

Whiskey Canyon to Clear Creek, UDAF Grant 161362
2016 Annual Report,
Presented February 1, 2016 to the Skyline CWMA
By Priscilla Burton

Location

Whiskey Canyon to Clear Creek (6 square miles, 3,800 acres private land of private land)

T. 13 S., R. 7 E. Sections 19, 20, 21, 29, 30, 31 and 32

Oxeye Daisy, Yellow Toadflax and Musk Thistle

3,800 acres total

Project description:

This grant was an extension of the 2014-2015 Grant #150357, Whiskey Canyon to Clear Creek Canyon project area (6 square miles (3,800 acres) in Carbon County.

The 600 acres, on land managed by the Manti La Sal National Forest in the Electric Lake area, in Emery County was included in the grant application (Map 1), but was deleted from the project mid-year.

Noxious weeds encountered in the project area are yellow toadflax, oxeye daisy, musk thistle, Canada thistle and houndstongue.

2016 Accomplishments:

June 8, 2016. Chad Dewey acquired containers of the stem boring weevil, *Mecinus janthinus* from Amber Mendenhall and donated them to the project. Mr. Dewey released the weevil at the site of a small population of yellow toadflax in Finn Canyon. He also released the weevil in a large population of yellow toadflax five miles west of the project boundary, see map included with the Snow College report, attached.

June 25, 2016. Robert Aycock and Priscilla Burton spoke to the Clear Creek Homeowners at their annual Homeowners Association Annual meeting. We presented the results of the Snow College survey and discussed the undesirable qualities of oxeye daisy plants in the landscaping in and around the town of Clear Creek. We presented the homeowners with a potential oxeye daisy exchange program, wherein the CWMA would eradicate the oxeye daisy on their property and in exchange they would receive a less aggressive, non-noxious daisy. A proposal for this exchange program was submitted to the 2017 ISM Grant committee.

July 9, 2016. CWMA project spray day was held. Carbon and Emery County weed crews, John Woolsey and Robert Aycock, landowners, participated. Mr. Aycock sent a sign-up sheet to Julie Weber, CWMA. Carbon County crew went up Boardinghouse and Slaughterhouse Canyons, spraying Milestone. Emery County crew of 3 persons, John Woolsey and Robert Aycock worked in Finn Canyon, using 2,4-D. In total there were 5 ETV's (side x sides) & 1 truck used.

July 16, 2016. The following Saturday, July 16, Robert Aycock finished spraying on Hammond Family property along the ridge above Slaughterhouse and Sheep Canyons. Mr. Aycock also worked through the Division of Wildlife Resource to recruit dedicated hunters to spray remote areas on July 16th.

July 19, 2016. Snow College continued mapping, monitoring, and treatment of weed infestations located by the mapping received from Snow College in 2015. Mr. Dewey's report of the Snow College monitoring is attached.

July 19, 2016. Spret (5 gal), Tordon 22K (5 gal), Hi-light blue dye (5 gal), and Weedar 64 (5 gal) were purchased from Helen Chemical Co. using landowner donations (\$1877.71) and grant funds. This chemical will be used on the project area in 2017.

September 20, 2016. Priscilla Burton walked the reclaimed White Oak mine site on and found a few pockets of musk thistle remaining within the disturbed area. Numbers have dwindled from previous years on the treated area. However an adjacent road on the disturbed area boundary is a monoculture of musk thistle. The access road to the mine site was removed in 2014 and the Eccles Creek crossing was removed in 2015. So the mine site is inaccessible, except on foot.

Future Work Suggestions:

Mr. Aycock plans to plant seed along logging roads on his property and on adjacent Oman Family Trust property.

Grant Expenses:

Total amount requested through December 31, 2016 = \$ 4,099.00

2016 Funds were dispersed as follows:

\$ 1,200 to Snow College for monitoring work completed in 2016.

\$ 1,200 to Helena Chemical Co. for chemicals.

\$ 0 for toadflax biological control which was provided free of charge.

