EXHIBIT 12

LAND USE PLANNING NOTES <<<<

NUMBER 3 X APRIL 1998

"STEWARDSHIP IN FORESTRY"

PURPOSE: This technical bulletin has been developed to help landowners and local governments when they must use an alternative to the USDA Soil Survey to determine the productivity of forestland. Under OAR 660-06-005 "where SCS data are not available or are shown to be inaccurate, an alternative method for determining productivity may be used. An alternative method must provide equivalent data and be approved by the Department of Forestry." This paper describes the methodology that the Department approves and provides guidance and other information necessary to use that methodology. We have also included some background information to answer some commonly asked questions about the cubic foot productivity class system.

Why use the average annual cubic foot production in land use decisions?

The Department of Forestry advises using the USDA Cubic Foot Productivity Class[1] system, as opposed to other systems of measure, when making land use planning decisions because it measures the relative productivity of the soil, it is not dependent upon the condition of the forest or the species of trees currently growing on the site, and it is more consistent than other measures.

The cubic foot productivity class system ranks soils based upon the mean annual increment measured in cubic feet at the point in time where the culmination of mean annual increment (maximum average annual growth) occurs. This is the average growth rate of the timber over the life of the stand measured at the peak of that average growth rate. The table below shows the potential timber yields of productivity classes 1 - 5 in cubic feet per acre per year (cuft/ac/yr).

[1]Field instructions for forest surveys in Washington, Oregon, and Northern California. USDA Forest Service, PNW Range and Experiment Station.

12-1

CUBIC FOOT PRODUCTIVITY CLASSES

CODE	POTENTIAL YIELD-MEAN ANNUAL INCREMENT
1	225 or more cuft/ac/yr
2	165 to 224 cuft/ac/yr
3	120 to 164 cuft/ac/yr
4	85 to 119 cuft/ac/yr
5	50 to 84 cuft/ac/yr

Cubic foot productivity class was developed to compare the relative productivity of different soils. Other measures which might be used to compare different parcels, such as site class or site index, are not consistent between species and authors. Site class is commonly used on the west side to describe the productivity of Douglas-fir forests, but site class is only used for Douglas-fir and not for other species. Site index is calculated as tree height divided by tree age at a base age of 100 or 50. Since on the same area, in the same length of time, different species grow to different heights, site index is not consistent between species.

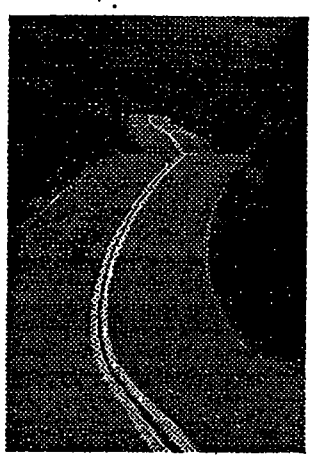
For example cubic foot productivity class III can produce between 120 and 164 cubic feet per acre per year from a fully stocked natural stand. In the next column is a comparison with several species and site indexes.

CUBIC FOOT PRODUCTIVITY CLASS 3
(120 - 164 cuft/ac/yr)

Site Index Equal to Productivity Class III

Douglas-fir	
(100 yr Site Index)	130 - 160
Western Hemlock	
(100 yr Site Index)	100 - 110
Ponderosa Pine	
(100 yr Site Index)	120 - 130
White Fir	
(50 yr Site Index)	60 - 70
Engelmann Spruce	
(50 year Site Index)	80 - 90

Another advantage of using cubic foot productivity class is that the ratings are available for most forestland without professional assistance. The published soil surveys contain a rating which can be used by county planners or private landowners to rate productivity and using the information does not require visiting the site or taking measurements.



Why don't we use board feet instead of cubic feet?

Cubic foot volume is a form of measurement commonly used in forestry research and forest management planning. It is a physical measurement based upon the actual volume of wood. On the other hand, board foot volume is based upon a series of rules. The board foot rules were developed to try to determine the amount of lumber which could be sawed (at that time) from a range of different diameter logs. Although its predictive abilities are out of date (1 board foot of log now produces from 1.7 - 2 board feet of lumber), board foot rules continue to be the most common measure used to buy and sell logs in the Northwest. The problem with converting cubic feet to board feet is that the conversion factor is not a constant. Because board foot volume is determined by a rule, one cubic foot of wood from a log with a scaling diameter (small end diameter) of 6 inches contains 3.32 board feet, while one cubic foot of wood from a log with a scaling diameter (small end diameter) of 30 inches contains 6.86 board feet. Therefore as the average diameter of a stand increases in size, the board foot/cubic foot ratio of the stand also increases. To complicate matters further, the length of the logs cut from the tree effects the conversion from cubic feet to board feet. Since trees are tapered and board foot is measured from the small end of the log, cutting the tree into different length logs changes the number of board feet contained in the tree. Because of this difference, the exact number of board feet contained in a stand of timber cannot be determined without knowing how the trees will be bucked into logs.

Because the board feet contained in a stand of timber depends on the average diameter of the stand and the way the trees are bucked into logs, the ratio of board feet to cubic feet is not constant. Comparisons such as soil productivity are much easier to make based upon a constant volume measure such as cubic feet. That is why it is more commonly used in the more technical forestry applications.

General Procedures to Challenge the Site Productivity Listed in the Soil Survey

Before deciding to use an alternative method of measuring the productivity of forestland, documentation should be produced showing that an attempt has been made to use the soil survey and either the soil(s) in question have no rating, or reasons exist indicating that the soil survey may be inaccurate. Where either of these two circumstances exist, a soil scientist from the USDA Natural Resource Conservation Service (NRCS, formerly SCS) should be contacted.

In many cases soils that are primarily used for agriculture were not given ratings for forestry. However, this does not mean they are not capable of growing trees. On the contrary, they may be highly productive, and a NRCS soil scientist may be able to provide a rating of that soil's forest capability. An NRCS soil scientist should also be able to advise you about the procedures used to conduct the soil survey and the accuracy of that survey as it relates to the property and soils in question. The advice received may save both the land owner and local official time and money.

Because the soil survey is not site specific information, The Department of Forestry has agreed to approve methods that would allow a land owner to use site specific information to determine the productivity of the land when applying for a dwelling or other land use decision.

The process should work something like this:

1. The Department of Forestry has approved a methodology for calculating site productivity (the details are described below in this document). When the landowner contacts the county with concerns about the productivity rating of their property, they are provided with information about the required methodology.

2. The landowner must have an independent, knowledgeable person, like a consulting forester, measure the trees on the property and calculate the cubic foot site class using the approved methods. Plots must be taken to measure the productivity of each different soil type and aspect on the property. The consultant must use care when selecting site trees to obtain an accurate measurement, and the consultant's report must provide adequate detail to determine whether the approved methods were followed.

3. The consultant shall provide a copy of the report to the county to use in making land use decisions. If the county has questions about whether the consultant followed the methodology, the Department of Forestry may need to review the report. However, because this is a land use decision, the county must make the final decision to accept or reject the work of the consultant.

Methodology Approved by the Department of Forestry for Calculating Site Productivity

The Department of Forestry does not measure sites for landowners. The landowner needs to have an independent qualified person, such as a consulting forester, take the measurements and calculate the cubic foot site class. The methodology the Department of Forestry approves to determine the productivity of an area is contained in the *Field instructions for forest surveys in Washington, Oregon, and Northern California. USDA Forest Service, PNW Range and Experiment Station.* Equivalent published methodology is more widely available from a Weyerhaeuser research paper, by King[2]. These papers describe how to select site-trees and calculate site index. A second paper, from the US Department of Agriculture[3], uses site index information

[2]King, James E. 1966. Site index curves for Douglas-fir in the Pacific Northwest. Weyerhaeuser Forestry Paper No. 8. Weyerhaeuser Forestry Research Center, Centralia, WA.

