



2018 Real Property Ratio Summary Statistics Report



Direct questions and comments regarding this report to
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Each year the Department of Revenue, Property Tax Division (DOR) gathers real property sales data from all 39 counties in the State of Washington. Sales, occurring from May 1, 2017, thru April 30, 2018, are determined to be either valid or invalid based on criteria set out in WAC 458-53-070 and WAC 458-53-080. The data from the valid sales is analyzed to determine the general level of assessment and the level of uniformity. Each county's results are broken down by property type and shown in this report. Other than requiring assessment at 100 percent of market value, Washington has not established appraisal performance standards in state law or by administrative rule. However, the International Association of Assessing Officers (IAAO) suggests performance standards for both the level and uniformity of assessments. This report focuses on three recognized IAAO standards, and two additional statistical measures of vertical equity. The standards promulgated by the IAAO include median ratio, coefficient of dispersion (COD), and price related differential (PRD). Other metrics that measure vertical equity are quintile mean ratios (QMR) and vertical equity index (VEI).

It should be noted this report includes all valid sales with no additional trimming of outliers. This report gives the results of each statistical analysis with no consideration given to the number of observations. For this report no binomial test or 'bootstrap' analysis was completed to determine the level of confidence in the results. In many cases, with the limited number of observations, it cannot be said with certainty that the standard was or was not met.

The median ratio is a measure of the level of assessment. A ratio is calculated for each sale by dividing the assessed value by the sales price. The median ratio is the middle ratio, meaning that half the properties have a ratio greater than the median ratio and half have ratios less than the median ratio. The IAAO standard suggests the median ratio for the jurisdiction being reviewed should be between .90 and 1.10 which on a percentage basis is between 90 and 110 percent.

COD is the most common measure of horizontal uniformity used in the assessment community. COD is referred to as a measure of horizontal uniformity because it measures uniformity across the data being reviewed without influences from the value of the properties. It measures, on average, how far each individual ratio is from the median ratio. A smaller COD indicates more uniform assessment. IAAO offers the following guidance for CODs by property types and or other neighborhood influences.

General Property Class	Jurisdiction Size/Profile/Market Activity	COD Range
Residential improved (single family dwelling , condominiums, manuf. Housing, 2-4 family units)	Very large jurisdictions/densely populated/newer properties/active markets	5.0 to 10.0
	Large to mid-sized jurisdictions/older & newer properties/less active markets	5.0 to 15.0
	Rural or small jurisdictions/older properties/depressed market areas	5.0 to 20.0
Income-producing properties (commercial, industrial, apartments)	Very large jurisdictions/densely populated/newer properties/active markets	5.0 to 15.0
	Large to mid-sized jurisdictions/older & newer properties/less active markets	5.0 to 20.0
	Rural or small jurisdictions/older properties/depressed market areas	5.0 to 25.0
Residential vacant land	Very large jurisdictions/rapid development/active markets	5.0 to 15.0
	Large to mid-sized jurisdictions/slow development/less active markets	5.0 to 20.0
	Rural or small jurisdictions/little development/depressed markets	5.0 to 25.0
Other (non-agriculture) vacant land	Very large jurisdictions/rapid development/active markets	5.0 to 20.0
	Large to mid-sized jurisdictions/slow development/less active markets	5.0 to 25.0
	Rural or small jurisdictions/little development/depressed markets	5.0 to 30.0

IAAO states that “CODs lower than five (5.0) may indicate sales chasing or non-representative samples.” The above chart and quote are from the April 2013 volume of IAAO Standards on Ratio Studies pages 33-37. Although the goal is to assess ‘all’ properties at 100 percent of market value, IAAO believes that due to the many factors of a real estate transaction, it is improbable that assessed values will be within the tight range of the sales price needed to achieve a COD of less than five. IAAO therefore, believes a COD of less than five could be a result of the selective reappraisal of sold properties.

The PRD is a measure of the vertical uniformity of the assessment of properties at different price levels. PRD is a statistic used to measure whether high-value properties and low-value properties are assessed at the same ratio to market value. The PRD is calculated by dividing the mean ratio by the weighted mean ratio. A PRD of 1.00 indicates uniform assessment between high and low value properties. A PRD greater than 1.00 indicates that higher valued properties are assessed at a lower ratio to market than lower valued properties. A PRD of less than 1.00 indicates that lower valued properties are assessed at a lower ratio to market than higher valued properties. IAAO suggests the PRD should fall between .98 and 1.03.

The sum of the sales price and a sum of the assessed value has been included in this report for informational purposes. The number of observations (number of sales) are shown in this report and should be considered when reviewing the statistical measure. The number of observations can help determine the reliability of the results, as the greater the number of observations the less influence a single outlier will have on the results.

On the pages that follow are each county’s results for the above mentioned measures. First are the overall county wide results including all property types. This is followed by each county’s results broken down by four general property types, and then each county’s results broken down by single family residential (residential) and all other property types (non-residential).

Statistics by County

	Frequency	Adj Sale Price	Assessed	Ratio	Weighted Mean	Ratio		
County	N	SUM	SUM	MEAN	MEAN	Median	PRD	COD
Adams	167	\$ 20,749,143	\$ 17,135,200	85.56	82.58	83.64	1.04	19.13
Asotin	364	\$ 73,703,938	\$ 65,176,100	89.12	88.43	88.84	1.01	16.28
Benton	4,078	\$ 1,161,985,701	\$ 1,021,016,350	87.95	87.87	87.36	1.00	12.37
Chelan	1,977	\$ 600,177,012	\$ 529,252,343	89.32	88.18	89.57	1.01	14.52
Clallam	1,891	\$ 514,194,436	\$ 457,046,761	92.30	88.89	91.35	1.04	14.16
Clark	10,059	\$ 3,816,275,984	\$ 3,740,291,129	99.19	98.01	98.62	1.01	8.23
Columbia	84	\$ 13,107,848	\$ 12,907,310	99.60	98.47	99.84	1.01	5.93
Cowlitz	2,289	\$ 558,003,601	\$ 519,121,550	95.32	93.03	93.86	1.02	14.71
Douglas	889	\$ 243,503,294	\$ 228,652,100	94.94	93.90	94.04	1.01	9.74
Ferry	169	\$ 18,786,938	\$ 17,401,000	98.25	92.62	96.97	1.06	20.03
Franklin	1,261	\$ 331,125,340	\$ 310,464,000	93.83	93.76	93.75	1.00	9.56
Garfield	44	\$ 5,253,366	\$ 4,805,336	98.98	91.47	94.59	1.08	17.86
Grant	1,700	\$ 327,541,234	\$ 276,979,680	86.36	84.56	87.22	1.02	13.08
Grays Harbor	2,117	\$ 369,407,489	\$ 342,625,697	93.74	92.75	93.61	1.01	13.13
Island	2,415	\$ 878,170,263	\$ 829,303,618	96.41	94.44	96.93	1.02	9.44
Jefferson	1,114	\$ 331,887,819	\$ 310,502,457	94.09	93.56	95.05	1.01	8.14
King	6,796	\$ 9,417,101,894	\$ 8,584,054,718	94.79	91.15	94.83	1.04	12.52
Kitsap	6,108	\$ 2,360,082,036	\$ 2,145,199,633	92.14	90.90	92.50	1.01	10.87
Kittitas	1,559	\$ 457,987,591	\$ 391,728,630	86.34	85.53	87.05	1.01	15.10
Klickitat	475	\$ 102,081,680	\$ 93,774,060	92.28	91.86	93.36	1.00	7.62
Lewis	1,606	\$ 329,035,358	\$ 292,829,251	91.54	89.00	89.99	1.03	17.16
Lincoln	371	\$ 48,698,817	\$ 38,217,670	80.24	78.48	79.35	1.02	22.80
Mason	1,758	\$ 377,779,187	\$ 359,842,500	97.06	95.25	94.77	1.02	17.19
Okanogan	895	\$ 158,052,540	\$ 131,595,800	87.32	83.26	84.06	1.05	22.04
Pacific	823	\$ 130,507,642	\$ 119,986,000	94.86	91.94	93.83	1.03	15.40
Pend Oreille	441	\$ 66,266,138	\$ 59,238,007	93.10	89.39	92.20	1.04	18.05
Pierce	17,488	\$ 6,406,811,484	\$ 6,035,880,000	95.43	94.21	95.16	1.01	8.74
San Juan	608	\$ 297,053,865	\$ 268,835,920	91.15	90.50	92.55	1.01	13.16
Skagit	2,757	\$ 954,899,080	\$ 886,944,816	94.30	92.88	93.32	1.02	11.73
Skamania	255	\$ 70,457,452	\$ 61,964,700	91.60	87.95	89.60	1.04	15.12
Snohomish	16,666	\$ 8,050,696,328	\$ 7,563,280,400	95.52	93.95	95.39	1.02	8.32
Spokane	10,570	\$ 2,754,860,694	\$ 2,638,431,940	96.69	95.77	96.20	1.01	6.12
Stevens	805	\$ 156,792,860	\$ 139,488,852	91.25	88.96	92.03	1.03	10.99
Thurston	6,297	\$ 1,991,251,517	\$ 1,903,167,600	95.57	95.58	95.34	1.00	10.80
Wahkiakum	109	\$ 18,253,250	\$ 16,098,900	92.99	88.20	88.85	1.05	24.81
Walla Walla	1,005	\$ 256,530,439	\$ 237,056,970	93.59	92.41	96.00	1.01	8.05
Whatcom	5,332	\$ 1,908,343,279	\$ 1,652,470,311	87.10	86.59	86.58	1.01	12.61
Whitman	660	\$ 164,796,737	\$ 125,262,951	77.95	76.01	78.19	1.03	20.54
Yakima	2,881	\$ 711,802,684	\$ 637,669,800	90.37	89.59	89.72	1.01	13.93
Total	116,883	\$46,454,015,958	\$43,065,700,060	94.07	92.69	94.46		

Statistics by County by Property Type

	Frequency	Adj. Sale Price	Assessed	Ratio	Ratio		
Property Type	N	SUM	SUM	MEAN	Median	PRD	COD
County = Adams							
AG/Other	17	\$1,056,330	\$826,400	68.11	76.43	0.87	23.76
Comm/Mfg	11	\$1,436,490	\$1,266,200	98.28	102.27	1.11	25.92
SFR	139	\$18,256,323	\$15,042,600	86.69	83.50	1.05	17.05
	167	\$20,749,143	\$17,135,200	85.56	83.64		
County = Asotin							
AG/Other	24	\$2,622,560	\$1,906,300	87.39	89.36	1.20	23.59
Comm/Mfg	11	\$3,510,045	\$3,215,100	91.14	95.42	1.00	16.25
MFR	15	\$2,718,538	\$2,556,500	96.98	88.53	1.03	19.07
SFR	314	\$64,852,795	\$57,498,200	88.80	88.21	1.00	15.55
	364	\$73,703,938	\$65,176,100	89.12	88.84		
County = Benton							
AG/Other	28	\$9,922,333	\$9,018,130	88.79	93.12	0.98	19.56
Comm/Mfg	89	\$73,646,545	\$60,309,470	85.93	84.54	1.05	20.98
MFR	65	\$46,981,845	\$45,450,070	91.88	90.75	0.95	15.18
SFR	3896	\$1,031,434,978	\$906,238,680	87.93	87.29	1.00	12.06
	4078	\$1,161,985,701	\$1,021,016,350	87.95	87.36		
County = Chelan							
AG/Other	48	\$9,147,500	\$7,138,857	89.21	87.86	1.14	24.30
Comm/Mfg	41	\$25,773,680	\$21,617,256	83.28	79.58	0.99	21.22
MFR	23	\$6,309,468	\$5,599,593	90.50	93.01	1.02	11.47
SFR	1865	\$558,946,364	\$494,896,637	89.44	89.58	1.01	14.17
	1977	\$600,177,012	\$529,252,343	89.32	89.57		
County = Clallam							
AG/Other	330	\$31,230,733	\$28,640,484	96.31	95.67	1.05	19.80
Comm/Mfg	65	\$43,797,404	\$28,992,906	85.27	92.32	1.29	22.82
MFR	33	\$11,339,788	\$10,135,115	91.62	93.92	1.03	11.43
SFR	1463	\$427,826,511	\$389,278,256	91.72	90.77	1.01	12.32
	1891	\$514,194,436	\$457,046,761	92.30	91.35		
County = Clark							
AG/Other	329	\$116,318,308	\$96,993,597	96.36	96.41	1.16	20.80
Comm/Mfg	87	\$127,223,683	\$105,828,575	89.23	88.85	1.07	18.88
MFR	133	\$71,400,156	\$64,584,241	91.78	90.69	1.01	10.94
SFR	9510	\$3,501,333,837	\$3,472,884,716	99.49	98.80	1.00	7.63
	10059	\$3,816,275,984	\$3,740,291,129	99.19	98.62		
SFR = single family residential							

	Frequency	Adj. Sale Price	Assessed	Ratio	Ratio		
Property Type	N	SUM	SUM	MEAN	Median	PRD	COD
County = Columbia							
Comm/Mfg	4	\$1,176,120	\$1,149,730	90.25	98.33	0.92	11.28
SFR	80	\$11,931,728	\$11,757,580	100.07	99.84	1.02	5.67
	84	\$13,107,848	\$12,907,310	99.60	99.84		
County = Cowlitz							
AG/Other	211	\$48,642,763	\$44,624,170	96.05	93.45	1.05	20.21
Comm/Mfg	50	\$33,629,408	\$29,920,870	95.65	94.19	1.08	17.84
MFR	42	\$7,224,743	\$6,121,970	87.21	83.56	1.03	15.20
SFR	1986	\$468,506,687	\$438,454,540	95.41	94.03	1.02	13.99
	2289	\$558,003,601	\$519,121,550	95.32	93.86		
County = Douglas							
AG/Other	178	\$24,351,296	\$22,541,400	96.65	93.81	1.04	15.57
Comm/Mfg	11	\$2,264,245	\$1,885,100	87.41	90.22	1.05	12.21
MFR	9	\$2,251,310	\$2,085,800	92.48	94.43	1.00	5.27
SFR	691	\$214,636,443	\$202,139,800	94.66	94.22	1.01	8.25
	889	\$243,503,294	\$228,652,100	94.94	94.04		
County = Ferry							
AG/Other	51	\$1,790,469	\$1,633,200	98.82	101.01	1.08	21.16
Comm/Mfg	3	\$855,380	\$890,600	113.18	110.50	1.09	25.71
SFR	115	\$16,141,089	\$14,877,200	97.60	95.56	1.06	18.90
	169	\$18,786,938	\$17,401,000	98.25	96.97		
County = Franklin							
AG/Other	106	\$20,639,881	\$17,228,200	85.39	86.98	1.02	21.10
Comm/Mfg	20	\$14,511,319	\$14,710,400	97.48	100.67	0.96	20.80
MFR	23	\$6,463,314	\$5,621,800	90.39	90.39	1.04	13.07
SFR	1112	\$289,510,826	\$272,903,600	94.64	94.09	1.00	8.11
	1261	\$331,125,340	\$310,464,000	93.83	93.75		
County = Garfield							
Comm/Mfg	1	\$29,700	\$42,620	143.50	143.50	1.00	0.00
SFR	43	\$5,223,666	\$4,762,716	97.95	94.39	1.07	17.11
	44	\$5,253,366	\$4,805,336	98.98	94.59		
County = Grant							
AG/Other	28	\$4,534,624	\$3,136,260	77.85	76.01	1.13	30.96
Comm/Mfg	67	\$23,847,454	\$18,529,675	85.81	89.10	1.10	20.83
MFR	35	\$8,765,628	\$7,471,365	88.31	92.07	1.04	16.21
SFR	1570	\$290,393,528	\$247,842,380	86.50	87.19	1.01	12.32
	1700	\$327,541,234	\$276,979,680	86.36	87.22		
SFR = single family residential							

	Frequency	Adj. Sale Price	Assessed	Ratio	Ratio		
Property Type	N	SUM	SUM	MEAN	Median	PRD	COD
County = Grays Harbor							
Ag/Other	372	\$19,686,947	\$17,966,768	96.62	95.42	1.06	19.24
Comm/Mfg	71	\$24,838,011	\$23,281,287	96.57	97.14	1.03	22.16
Multi Family	58	\$17,363,660	\$16,297,122	99.15	99.60	1.06	13.28
SFR	1616	\$307,518,871	\$285,080,520	92.75	93.27	1.00	11.13
	2117	\$369,407,489	\$342,625,697	93.74	93.61		
County = Island							
Ag/Other	332	\$41,745,707	\$36,898,404	95.64	96.86	1.08	19.21
Comm/Mfg	31	\$20,678,097	\$20,144,857	101.02	98.71	1.04	10.99
Multi Family	31	\$17,307,923	\$14,527,474	93.57	95.77	1.11	8.26
SFR	2021	\$798,438,536	\$757,732,883	96.51	96.97	1.02	7.82
	2415	\$878,170,263	\$829,303,618	96.41	96.93		
County = Jefferson							
Ag/Other	232	\$22,489,106	\$20,607,296	92.81	94.51	1.01	12.01
Comm/Mfg	28	\$8,931,285	\$8,564,391	94.88	95.13	0.99	10.42
Multi Family	3	\$5,831,700	\$5,352,773	95.71	96.51	1.04	3.22
SFR	851	\$294,635,728	\$275,977,997	94.41	95.17	1.01	7.04
	1114	\$331,887,819	\$310,502,457	94.09	95.05		
County = King							
Ag/Other	753	\$460,027,734	\$406,001,900	96.88	96.92	1.10	22.78
Comm/Mfg	548	\$2,569,845,608	\$2,194,746,900	87.20	89.19	1.02	17.12
Multi Fam	3303	\$4,063,766,347	\$3,751,944,718	94.60	94.58	1.02	10.54
SFR	2192	\$2,323,462,205	\$2,231,361,200	96.25	95.51	1.00	10.68
	6796	\$9,417,101,894	\$8,584,054,718	94.79	94.83		
County = Kitsap							
Ag/Other	409	\$53,423,312	\$44,218,570	92.32	91.36	1.12	21.53
Comm/Mfg	80	\$90,502,318	\$76,591,336	91.67	90.92	1.08	21.22
Multi Family	133	\$46,213,547	\$41,608,360	91.97	91.88	1.02	12.73
SFR	5486	\$2,169,942,859	\$1,982,781,367	92.13	92.58	1.01	9.90
	6108	\$2,360,082,036	\$2,145,199,633	92.14	92.50		
County = Kittitas							
Ag/Other	392	\$54,269,284	\$43,647,930	84.25	84.14	1.05	19.90
Comm/Mfg	25	\$18,363,312	\$16,067,750	87.28	93.59	1.00	16.32
Multi Family	19	\$7,581,915	\$6,996,000	91.56	95.67	0.99	7.04
SFR	1123	\$377,773,080	\$325,016,950	86.95	87.77	1.01	13.46
	1559	\$457,987,591	\$391,728,630	86.34	87.05		
SFR = single family residential							

