

A lush, green forest scene featuring tall, moss-covered trees and a fallen log in the foreground. The text is overlaid in white, bold, sans-serif font.

**MASS APPRAISAL
OF
TIMBERED PROPERTIES**

21st Annual GIS/CAMA Technologies Conference Chattanooga Convention Center

GIS/CAMA • Chattanooga, TN



March 6-9, 2017

Continuing Education (CE) Credit

Recertification Credit forms for CE credit can be collected from the Registration Desk on Thursday.

Housekeeping

The conference proceedings will be available approximately 8 weeks after the conference.



THE POWER OF 1

**Elouise “Yellow Bird Woman”
Cobell. (1945 – 2011)**



- Raised on the Blackfeet Reservation in a home without power or running water.
- Graduated from college and founded the Blackfeet National Bank, the first Native American bank in the U.S.
- Won in 1997 a MacArthur Genius Award for her work on the bank and on Native financial literacy.
- Led a 15-year legal battle to force the U.S. Government to embrace accountability.
- Received the 2007 AARP Impact Award for making the world a better place.
- Awarded the Presidential Medal of Freedom posthumously.

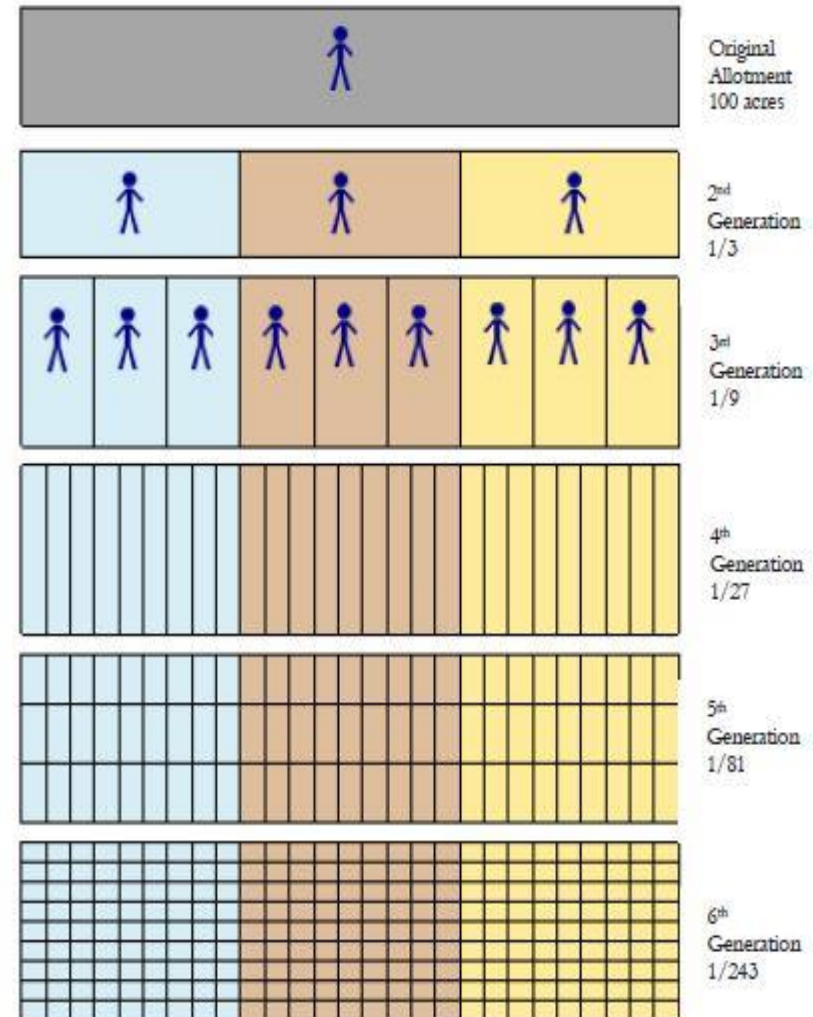
- After working many years with Federal agencies and with Congress to bring about reform of the manner Indian Trust Funds were administered, Cobell v. Babbitt was filed as a class action in 1996.
- Plaintiffs claimed the U.S. government had incorrectly accounted for the income from Indian trust assets, which are legally owned by the Department of the Interior, but held in trust for individual Native Americans.
- The potential liability of the U.S. government was disputed: plaintiffs suggested a figure as high as \$176 billion, while defendants suggested a number in the low millions.
- The case was settled for \$3.4 billion in 2009. \$1.5 billion was allocated to be paid to the plaintiffs (263,500 +/-) and \$1.9 billion to repurchase fractionated land.
- A scholarship fund of \$60 million, named the Cobell Education Scholarship Fund, was also created.

- Borne from the 1887 Dawes Act that created ‘allotments’ to be distributed to Indian households.
- Ownership of land and subsistence farming on the European-American model had no precedent on Native American culture.
- Many ‘allotments’ today have hundreds or thousands of owners.
- Difficulty finding majority agreement has forced most of this land to lie idle.
- Prevents economic development beneficial for the community.
- Inability to reach its Highest & Best Use.

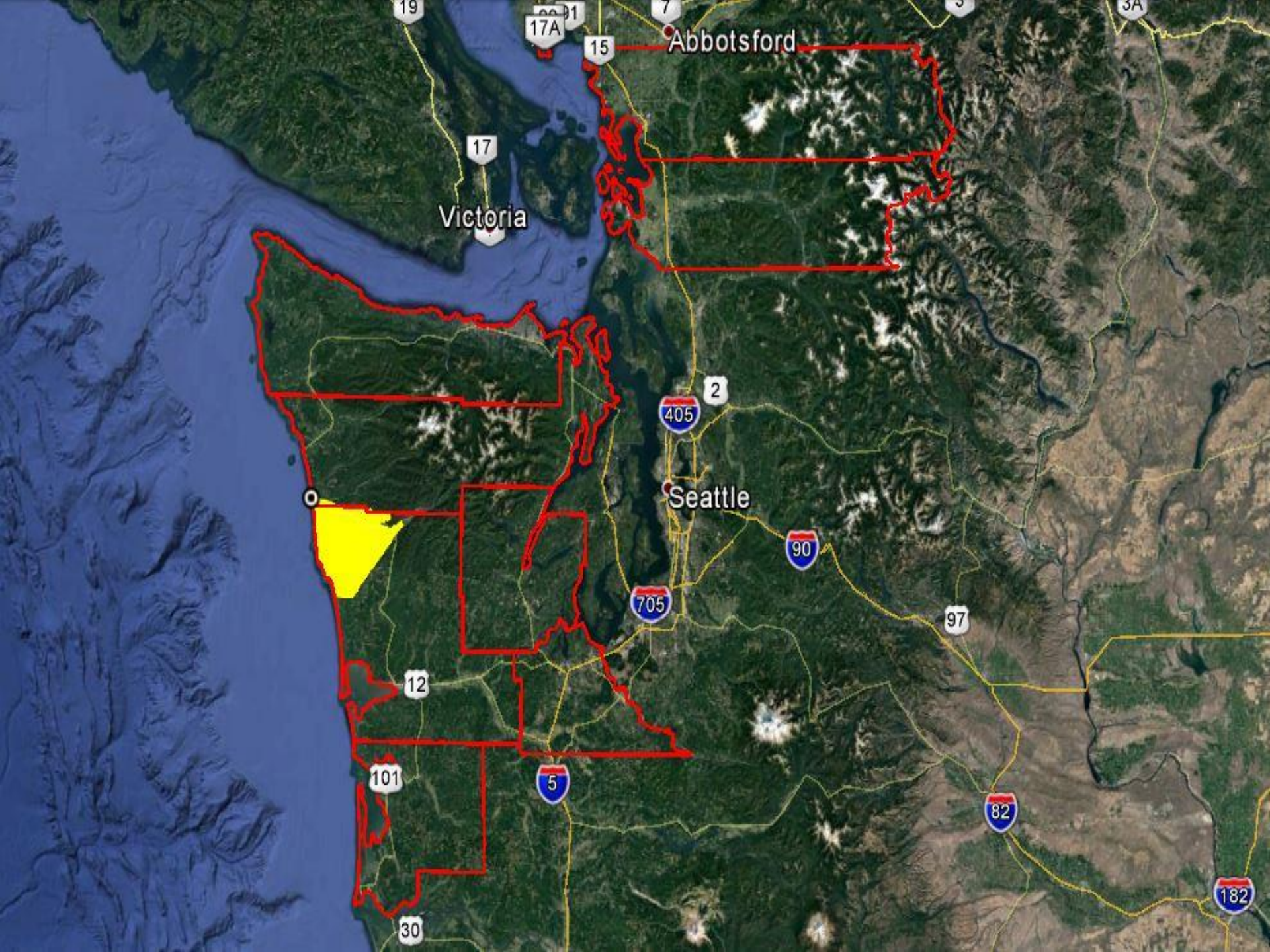
FRACTIONATION

A serious problem facing tribal communities

As tracts (or “allotments”) of tribal lands are passed down through generations, they gain more and more individual owners.



- The Settlement charges the U.S. Department of the Interior with the responsibility to use the Fund within a 10-year period to acquire, at fair market value, fractional interests in trust or restricted land that individuals are willing to sell.
- There are approximately 150 reservations with 2.9 million purchasable fractional interests owned by more than 219,000 individuals.
- The Settlement will require the appraisal of more than 10.6 million acres in some 62,500 tracts.
- A significant portion of the fractionated properties are located within the Great Plains and Rocky Mountain Regions. Moreover, approximately 90% of the purchasable fractional interests are located within 40 of the 150 reservations.







TEMPERATE RAIN FOREST

Characteristics

- **RAIN** -- Storms off the Pacific drop most of their moisture on these west-facing valleys. Precipitation in the Olympics' rain forests range from 12 to 14 feet annually.
- **MODERATE TEMPERATURES** -- They seldom drop below freezing and summer highs rarely exceed 80° F.
- **LARGE OLD TREES** -- Many centuries old. They can reach 250 feet in height and 30 to 60 feet in circumference.
- **EPIPHYTES** -- Plants growing on other plants. Mosses, ferns and lichens among others, festoon tree trunks and branches.

TEMPERATE RAIN FOREST

Characteristics

- **NURSE LOGS** -- Because of the densely covered ground, many seedlings instead germinate on fallen, decaying trees. As they grow, their roots reach to the ground. When the log eventually rots away, a colonnade, or row of trees on stilt-like roots, remains.
- **ABUNDANT DEAD WOOD** -- When the massive trees die, they eventually fall, but can take centuries to decay. Throughout their long death, they provide important habitat for whole communities, including mosses, tree seedlings, fungi, small mammals, amphibians, and insects.

TEMPERATE RAIN FOREST

Characteristics

- **ROOSEVELT ELK** -- The thick, layered canopy above, moderates the temperature year-round for wildlife, including the largest wild populations of Roosevelt elk in the U.S.

On the forest floor, elk browsing shapes the appearance of their forest home.



TEMPERATE RAIN FOREST

Common Tree Species

- Sitka Spruce - *Picea Sitchensis*
- Douglas Fir - *Pseudotsuga Menziesii*
- Western Hemlock - *Tsuga Heterophylla*
- Western Red Cedar - *Thuja Plicata*
- Big Leaf Maple - *Acer Macrophyllum*
- Vine Maple - *Acer Circinatum*
- Red Alder - *Alnus Rubra*
- Black Cottonwood - *Populus Balsamifera*

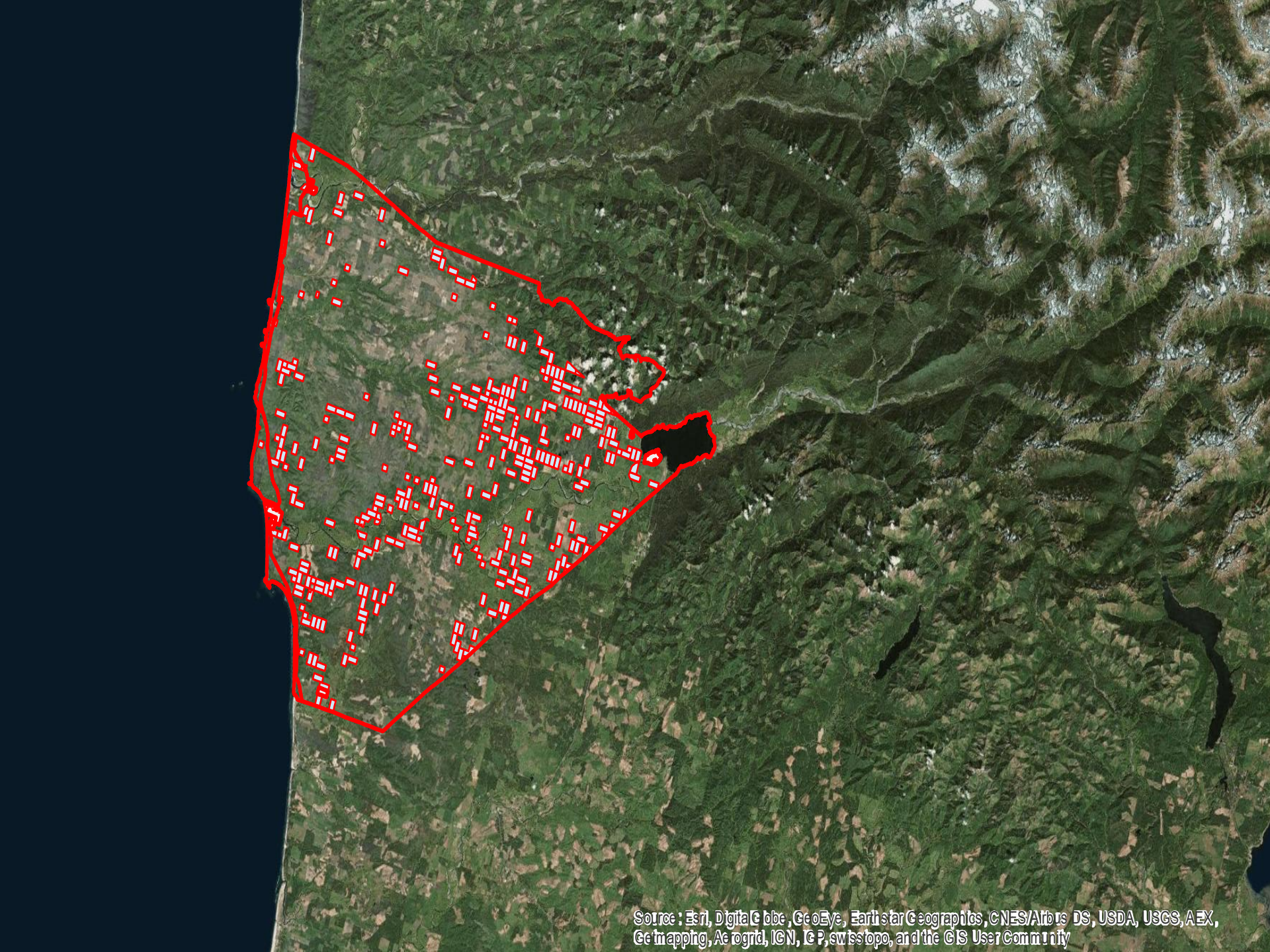
THE APPRAISAL TEAM

Timber severed from the property is considered personal property. Standing timber on the other hand, is real property. Thus, in timberland appraisal, the effect on property value of the trees must be properly accounted.

Therefore a credible appraisal requires the skill-set provided by both, an appraiser and a certified forester.

Both these professionals are highly dependent on the geographical data provided by a robust GIS capability and the skilled personnel to manage it.

Once all the data has been collected and verified, it is time for the appraiser/statistician to join the fun.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomatics, Aergrid, IGN, IGP, swisstopo, and the GIS User Community

LAKE QUINAULT LODGE



Quinault Indian Nation

Reservation Size	208,150 acres
Coastline	23 Miles on Pacific Ocean
Tracts	314
Acres	24,624
Merchantable Timber (ready for harvest)	243,789 MBF (thousands board feet)
Non-Merchantable Timber (too young for harvest)	7,704 acres

Subject Timber Inventory

	MBF	Count	Min	Max	Mean
DOUGLAS FIR	18,408	189	1	778	97
WESTERN HEMLOCK	164,445	249	1	3,210	660
WHITE FIR	5,322	139	1	959	38
RED CEDAR	20,267	222	1	784	91
SITKA SPRUCE	8,144	209	1	522	39
LOGGEPOLE PINE	1,204	56	1	350	22
OTHER CONIFER	334	40	1	71	8
RED ALDER	24,323	208	1	913	117
BIGLEAF MAPLE	717	27	1	196	27
BLACK COTTONWOOD	625	43	1	92	15

Average Delivered Log Prices (MBF)

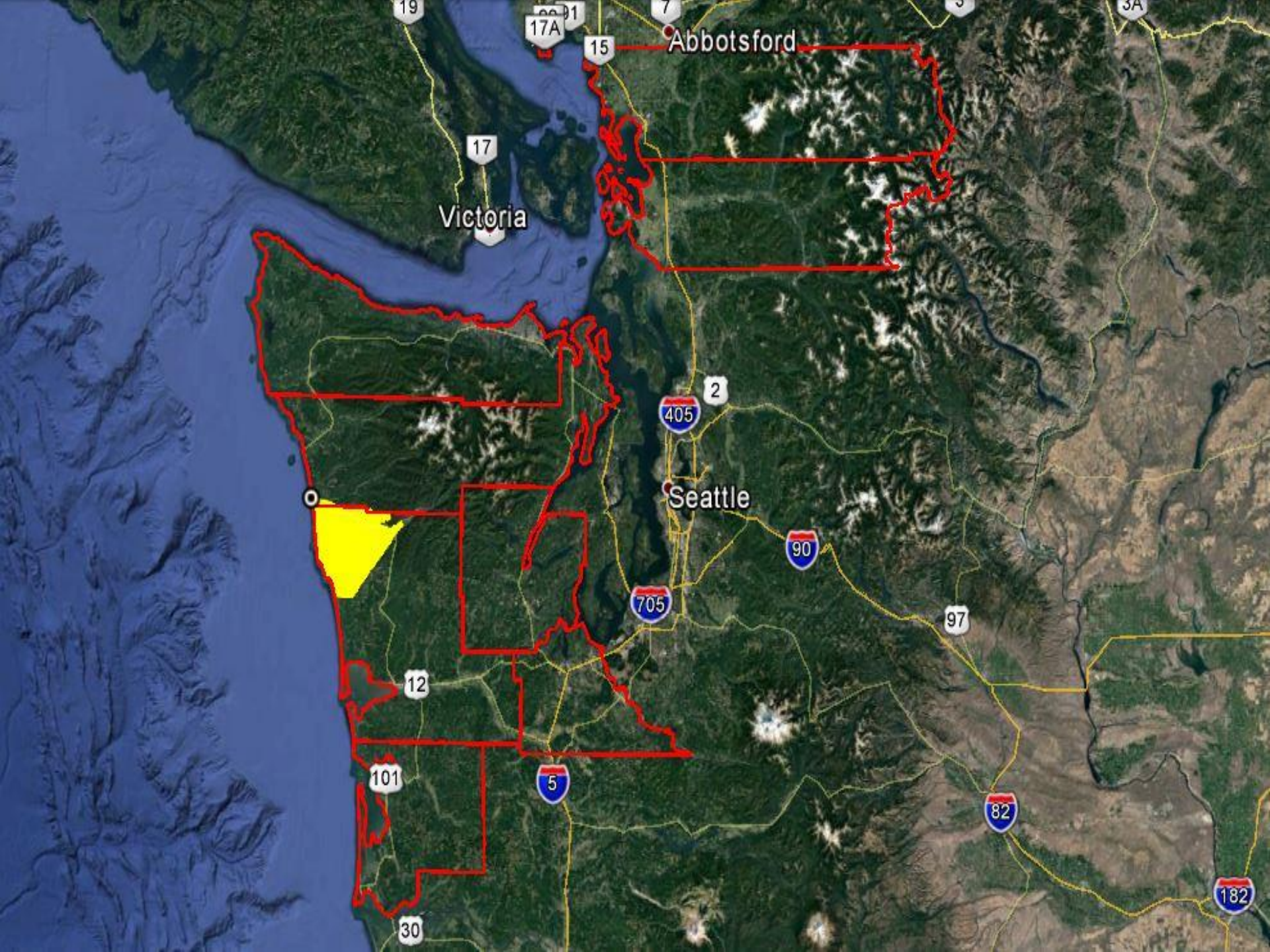
Western Washington 2011 By Species and Sort

	1st Q	2nd Q	3rd Q	4th Q
DOUGLAS FIR				
J SORT 12" +	\$675	\$745	\$645	\$615
JSORT 9-11"	\$635	\$680	\$600	\$575
C SORT 12" +	\$610	\$665	\$590	\$560
C/K SORT 8"+	\$575	\$645	\$560	\$530
#3 PEELER GRADE & BTR				
SPECIAL MILL	\$625	\$685	\$625	\$610
#1 SAWMILL	\$600	\$620	\$565	\$555
#2SAWMILL	\$550	\$570	\$520	\$510
#3 SAWMILL	\$525	\$545	\$490	\$485
#4 SAWMILL	\$450	\$480	\$460	\$455
PULPWOOD	\$270	\$290	\$300	\$295

Average Delivered Log Prices (MBF)

