

**TIMBER INVENTORY & APPRAISAL
OF
BADGER PROPERTY**

Dated

February 11, 1998

Prepared for

**Sonoma County Agricultural Preservation
and Open Space District**

Prepared by

Gene Forsburg



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OF
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Introduction

At the request of Mr. Stuart Martin, I have appraised the timber on the Badger Property, a 425+/- acre tract located between Oakmont and Buzzard Peak, just east of Santa Rosa. The property is more particularly portrayed on the enclosed map.

The purpose of this appraisal is to determine the value contribution of the timber on the subject property to support acquisition of a conservation easement. Conservation easements are normally valued by appraising a property twice: in the absence of the easement terms ("before"), and "after" they are imposed. In both cases, the fair market value is sought, i.e., the amount of cash, or its equivalent which the property would bring in the open market when neither the buyer or the seller is under any compulsion to complete the transaction, each being knowledgeable of all uses to which the property could be put or adapted.

Portions of the subject property have highest and best uses other than forest management. Accordingly, my appraisal is based on the assumption that hypothetical timber harvesting must be conducted in a manner that is supportive of other, and more valuable, land uses. This report identifies and discusses the contributory value of timber under such circumstances.

Although the timber has been appraised as if a whole, for convenience the property has been divided into three logical units:

- | | |
|--------|-----------------------------------|
| Unit A | (assessor's parcel -08) |
| Unit B | (assessor's parcels -23, and -41) |
| Unit C | (assessor's parcel -24) |

The effective date of this appraisal is coincident with our last visit to the property on January 18, 1998. The present document has been organized so that it may be incorporated into an appraisal of the entire fee interest.



The Subject Forest

The Badger property consists of the better part of a small watershed draining southwest into Sonoma Creek. Terrain varies from gentle, on the western hilltops, to very steep along back canyons. The unnamed creek appears to be perennial and occasional springs are present. One of these has been developed for a domestic water source. The area is surrounded by vacant lands, rural housing, and agriculture.

The vegetation on the subject property is quite varied, probably because the underlying "Boomer" soils vary in depth and rainfall. Open grasslands, oak savannas, brushland, hardwood and riparian woodlands, and conifer forests are all found. The latter include stands of redwood in back canyon bottoms, and Douglas-fir on hilltops and north facing slopes. The redwood and Douglas-fir forest is young growth in character implying that the property was heavily cut-over many years ago. Occasional "residual" old growth trees are found as is typical in young growth forests. Other tree species present do not necessarily have commercial value but include ponderosa pine, knobcone pine, black oak, bay, coast live oak, madrone, and big leaf maple.

The property is reached by a right of way from Highway 12. A network of dirt roads provides access to most of the ownership except for the northeastern most portions. Apparently the roads are maintained by P.G.&E. as a large powerline easement crosses the property.

With regard to timber harvesting permits, the California Department of Forestry and Fire Protection has exclusive regulatory authority although the County and several agencies participate as advisors. Detailed forest practice rules provide cutting standards, sensitive species and habitat preservation, and stream protection. However, in the absence of a specific ordinance adopted by County government, timber harvesting can take place on any zoning designation.

Timber Inventory

To estimate the timber volume standing on the subject property, the landscape was first classified on aerial photography. Based on this work, it was found that redwood and Douglas-fir stands comprise about a third of the ownership, although insignificant "stringers" are located throughout the property.



	<u>Stream Protec- tion Zone</u>	<u>Upslope Zone</u>
Unit A - Northeast of Powerline		
Young growth Redwood, some Douglas-fir	20 acres	4 acres
Young growth Douglas-fir, some redwood	2	23
Unit A - Southwest of Powerline		
Young growth Redwood, some Douglas-fir	11	2
Young growth Douglas-fir, some redwood	2	21
Unit B		
Young growth Douglas-fir, w/o redwood	0	36
Unit C		
Young growth Douglas-fir, some redwood	<u>0</u>	<u>12</u>
	35 acres	98 acres

Next, a timber inventory was conducted by the forestry staff of Pacific Meridian Resources. The inventory or "cruise" consisted of a sample of forty circular plots. These were arranged along random azimuths across the timbered area. For each sample, all conifers 12 inches and larger were measured with the following information recorded: diameter at breast height, number of logs to a merchantable top, log merchantability, and defect. For purposes of this appraisal, it was assumed that only conifer sawlogs are merchantable. Hardwood trees such as black oak, madrone, and scrub conifers were not measured as they have only nominal value related to their use as fuelwood.