	Frequency	Adj. Sale Price	Assessed	Ratio	Ratio		
Property Type	N	SUM	SUM	MEAN	Median	PRD	COD
County = Klickitat							
AG/Other	143	\$14,861,091	\$13,267,060	91.89	93.40	1.03	9.54
Comm/Mfg	11	\$3,305,511	\$3,125,940	95.84	99.63	1.01	5.85
MFR	8	\$2,194,626	\$2,056,970	93.20	93.44	0.99	4.78
SFR	313	\$81,720,452	\$75,324,090	92.30	93.31	1.00	6.82
	475	\$102,081,680	\$93,774,060	92.28	93.36		
County = Lewis							
Ag/Other	211	\$14,379,326	\$13,217,000	96.25	95.73	1.05	21.77
Comm/Mfg	48	\$19,267,186	\$16,200,500	88.11	89.98	1.05	23.26
Multi Family	21	\$9,611,218	\$8,183,700	97.94	93.14	1.15	21.88
SFR	1326	\$285,777,628	\$255,228,051	90.82	89.34	1.02	15.87
	1606	\$329,035,358	\$292,829,251	91.54	89.99		
County = Lincoln							
Ag/Other	119	\$17,186,715	\$12,969,620	75.52	73.58	1.00	24.54
Comm/Mfg	10	\$1,298,880	\$987,510	75.84	73.09	1.00	35.13
Multi Family	3	\$356,400	\$230,850	67.57	60.38	1.04	12.35
SFR	239	\$29,856,822	\$24,029,690	82.93	81.69	1.03	21.08
	371	\$48,698,817	\$38,217,670	80.24	79.35		
County = Mason							
Ag/Other	324	\$21,307,792	\$20,896,415	102.37	101.09	1.04	22.87
Comm/Mfg	24	\$8,979,300	\$9,184,980	103.71	101.25	1.01	21.28
Multi Family	15	\$2,936,211	\$2,804,290	94.93	91.78	0.99	11.27
SFR	1395	\$344,555,884	\$326,956,815	95.74	93.58	1.01	15.47
	1758	\$377,779,187	\$359,842,500	97.06	94.77		
County = Okanogan							
Ag/Other	315	\$29,753,150	\$25,212,600	90.78	87.54	1.07	26.07
Comm/Mfg	23	\$7,730,694	\$6,639,000	85.77	82.61	1.00	22.99
Multi Family	11	\$2,619,045	\$2,484,100	91.82	90.52	0.97	17.45
SFR	546	\$117,949,651	\$97,260,100	85.30	82.66	1.03	19.27
	895	\$158,052,540	\$131,595,800	87.32	84.06		
County = Pacific							
Ag/Other	153	\$7,633,379	\$7,316,500	97.65	98.48	1.02	17.35
Comm/Mfg	23	\$7,644,780	\$6,741,900	93.00	98.21	1.05	15.49
Multi Family	13	\$2,375,574	\$2,046,600	92.66	93.51	1.08	13.81
SFR	634	\$112,853,909	\$103,881,000	94.30	92.93	1.02	14.69
	823	\$130,507,642	\$119,986,000	94.86	93.83		
SFR = single family residential							

	Frequency	Adj. Sale Price	Assessed	Ratio	Ratio		
Property Type	N	SUM	SUM	MEAN	Median	PRD	COD
County = Pend Oreille							
Ag/Other	155	\$15,122,070	\$14,367,407	96.70	94.89	1.02	19.72
Comm/Mfg	13	\$1,780,272	\$1,778,168	104.13	87.88	1.04	28.99
Multi Family	2	\$308,880	\$270,483	86.87	86.87	0.99	10.41
SFR	271	\$49,054,916	\$42,821,949	90.56	90.56	1.04	16.51
	441	\$66,266,138	\$59,238,007	93.10	92.20		
County = Pierce							
Ag/Other	590	\$97,255,268	\$89,488,700	101.27	100.33	1.10	19.21
Comm/Mfg	280	\$271,390,144	\$230,824,700	90.43	91.23	1.06	18.35
Multi Family	432	\$333,652,657	\$284,728,500	92.83	92.90	1.09	10.68
SFR	16186	\$5,704,513,415	\$5,430,838,100	95.38	95.15	1.00	8.10
	17488	\$6,406,811,484	\$6,035,880,000	95.43	95.16		
County = San Juan							
Ag/Other	149	\$31,936,860	\$28,766,120	92.23	93.33	1.02	13.59
Comm/Mfg	14	\$7,791,142	\$6,235,470	82.24	82.28	1.03	13.99
Multi Family	1	\$396,000	\$399,350	100.85	100.85	1.00	0.00
SFR	444	\$256,929,863	\$233,434,980	91.05	92.53	1.00	12.91
	608	\$297,053,865	\$268,835,920	91.15	92.55		
County = Skagit							
Ag/Other	164	\$26,677,174	\$23,585,400	95.67	91.10	1.08	22.79
Comm/Mfg	155	\$105,694,768	\$95,081,300	94.60	95.64	1.05	13.30
Multi Fam	67	\$28,442,800	\$26,481,000	93.24	93.23	1.00	9.23
SFR	2371	\$794,084,338	\$741,797,116	94.22	93.33	1.01	10.93
	2757	\$954,899,080	\$886,944,816	94.30	93.32		
County = Skamania							
Ag/Other	56	\$8,476,826	\$7,588,900	96.73	96.18	1.08	20.64
Comm/Mfg	5	\$1,028,727	\$931,200	95.84	86.43	1.06	35.96
Multi Family	1	\$197,010	\$176,300	89.49	89.49	1.00	0.00
SFR	193	\$60,754,889	\$53,268,300	90.02	89.14	1.03	12.50
	255	\$70,457,452	\$61,964,700	91.60	89.60		
County = Snohomish							
Ag/Other	397	\$189,524,174	\$134,670,000	91.33	90.42	1.29	25.78
Comm/Mfg	228	\$419,530,762	\$381,610,400	93.92	95.92	1.03	12.84
Multi Family	278	\$212,136,499	\$196,381,900	94.00	94.30	1.02	10.00
SFR	15763	\$7,229,504,958	\$6,850,618,100	95.68	95.43	1.01	7.81
	16666	\$8,050,696,328	\$7,563,280,400	95.52	95.39		
SFR = single family residential							

	Frequency	Adj. Sale Price	Assessed	Ratio	Ratio		
Property Type	N	SUM	SUM	MEAN	Median	PRD	COD
County = Spokane							
Ag/Other	559	\$85,323,586	\$80,345,410	94.55	94.96	1.00	10.43
Comm/Mfg	241	\$187,284,779	\$171,994,290	94.03	95.22	1.02	9.59
Multi Family	460	\$198,822,527	\$183,803,820	96.85	96.11	1.05	7.54
SFR	9310	\$2,283,429,802	\$2,202,288,420	96.88	96.28	1.00	5.70
	10570	\$2,754,860,694	\$2,638,431,940	96.69	96.20		
County = Stevens							
Ag/Other	129	\$7,218,354	\$6,821,485	95.52	94.75	1.01	14.65
Comm/Mfg	21	\$9,363,549	\$8,685,670	94.63	100.36	1.02	10.65
Multi Family	4	\$900,900	\$849,887	96.90	97.02	1.03	6.92
SFR	651	\$139,310,057	\$123,131,810	90.26	91.57	1.02	10.04
	805	\$156,792,860	\$139,488,852	91.25	92.03		
County = Thurston							
Ag/Other	203	\$27,314,807	\$24,873,800	99.76	96.31	1.10	22.86
Comm/Mfg	67	\$60,884,738	\$55,529,300	96.70	99.43	1.06	11.22
Multi Family	90	\$52,641,817	\$47,988,000	94.85	93.70	1.04	10.46
SFR	5937	\$1,850,410,155	\$1,774,776,500	95.42	95.29	0.99	10.37
	6297	\$1,991,251,517	\$1,903,167,600	95.57	95.34		
County = Wahkiakum							
Ag/Other	34	\$3,084,741	\$2,627,600	94.59	88.43	1.11	30.49
Comm/Mfg	3	\$638,550	\$433,700	70.72	70.58	1.04	11.43
Multi Family	1	\$297,000	\$289,100	97.34	97.34	1.00	0.00
SFR	71	\$14,232,959	\$12,748,500	93.10	88.99	1.04	22.53
	109	\$18,253,250	\$16,098,900	92.99	88.85		
County = Walla Walla							
Ag/Other	51	\$7,137,719	\$5,089,600	75.78	76.63	1.06	24.64
Comm/Mfg	16	\$8,497,071	\$6,387,570	89.59	92.40	1.19	25.39
Multi Family	35	\$8,230,437	\$7,699,120	94.76	96.22	1.01	8.78
SFR	903	\$232,665,212	\$217,880,680	94.62	96.27	1.01	6.61
	1005	\$256,530,439	\$237,056,970	93.59	96.00		
County = Whatcom							
Ag/Other	546	\$84,340,551	\$68,698,192	86.56	87.91	1.06	18.00
Comm/Mfg	214	\$129,571,347	\$108,719,932	86.73	87.46	1.03	11.77
Multi Family	125	\$109,967,960	\$90,197,649	85.09	84.48	1.04	11.23
SFR	4447	\$1,584,463,421	\$1,384,854,538	87.24	86.53	1.00	11.99
	5332	\$1,908,343,279	\$1,652,470,311	87.100	86.58		
SFR = single family residential							

	Frequency	Adj. Sale Price	Assessed	Ratio	Ratio		
Property Type	N	SUM	SUM	MEAN	Median	PRD	COD
County = Whitman							
Ag/Other	9	\$1,815,165	\$973,932	67.18	61.19	1.25	40.67
Comm/Mfg	23	\$14,525,743	\$8,976,515	61.84	54.04	1.00	38.28
Multi Family	29	\$14,997,702	\$11,169,392	81.11	82.59	1.09	15.00
SFR	599	\$133,458,127	\$104,143,112	78.58	78.31	1.01	19.84
	660	\$164,796,737	\$125,262,951	77.95	78.19		
County = Yakima							
Ag/Other	251	\$29,897,383	\$25,803,500	81.20	80.03	0.94	26.45
Comm/Mfg	133	\$104,880,254	\$93,259,300	88.75	88.41	1.00	18.28
Multi Family	120	\$36,893,259	\$31,194,700	89.60	88.41	1.06	15.19
SFR	2377	\$540,131,788	\$487,412,300	91.47	90.27	1.01	12.39
	2881	\$711,802,684	\$637,669,800	90.37	89.72		
State Total	116883	\$46,454,015,958	\$43,065,700,060	94.07			

Statistics by County by Residential and Non-Residential

Property Class	Frequency (N)	Adj. Sale Price	Assessed	Weighted	Ratio	PRD	COD
		SUM	SUM	MEAN	Median		
County = Adams							
Non-Residential	28	\$2,492,820	\$2,092,600	79.96	84.36	0.95	29.29
Residential	139	\$18,256,323	\$15,042,600	86.69	83.50	1.05	17.05
	167	\$20,749,143	\$17,135,200	85.56			
County = Asotin							
Non-Residential	50	\$8,851,143	\$7,677,900	91.09	90.69	1.05	21.05
Residential	314	\$64,852,795	\$57,498,200	88.80	88.21	1.00	15.55
	364	\$73,703,938	\$65,176,100	89.12			
County = Benton							
Non-Residential	50	\$8,851,143	\$7,677,900	91.09	90.69	1.05	21.05
Residential	314	\$64,852,795	\$57,498,200	88.80	88.21	1.00	15.55
	364	\$73,703,938	\$65,176,100	89.12			
County = Chelan							
Non-Residential	112	\$41,230,648	\$34,355,706	87.30	88.74	1.05	20.56
Residential	1865	\$558,946,364	\$494,896,637	89.44	89.58	1.01	14.17
	1977	\$600,177,012	\$529,252,343	89.32			
County = Clallam							
Non-Residential	428	\$86,367,925	\$67,768,505	94.27	94.63	1.20	19.73
Residential	1463	\$427,826,511	\$389,278,256	91.72	90.77	1.01	12.32
	1891	\$514,194,436	\$457,046,761	92.30			
County = Clark							
Non-Residential	549	\$314,942,147	\$267,406,413	94.12	93.16	1.11	18.58
Residential	9510	\$3,501,333,837	\$3,472,884,716	99.49	98.80	1.00	7.63
	10059	\$3,816,275,984	\$3,740,291,129	99.19			
County = Columbia							
Non-Residential	4	\$1,176,120	\$1,149,730	90.25	98.33	0.92	11.28
Residential	80	\$11,931,728	\$11,757,580	100.07	99.84	1.02	5.67
	84	\$13,107,848	\$12,907,310	99.60			
County = Cowlitz							
Non-Residential	303	\$89,496,914	\$80,667,010	94.76	91.92	1.05	19.55
Residential	1986	\$468,506,687	\$438,454,540	95.41	94.03	1.02	13.99
	2289	\$558,003,601	\$519,121,550	95.32			
County = Douglas							
Non-Residential	198	\$28,866,851	\$26,512,300	95.94	93.53	1.04	14.97
Residential	691	\$214,636,443	\$202,139,800	94.66	94.22	1.01	8.25
	889	\$243,503,294	\$228,652,100	94.94			

		Adj. Sale Price	Assessed	Weighted	Ratio		
Property Class	Frequency (N)	SUM	SUM	MEAN	Median	PRD	COD
County = Ferry							
Non-Residential	54	\$2,645,849	\$2,523,800	99.62	101.01	1.04	21.72
Residential	115	\$16,141,089	\$14,877,200	97.60	95.56	1.06	18.90
	169	\$18,786,938	\$17,401,000	98.25			
County = Franklin							
Non-Residential	149	\$41,614,514	\$37,560,400	87.78	88.89	0.97	20.51
Residential	1112	\$289,510,826	\$272,903,600	94.64	94.09	1.00	8.11
	1261	\$331,125,340	\$310,464,000	93.83			
County = Garfield							
Non-Residential	1	\$29,700	\$42,620	143.50	143.50	1.00	0.00
Residential	43	\$5,223,666	\$4,762,716	97.95	94.39	1.07	17.11
	44	\$5,253,366	\$4,805,336	98.98			
County = Grant							
Non-Residential	130	\$37,147,706	\$29,137,300	84.77	87.67	1.08	22.23
Residential	1570	\$290,393,528	\$247,842,380	86.50	87.19	1.01	12.32
	1700	\$327,541,234	\$276,979,680	86.36			
County = Grays Harbor							
Non-Residential	501	\$61,888,618	\$57,545,177	96.91	96.20	1.04	18.99
Residential	1616	\$307,518,871	\$285,080,520	92.75	93.27	1.00	11.13
	2117	\$369,407,489	\$342,625,697	93.74			
County = Island							
Non-Residential	394	\$79,731,727	\$71,570,735	95.90	96.83	1.07	17.73
Residential	2021	\$798,438,536	\$757,732,883	96.51	96.97	1.02	7.82
	2415	\$878,170,263	\$829,303,618	96.41			
County = Jefferson							
Non-Residential	263	\$37,252,091	\$34,524,460	93.06	94.54	1.00	11.76
Residential	851	\$294,635,728	\$275,977,997	94.41	95.17	1.01	7.04
	1114	\$331,887,819	\$310,502,457	94.09			
County = King							
Non-Residential	4604	\$7,093,639,689	\$6,352,693,518	94.09	94.39	1.05	13.41
Residential	2192	\$2,323,462,205	\$2,231,361,200	96.25	95.51	1.00	10.68
	6796	\$9,417,101,894	\$8,584,054,718	94.79			
County = Kitsap							
Non-Residential	622	\$190,139,177	\$162,418,266	92.16	91.54	1.08	19.57
Residential	5486	\$2,169,942,859	\$1,982,781,367	92.13	92.58	1.01	9.90
	6108	\$2,360,082,036	\$2,145,199,633	92.14			

		Adj. Sale Price	Assessed	Weighted	Ratio		
Property Class	Frequency (N)	SUM	SUM	MEAN	Median	PRD	COD
County = Kittitas							
Non-Residential	436	\$80,214,511	\$66,711,680	84.75	84.71	1.02	19.41
Residential	1123	\$377,773,080	\$325,016,950	86.95	87.77	1.01	13.46
	1559	\$457,987,591	\$391,728,630	86.34			
County = Klickitat							
Non-Residential	162	\$20,361,228	\$18,449,970	92.22	94.17	1.02	9.10
Residential	313	\$81,720,452	\$75,324,090	92.30	93.31	1.00	6.82
	475	\$102,081,680	\$93,774,060	92.28			
County = Lewis							
Non-Residential	280	\$43,257,730	\$37,601,200	94.98	95.23	1.09	21.92
Residential	1326	\$285,777,628	\$255,228,051	90.82	89.34	1.02	15.87
	1606	\$329,035,358	\$292,829,251	91.54			
County = Lincoln							
Non-Residential	132	\$18,841,995	\$14,187,980	75.36	73.35	1.00	25.21
Residential	239	\$29,856,822	\$24,029,690	82.93	81.69	1.03	21.08
	371	\$48,698,817	\$38,217,670	80.24			
County = Mason							
Non-Residential	363	\$33,223,303	\$32,885,685	102.15	100.69	1.03	22.40
Residential	1395	\$344,555,884	\$326,956,815	95.74	93.58	1.01	15.47
	1758	\$377,779,187	\$359,842,500	97.06			
County = Okanogan							
Non-Residential	349	\$40,102,889	\$34,335,700	90.48	86.58	1.06	25.88
Residential	546	\$117,949,651	\$97,260,100	85.30	82.66	1.03	19.27
	895	\$158,052,540	\$131,595,800	87.32			
County = Pacific							
Non-Residential	189	\$17,653,733	\$16,105,000	96.74	98.20	1.06	16.94
Residential	634	\$112,853,909	\$103,881,000	94.30	92.93	1.02	14.69
	823	\$130,507,642	\$119,986,000	94.86			
County = Pend Oreille							
Non-Residential	170	\$17,211,222	\$16,416,058	97.15	94.46	1.02	20.28
Residential	271	\$49,054,916	\$42,821,949	90.56	90.56	1.04	16.51
	441	\$66,266,138	\$59,238,007	93.10			
County = Pierce							
Non-Residential	1302	\$702,298,069	\$605,041,900	96.14	95.33	1.12	16.69
Residential	16186	\$5,704,513,415	\$5,430,838,100	95.38	95.15	1.00	8.10
	17488	\$6,406,811,484	\$6,035,880,000	95.43			