Western Washington 1st Qtr. 2011 to 4th Qtr. 2015

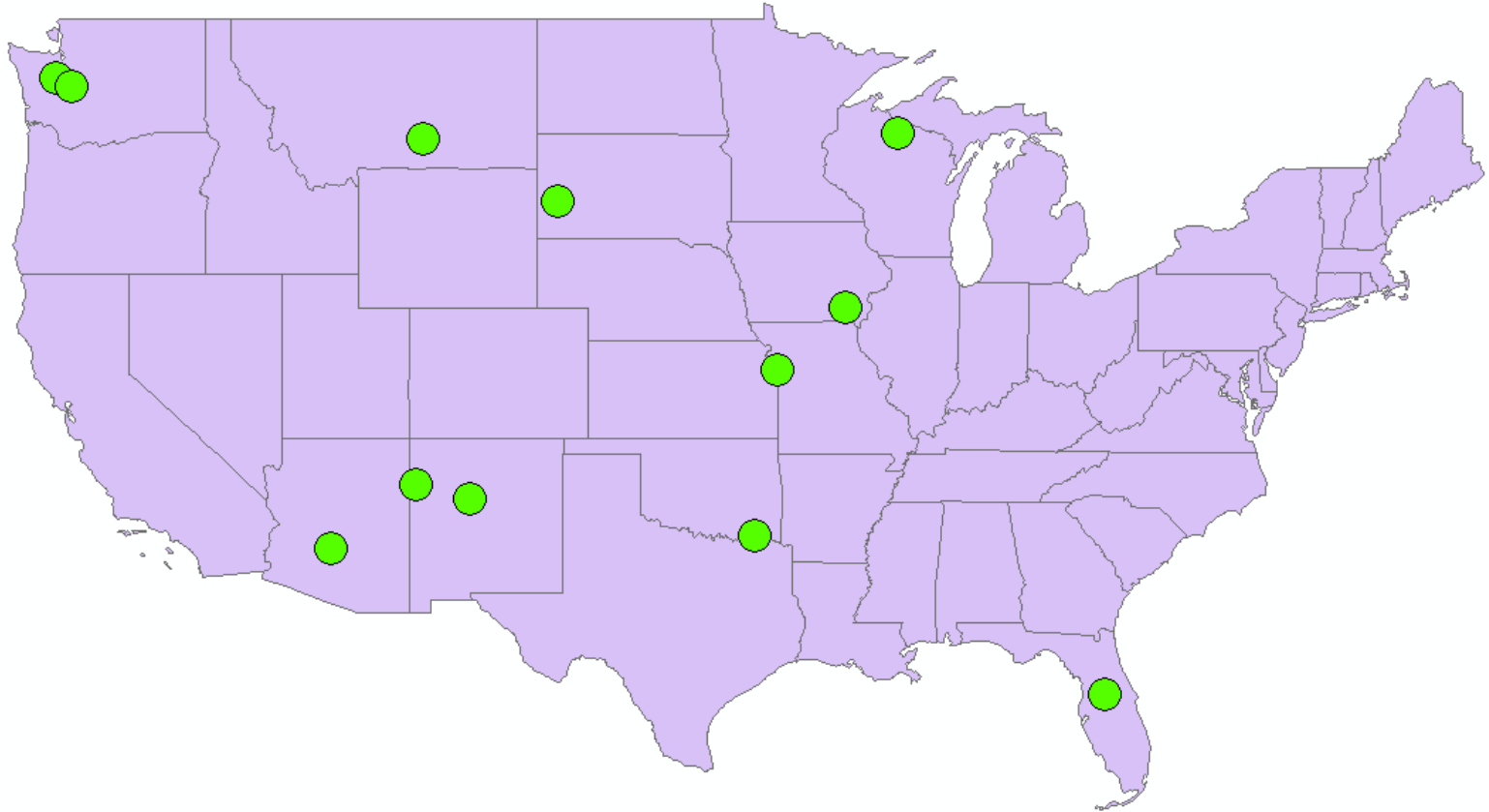
SPECIES	MIN	MAX	SPREAD
DOUGLAS FIR	185	875	373%
WESTERN HEMLOCK	220	770	250%
WHITE FIR & OTHER CONIFERS	220	770	250%
RED ALDER	210	735	250%
SITKA SPRUCE	210	655	212%
BLACK COTTONWOOD	130	350	169%
RED CEDAR	560	1,400	150%
BIGLEAF MAPLE & OTHER HARDWOODS	210	510	143%



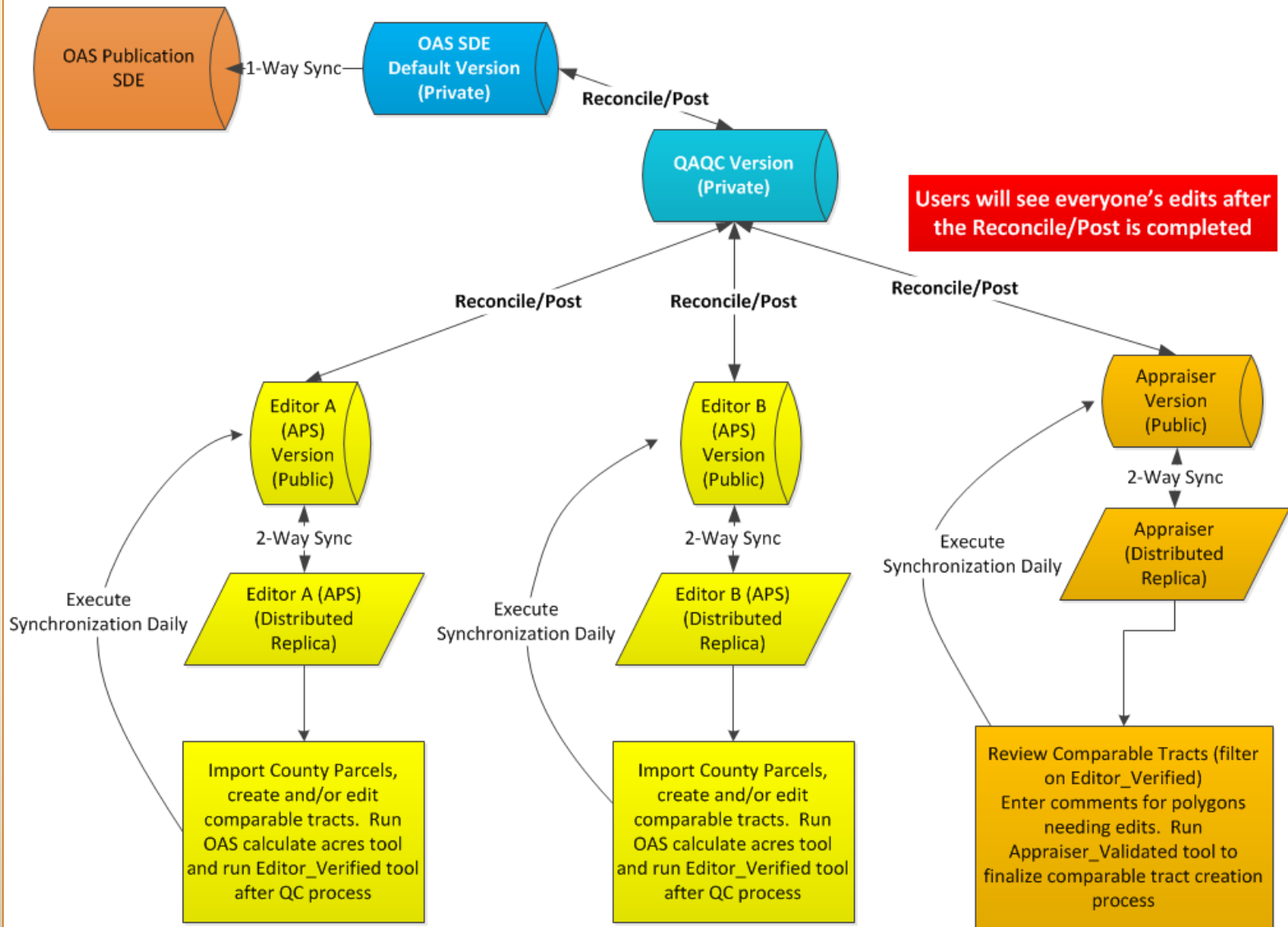
Enterprise GIS

Steve Wilson
Physical Scientist

Virtual Team



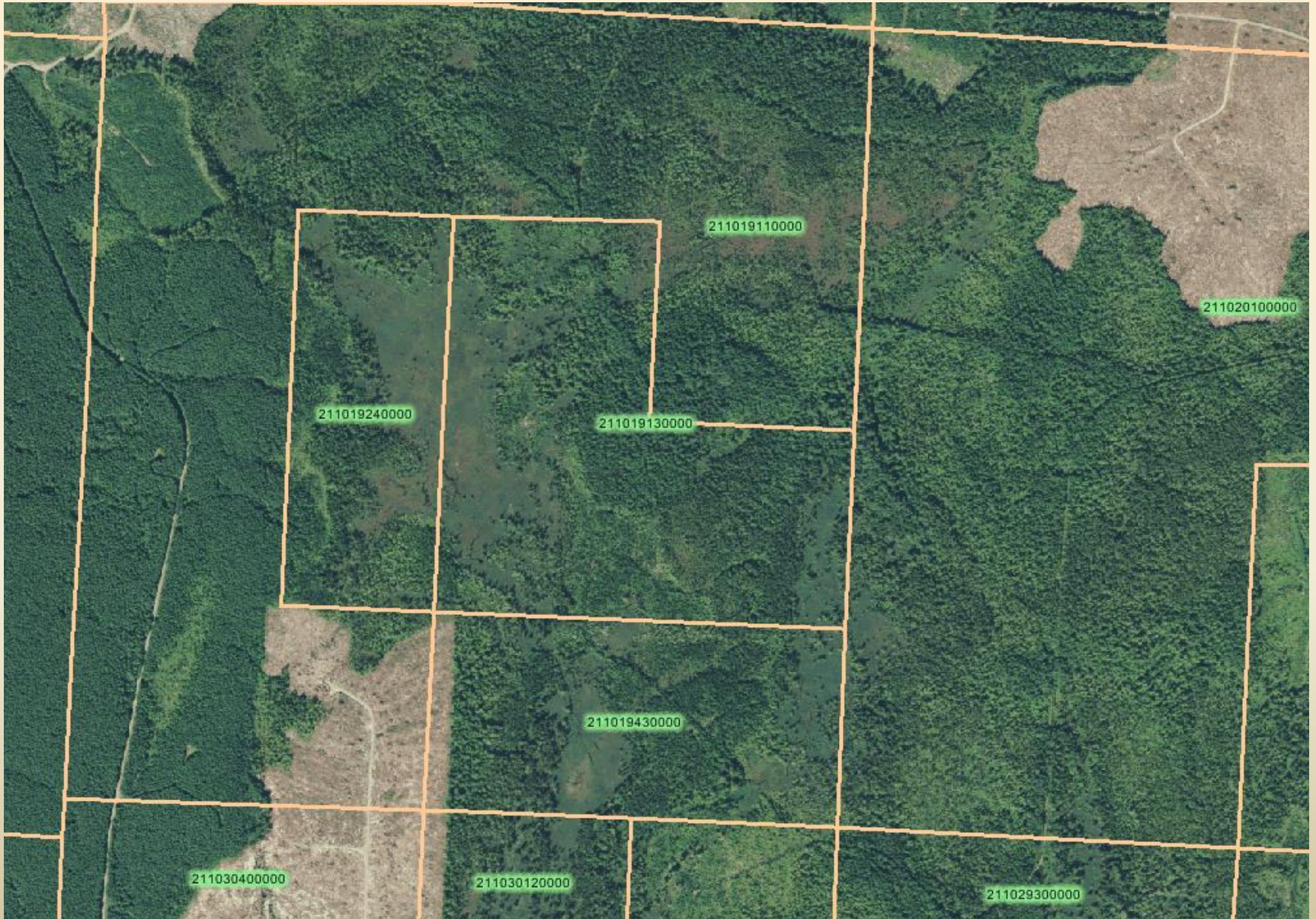
Version and Replica



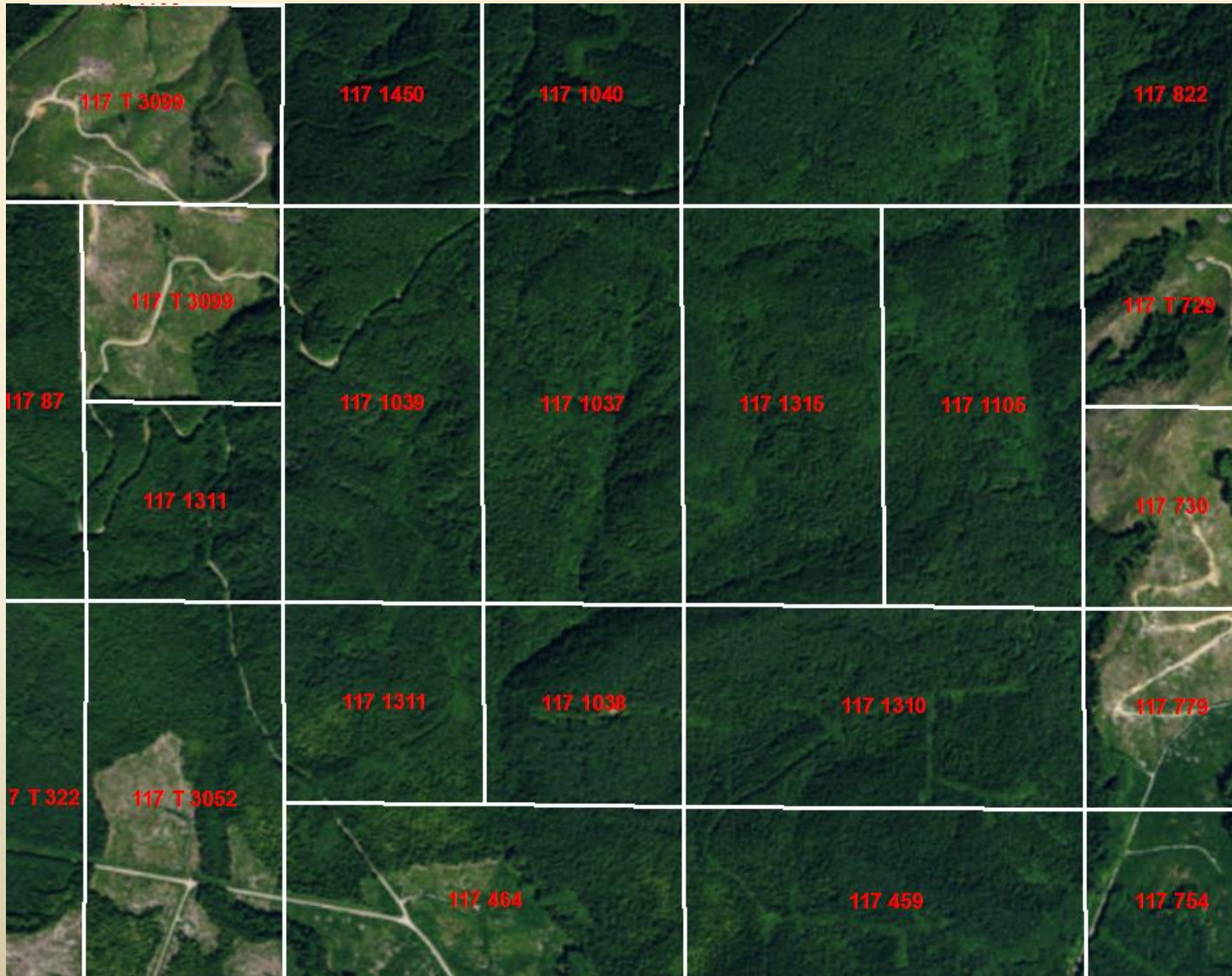
Data Acquisition and Processing

- Subject Tracts (316 total)
 - DOI - Bureau of Indian Affairs
- Sales (180 total)
 - Eight County Offices
 - Tabular and Spatial Data
 - Sale Price, Date, Acres, and GIS Polygon

Sale Verification



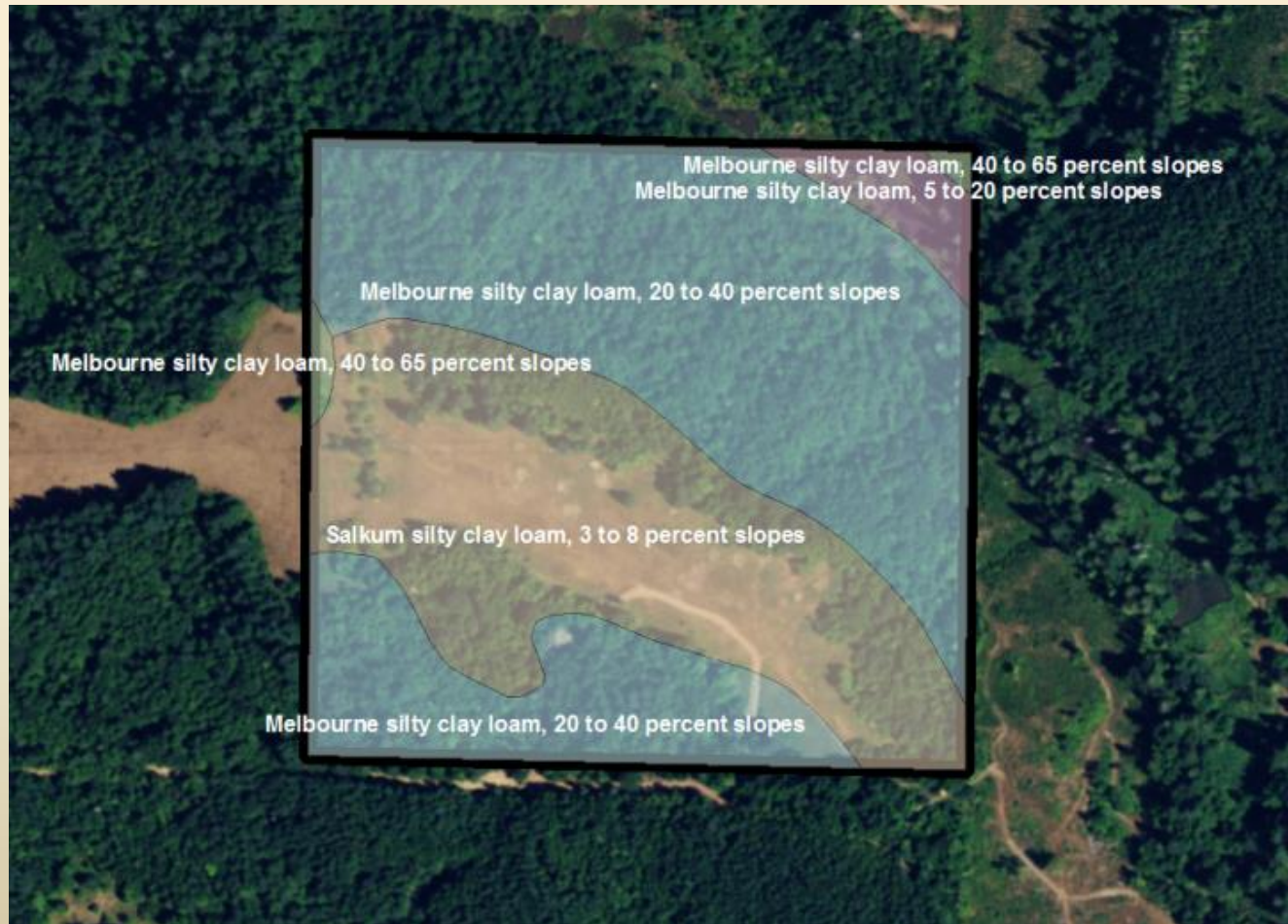
Subject Verification



Variables

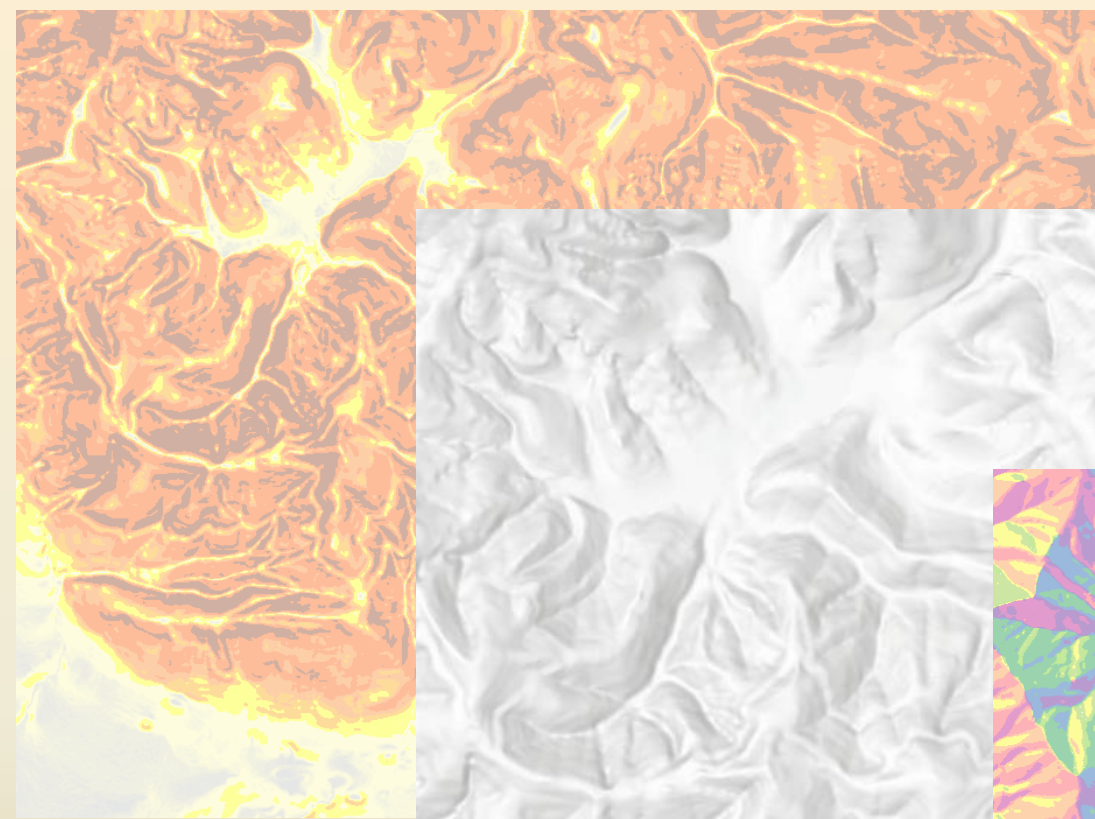
- Natural Resource Conservation Service Soil Survey (SSURGO)
- Elevation
- Routing
- Precipitation
- Land Use (Forester Classifications)

Soils (USDA-SSURGO)