[3]USDA. 1986. Culmination of mean annual increment for commercial forest trees of Oregon.

(continued on next page)

as determined from on-site measurements to reference a set of cubic foot productivity tables. We approve this method because it is based on site specific measurements and it will produce results that are consistent with the Soil Survey.

A summary of the methodology and the necessary tables to calculate site class for the three most common forest types are included below. The methods listed in this paper can be used in combination with other published site index and yield tables if the site is not suited to one of these species. However, the use of other tables or the use of other species to determine site index must be approved by the Department of Forestry on a case by case basis.

Plots must be taken to measure the productivity of each different soil type and aspect on the property. Selection of site-trees (trees selected to determine site index) is a critical part of accurately determining the productivity of the land. To be used, site-trees must have remained in a dominant or co-dominant position throughout their life. If the land has been selectively harvested in the past, most or all of the dominant trees in the stand may have been removed. Basing site index calculations on the remaining trees, grown in lower crown positions, will not accurately measure site productivity. In some cases it may be difficult to find enough site trees on the property to accurately determine productivity. If insufficient dominant trees exist on the property to determine the site index, site-trees may be selected from adjacent properties with the same aspect, elevation, and soil type.

If the parcel is a forest site and no trees are available for site index calculations, or if the site index cannot be determined accurately from the existing timber in the area, then soil survey methodology will be required to accurately assess the site productivity. To map the area and provide site specific data that is more accurate than the USDA Soil Survey will require the landowner to employ a soil scientist to do a higher intensity soil survey. The qualifications and procedures for conducting such a survey are contained in OAR 603-80-0040 (3). This survey must provide detailed information on the soil types represented on the property.

General Rules for Selecting Site Trees

1. If possible, use the species that dominates the area. Height from 15 to 20 dominant and co-dominant trees and age counts on about 10 trees should be sufficient to determine site index if the area is homogeneous. Additional plots will need to be taken to represent different soil types and aspects across the property.

2. You may select site trees of different species as long as they use the same site table.

Technical Note No. 2. USDA, Soil Conservation Service, Portland, OR. (Note: the SCS - Soil Conservation Service is now the NRCS - Natural Resource Conservation Service)

3. Site index should not vary by more than 20 or 30 between site trees (as indicated on each site table), unless the difference can be explained by actual site variation. Use the site index tables below to compare site measurements.

4. If you select Douglas-fir or grand fir site trees use the site tree selection method for King's Douglas-fir table, outlined below. For other site tree species, use the site tree selection criteria for other species.

Method for Selecting Site Trees for King's Site Index Table
(Use for Douglas-fir and grand fir)

1. Within the plot area, locate an approximately circular area that encompasses 25 trees (the "site index clump") and that is representative of the site being sampled. When there is a choice, favor well-stocked areas over sparse areas. When counting trees, include only Douglas-fir with normally-formed tops; do not include understory trees that are both younger and shorter than the general crown canopy.

2. Of these 25 trees, select the 5 with the largest dbh as site trees.

3. Any site tree with a clear history of suppression should be rejected, and the next largest tree selected if it is suitable. However, you may select a suppressed tree over a shorter, suppression-free tree of the same age.

4. If a 25-tree clump is not available, a smaller clump may be used. You should still limit the site tree subsample to the 1/5 of the trees in the clump with the largest dbh **unless** this gives you less than three site trees.

Method for Selecting Site Trees for Other Site Index Tables

1. Select trees that are or have been free from suppression for their entire lives. A tree that has been suppressed will have closely-spaced annual growth rings on all or part of its increment core.

2. Select dominant trees.

3. Trees less than 50 years old are undesirable if older trees are available. For ponderosa pine, trees 60 to 120 years old are most desirable.

4. Site trees should be evenly distributed across the plot area.

5. Select trees that show no signs of top-out, such as crooks or forks, **unless** these trees are taller than normally-formed trees of the same dbh.

6. If no suitable site trees are available from the property, select dominant trees from a nearby area with the same general aspect, elevation, and soil type. Note the location of the site trees in your report.

Site Tables:

Depending on the species of site tree selected, use the appropriate table to determine site index.

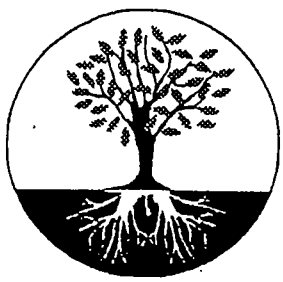
1. King's Douglas-fir table. Use for Douglas-fir and grand fir.

2. Barnes western hemlock table. Use for western hemlock and Sitka spruce.

3. Meyer's ponderosa pine table. Use for ponderosa pine and Jeffrey pine. Use this table when in stands that are predominantly pine, or when pine site trees are all that are available (except in the Willamette Valley).

How to use site tables:

The following site index tables are "upper limit tables." This means that when a tree height indicates a site index that falls between two site indices listed you should use the higher one. Example: Site tree is Douglas-fir, 75 years old at breast height, 115 feet tall. King's Douglas-fir site index table indicates that a height of 115 feet at age 75 falls between site index 80 and 90. Site index is therefore 90.



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Lane County Board of Commissioners
c/o Jerry Kendall, Land Management Division
125 E. 8th Avenue
Eugene, OR 97401

September 25, 2006

RE: Ogle-Childs marginal lands application, PA 05-5985

Dear Commissioners,

The Goal One Coalition (Goal One) is a nonprofit organization whose mission is to provide assistance and support to Oregonians in matters affecting their communities. Goal One is appearing in these proceedings at the request of and on behalf of its membership residing in Lane County. This testimony is presented on behalf of Goal One and its membership; LandWatch Lane County, 642 Charnelton, Eugene OR 97401; LandWatch's membership in Lane County, specifically to include LandWatch President Robert Emmons, 40093 Little Fall Creek Road, Fall Creek OR 97438, as an individual.

The purpose of this letter is to respond to comments made by the applicant's representatives at the public hearing on September 13, 2006.

1. What is the significance of NRCS's use of Base 50 site index tables?

At the hearing Goal One pointed out that the 1997 Marginal Lands Supplement was confused and in error concerning the significance of using a 50-year site index table. The applicant's forestry consultant appears to share that confusion.

The fact a Base 50 site index table is currently used by NRCS and Lane County to report potential forest productivity does not mean that a 50-year growth cycle is appropriate. Rather, the King 50-year table uses a CMAI age of *90* years for Douglas-fir. This means that *a 90-year growth cycle* would be appropriate if the objective is to maximize average annual volume.

As ODF explained in Technical Notes, June 1985:

> "The most common expression of productivity on forestland is site index (total *height* of trees in the dominant crown canopy at a *base age*, usually 50 or 100 years. * * *
>
> "The attached tables express site index in such a way it can be related to volumes. It is necessary, for comparative purposes, to use a method that expresses one value for each site index. The method chosen is culmination of mean annual increment (CMAI).

"This age or point may be thought of as *the most efficient time to harvest as far as tree growth is concerned.* * * *

"In the following tables, the culmination of mean annual increment (CMAI) *and the age when it occurs* is shown for the corresponding site indices. * * *"

[Emphasis added. See Exhibit 5, Goal One testimony of 9/13/06.]

Relying on the NRCS's use a Base 50 site index would assume harvesting at 90 years of age, not 50 years of age.

It is perhaps understandable that the Lane County Board of Commissioners would misunderstand what a Base 50 site index table is and what it implies for a harvest cycle. One who holds himself out to be a forestry expert has no such excuse.