		Adj. Sale Price	Assessed	Weighted	Ratio		
Property Class	Frequency (N)	SUM	SUM	MEAN	Median	PRD	COD
County = San Juan							
Non-Residential	164	\$40,124,002	\$35,400,940	91.43	92.56	1.04	13.83
Residential	444	\$256,929,863	\$233,434,980	91.05	92.53	1.00	12.91
	608	\$297,053,865	\$268,835,920	91.15			
County = Skagit							
Non-Residential	386	\$160,814,742	\$145,147,700	94.82	93.22	1.05	16.68
Residential	2371	\$794,084,338	\$741,797,116	94.22	93.33	1.01	10.93
	2757	\$954,899,080	\$886,944,816	94.30			
County = Skamania							
Non-Residential	62	\$9,702,563	\$8,696,400	96.54	94.05	1.08	21.98
Residential	193	\$60,754,889	\$53,268,300	90.02	89.14	1.03	12.50
	255	\$70,457,452	\$61,964,700	91.60			
County = Snohomish							
Non-Residential	903	\$821,191,370	\$712,662,300	92.81	94.06	1.07	17.41
Residential	15763	\$7,229,504,958	\$6,850,618,100	95.68	95.43	1.01	7.81
	16666	\$8,050,696,328	\$7,563,280,400	95.52			
County = Spokane							
Non-Residential	1260	\$471,430,892	\$436,143,520	95.29	95.42	1.03	9.22
Residential	9310	\$2,283,429,802	\$2,202,288,420	96.88	96.28	1.00	5.70
	10570	\$2,754,860,694	\$2,638,431,940	96.69			
County = Stevens							
Non-Residential	154	\$17,482,803	\$16,357,042	95.44	95.89	1.02	14.00
Residential	651	\$139,310,057	\$123,131,810	90.26	91.57	1.02	10.04
	805	\$156,792,860	\$139,488,852	91.25			
County = Thurston							
Non-Residential	360	\$140,841,362	\$128,391,100	97.96	96.16	1.07	17.71
Residential	5937	\$1,850,410,155	\$1,774,776,500	95.42	95.29	0.99	10.37
	6297	\$1,991,251,517	\$1,903,167,600	95.57			
County = Wahkiakum							
Non-Residential	38	\$4,020,291	\$3,350,400	92.77	84.70	1.11	30.20
Residential	71	\$14,232,959	\$12,748,500	93.10	88.99	1.04	22.53
	109	\$18,253,250	\$16,098,900	92.99			
County = Walla Walla							
Non-Residential	102	\$23,865,227	\$19,176,290	84.46	88.30	1.05	20.96
Residential	903	\$232,665,212	\$217,880,680	94.62	96.27	1.01	6.61
	1005	\$256,530,439	\$237,056,970	93.59			

		Adj. Sale Price	Assessed	Weighted	Ratio		
Property Class	Frequency (N)	SUM	SUM	MEAN	Median	PRD	COD
County = Whatcom							
Non-Residential	885	\$323,879,858	\$267,615,773	86.39	86.97	1.05	15.69
Residential	4447	\$1,584,463,421	\$1,384,854,538	87.24	86.53	1.00	11.99
	5332	\$1,908,343,279	\$1,652,470,311	87.10			
County = Whitman							
Non-Residential	61	\$31,338,610	\$21,119,839	71.79	72.27	1.07	28.78
Residential	599	\$133,458,127	\$104,143,112	78.58	78.31	1.01	19.84
	660	\$164,796,737	\$125,262,951	77.95			
County = Yakima							
Non-Residential	504	\$171,670,896	\$150,257,500	85.19	85.41	0.97	21.44
Residential	2377	\$540,131,788	\$487,412,300	91.47	90.27	1.01	12.39
	2881	\$711,802,684	\$637,669,800	90.37			
Total	116883	\$46,454,015,958	\$43,065,700,060				

Like the PRD; QMR and VEI are means of looking at vertical uniformity. QMR is calculated by first arraying the data in order (lowest to highest) by market value. Then the data is divided into five equal groups (quintiles). Then, an average ratio is calculated for each quintile. Looking at the ratio for each quintile, you can visually see if there is a difference in the ratio of each value range. The closer these quintile ratios are, the better the vertical equity.

VEI is a method of scoring the QMR results. Noted assessment expert, J. Wayne Moore proposed computing a VEI using quintile ratios as Dr. Moore believes “VEI may be more sensitive to differences in vertical equity than the PRD.” The VEI is calculated by subtracting the lowest quintile ratio from the highest quintile ratio. Then, the results are divided by the average of all five quintile ratios and the results are multiplied by 100.

$$((\text{Maximum Quintile Ratio} - \text{Minimum Quintile Ratio}) / \text{Avg. Quintile Ratio}) * 100$$

As a guideline, VEI values above 14.0 indicate vertical inequity; values between 14.0 and 7.0 indicate acceptable vertical equity; values below 7.0 indicate good vertical equity, with those below 3.5 indicating excellent vertical equity¹.

The following tables show the QMR and VEI for residential (single family dwelling) and non-residential (all other types) properties in each county.

¹ Property Tax Equity Implications of Assessment Capping and Homestead Exemptions for Owner-Occupied Single-Family Housing. Journal of Property tax Assessment & Administration, Volume 5, Issue 3

QMR and VEI for Residential and Non-Residential by County

2018 Real Property Quintile Ratio and VEI

County=Adams Property Class=Residential	
Quintile	Mean
Quintile_1	102.34
Quintile_2	93.41
Quintile_3	83.65
Quintile_4	77.71
Quintile_5	76.76
VEI (Vertical Equity Index)	29.48

County=Adams Property Class=Non-Residential	
Quintile	Mean
Quintile_1	55.88
Quintile_2	89.04
Quintile_3	77.47
Quintile_4	86.76
Quintile_5	87.99
VEI (Vertical Equity Index)	41.75

County=Asotin Property Class=Residential	
Quintile	Mean
Quintile_1	95.24
Quintile_2	80.57
Quintile_3	88.09
Quintile_4	87.92
Quintile_5	92.22
VEI (Vertical Equity Index)	16.52

County=Asotin Property Class=Non-Residential	
Quintile	Mean
Quintile_1	95.22
Quintile_2	97.94
Quintile_3	88.05
Quintile_4	82.10
Quintile_5	93.27
VEI (Vertical Equity Index)	17.35

County=Benton Property Class=Residential	
Quintile	Mean
Quintile_1	90.26
Quintile_2	84.88
Quintile_3	85.14
Quintile_4	89.72
Quintile_5	89.64
VEI (Vertical Equity Index)	6.12

County=Benton Property Class=Non-Residential	
Quintile	Mean
Quintile_1	95.75
Quintile_2	89.93
Quintile_3	86.67
Quintile_4	82.59
Quintile_5	87.56
VEI (Vertical Equity Index)	14.87

2018 Real Property Quintile Ratio and VEI

County=Chelan Property Class=Residential		County=Chelan Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	96.86	Quintile_1	92.65
Quintile_2	86.98	Quintile_2	92.06
Quintile_3	86.83	Quintile_3	90.28
Quintile_4	88.02	Quintile_4	79.93
Quintile_5	88.51	Quintile_5	81.25
VEI (Vertical Equity Index)	11.21	VEI (Vertical Equity Index)	14.58

County=Clallam Property Class=Residential		County=Clallam Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	95.81	Quintile_1	110.28
Quintile_2	89.52	Quintile_2	95.67
Quintile_3	90.77	Quintile_3	92.13
Quintile_4	92.13	Quintile_4	86.87
Quintile_5	90.39	Quintile_5	86.38
VEI (Vertical Equity Index)	6.86	VEI (Vertical Equity Index)	25.35

County=Clark Property Class=Residential		County=Clark Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	101.49	Quintile_1	110.93
Quintile_2	98.72	Quintile_2	95.86
Quintile_3	98.42	Quintile_3	91.84
Quintile_4	99.17	Quintile_4	89.38
Quintile_5	99.63	Quintile_5	82.77
VEI (Vertical Equity Index)	3.09	VEI (Vertical Equity Index)	29.91

County=Columbia Property Class=Residential		County=Columbia Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	106.77	Quintile_1	
Quintile_2	99.71	Quintile_2	95.56
Quintile_3	97.73	Quintile_3	62.75
Quintile_4	98.87	Quintile_4	101.57
Quintile_5	97.27	Quintile_5	101.11
VEI (Vertical Equity Index)	9.49	VEI (Vertical Equity Index)	43.02

2018 Real Property Quintile Ratio and VEI

County=Cowlitz Property Class=Residential		County=Cowlitz Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	107.71	Quintile_1	107.61
Quintile_2	92.73	Quintile_2	93.99
Quintile_3	90.54	Quintile_3	92.48
Quintile_4	93.59	Quintile_4	87.60
Quintile_5	92.71	Quintile_5	92.33
VEI (Vertical Equity Index)	17.99	VEI (Vertical Equity Index)	21.11

County=Douglas Property Class=Residential		County=Douglas Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	95.06	Quintile_1	100.05
Quintile_2	95.65	Quintile_2	102.67
Quintile_3	94.08	Quintile_3	93.12
Quintile_4	94.22	Quintile_4	92.17
Quintile_5	94.30	Quintile_5	91.46
VEI (Vertical Equity Index)	1.66	VEI (Vertical Equity Index)	11.69

County=Ferry Property Class=Residential		County=Ferry Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	116.29	Quintile_1	102.44
Quintile_2	98.14	Quintile_2	109.64
Quintile_3	95.47	Quintile_3	99.09
Quintile_4	92.38	Quintile_4	95.20
Quintile_5	85.74	Quintile_5	90.36
VEI (Vertical Equity Index)	31.30	VEI (Vertical Equity Index)	19.41

County=Franklin Property Class=Residential		County=Franklin Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	94.84	Quintile_1	95.19
Quintile_2	93.21	Quintile_2	82.30
Quintile_3	97.57	Quintile_3	85.40
Quintile_4	95.32	Quintile_4	90.30
Quintile_5	92.26	Quintile_5	85.44
VEI (Vertical Equity Index)	5.61	VEI (Vertical Equity Index)	14.69

2018 Real Property Quintile Ratio and VEI

County=Garfield Property Class=Residential		County=Garfield Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	121.85	Quintile_1	
Quintile_2	96.31	Quintile_2	
Quintile_3	89.02	Quintile_3	143.50
Quintile_4	97.84	Quintile_4	
Quintile_5	85.14	Quintile_5	
VEI (Vertical Equity Index)	37.45	VEI (Vertical Equity Index)	0.00

County=Grant Property Class=Residential		County=Grant Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	89.51	Quintile_1	92.72
Quintile_2	84.34	Quintile_2	77.19
Quintile_3	86.15	Quintile_3	84.46
Quintile_4	88.15	Quintile_4	87.84
Quintile_5	84.30	Quintile_5	82.23
VEI (Vertical Equity Index)	6.02	VEI (Vertical Equity Index)	18.29

County=Grays Harbor Property Class=Residential		County=Grays Harbor Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	95.08	Quintile_1	107.48
Quintile_2	91.61	Quintile_2	91.60
Quintile_3	91.34	Quintile_3	95.45
Quintile_4	92.85	Quintile_4	96.52
Quintile_5	92.90	Quintile_5	93.77
VEI (Vertical Equity Index)	4.03	VEI (Vertical Equity Index)	16.38

County=Island Property Class=Residential		County=Island Property Class=Non-Residential	
Quintile	Mean	Quintile	Mean
Quintile_1	101.55	Quintile_1	100.09
Quintile_2	97.68	Quintile_2	103.28
Quintile_3	95.62	Quintile_3	96.73
Quintile_4	95.19	Quintile_4	89.08
Quintile_5	92.43	Quintile_5	90.20
VEI (Vertical Equity Index)	9.45	VEI (Vertical Equity Index)	14.81

2018 Real Property Quintile Ratio and VEI

County=Jefferson Property Class=Residential	
Quintile	Mean
Quintile_1	96.62
Quintile_2	93.69
Quintile_3	94.37
Quintile_4	94.97
Quintile_5	92.48
VEI (Vertical Equity Index)	4.38

County=Jefferson Property Class=Non-Residential	
Quintile	Mean
Quintile_1	95.73
Quintile_2	94.22
Quintile_3	90.11
Quintile_4	91.67
Quintile_5	93.45
VEI (Vertical Equity Index)	6.04

County=King Property Class=Residential	
Quintile	Mean
Quintile_1	97.29
Quintile_2	94.90
Quintile_3	100.12
Quintile_4	94.14
Quintile_5	94.81
VEI (Vertical Equity Index)	6.21

County=King Property Class=Non-Residential	
Quintile	Mean
Quintile_1	99.64
Quintile_2	95.23
Quintile_3	95.18
Quintile_4	93.99
Quintile_5	86.41
VEI (Vertical Equity Index)	14.06

County=Kitsap Property Class=Residential	
Quintile	Mean
Quintile_1	92.17
Quintile_2	91.08
Quintile_3	92.34
Quintile_4	93.65
Quintile_5	91.40
VEI (Vertical Equity Index)	2.79

County=Kitsap Property Class=Non-Residential	
Quintile	Mean
Quintile_1	108.92
Quintile_2	93.28
Quintile_3	85.67
Quintile_4	88.17
Quintile_5	84.27
VEI (Vertical Equity Index)	26.78

County=Kittitas Property Class=Residential	
Quintile	Mean
Quintile_1	91.32
Quintile_2	87.35
Quintile_3	86.76
Quintile_4	84.34
Quintile_5	85.05
VEI (Vertical Equity Index)	8.03

County=Kittitas Property Class=Non-Residential	
Quintile	Mean
Quintile_1	92.80
Quintile_2	85.65
Quintile_3	80.28
Quintile_4	83.43
Quintile_5	81.53
VEI (Vertical Equity Index)	14.77

2018 Real Property Quintile Ratio and VEI

County=Klickitat Property Class=Residential	
Quintile	Mean
Quintile_1	95.05
Quintile_2	91.58
Quintile_3	89.35
Quintile_4	91.99
Quintile_5	93.51
VEI (Vertical Equity Index)	6.18

County=Klickitat Property Class=Non-Residential	
Quintile	Mean
Quintile_1	96.04
Quintile_2	94.79
Quintile_3	90.54
Quintile_4	90.82
Quintile_5	88.92
VEI (Vertical Equity Index)	7.72

County=Lewis Property Class=Residential	
Quintile	Mean
Quintile_1	99.96
Quintile_2	88.08
Quintile_3	88.72
Quintile_4	88.91
Quintile_5	88.48
VEI (Vertical Equity Index)	13.08

County=Lewis Property Class=Non-Residential	
Quintile	Mean
Quintile_1	100.93
Quintile_2	103.94
Quintile_3	92.62
Quintile_4	94.38
Quintile_5	82.85
VEI (Vertical Equity Index)	22.21

County=Lincoln Property Class=Residential	
Quintile	Mean
Quintile_1	91.33
Quintile_2	82.69
Quintile_3	84.73
Quintile_4	76.24
Quintile_5	79.31
VEI (Vertical Equity Index)	18.21

County=Lincoln Property Class=Non-Residential	
Quintile	Mean
Quintile_1	81.86
Quintile_2	66.84
Quintile_3	76.54
Quintile_4	76.59
Quintile_5	75.26
VEI (Vertical Equity Index)	19.92

County=Mason Property Class=Residential	
Quintile	Mean
Quintile_1	102.92
Quintile_2	90.67
Quintile_3	93.32
Quintile_4	94.95
Quintile_5	96.9
VEI (Vertical Equity Index)	12.79

County=Mason Property Class=Non-Residential	
Quintile	Mean
Quintile_1	112.95
Quintile_2	109.89
Quintile_3	100.61
Quintile_4	88.49
Quintile_5	98.83
VEI (Vertical Equity Index)	23.94

2018 Real Property Quintile Ratio and VEI

County=Okanogan Property Class=Residential	
Quintile	Mean
Quintile_1	97.21
Quintile_2	83.23
Quintile_3	80.00
Quintile_4	83.72
Quintile_5	82.45
VEI (Vertical Equity Index)	20.17

County=Okanogan Property Class=Non-Residential	
Quintile	Mean
Quintile_1	105.47
Quintile_2	93.96
Quintile_3	86.48
Quintile_4	86.62
Quintile_5	80.82
VEI (Vertical Equity Index)	27.19

County=Pacific Property Class=Residential	
Quintile	Mean
Quintile_1	102.95
Quintile_2	95.97
Quintile_3	89.82
Quintile_4	90.29
Quintile_5	92.55
VEI (Vertical Equity Index)	13.92

County=Pacific Property Class=Non-Residential	
Quintile	Mean
Quintile_1	103.18
Quintile_2	97.00
Quintile_3	95.13
Quintile_4	97.00
Quintile_5	91.39
VEI (Vertical Equity Index)	12.19

County=Pend Oreille Property Class=Residential	
Quintile	Mean
Quintile_1	98.92
Quintile_2	94.46
Quintile_3	88.26
Quintile_4	86.68
Quintile_5	84.43
VEI (Vertical Equity Index)	16.00

County=Pend Oreille Property Class=Non-Residential	
Quintile	Mean
Quintile_1	105.62
Quintile_2	98.92
Quintile_3	94.93
Quintile_4	95.28
Quintile_5	91.12
VEI (Vertical Equity Index)	14.92

County=Pierce Property Class=Residential	
Quintile	Mean
Quintile_1	95.21
Quintile_2	95.21
Quintile_3	95.60
Quintile_4	95.47
Quintile_5	95.38
VEI (Vertical Equity Index)	0.41

County=Pierce Property Class=Non-Residential	
Quintile	Mean
Quintile_1	109.88
Quintile_2	97.57
Quintile_3	94.12
Quintile_4	93.00
Quintile_5	86.14
VEI (Vertical Equity Index)	24.69

2018 Real Property Quintile Ratio and VEI

County=San Juan Property Class=Residential	
Quintile	Mean
Quintile_1	90.16
Quintile_2	89.20
Quintile_3	90.42
Quintile_4	92.93
Quintile_5	92.57
VEI (Vertical Equity Index)	4.10

County=San Juan Property Class=Non-Residential	
Quintile	Mean
Quintile_1	99.47
Quintile_2	94.52
Quintile_3	92.75
Quintile_4	87.88
Quintile_5	82.62
VEI (Vertical Equity Index)	18.43

County=Skagit Property Class=Residential	
Quintile	Mean
Quintile_1	99.28
Quintile_2	91.94
Quintile_3	92.35
Quintile_4	93.32
Quintile_5	94.21
VEI (Vertical Equity Index)	7.79

County=Skagit Property Class=Non-Residential	
Quintile	Mean
Quintile_1	104.38
Quintile_2	96.90
Quintile_3	91.05
Quintile_4	92.18
Quintile_5	89.58
VEI (Vertical Equity Index)	15.61

County=Skamania Property Class=Residential	
Quintile	Mean
Quintile_1	102.49
Quintile_2	86.59
Quintile_3	89.97
Quintile_4	86.09
Quintile_5	85.05
VEI (Vertical Equity Index)	19.37

County=Skamania Property Class=Non-Residential	
Quintile	Mean
Quintile_1	101.43
Quintile_2	104.57
Quintile_3	113.21
Quintile_4	83.42
Quintile_5	80.48
VEI (Vertical Equity Index)	33.87

County=Snohomish Property Class=Residential	
Quintile	Mean
Quintile_1	98.90
Quintile_2	96.34
Quintile_3	95.89
Quintile_4	94.63
Quintile_5	92.64
VEI (Vertical Equity Index)	6.54

County=Snohomish Property Class=Non-Residential	
Quintile	Mean
Quintile_1	101.61
Quintile_2	93.46
Quintile_3	92.17
Quintile_4	89.89
Quintile_5	87.02
VEI (Vertical Equity Index)	15.72

2018 Real Property Quintile Ratio and VEI

County=Spokane Property Class=Residential	
Quintile	Mean
Quintile_1	99.25
Quintile_2	96.52
Quintile_3	95.92
Quintile_4	96.28
Quintile_5	96.38
VEI (Vertical Equity Index)	3.44

County=Spokane Property Class=Non-Residential	
Quintile	Mean
Quintile_1	96.72
Quintile_2	96.35
Quintile_3	95.28
Quintile_4	94.52
Quintile_5	93.57
VEI (Vertical Equity Index)	3.31