+ 8% administrative costs

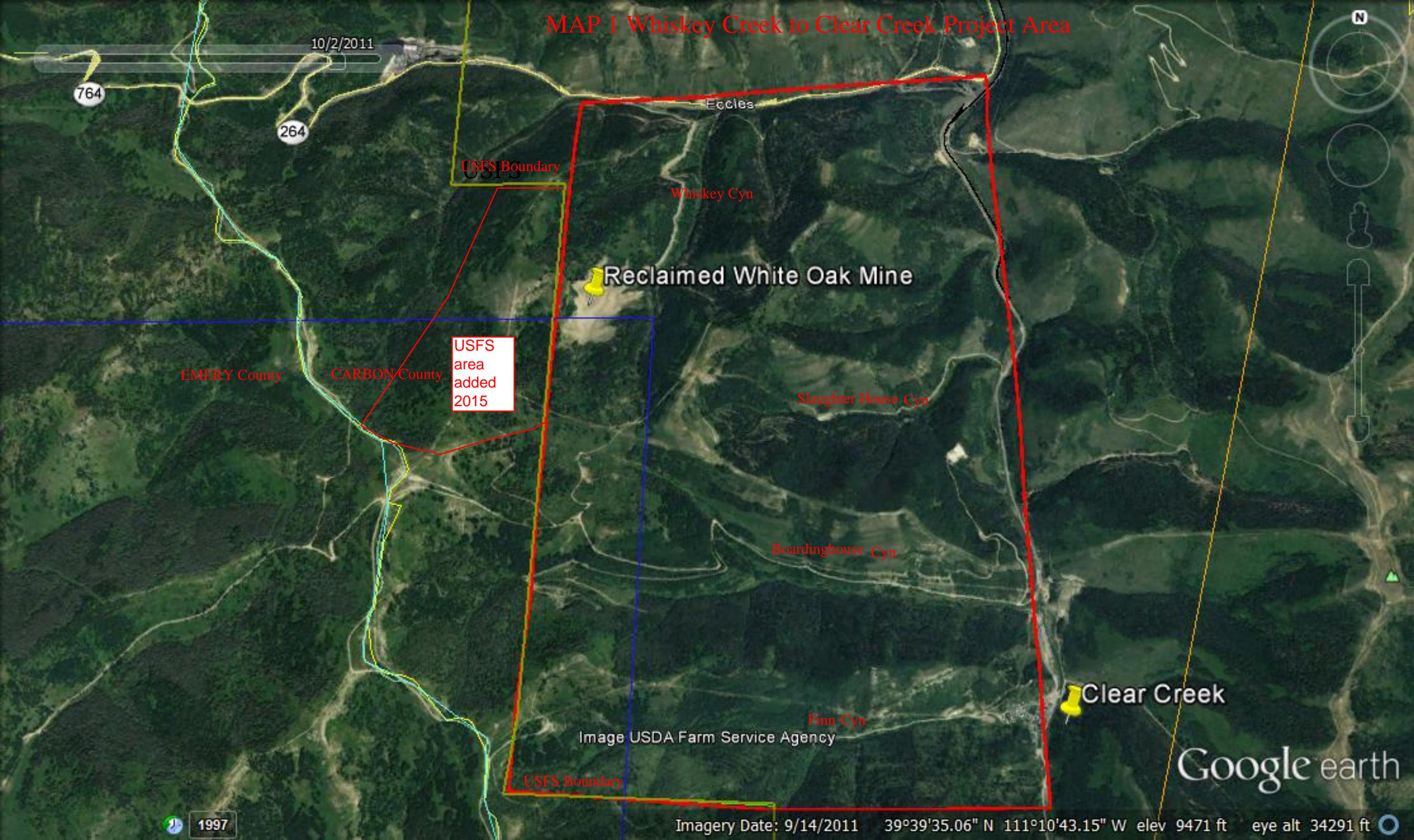
\$2,520

\$ 4,099 grant amount

-\$ 2,520 spent

\$ 1,579 remaining, unused, allocated for biological control

MAP 1 Whiskey Creek to Clear Creek Project Area



10/2/2011

764

264

USFS Boundary

Eccles

Whiskey Cyn

Reclaimed White Oak Mine

EMERY County

CARBON County

USFS
area
added
2015

Slaughter House Cyn

Boardinghouse Cyn

Clear Creek

Finn Cyn

Image USDA Farm Service Agency

USFS Boundary

Google earth

1997

Imagery Date: 9/14/2011 39°39'35.06" N 111°10'43.15" W elev 9471 ft eye alt 34291 ft

ISM Grant 161362
June 13, 2016 images of Mecinus janthiniformis, yellow toadflax
biological control



Skyline CWMA Monitoring 2016

Snow College Natural Resources Program

Several methods were used to monitor the target weeds for this project. The Snow College Natural Resources Program is currently hired to do all of the monitoring work. Chad Dewey, Director of Natural Resources for Snow College, oversees all monitoring procedures and ensures that proper protocols are followed. Students interested in natural resources are able to get hands-on experience in the field by creating permanent plots and collecting data along transects of each plot.

Within the project, seven permanent plots are being observed. Plot locations were chosen to represent a high density target weed area within each square mile plot. Target weeds include: musk thistle (*Carduus nutans*), oxeye daisy (*Leucanthemum vulgare*), hoary cress (*Cardaria draba*), and houndstongue (*Cynoglossum officinale*). Plots were named after the section numbers in township 13 (T13 S), range 7 (R7 E) of the Public Land Survey System (PLSS). Each plot is 52 meters in length and the beginning and end of the plots are marked with rebarb with a tip painted blue. GPS coordinates of each stake are included in the report. 50 line-point intercept data points are collected on each plot to monitor canopy cover. Each plot also has a photo-point taken from the beginning post, pointing towards the end post. All data collected follows protocols taken from the "Monitoring Manual for Grassland, Shrubland and Savanna Ecosystems," authored by Jeffrey E. Herrick from the Jornada Experiment Station at New Mexico State University.

One goal of the project is to replace target weed infestations with desirable perennial shrubs, forbs, and grasses. For the most part, these desirable species were merely lumped into a category instead of listing each species. Each plot has been read annually. Weed densities of musk thistle as well as canopy cover for all weed species were analyzed and compared to previous years to measure the success of the program. From 2015 to 2016, weed cover decreased in six of the seven monitoring sites and was more than cut in half between all sites, averaging 24% cover in 2015 to 11% cover in 2016. More importantly, these weeds were not replaced by other undesirable weedy species. Desirable vegetation increased from 70% in 2015 to 83% in 2016.

In each plot where musk thistle was the dominant weed, a biocontrol survey was also completed to see what percent of the seed heads were infected by the *Rhinocyllus spp.* A total of 30 seed heads were randomly selected, cut open, and inspected for evidence of the weevil per site (see Picture 1). Of the 3 sites where musk thistle was the dominant weed in 2016, an average of 65% of the seed heads were infected by the weevil compared to 30% in 2015.

In 2016, the stem boring weevil, *Mecinus janthinus*, was also released in two locations. Within the project boundaries, only two infestations of yellow toadflax have been discovered and they are very small infestations. However, outside of this area, yellow toadflax has become well established. On June 8, 2016, approximately 200 weevils were released on a small toadflax infestation within the boundary, and 300 were released approximately five miles from the project boundary in a large, well established yellow toadflax infestation (see Whiskey Canyon to Clear Creek Weed Monitoring Project Map). These sites will be returned to and monitored to see if the weevils survived the transplant.

Plot: Skyline 19

Site Visit: 7/19/16

GPS Coordinates: NAD 83 Post 1: N 39.66935, W 111.17531 Post 2: N 39.66893, W 111.17513



Notes: Picture (left) taken at 4 feet high facing south. Quadrant plot photo (right) taken at 11 meters. Plot line starts at 1 meter and ends at 51 meters. Total length of transect is 52 meters.

