

Procedures Used to Calculate Agricultural Use Value for Crop Land in Mississippi

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Procedures Used to Calculate Ag Use Value for Crop Land in Mississippi

- Why use values are developed.
- Procedures for calculation of agricultural use value for Mississippi Department of Revenue Report.
- Current estimated net returns and agricultural use values.
- Conclusion / Questions?



Why Develop Use Values?

- Producers realize value from farmland based on net farm income while the actual farm real estate value is partially affected by factors unrelated to the practice of farming.
- Farmland values may be significantly influenced by non-farm market forces such as urban, industrial, recreational and speculative demand for land.
- Proponents of use value assessments of farmland believe that farmers, provided that they are serious about farming the land, should not be placed in a position where it would be more advantageous to sell farmland than to farm it.



Why Develop Use Values? (continued)

- MS Code § 27-35-50 (2015) (b) In arriving at the true value of any land used for agricultural purposes, the appraisal shall be made according to its use on January 1 of each year, regardless of its location; in making the appraisal, the assessor shall use soil types, productivity and other criteria set forth in the land appraisal manuals of the State Tax Commission, which criteria shall include, but not be limited to, an income capitalization approach with a capitalization rate of not less than ten percent (10%) and a moving average of not more than ten (10) years.
- Current procedure is to use 10% capitalization rate and 3 year moving average



Why Develop Use Values? (continued)

- Since the early 1980's the Mississippi Department of Revenue has contracted with Mississippi State University to calculate agricultural use values employing the income capitalization method.
- The agricultural use values calculations follows the guidance of the Mississippi Department of Revenue Appraisal Manual.
- This guidance is very similar to the owner-operator gross income approach laid out by the American Institute of Real Estate Appraisers in "The Appraisal of Rural Property".



Example Ad Valorem Taxes for Payment in 2018 for Lower Delta Land Parcel

Reported Washington County 2018 Total Millage Rate



LCC	Acres in Parcel	Use Value - \$/acre	True Value - \$	Assessment Rate	Assessed Value - \$	Millage Rate	Ad Valorem Tax
I	-	\$ 2,718	\$ -	15%	\$ -	126.53	\$ -
II	-	\$ 1,602	\$ -	15%	\$ -	126.53	\$ -
III	414.62	\$ 535	\$ 221,822	15%	\$ 33,273	126.53	\$ 4,210.07
IV	112.06	\$ 226	\$ 25,326	15%	\$ 3,799	126.53	\$ 480.67
	526.68		\$ 247,148		\$ 37,072		\$ 4,690.74



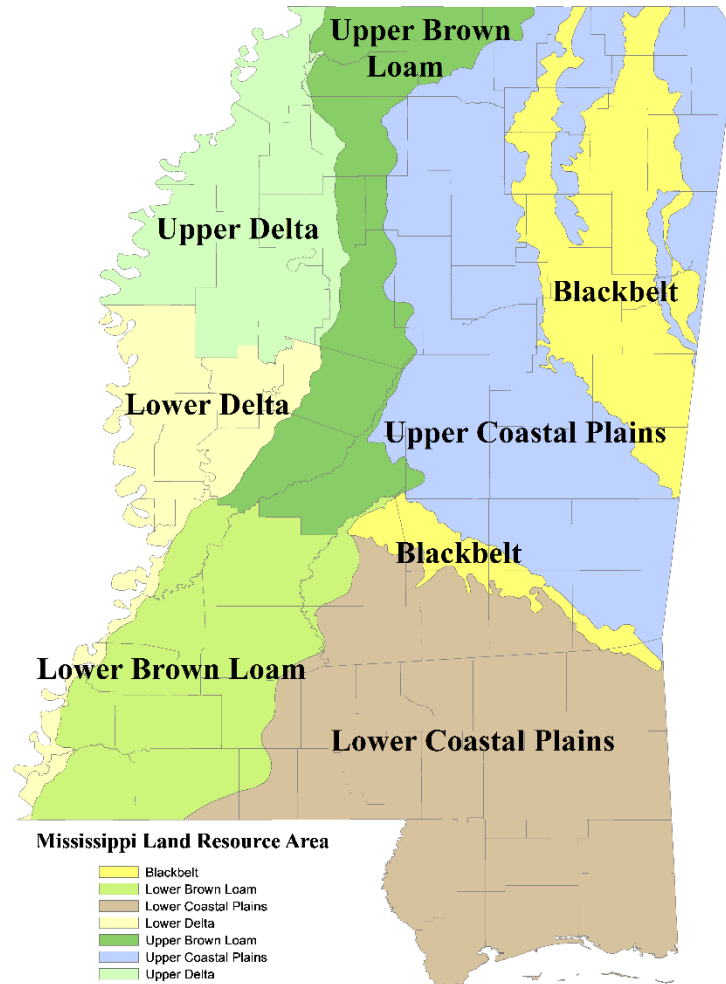
Agricultural Use Values calculated based on 2014-2016 net returns to land.