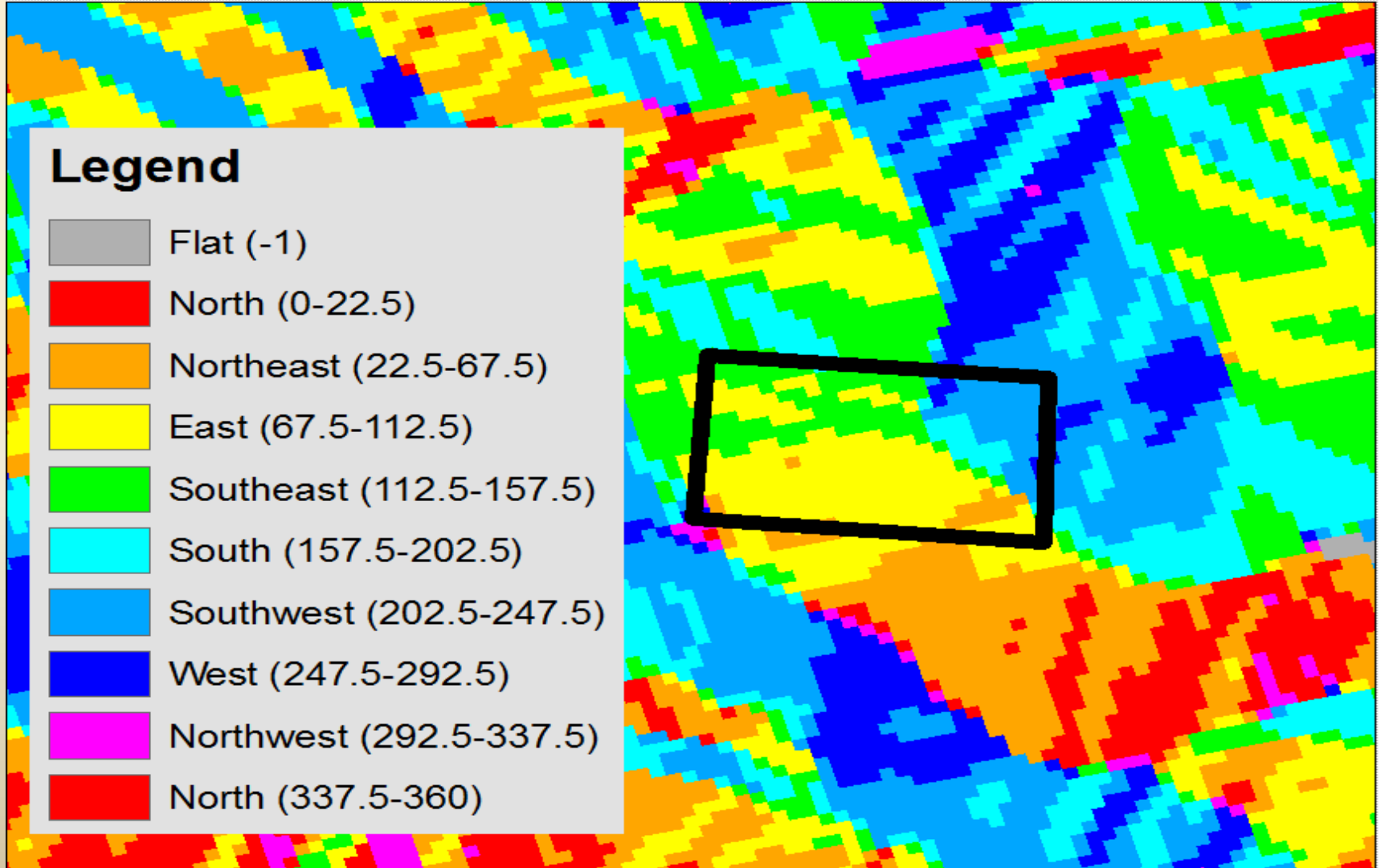


ArcGIS Online -- World Elevation Services

Elevation, Slope, Aspect Analysis



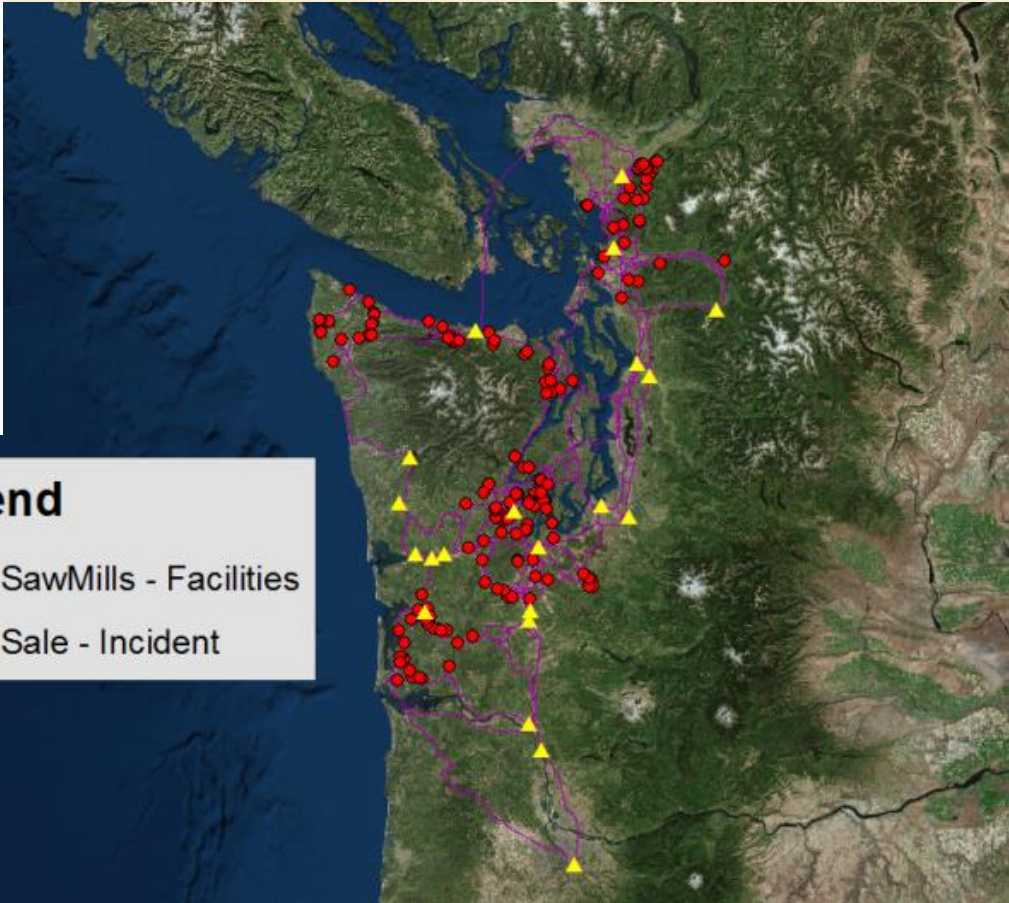
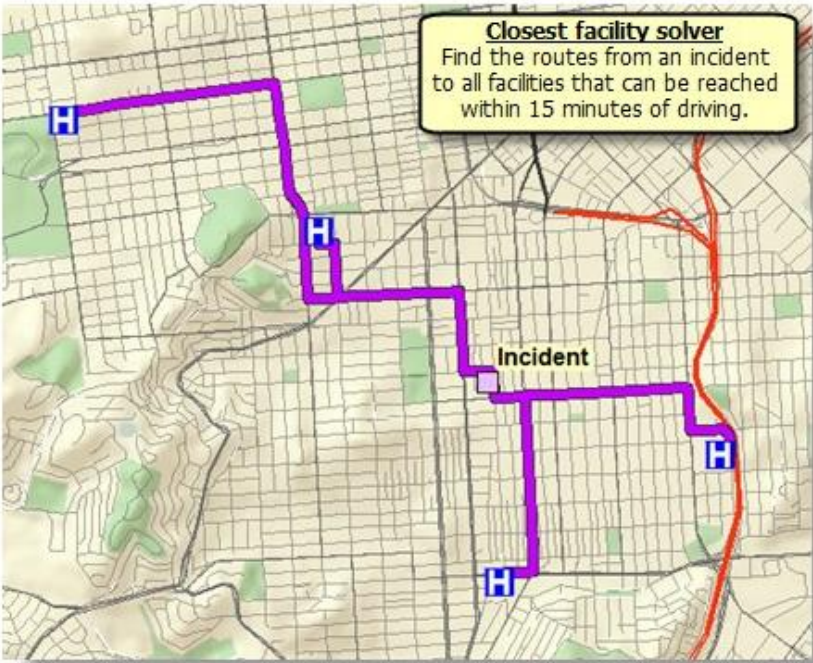
Aspect



ArcGIS Online Logistics Services

- Find Closest Facility
 - Tracts are the Incident
 - Starting Points adjusted to Nearest NavTeq Road
 - Saw Mills are the Facility
 - Driving Distance and Time
 - Custom Travel – Avoid Ferries

ArcGIS Online Logistics Services

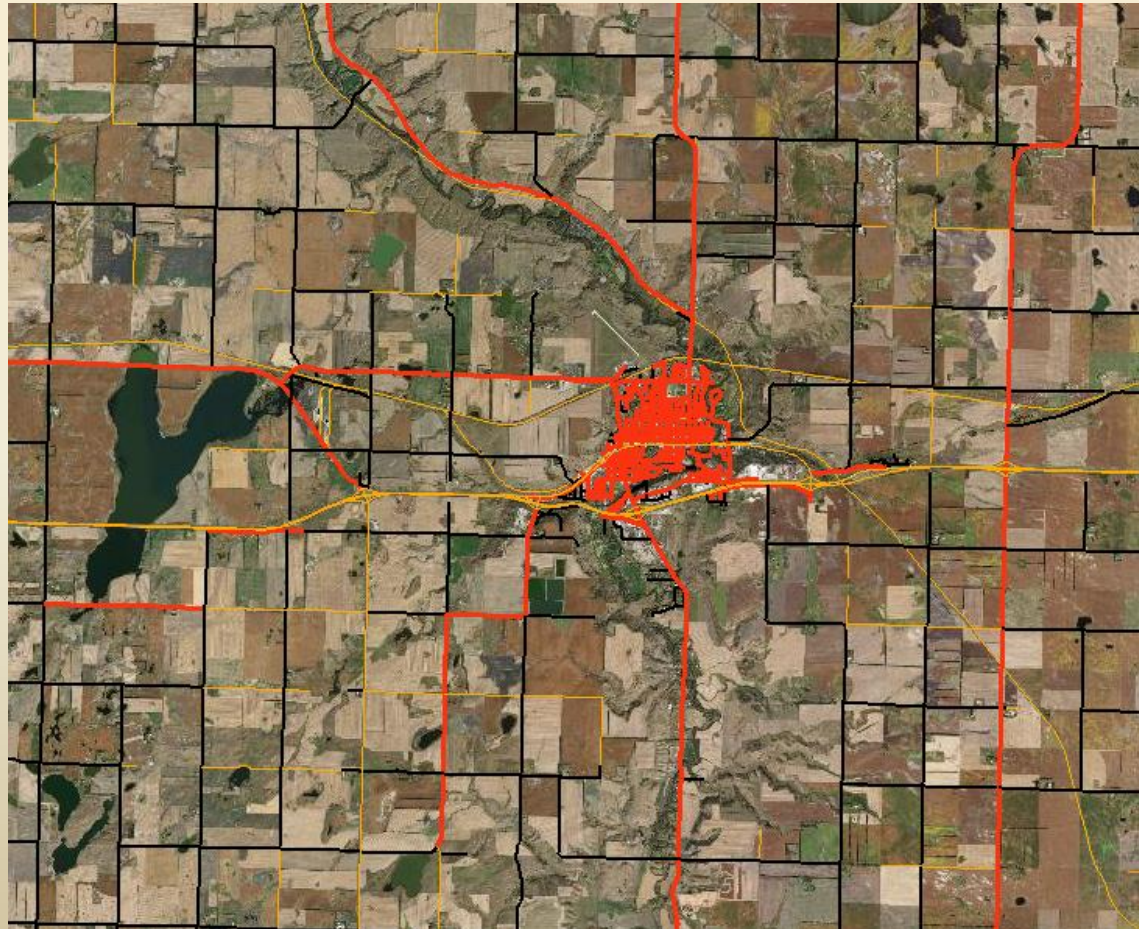


Legend

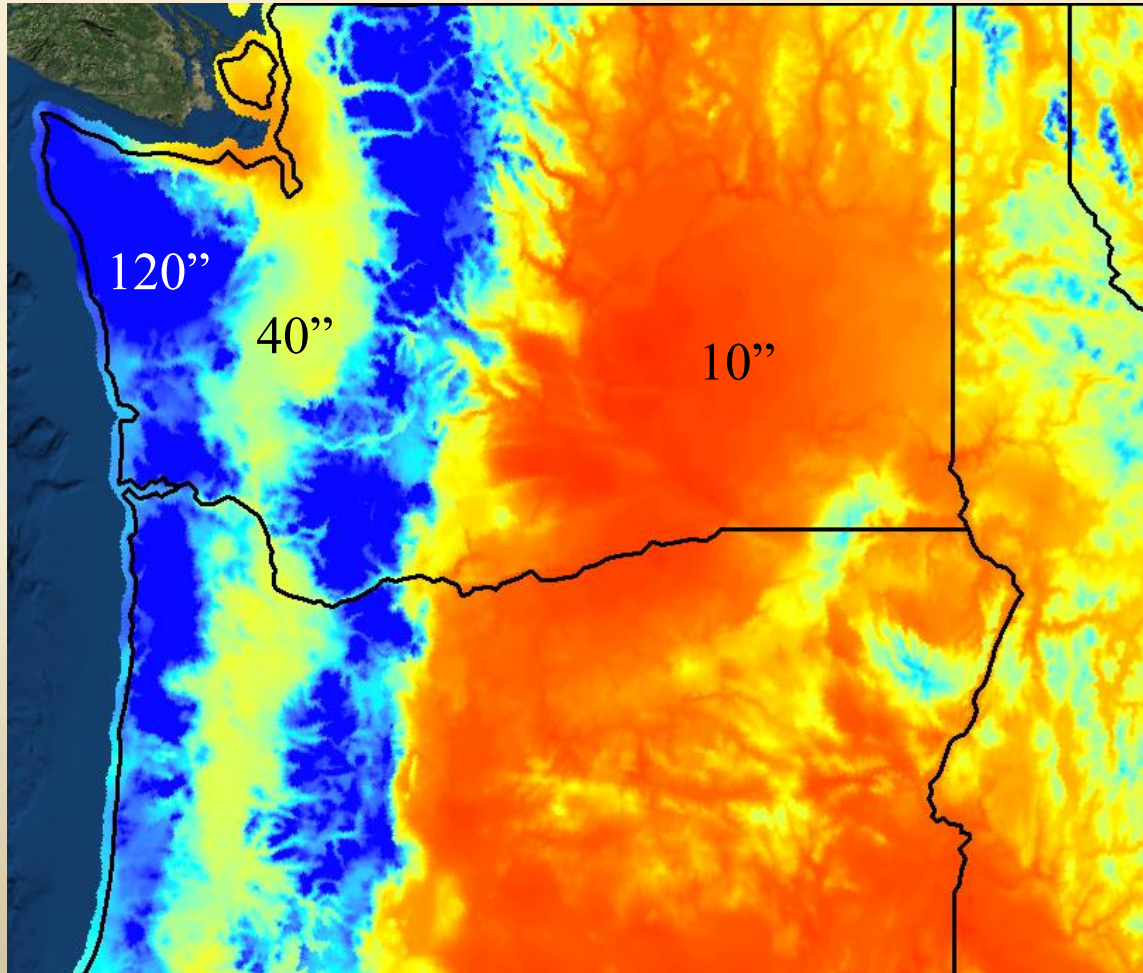
- ▲ SawMills - Facilities
- Sale - Incident

Transportation (Roads)

- Surface Type
 - Paved
 - Unpaved (gravel)
 - Trail
 - Unknown
- Road width (ft)
 - ROW to ROW

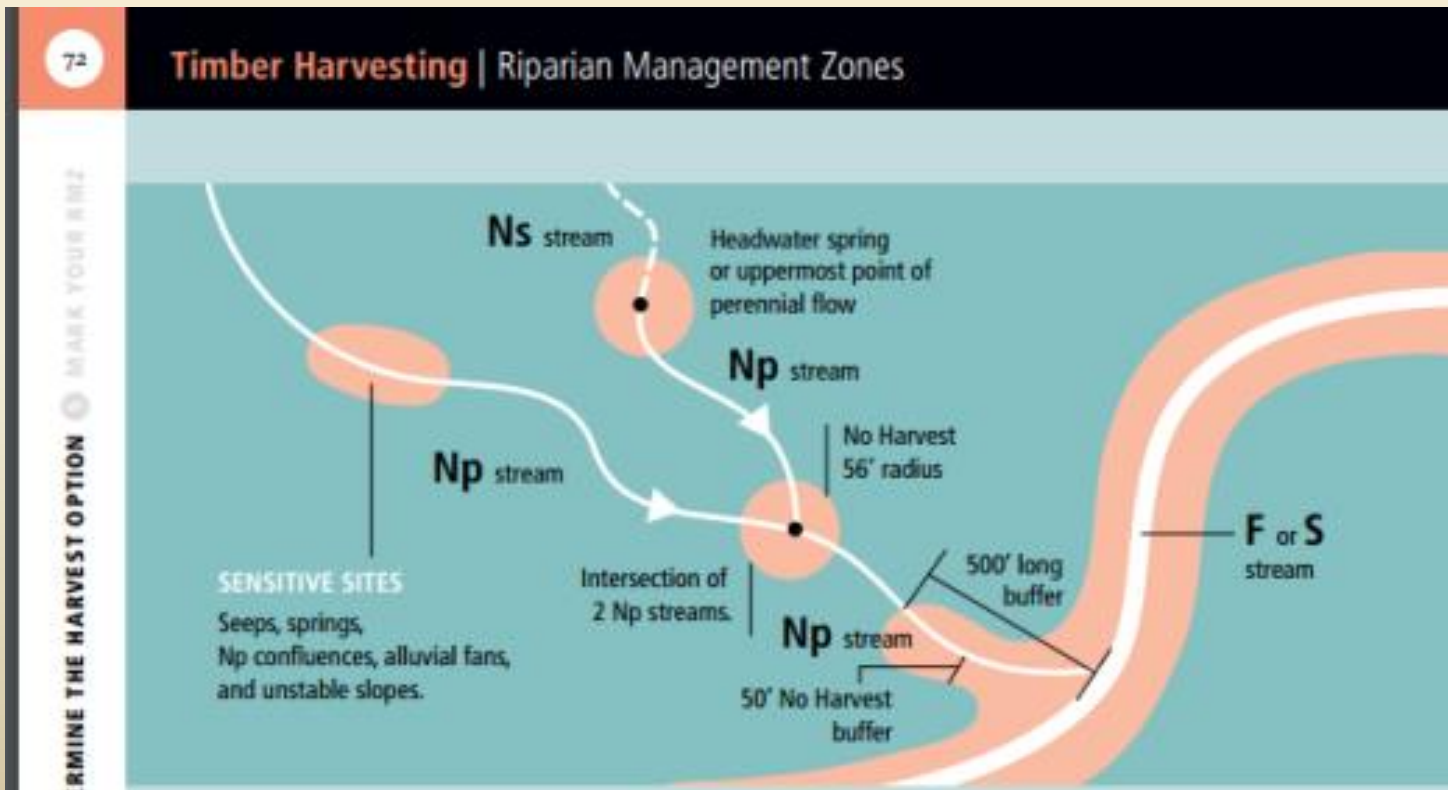


Annual Precipitation (PRISM Climate Group – OSU)



Riparian Management Zone

- Provides stream/river protection from disturbance during timber harvest.