Line-Point Intercept Data for Skyline 19

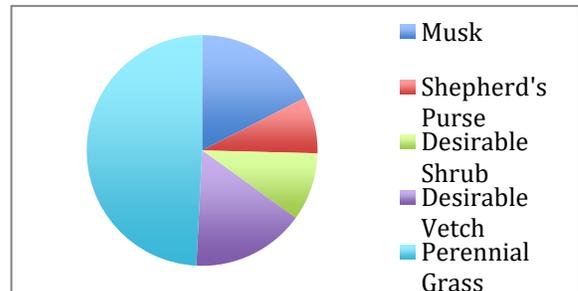
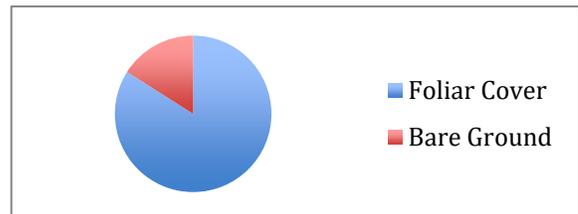
TOTAL COVER	
% Foliar Cover	84%
% Bare Ground/Litter	16%
TOTAL PLANT COUNT- 63 PLANTS	
Musk Thistle	11 17.5%
Desirable Shrub	6 9.5%
Shepherd's Purse	5 7.9%
Desirable Vetch	10 15.9%
Perennial Grass	31 49.2%

Observer: Rayce Bryan, Recorder: Charlotte Partridge

Musk Thistle Biocontrol: 19/30 infected

Belt Transect Data for Skyline 19

Musk Thistle= 30,109 plants/acre



Plot: Skyline 20

Site Visit: 7/19/16

GPS Coordinates: NAD 83 Post 1: N 39.67842, W 111.15884 Post 2: N 39.67888, W 111.15890

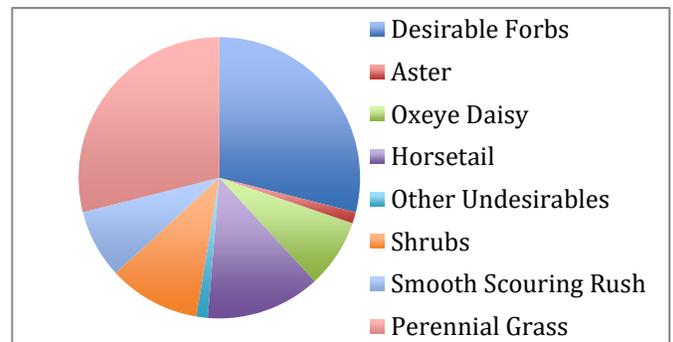
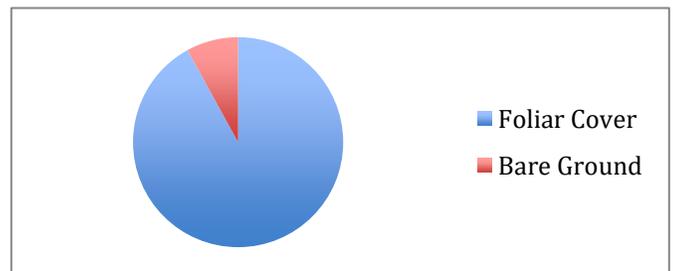


Notes: Picture (left) taken at 4 feet high facing west. Quadrant plot photo (right) taken at 11 meters. Plot line starts at 1 meter and ends at 51 meters. Total length of transect is 52 meters.

Line-Point Intercept Data for Skyline 20:

TOTAL COVER		
% Foliar Cover		92%
% Bare Ground		8%
TOTAL PLANT COUNT- 76 PLANTS		
Oxeye Daisy	6	7.9%
Horsetail (EQAR)	10	13.2%
Other Undesirables	1	1.3%
Shrubs	8	10.5%
Smooth Scouring Rush	6	7.9%
Desirable Forbs	22	29.0%
Mountain Aster	1	1.3%
Perennial Grass	22	29.0%

Observer: Rayce Bryan, Recorder: Charlotte Partridge



Belt Transect Data for Skyline 20

Musk Thistle= 728 plants/acre

Houndstongue= 567 plants/acre

Plot: Skyline 29

Site Visit: 7/19/16

GPS Coordinates: NAD 83 Post 1: N 39.66705, W 111.17197 Post 2: N 39. 66679, W 111.17243



Notes: Notes: Picture (left) taken at 4 feet high facing west. Quadrant plot photo (right) taken at 11 meters. Plot line starts at 1 meter and ends at 51 meters. Total length of transect is 52 meters.

Line-Point Intercept Data for Skyline 29

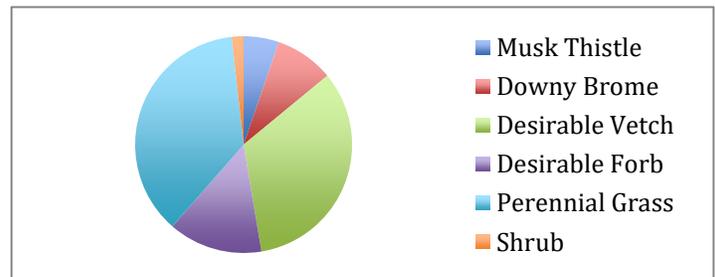
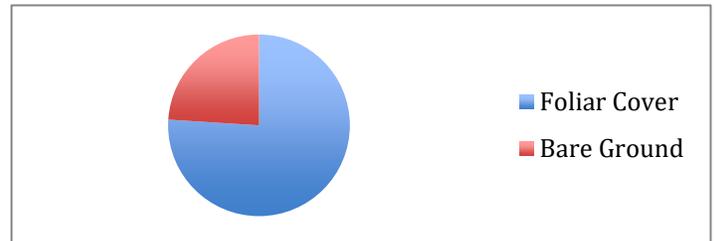
TOTAL COVER		
% Foliar Cover	76%	
% Bare Ground	24%	
TOTAL PLANT COUNT- 57 PLANTS		
Musk Thistle	3	5%
Downy Brome	5	9%
Shrub	1	2%
Desirable Vetch	19	33%
Desirable Forb	8	14%
Perennial Grass	21	37%

