

Ag Land Valuation Issue

Revised Land Capability Groups (LCG)

Grassland

Jerry Green, PhD
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Overview

- 12 March 2019 LB372 Signed Into Law
 - Specifically outlawed applying dryland criteria to grassland and irrigated farmland.
- 2020 PAD Adopted New LCG Criteria
 - Grassland – based on NRCS Range Production Ratings (Best available option for grassland)
 - Questionable breakpoints, however resulted
 - Reported to PAD Staff members Sarah Scott and Scott Shaver in spring of 2020
 - 2021 – Questionable breakpoints continue

LCG Grassland Break Points

Grass Land Capability Group	
Range Production (Normal Year) (lbs/acre/year)	LCG
> 3500	1G1
3291 to 3500	1G
3000 to 3290	2G1
2750 to 2999	2G
2501 to 2749	3G1
2001 to 2500	3G
1501 to 2000	4G1
500 to 1500	4G
< 500	WST

Professional Mass Appraisal Overview

■ Unif. Standards of Professional Appraisal Practice (USPAP) – Standard 5: Mass Appraisal, Devel.

A mass appraisal includes

1. Identifying properties to be appraised
2. Defining market area of consistent behavior that applies to properties
3. Identifying characteristics (supply and demand) that affect the creation of value in that market area
4. Developing a model structure that reflects the relationship among the characteristics affecting value in the market area
5. Calibrating the model structure to determine the contribution of the individual characteristics affecting value in the market area
6. Applying the conclusions reflected in the model to the characteristics of the property(ies) being appraised
7. Review the mass appraisal results

Nebraska Ag Land Assessment Process Grassland

- Characteristics that affect creation of value (slide #4, bullet 3 (previous slide))
 - Grassland for generating income by raising livestock – there is only one characteristic
 - Livestock carrying capacity
 - Forage production
- PAD Implementation (slide #4, bullet 4)
 - Land Capability Groupings (LCG)
 - Eight classes w/ varying forage production
 - Best soils – very high yields of forage production
 - Worst soils – very low yields of forage production

LCG Grassland Classifications

Neb Admin Code Title 350 Chapter 14, 4.08H(9) -4.08H(16)

- 1G1 – Grassland and meadows generally capable of producing very high yields of forage.
- 1G – Grassland and meadows generally capable of producing high yields of forage.
- 2G1 – Grassland and meadows generally capable of producing moderately high yields of forage.
- 2G – Grassland and meadows generally capable of producing above average yields of forage.
- 3G1 – Grassland and meadows generally capable of producing average yields of forage.
- 3G – Grassland and meadows generally capable of producing moderately low yields of forage.
- 4G1 – Grassland and meadows generally capable of producing low yields of forage.
- 4G – Grassland and meadows generally capable of producing very low yields of forage.

Recap Mass Appraisal Principals

Grassland for Raising Livestock for Income

- Characteristic that affects creation of value
 - Livestock carrying capacity
 - Forage production
- PAD Recognition of this Characteristic
 - LCG Scale
 - Very high to very low yields of forage
 - LCG Scale based on NRCS Range Productions Ratings
 - Forage production

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Questionable Low End Break Points

Grassland LCGs

- 4G – Factor of 3 Difference Between Start Point (500 lbs/acre) and End Point (1500 lbs/acre)
 - Direct correlation between forage production and gross income
 - Example – 1500 lbs/acre soil will carry 3 times as many cow/calf pairs as a 500 lbs/acre soil.
 - 1500 lbs/acre will garner 3 times the rent as the 500 lbs/acre soil
 - Surely a factor of 3 rent difference will make the 1500 lbs/acre soil at least 3 times higher in value
 - But yet the PAD has *predetermined* that this entire range is all equal in value!
 - This defeats USPAP Standard 5 steps 3 & 4

Questionable Low End Break Points

Grassland LCGs

- 4G1 & 3G – Similar Issue but Not as Significant
 - But compared to the LCG classes 1G1 through 3G1 they are significant

Questionable Low End Break Points

Grassland LCGs

■ Common Sense

- Dictates that setting constant value across broad ranges of forage production is absurd

■ Violates §77-1327 & §79-1016

- Principals of Professionally Accepted Mass Appraisal
 - No reputable appraiser would use such wild ranges in forage production in an appraisal
 - Goes against USPAP Standard 5 step #3 – Identify characteristic that creates value
 - PAD identified forage production as that characteristic
 - But suddenly within large ranges it's not important???

New Information

- Statewide Trend in Grassland Value
 - Nebraska common knowledge
 - Rainfall increases going from west to east
 - Grassland production increases going from west to east
 - Grassland value increases going from west to east
 - No one doubts there is a direct correlation between these three features