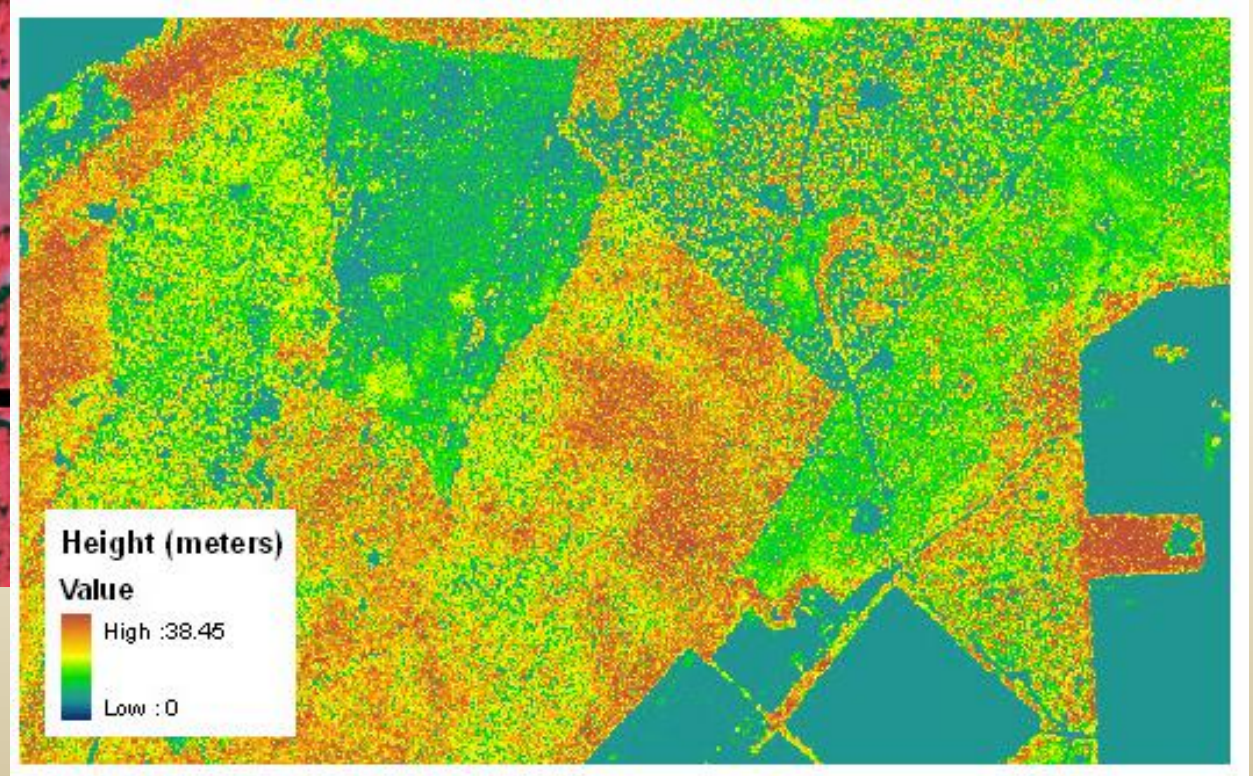
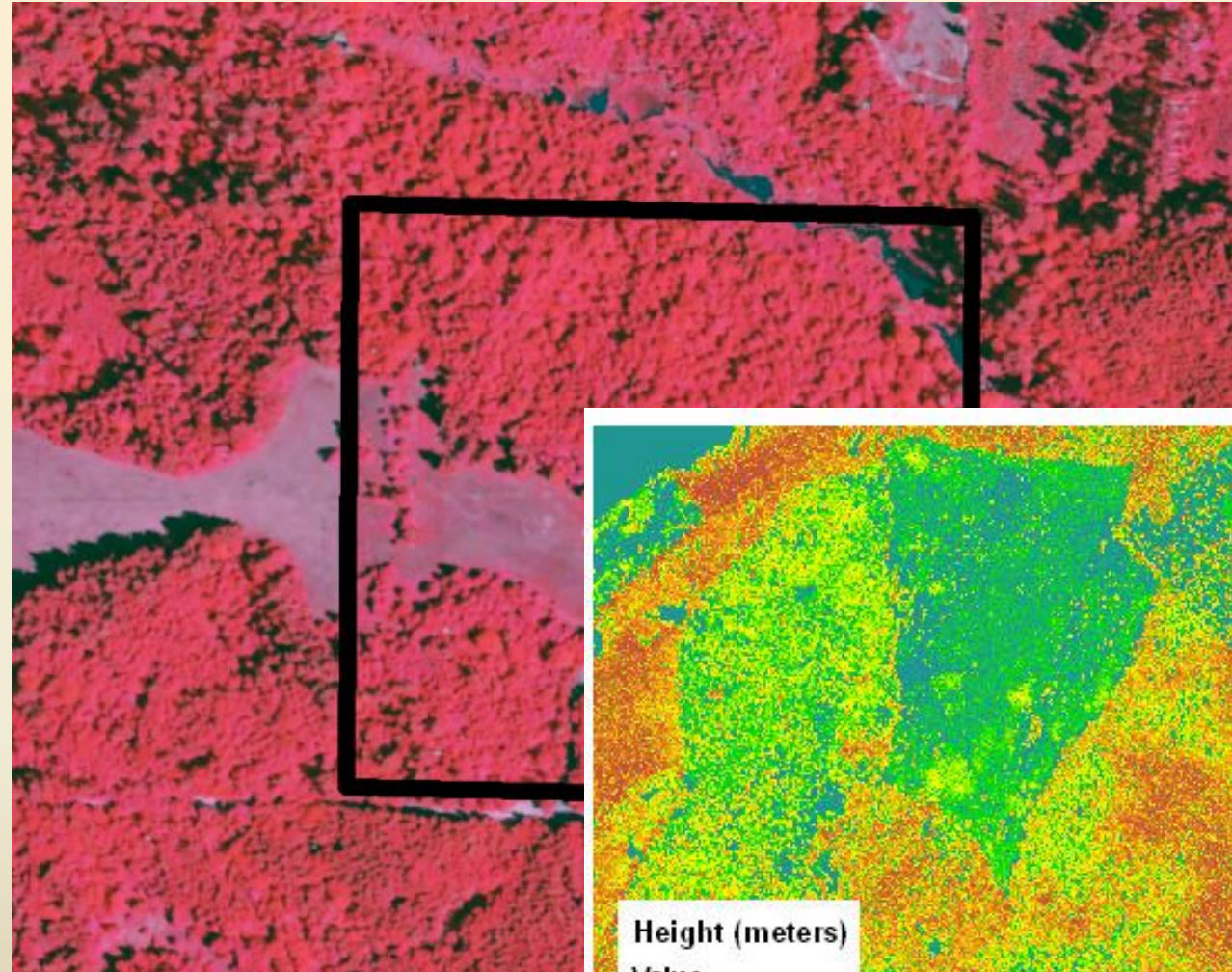
Land Use Characteristics

- Forest (merchantable vs. non-merchantable)
- Low Utility (water/roads/no vegetation)



Forest Species and Age-Class Determinations

L I D A R



Field Inspections (Ground and Aerial)

The screenshot displays the ArcMap interface with a map of a rural area. The map features several subject tracts outlined in green and blue. Three yellow dots, representing photo points, are placed on the map with arrows pointing to three separate inspection windows. The left window shows a photo of a satellite dish and its metadata. The right window shows another photo of a satellite dish and its metadata. The bottom window shows a third photo of a satellite dish and its metadata. The map also includes various labels for tracts and a scale bar at the bottom.

Table Of Contents

- Layers
 - Yakama_PhotoPoints
 - Yakama_PhotoPoints_BearingDi
 - SubjectTracts
 - Comments
 - Target
 - Priority
 - NAIP\Washington_2015_1m RGB
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3

Inspection Window 1 (Left):

IMG_0124.JPG
Yakama Inspection

IMG_0124.JPG
Name: IMG_0124.JPG
DateTime: 2016:08:24 11:04:43
Direction: 257.161538

Inspection Window 2 (Right):

IMG_0117.JPG
Yakama Inspection

IMG_0117.JPG
Name: IMG_0117.JPG
DateTime: 2016:08:24 11:04:15
Direction: 268.928934

Inspection Window 3 (Bottom):

IMG_0121.JPG
Yakama Inspection

IMG_0121.JPG
Name: IMG_0121.JPG
DateTime: 2016:08:24 11:04:30
Direction: 251.759398

Scale: -1882798.351 2841933.862 Meters



Average Delivered Log Prices (MBF)

Western Washington 2011 By Species and Sort

	1st Q	2nd Q	3rd Q	4th Q
DOUGLAS FIR				
J SORT 12" +	\$675	\$745	\$645	\$615
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MERCHANTABLE TIMBER VOLUMES

- Used GIS aerial, LIDAR and infrared imagery to identify species and to estimate age and stocking volumes.
- Captured NRCS Soils data for each identified stand of timber.
- Input above data into ORGANON, a forest yield simulator, to forecast volumes (mbf) and sort recovery per acre by identified species, age, site and stocking as estimated.
- Expanded the forecasted volumes per acre by species and sorts to determine total volumes for the property.

WEIGHTED AVERAGE DELIVERED LOG PRICE

- Based on a quarterly average of prices being paid per mbf at the point of utilization (sawmill, export yard, etc.) by species and sort.
- Prices by sort were applied to the estimated sort volumes for each species to calculate a weighted average delivered log price for each species.
- For a whole sale, the weighted average for each species calculated above were weighted by the volume of each species, to arrive at a total weighted average delivered log price for that sale.

City	Douglas Fir	Other White Woods	Red Cedar	Hardwoods	Export All Species
Aberdeen	●				●
Amanda		●	●		
Avon	●	●		●	
Bow			●		
Central Park	●	●			
Centralia				●	
Chehalis	●	●		●	
Darlington	●	●			
Everett	●	●		●	●
Everson	●	●			
Humptulips			●		
Kalama			●		
Longview	●	●		●	●
Montesano			●		
Olympia					●
Onalaska			●		
Port	●	●		●	●
Raymond	●	●			
Shelton			●		
Snohomish	●	●	●		
Sumner	●				
Tacoma	●	●	●		●
Hoquiam					●

AVERAGE LOGGING COSTS

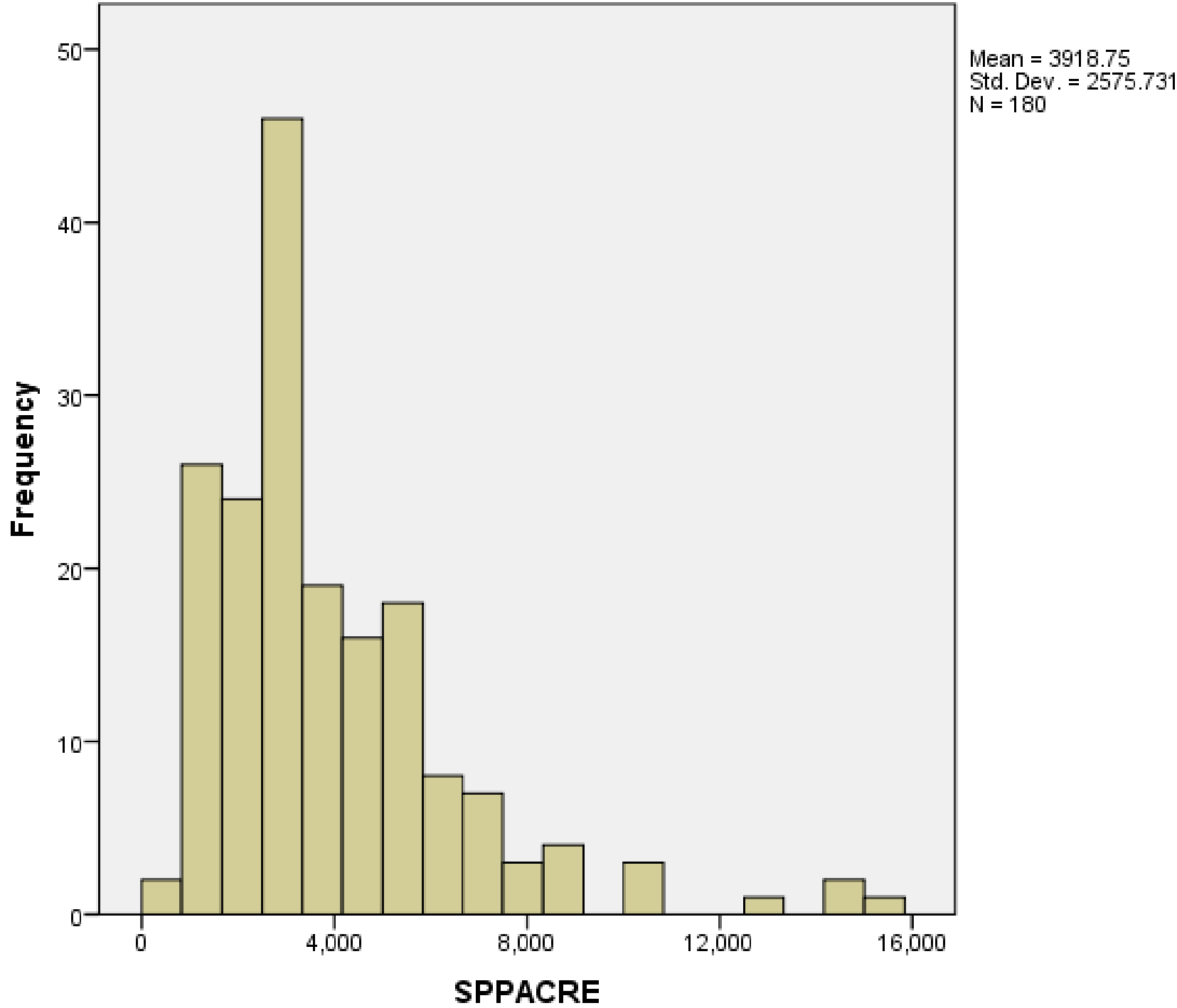
- Logging costs are the expenses incurred to cut down the standing timber, load it on trucks and transport the timber as logs to a utilization center, usually expressed as \$/mbf.
- The cost factors that come into play are:
 - Constructing any new roads, culverts and/or bridges necessary to access the timber.
 - Falling the trees and bucking them into logs.
 - Yarding the logs to a landing and loading them onto a truck.

AVERAGE LOGGING COSTS (cont.)

- Transporting the logs to the nearest utilization center.
- Performing periodic road maintenance as needed.
- The dollar amounts associated with the cost factors come from interviews with loggers working in the same region where the timber is located.
- After applying the industry average costs to each factor, as listed above on a per mbf basis, those costs were summed up to arrive at the total estimated logging cost for each sale.

		SUBJECT		Total
		.00	1.00	
SALE	.00	0	316	316
	1.00	180	0	180
Total		180	316	496

		YEAR					Total
		2011	2012	2013	2014	2015	
SMONTH	1	2	0	3	2	4	11
	2	2	2	2	4	3	13
	3	2	2	2	3	1	10
	4	2	1	1	4	7	15
	5	1	0	4	1	4	10
	6	1	5	2	4	6	18
	7	0	3	6	5	6	20
	8	4	4	6	4	4	22
	9	3	2	1	2	4	12
	10	2	2	5	4	7	20
	11	2	3	3	3	5	16
	12	5	2	3	3	0	13
Total		26	26	38	39	51	180