County=Stevens Property Class=Residential	
Quintile	Mean
Quintile_1	98.12
Quintile_2	92.02
Quintile_3	88.16
Quintile_4	85.02
Quintile_5	87.99
VEI (Vertical Equity Index)	14.51

County=Stevens Property Class=Non-Residential	
Quintile	Mean
Quintile_1	102.23
Quintile_2	90.66
Quintile_3	95.38
Quintile_4	96.50
Quintile_5	93.94
VEI (Vertical Equity Index)	12.08

County=Thurston Property Class=Residential	
Quintile	Mean
Quintile_1	93.04
Quintile_2	92.95
Quintile_3	95.98
Quintile_4	97.08
Quintile_5	98.09
VEI (Vertical Equity Index)	5.39

County=Thurston Property Class=Non-Residential	
Quintile	Mean
Quintile_1	117.60
Quintile_2	97.42
Quintile_3	88.71
Quintile_4	93.81
Quintile_5	92.67
VEI (Vertical Equity Index)	29.47

County=Wahkiakum Property Class=Residential	
Quintile	Mean
Quintile_1	109.02
Quintile_2	103.24
Quintile_3	80.16
Quintile_4	84.80
Quintile_5	87.56
VEI (Vertical Equity Index)	31.05

County=Wahkiakum Property Class=Non-Residential	
Quintile	Mean
Quintile_1	98.92
Quintile_2	113.86
Quintile_3	105.03
Quintile_4	64.70
Quintile_5	79.72
VEI (Vertical Equity Index)	53.18

2018 Real Property Quintile Ratio and VEI

County=Walla Walla Property Class=Residential	
Quintile	Mean
Quintile_1	97.14
Quintile_2	95.75
Quintile_3	93.57
Quintile_4	93.90
Quintile_5	92.80
VEI (Vertical Equity Index)	4.59

County=Walla Walla Property Class=Non-Residential	
Quintile	Mean
Quintile_1	86.26
Quintile_2	79.84
Quintile_3	84.45
Quintile_4	87.47
Quintile_5	84.37
VEI (Vertical Equity Index)	9.03

County=Whatcom Property Class=Residential	
Quintile	Mean
Quintile_1	87.50
Quintile_2	86.22
Quintile_3	86.94
Quintile_4	87.16
Quintile_5	88.36
VEI (Vertical Equity Index)	2.45

County=Whatcom Property Class=Non-Residential	
Quintile	Mean
Quintile_1	92.11
Quintile_2	90.60
Quintile_3	82.69
Quintile_4	84.93
Quintile_5	81.64
VEI (Vertical Equity Index)	12.12

County=Whitman Property Class=Residential	
Quintile	Mean
Quintile_1	84.22
Quintile_2	73.95
Quintile_3	77.61
Quintile_4	77.80
Quintile_5	79.50
VEI (Vertical Equity Index)	13.06

County=Whitman Property Class=Non-Residential	
Quintile	Mean
Quintile_1	72.88
Quintile_2	76.43
Quintile_3	80.43
Quintile_4	69.56
Quintile_5	60.18
VEI (Vertical Equity Index)	28.17

County=Yakima Property Class=Residential	
Quintile	Mean
Quintile_1	97.92
Quintile_2	92.02
Quintile_3	90.08
Quintile_4	88.26
Quintile_5	89.02
VEI (Vertical Equity Index)	10.56

County=Yakima Property Class=Non-Residential	
Quintile	Mean
Quintile_1	87.05
Quintile_2	74.17
Quintile_3	87.72
Quintile_4	89.94
Quintile_5	87.22
VEI (Vertical Equity Index)	18.51

The following tables show the mean ratio, standard deviation, number of observations (N), and median ratio for each property type statewide.

Statewide by Property Type

Property Type=Ag/Other			
Mean	Std Dev	N	Median
93.59	25.64	8398	93.00

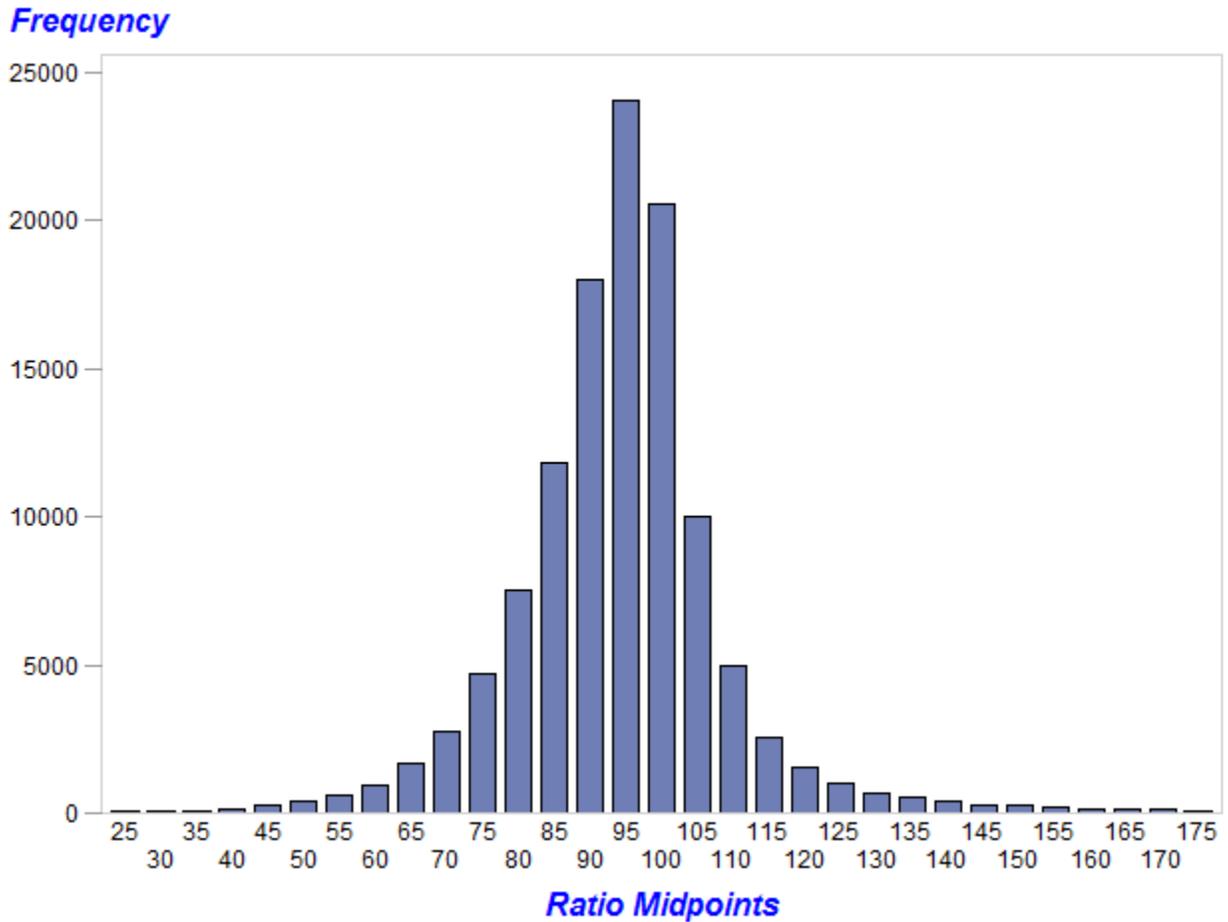
Property Type=Comm/Mfg			
Mean	Std Dev	N	Median
90.26	21.37	2795	92.40

Property Type=Multi Family			
Mean	Std Dev	N	Median
93.94	13.81	5641	94.11

Property Type=SFR			
Mean	Std Dev	N	Median
94.22	13.68	100049	94.57

Another visual indication of horizontal uniformity is a histogram. On a histogram each ratio contributes to the length of a bar representing the range in which the ratio falls. Good uniformity is indicated when the highest bars are near the median (approximately the same number of observations on each side) with the bars decreasing in length the farther they are from the median (forming the shape of a bell). A histogram indicates a good level of assessment when the top of the bell is at or near 100. The following histogram is for all valid real property sales statewide. The graph shows that the top of the bell is in the range of 95, which is consistent with the 94.46 statewide median ratio shown in the table on page 3. The graph, with the tallest bar in the middle, also shows that statewide the level of assessment is uniform horizontally. Horizontal uniformity means uniformity across the data being reviewed without influences from the value of the properties. Vertical uniformity, a measure of uniformity in the level of assessment of properties at different value levels cannot be illustrated on a histogram.

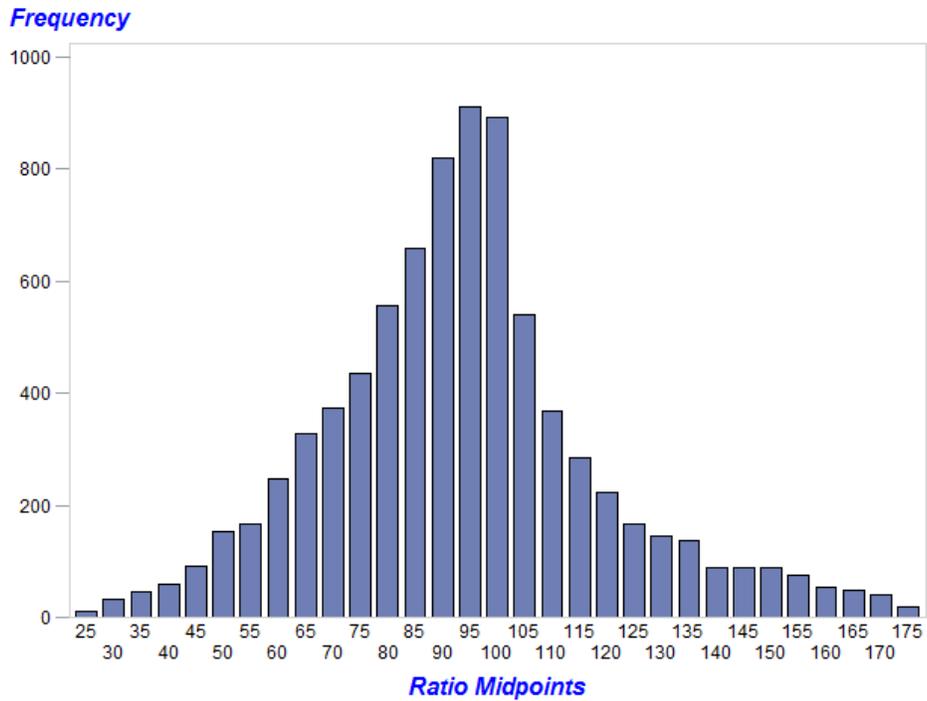
Statewide Ratio Distribution



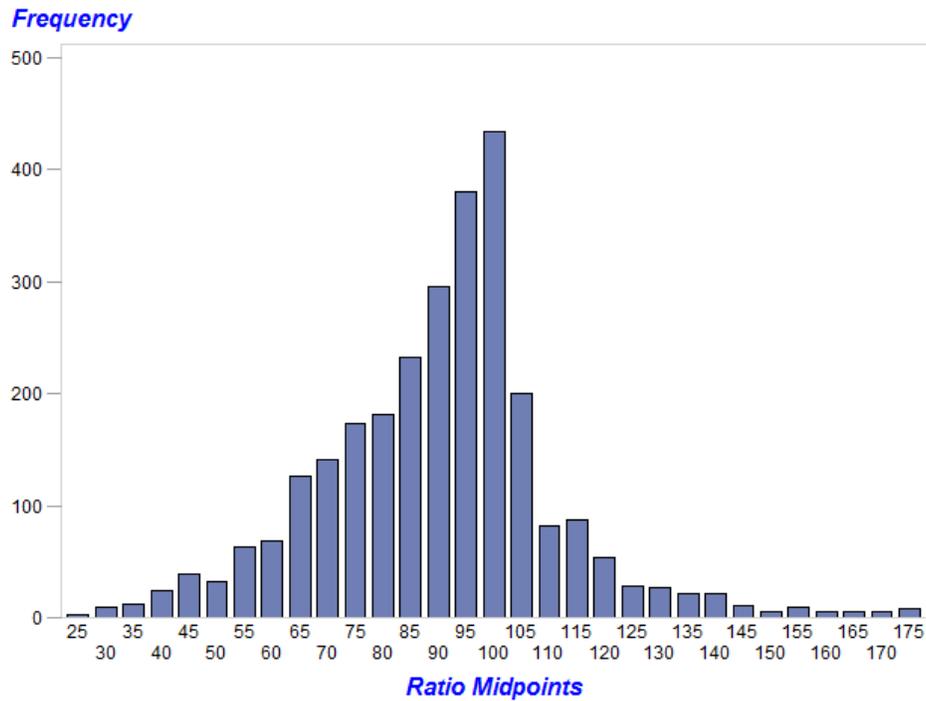
The following four histograms are for each of the four major property types on a statewide basis. They are followed by a histogram for each county including all property types.