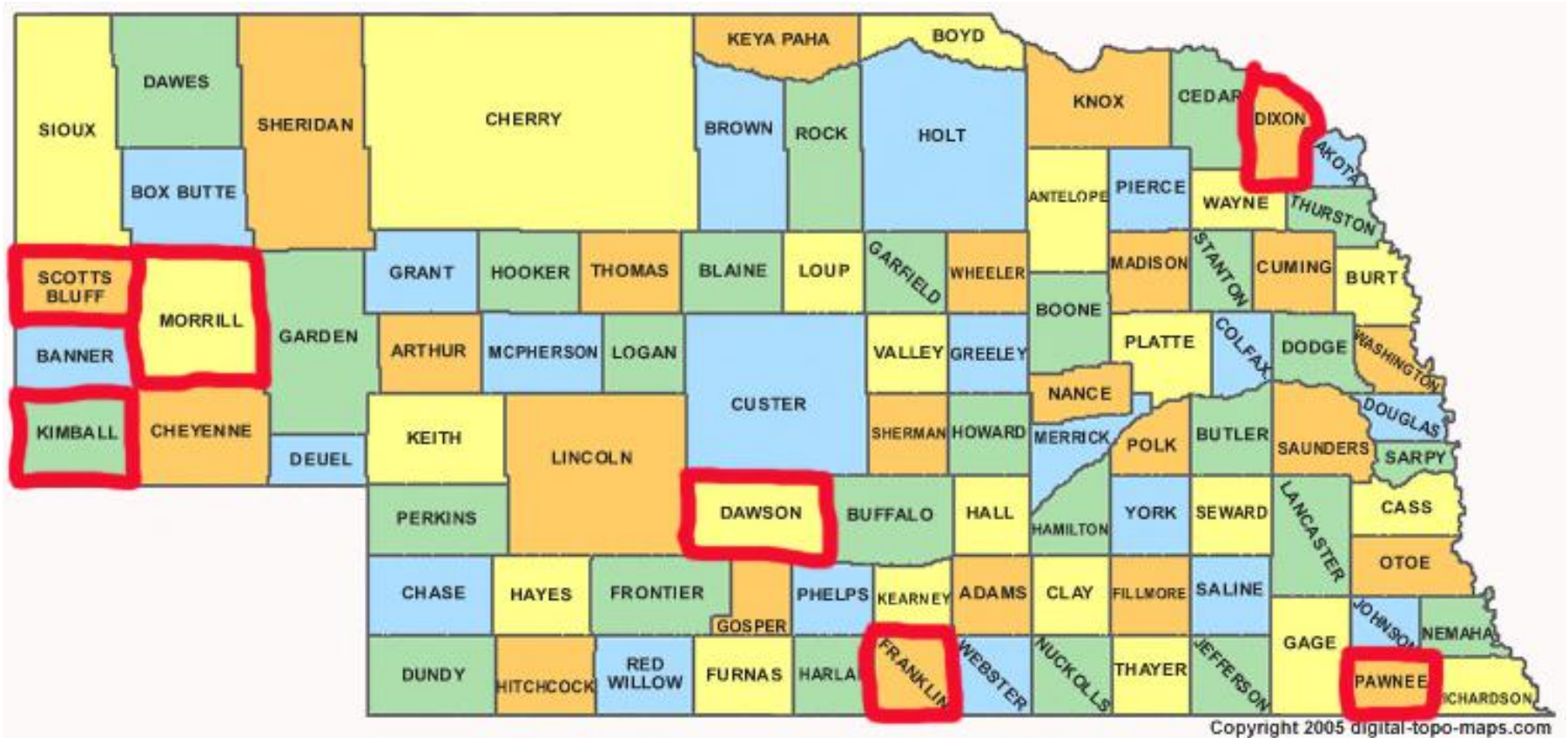
Nebraska Wide Trend in Grassland Value vs. Forage Productivity

■ Working with Senator Steve Erdman

- Attempt to set land valuations using an income approach in 2018 & 2019
- Obtained detailed assessor data from 7 counties
 - All grassland acres
 - Individual soils, number of acres & assessed value/acre
 - » Market Area – Average assessed value
- NRCS forage productivity estimations
 - Individual soils (same as above) forage production
 - » Market Area – Average forage production
- Plot avg. assessed value vs avg. forage production
 - Assessed values – based on what should be the best available market data
 - Forage production – based on NRCS best estimates

Nebraska County Map

Counties Used in Study (outlined in Red)



The seven counties outlined in red show the counties used in this study. The choice was intentional with three from the west end of the state, two in the center of Nebraska and then two from the east side of the state.

Nebraska Wide Trend in Grassland Value vs. Forage Productivity

The slide to follow are the results on this study. There are 12 data points from the 7 counties included. Five counties were broken down into two appropriate market areas, hence the reason for the addition data points.

The x-axis represents forage production and each data point on this scale is the average forage production for that market area.

The y-axis represents market value and each data point on this scale is the average market value for that market area.