Assessed Value is Total Ag Use Value (True Value) multiplied by statutory 15% assessment rate.



Mississippi Land Resource Areas for Purpose of Agricultural Use Valuation



Procedures for Calculation of Agricultural Use Value for Mississippi Department of Revenue Report

- 1. The net return to the land is calculated for each of the 7 LRAs.
- 2. Any crop with acreage that makes up less than 5% of the total acreage planted in each LRA is excluded from the net return to land calculation for that LRA.
- 3. Direct and Fixed Expenses are calculated using survey data.
- 4. Net returns to land are calculated for Land Capability Classifications (LCC) I, II, III & IV for each LRA.



Determining Income and Production Cost Estimates

- Income per acre for each crop is based on a yield estimate for each LCC by LRA and the annual price received in Mississippi, which is published by USDA-NASS.
- The weighted average yield for a crop is the total production reported by USDA-NASS for the counties included in the LRA divided by the total planted acreage of that crop in a LRA.



USDA-NASS Surveys

- Completed and useable field surveys of approximately 30 to 120 farmers depending on crop
- The field operations and input quantities from the surveys are used to generate total direct and total fixed costs per acre estimates by crop
- Each farm for a given crop in a LRA is weighted by a farm expansion factor calculated by USDA-NASS to produce the final direct cost and fixed cost estimates that make up the production cost for each LRA.



Five Recent Changes

1. State law that limits the change in use value change from one year to next changed from a 10% limit to 4%.

DOR changes for this year

2. Exclude farm program payments from revenue
3. Clarified that we exclude crop insurance payments from revenue
4. Increase the management charge from 10% to 25% of variable, machinery, general farm overhead cost.
5. Some clarifying language on the computation of the returns to a composite acre for a land



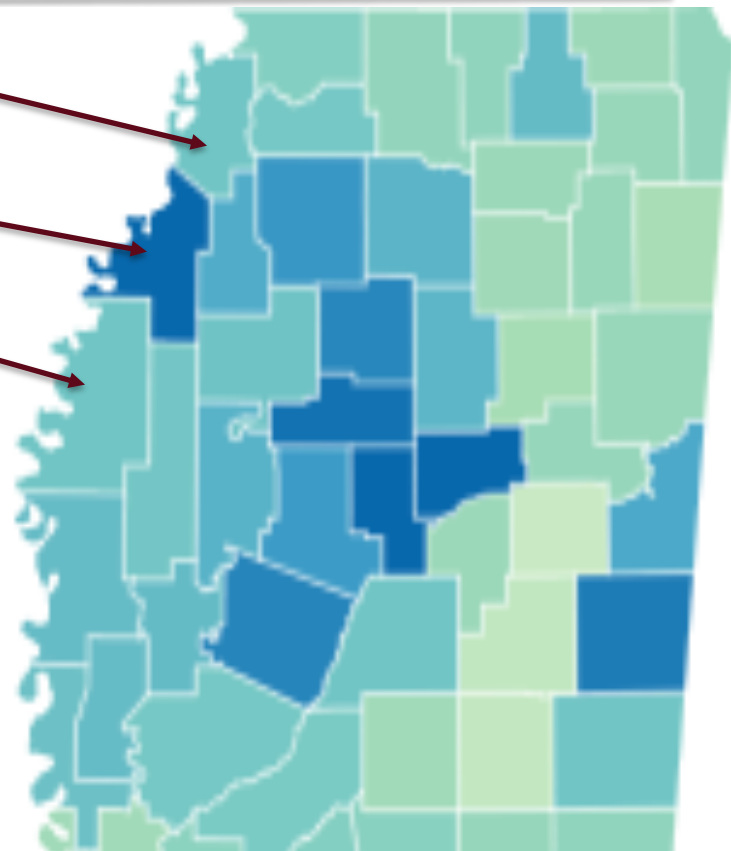
Example of 2019 Mississippi MFP County Payments that will not be included in Revenue