Statewide Ratio Distribution by Property Type

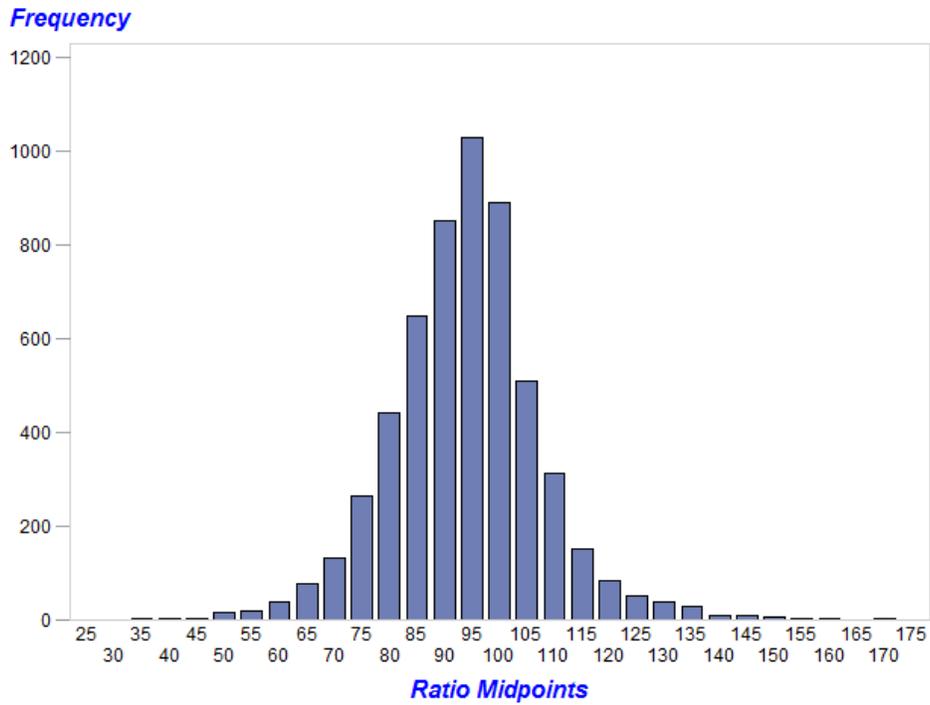
Agricultural/Other



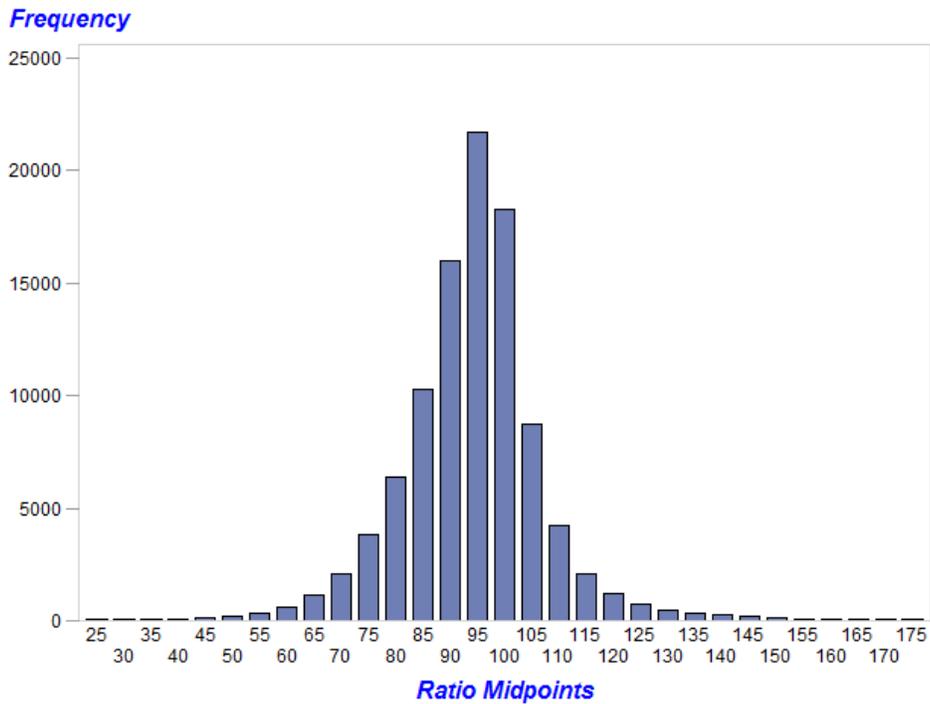
Commercial/Manufacturing



Multi-Family Residential



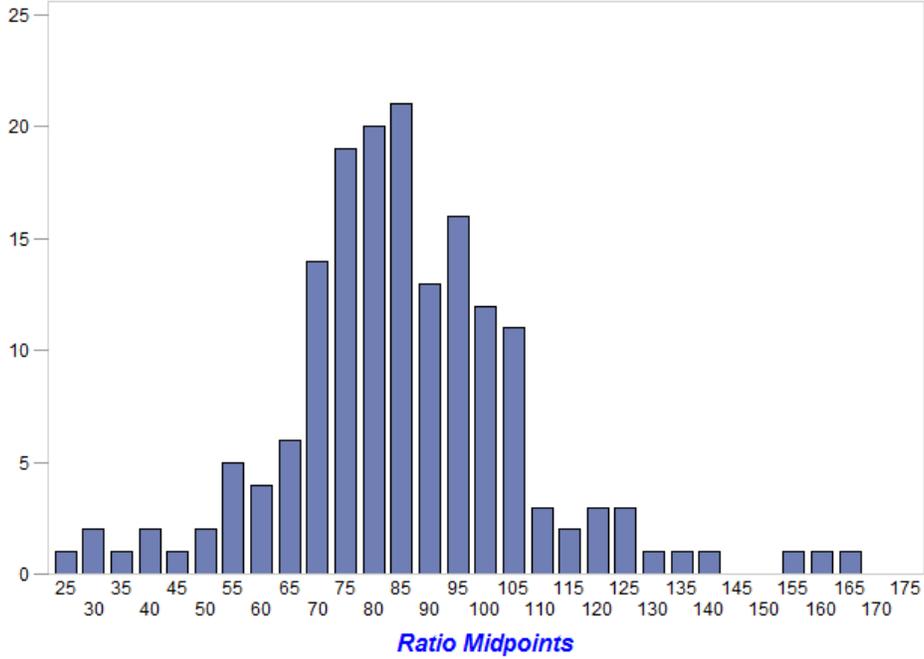
Single-Family Residential



Ratio Distribution by County

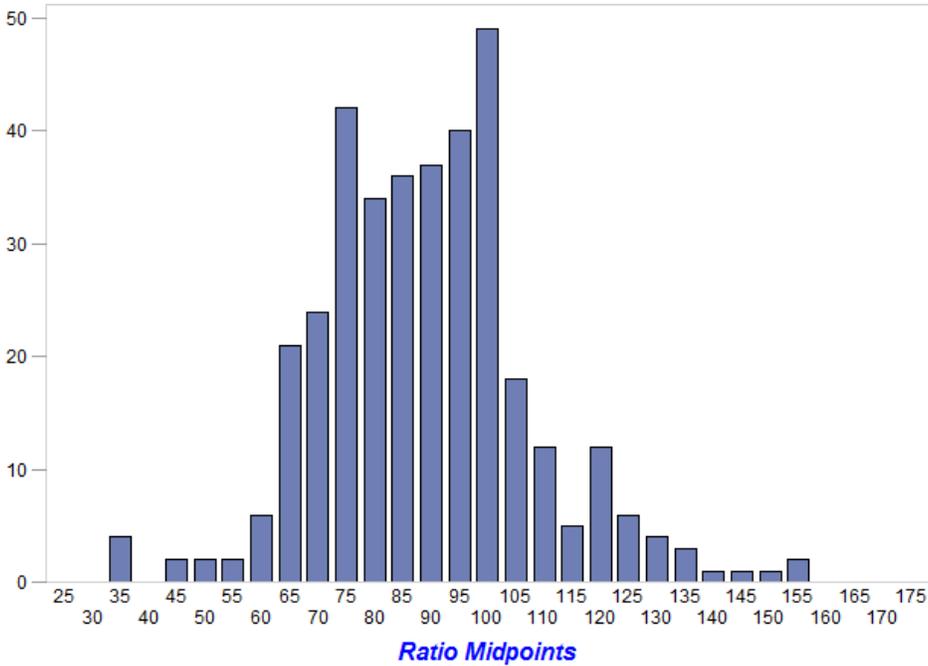
Adams

Frequency

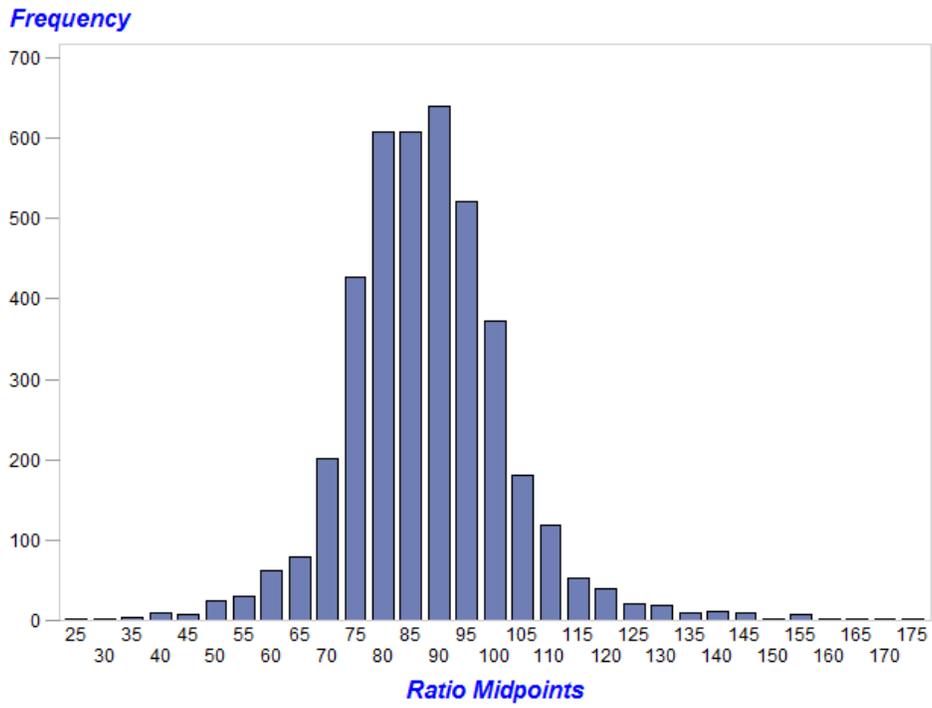


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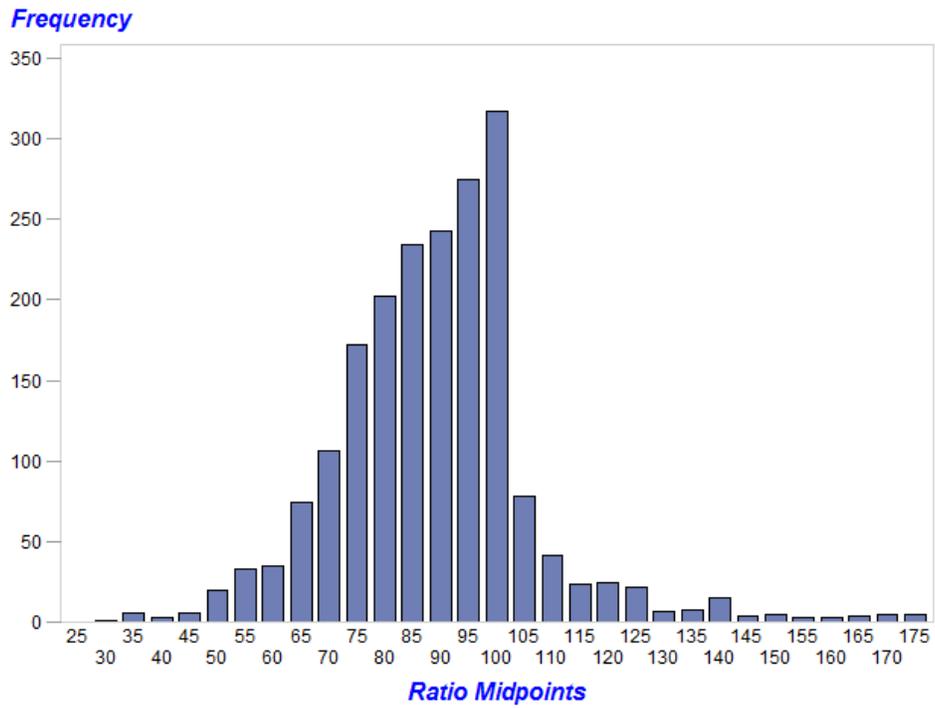
Frequency