2. Ponderosa pine is a merchantable tree species.

Mr. Farthing suggested that, in his opinion, ponderosa pine is not a merchantable or commercial tree species in the Willamette Valley.

As the attached email from Kevin Birch of the Oregon Department of Forestry establishes, Mr. Cornacchia's opinion is not shared by ODF and the forestry experts who have been charged by the legislature with oversight of Oregon's forests and forestry industry.

CONCLUSION

The use of Base 50 site index tables for Douglas-fir implies a CMAI age and harvest cycle age of 90 years, not 50. That Mr. Setchko doesn't acknowledge this, and has gone so far as to accuse Mr. Just of "fabricating" this fact, casts doubt on either his expertise or his integrity.

Ponderosa pine is a merchantable, commercial tree species in the Willamette Valley.

Goal One and other parties whose addresses appear in the first paragraph of this letter request notice and a copy of any decision and findings regarding this matter.

Respectfully submitted,

Jim Just
Executive Director

----- Original Message -----
From: BIRCH Kevin R
To: Jim Just
Sent: Thursday, May 25, 2006 3:51 PM
Subject: RE: tree species acceptable for reforestation

Yes, it is an acceptable species.

From: Jim Just [mailto:jjust@centurytel.net]
Sent: Thursday, May 25, 2006 1:31 PM
To: Kevin Birch
Subject: tree species acceptable for reforestation

Kevin,

OAR 629-610-0050(1) governs tree species acceptable for reforestation, requiring that a species be ecologically suited to the site, capable of producing logs, fiber, or other wood products suitable in size and quality for the production of lumber, sheeting, pulp or other commercial forest products, and marketable in the foreseeable future.

Question: does ODF consider Valley Ponderosa Pine to be a tree species acceptable for reforestation in the Willamette Valley, and specifically in Lane County?

Jim Just, Executive Director
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Goal One *is* Citizen Involvement

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September 27, 2006

HAND DELIVERED

Lane County Board of Commissioners
% Jerry Kendall
Land Management Division
Lane County Courthouse/Public Service Building
125 East 8th Avenue
Eugene, OR 97401

Re: Marginal Lands Plan Amendment Application
Tax Lots 303 and 304, Map No. 18-04-11
(Ogle-Childs)

Chair Dwyer and Commissioners:

Pursuant to the schedule that was established at the conclusion of the September 13 public hearing, I am enclosing supplemental statements prepared by the Applicant's forester, Marc Setchko, and soil scientist, Stephen Caruana. There is no new information or facts included with these materials. Both gentlemen reaffirm the analysis and conclusions contained in their previous oral testimony and written statements.

We urge you to read both reports carefully and compare them with the testimony submitted by Mr. Just on behalf of Goal One Coalition. Enclosed for your convenience is Mr. Setchko's previously-submitted report, dated March 1, 2006.

As noted by both Mr. Setchko and Mr. Caruana, Mr. Just continually misstates, misinterprets and, in some cases, misrepresents the available data regarding the soil and growth capabilities of the Subject Property. For example, he asserts that the analysis and conclusions of Mr. Setchko and Mr. Caruana are in conflict. In fact, both gentlemen state and now restate that their conclusions about the Subject Property are entirely compatible. In particular, the area identified by Mr. Setchko as "grassland with exposed rock" has now been reexamined by him and Mr. Caruana, who collectively, reaffirm the basic fact that these areas are nonproductive resource land. It is basically a large grassy meadow that has been in this condition ever since it was first observed and mapped in 1909. See Agronomic Analysis Soil Report, p.5. The irrefutable fact is that this area of the Subject Property has not, cannot and will never be capable of producing a merchantable tree species.

BCC #3 - 2pp.

The criteria in ORS 197.247 establishes a minimum productivity standard for determining whether a specific site qualifies as "marginal land":

> "The proposed marginal land... is not capable of producing ... eighty-five cubic feet of merchantable timber per acre per year..."

Mr. Setchko has presented irrefutable evidence that large areas of the Subject Property are not capable of producing any merchantable timber. Mr. Just has not presented any evidence to the contrary about the growth potential for the Subject Property in these areas, other than conjecture and hypothesis based on generalized soil and growth data. Mr. Caruana's report confirms Mr. Setchko's analysis from a soils and agronomy perspective.

The other important part of Mr. Setchko's enclosed supplemental report is his confirmation of the 50-year growth standard. As Mr. Setchko notes: "[T]he majority of trees grown west of the Cascades are harvested **before** 50 years old." This is the industry standard. This is what determines merchantability, i.e. salability. Again, Mr. Just offers no real world experience or facts to support his assertions about longer growing periods. As Mr. Setchko points out, tree growth, whether for pine or fir, begins to slow down and the carrying costs begin to consume profit from larger trees. In short, a 50-year growth standard represents a reasonable management practice. Any longer period is not.

Overall, and has been the case with other applications (e.g. Carver and Dahlen), Mr. Just makes statements and produces statistical analysis which have no basis in normal, standard forest practice. He is not a reasonable and prudent forester. His analysis does not reflect "reasonable forest management practices". In reality they are quite inaccurate and misleading and should be dismissed in their entirety.

Mr. Just has not produced any new and certainly not any persuasive evidence about the Subject Property growth potential. We urge your careful consideration of the enclosed materials.

Sincerely,

Michael E. Farthing

MEF/kt

Enclosure

cc: Brad Ogle (w/ encl)
Marc Setchko (w/o encl)
Stephen Caruana (w/o encl)
Board of Commissioners (w/ encl)

Stephen Caruana
3419 Chaucer Way
Eugene, OR 97405
Telephone: 541-684-8000
Email: caruana@integra.net

Agronomic Analytics

September 25, 2006

Lane County Planning Commission
125 E. 8th Avenue
Eugene, OR 97402

Re: Ogle-Childs marginal lands application, PA 05-5985; response to Goal One Coalition Testimony of September 13, 2006

Dear Members of the Commission:

This communication is in response to issues raised by the Goal One Coalition as a result of the testimony provided by *Agronomic Analytics* in support of the above referenced application. The testimony was provided in both oral and written form. Only issues raised in the *Ogle Property Soil Report* (Report) by the Goal One Coalition (Coalition) will be addressed in this communication. These comments are in addition to those already raised by myself in my communiqué of March 12, 2006.

Once again, for the record, the correct spelling of my name is 'Caruana' not 'Carnuana' as presented by the Coalition.

The essence of my testimony presented here is that the Coalition has drawn a faulty, misinterpreted, and statistically invalid conclusion from my Report.

I reiterate my testimony from my earlier comments on Goal One's testimony. On Page 7, paragraph 6 of the Coalition's testimony, they cite my report with reference to the 16 sample sites examined on the soil mapped as Philomath. The Coalition derived an average depth of 29.5 inches for these 16 sample sites. This value is not reported *by Agronomic Analytics*. This is a statistically meaningless value to cite. The only statistically valid method to determine the average soil depth or any other soil factor would be to conduct a sampling procedure following a recognized protocol. An example of this would be to sample the site on a grid pattern, with a sample taken every 25 to 100 feet or as determined by the degree of precision and accuracy desired. On a 25 foot grid sample, this would require over 5,000 samples on this property in order to achieve a 95% confidence level. Obviously such a sampling would be time consuming and cost prohibitive. The goal of the survey conducted by *Agronomic Analytics* was to determine if soil and environmental factors were influencing the presence or absence of trees on the property, not to conduct a 1st order survey.