Observer: Rayce Bryan, Recorder: Charlotte Partridge

Musk Thistle Biocontrol: 21/30 Infected

Belt Transect Data for Skyline 29

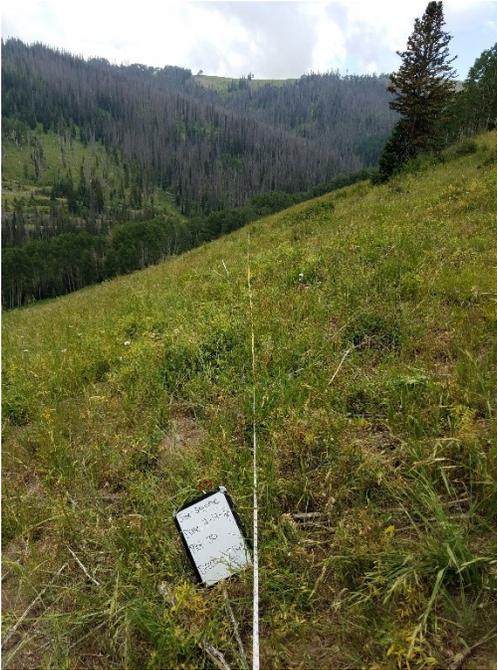
Musk Thistle= 29,947 plants/acre



Plot: Skyline 30

Site Visit: 7/19/16

GPS Coordinates: NAD 83 Post 1: N 39.65332, W 111.18829 Post 2: N 39.65295, W 111.18861



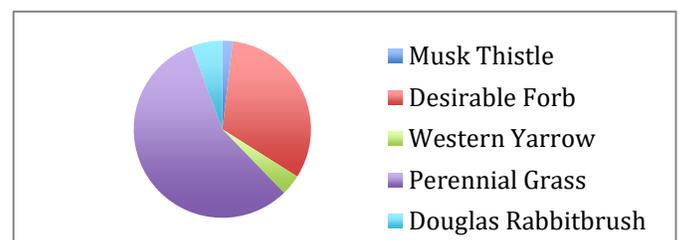
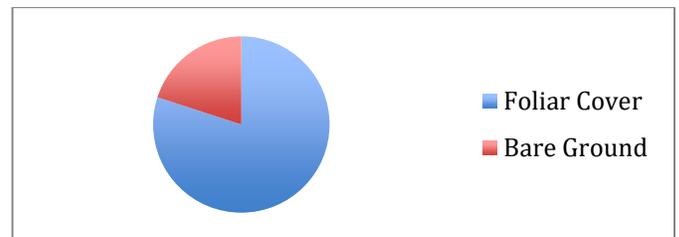
Notes: Notes: Picture (left) taken at 4 feet high facing north. Quadrant plot photo (right) taken at 11 meters. Plot line starts at 1 meter and ends at 51 meters. Total length of transect is 52 meters.

Line-Point Intercept Data for Skyline 30

TOTAL COVER	
% Foliar Cover	80%
% Bare Ground	20%
TOTAL PLANT COUNT- 53 PLANTS	
Musk Thistle	1 2%
Desirable Forb	17 32%
Western Yarrow	2 4%
Perennial Grass	30 57%
Douglas Rabbitbrush	3 6%

Observer: Rayce Bryan, Recorder: Charlotte Partridge

Musk Thistle Biocontrol: 18/30 Infected



Belt Transect Data for Skyline 30

Must Thistle= 5,099 plants/acre

Plot: Skyline 31

Site Visit: 7/19/16

GPS Coordinates: NAD 83 Post 1: N 39.64565, W 111.18690 Post 2: N 39.64552, W 111.186352

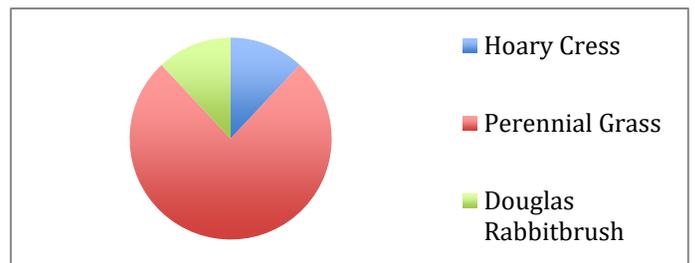
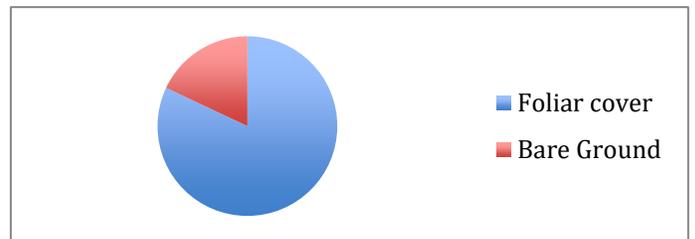


Notes: Picture (left) taken at 4 feet high facing north. Quadrant plot photo (right) taken at 11 meters. Plot line starts at 1 meter and ends at 51 meters. Total length of transect is 52 meters.