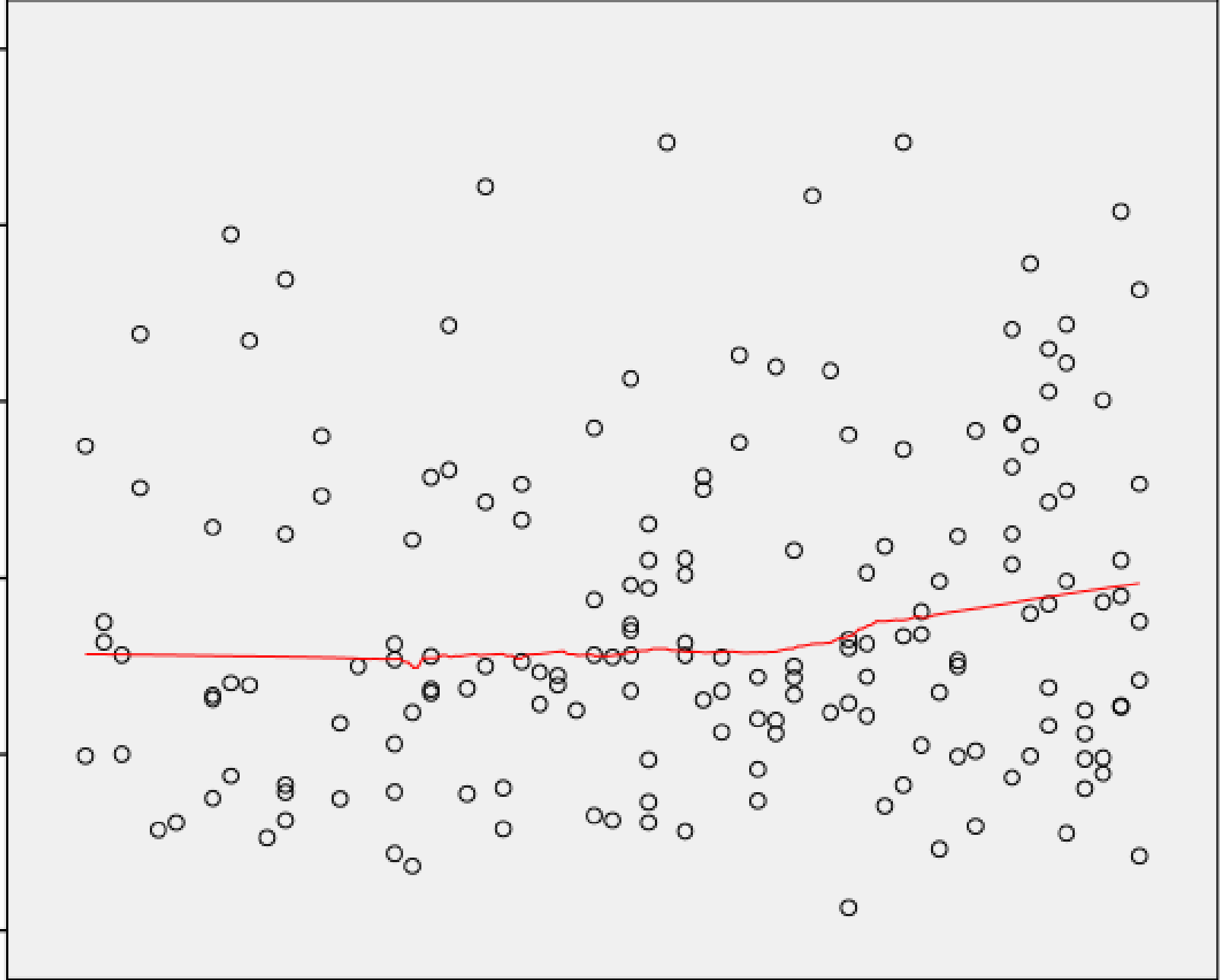


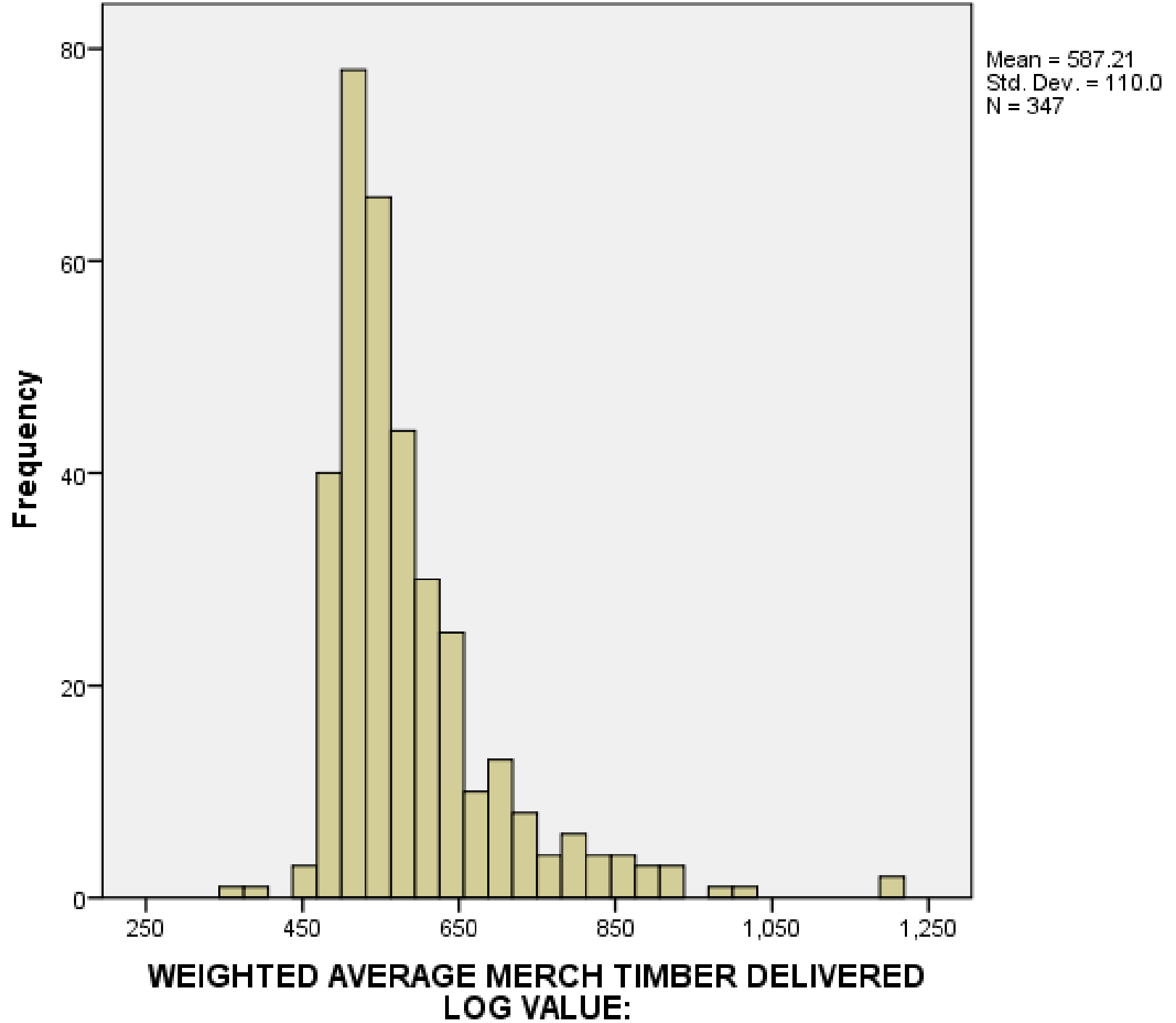
SPPACRE

10,000
8,000
6,000
4,000
2,000
0

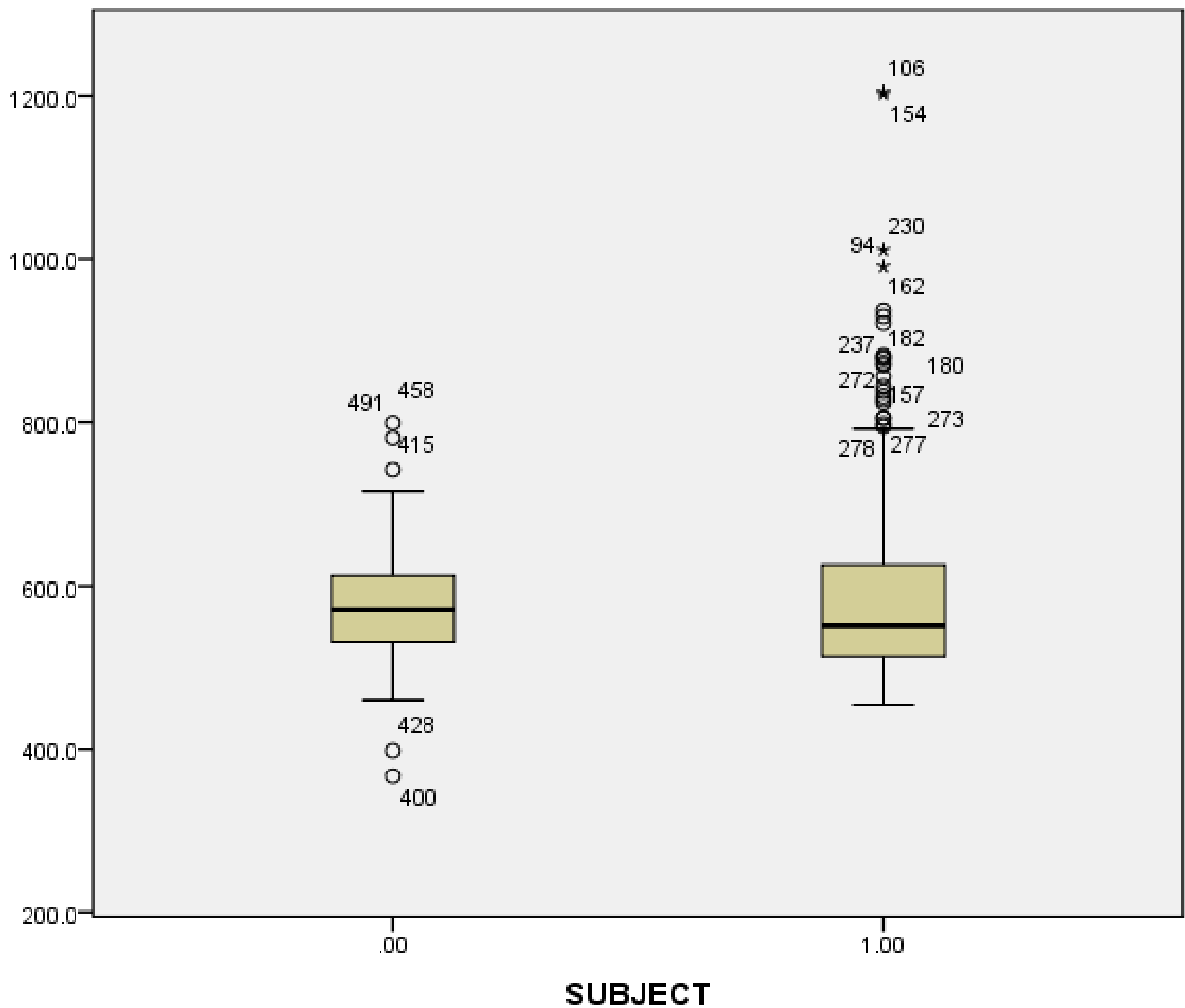
0 10 20 30 40 50 60

MONTHS



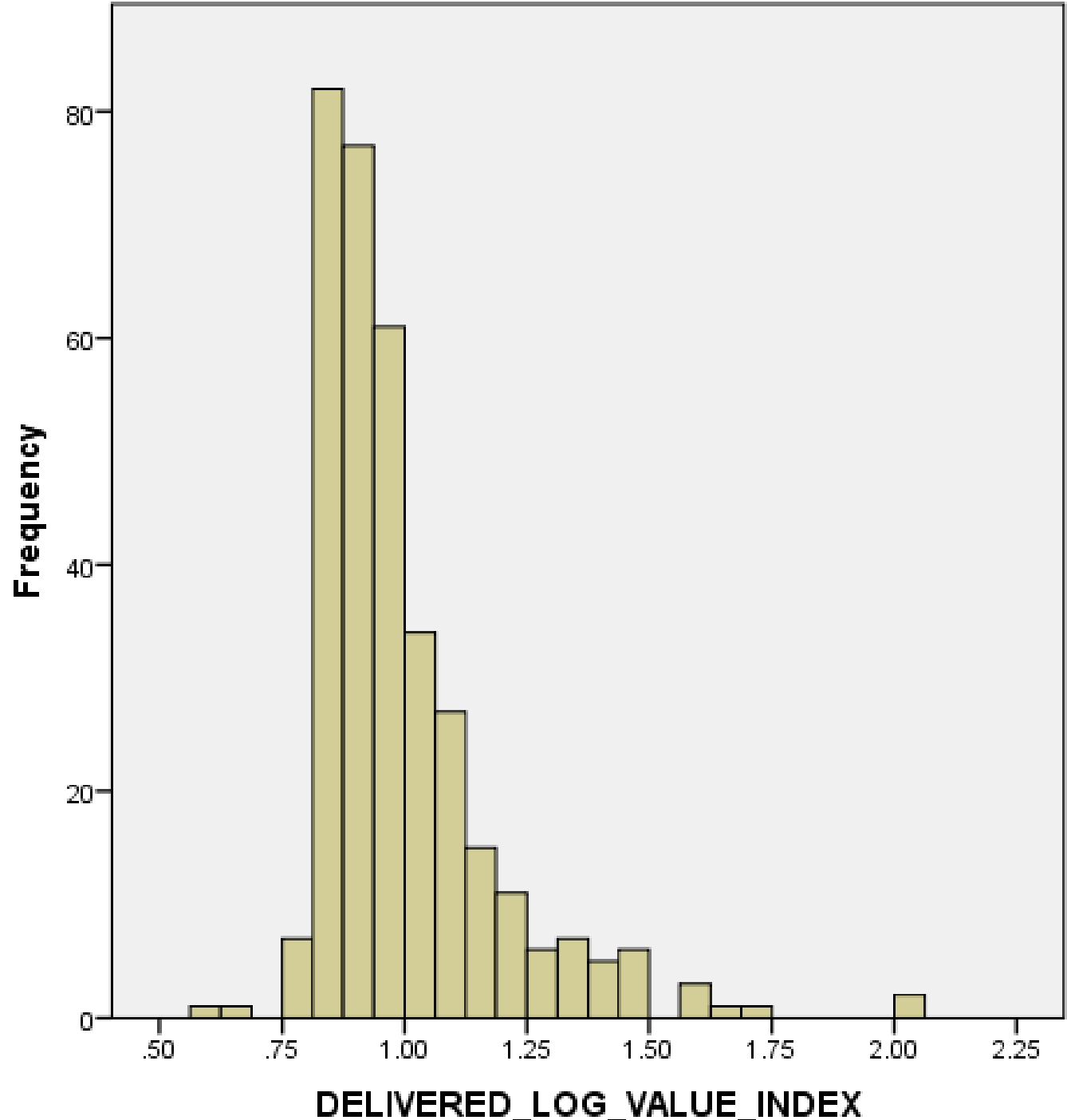


WEIGHTED AVERAGE MERCH TIMBER DELIVERED LOG
VALUE:

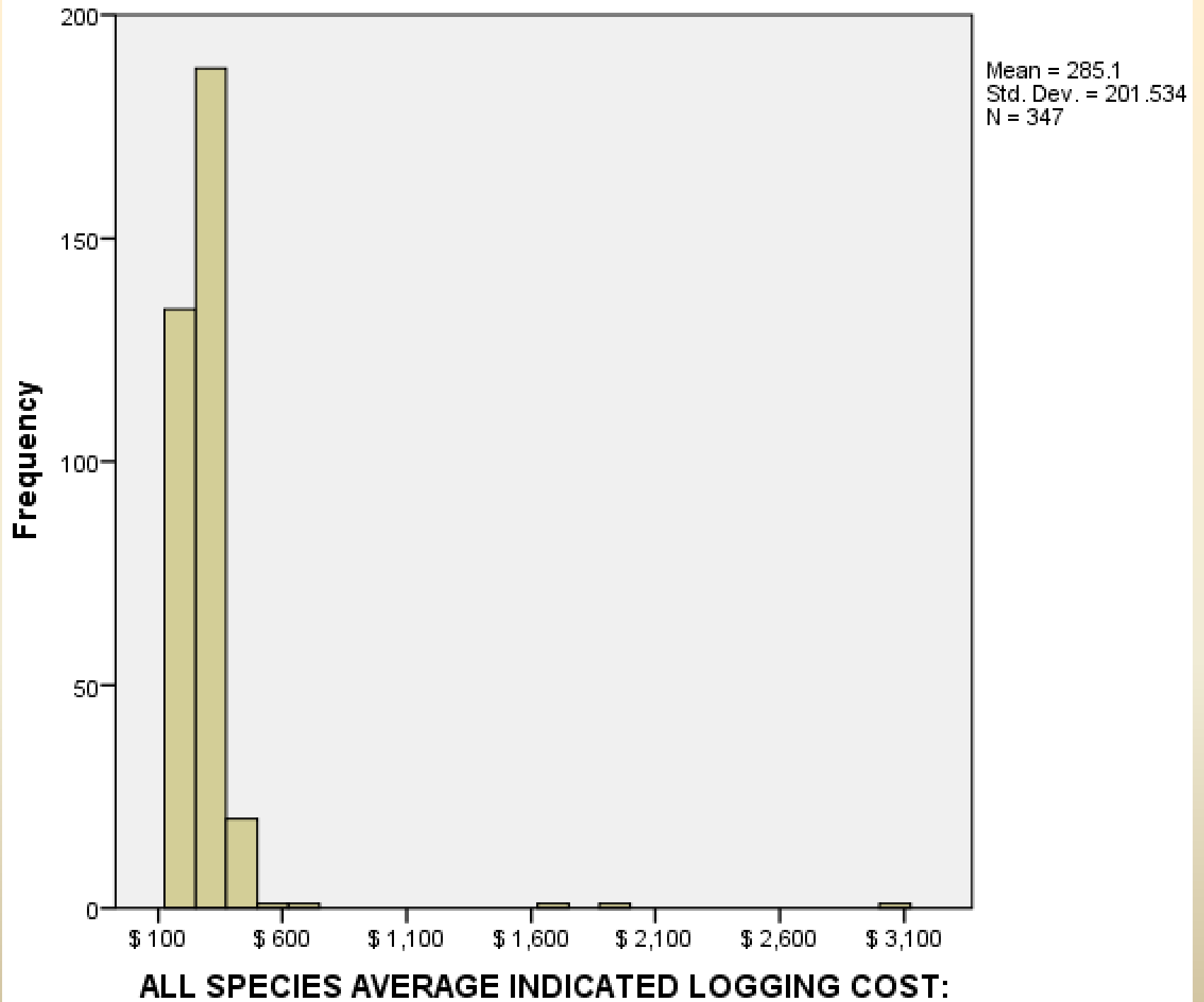


AVG_DELIVERED_LOG_VALUE WEIGHTED AVERAGE MERCH TIMBER DELIVERED LOG VALUE

SUBJECT	N	Median	Mean	Minimum	Maximum
.00	92	570	578	367	799
1.00	255	551	591	454	1,205
Total	347	556	587	367	1,205



Mean = 1.00
Std. Dev. = .186
N = 347



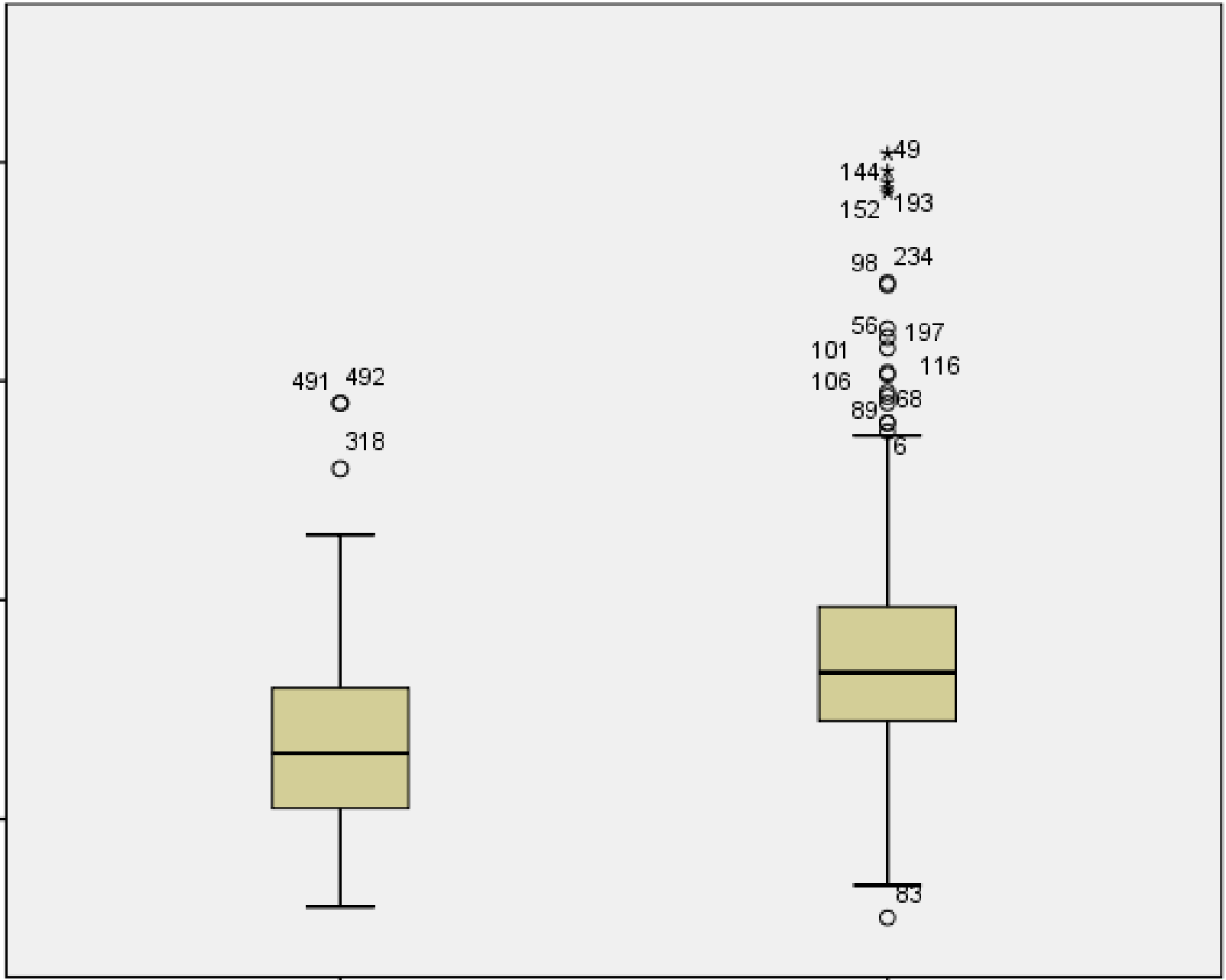
ALL SPECIES AVERAGE INDICATED LOGGING COST:

500.0
400.0
300.0
200.0

.00

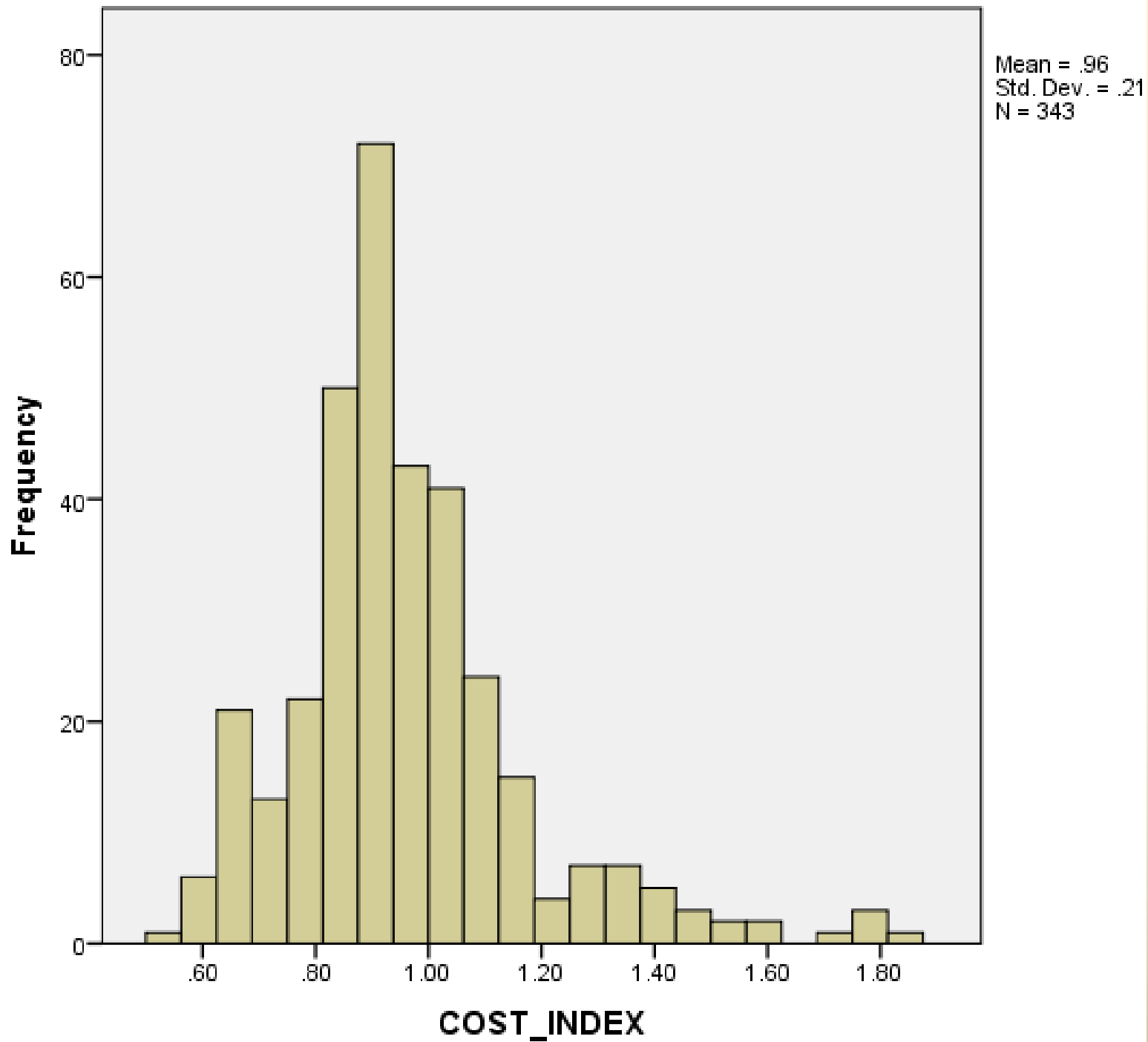
1.00

SUBJECT



AVG_LOG_IN_COST ALL SPECIES AVERAGE INDICATED LOGGING COST

SUBJECT	N	Median	Mean	Minimum	Maximum
.00	92	230	237	160	390
1.00	251	267	278	155	504
Total	343	258	267	155	504



COST INDEX

SUBJECT	N	Median	Mean	Minimum	Maximum
.00	92	.83	.85	.58	1.40
1.00	251	.96	1.00	.56	1.81
Total	343	.93	.96	.56	1.81

Coefficients^{a,b}

Model: 4

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	61.761	30.021		2.057	.043
DELIVERED_LOG_VALUE_INDEX	408.993	29.781	.848	13.733	.000
COST_INDEX	-216.391	24.532	-.544	-8.821	.000

Excluded Variables^a

Model: 4

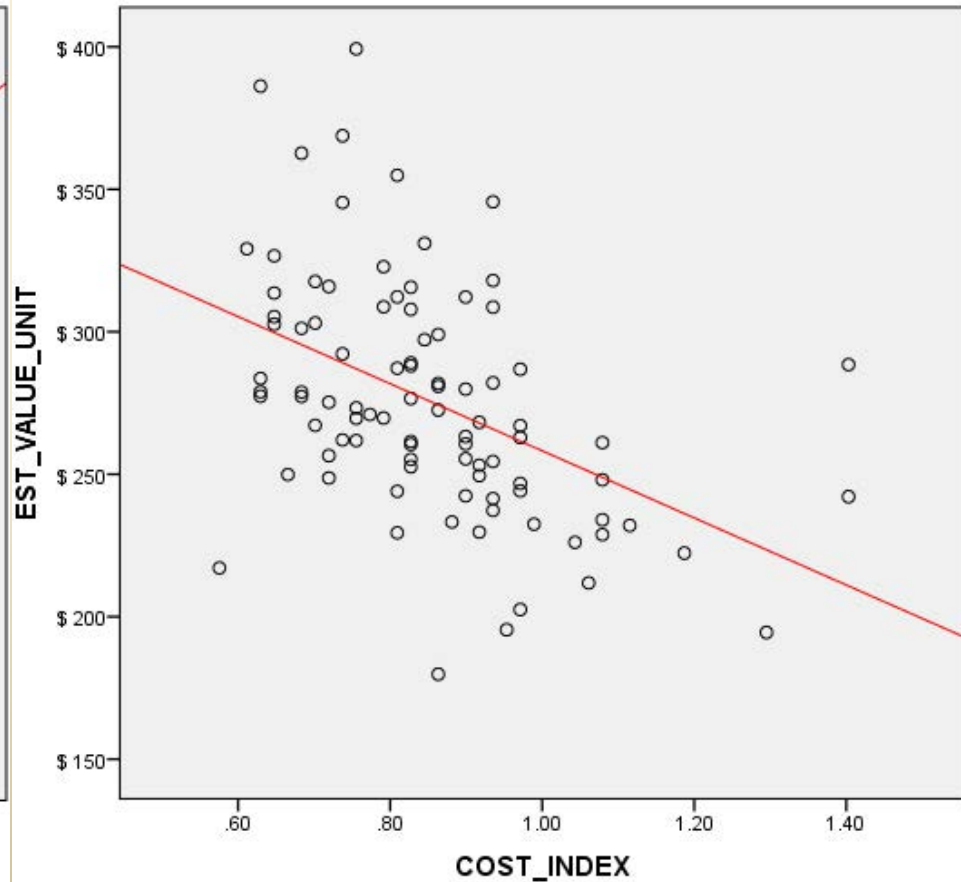
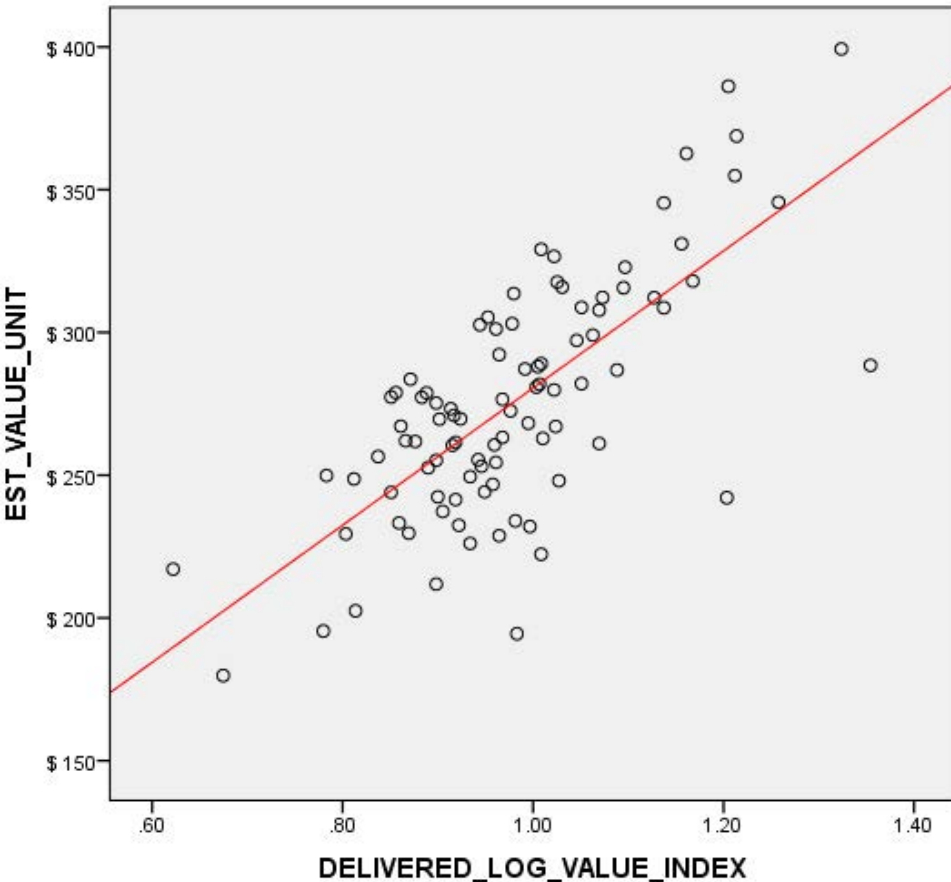
	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
MERCHANTABLE_VOLUME TOTAL NET MERCHANTABLE VOLUME:	.012 ^d	.205	.838	.023	.996
MONTHS1	-.074 ^d	-1.048	.298	-.116	.683
MONTHS2	-.091 ^d	-1.431	.156	-.157	.829