On the Ogle property a less intensive method was chosen in order to characterize the pattern and occurrence of vegetation observed. Sample sites were chosen not in order to produce an average soil depth corresponding to either the lowest or highest possible values, but in order to determine if the natural soil factors were influencing the observed occurrence of vegetation on the property.

On the Philomath soils of the property we observe the presence of grasslands and trees, shallow soils and deeper soils. Although both vegetation types occur across the varying soil depths from shallow to deep, in general the pattern appears to be that grasslands occur on the shallower soils and trees occur on the deeper soils. Where grasses occur on deeper soils as in AH # A then there is also a presence of younger trees indicating that it may be revegetating to trees; whereas those sites with shallow soils and grasslands show no evidence of encroaching younger trees and development of a forest canopy. In addition the large grassy area predominantly mapped as 108F shows no history of forest cover as far back as accurate records and aerial photography reveal. The large grassy area is underlain by predominantly shallow soils.

The production of any crop – whether corn or Douglas fir is always a question of both soil capability and economics. If the cost of production exceeds the value of the product then a wise manager and his banker are likely find other avenues for investment. The fact that a large area of this property is characterized by shallow soils, a hot, dry aspect, and severe competition may make it cost prohibitive to attempt to establish a commercially viable timber stand.

On those areas where trees are present the question becomes are they commercially viable trees? This question I believe is adequately addressed in the Forester's testimony.

There are several assertions raised in Goal One's testimony of September 13, 2006 which merit further comment and refutation.

Goal One conflates the presence of trees on shallow soils with the ability of all shallow soils to produce merchantable, commercially viable timber crops. All sites must be evaluated against a host of inherent and manageable ecological factors. A good steward of the land manages a tract to improve those factors which can be improved, conserve those that are inherent and produce a crop or maintain permanent vegetative cover in as sustainable and economically a manner as possible. Soil depth is just one such factor. For example, a shallow soil may be underlain by a water table or springs, thus allowing atypical vegetation for the site to thrive. Conversely, a deep soil may also have a high water table limiting the vegetation present to hydrophyllic species.

Also sites must be examined in their totality if one is to derive a management plan sensitive to both the site's ecological strengths and limitations and within the financial goals of the landowner. All evidence available for examination and in my best professional judgment indicate that a significant portion of the areas now in grassland are likely to remain so. And while it may be possible to plant trees in these areas, it is unlikely that these soils will produce a commercially viable timber crop. That is why the Philomath is unrated for timber production in the *Soil Survey of Lane County*.

In conclusion, those areas now supporting grass vegetation and mapped as Philomath closely match the range of characteristics for the Philomath Series. Those areas on the property that are mapped as Philomath and support a growth of trees more closely resemble either the deeper and more productive inclusions of the Philomath Series or are more similar to adjacent soils which are in fact rated for timber production.

Respectfully submitted,

Stephen Caruana
Agronomic Analytics

Marc E. Setchko
CONSULTING FORESTER

870 Fox Glenn Avenue
Eugene, Oregon 97405
Phone: (541) 344-0473
FAX: (541) 344-7791

September 20, 2006

Lane County Board of Commissioners
125 East Eighth Avenue
Eugene, Oregon 97401

RE: Lane County File #PA 05-5985, Ogle-Childs Marginal Land Application; Response to Goal One Coalition Letter dated September 13, 2006

Members of the Board of Commissioners:

In this letter I will clarify some of the issues raised by Goal One Coalition. I have only addressed the issues concerning forest productivity. Most of the remaining issues have been repeatedly addressed by me, or someone else; the remainder are either policy or procedural issues.

Page 3 of Goal One's Letter: Mr. Just presents yet **another** table on the productivity of the parcel being looked at. The cf/ac/yr figures he uses are different than the previous figures he has used. He calculates a different site index number than he used previously.

In response to this I will provide some background. Mr. Just has **repeatedly** stated that I must follow the procedures outlined in the 1998 Land Use Planning Notes for calculating Site Index. He has stated that I must bore **at least** 10 trees; he has even included exhibits showing how this is done. I have bored more than 10 **on the site being looked at.** From these trees I have calculated the Site Index **for this specific site.** Mr. Just then takes **one** sample tree, taken at a different location (from where the subject site is) in the Willamette Valley, from **one** of the soil map unit types which exist on the subject parcel. This **cannot** be done according to the 1998 Land Use Planning Notes cited by Mr. Just. The determination of a site index, for a specific site, must be made from samples taken on that site. Site Index is a function of soil **and** environmental conditions existing on the specific site in question. Using this **one tree** Mr. Just calculates a different site index than he previously calculated, then applies it across **two** soil map units.

To sum up; Mr. Just has not followed any of the procedures he has repeatedly insisted I must follow to determine Site Index numbers. He has then applied these numbers across more than one soil map unit; which he himself has repeatedly said you cannot do. From these calculations he has come up with yet another cf/ac/yr calculation. The most recent calculations are different than his previous calculations; **none** of the calculations are based on **approved** methodology.

A final note concerning these discussions. Not once, throughout all of these presentations and calculations presented by Mr. Just, has a professional forester backed up his numbers.

Page 4: Mr. Just presents new calculations, using my productivity numbers, which assume full stocking on all of the acres being considered. I stand by my original report(s), which explains in great detail why this is not possible. I have included copies of my original reports for the Board to read, if necessary.

Page 5 (middle of the page): Mr. Just again stresses the 1978 ODF publication which states that the **dominant** tree species must be used to determine forest productivity. The above referenced publication also states that dominant species may be determined by forest type maps, aerial photos or field observation. From aerial photos (past and present) and field observation, it can be seen that Douglas-fir is the dominant species.

If these guidelines are followed the discussion of ponderosa pine productivity becomes a moot point. While ponderosa pine can and does grow on the property, it has **not been** and **is not** the dominant species.

This point is similar to the discussion of site trees. While Mr. Just repeatedly states that I must follow approved methodology, and shows all of the required methodology in his letters, he **does not follow any of the approved methodology in his calculations.**

Page 9: Mr. Just discusses my analysis of "grassland with exposed rock". He insists that that is not possible; with "reasonable forest management" he believes you can grow trees anywhere, in any conditions. As I have repeatedly stated, and discuss in great length in all of my preceding letters, there are places where trees will simply not grow. The fact that the subject property has a particular soil type does not mean trees will grow in it. I have discussed the influence environmental factors and conditions have on tree growth. These factors include southern exposure with high soil temperatures, low moisture content and shallow soil depths. A soil can be deep with **too much** moisture to allow tree growth. Ponderosa pine does not like excessive moisture or wet areas; wet areas exist on the subject property and these areas do not support trees. From over 30 years of experience as a professional forester, and personal experience with planting and replanting areas (with various tree species), I know that some areas **will not** grow trees. My conclusion that approximately 24 acres of this property will not grow trees is supported by historical photos dating back to 1936. The fact that some areas will grow trees, within the same soil map unit that will not support trees, is most likely due to inclusions of other soil types within the soil map unit. Mr. Caruana's report covers this subject.

For this report I have identified the areas with no trees as "grassland with exposed rock". I am **not** reclassifiying the soils in these areas. I am stating a professional opinion, based on years of working on similar sites, including numerous attempts to grow trees on my own property, which is similar to the subject property. Mr. Just has cited tables and charts, without considering the environmental conditions of this specific site, without the support of a professional forester (or professional soil scientist), and has not demonstrated, in any fashion, how he would get trees to grow here. His only response has been to throw out all manner of extremely expensive suggestions on how to get trees established. All of these suggestions are presented under the guise of "reasonable forest management".