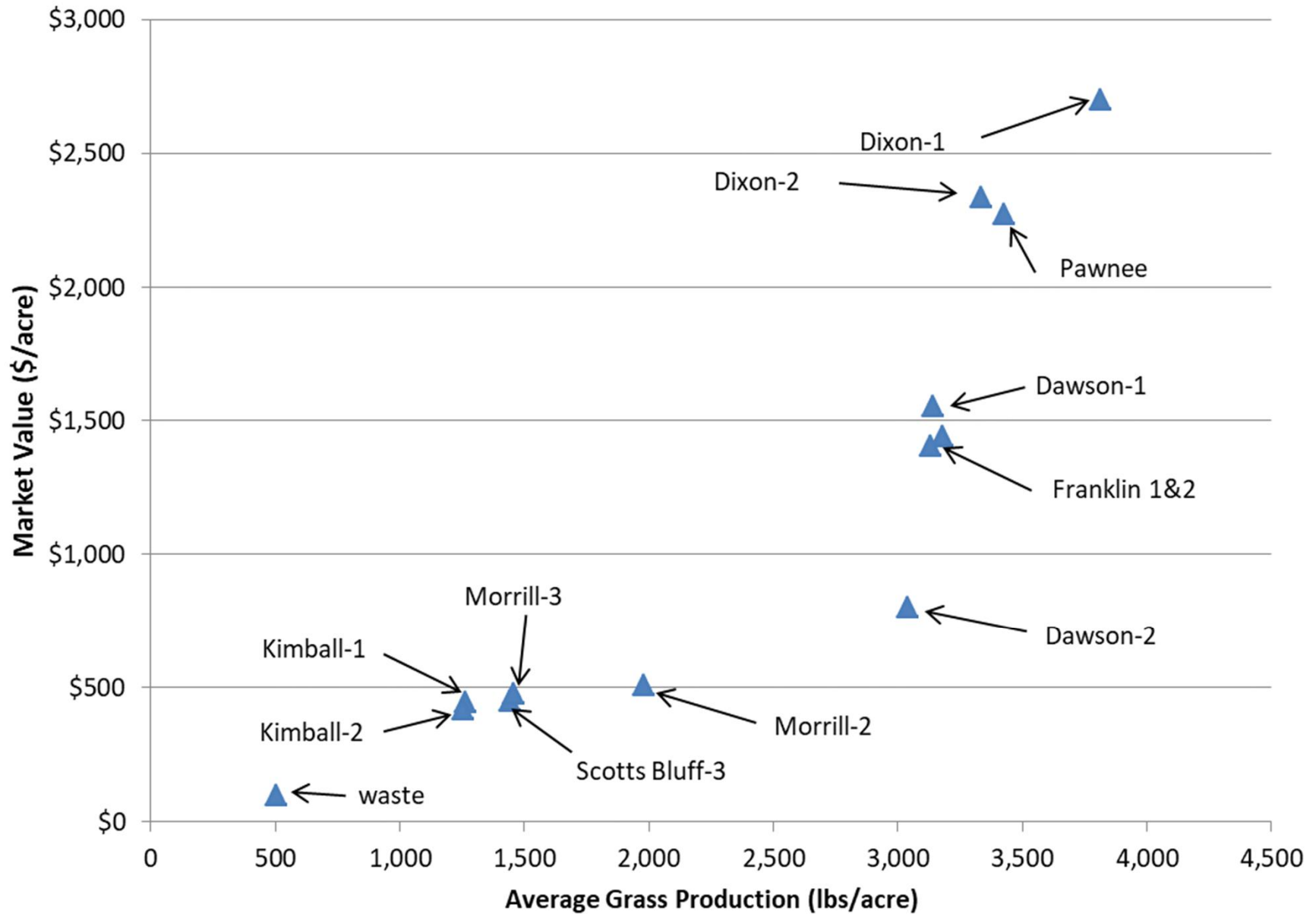
The data points show a clear increase in forage production going from west to east and a clear increase in value going from west to east.

The solid line is a best fit of the data points. There is a strong correlation between market value and forage production, which is intuitive. This solid line can be considered as a state-wide grassland valuation representation.

Note – there is one additional data point labeled as “Waste”. The PAD has defined all soils with less that 500 lbs/acre as waste. Different counties have put different values on waste. Scottsbluff set waste at \$100/acre, Morrill County sets that value at \$30/acre. This point was added to demonstrate that this curve does not stop at Kimball County, it goes much lower.