Tunica \$103

Coahoma \$150

Bolivar \$103

Average Delta crop insurance indemnity for 2015-2019 -- \$34.57

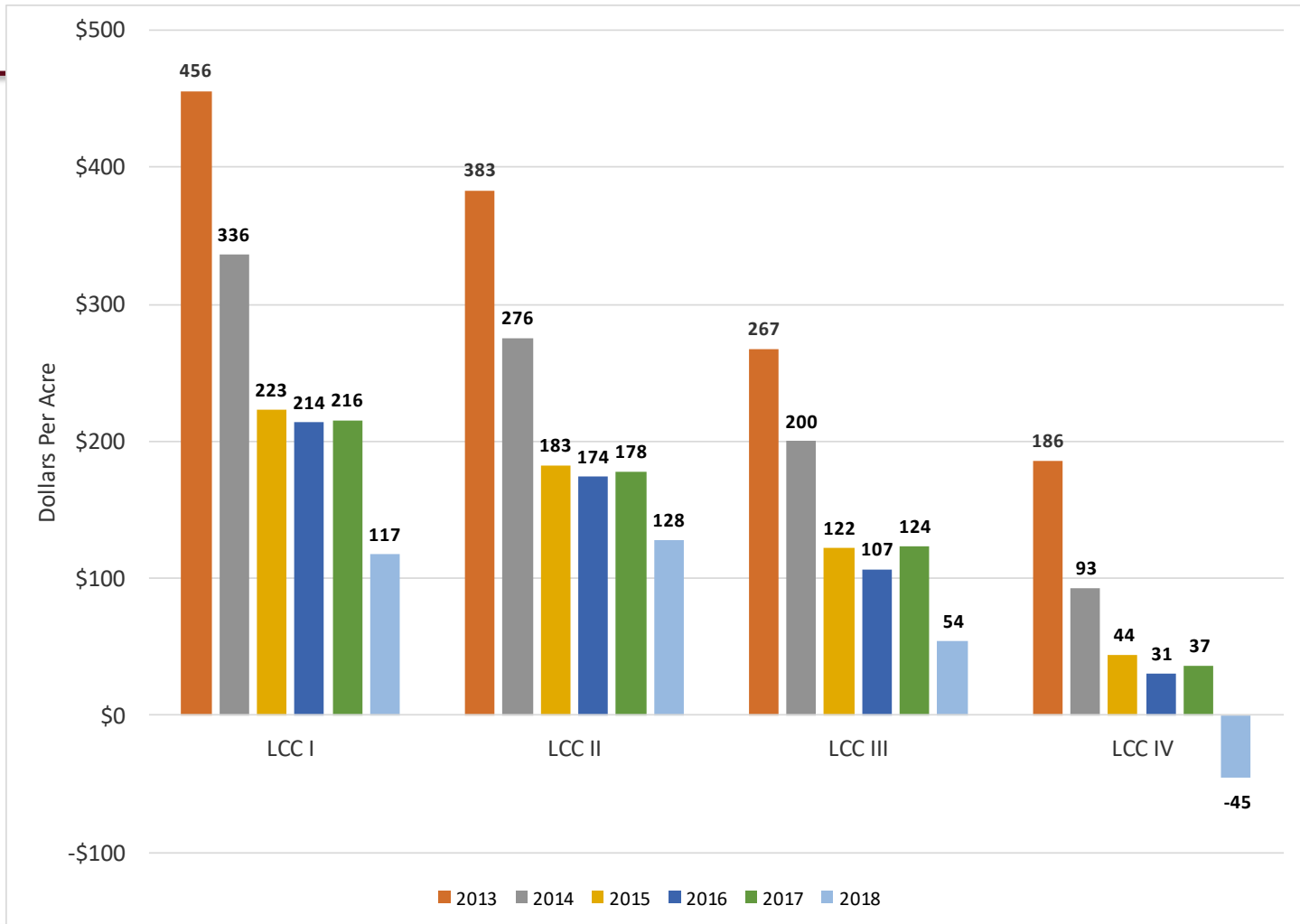


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Lower Delta Net Return to Land



2010-2018 Net returns

Net Return to Land by LRA and Class (\$/acre)		2010	2011	2012	2013	2014	2015	2016	2017	2018
Upper Delta	I	269.10	329.45	384.77	369.33	266.14	238.80	218.62	220.84	102.06
Upper Delta	II	253.89	301.20	364.12	344.23	250.12	226.40	209.67	205.76	111.51
Upper Delta	III	139.95	189.61	237.62	251.98	155.56	135.98	81.63	114.04	-1.58
Upper Delta	IV	84.21	125.76	160.02	182.73	86.26	74.34	18.11	46.20	-29.62
Lower Delta	I	319.13	388.47	360.81	455.70	336.02	222.63	213.66	215.56	117.38
Lower Delta	II	262.42	325.33	298.56	383.12	275.55	182.63	174.05	178.00	127.81
Lower Delta	III	169.17	223.76	195.62	267.42	199.95	122.21	106.86	123.64	54.07
Lower Delta	IV	105.40	143.58	120.62	185.60	93.18	44.45	30.78	36.56	-45.14

Capped use value for Upper Delta LCC II in 2019 was \$1,683 so 2020 use value of \$1,756 led to 4% increase.

Capped use value for Lower Delta LCC II in 2019 was \$1,666 so 2020 use value of \$1,599 led to 4% decrease.

Higher net return in 2018 for LCC II relative to LCC I in Upper and Lower Delta primarily due to difference in lower estimated real estate taxes for LCC II.

We also believe that the elimination of all government and crop insurance payments from the net returns added to what we think is a one-time distortion.



