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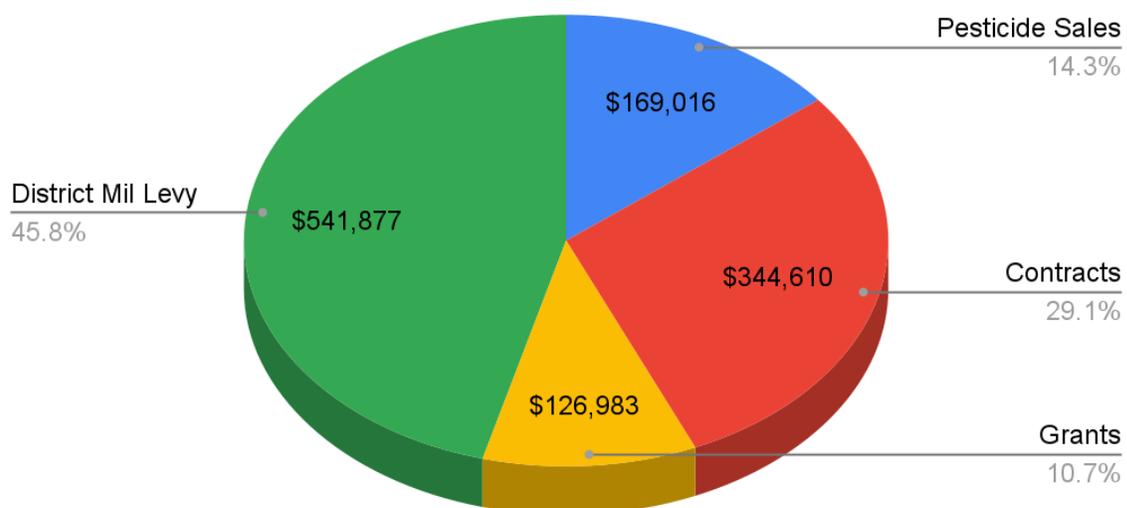
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Big Horn County Weed and Pest Control District 2021 Annual Report

Introduction

The purpose of this Annual Report is to highlight the District's efforts to control designated and declared weeds and pests in Big Horn County in 2021. The District utilized various funding sources, partnerships, and programs to fulfill its mission during the past year. The following sections will highlight the District's specific accomplishments in 2021. Some information from 2020 has also been provided for comparative purposes.

2021 District Income Sources



Grants

During the winter months, District full time employees spend a considerable amount of time applying for grant funding from a variety of sources. The table below displays each grant the District was awarded in the past two years and the acres of weeds treated with the provided funding.

Grant	2020 Amount	2020 Acres Treated	2021 Amount	2021 Acres Treated
Greybull Watershed—Whitetop and Leafy spurge	\$20,000	3,013.84	\$20,000.00	3,329.82
Rocky Mountain Elk Foundation	\$10,000	66.20	\$7,500.00	101.68
Grasshoppers IPM (Insecticide Only)			\$7,000.00	N/A
Horse Creek Pesticide Registration Fee Grant			\$15,000.00	202.9
Trapper Creek Pesticide Registration Fee Grant			\$25,000.00	95.71
Luman Creek Pesticide Registration Fee Grant			\$25,000.00	477.9
White Creek Pesticide Registration Fee Grant			\$25,000.00	279.66
Secure Rural Schools Resource Advisory Committee			\$2,482.97	1.36
Total	\$30,000.00	3,080.04	\$126,982.97	4,489.03



Contracts

In 2021 the District cooperated with various State, Federal, and County partners to manage designated and declared weeds and pests on public land and road rights of way. These partners provided funding for the District to perform herbicide treatments on the properties they manage. These treatments were carried out by District crews or private contractors hired by the District. The table below summarizes each contract the District fulfilled and the acres of weeds treated.