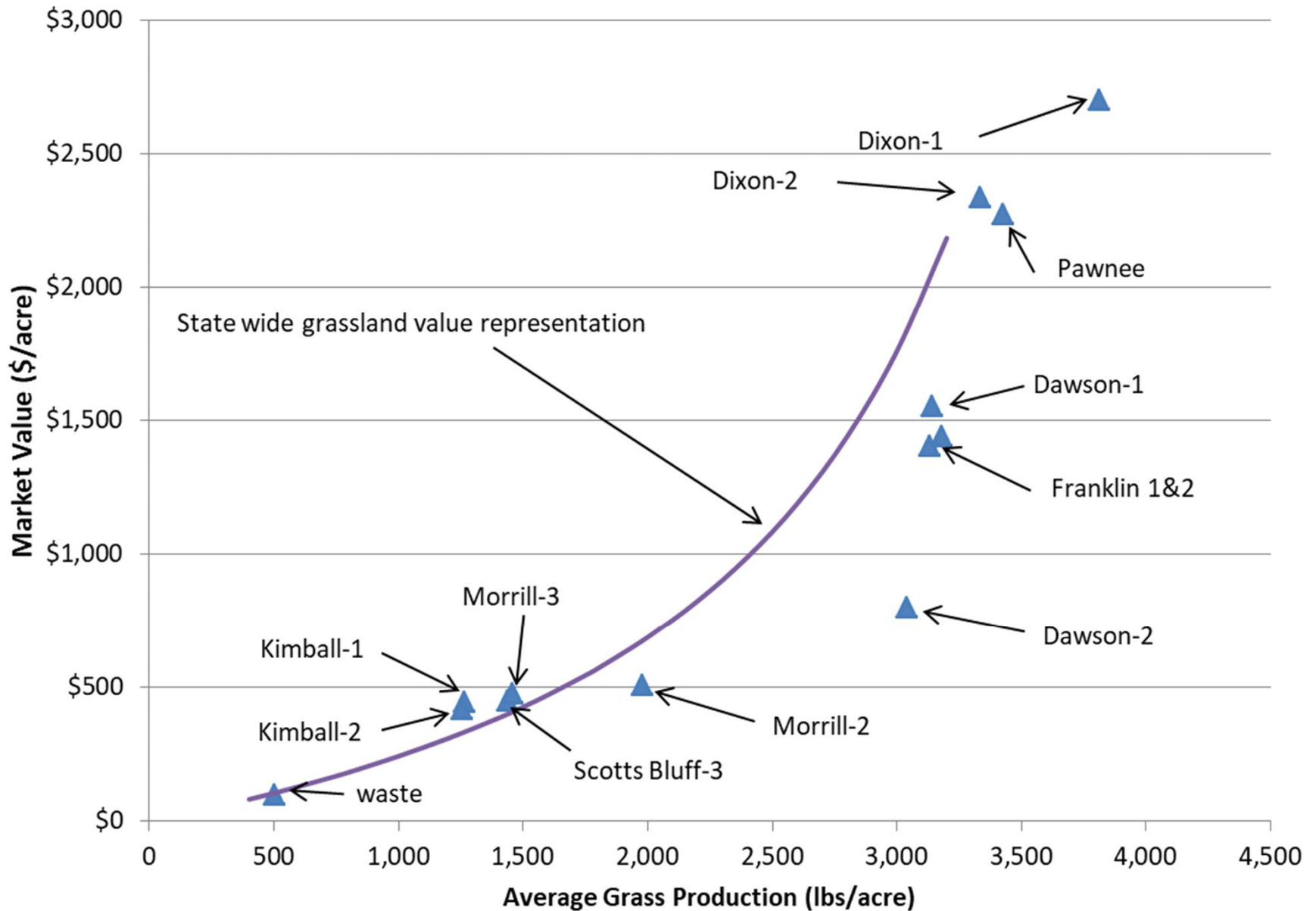
Nebraska Grassland Productivity vs. Value

Grassland Productivity vs Market Values 7 Counties



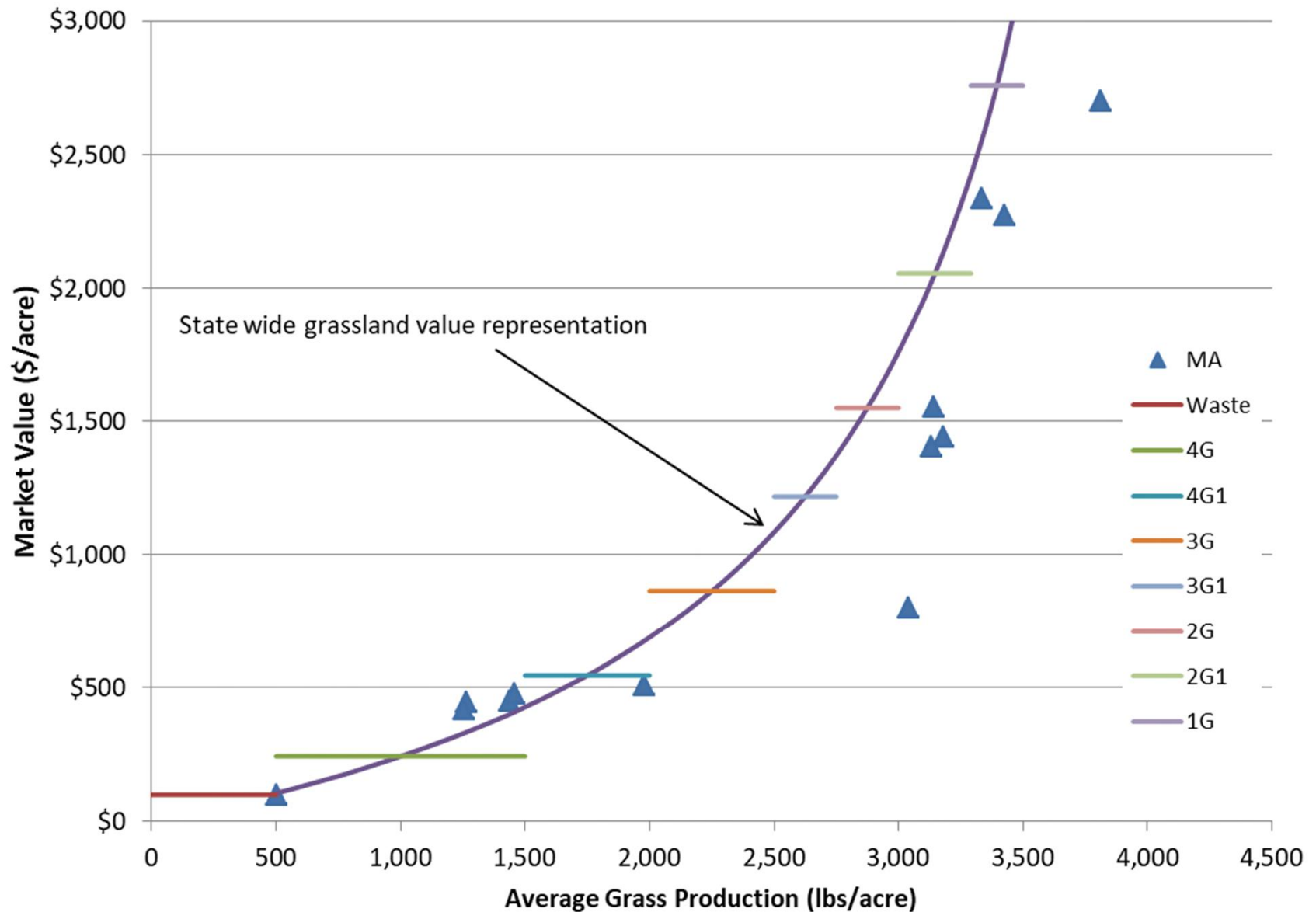
Nebraska Grassland Productivity vs. Value