Net Return Moving Averages

Net Return to Land by LRA and Class (\$/acre)				2015-2017	2016-2018		Possible 2017-2019	
Region		2017	2018	Average	Average	Change	Average	Change
Upper Delta	I	220.84	102.06	226.09	180.51	-20%	141.65	-37%
Upper Delta	II	205.76	111.51	213.94	175.64	-18%	142.93	-33%
Upper Delta	III	114.04	-1.58	110.55	64.69	-41%	36.96	-67%
Upper Delta	IV	46.20	-29.62	46.22	11.56	-75%	-4.35	-109%
Lower Delta	I	215.56	117.38	217.28	182.20	-16%	150.11	-31%
Lower Delta	II	178.00	127.81	178.23	159.95	-10%	144.54	-19%
Lower Delta	III	123.64	54.07	117.57	94.86	-19%	77.26	-34%
Lower Delta	IV	36.56	-45.14	37.26	7.40	-80%	-17.90	-148%



Final Outcomes for 2020

Table 1. Use Values for Cultivable Land (\$/acre) by Soil Resource Area and Land Capability Class, Prior to 4% Cap, 2020.

<i>Resource Area</i>	<i>Class I</i>	<i>Class II</i>	<i>Class III</i>	<i>Class IV</i>	<i>Other</i>
Upper Delta	1805	1756	646	125	125
Lower Delta	1822	1599	948	125	125

Table 2. Use Values for Cultivable Land (\$/acre) by Soil Resource Area and Land Capability Class, 2019.

<i>Resource Area</i>	<i>Class I</i>	<i>Class II</i>	<i>Class III</i>	<i>Class IV</i>	<i>Other</i>
Upper Delta	2251	1683	973	340	170
Lower Delta	2609	1666	556	235	125

Table 3. Use Values for Cultivable Land (\$/acre) by Soil Resource Area and Land Capability Class, 2020.

<i>Resource Area</i>	<i>Class I</i>	<i>Class II</i>	<i>Class III</i>	<i>Class IV</i>	<i>Other</i>
Upper Delta	2160*	1750*	934*	326*	163
Lower Delta	2504*	1599	578*	225*	125

* This year's values were constrained to be within 4% of last year's values.

Notes: "Other" category values are computed to be equal to one-half of Class IV values.

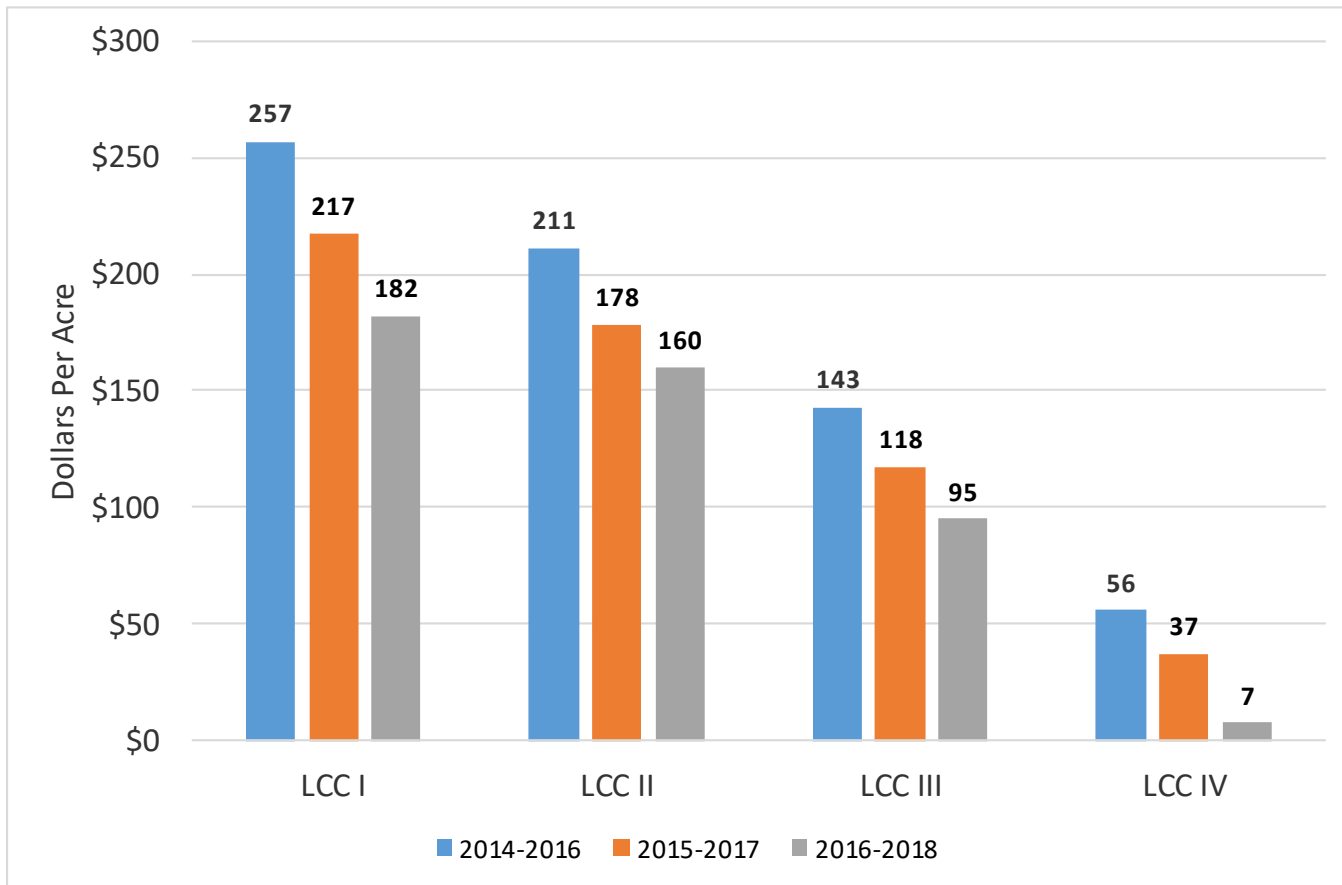
If necessary, a minimum value of \$125 per acre was imposed.