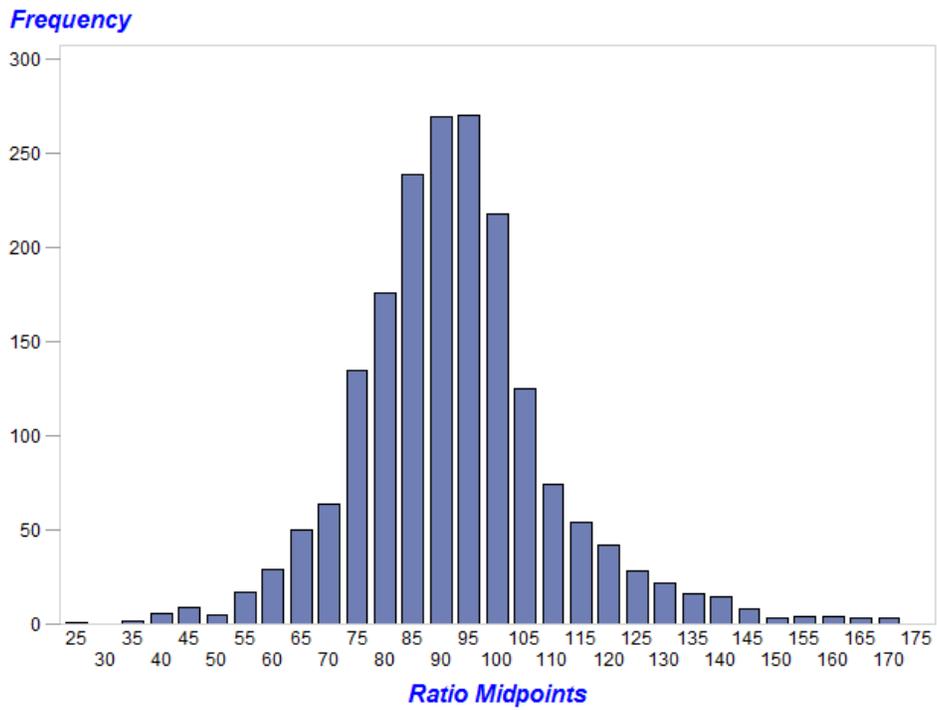
Benton



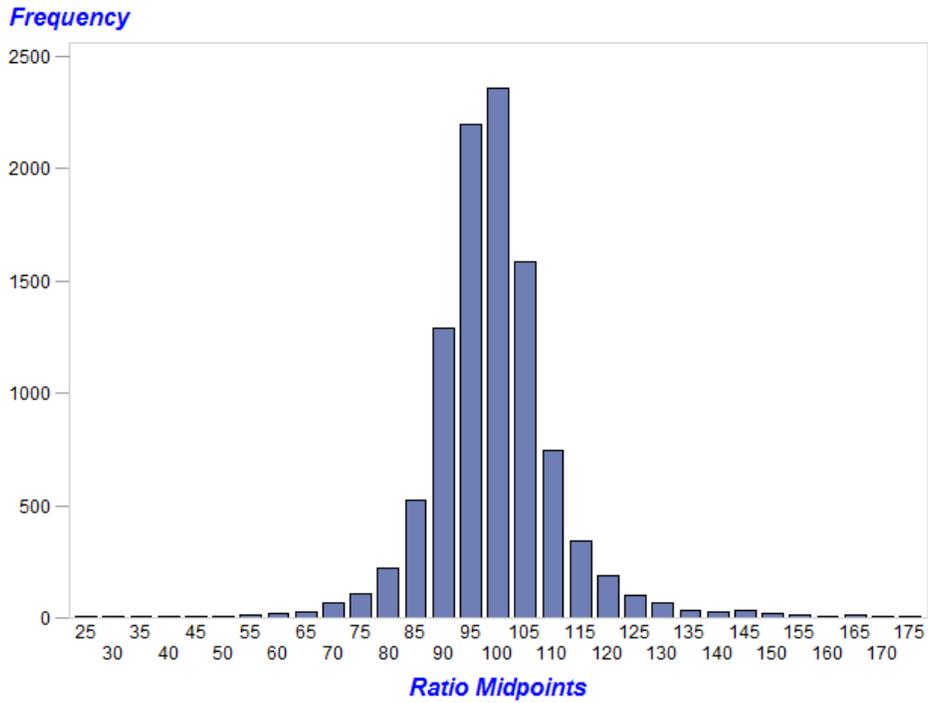
Chelan



Clallam

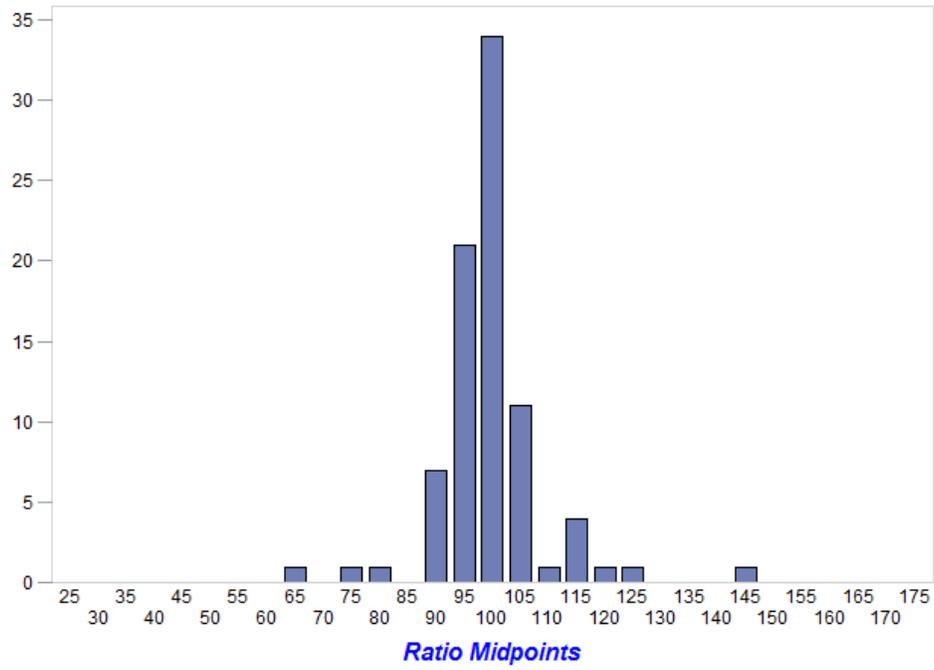


Clark



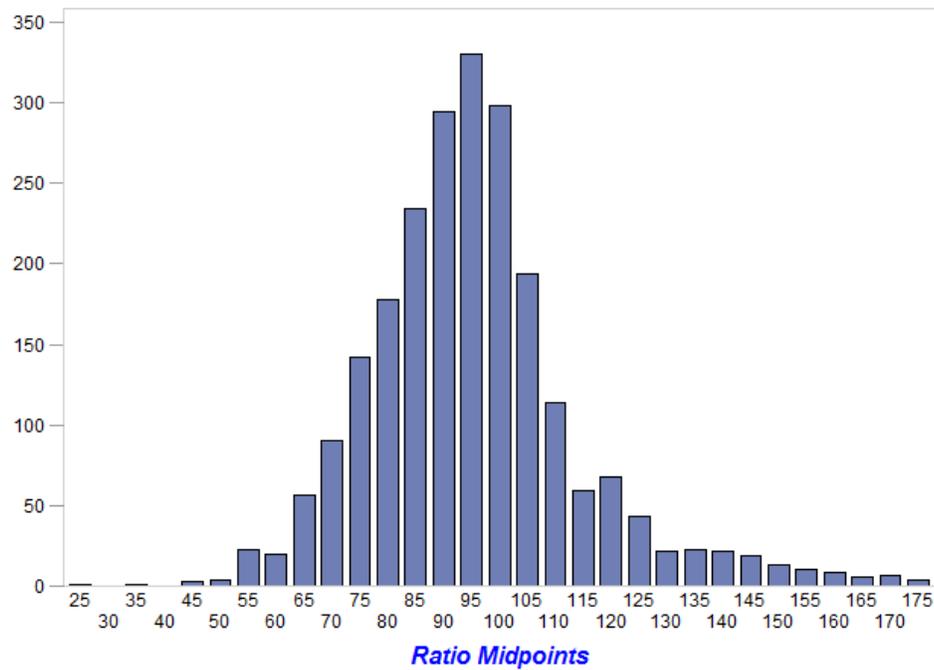
Columbia

Frequency



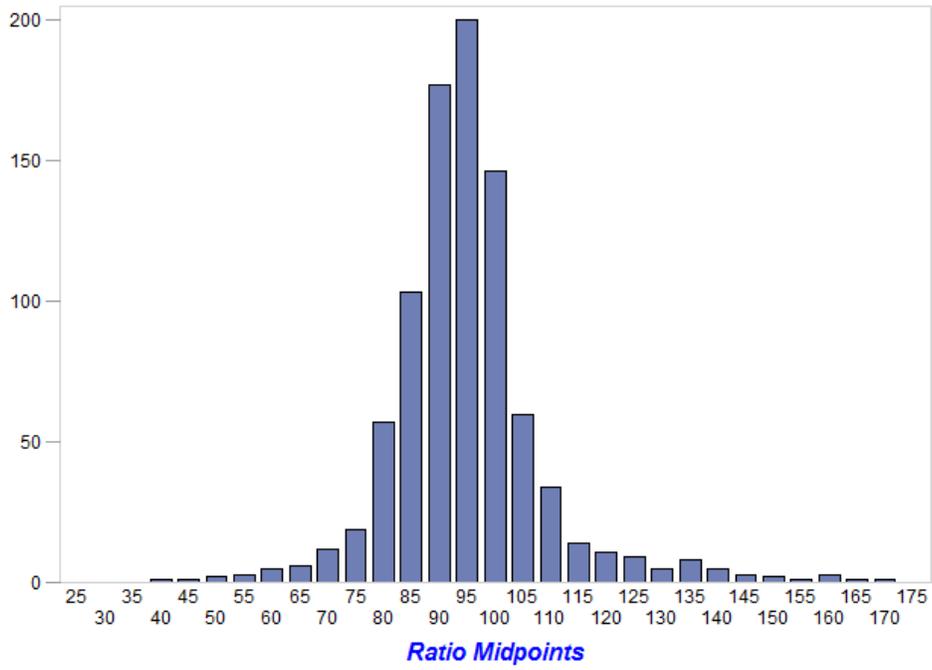
Cowlitz

Frequency



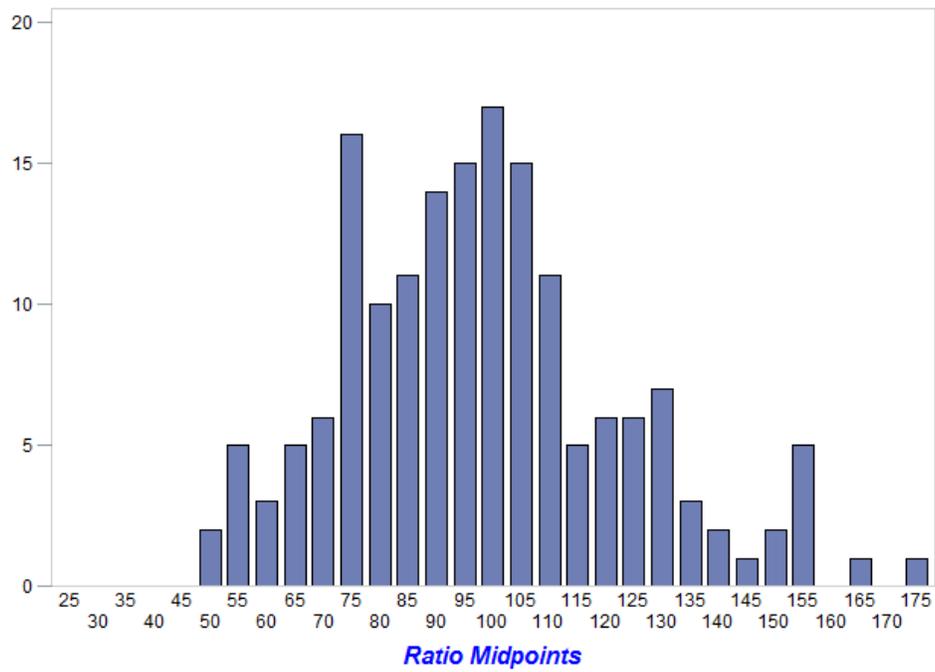
Douglas

Frequency

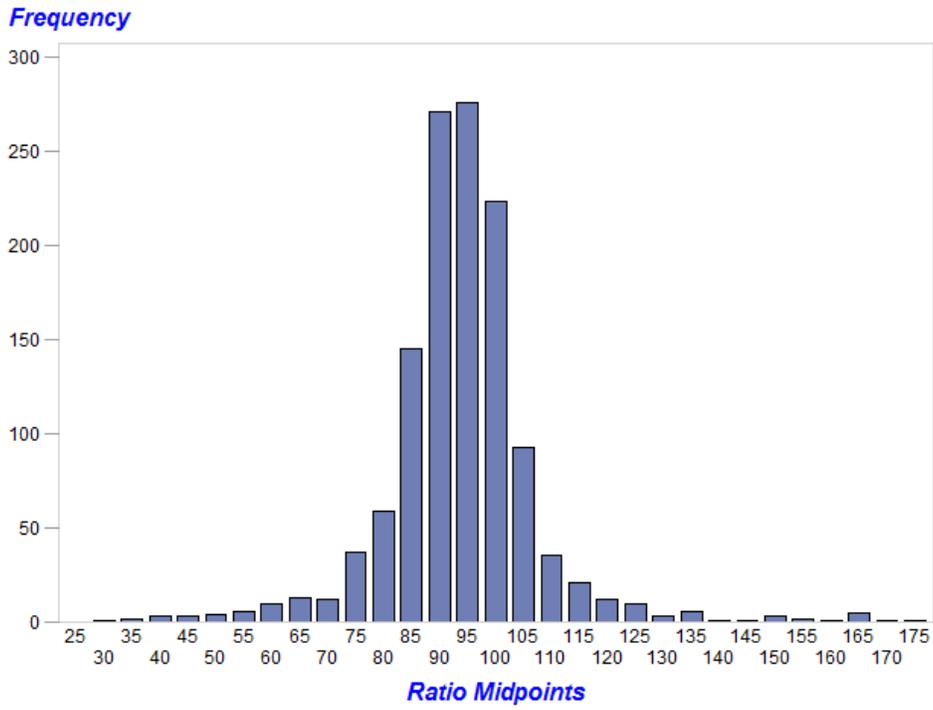


Ferry

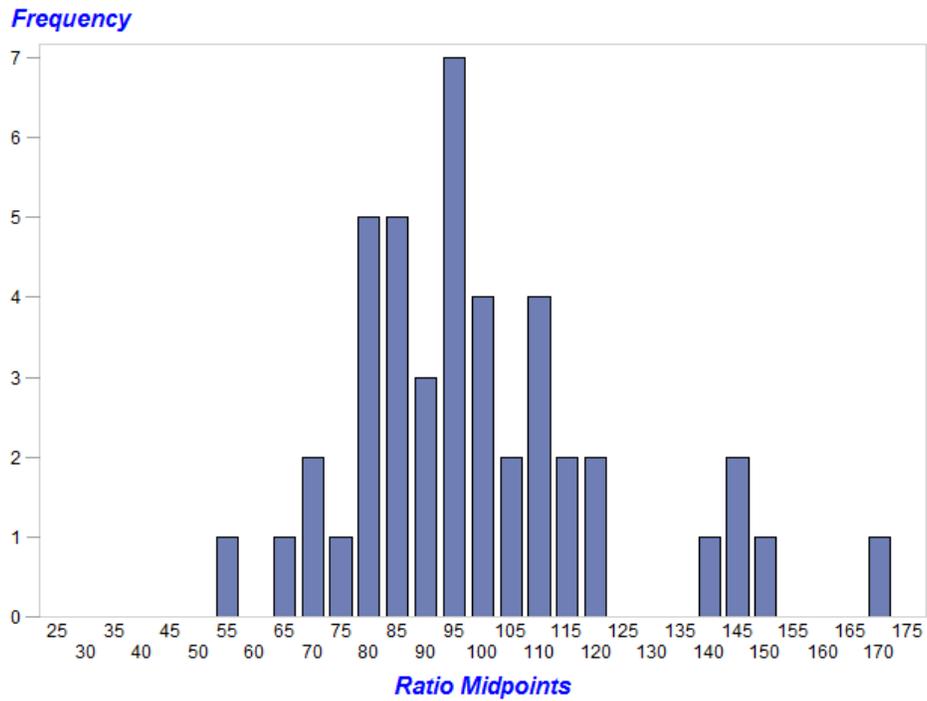
Frequency



Franklin

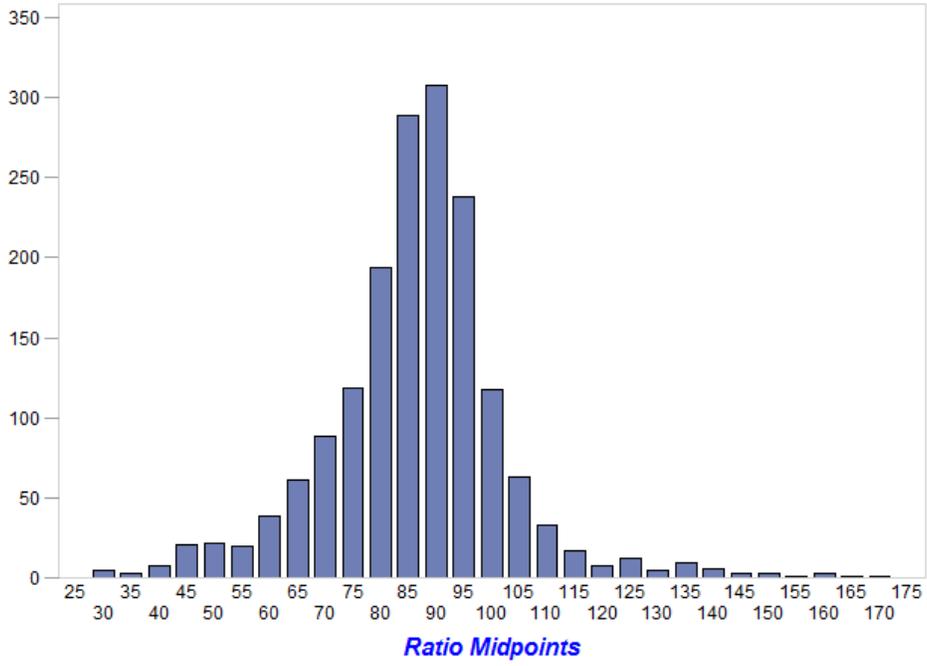


Garfield



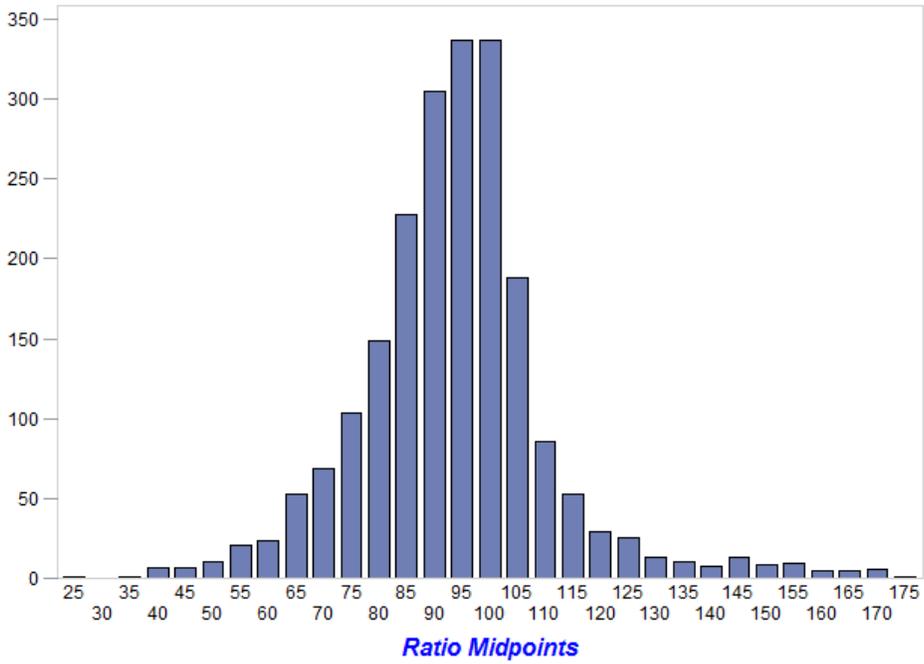
Grant

Frequency



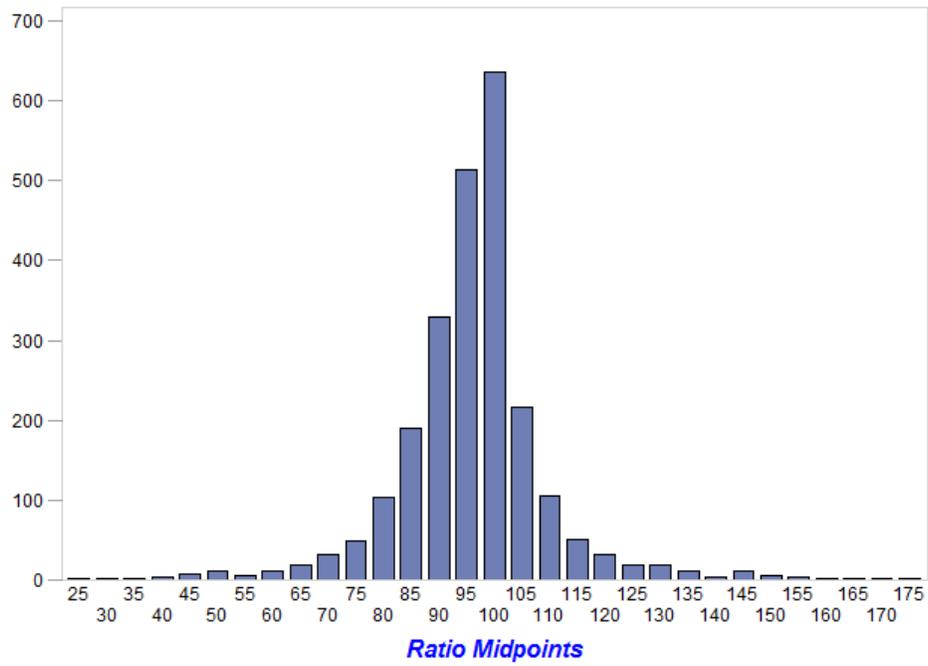
Grays Harbor

Frequency