Contract	2020 Contract Amount Spent	2020 Acres Treated	2021 Contract Amount Spent	2021 Acres Treated
County Roads	\$35,885	675.75	\$30,000.00	1,152.26
WYDOT Noxious Weeds	\$15,503	93.30	\$14,176.33	42.51
WYDOT Sterilant and Annuals	\$40,375.00	783.29	\$29,596.02	512.5
Game and Fish	\$23,400.13	83.78	\$13,500.00	166.25
USFS	\$91,639.79	191.54	\$50,000.00	82.6
BLM	\$64,978.96	772.74	\$178,813.32	1,641.89
State Land	N/A	N/A	\$20,000.00	5,740.64
Totals	\$271,781.88	2,600.40	\$336,085.67	9,338.65



Cost Share Programs

In 2021, the District offered various cost share programs to private landowners and canal districts. Depending on the program, the District portion of the cost share is funded by mil levy, or grant dollars. The following tables summarize each cost share program that the District offered in 2021.

Cost Share Pesticide Sales	Total 2020 Pesticide Sales	2020 Landowner Portion	2020 W&P District Portion	Total 2021 Pesticide Sales	2021 Landowner Portion	2021 W&P District Portion
Canal Districts	\$16,551.00	\$8,275.65	\$8,275.65	\$9,820.19	\$4,910.10	\$4,910.10
Russian knapweed	\$18,634.00	\$3,726.89	\$14,907.55	\$25,194.89	\$5,038.98	\$20,155.91
Grasshoppers	\$9,100.12	\$4,550.06	\$4,550.06	\$13,000.32	\$6,500.16	\$6,500.16
Russian olive/Saltcedar	\$18,061.29	\$8,817.41	\$8,817.41	\$17,717.26	\$8,585.63	\$8,585.63
Grand Totals	\$62,346.41	\$25,370.01	\$36,550.67	\$65,732.66	\$25,034.87	\$40,424.80

Cost Share Treatment Programs	2020 Program Total Cost	2020 Landowner Portion	2020 W&P District Portion	2020 Treated Acres	2021 Program Total Cost	2021 Landowner Portion	2021 W&P District Portion	2021 Treated Acres
Priority Species 100%	\$23,375.88	0.00	\$23,375.88	9.96	\$12,317.52	\$0.00	\$12,317.52	52.34
District Canals 50%	\$30,476.81	15,238.40	\$15,238.40	252.15	\$17,049.05	\$8,524.53	\$8,524.53	253.68
Grand Totals	\$53,852.69	\$15,238.40	\$38,614.28	262.11	\$29,366.57	\$8,524.53	\$20,842.05	306.02



Special Management Program

Also in 2021, the District continued its special management program for leafy spurge and whitetop. The second mil levy collected by the district is used to fund this program. This program was largely successful. We were able to help many landowners reduce their acreage of whitetop and leafy spurge. Most leafy spurge infestations were treated twice during 2021 with the final treatment including aerial drone application of herbicide. District crews always search for patch expansion around the treatment sites. We prioritize our base funding toward the treatment of leafy spurge. We collect GPS data on all treatments which enables us to track patch size and location over time. We also make an evaluation of herbicide efficacy and research alternatives. Leafy spurge acreage fluctuates from year to year. This may be attributed to moisture, crew quality and plant phenology at the time of treatment. Herbicides applied at the correct timing are very effective for whitetop control. We measure our success by the number of landowners that we can serve. In the past, we have returned to properties for 2-3 years to treat any remaining plants. In many cases, maintenance is the responsibility of the landowner after we have helped them control the major infestations. We plan for long term success through education and by providing herbicides at reasonable rates. The table below summarizes the accomplishments of the District in 2021 in treating whitetop and leafy spurge.

2021 Special Management Program	Participating Landowners	Herbicide Cost	Application Cost	Acres Treated	District Cost	Cooperator Cost	Total Cost
Leafy Spurge	24	\$393.44	\$5,411.50	12.79	\$5,558.38	\$246.56	\$5,804.94
Whitetop	1670	\$39,786.55	\$110,956.08	2,130.47	\$63,014.73	\$15,590.65	\$150,742.63
Grand Totals	1,694	\$40,179.99	\$116,367.58	2,143.26	\$68,573.11	\$15,837.21	\$156,547.57



Unmanned Aerial Systems (UAS)

In 2021 the District continued to incorporate the use of drones in it's work and programs. A camera drone was used to scout for new weed infestations, and to inspect fields as part of the weed free products program. A sprayer drone was used to treat leafy spurge, spotted knapweed, purple loosestrife, and perennial pepperweed as part of the District's priority species program. At the District board's request, an analysis was done to compare the cost of conducting the District priority species program with ground based sprayers vs. with the sprayer drone. The tables below display the details of the analysis. In short, the use of the sprayer drone nearly halved the cost of conducting the priority species program.

