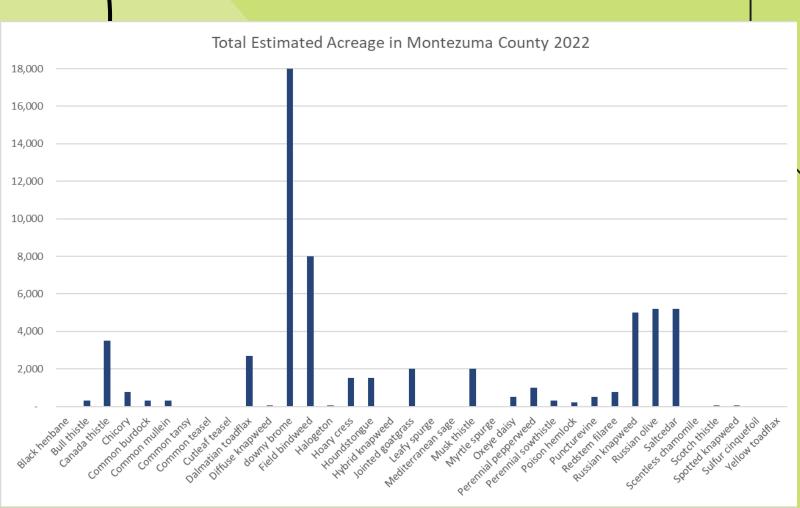
Noxious Weeds Impact on Montezuma County Economy

By Bonnie Loving



In Montezuma County (MC) there are 36 known species of designated noxious weeds.



The data we have for you today only includes Montezuma County Noxious Weed Department (MCNWD) inventory data for Canada thistle, Dalmatian toadflax, downy brome, hoary cress, musk thistle, Russian knapweed, Russian olive, saltcedar, and jointed goatgrass.

	2015-2020 Noxious Weed	Total Acreage in Montezuma
	Acreage	County
Wheat	3,786	13,547
Other Crops	468	6,214
Rangeland	22,870	641,280
Corn	278	3,348
Alfalfa	5,705	42,659
Grass Hay	4,218	14,259
Forest	4,141	519,335

How much money is MC losing from decreased crop yield and crop quality? \$3,710,189.16

Data Sources: Multiple Sources that can be found on original Economic Assessment Document

				_								_	
							Reduced						
	MC	Average				Average	Price From	To	otal Revenue if no				
	Acreage	(Unit) Per	Units /	Avera	age Cost	Loss in	Lower		Noxious Weed	To	tal Revenue With	Year	ly Economic Loss
	Infested	Acre	acre	pe	r Unit	Yield	Quality		Species		Weed Species	0	ue to Weeds
Winter Wheat	3,786	27.0	BU	\$	4.62	0.27	4.22	\$	472,265.64	\$	314,905.09	\$	157,360.55
Alfalfa	5,705	3.4	tons	\$ 2	09.00	-	125.40	\$	4,053,973.00	\$	2,432,383.80	\$1	,621,589.20
												\$1	799662.00
Grass Hay	4,218	2.4	tons	\$ 2	12.00	0.12	139.90	\$	2,146,118.40	\$	1,246,287.40	for	2 cuttings
Corn	278	116.0	BU	\$	4.62	0.27	-	\$	148,985.76	\$	108,759.60	\$	40,226.16
Other Crops	468	82.5	BU	\$	4.55	0.52	-	\$	175,675.50	\$	84,324.24	\$	91,351.26
Total Loss												\$3	,710,189.16

Economic Impacts of Noxious weeds on Rangeland

\$131,447.68

Data sources: CSU Livestock and Range App

ſ		Average Forage					Pounds of Hay		
		Production	AUM per acre	Total Loss of	AUM for		Needed for a	Cost of	Cost of Hay
	Rangeland	Level AUM per	Decreased From	AUM due to	Cow/Calf 185	Loss in Cows	Cow/Calf for 185	7,400 lbs of	Needed for Loss in
	Acres	acre	Weeds	Weeds	days	Supported	Days	Cow Hay	Cows
	22,870	0.2045	0.12	1842.64	7.78	236.84	7400.00	550	\$ 131,447.68



