that IFA would approve the assessment of a levy against forestland as the industry has been faced with a number of difficult financial years. She said she also doesn't feel that it would be fair. She asked, if the process for assessment is changed for residential landowners in the state would they have to pay for it or would the money for the project come from the general fund?

Mike McDowell said that he is concerned with the 30 plots per county doing an adequate job of describing the productivity classes on small ownerships. His forester has done this work for years and has been very successful in working with small owners using he current system when questions come up.

Jim Arney suggested that he can use the IDL (Idaho Department of Lands) CFI (Continuous Forest Inventory) plots to broaden his data base.

Dan Chadwick asked if it would be as great a problem to fund one county as it would be to fund the whole state.

Jane Wittmeyer said that when she asked that question she was told that the cost for one county would be 80% of the cost to do the entire state.

Jim Arney said that he can take in data from private companies without the obligation of releasing that information to someone else.

Dave Ryals said that if JFAC will not fund this study and the companies will not fund the study and the state and the counties will not fund the study then this whole thing is dead in the water.

Jane Wittmeyer said that with the coalition of the ISTC, IFA and IAC the likelihood of JFAC funding the study is very good.

Dan Chadwick asked if JFAC were to fund the study before implementation, then the question of the impact of the study could be determined before the results of the study are implemented.

Tom Katsilometes said that if this were done then there could be a determination if the impacts would be acceptable prior to the time any of it is implemented.

John Currin said that the application is broader than just through taxation. The IDL, tribes and industry would all be benefited by the results of this study.

Dave Ryals said that he liked the idea that Dan Chadwick had proposed.

Mike McDowell said that he wanted to ask if the industry would want an opportunity to see what the impact would be prior to implementation also. He said that he recalled a careful process to try to come up with the values before they were approved by the CFTM.

Kevin Boling said that he would like to see what the impacts would be prior to them being implemented.

Jane Wittmeyer said that she doesn't feel that she can agree to this suggestion because if the answer is science and data based then the result should be right and both sides should be willing to accept the consequences whatever they may be. What is good for the goose is good for the gander.

Mike McDowell said that he doesn't feel that the CFTM can dictate to any elected official what to do in their jurisdiction. If the result can go either way then he feels conflicted as to how he is representing his constituents.

Steve Fiscus said that he doesn't want Kevin to feel picked on because of this discussion from the counties because there is only one county with a forester on staff. Additionally, the counties have yield and deferred tax administration which they are responsible for. So even if there were to be a change in the way that productivity classes were determined it would not impact the work load within the counties and there would be no cost savings. Also even if there is a change in the process and a resultant increase in valuation there may be no more tax generated because the other portions of the budget may change and there may be no impact because of compensating changes.

Dan Chadwick said that he would explain the stuff that he and Jane had put on the board during the lunch break.

(1) The group would pursue a $250,000 grant from the state to develop a scientifically based, data driven forest land productivity classification product.

(2) The productivity classifications on forestland in Idaho would be frozen as of January 1, 2007 for however long it takes to work out this process.

(3) There will be no voluntary reclassification.

(4) There will be a limit to the changes in the classification of forestland to a "change in use".

(5) There will be a report to the CFTM for analysis/action/possible legislative change without a change in the ISTC rules.

Tom Katsilometes called for the motion.

Mike McDowell provided a first to the motion.

Kevin Boling provided a second.

Tom Katsilometes called for the vote and the vote for the resolution was unanimous.

Dan Chadwick said that the appropriation must be placed in the ISTC budget for the 2008-2009 budget period.

Jane Wittmeyer said that she and Dan can go to the Governor and see if they could work on an appropriation for this next year.

Tom Katsilometes asked if there is anything else that needs to be discussed. Hearing none he closed the meeting at 4:30 PM.