a. Dependent Variable: SPRICE_MERCHANTABLE_TIMBER_UNIT

d. Predictors in the Model: (Constant), COST_INDEX, DELIVERED_LOG_VALUE_INDEX

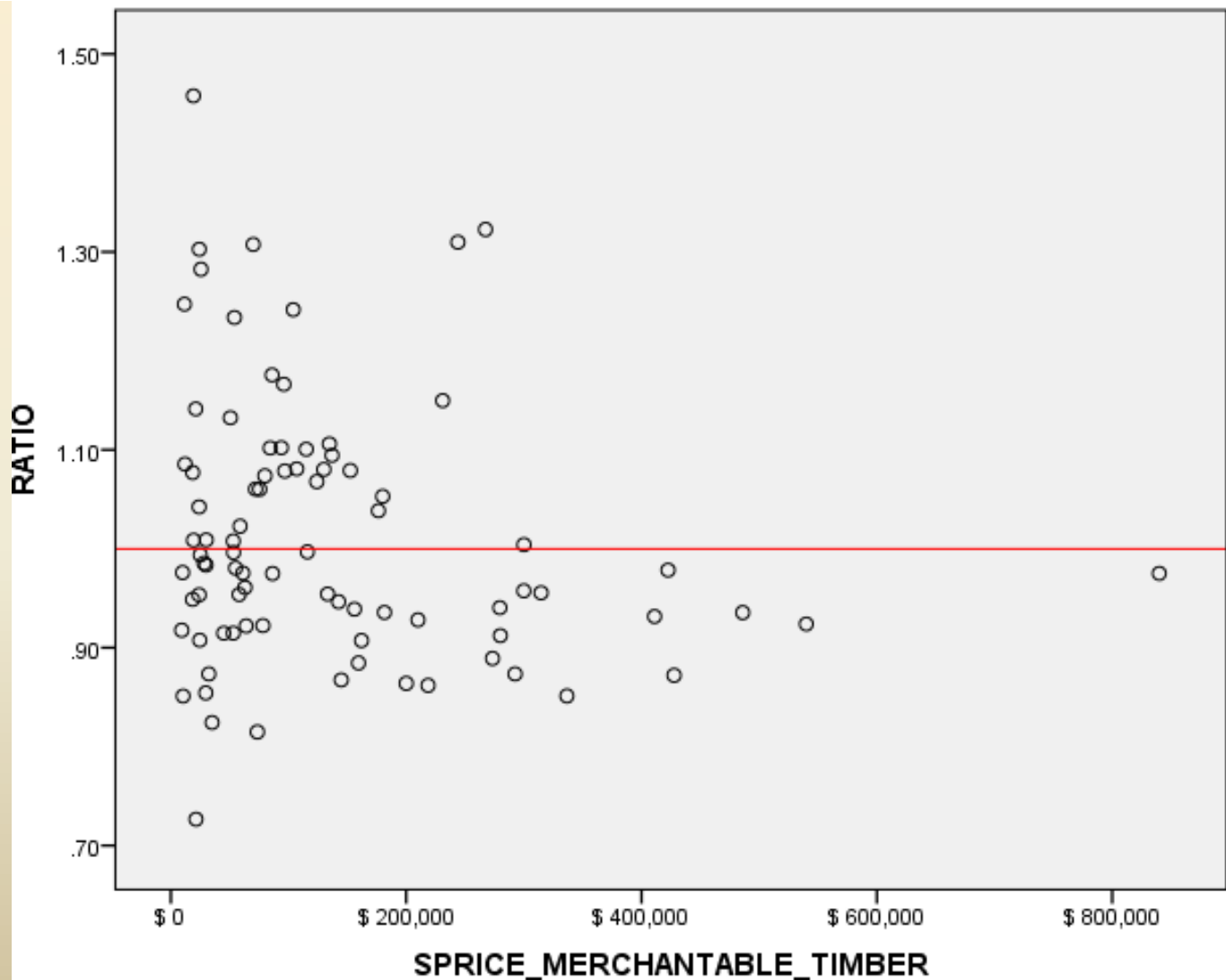
Model Summary^{e,f}

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	SALE = 1.00 (Selected)			
1	.853 ^a	.728	.710	32.88383
2	.853 ^b	.727	.714	32.68856
3	.852 ^c	.726	.716	32.54361
4	.848 ^d	.720	.713	32.75087



Ratio Statistics for EST_MERCH_TIMBER_VALUE / SPRICE_MERCHANTABLE_TIMBER

Mean	Median	Weighted Mean	Minimum	Maximum	Price Related Differential	Coefficient of Dispersion
1.014	.974	.997	.710	1.391	1.017	.098



COMPUTE MEDIAN=0.974.

COMPUTE VALUE=.50*SPRICE_MERCHANTABLE_TIMBER+.50*EST_MERCH_TIMBER_VALUE/MEDIAN.

COMPUTE LN_VALUE=LN(VALUE)/.693.

COMPUTE PCT_DIFF=(RATIO-MEDIAN)/MEDIAN.

REGRESSION

/STATISTICS COEFF OUTS CI(95) R ANOVA

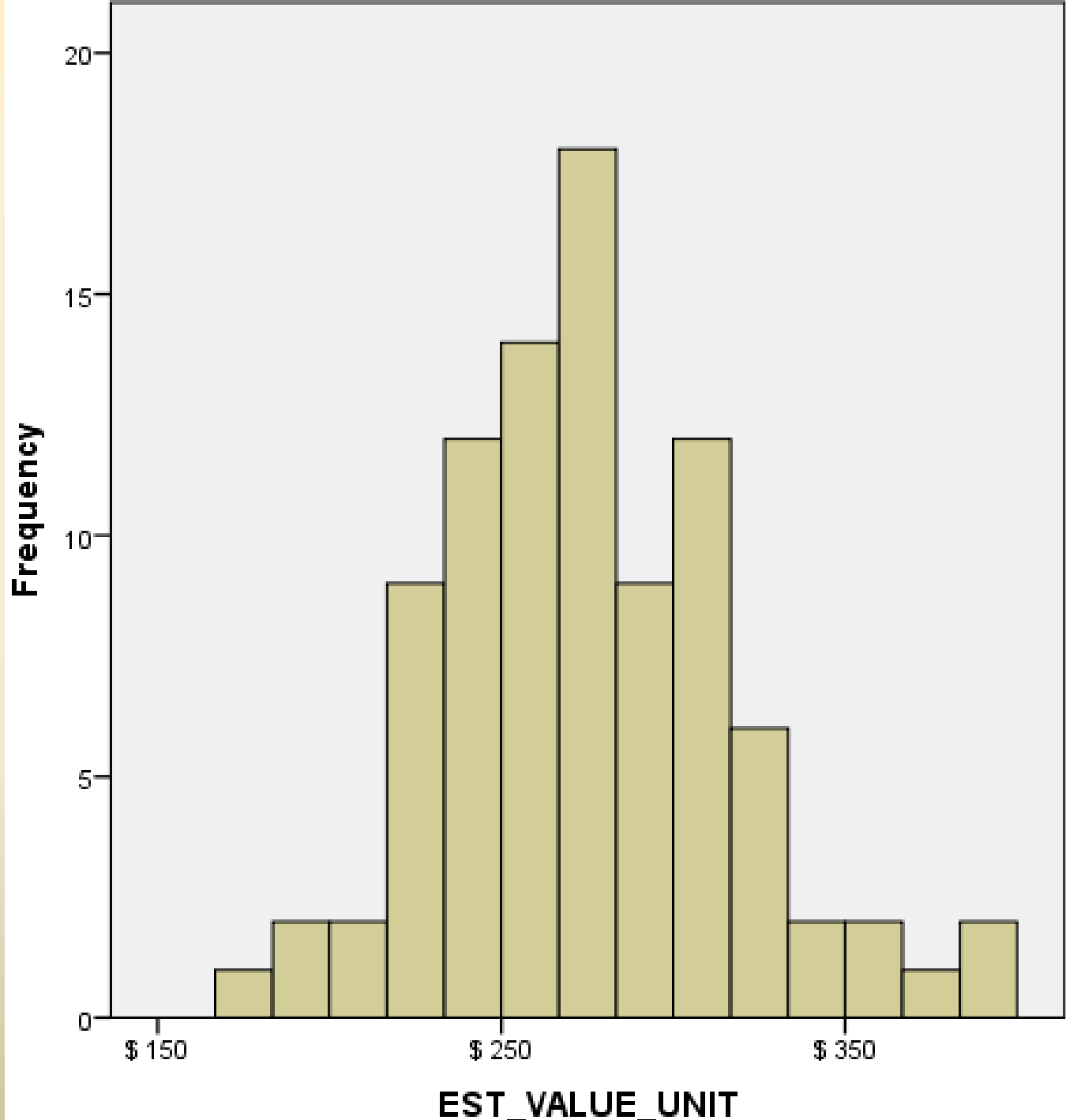
/DEP=PCT_DIFF/ENTER=LN_VALUE.

Coefficients^a

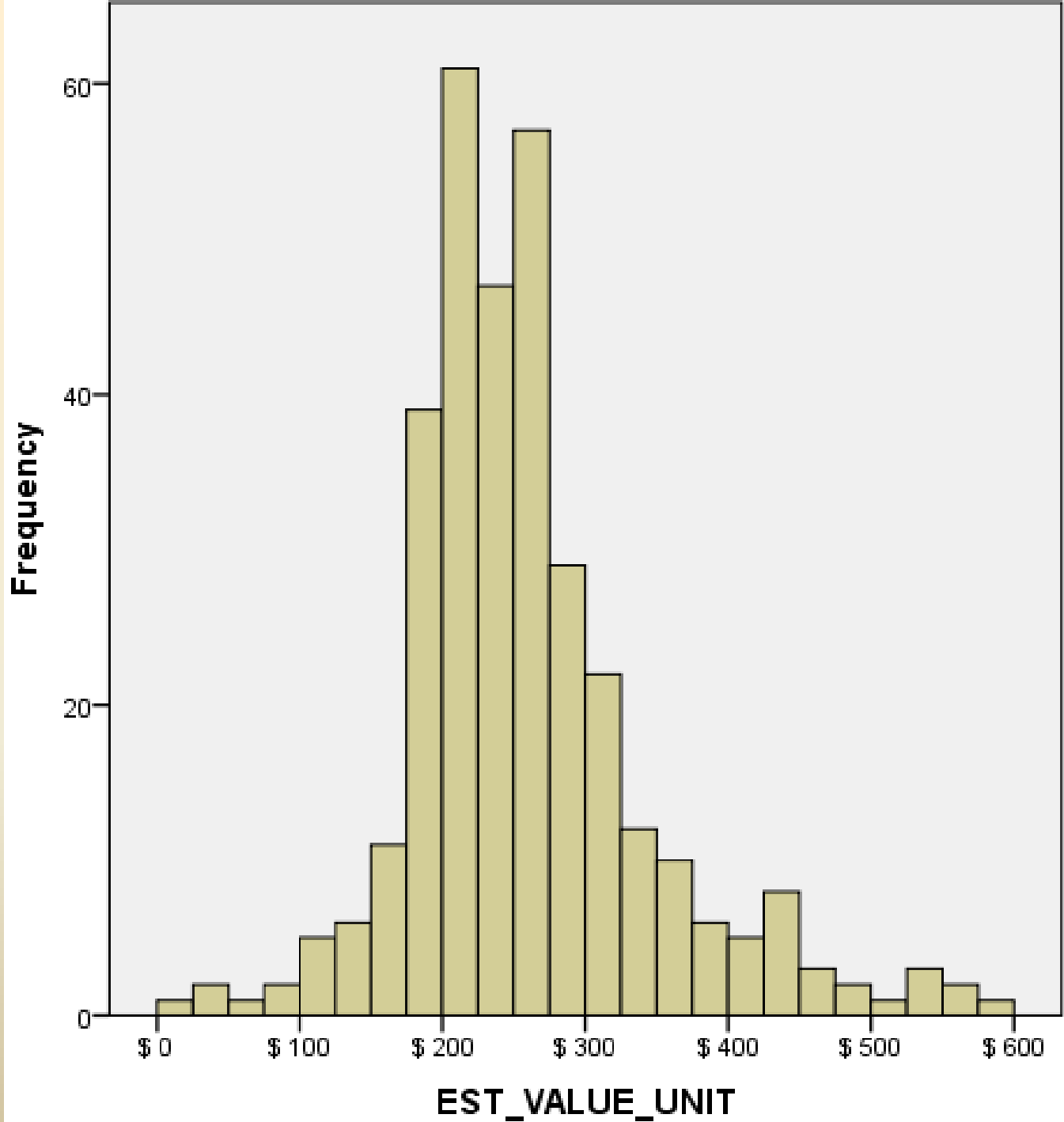
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.163	.161				
	LN_VALUE	-.007	.010	-.084	-1.009	.316	