As a practicing forester for over 30 years, including 20 years as a consultant, I would never recommend the activities suggested by Mr. Just. My job for clients is to practice good forestry, and if at all possible maximize their return. In many cases my clients will spend extra money to accomplish management goals above and beyond the Forest Practice Act minimum requirements. In many cases my clients will spend money up front to attain a good return in the future. However, I will not recommend, and I have never had a client ask, to spend money on extremely expensive projects which will not even return the money spent.

Page 11: Mr. Just states that a base 50 site index would assume harvesting at 90 years of age, not 50. I have included his own exhibit, which shows the CMAI (of a sample Douglas-fir stand) culminating at 80 years. I am not sure where Mr. Just gets 90 years out of this graph. It states below this graph that **the absolute age of CMAI varies**, but the pattern in this graph is similar for all species. He then provides two Exhibits which he purports to support his statement.

The first Exhibit (Goal One No. 5-2) is a productivity table **based on a CMAI at 50 years.** This is stated at the top of the table. The second Exhibit (No. 6) **does not contain a single statement** concerning the age at which CMAI is reached. I am not sure how Mr. Just arrived at a CMAI age of 90 years; it is **not** supported by his Exhibits.

Mr. Just then talks extensively about why a 50 year rotation is not "reasonable management practice". Very few private woodland owners, and even fewer industrial forestland owners, use a 50 year rotation. The majority of trees grown west of the Cascades are harvested **before** 50 years old. The **primary** reason for this is because the growth of the trees is **slowing** down after 50 years of age; prior to 50 years of age the growth is **accelerating.**

This is another example, presented by Mr. Just as "reasonable forest management", which is rarely followed by woodland owners. Mr. Just has repeatedly brought up management practices which are rarely followed, primarily because they are extremely expensive.

Pages 15-20: Mr. Just presents a series of tables showing incredible growth rates and monetary returns. I have refuted previous tables presented by Mr. Just showing similar numbers; most recently in my March 1, 2006 letter (which I have included with this letter). While Mr. Just shows how much more money the stands can generate over time, he has **no** discussion of the **carrying costs** to grow the timber to those older ages.

To further clarify my above statements I refer to Exhibit 1. From this exhibit it can be seen that the growth **rate** of the trees (periodic increment) is slowing down after 50 years of age. It can also be seen (from this Exhibit) that eventually the periodic growth rate crosses the mean annual increment (average growth of the stand throughout its' life). This is the point at which culmination of mean annual increment is reached, or CMAI.

From a monetary return point of view, the timber should be harvested at the edge of the curve where growth begins to drop off. From this point on the carrying costs exceed the returns. **This is why the majority of timber in western Oregon is harvested at 45-50 years.**

Mr. Just's tables also assume grade breakdowns which are not possible within the time frames he use. He also mixes and matches eastern Oregon ponderosa pine with valley ponderosa pine (which cannot be done). The final step he uses, to inflate the volumes, is breaking out the different soils within soil complexes and applying productivity figures to each different soil within the complex. This cannot be done under the marginal land guidelines for soil productivity calculations.

I have discussed all of these aspects of Mr. Just's calculations **several** times; see my enclosed previous letters. I would also stress that most of the calculations presented by Mr. Just **do not** follow the procedures he has repeatedly stressed that I follow. He has used data out of context, not followed approved methods and repeatedly changed his numbers. He has presented Exhibits which **do not** support his presentations. At no point in time has he had a professional forester back up his calculations and he himself **is not** a qualified professional forester.

In conclusion, I stand by my original analysis. I have conducted the analysis using site specific methods. Soil map units are only **one** aspect of site index. Environmental factors have a large influence on site index. From 32 years of experience as a professional forester, including a Master of Forestry in Silviculture degree from Oregon State, I know that there are places where trees will not grow.

Sincerely,

Marc E Settle

SE CHKO / OGLE EXHIBIT 1

Step 6. Calculate periodic annual increment (PAI)

The average annual volume growth of a timber stand measured over a specific period is its periodic annual increment (PAI). This figure is useful because volume growth per acre can vary substantially as the stand ages. The PAI of either board-foot or cubic-foot volumes can be calculated for any period, but 5- or 10-year periods are most common. Calculate PAI:

Periodic annual increment = (Total volume/acre at end of period – Total volume/acre at beginning of period) ÷ Number of years in the period

PAI can measure previous growth or project future growth. Core samples enable you to take measurements back from the present, and your calculated growth projection factor enables you to estimate a future periodic annual increment. This enables you to determine how your stand is growing by taking a "snapshot" in time.

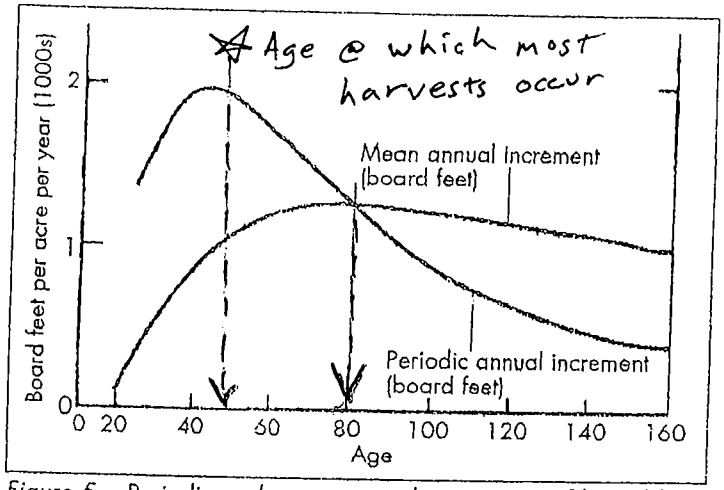

Figure 5.—Periodic and mean annual increments of board-foot volume for Douglas-fir, showing culmination of mean annual increment at about 80 years. Absolute age of culmination varies, but the pattern in this graph is similar for all species. Adapted from McArdle et al., *The Yield of Douglas Fir in the Pacific Northwest*, USDA Technical Bulletin 201, 1961.

Hypothetical ideal harvest time

Foresters have a long tradition of analyzing timber stand growth. Figure 5 shows the growth pattern for Douglas-fir, but the pattern for even-age stands tends to be similar for all tree species.

From analyses and long experience, foresters have derived the general rule that when PAI falls below MAI, the timber stand is "mature"—that is, it has passed its peak of wood growth production in the biological sense. Thus, the stand might be harvested if growth rate is the overriding factor in the harvest decision.

The point where the PAI line crosses the MAI line also is the highest value for MAI. This point, therefore, is referred to as *culmination* of MAI. The stand will continue to add volume after this point but at a slower rate than before. Thus, by comparing estimates of PAI and MAI, we can test whether our stands are biologically mature. Thinning stands can boost the growth of residual trees and delay the culmination of MAI.

Often, factors such as cash flow or market cycles dictate a timber harvest before or after culmination of MAI. By combining this biological information with financial analysis, you can tailor your management decisions to your own situation and objectives.

Where to go from here

Good stand information is essential to making the decisions necessary for managing your woodland property. Stand measurements are critical to logging and marketing options. They are also important as indicators of a stand's health and vigor and its susceptibility to insect and disease problems. And, measurements might be important in deciding whether a harvest operation will generate the desired cash flow.

Measurements taken according to the procedures described here are suitable for understanding how a timber stand may develop over time; however, they're no substitute for professional timber appraisals or inventories done by foresters.

If you want to refine these techniques or to study timber growth further, contact your Extension forestry agent for possible opportunities.