These values were estimated during 2019 using data from 2016-2018.

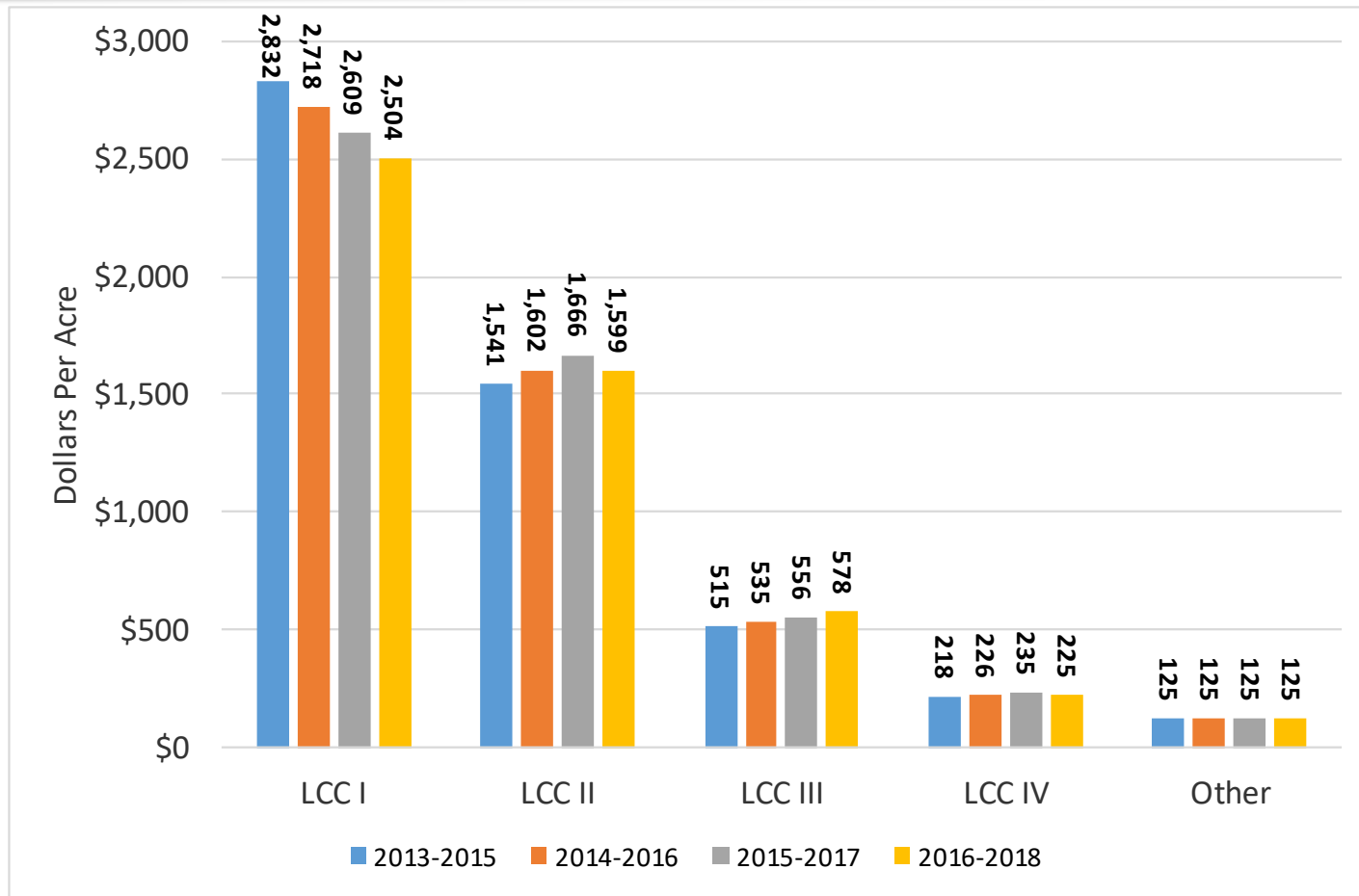
These values are to be provided to counties in January 2020.