Inventory data were processed on Pacific Meridian's computer system located in Emeryville, California. Volumes were computed from tables appropriate to the region. To account for breakage and hidden defects, additional deductions were applied.

A total of 1,741,000 board feet of redwood and 1,810,000 board feet of Douglas-fir were found to be standing on the property. Additional details are provided in an appendix.

The cruise proved to be quite robust; 6% of the forest area was actually measured yielding a standard error of 7.4%. In other words, there is a two-thirds chance that the true figure lies within +/- 7.4% of the estimate (equivalently, there is a 95 percent chance that the true figure lies within +/- 14.8%).



Opinion of Recoverable Timber

Not all of the standing timber can be reasonably considered to be recoverable. In the present case, the easement terms are of a "forever wild" nature and, in the "after" condition would preclude commercial timber harvesting altogether. However, the "before" condition must be evaluated in light of the practical limitations on harvesting. These include not only forest practice rules, local utilization practices, environmental conditions, terrain, etc., but also consideration that the highest and best use of the property as a whole involves development of rural homesites.

Accordingly, I considered that, for the timber component in the "before" condition, the highest and best use would be a conservative harvest regime designed to generate interim capital while preserving the attractiveness of the land for residential uses. Thus the following harvests were considered to be the maximum that a prudent owner would seek to implement in the "before" condition:

Within 150 feet of stream:	Harvest no more than 20% of volume consistent with new regulations to protect fisheries and riparian vegetation and to protect springs.
Upslope lands, Unit A:	Harvest 60% of volume in a selective cut.
Upslope lands, Units B&C:	Harvest no more than 45% of volume consistent with preserving aesthetics for homesites.

Applying these regimes to the inventoried timber volumes, I obtain:

Standing Volume by Species and Unit and Estimates of Recoverable Volume

	<u>Streamside Zone</u>	<u>Upslope Zone</u>
Unit A - Northeast of Powerline		
Redwood		
Standing	760,000	290,000
Recoverable	150,000	170,000
Douglas-fir		
Standing	200,000	390,000
Recoverable	40,000	230,000



Unit A - Southwest of Powerline		
Redwood		
Standing	420,000	200,000
Recoverable	80,000	120,000
Douglas-fir		
Standing	130,000	340,000
Recoverable	30,000	200,000
Unit B		
Douglas-fir		
Standing	-0-	570,000
Recoverable	-0-	250,000
Unit C		
Redwood		
Standing volume	-0-	70,000
Recoverable	-0-	30,000
Douglas-fir		
Standing	-0-	180,000
Recoverable	-0-	80,000

Timber Appraisal

The timber was then valued using the "residual" method, i.e. logging and administrative costs, including allowances for normal profit and risk, were subtracted from delivered log values to develop an estimate of the "stumpage" value or the net return to the landowner. This appraisal method is commonly used by buyers and sellers in this area.

To develop market data, I compiled information regarding delivered log prices from regional sawmills. This information was collected in late 1997 and is portrayed in an appendix. Prices are not differentiated by grade as sawmills in this region are currently buying on a log diameter (d.i.b.) basis.

Although the market for sawlogs is currently weak, it is early and I believe that late 1997 prices are a good indicator of the price levels at which buyers and sellers will transact timber in spring, 1998. The timber volume present could be easily harvested during the 1998 season; accordingly no discount for cash or for time was applied.

It was assumed that helicopter logging techniques would be employed for those portions of the property lying behind the powerline. Logs collected by the helicopters would be transported beneath the powerline ("forwarded") by tractors. This is a relatively expensive technique but avoids the need to cross adjacent properties or to build extensive roads. That portion of the timber lying southwest of the powerline could be logged using normal tractor techniques.