GOAL ONE EXHIBIT → Ex. 3-13

GOAL ONE EXHIBIT 5-2

CMAI FOR DOUGLAS FIR

SITE INDEX	100 YR. TABLE (PSME) 790-McARDLE							WEST SIDE 50 YR. (PSME) 795-KING			EAST SIDE 50 YR. (PSMEG) 765-COCHRAN		
	CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL AGE	SCRIBNER BD.FT./ AC./YR.	TOTAL AGE	INTER.1/8" BD.FT./ AC./YR.	TOTAL AGE	CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL AGE	CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL AGE
50											29	2.0	116
51											30	2.1	115
52											32	2.2	115
53											34	2.4	114
54											35	2.4	114
55											36	2.5	113
56											38	2.7	112
57											40	2.8	112
58											41	2.9	111
59											42	2.9	111
60											44	3.1	110
61											46	3.2	109
62											47	3.3	109
63											49	3.4	108
64											51	3.6	107
65											52	3.6	106
66											54	3.8	106
67											56	3.9	105
68											58	4.1	104
69											59	4.1	104
70													
71								79	5.5	90	61	4.3	103
72								81	5.6	90	63	4.4	102
73								83	5.8	90	65	4.5	102
74								84	5.9	90	67	4.7	101
75								86	6.0	90	69	4.8	101
76								89	6.2	90	71	5.0	100
77								91	6.3	90	73	5.1	99
78								93	6.5	90	75	5.2	99
79								94	6.6	90	77	5.4	98
								96	6.7	90	79	5.5	98
80	58	4.1	70	146	160	291	110	98	6.8	90	81	5.7	97
81	60	4.2	70	151	160	299	110	100	7.0	90	83	5.8	96
82	61	4.3	70	156	160	307	110	102	7.1	90	86	6.0	96
83	62	4.3	70	162	160	316	110	103	7.2	90	88	6.2	95
84	63	4.4	70	167	160	324	110	105	7.4	90	90	6.3	94
85	64	4.5	70	172	160	332	110	107	7.5	90	92	6.4	94
86	66	4.6	70	178	160	340	110	109	7.6	90	95	6.6	93
87	67	4.7	70	183	160	348	110	111	7.7	90	97	6.8	92
88	68	4.8	70	189	160	356	110	113	7.9	90	99	6.9	91
89	69	4.8	70	194	160	365	110	114	8.0	90	102	7.1	91

5-2

GOAL 3E EXHIBIT 6

Forestland Productivity

Lane County Area, Oregon

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			Cu ft/ac	
41C:				
Dixonville	Douglas-fir	109	152	Douglas-fir, Ponderosa pine
	Grand fir	—	—	
	Oregon white oak	—	—	
	Pacific madrone	—	—	
41E:				
Dixonville	Douglas-fir	109	152	Douglas-fir, Ponderosa pine
	Grand fir	—	—	
	Oregon white oak	—	—	
	Pacific madrone	—	—	
43C:				
Dixonville	Douglas-fir	109	152	Douglas-fir, Ponderosa pine
	Grand fir	—	—	
	Oregon white oak	—	—	
	Pacific madrone	—	—	
Philomath	—	—	—	—
Hazelair	—	—	—	—
43E:				
Dixonville	Douglas-fir	109	152	Douglas-fir, Ponderosa pine
	Grand fir	—	—	
	Oregon white oak	—	—	
	Pacific madrone	—	—	
Philomath	—	—	—	—
Hazelair	—	—	—	—
81D:				
McDuff	Bigleaf maple	—	—	Douglas-fir
	Douglas-fir	112	158	
	Red alder	—	—	
	Western hemlock	—	—	
102C:				
Panther	—	—	—	—
107C:				
Philomath	—	—	—	—

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FOREST PRODUCTIVITY AND INCOME ANALYSIS
for Brad Ogle and Mark Childs -- March 1, 2006
SUBJECT PARCEL: ASSESSORS MAP NO. 18-04-11
Tax Lots 303 & 304, totaling 113.74 acres.

SUPPLEMENT TO ORIGINAL REPORT DATED JULY 7, 2005, including response to issues raised by Jim Just in February 1, 2006 letter to Lane County Planning Commission (presented by page number).

I will first try to clarify some of the issues and tables, presented by Mr. Just, which are extremely misleading.

Page 2 (Table 1 at bottom of page): Mr. Just shows a Site Index of 125 for Ponderosa Pine with a growth rate of 154 cf/ac/yr, then cites *Establishing and Managing Ponderosa Pine in the Willamette Valley* as the source for these figures. The table in this publication shows a Site Index of 104 and a growth of 110 cf/ac/yr, then cautions against putting to much weight on these figures due to the small sample size from which these figures were obtained. The latter **figures shown were presented by Mr. Just** in a previous presentation, and used by me in my analysis.

Page 6 (under prices): Mr. Just has questioned why I have not used log grades of higher value than 2 Saw. I have submitted Exhibit One showing the specifications needed for a log to be graded higher than a 2 Saw log, i.e., Peelers and Special Mill. The first requirement for these grades is age, then surface characteristics. Peelers and special mill grades require trees older than 50 years (see Tree Age column on Exhibit 1). These grades cannot be attained in a 50 year rotation, therefore they were not considered. I used the three grades which can exist in a 50 year old stand. I also used optimistic percentages of the three grades (40% 2 saw, 50% 3 saw and 10% 4 saw). From 30 years of cruising experience, I can state that these percentages of saw grades are high. Usually stands growing on Site III and IV ground (the site classes on the Ogle parcel) will have 20-25% 2 saw and 20-25% 4 saw, with the remainder being 3 saw. Using real stands growing on poor sites, such as the Ogle parcel, will actually result in lower average prices than I have used in my original report.

I have also presented Exhibit 2, showing the average stand diameter of stands at different ages, on different sites. From this exhibit it can be seen that, on **high** site III ground, the average stand diameter (at breast height) is 11". A 2 saw log must have 12" inside the bark, **at the top of the log**, to be graded a 2 saw log. An 11" tree cannot have a 2 saw log. However, 2 saw logs will exist in these stands because the diameters shown are averages. Therefore, some of the trees will be larger, and some will be smaller. A further argument could be made that thinning the stand will increase the average diameter, hence the percentage of 2 saw. This is true, in fact would be considered a reasonable and prudent forest management practice. But a thinned stand, while producing larger trees, has fewer trees. This means that the cubic foot per year per acre growth, in a thinned stand, will be less than the growth from a fully stocked stand. The tables used for projecting cubic foot growth, per acre per year, assume fully stocked stands.

To sum this up: fully stocked stands produce smaller average diameter trees, i.e., more 3 saw and 4 saw than 2 saw, but more cubic foot growth per year. Less than fully stocked stands, i.e., thinned and/or poorly stocked stands, produce larger average diameter trees, i.e., more 2 saw, but less cubic foot growth per year. Therefore, the grade mix I used for the forest income test is actually higher than an actual stand on this site class would produce.

Page 9: Mr. Just has pointed out that harvesting 16' logs would result in substantially more yield. This is true. The mills price the logs accordingly. Most mills pay top dollar for 36'-40' logs; some pay top dollar for 32'-40' logs. Shorter lengths drop off dramatically in price. If you can get a "camp run" price (meaning every log gets paid the same), there are parameters to follow. A standard in the industry is 70% of all delivered volume **shall be in 32' or longer logs**. This means that for every 16' log cut, a 36'-40' log must be cut to make up the difference. A log buyer will adjust his "camp run" price according to how much short wood they think will be delivered. If you can find a mill that will accept all 16' logs they will adjust the price down accordingly.