2020 - 2021 Priority Species Program

Year	Labor Cost	Chemical Cost	Total Cost	Treated Acres
2020	\$23,009.90	\$365.97	\$23,375.88	9.96
2021	\$11,245.92	\$1,071.60	\$12,317.52	52.34

Leafy Spurge

Year	Labor Cost	Chemical Cost	Total Cost	Treated Acres	Total Savings
2020	\$7,509.27	\$54.59	\$7,563.85	1.67	\$2,252.03
2021	\$4,991.50	\$320.32	\$5,311.82	11.53	

Purple Loosestrife

Year	Labor Cost	Chemical Cost	Total Cost	Treated Acres	Total Savings
2020	\$2,787.82	\$58.24	\$2,846.06	1.36	\$1,877.62
2021	\$885.83	\$82.60	\$968.44	2.27	

Spotted Knapweed

Year	Labor Cost	Chemical Cost	Total Cost	Treated Acres	Total Savings
2020	\$4,376.09	\$226.14	\$4,602.22	8.65	\$2,860.22
2021	\$1,549.67	\$182.40	\$1,742	12.8	

Perennial Pepperweed

Year	Labor Cost	Chemical Cost	Total Cost	Treated Acres	Total Savings
2020	\$7,224.02	\$149.58	\$7,373.60	4.76	\$3,789.35
2021	\$3,342.58	\$241.67	\$3,584.25	14.98	
Overall Saving					\$10,779.22

Equipment Purchase Price Comparison	Price	Years to Pay off
Truck+Spray Drone	\$78,600	2.22
Truck+Trailer+2 SxS	\$66,595	2.46

Protection and Prevention Programs

Weed Free Products Inspections: There is a growing demand for the use of certified weed free forage and gravel as a noxious weed prevention practice. In 2021, the District hired a full time seasonal technician to provide inspections to certify forage and gravel as being weed free. The use of custom made record keeping apps greatly improved the efficiency with which these inspections were done.

Weed Free Product Inspections					
2020 Forage Inspections	2020 Forage Acres Inspected	2020 Gravel Pits Inspected	2021 Forage Inspections	2021 Forage Acres Inspected	2021 Gravel Pits Inspected
43	5,880.96	11	86	9,122.07	1

Quarantine Releases: Big Horn County is one of the few districts that have a district-wide quarantine which requires that before any crop can be harvested and moved off the land it was grown on, it must be inspected and released by a District staff member. In 2021, the District continued to provide inspections to release forage products from the quarantine if the necessary requirements were met.

Quarantine Releases	
2020 Releases Issued	2021 Releases Issued
60	159

Education

Part of the mission of the District is to provide educational opportunities concerning noxious weeds and pests to county residents. The District continued to provide these opportunities in 2021. The following were the educational efforts/events that the District participated in:

- Posted a display board at the Big Horn County Fair
- Taught a weed science course to a 7th grade class at Basin Middle School
- Hosted private pesticide applicator classes taught by UW extension agents
- Presented at canal district board meetings
- Hosted drone demonstrations for Park and Hot Springs County Weed and Pest Districts
- Presented at the Big Horn County coordination meeting
- Conducted weed management consultations with 7 landowners.

Biological Control

In 2021, the District continued to work with two biocontrol agents. The Russian knapweed gall wasp (*Aulacidea acroptilonica*) and Canada thistle rust (*Puccinia punctiformis*). Releases of the gall wasp, along the Big Horn River, Shell Creek, and in the Otto area were monitored for establishment. Canada thistle rust was released in 4 new locations in the County in 2021. Along Horse Creek, Medicine Lodge Creek, Cabin Creek, and Trapper Creek. Previous releases of Canada thistle rust along the Greybull River and Shell Creek were also monitored. All releases will continue to be monitored in order to determine agent establishment.



Service Requests

In 2021, the District purchased new software used to track all of the jobs or “service requests” that needed to be completed. Each brown dot on the map below represents the location of a spray job, inspection, or weed ID that District employees or contractors completed this past year. There were a total of 771 service requests completed in 2021.