Line-Point Intercept Data for Skyline 31

TOTAL COVER		
% Foliar Cover	82%	
% Bare Ground	18%	
TOTAL PLANT COUNT- 50 PLANTS		
Hoary Cress	6	12%
Perennial Grass	38	76%
Douglas Rabbitbrush	6	12%

Observer: Charlotte, Recorder: Rayce Bryan



Plot: Skyline 32

Site Visit: 7/19/2016

GPS Coordinates: NAD 83 Post 1: N 39.64214, W 111.17003 Post 2: N 39.64222, W 111.16951



Notes: Notes: Picture (left) taken at 4 feet high facing east. Quadrant plot photo (right) taken at 11 meters. Plot line starts at 1 meter and ends at 51 meters. Total length of transect is 52 meters.

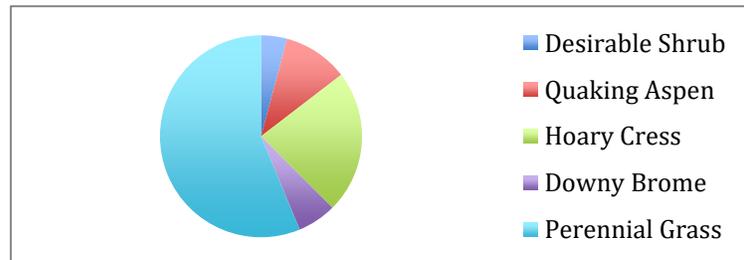
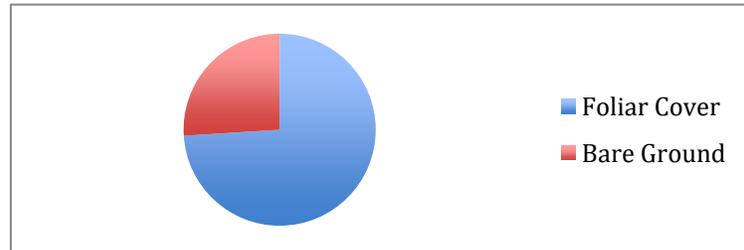
Line-Point Intercept Data for Skyline 32

TOTAL COVER		
% Foliar Cover		74%
% Bare Ground		26%
TOTAL PLANT COUNT- 48 PLANTS		
Hoary Cress	11	23%
Downy Brome	3	6%
Desirable Shrub	2	4%
Quaking Aspen	5	10%
Perennial Grass	27	56%

Observer: Landon Carter & Rayce Bryan
Recorder: Charlotte Partridge

Belt Transect Data for Skyline 32

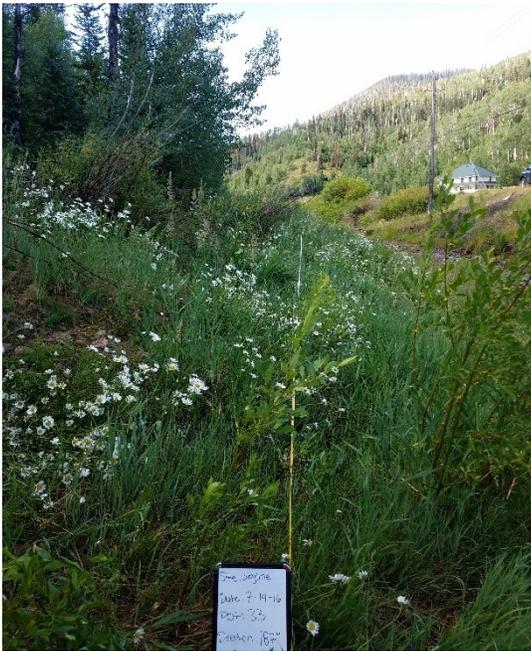
Houndstongue= 81 plants/acre



Plot: Skyline 33

Site Visit: 7/19/2016

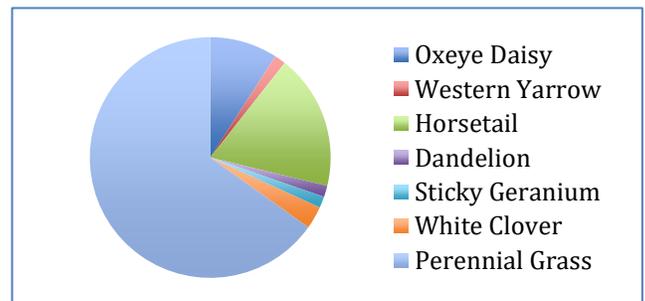
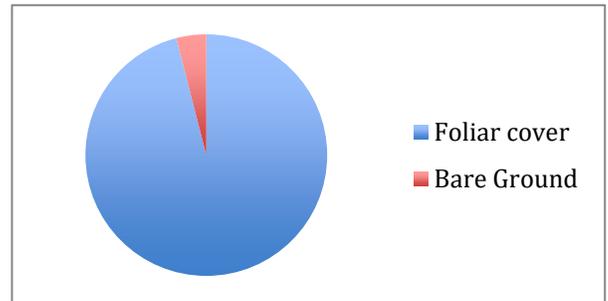
GPS Coordinates: NAD 83 Post 1: N 39.64370, W 111.15272 Post 2: N 39.64326, W 111.15292



Notes: Picture (left) taken at 4 feet high facing south. Quadrant plot photo (right) taken at 11 meters. Plot line starts at 1 meter and ends at 51 meters. Total length of transect is 52 meters.