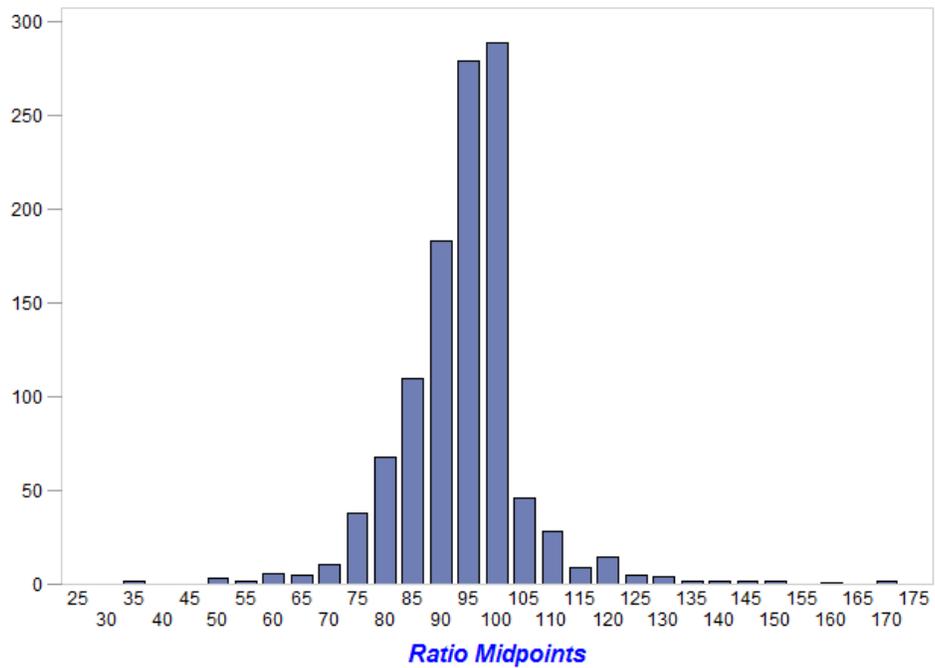
Island

Frequency



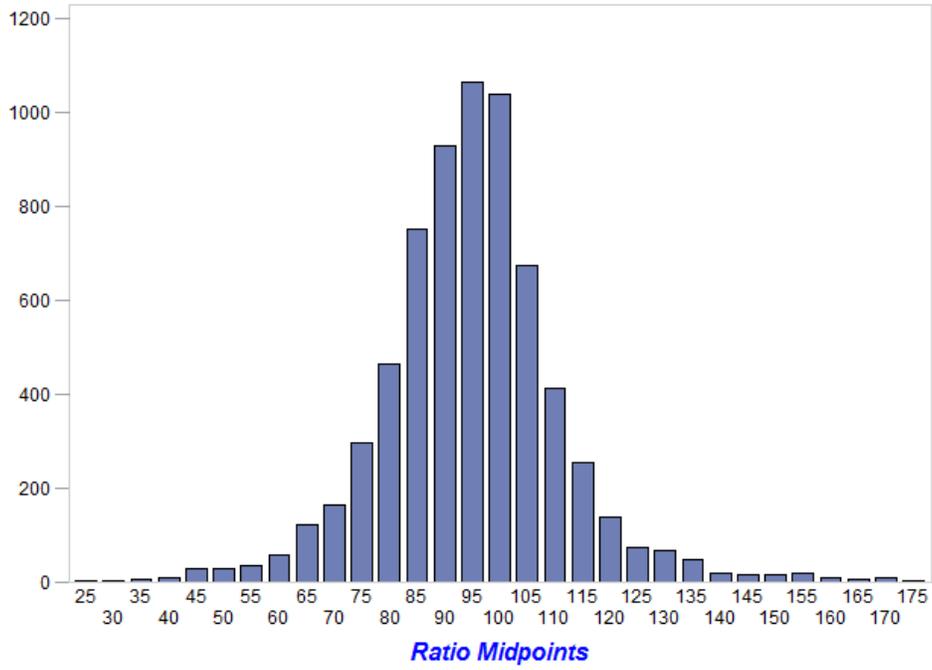
Jefferson

Frequency



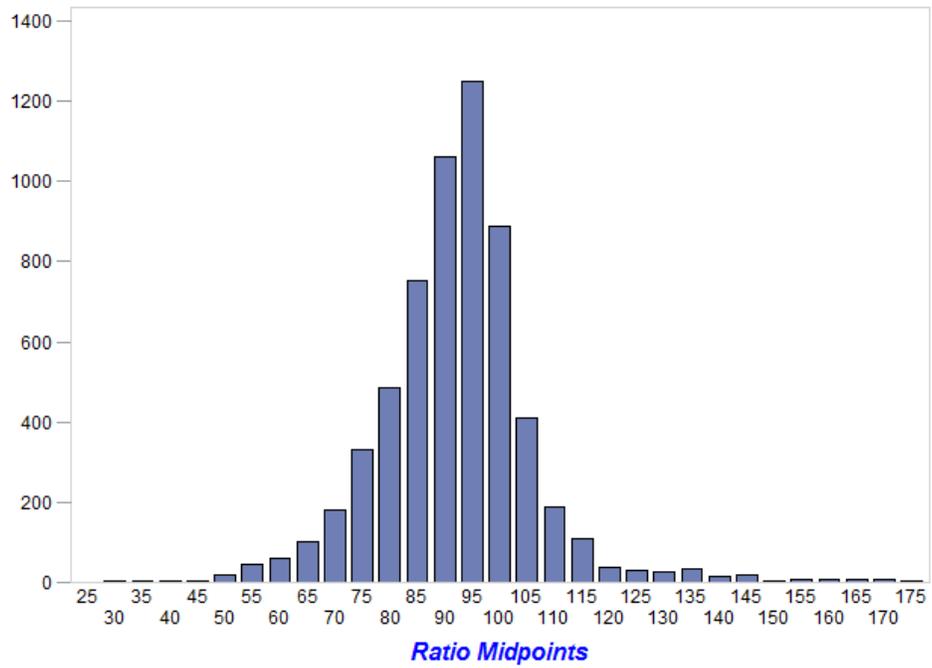
King

Frequency

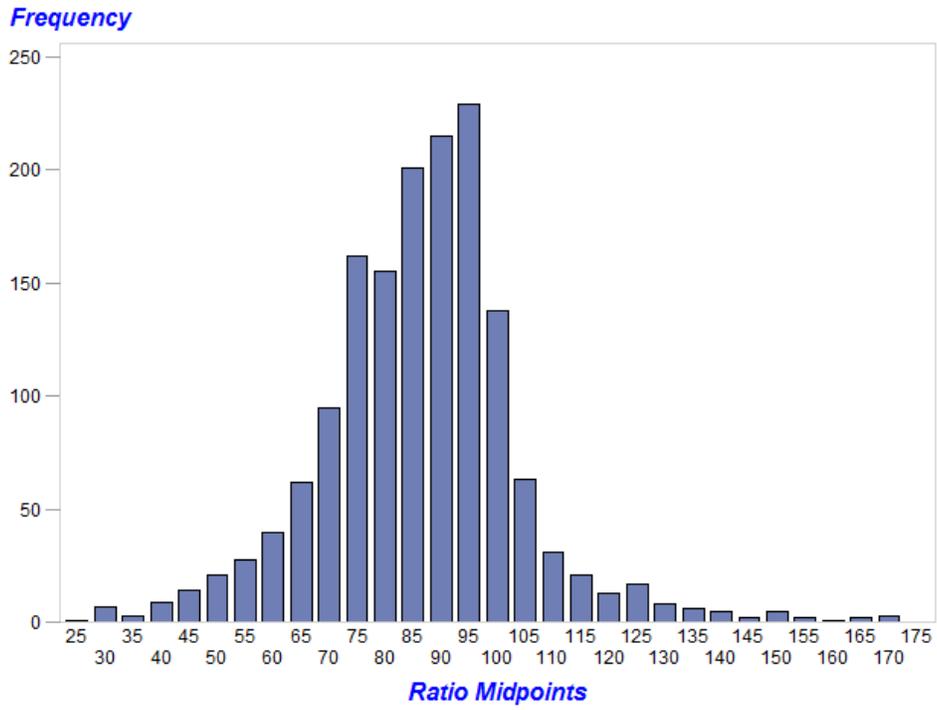


Kitsap

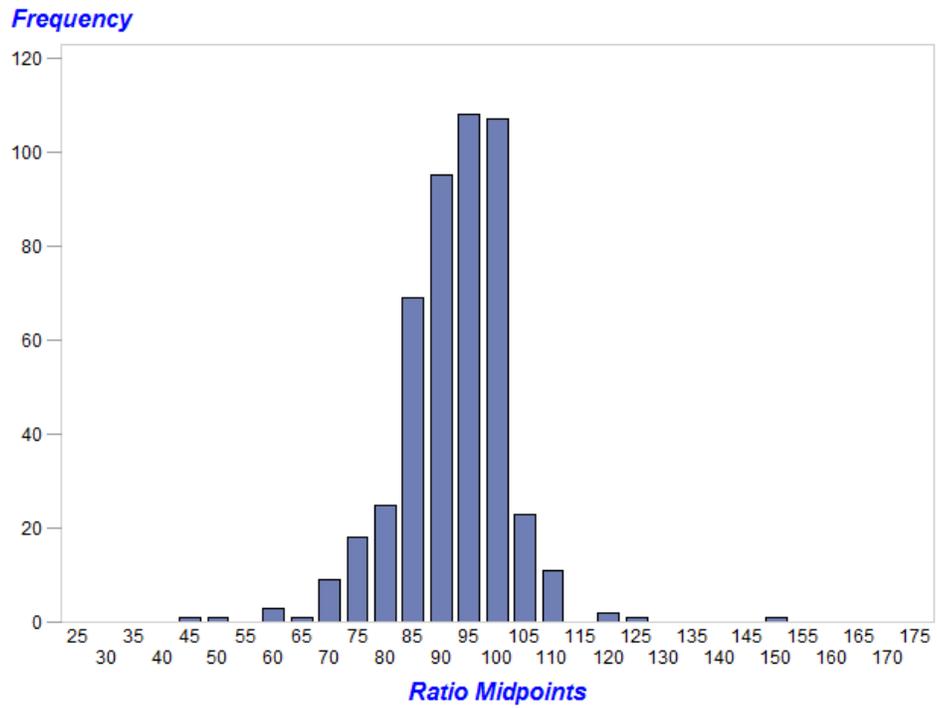
Frequency



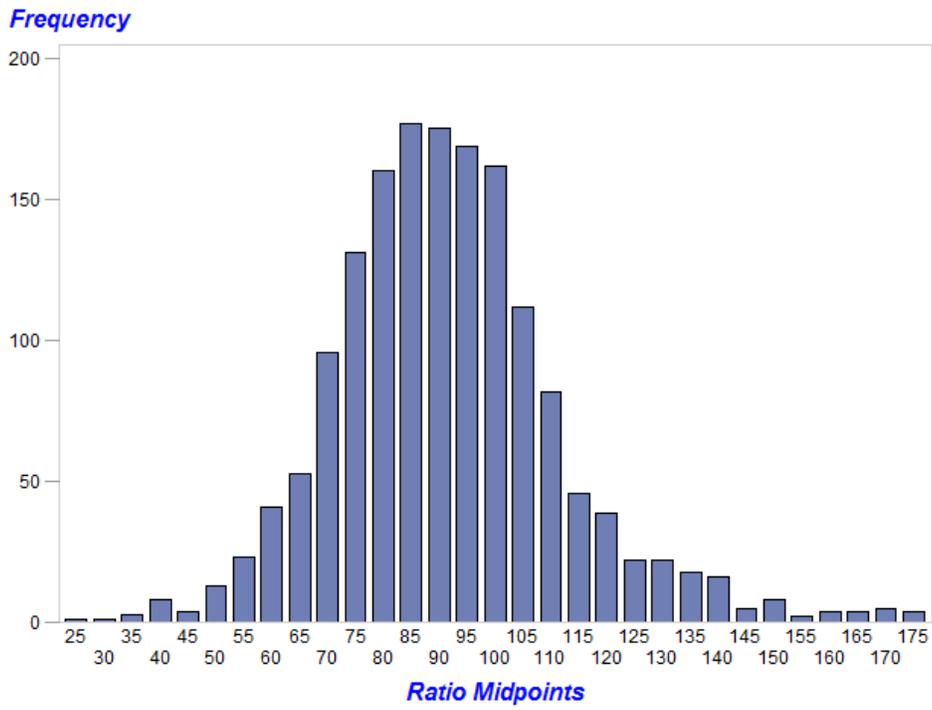
Kittitas



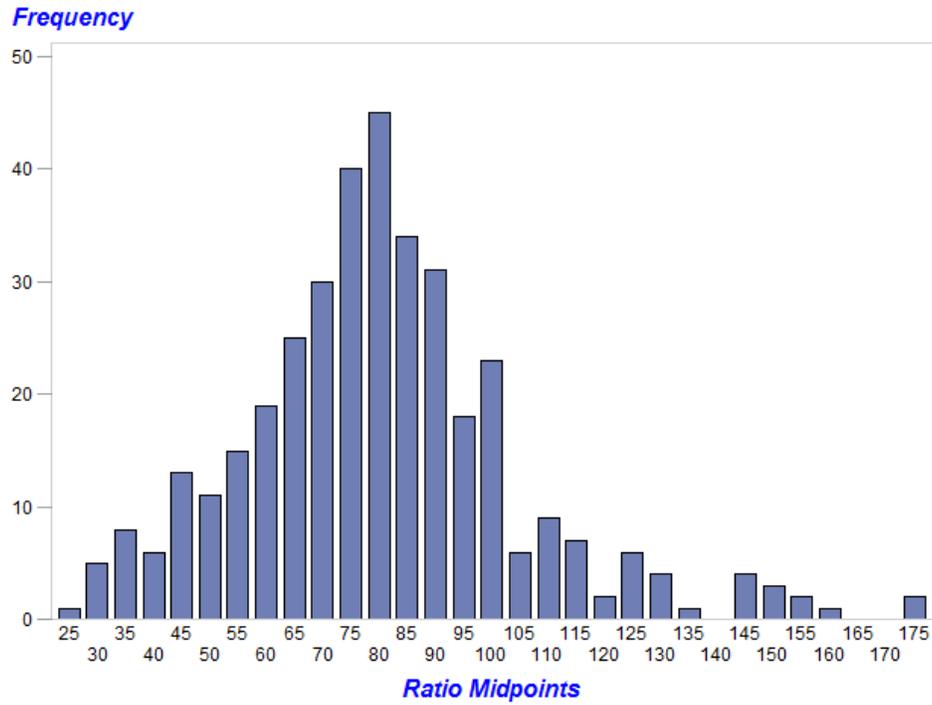
Klickitat



Lewis

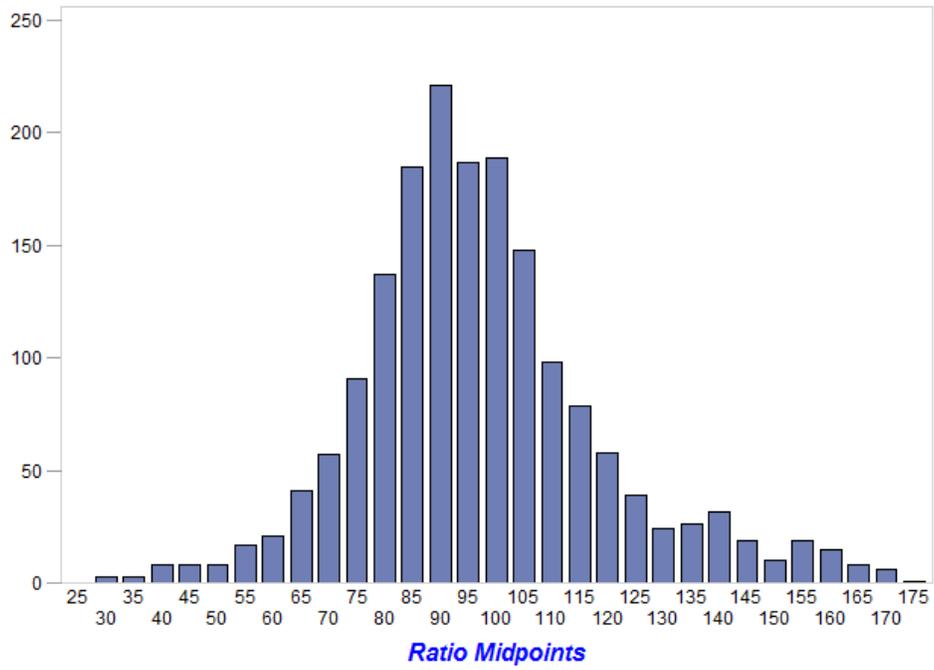


Lincoln



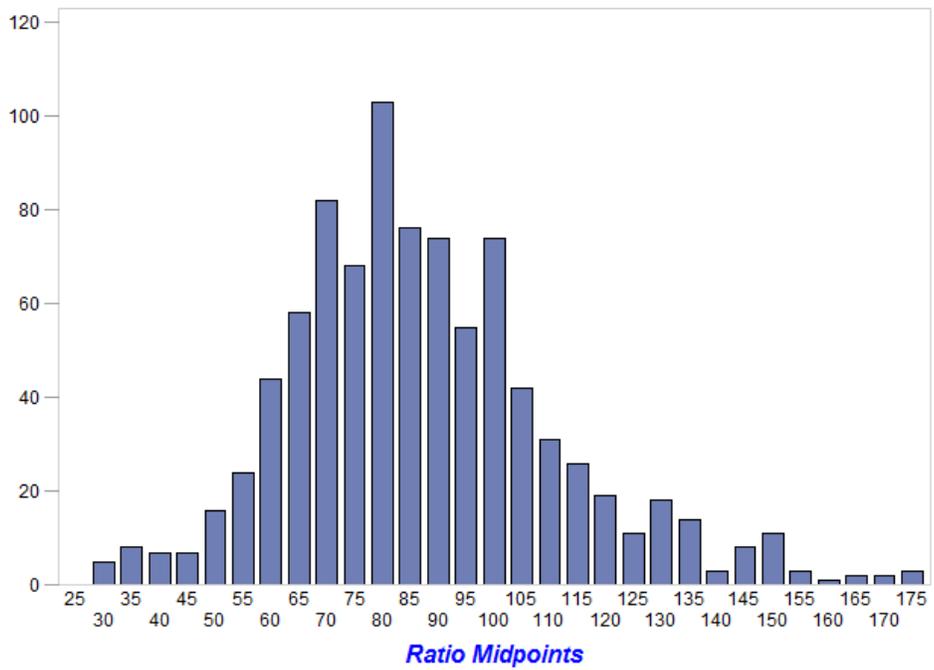
Mason

Frequency

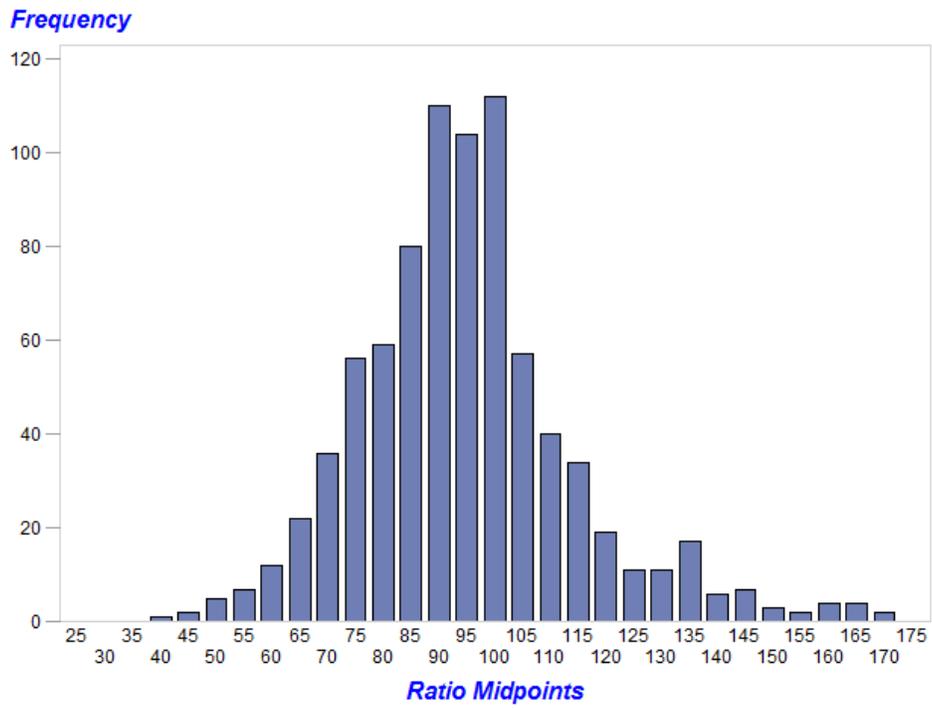


Okanogan

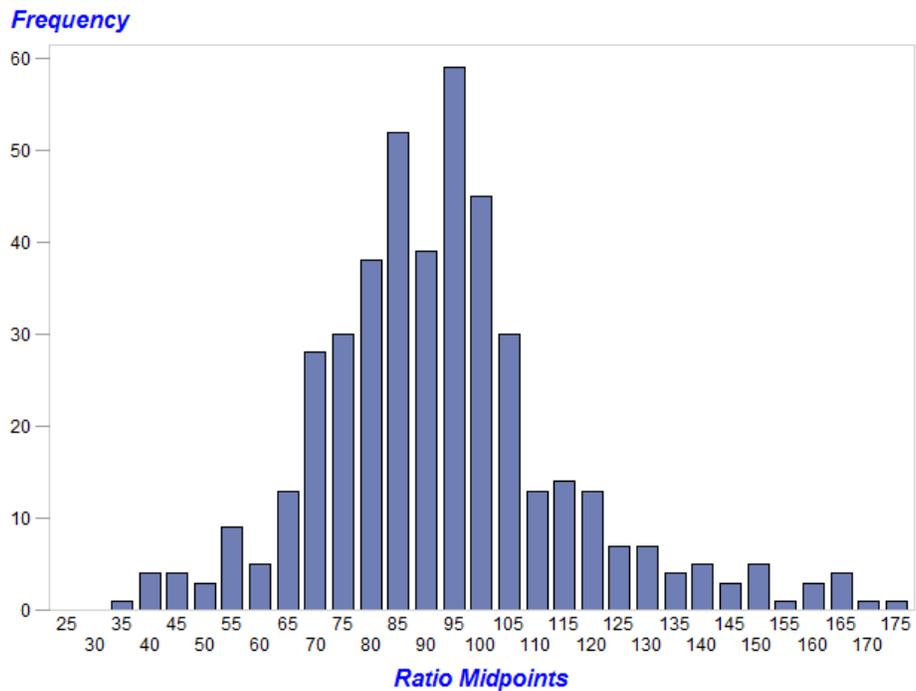
Frequency



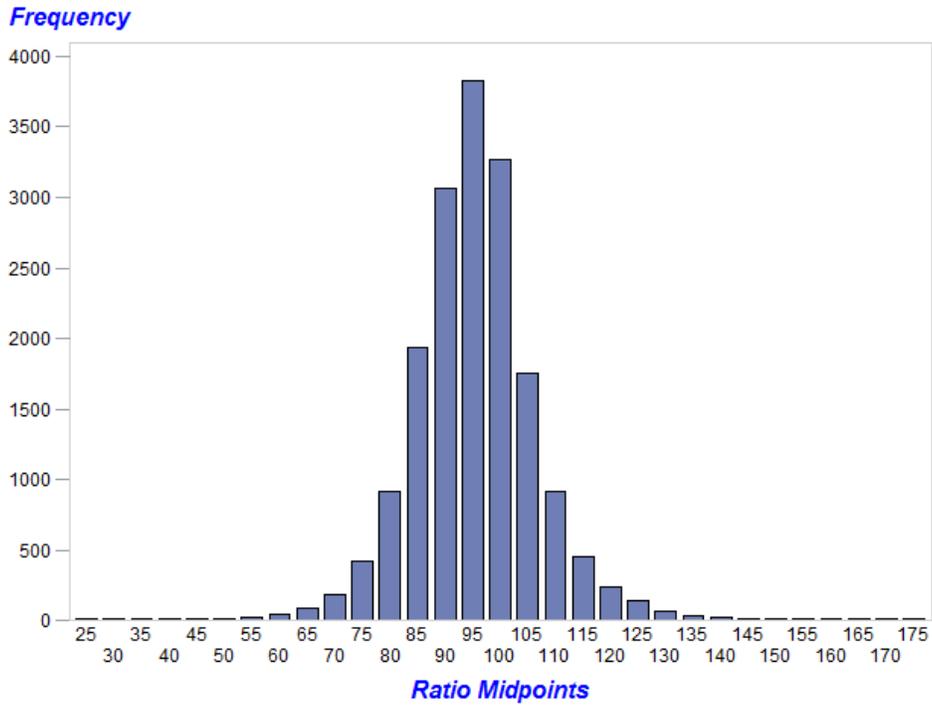
Pacific