Mathematical Relationship Between Productivity and Market Value



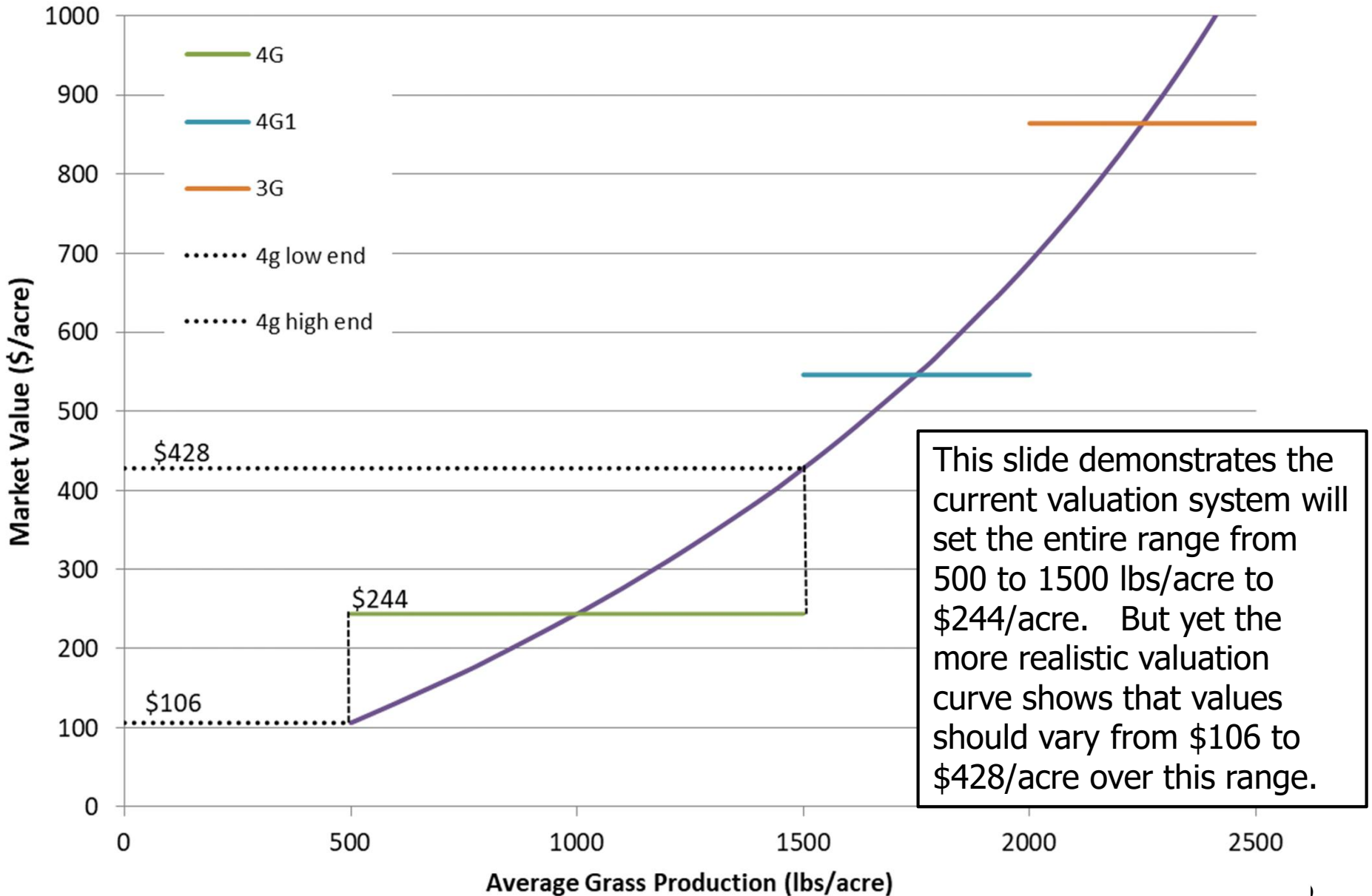
Nebraska Grassland Productivity vs. Value

State Wide Curve Overlaid with Grassland LCG Bands



Nebraska Grassland Productivity vs. Value

4G LCG Focus - Value Bounds



4G LCG – 500 to 1500 lbs/acre

- Constant Valuation of \$244 from 500 to 1500 lbs/acre is Unreasonable
 - Results from previous slide shows that values should range from \$106/acre to \$428/acre
- Income Approach to Confirm