Line-Point Intercept Data for Skyline 33

TOTAL COVER		
% Foliar Cover	96%	
% Bare Ground	4%	
TOTAL PLANT COUNT- 66 PLANTS		
Oxeye Daisy	6	9%
Western Yarrow	1	2%
Horsetail	12	18%
Dandelion	1	2%
Sticky Geranium	1	2%
White Clover	2	3%
Perennial Grass	43	65%



Observer: Landon Carter, Recorder: Charlotte Partridge

Belt Transect Data for Skyline 33

Musk Thistle= 2,023 plants/acre

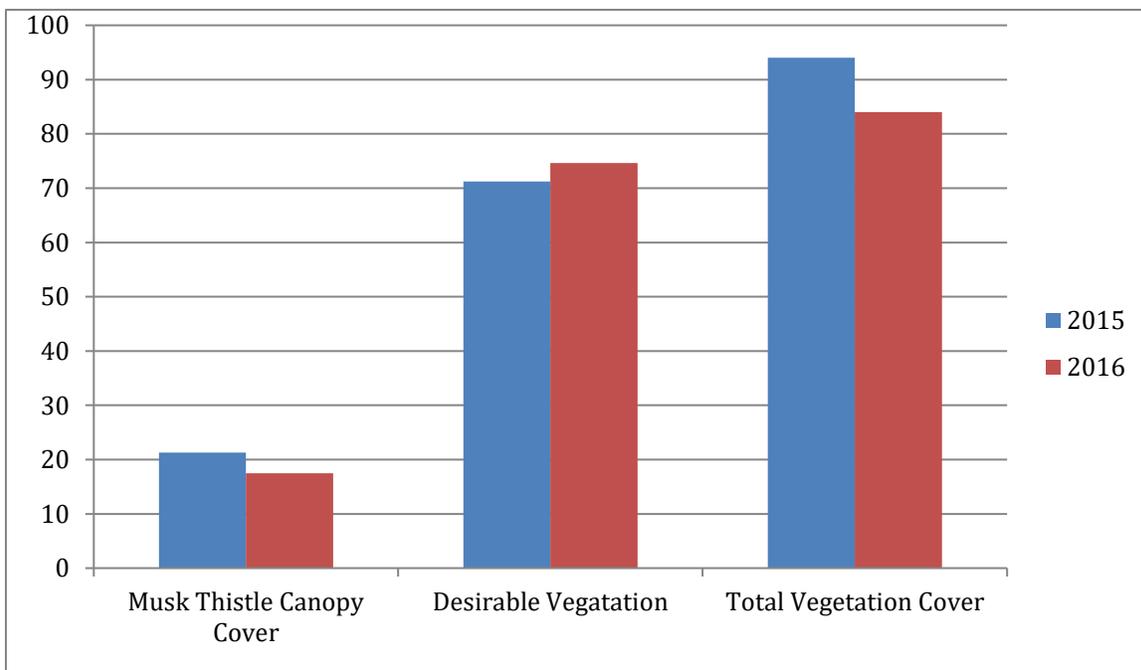
Skyline 19



2015



2016



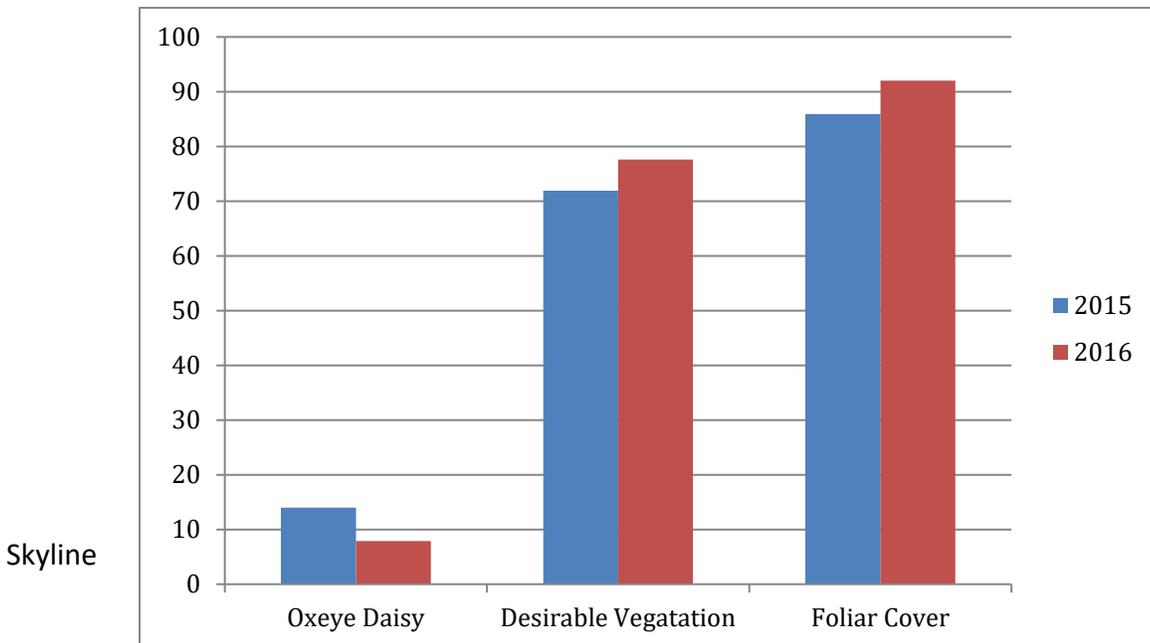
Skyline 20



2015



2016



Skyline

29

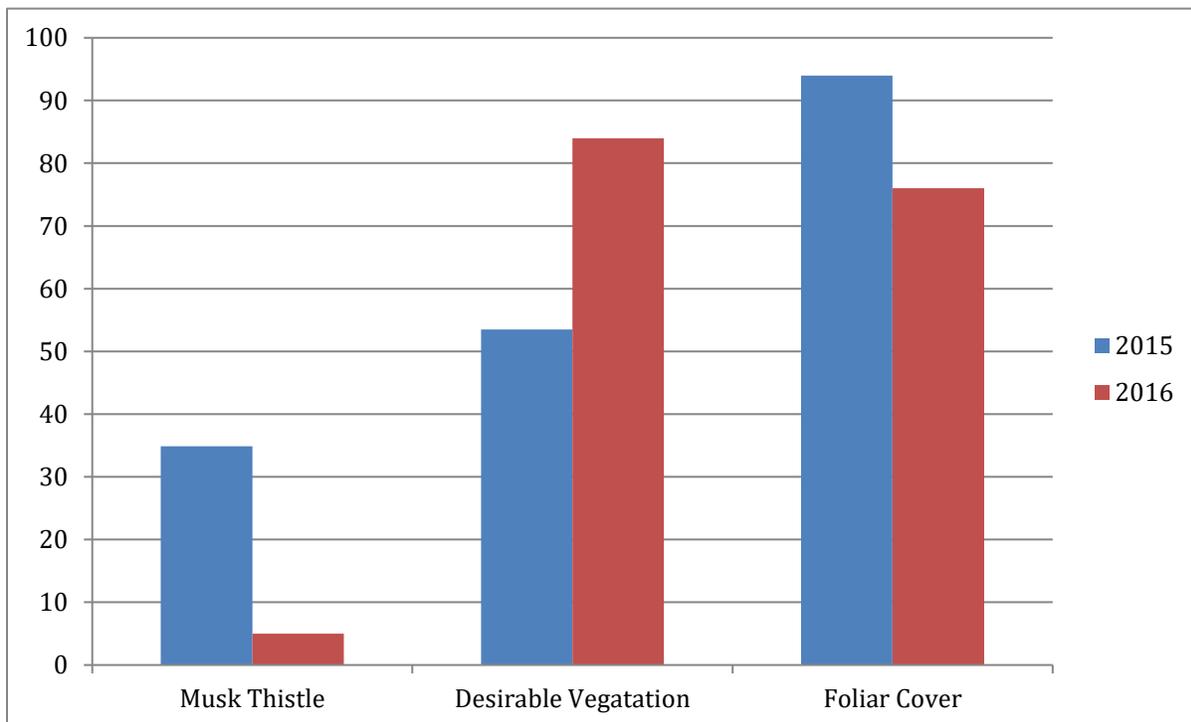