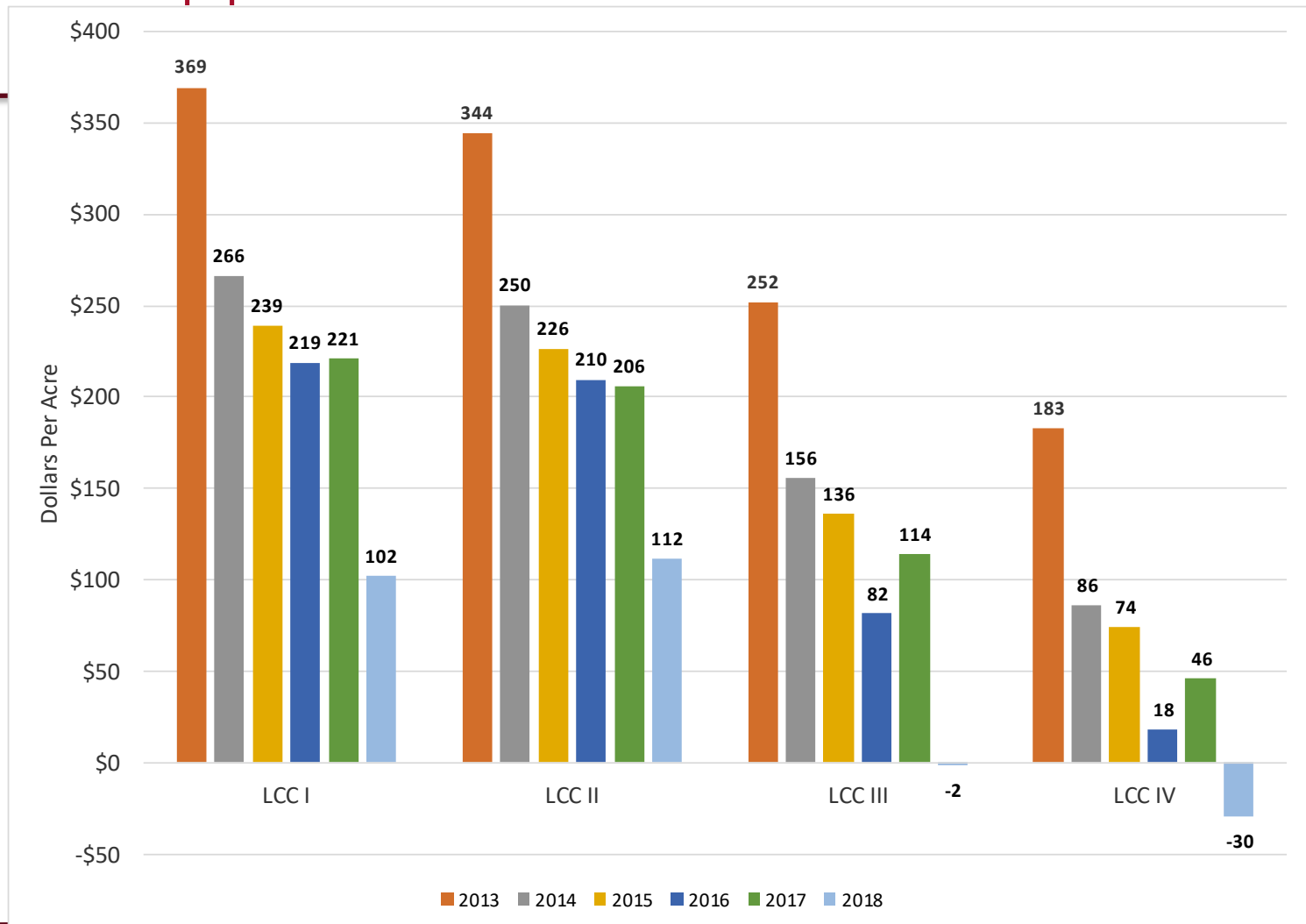
Three Year Average Net Returns to Cultivable Land (\$/acre) for Lower Delta Land Resource Area by Land Capability Class