In summation: the mills have taken the scaling rules into account when stating a delivered log price. The standard has been 32' logs for years, now the most sought after logs are 36'-40'. The standard in eastern Oregon has been 16', primarily because of different trees species (i.e., products) and much shorter trees in this portion of the state. Mr. Just states that "reasonable management practices" would include selecting a log length that would maximize income. **In western Oregon, cutting long logs maximizes income.**

Final Paragraph Page 9: Mr. Just states again that I have assumed that only grades 2S, 3S and 4S exist on the Ogle property. He then states that 32' logs would generally be expected to result in higher grading, and thus higher prices. I am not sure what this means. Why would a longer log be a higher grade, just because of length? Grades are based on characteristics of the log, primarily surface characteristics, not length. Today's biggest **price determinant is length, not diameter**. And looking at Exhibit 1 shows that the higher grades cannot be obtained in a 50 year rotation.

He then states that the two assumptions - lower grades and 32' logs - are not consistent. This is very confusing, because the two have very little to do with each other. Grades are not determined by length, lengths were established by grading/scaling bureaus to accurately reflect the products being produced. For years 8' foot studs were the norm, hence 32' logs (because this is 4 X 8'). Today the 9' stud is becoming standard in many homes, hence 36' logs (because this is 4 X 9').

In other words: the current marketplace has changed the desired log lengths, but the scale books still use 32' as the standard west of the Cascades and 16' as the standard east of the Cascades.

Goal One has also questioned why I have discussed the facts of today's timber market, specifically, long 36'-40' logs, which were not the predominant logs in 1983 markets. In fact the relevance of my discussion of current log markets was called into question.

The reason I have discussed this subject is the parameters used for the income test. **Whether or not a tree species will be used for the 1983 income test is determined by whether or not it is a merchantable species on today's market. This is the primary reason that ponderosa pine is even being considered for the productivity test; in 1983 it was virtually impossible to sell west of the Cascades.**

Page 10 (table presented at the top of the page): This table shows board feet per acre, and total volume in board feet, for each soil type. On page 9 Mr. Just states that volume totals shown, for the entire 113.74 acres, are based on growth cycles of 60 years for Douglas-fir and 40 years for ponderosa pine. Neither species uses the 50 year growth cycle which is the parameter used by Lane County for calculations of income. The volumes shown, on the table presented, for both Douglas-fir and ponderosa pine are 60 year volumes. I am not sure why Mr. Just states that the ponderosa pine volumes are for a 40 year rotation, then uses 60 year volumes. Throughout his letters, Mr. Just repeatedly makes statements of fact, then shows data which does not match the statement, or cites a source for data used in tables, then presents data (in his tables) that is different than the data shown in the sources.

However, the biggest discrepancy in the volumes (shown in Mr. Just's income test table) occurs from the use of 16' log scaling volumes. These volume figures (for 16' logs) are 22-23% higher than the 32' log volumes, which is the standard used west of the cascades. All log buyers, and foresters, are aware of this, but the 32' log volumes must be used, because that is what log prices, west of the cascades, are based on. Using 16' log volumes increases the volume figures used for the income test. Combining the 16' log volumes with the volumes attained in a 60 year rotation, rather than a 50 year rotation, inflates the volumes used for the income test by **more than 80%**. The tables for ponderosa pine do not differentiate between 16' and 32' log volumes. My guess is that these are 16' log volumes, because that is the standard for east of the cascades; growth and volume tables for ponderosa pine west of the cascades are still being developed. However, since these are the only numbers available I will use them for the following presentation of the income calculation, but I will use the 50 year volumes rather than the 60 year volumes.

The table presented here is on page 10 of Mr. Just's letter to Lane County. I have inserted the correct figures, i.e., 50 year/32' log volumes for Douglas-fir and 50 year volumes for ponderosa pine. The numbers shown (in bold print) are from the tables **presented by Mr. Just.** In other words, I have used **the data presented by Mr. Just,** but used the **correct volumes for Douglas-fir** (i.e., 32' logs, SEE MY DISCUSSION AT THE TOP OF PAGE 2), from the **correct rotation for both Douglas-fir and ponderosa pine** (i.e., 50 years). Only the corrected numbers are shown in bold print.

VOLUME TABLE FOR OGLE PARCEL
(as presented by Mr. Just, **bold** print my changes)

#	Soil Name	Acres	Site Index	bd.ft./ac.	total volume (board feet) DF	PP
43C	DPH Complex	6.64				
	Dixonville (30%)	1.99	109	**22,321**	**44,419**	
	Philomath (30%)	1.99	104	**12,488**		**24,851**
	Hazelair (25%)	1.66	120	**20,912**		**34,714**
43E	DPH Complex	0.44				
	Dixonville (30%)	0.15	109	**22,321**	**3,348**	
	Philomath (30%)	0.13	104	**12,488**		**3,746**
	Hazelair (25%)	0.11	120	**20,912**		**2,300**
81D	McDuff	5.60	112	**22,321**	**124,998**	
102C	Panther	14.68	-	**6,215**	**91,236**	
107C	Philomath	39.61	104	**12,488**		**494,650**
108F	Philomath	30.20	104	**12,488**		**377,138**
113E,F&G	Ritner	13.38	107	**20,099**	**268,925**	
125C	Steiwer	3.19	-	**4,136**	**13,194**	
TOTALS		113.74			**546,120**	**937,399**
TOTALS FROM MR. JUST					991,455	1,398,346

The volumes shown above differ considerably, **even though they are from the same tables, all presented by Mr. Just.** The bold figures are numbers from the correct rotation age and correct volume columns, although the ponderosa pine figures are probably high, due to the likelihood of these volumes being 16' log volumes rather than 32' log volumes. However, since no other numbers are available I will use these numbers for the income calculation.

Other notes for clarification. The Douglas-fir prices used by Mr. Just are high, because he used an average price from 1978-1982 (as stated by him midway down page 10). The prices would be lower if 1983 prices and actual grade percentages used. The ponderosa pine price is much higher than what would have been received on the open log market, since average prices, **presented by Mr. Just, included all ponderosa pine grades,** were used. In reality, if the same 40% 2 saw, 50% 3 saw and 10% 4 saw ratio used for Douglas-fir, were applied to ponderosa pine, the price would be considerably lower. A 4 saw ponderosa pine has the same specifications as a 2 saw Douglas-fir, a 5 saw ponderosa pine has the same specifications as a 3 saw Douglas-fir and 6 saw ponderosa pine has the same specifications as a 4 saw Douglas-fir. So, in order to compare apples to apples, the same ratio applied to Douglas-fir 2 saw, 3 saw and 4 saw would need to be applied to ponderosa pine 4 saw, 5 saw and 6 saw. Using these ratios with 1983 log prices yields an average price of **$205.20/MBF. Even this price is high, because 4 saw is a tough grade to attain in valley ponderosa pine** (see Exhibit 3). **The true market value** at that time (for valley pine) was in the $160-170/MBF range. The average price I have used for **Douglas-fir in my original analysis is $229.50/MBF.**

However, for the sake of argument I will present the income test using the volume figures shown above, but **prices presented by Mr. Just.**

INCOME TEST FOR OGLE PARCEL using log prices presented by Mr. Just.

Douglas-fir

2S	.40 x 546.120 mbf =	218.45 x $316 =	$ 69,030	
3S	.50 x 546.120 mbf =	273.06 x $268 =	73,180	
4S	.10 x 546.120 mbf =	54.61 x $235 =	12,833	
			$155,043	$155,043
Ponderosa Pine		937.399 x $309 =	$289,656	$289,656
				$444,699

$444,699 (income over 50 year growth cycle)÷50 years = $8,894 per year

The above figure is less than $10,000 per year. This is the yearly income for the parcel; using numbers arrived at by splitting the DPH complex (which cannot be done), assuming full stocking over the entire 113.74 acres (which would be difficult, if not impossible to attain) and using log prices which are substantially higher (≈50%) than the prices actually paid during 1983.