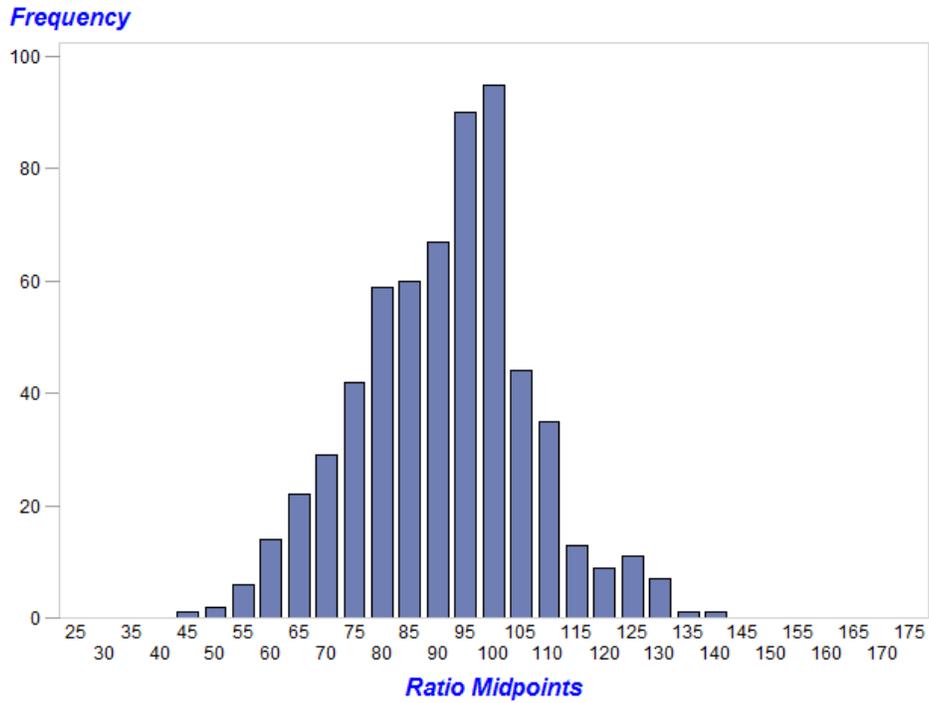
Pend Oreille



Pierce

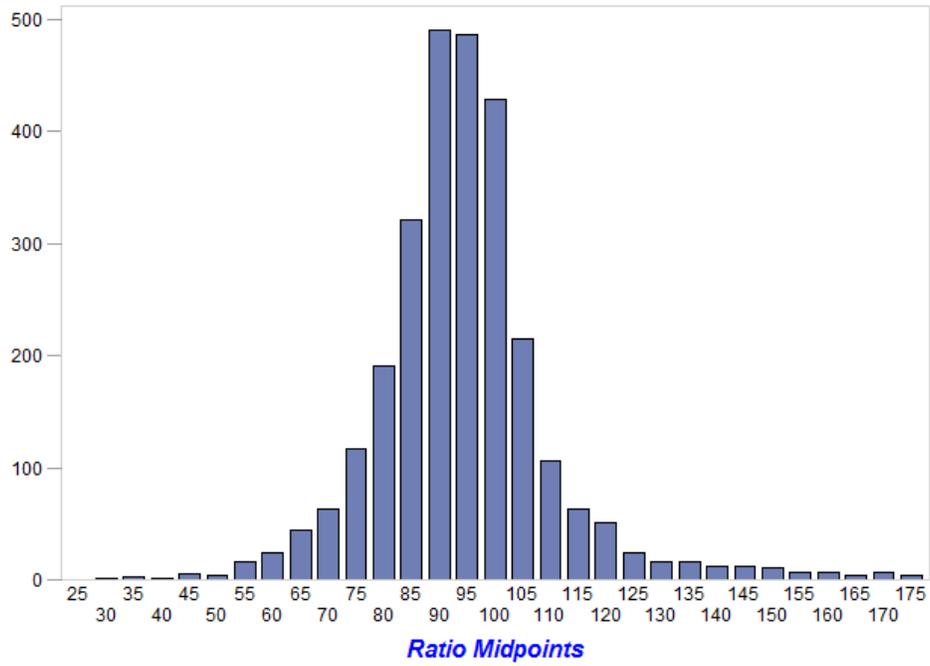


San Juan



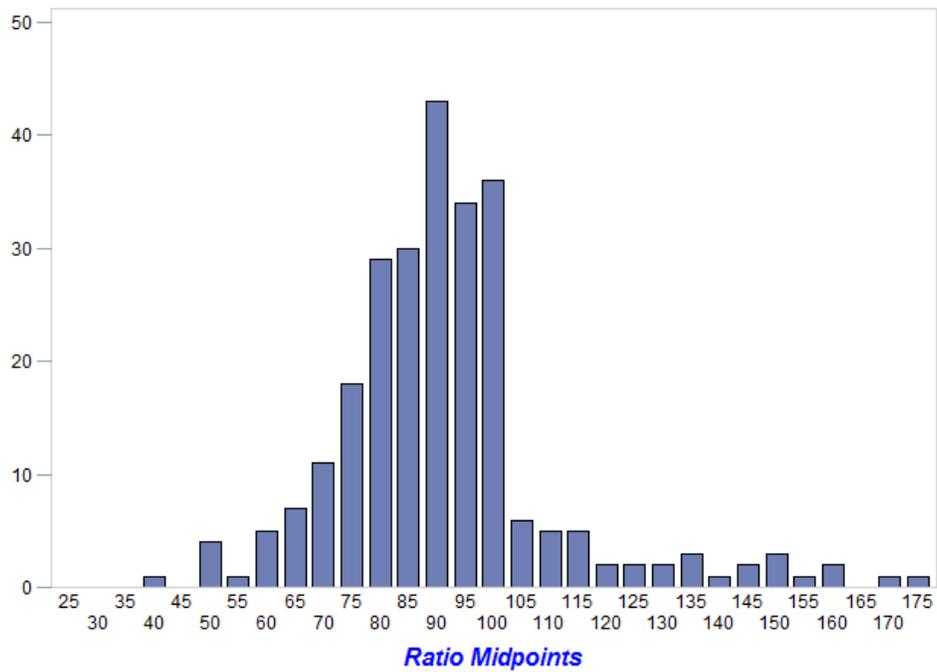
Skagit

Frequency

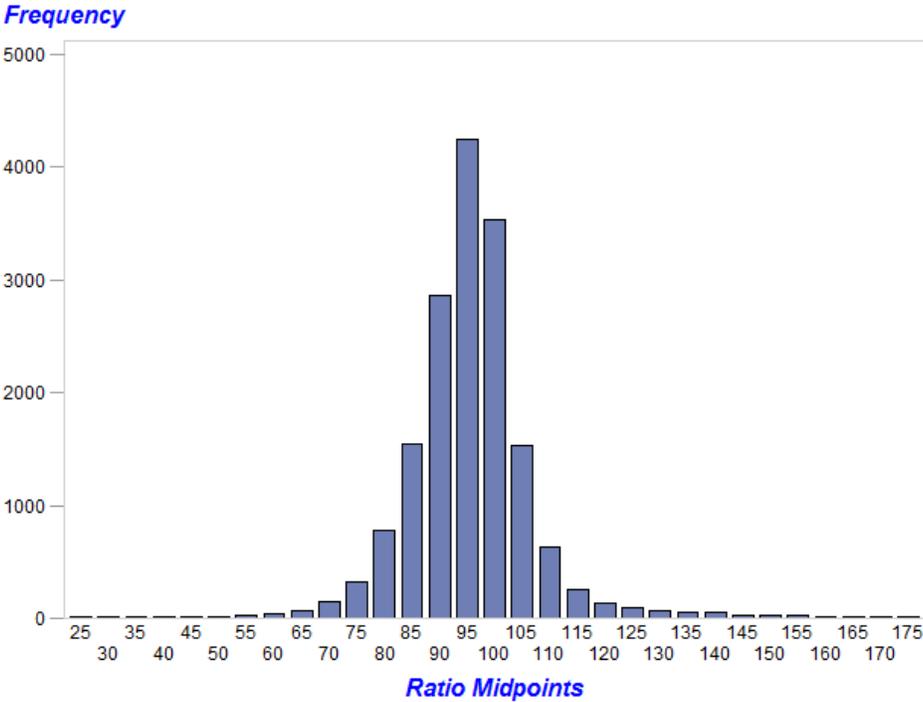


Skamania

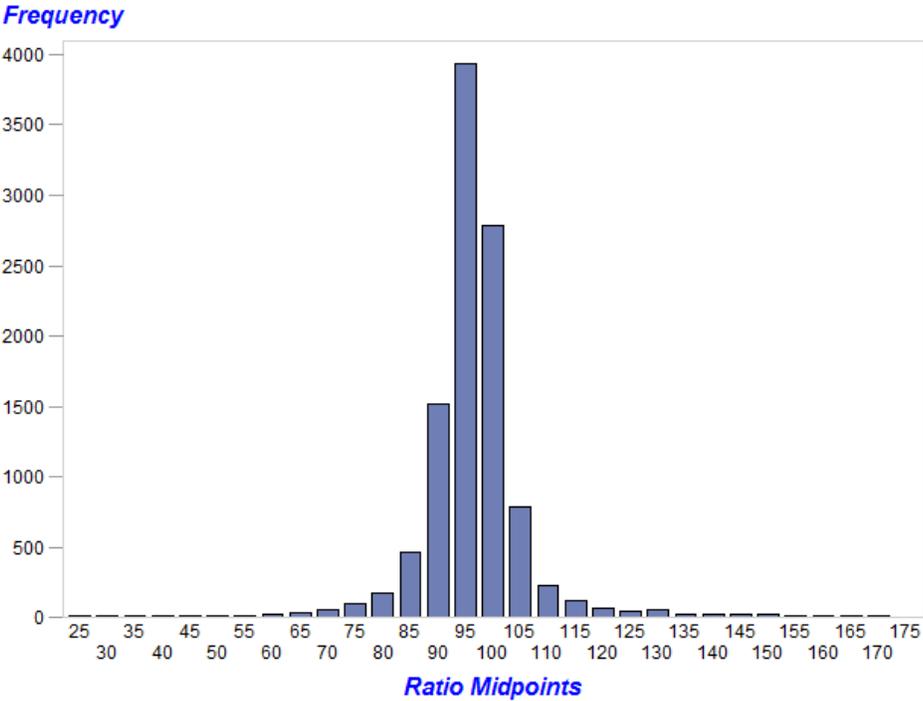
Frequency



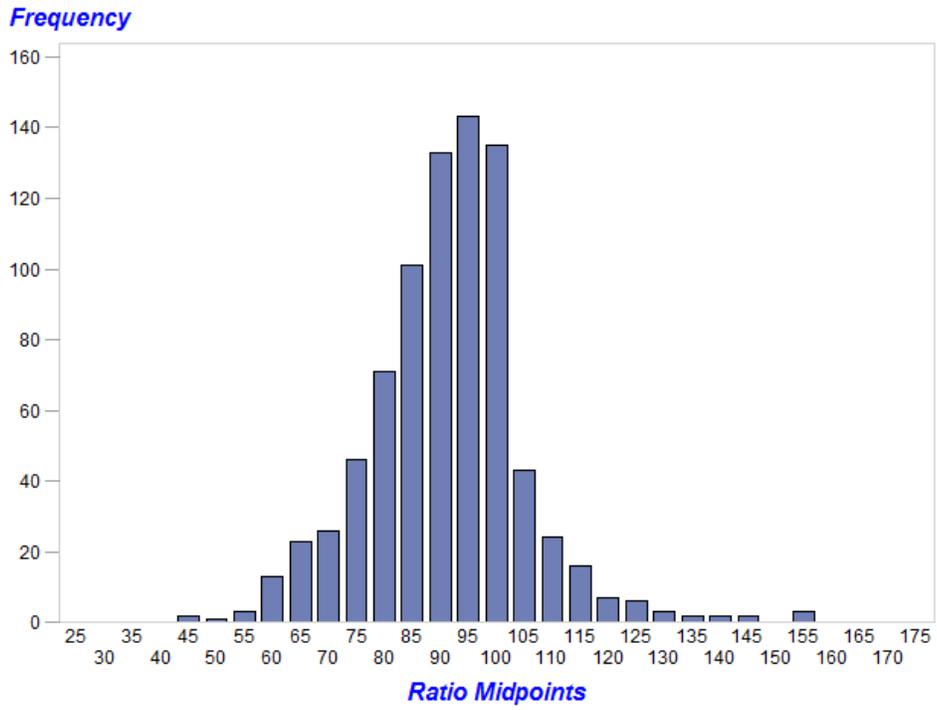
Snohomish



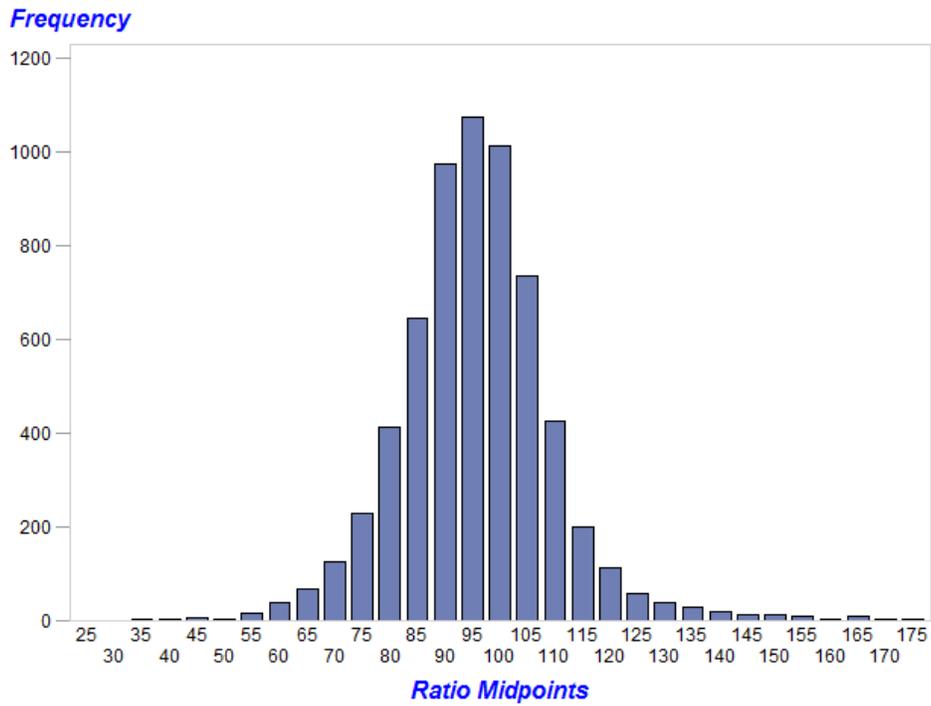
Spokane



Stevens

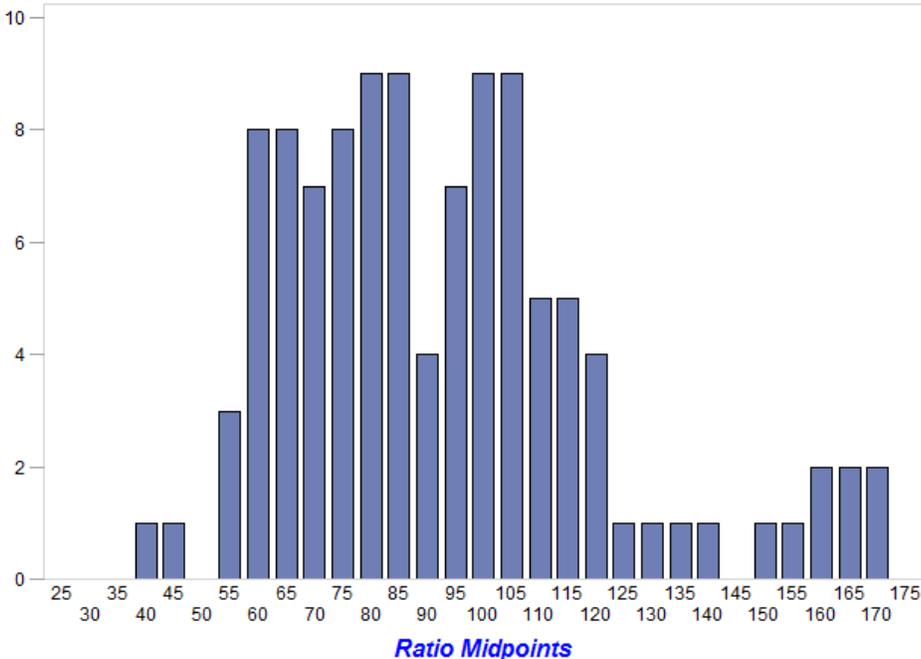


Thurston



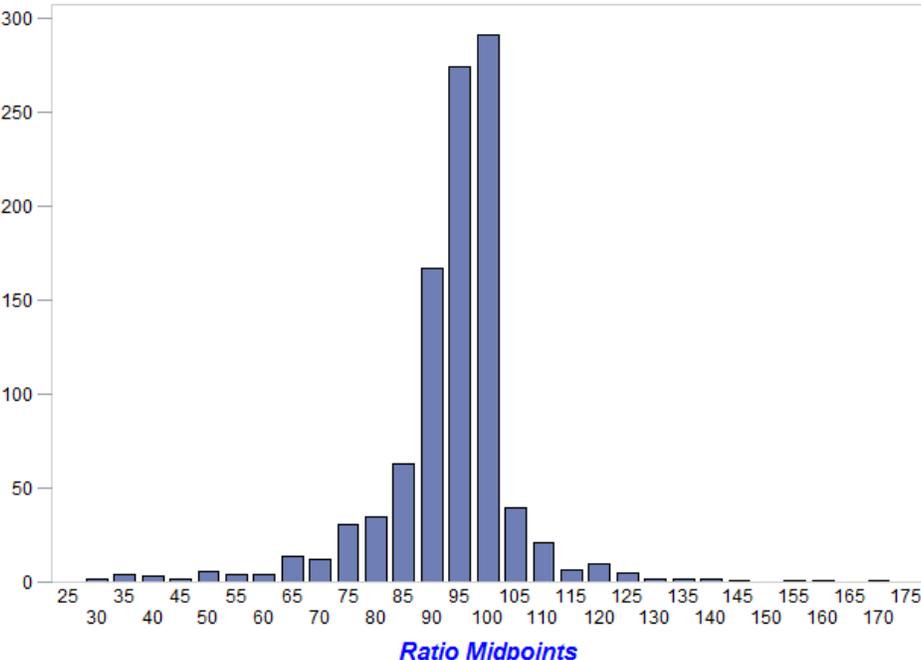
Wahkiakum

Frequency



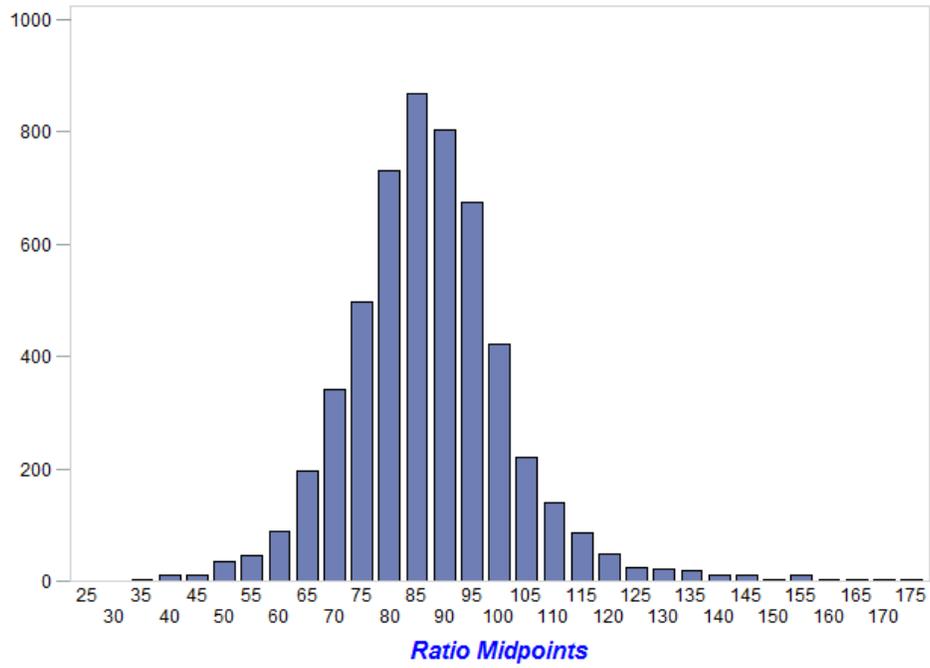
Walla Walla

Frequency



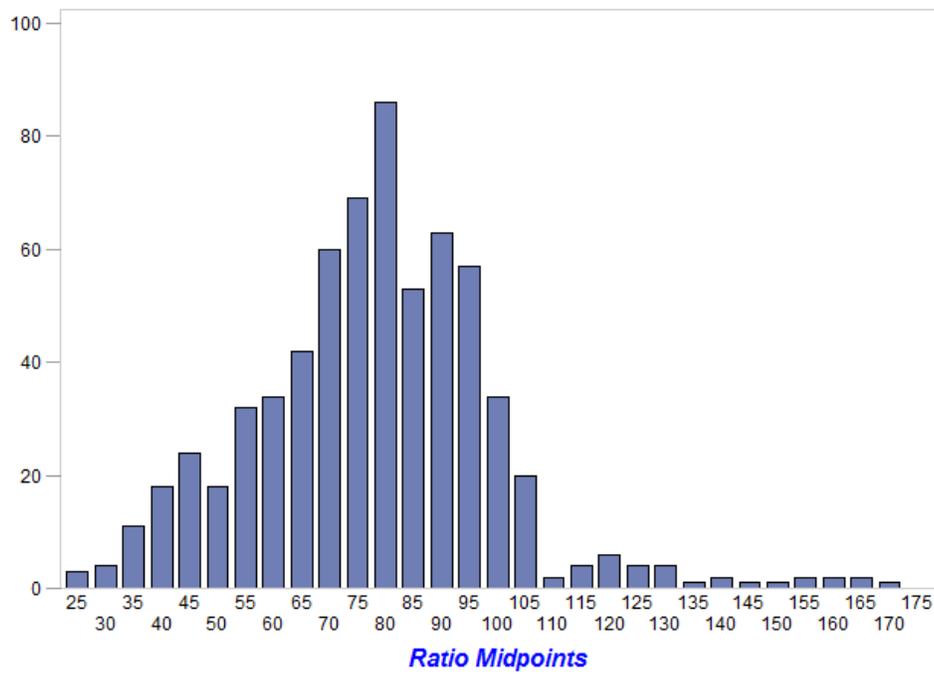
Whatcom

Frequency



Whitman

Frequency



Yakima