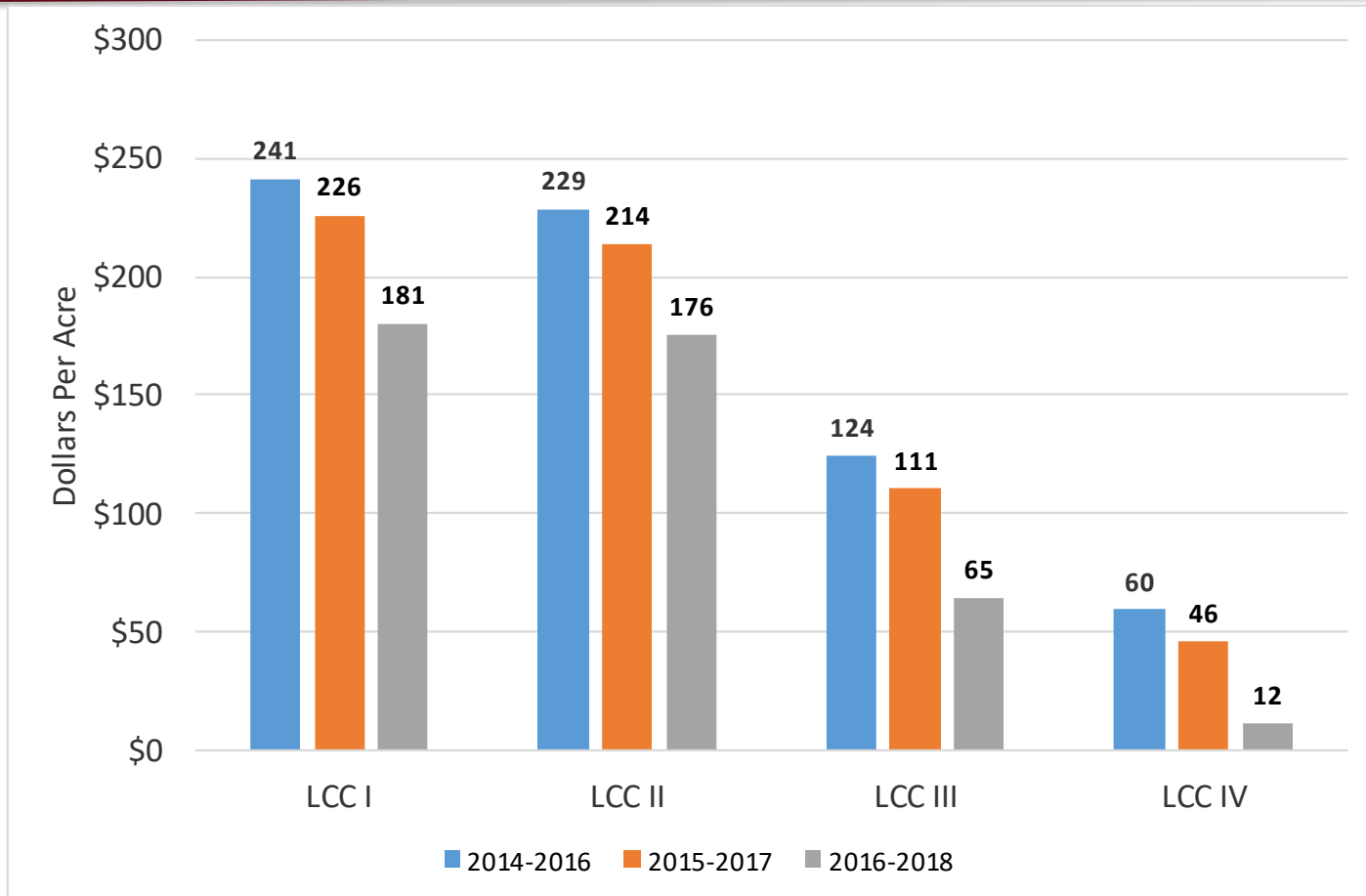
Use Values for Cultivable Land (\$/acre) for Lower Delta Land Resource Area by Land Capability Class