Income Approach

Double Check – 4G – 500 to 1500 lbs/acre

- Already Established – Grassland for Generating Income
- Focus on 500 to 1500 lbs/acre Region
 - Average yield = 1000 lbs/acre
 - Average valuation (previous slide) = \$244/acre
 - Income rental rate
 - Nebraska Farm Real Estate Report Northwest 2019-2020
 - \$37.90/ cow-calf pair = \$30.32/AUM
 - Morrill County typical rental rate (well watered)
 - \$45/ cow-calf pair = \$36/AUM
 - Expenses
 - Maintenance – fences, wells = \$1.10/acre
 - Management – 10% gross income

Income Approach - Continued

Double Check – 4G – 500 to 1500 lbs/acre

- **Loaded Capitalization Rate** (not including property taxes)
 - Based on previous slide figures
 - Mid point forage production of 1000 lbs/acre
 - Mid point value of \$244/acre
 - Resulting loaded capitalization rate = 4%
- **Value Based on Income Approach**
 - 500 lbs/acre
 - \$108/acre (close to value predicted by curve of \$106)
 - 1500 lbs/acre
 - \$378/acre (falls somewhat short of curve value of \$428)
- **Income Approach Confirms that a Constant Value Should Not be Used for This Entire Range 500 lbs/acre to 1500 lbs/acre**

Income Approach - Continued

Impact on Taxes

- Constant Valuation of \$244/acre on Property Tax (the mid-point)
 - Tax as a Percent of Gross Income
 - 500 lbs/acre = 51.5%
 - 1000 lbs/acre = 25.8%
 - 1500 lbs/acre = 17.2%
 - Tax as a Percent of Net Income
 - 500 lbs/acre = 255%
 - 1000 lbs/acre = 47%
 - 1500 lbs/acre = 26%

4G LCG Band

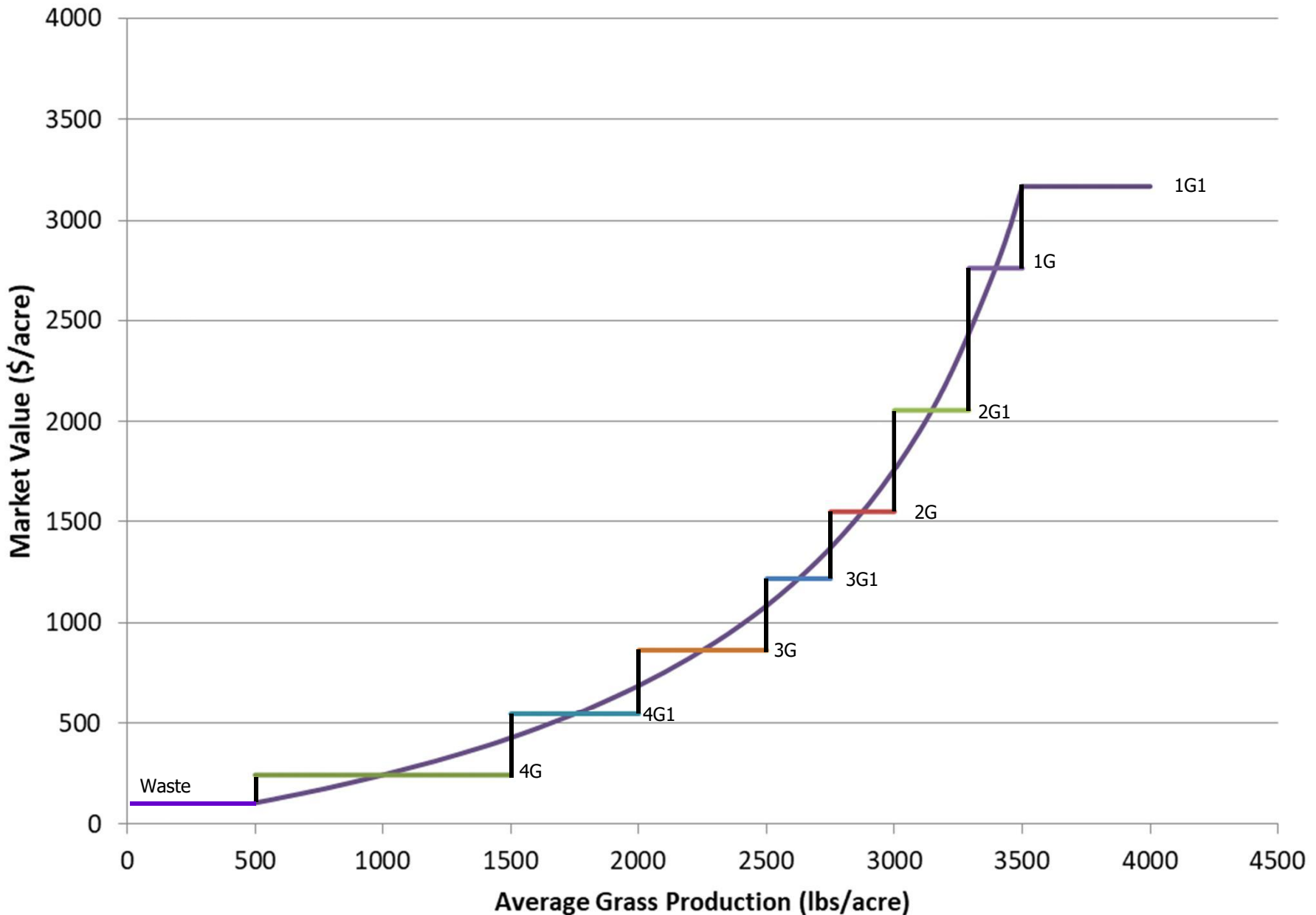
- Improper Range Rating – 500 to 1500 lbs/acre
 - Factor of 3 difference in gross income
 - Factor of 4 difference in value (based on sales data)
- Low end soils are easily being over valued by a factor of 2 and therefore over taxed by a factor of 2.
- This does not meet USPAP Standards and therefore does not qualify for “Professionally Accepted Mass Appraisal”
- Nebraska Constitution Article VIII ? Taxes shall be levied by valuation and uniformly and proportionate upon all property