For developing logging costs, I have assumed that a sawlog sale of reasonable size would be presented such as might result from harvest of the entire property at once. Yarding and hauling costs are based on quotes for current operations or my own recent experience. Other necessary costs include permit development and sale supervision by a licensed forester and the State timber severance tax.

Presumably, by sorting logs before shipping, a seller could deliver logs to the location that produces the highest net value by species and log diameter. On this basis, the following represent the highest values obtainable for the subject timber:

Analysis of Revenues and Costs
Under proposed Timber Harvest Assumptions

<u>Revenue or Cost element</u>	<u>Tractor</u>	<u>Helicopter/ Tractor</u>
	<i>per thousand bd. ft.</i>	
<i>Redwood</i>		
Delivered log value, weighted by d.i.b.	\$738	\$738
less logging cost (inc. falling, yarding, landings)	(120)	(300)
less haul cost to Cloverdale (4.6M/load)	(39)	(39)
equals indicated stumpage	\$579	\$399
less permit and administration costs (licensed forester, biologist)	(40)	(40)
less timber yield tax	(16)	(12)
equals net return	\$523	\$347
 <i>Douglas-fir</i>		
Delivered log value, weighted by d.i.b.	\$582	\$582
less logging cost (inc. falling, yarding, landings)	(120)	(300)
less haul cost to Branscomb (4.6M/load)	(78)	(78)
equals indicated stumpage	\$384	\$204
less permit and administrative costs (licensed forester, biologist)	(40)	(40)
less timber yield tax	(10)	(6)
equals net return	\$334	\$158



Applying these rates to the recoverable volumes, we have:

Unit A			
Northeast of Powerline			
	Redwood,	320,000 recoverable @ \$347 =	\$111,040
	Douglas-fir,	270,000 recoverable @ \$158 =	42,660
Southwest of Powerline			
	Redwood,	200,000 @ \$523 =	104,600
	Douglas-fir,	230,000 @ \$334 =	<u>76,820</u>
			\$335,120
Unit B	Douglas-fir,	250,000 @ \$334 =	\$83,500
Unit C	Redwood,	30,000 @ \$523 =	15,690
	Douglas-fir,	80,000 @ \$334 =	<u>26,720</u>
			\$42,410
Total			\$461,030
rounded to			<u><u>\$460,000</u></u>

Final Statement

Thus, to reiterate, based on my examination of the subject timber and my investigation of the current timber market, I have formed the opinion that the value contribution of timber on the subject property is:

Before application of easement terms:	\$460,000
After application of easement:	-0-

The before value may be allocated to Units as follows:

Unit A	\$335,000
Unit B	\$83,000
Unit C	\$42,000



Limiting Conditions and Certifications

This appraisal is subject to the following assumptions and limiting conditions:

- (1) In the absence of a title report or any information regarding unrecorded contracts, no responsibility is assumed for matters of a legal nature. This report assumes that title to the subject property is held in fee simple with no liens, encumbrances, or other exceptions which would affect marketability of timber.
- (2) The information and data contained in this report were obtained from sources believed to be reliable, but no guarantee or assumption of liability is intended.
- (3) No surveying was contemplated or conducted during the course of this project; consequently, no responsibility is assumed for location of property boundaries, encroachments, subsurface soil conditions, or for property area. Maps and illustrative materials in this report are included only to assist the reader in visualizing the property. Scales used are approximate and differences in distances, locations, etc. which may be noted have no significant effect on value conclusions.
- (4) Timber and land values are not necessarily additive. If the information contained herein is to be used with comparable land transactions to derive an indication of the total value of the subject property, it will be necessary to lean the value contribution of any timber that may be present on the comparable sales. I have not analyzed any comparable land sales in the course of this assignment and accept no responsibility in this regard.
- (5) It is assumed that a right of way suitable for hauling logs to a public road is present. Also, it is assumed that the property is held as a single ownership and that recoverable timber in Units A, B and C would be harvested simultaneously to develop a economic sale unit.


In addition, I certify, to the best of my knowledge and belief that:

- (1) the statements of fact contained in this report are true and correct.
- (2) the reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions, and conclusions.