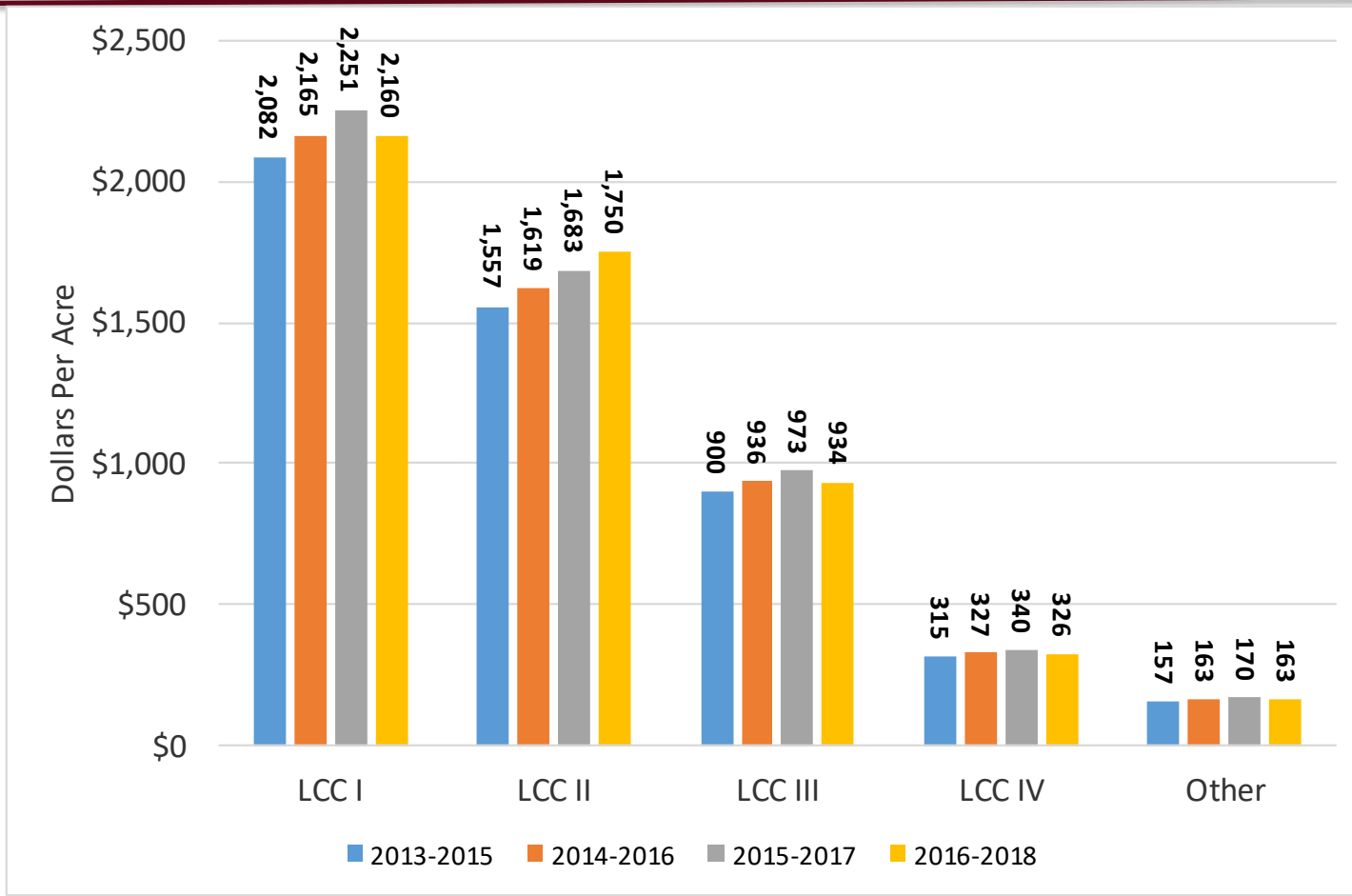
Upper Delta Net Return to Land



Three Year Average Net Returns to Cultivable Land (\$/acre) for Upper Delta Land Resource Area by Land Capability Class



Use Values for Cultivable Land (\$/acre) for Upper Delta Land Resource Area by Land Capability Class



Comparison to Other States

Item	Alabama	Arkansas	Louisiana	Mississippi
Income Capitalization Approach Used	Owner-Operator Gross Income	Landlord-Tenant Gross Income	Owner-Operator Gross Income	Owner-Operator Gross Income
Areas Within State for Which Ag Use Values are Calculated	1 Statewide	4 Based on U.S. Forest Service Regions	1 Statewide.	7 Areas Based on Modified NRCS Major Land Resource Areas (LRA)
Crops Used in Ag Use Valuation Calculation	Top 3 by Acreage for Current Year	Soybeans	All crops and livestock	Must be greater than 5% of Plantings in Each LRA
Prices Used in Gross Revenue Calculations	10 Year NASS State Marketing Year Average	10 Year NASS State Marketing Year Average	NASS State Marketing Year Average	NASS State Marketing Year Average
Yields Used in Gross Revenue Calculations	10 Year NASS State Average	USDA-NRCS average bushel per acre of soybeans for each soil type	NASS State Average	NASS County
Government Payments Included in Revenue	NO	NO	NO	NO – All payments excluded in latest calculations
Cost Estimates	Adjusted USDA-ERS Estimates for Top 3 Crops	75% share of gross returns	LSU AgCenter Budgets	Updated Annually Using NASS Cropping Practice Survey Data
Net Returns Adjusted for Land Productivity	Increased 20% for good productivity rating, decreased by 30% for poor, decreased 75% for nonproductive and unchanged for average.	USDA-NRCS soybean yields by Land Capability Class (LCC)	Index based on USDA-NRCS yields for soils in each LCC	Index based on USDA-NRCS yields for each LCC in each LRA
Years of Net Returns Averaged for Use Value	10 Years	10 Years	4 Years	3 Years
Capitalization Rate to Calculate Ag Use Value	10 year moving average of Farm Credit System Rates	Not less than 8% or more than 12%	12%	Not less than 10%
Assessment Rate*	10%	20%	10%	15%



Questions?



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