Breakpoint Issue for All Grassland LCGs

- 4G – Obviously incorrect with a factor of 3 variation in gross income
- Higher producing soils have an issue as well
 - Slope of state wide grassland curve get much steeper at the high end
 - Relatively small changes in production result in large changes in value

Nebraska Grassland Productivity vs. Value

Current Stair Step Valuation vs. Continuous Curve



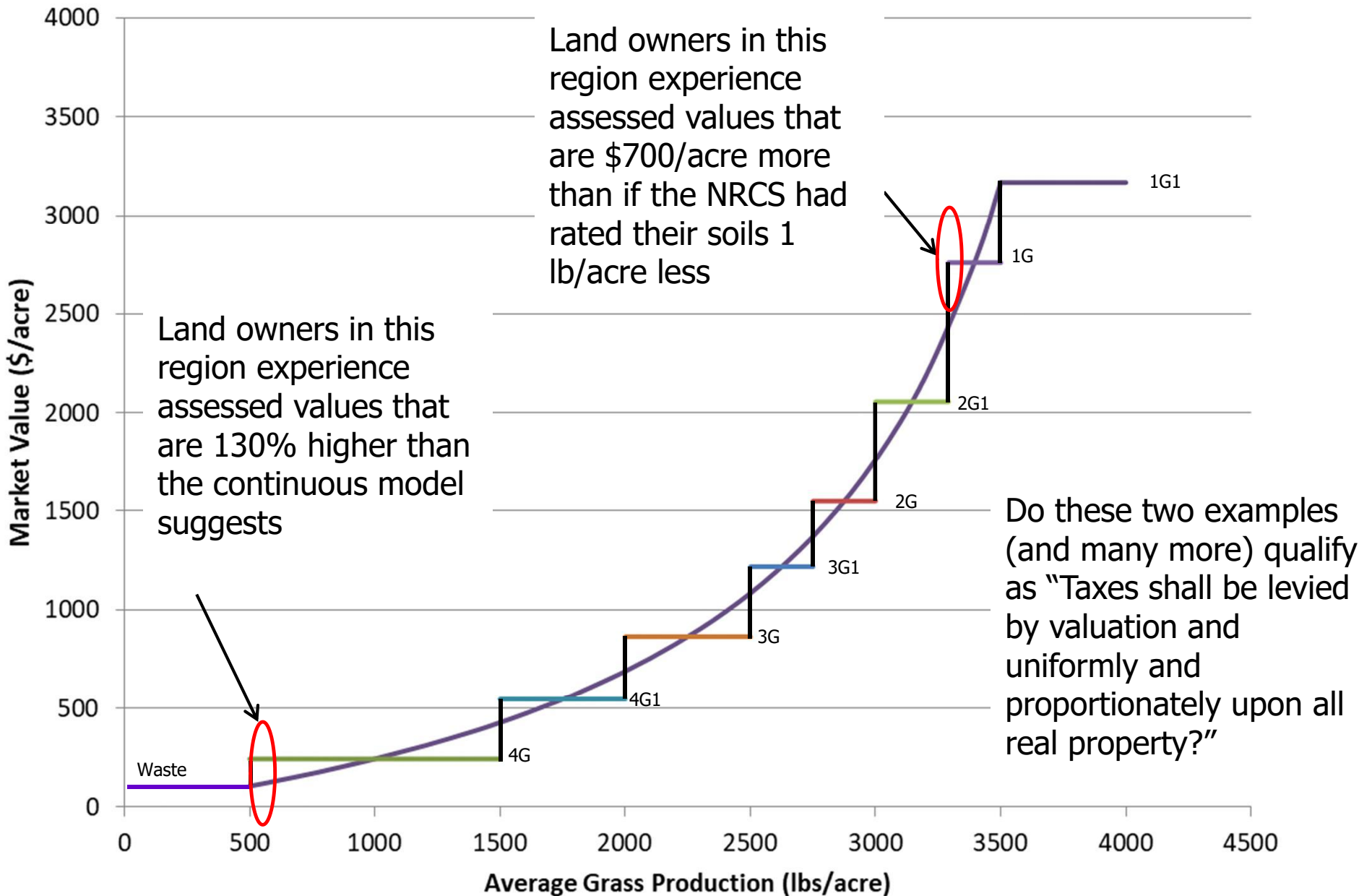
Stairstep Valuation Error

	LCG Value Ranges Based on Given Model			Valuation Error	
	Low end	MidPoint	High end	Low end	High End
1G	2425	2759	3168	14%	-13%
2G1	1760	2056	2428	17%	-15%
2G	1372	1550	1760	13%	-12%
3G1	1085	1218	1372	12%	-11%
3G	689	864	1085	25%	-20%
4G1	428	546	689	28%	-21%
4G	106	244	428	130%	-43%

