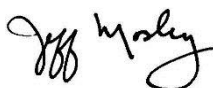


**MEMORANDUM**

**TO:** Amanda Funke  
Montana Department of Revenue

**FROM:** Jeff Mosley  
Extension Range Management Specialist



**DATE:** June 20, 2024

**SUBJECT:** Agricultural Property Tax Classification

As required by Montana statute (15-7-2022 MCA), I estimated the number of Animal Unit Months (AUMs) necessary to generate \$1500 in annual gross income.

I obtained cattle price data from the USDA Agricultural Marketing Service and the Livestock Marketing Information Center. From 2014–2023 in Montana, the 10-year Olympic average for calves was \$185.60 per hundred weight and the 10-year Olympic average for slaughter cows was \$74.02 per hundred weight (Table 1).

Table 1.

Year	Calf Price (cwt)	Cow Price (cwt)
2023	\$249.08	\$91.85
2022	\$188.32	\$76.10
2021	\$164.42	\$61.13
2020	\$156.43	\$58.25
2019	\$163.28	\$61.70
2018	\$166.47	\$63.36
2017	\$159.78	\$66.41
2016	\$156.44	\$73.23
2015	\$249.11	\$98.40
2014	\$237.05	\$107.38
Olympic Average	\$185.60	\$74.02

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Spreadsheet results are shown in Table 2 for 6 alternative management scenarios with 1200-lb cows:

Alternative 1: raise own replacements and account for calf forage consumption

Alternative 2: raise own replacements but do not account for calf forage consumption

Alternative 3: purchase replacements and account for calf forage consumption

Alternative 4: purchase replacements but do not account for calf forage consumption

Alternative 5: purchase bred cows (no bulls or replacements) and account for calf forage consumption

Alternative 6: purchase bred cows (no bulls or replacements) but do not account for calf forage consumption

The Olympic average from the 6 alternatives in Table 2 is 22.08 AUMs. Alternatives 3 and 4 are the most typical of small beef cattle operations, and the average for Alternatives 3 and 4 is 21.80 AUMs.

Recommendation: In the 2025-2026 appraisal cycle, the Montana Department of Revenue (MDR) should consider using 22 AUMs as the minimum number of AUMs necessary to generate \$1500 of annual gross income.

Table 2.

Calculate Minimum AUMs to Meet Revenue Threshold						
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
<b>Herd Composition, Weight, and Prices</b>						
Cows	1	1	1	1	1	1
Bulls (1 bull per 25 cows)	0.04	0.04	0.04	0.04	0	0
Replacement Heifers (18% replacement rate)	0.18	0.18	0.18	0.18	0	0
Calves Weaned (91% weaning percentage)	0.91	0.91	0.91	0.91	0.91	0.91
Cow Weight (1200 lbs)	1200	1200	1200	1200	1200	1200
Calf Weight (45% of cow weight)	540	540	540	540	540	540
Olympic Average Cow Price cwt (2014-2023)	74.02	74.02	74.02	74.02	74.02	74.02
Olympic Average Calf Price cwt (2014-2023)	185.60	185.60	185.60	185.60	185.60	185.60
Calves Sold (calves weaned - replacements)	0.73	0.73	0.91	0.91	0.91	0.91
Cow Death Loss (1%)	0.01	0.01	0.01	0.01	0.01	0.01
Cows Sold (replacements - cows died)	0.17	0.17	0.17	0.17	0.17	0.17
<b>Animal Unit Months (AUMs)</b>						
Animal Unit Equivalent - Cows	1.2	1.2	1.2	1.2	1.2	1.2
Animal Unit Equivalent - Bulls	1.5	1.5	1.5	1.5	0	0
Animal Unit Equivalent - Replacement Heifers	0.85	0.85	0.85	0.85	0	0
Animal Unit Equivalent - Calves	0.3	0	0.3	0	0.3	0
Cow AUM (cow AUE x 1.0)	1.2	1.2	1.2	1.2	1.2	1.2
Bull AUM (bull AUE x 0.04)	0.06	0.06	0.06	0.06	0	0
Replacement Heifer AUM (replacement heifer AUE x 0.18)	0.15	0.15	0.15	0.15	0	0
Calf AUM (calf AUE x 0.91)	0.27	0	0.27	0	0.27	0
Grazing Months	10	10	10	10	10	10
Total AUMs (sum of cow, bull, heifers, and calf AUMs)	16.8	14.1	16.8	14.1	14.7	12
<b>Revenue</b>						
Calf Revenue (calf weight x calf price x calves sold/100)	731.64	731.64	912.04	912.04	912.04	912.04
Cow Revenue (cow weight x cow price x cows sold/100)	151.00	151.00	151.00	151.00	151.00	151.00
Total Revenue per Cow (calf revenue + cow revenue)	882.64	882.64	1063.04	1063.04	1063.04	1063.04
Revenue per AUM (total revenue per cow / total AUMs)	52.54	62.60	63.28	75.39	72.32	88.59
Minimum Revenue Threshold	1500	1500	1500	1500	1500	1500
AUMs Needed (minimum revenue/revenue per AUM)	28.55	23.96	23.71	19.90	20.74	16.93
Alternative 1: raise own replacements and account for calf forage consumption						
Alternative 2: raise own replacements but do not account for calf forage consumption						
Alternative 3: purchase replacements and account for calf forage consumption						
Alternative 4: purchase replacements but do not account for calf forage consumption						
Alternative 5: purchase bred cows (no bulls or replacements) and account for calf forage consumption						
Alternative 6: purchase bred cows (no bulls or replacements) but do not account for calf forage consumption						