- (3) I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.
- (4) my compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.
- (5) my analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
- (6) I have made a personal inspection of the property that is the subject of this report.
- (7) Mr. Rich Sampson, R.P.F. 2422, provided significant professional assistance to the person signing this report.

date



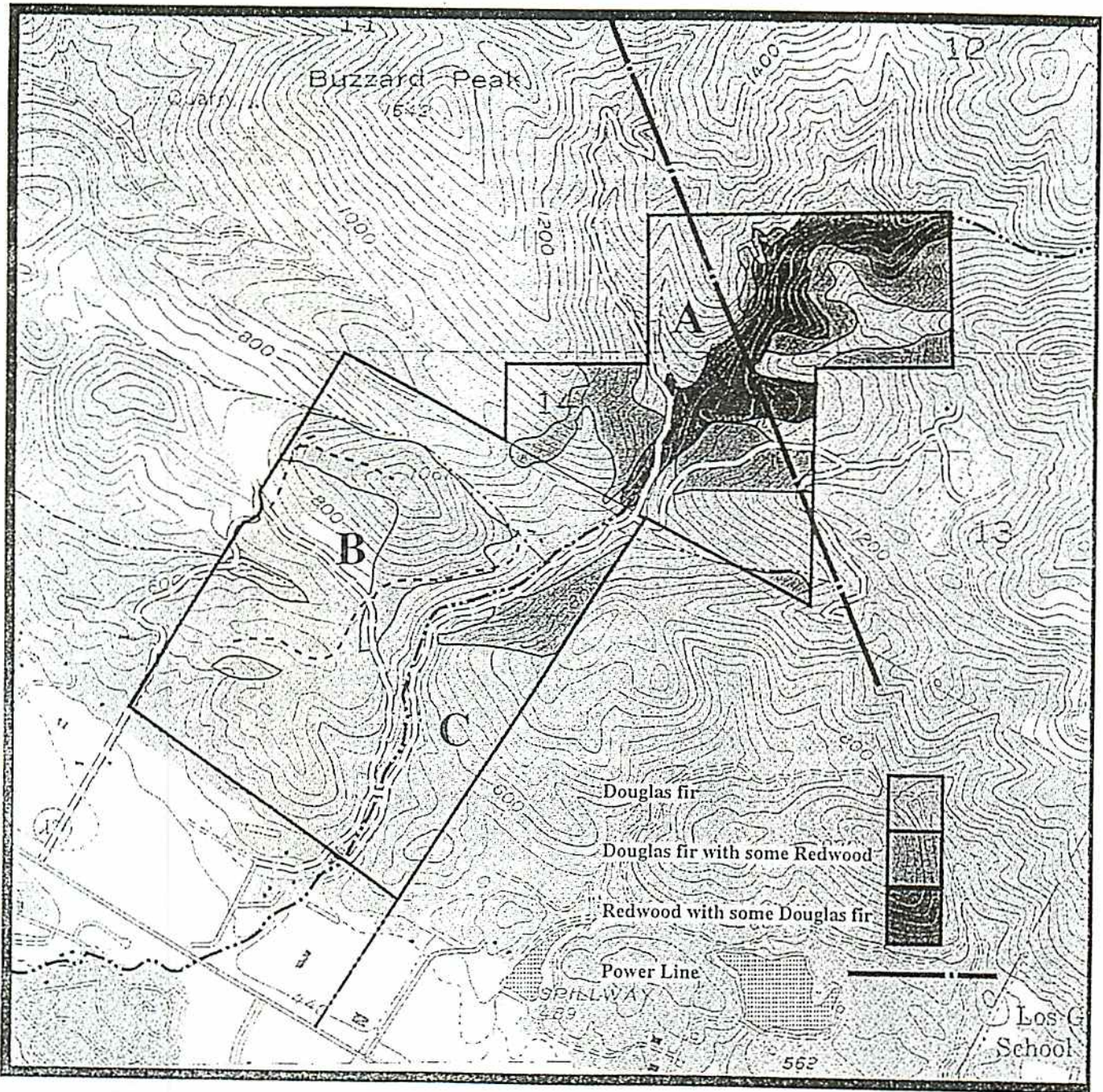
Gene Forsburg, R.P.F. 1873



APPENDICES

(including Map,
Inventory Results,
Market Data,
and Qualifications)