INCOME TEST FOR OGLE PARCEL using 1983 log prices (Douglas-fir prices shown below result in an average log price of $229.50/MBF).

Douglas-fir

2S	.40 x 546.120 mbf =	218.45 x $255 =	$ 55,705	
3S	.50 x 546.120 mbf =	273.06 x $215 =	58,708	
4S	.10 x 546.120 mbf =	54.61 x $200 =	10,922	
			$125,335	$125,335
Ponderosa Pine		937.399 x $205 =	$192,167	$192,167
				$317,502

$317,350 (income over 50 year growth cycle)÷50 years = $6,350 per year

The above figure is substantially less than $10,000 per year. This number is arrived at even with the assumption that the ponderosa pine will have 40% 4 saw grade wood.

The final point to be discussed in brought up on Page 3, under the discussion of soils with zero productivity. Mr. Just states that I have excluded approximately one third of the property from my analysis, assuming "zero" productivity for tree growth. He further states that SCS and NRCS soil maps show these areas as being underlain by the Philomath soils. He then states that I have "invented" a new soil. All I have done is make the observation that no trees have grown in these areas for decades (as shown on the attached aerial photos), no trees are growing there now; therefore, these areas have no productivity from a tree growing standpoint.

I am basing my analysis on 30 years of experience, as a certified professional forester, and years of personal experience on similar properties. The most recent example of personal experience with this type of property is one that I owned with a partner until 2004. The property had similar soil types to the Ogle property, thin soils over rock with exposed rock, a southwest aspect, and grass. We planted ponderosa pine in this area (≈15 acres) **three** times; to date only a handful of trees have survived. Just because the soil map says a certain soil exists in an area does not mean it will support trees. Productivity figures for a soil type are averages taken over a wide range of sites. If the site is similar to the average site, the productivity of trees growing on the site will match the tables. However, there are many areas of the countryside overlaid with productive soils that have no trees. Conversely, there are areas of poor soil that do support trees.

There are many reasons for this. Thin soils do not provide enough rooting depth. Soils on a south slope can reach lethal temperatures in the surface layer, sometimes reaching above 140°F in the summer months (see page 7 and 8 of soils report by Mr. Caruana). Increased soil temperatures result in less moisture. With little moisture retention, and hot soil temperatures, these thin soils (on top of rock), will not support tree growth. This same soil, with a deeper soil depth, on a north slope, may support trees very well. Trees grow well on north slopes because of natural shading, which helps moisture retention and keeps soil temperatures low, which dramatically improves a tree's chance of surviving and establishing itself.

Another very important factor is the **difference** between **soil depth** and **effective depth.** Soils which are approximately 10" or less are extremely difficult, if at all possible, to establish trees in. Deeper soils, under ideal conditions, will readily support tree growth. However, **absolute** and **effective** soil depths are not necessarily the same. A high water table, toxic substances, an impervious layer, high rock content or steep slopes are factors which decrease the **effective** soil depth and decrease productivity. In many cases the conditions which decrease the effective soil depth are not sufficient to overcome the absolute soil depth. The result is areas of soil which will not grow trees. Practicing foresters are trained to look for areas such as these and adjust their management practices accordingly. If I have **repeatedly planted** an area with seedlings, over the course of several years, with no (or very little) survival, I make the assumption that the area is nonproductive. I will not, and will not advise a client, to continually plant an area because a map states that the soil (which may or may not be the actual soil there) is productive. At some point, a prudent tree farmer, company forester or consulting forester, makes the decision that the soil in nonproductive.

The primary point of this discussion is that all of these factors have a huge influence on tree growth. The same soil will have radically different growth rates, depending on the aspect, soil depth, elevation and latitude. A north aspect will have much better growth than a south aspect, trees grow better in deeper soils and higher moisture conditions. The further north (in latitude) you go, the better trees grow, because the rainfall increases. The only case where this is not so is when you get to the far north (Alaska and the Arctic Circle), because the extreme cold and harsh conditions inhibit growth.

In short: **soil type** is only **one** environmental factor influencing growth. Mr. Caruana will discuss all of these factors in detail; I am simply stating what I have observed during 30 years as a practicing forester.

To conclude this response I would like to discuss the concept of "reasonable management practices", which Mr. Just **repeatedly** brings up. The majority of his proposals to land owners would be horribly expensive up front, with very little return in the future. Ponderosa pine will be used as an example. Establishing ponderosa pine (while easier than Douglas-fir) on harsh, low site ground, would be difficult, if not impossible. I know this from years of experience, regardless of what a soil table says. Planting a property three or more times to establish a tree species would be extremely expensive, regardless of the tree planted. On top of that you would need to pay for brush control, otherwise you will not get the growth rates expected during the early years of a fully stocked, "free to grow" stand of trees. Brush control is expensive.

To spend this much money (this could exceed $1000/acre), establishing a tree worth very little on today's market, would not be prudent or "reasonable" from a landowner's perspective. This would be equivalent to buying a "hot" stock, betting that it will increase in value. Financial planners shudder at this, they want the money in dependable funds. As a practicing professional forester I would not recommend this course of action to a client of mine. I like to stick with tried and true forest practices, i.e., predictable and dependable.

The proposals Mr. Just makes are anything but "reasonable management practices". They are unsound from a financial standpoint and difficult to achieve from a forestry standpoint. As a consultant it is my job to help the landowner choose a course of action which is financially prudent and above all "doable". The last thing I would recommend is multiple plantings of a low value tree, on ground that has not grown trees in the past and will in all likelihood not grow trees in the future.

CONCLUSION

The analysis presented shows conclusively that this property will not support a merchantable stand of timber, of sufficient production capability, to meet or exceed the Marginal Lands Income test:

1) FROM ORIGINAL ANALYSIS DATED JULY 7, 2005. The estimated gross income based on a 50 year rotation for the entire 113.74 acre parcel would have been $258,630 in 1983. The average annual gross income would have been **$5,173 per year**.

FROM ANALYSIS PRESENTED IN SUPPLEMENT DATED MARCH 1, 2006. Using prices presented by Mr. Just, the estimated gross income based on a 50 year rotation for the entire 113.74 acre parcel would have been $444,699 in 1983. The average annual gross income would have been **$8,894 per year**. Using prices from 1983, the estimated gross income based on a 50 year rotation for the entire 113.74 acre parcel would have been $317,502 in 1983. The average annual gross income would have been **$6,350 per year.**

All of these figures are less than $10,000/year. Therefore, the property meets the following statutory test for Marginal Lands: ORS 197.247 (1)(a) "The proposed marginal land was not managed during three of the five calendar years preceding January 1, 1983, as part of a ... forest operation capable of producing an average, over the growth cycle, of $10,000 in annual gross income."

2) FROM ORIGINAL ANALYSIS DATED JULY 7, 2005. **These figures were calculated from productivity of areas that are actually capable of growing timber. Areas incapable of growing trees were not considered.** The subject parcel produces less than 85 cu. ft./ac./yr. of merchantable timber volume. The portion of the parcel being looked at for marginal lands designation produces only 69.327 cu.ft./ac./yr; only 62.146 cu.ft./ac./yr. if ground under the powerlines are not included. This has been determined by Lane County, and the State of Oregon, to be the measuring parameter for marginal soils west of the Cascade Range; as defined in ORS 477.001(21).

In summary, I find from the **specific site conditions present**, empirical yield tables, SCS data, Lane County Data and experience with similar lands, that this property is ill suited to the production of merchantable timber and use as land for forestry purposes. It is my opinion that this parcel should be classified as marginal land.

Sincerely,

Marc E Settle