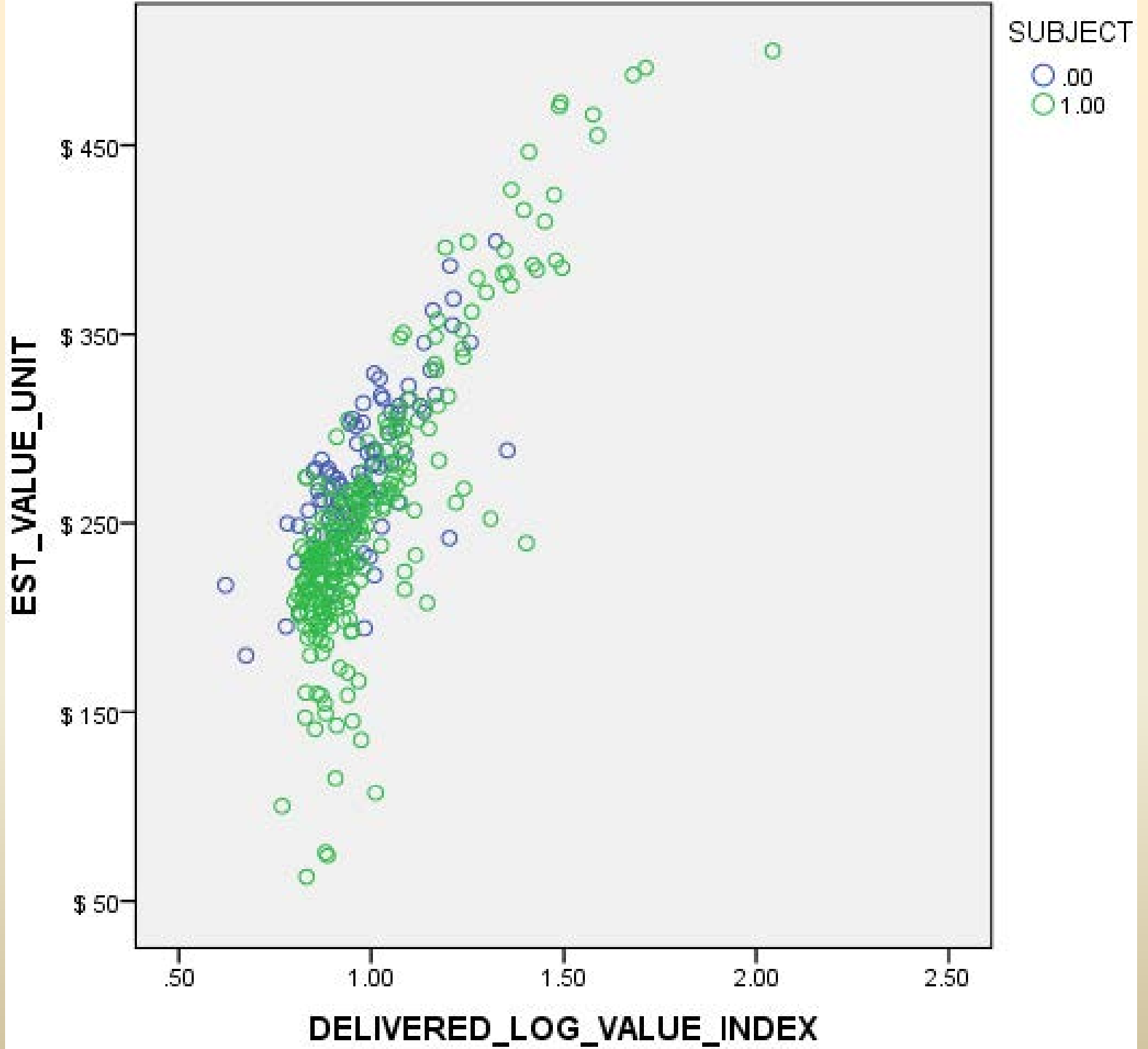
a. Dependent Variable: PCT_DIFF

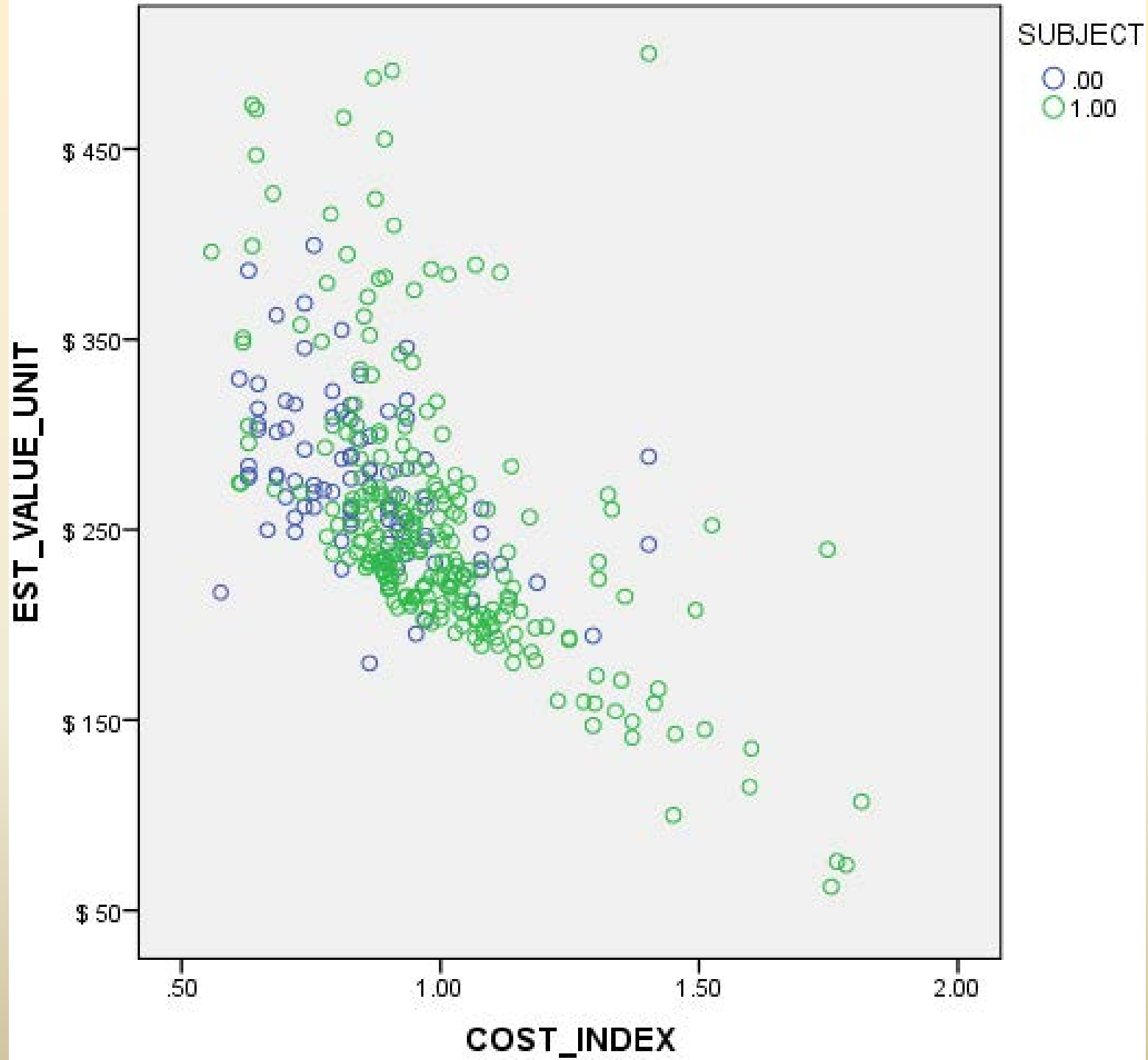
Mean = 275.64
Std. Dev. = 41.813
N = 92

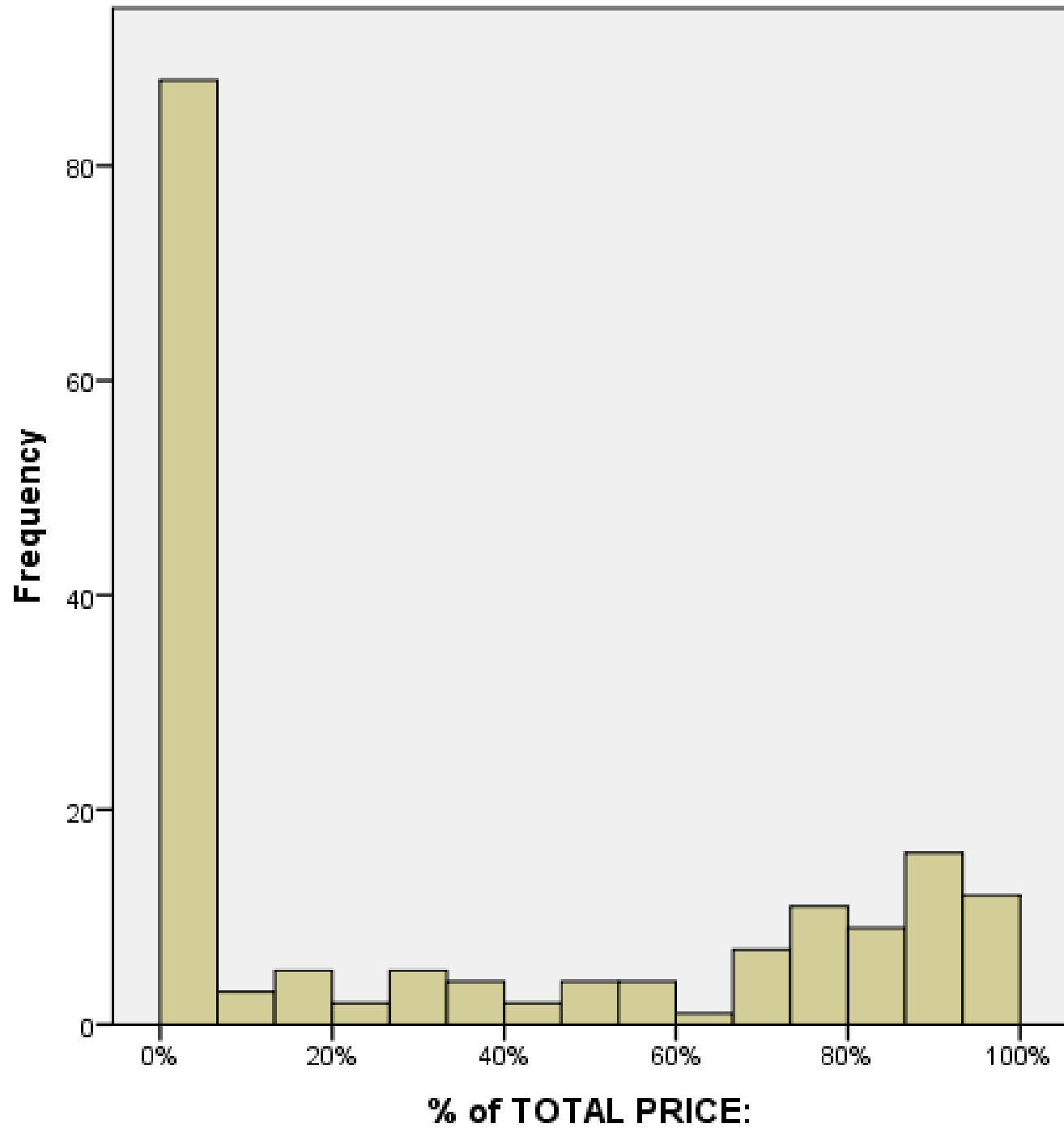


Mean = 258.99
Std. Dev. = 85.541
N = 336



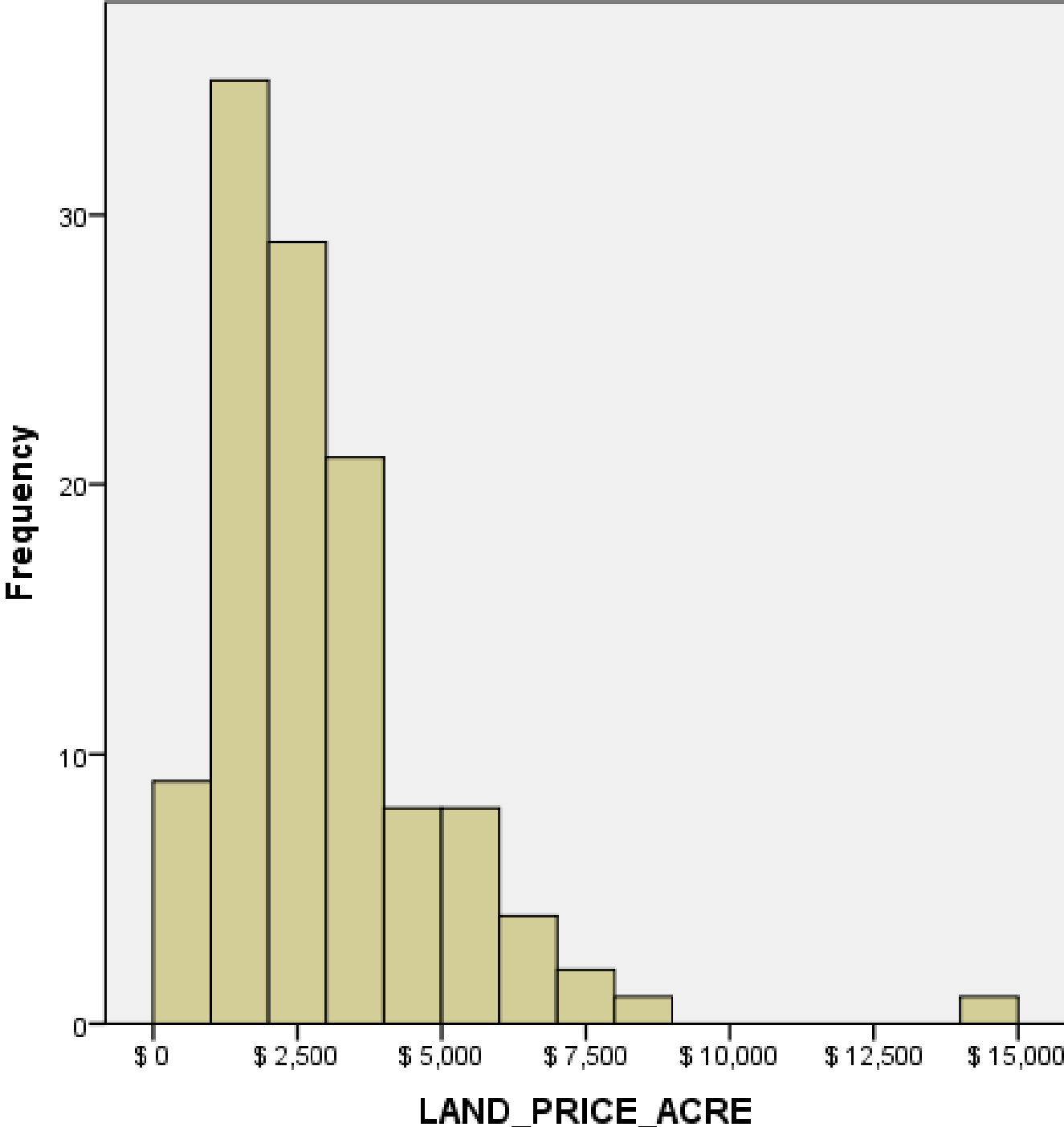


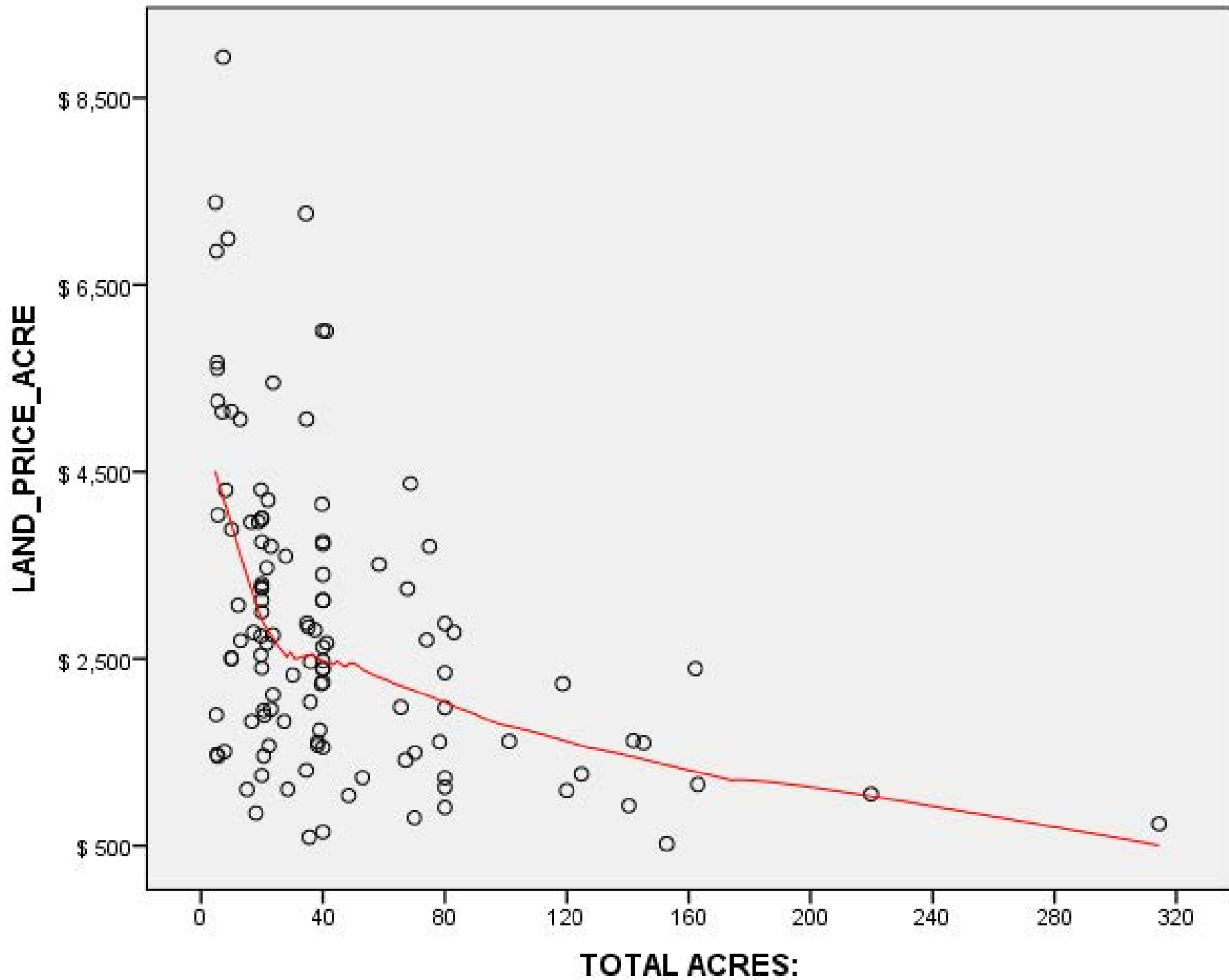




Mean = 33.28%
Std. Dev. = 38.947%
N = 173

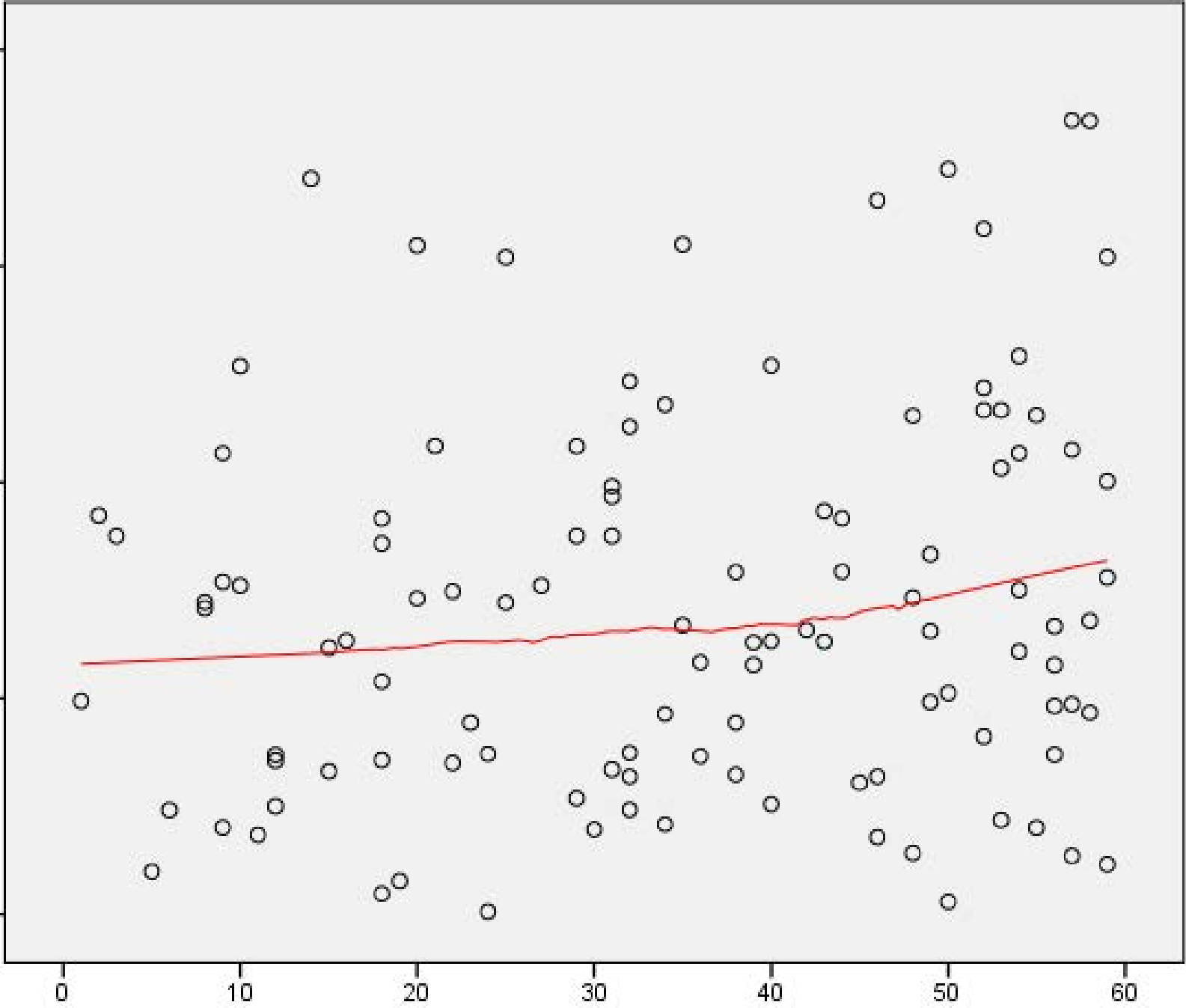
Mean = 2922.13
Std. Dev. = 1962.778
N = 118