Map of Badger Property
 showing General Location and Timber Stands
 Located in T 7N, R 7W and Rancho Los Guillicos,
 Sonoma County, California



Summary of Timber Inventory
Badger Property, Sonoma County
January, 1998

<u>Species and Diameter Class</u>	<u>Est. No. of Trees</u>	<u>Estimated Volumes in board feet:</u>	
		<u>Gross Volume</u>	<u>Net Volume</u>
Redwood (16 foot logs, Spaulding scale)			
12-16 inches	1,040	117,000	110,000
18-22	900	339,000	312,000
24-28	550	401,000	359,000
30-34	430	533,000	478,000
36-46	210	373,000	333,000
48+ inches	<u>50</u>	<u>207,000</u>	<u>149,000</u>
Total, redwood	3,180	1,970,000	1,741,000
Douglas-fir (16 foot logs, Scribner scale)			
12-16 inches	940	127,000	120,000
18-22	570	255,000	231,000
24-28	550	446,000	404,000
30-34	390	486,000	384,000
36-46	330	719,000	558,000
48+ inches	<u>30</u>	<u>180,000</u>	<u>113,000</u>
Total, Douglas-fir	2,810	2,213,000	1,810,000

This inventory is based on 40 plots. The standard error of the gross volume estimate is 7.4%. See accompanying text for explanation of methods, specifications, and limiting conditions.



Distribution of Net Timber Volume
by Predicted Log Diameter

Redwood

6-11 inches d.i.b.*	16%
12-15	21%
16	6%
17-19	16%
20-29	35%
30+	6%

Douglas-fir

8 inches d.i.b.	4%
9-11	9%
12-19	32%
20+	55%

* d.i.b. is diameter inside bark at the small end of the log.



Some Recent Quotations for Delivered Logs

Louisiana Pacific, Fort Bragg

Douglas-fir, 9+"	\$525.00 per Mbf
Redwood (Fort Bragg or Ukiah)	
6-11"	600.00
12-16"	700.00
17+"	(not desired)

Harwood, Branscomb

Douglas-fir	
8-11"	435.00
12-19"	525.00
20+"	650.00

Georgia Pacific, Fort Bragg

Douglas-fir, camp run	525.00
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Burton's Mill, Willits

Redwood, 16+"	760.00
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Redwood Empire, Cloverdale

Redwood	
15-"	700.00
16-29"	750.00
30+"	850.00
6-16", small quantities to Philo	
	650.00

AMC, Annapolis

Redwood	
6-11"	600.00
12-15"	700.00
16-29"	740.00
30+"	800.00



Qualifications of the Appraiser

Gene Forsburg

- Affiliation:** Principal,
Pacific Meridian Resources
- Education:** Bachelor of Science in Forestry,
University of California, Berkeley
- Intensive Course in Forestland Appraisal,
Duke University, Durham, North Carolina
- Completion of Courses 1A1, 1A2, SPP-A, SPP-B, & 310
American Institute of Real Estate Appraisers
- Licensure:** Registered Professional Forester #1873,
State of California
- Expert Testimony:** Superior Courts in Mendocino, Santa Cruz,
and San Mateo Counties, California
- U.S. Tax Court, Portland, Oregon
- U.S. District Court, San Francisco, California

Gene Forsburg has specialized in valuation of rural land and timber property since 1980. He has completed assignments involving purchases, exchanges, financing, damages, and condemnation, as well as conservation easements and taxation matters. Mr. Forsburg's clients include a variety of government agencies and private parties and the total value of real estate that he has appraised now exceeds three hundred million dollars. He is also a practicing forester, experienced in timber inventory and harvest planning.

Mr. Forsburg is a founding principal of Pacific Meridian Resources, a consulting firm specializing in GIS and remote sensing, forestry services, and natural resource and land appraisal. Pacific Meridian has a multi-disciplinary staff of eighty and serves a varied clientele from its offices in the San Francisco bay area; Sacramento, California; Portland, Oregon; Salt Lake City, Utah; and Atlanta, Georgia.