- Nebraska Constitution Article VIII ? Taxes shall be levied by valuation and uniformly and proportionate upon all property

Nebraska Grassland Productivity vs. Value

Current Stairstep Valuation vs. Continuous Curve



Stairstep Valuation Strategy is Antiquated

- Historical Use of Stairstep Valuations
 - Perhaps worked okay when land valuations were relatively low
 - Perhaps worked okay when real estate taxes were a low percentage of yearly income
- A Stairstep Valuation Strategy No Longer Works
- Does Not Qualify as a Professionally Accepted Mass Appraisal Method
- Does not meet Article VIII of Nebraska Constitution

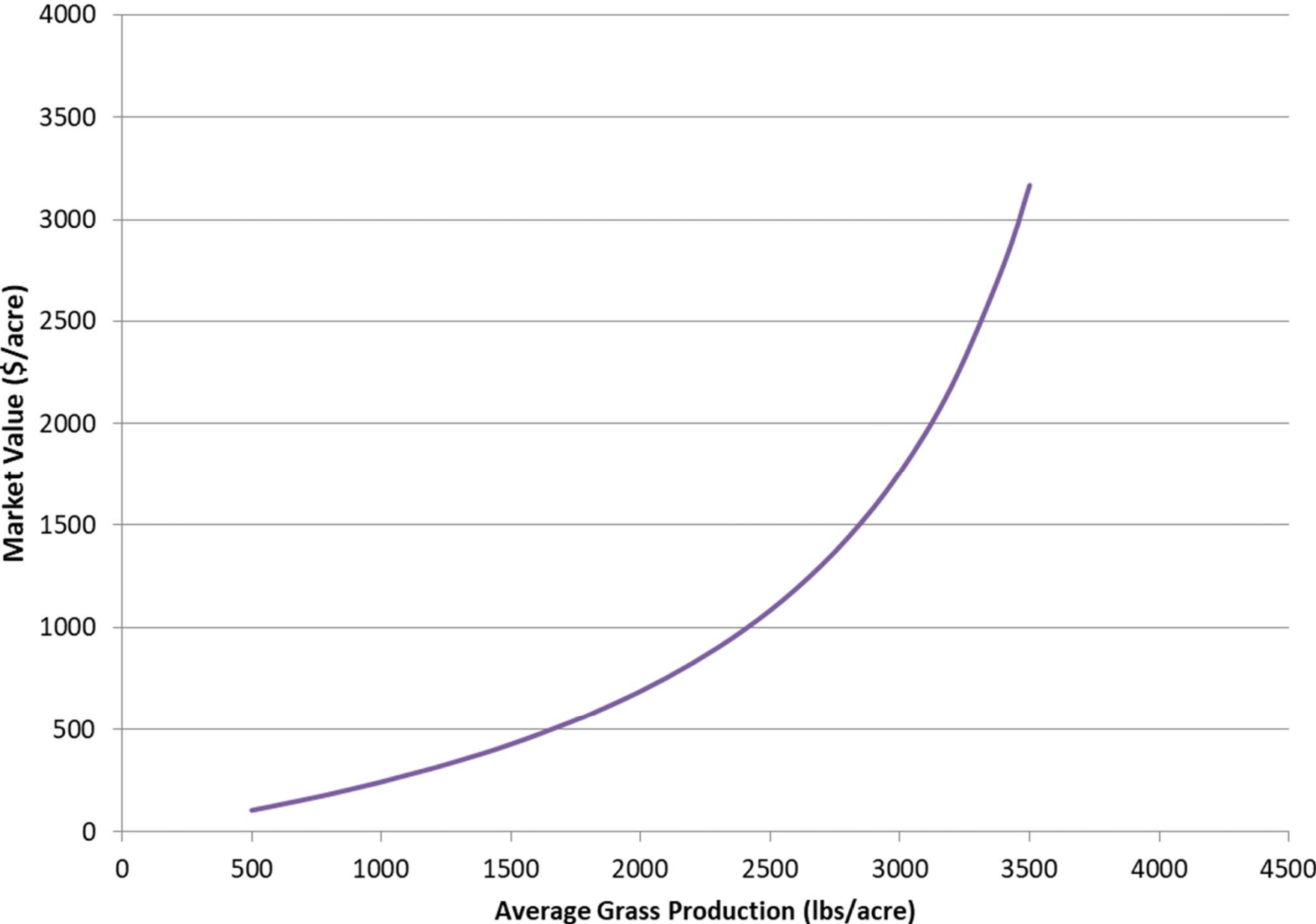
Valuation Method Revision Needed

■ Easy Solution

- Move to statewide valuation model
- Keep many elements of current system
 - Tracking of sales
 - Sales statistics
 - Etc.
- Abandon stairstep values – antiquated approach

Nebraska Grassland Productivity vs. Value

State Wide Valuation Model



Conclusion

- **Stairstep Valuation Strategy No Longer Works**
 - Results in some landowners land being overvalued by hundreds of dollars
 - Results in some landowners land being overvalued by 100% of what it should be
- **Continuous Valuation Strategy Needs to be Implemented**
 - Will eliminate discontinuous steps
 - Will facilitate broader than county wide model
 - Works better with limited sales
 - Will meet the law