Possible Economic Impact on Hunting? \$97,206.47

Data sources: Parks and Wildlife Data; CSU Livestock and Range App

		PalatableVeg				
	Palatable	With Weeds	Deer Annual	Deer Supported	Deer Supported	Loss of Deer
Forest Acres	lbs/acre/year	lbs/acre/year	Intake (pounds)	With No Weeds	With Weeds	Due to Weeds
4,141	385	220	1725	924.22	528.13	396.10

Year	Deer Population Pre Hunt	# of Hunters	# of Deer Harvested	Ratio of Deer Harvested to Population #	Ratio of Hunters to Deer Population
2020	8180	1031	530	6.48%	13%
2019	7506	1076	546	7.27%	14%
2018	7027	931	547	7.78%	13%
2017	6886	987	596	8.66%	14%
2016	7066	988	606	8.58%	14%
Average	7333	1002.6	565	8%	14%

		# of Hunters	Difference in		
	Average Herd	With	Hunter #'s		
Loss of	Size + Deer	Additional	(1057-1003	Average	
Deer Due	Loss	Deer	(avg#	Revenue Per	Loss In
to Weeds	(7333+396)	(7729*14%)	hunters))	Hunter	Revenue
396	7729	1057	54	1795.37	\$97,206.47

What is the economic value of water savings by removing Russian olive and saltcedar?

\$1,163,651.46

	Estimated Water
Saltcedar (SC) and	Consumption of RO
Russian olive (RO)	and SC - in acre feet
combined acreage	per year
 7800	11544

How much water actually salvageable after removing trees?

It depends on site ecology, hydrology, and the species of replacement vegetation. It is complex, and no study will ever be able to come up with an accurate number because the variables change drastically. For this assessment we will be using an estimate of 20% of the water being salvageable.

11,544 X 20% = 2,308 acre feet

One share of water gives 3-4 acre feet of water per year, depending on the year.

acres to support on cow calf on rangeland for 185 days	cost of hay to support a cow calf pair for 185 days	acre of rangeland for	Average profit from grass hay - 2 cuttings per season	Hay Profit - Rangeland Profit per acre	Acreage that Could be Irrigated From Water Savings	Farming Expenses 50% of income	Profit from addition water
9.	6\$550.00	\$ 5.73	\$1,017.60	\$1,011.87	\$2,300.00	\$1,150.00	\$1,163,651.46
7	υ ψουο.ου	φο./ Ο	ψ1,017.00	ψ1,011.07	Ψ2,000.00	ψ1,100.00	\$1,100,031.40

Disclaimer

Bonnie Loving is not an economist, however she felt it was important an economic assessment was done in Montezuma County to show the impacts of noxious weeds. There are many variables that can still be taken into account.

These are all reserved numbers based off MCNWD inventory data, USDA Land Type, CSU, Parks and Wildlife, along with dozens of studies. A full report of this assessment, including sources and the steps taken to calculate these numbers, can be found at: www.montezumacounty.org/noxious-weed-program.

Variables that have not been analyzed by Bonnie are impacts on recreation, wildlife, aesthetics, land value, infrastructure (road, irrigation canal, waterway damage, etc...), and species that can increase frequency and intensity of wildland fires.

	2015-2020 Noxious Weed	Total Acreage in Montezuma	Loss of Revenue due
	Acreage	County	to weeds
Wheat	3,786	13,547	\$ 157,360.55
Other Crops	468	6,214	\$ 91,351.26
Rangeland	22,870	641,280	\$ 131,477.68
Corn	278	3,348	\$ 40,226.16
Alfalfa	5,705	42,659	\$ 1,621,589.20
Grass Hay	4,218	14,259	\$ 1,799,662.00
Forest	4,141	519,335	\$ 97,206.47
Water	7,800	N/A	\$ 1,163,651.46
Total			\$ 5,102,524.78