LAND_PRICE_ACRE

\$ 6,500
\$ 5,000
\$ 3,500
\$ 2,000
\$ 500



MONTHS

0 10 20 30 40 50 60

LAND_PRICE_ACRE

\$ 8,000
\$ 6,500
\$ 5,000
\$ 3,500
\$ 2,000
\$ 500

CLA

GH

JEF

MAS

PAC

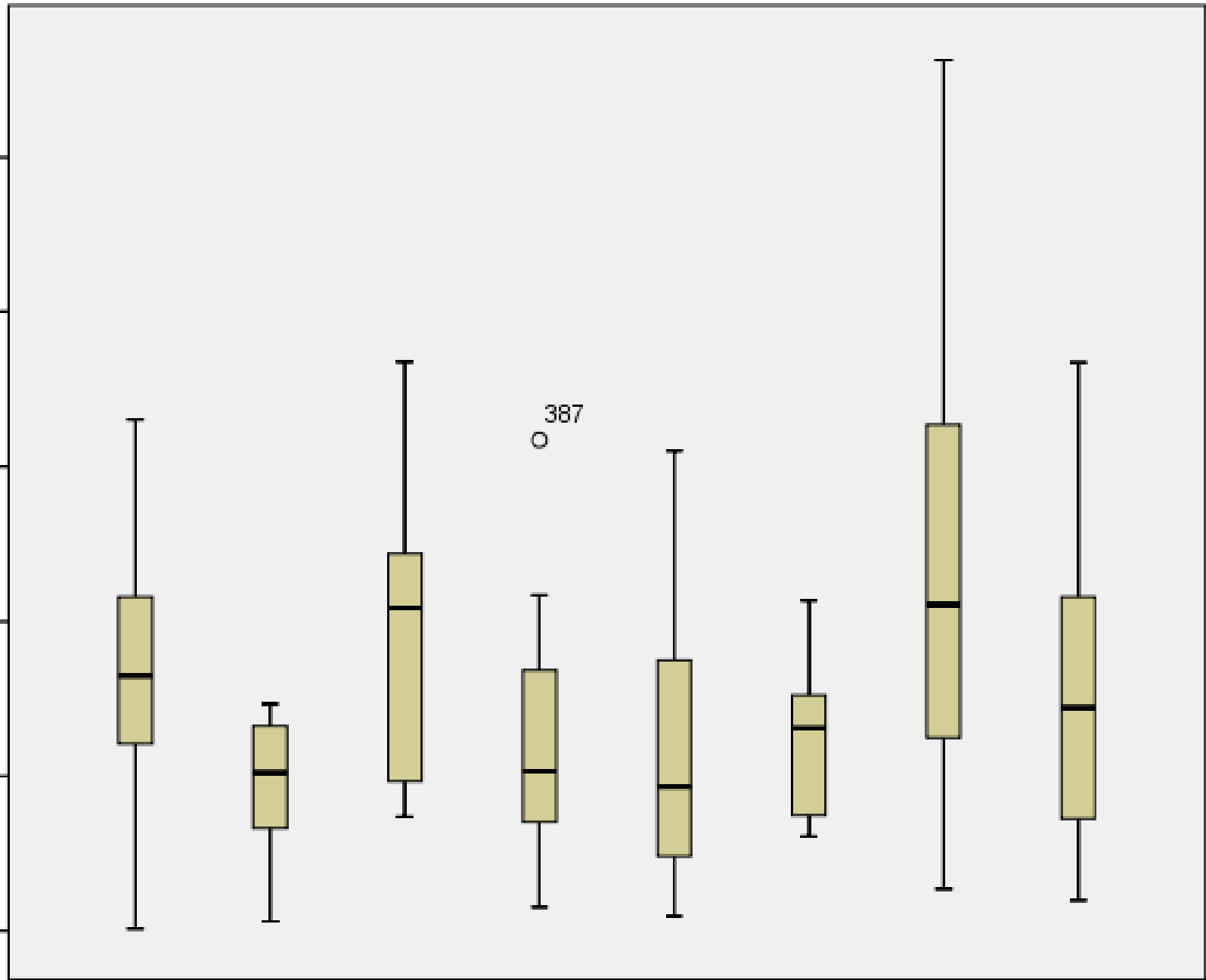
SKA

THU

WHA

COUNTY

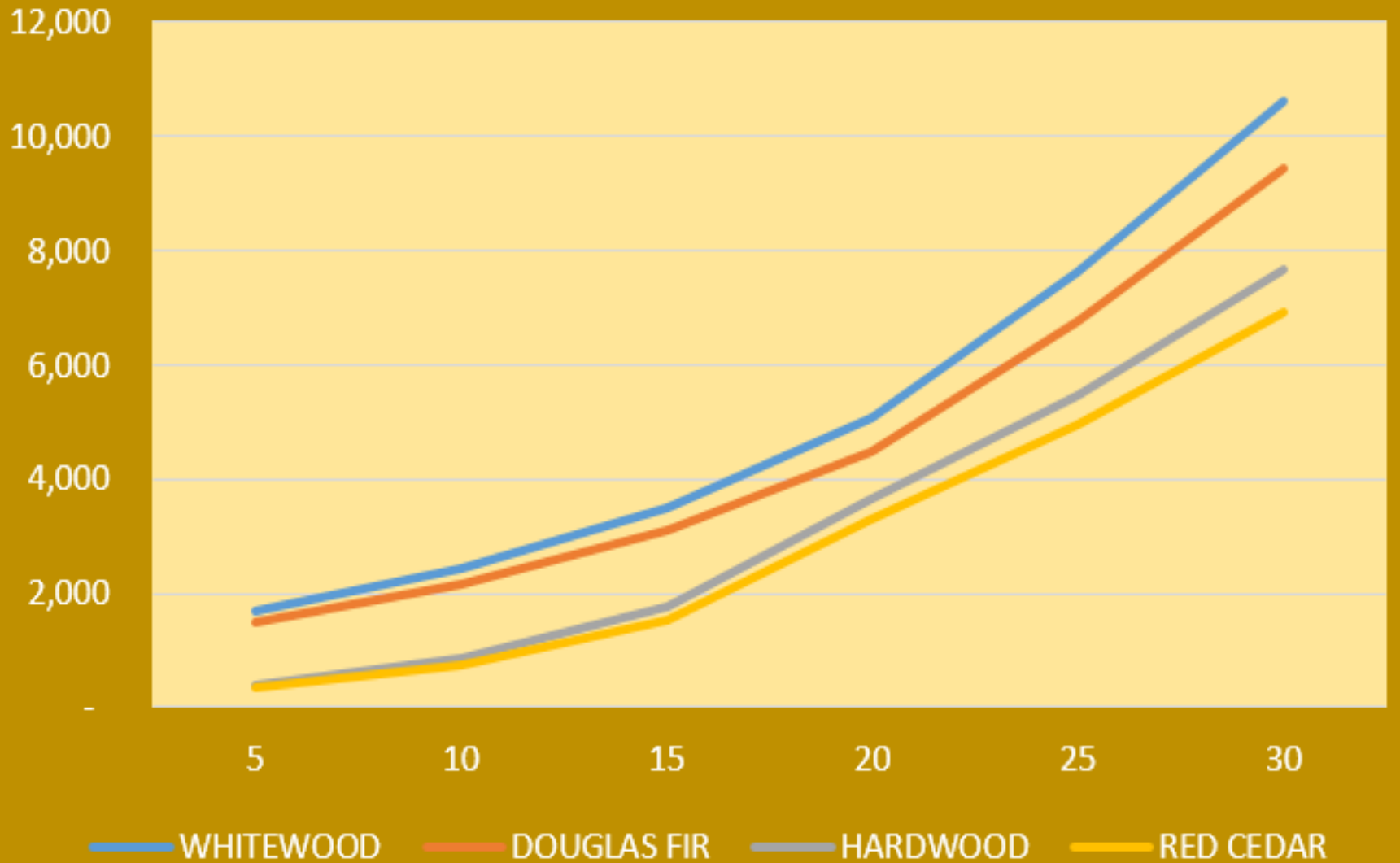
387

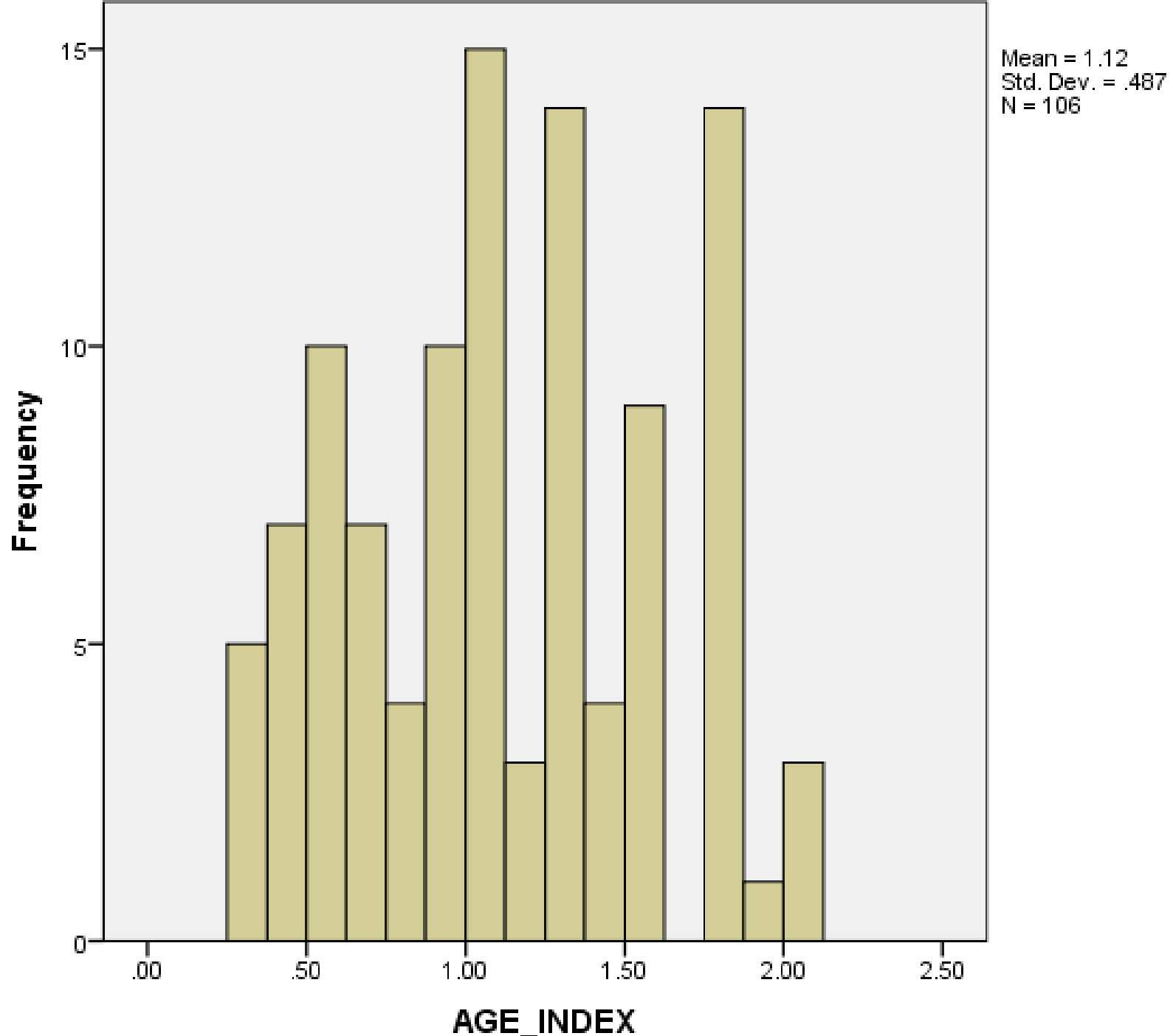


ADDITIONAL ELEMENTS OF VALUE

- Composition of the non merchantable timber.
 - Classified by Species.
 - Classified by Age (5-10-15-20-25-30 years).
 - Classified by Acres by NRCS Soil Classification (1-8).
 - Classified by whether Understocked or Severely Understocked.
- Total non forested acres (brush, grass, openings).
- Total non productive acres (rock outcroppings, roads, swamps, lagoons, RMZ zones).

AVERAGE CUBIC FOOT YIELDS PER ACRE





Report

LAND_PRICE_ACRE

HAS_MERCHANTABLE_TIMBER	Mean	N	Std. Deviation
.00	3,059	82	1633.7245
1.00	2,331	34	1567.3031
Total	2,846	116	1641.8261

Coefficients^a

Model: 12

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.464	.150		49.677	.000
LN_ACRES	-.308	.050	-.476	-6.198	.000
AGE_WTD_PCT_GROWING_TIMBER	.142	.087	.128	1.624	.108
PCT_RMZ	-.286	.300	-.069	-.952	.343
PCT_ROCKY	-2.042	.467	-.286	-4.377	.000
PCT_UNDERSTOCK	-.318	.352	-.060	-.903	.369
MONTHS2	.014	.007	.138	1.868	.065
STD_10	-.086	.028	-.222	-3.100	.003
PCT_EAST	.405	.211	.123	1.915	.058
CLALLAM	.348	.123	.185	2.838	.006
JEFF_EAST	.356	.146	.174	2.435	.017
SKAGIT	.346	.175	.134	1.975	.051
THURSTON	.192	.108	.133	1.769	.080
PERCENT_PRICE_MERCHANTABLE_TIMBER	-.789	.242	-.226	-3.262	.002

a. Dependent Variable: LN_LAND_PRICE_ACRE

Excluded Variables^a

Model: 12

	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
PACIFIC	-.087 ^l	-1.287	.201	-.130	.773
PCT_WEST	-.033 ^l	-.504	.616	-.051	.850
PCT_SOUTH	.006 ^l	.091	.928	.009	.794
MEAN	-.005 ^l	-.066	.947	-.007	.598
NO_ROADS	-.058 ^l	-.835	.406	-.084	.739
MONTHS1	.047 ^l	.552	.582	.056	.501
WHATCOM	.060 ^l	.870	.386	.088	.745
MASON	.092 ^l	1.278	.204	.129	.686

a. Dependent Variable: LN_LAND_PRICE_ACRE

Ratio Statistics for EST_VALUE_ACRE / LAND_PRICE_ACRE

Group	Mean	Median	Weighted Mean	Minimum	Maximum	Price Related Differential	Coefficient of Dispersion
.00	1.052	.980	.977	.541	2.024	1.077	.239
1.00	1.080	.958	.857	.394	2.138	1.260	.427
Overall	1.060	.971	.949	.394	2.138	1.117	.293

Coefficients^{a,b}

Model: 11

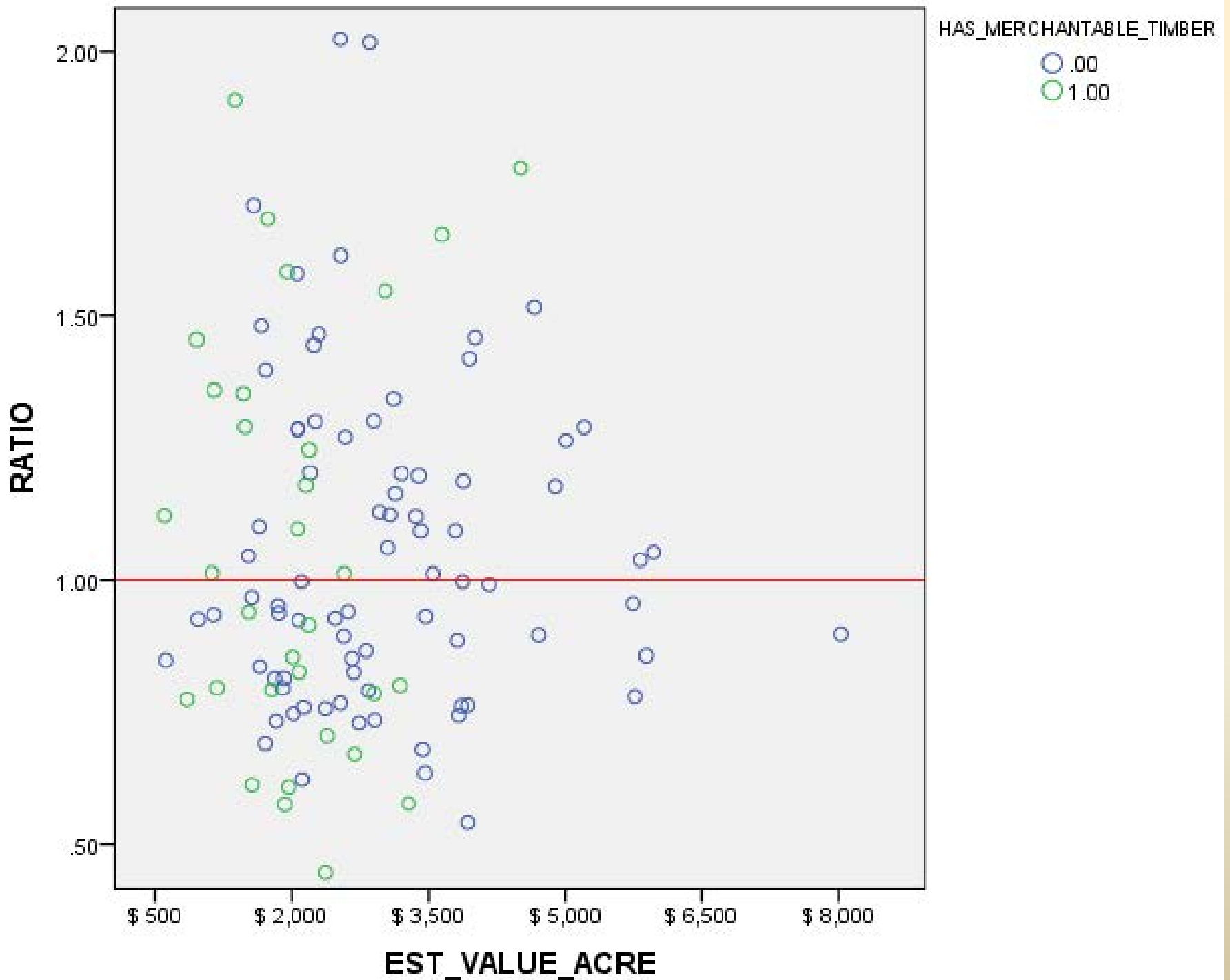
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.748	.132		58.914	.000
LN_ACRES	-.308	.049	-.512	-6.358	.000
AGE_WTD_PCT_GROWING_TIMBER	.142	.077	.138	1.847	.068
PCT_RMZ	-.285	.293	-.074	-.972	.333
PCT_ROCKY	-2.043	.461	-.307	-4.426	.000
PCT_UNDERSTOCK	-.316	.329	-.064	-.959	.340
STD_10	-.086	.027	-.238	-3.173	.002
PCT_EAST	.405	.208	.132	1.945	.055
CLALLAM	.348	.121	.198	2.885	.005
JEFF_EAST	.355	.134	.187	2.650	.009
SKAGIT	.346	.173	.144	2.002	.048
THURSTON	.191	.103	.142	1.862	.066

a. Dependent Variable: LN_ADJ_LAND_PRICE_ACRE

b. Selecting only cases for which PCT_PRICE_MERCHANTABLE_TIMBER % of TOTAL PRICE: < 65.00%

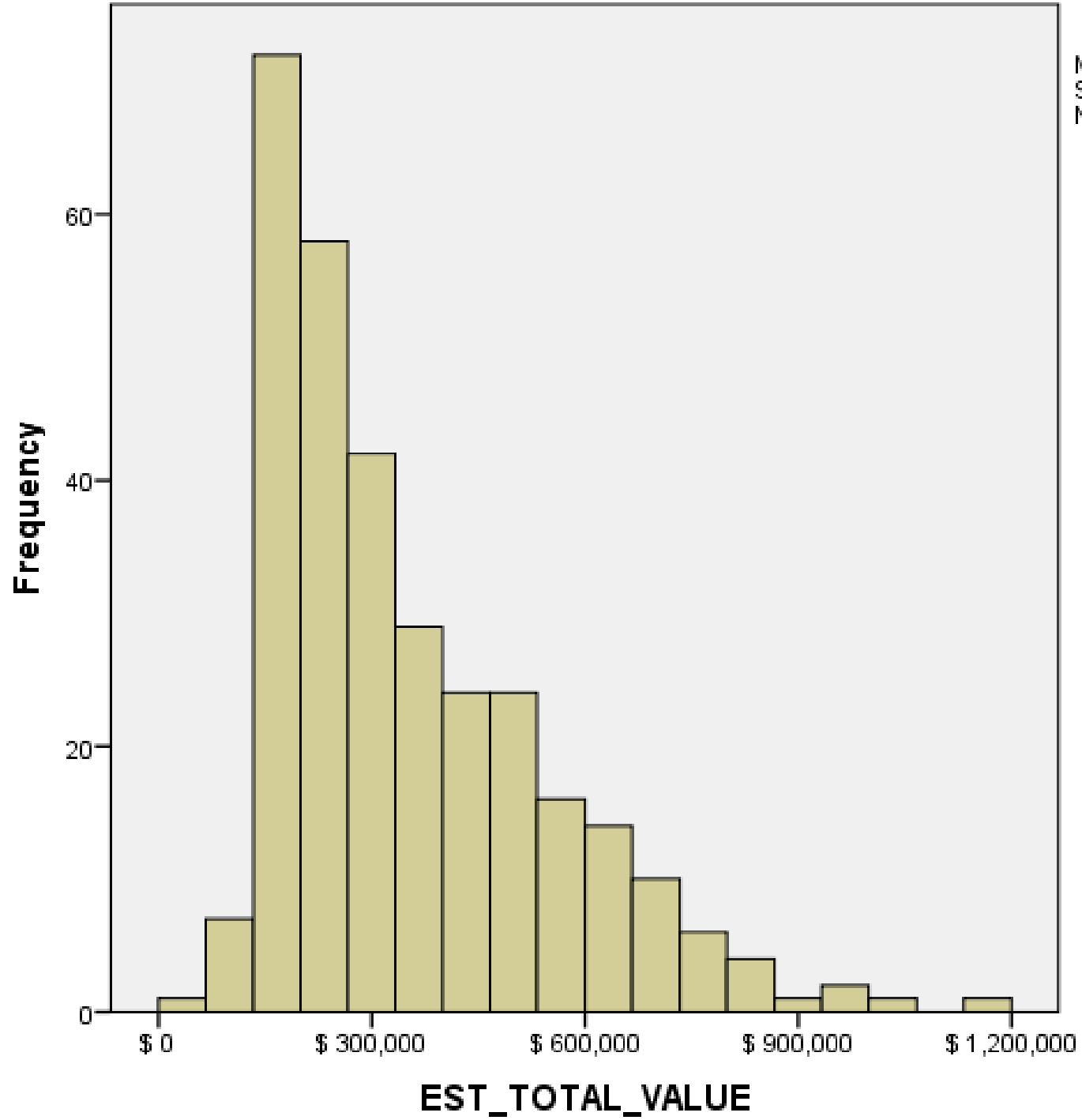
Model Summary^{l,m}

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate
	PCT_PRICE_MERCHANTABLE _TIMBER % of TOTAL PRICE: < 65.00% (Selected)	PCT_PRICE_MERCHANTABLE _TIMBER % of TOTAL PRICE: >= 65.00% (Unselected)			
1	.785 ^a		.616	.542	.36896
2	.785 ^b		.616	.546	.36701
3	.785 ^c		.616	.551	.36516
4	.784 ^d		.615	.555	.36355
5	.783 ^e		.613	.558	.36245
6	.782 ^f		.612	.560	.36145
7	.780 ^g		.608	.561	.36105
8	.777 ^h		.603	.559	.36171
9	.772 ⁱ		.597	.557	.36282
10	.770 ^j		.593	.557	.36279
11	.774 ^k	.289	.599	.555	.36335

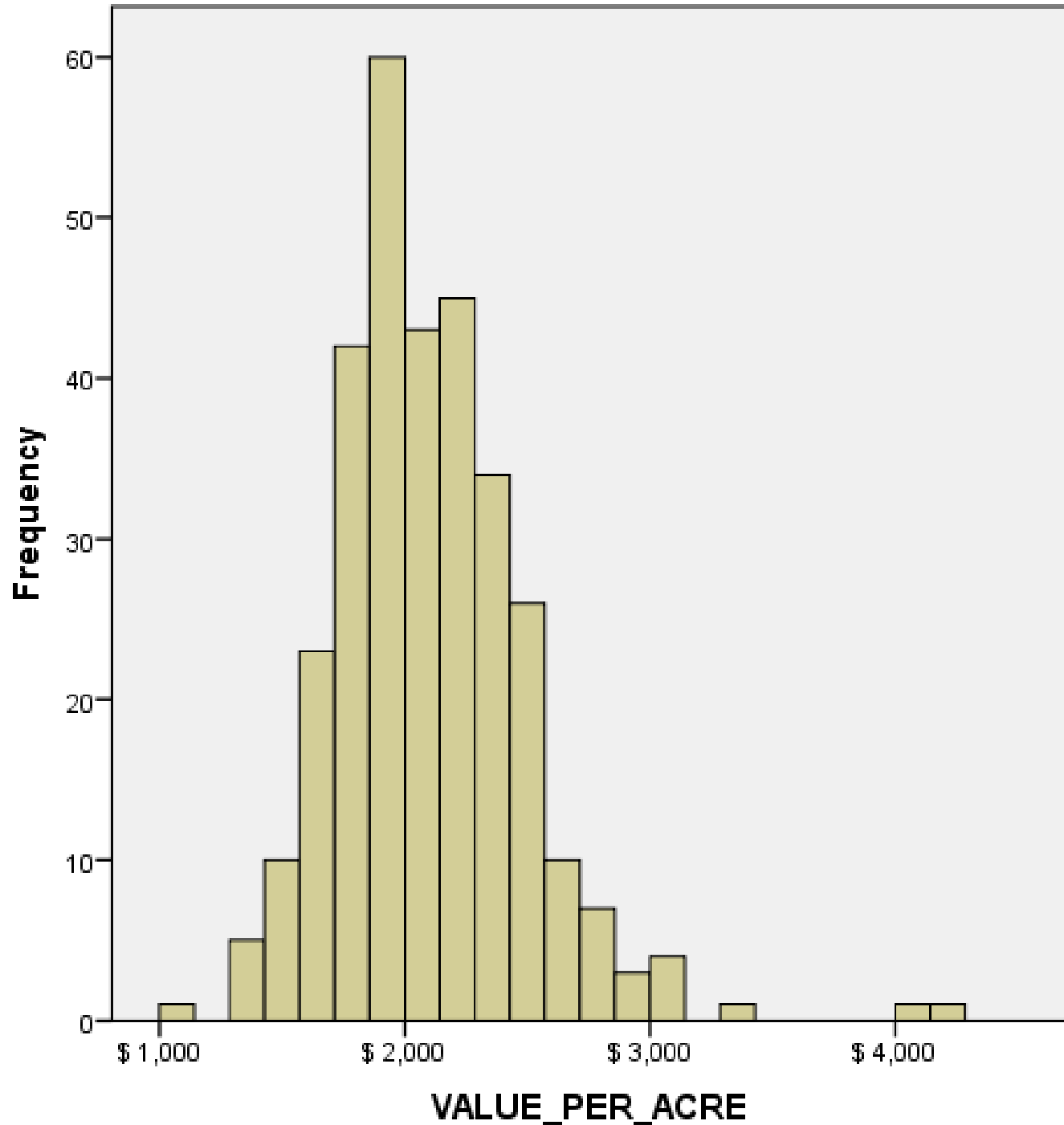


Report

SUBJECT		EST_MERCH_T IMBER_VALUE	EST_LAND_ VALUE	EST_TOTAL_ VALUE
.00	N	155	155	155
	Median	0	106,721	126,394
	Mean	60,536	127,442	187,978
	Minimum	0	20,066	20,066
	Maximum	803,645	491,682	1,192,419
1.00	N	312	316	312
	Median	137,845	160,839	298,748
	Mean	189,398	162,568	351,832
	Minimum	0	40,118	40,118
	Maximum	1,000,694	246,534	1,147,958
Total	N	467	471	467
	Median	63,765	154,377	235,356
	Mean	146,628	151,009	297,448
	Minimum	0	20,066	20,066
	Maximum	1,000,694	491,682	1,192,419



Mean = 351832.15
Std. Dev. = 194213.591
N = 312



Mean = 2101.39
Std. Dev. = 385.104
N = 316

Case Processing Summary

HAS_MERCHANTABLE_TIMBER	Count	Percent
.00	80	51.6%
1.00	75	48.4%
Overall	155	100.0%
Excluded	0	
Total	155	

Ratio Statistics for EST_TOTAL_VALUE / ADJ_PRICE

Group	Mean	Median	Weighted Mean	Minimum	Maximum	Price Related Bias (PRB)	Coefficient of Dispersion
.00	1.052	.980	.985	.542	2.023		.239
1.00	1.172	1.122	1.024	.446	2.105		.258
Overall	1.110	1.055	1.010	.446	2.105	-.011	.253





Assessment Leadership
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