Skyline 29



2015



2016



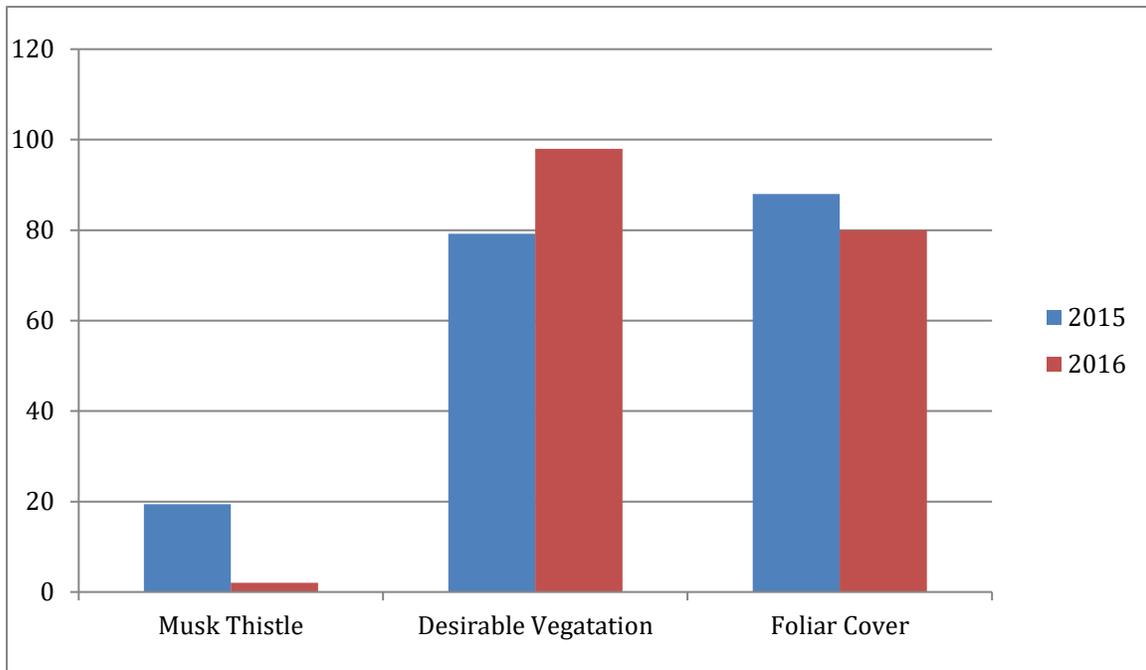
Skyline 30



2015



2016



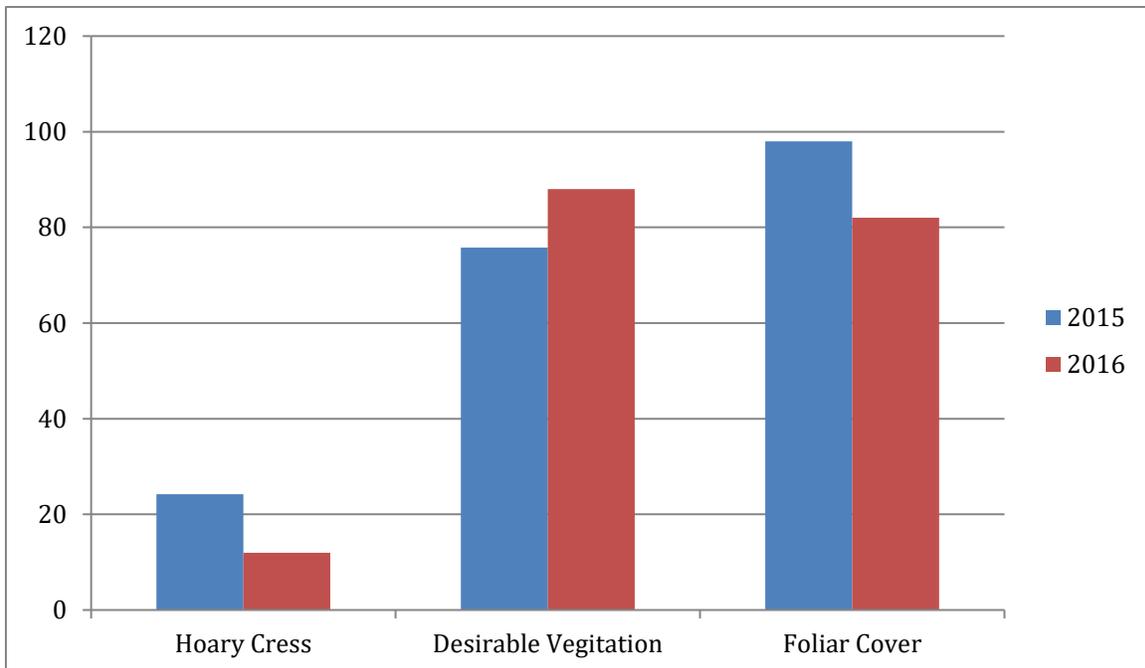
Skyline 31



2015



2016



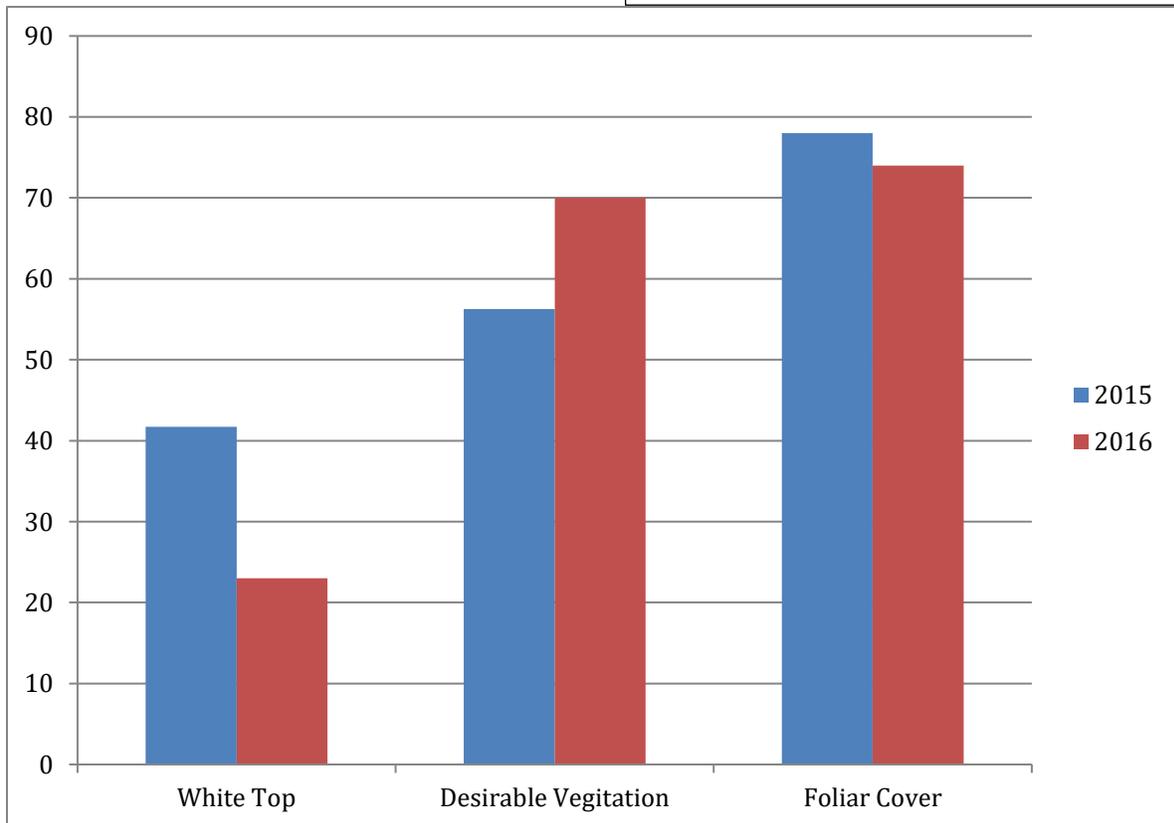
Skyline 32



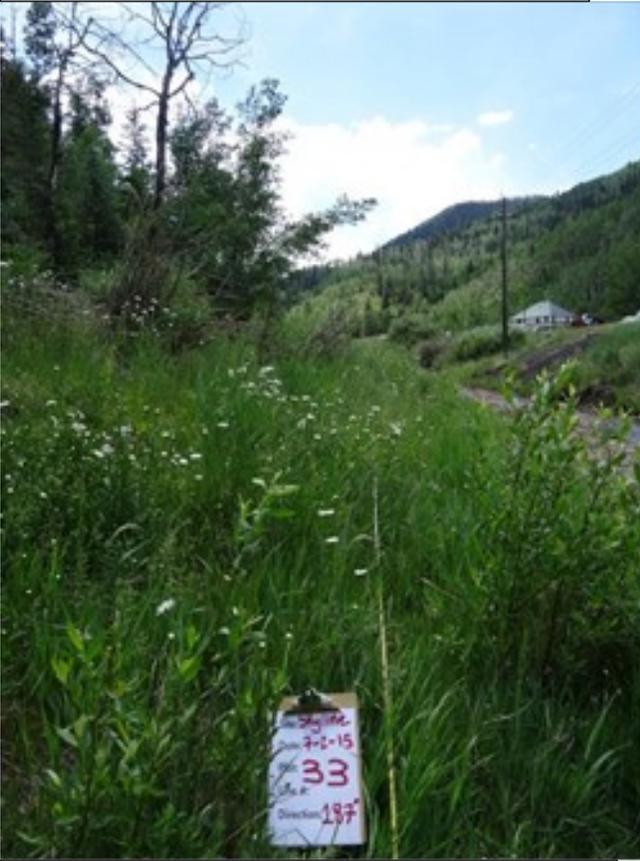
2015



2016



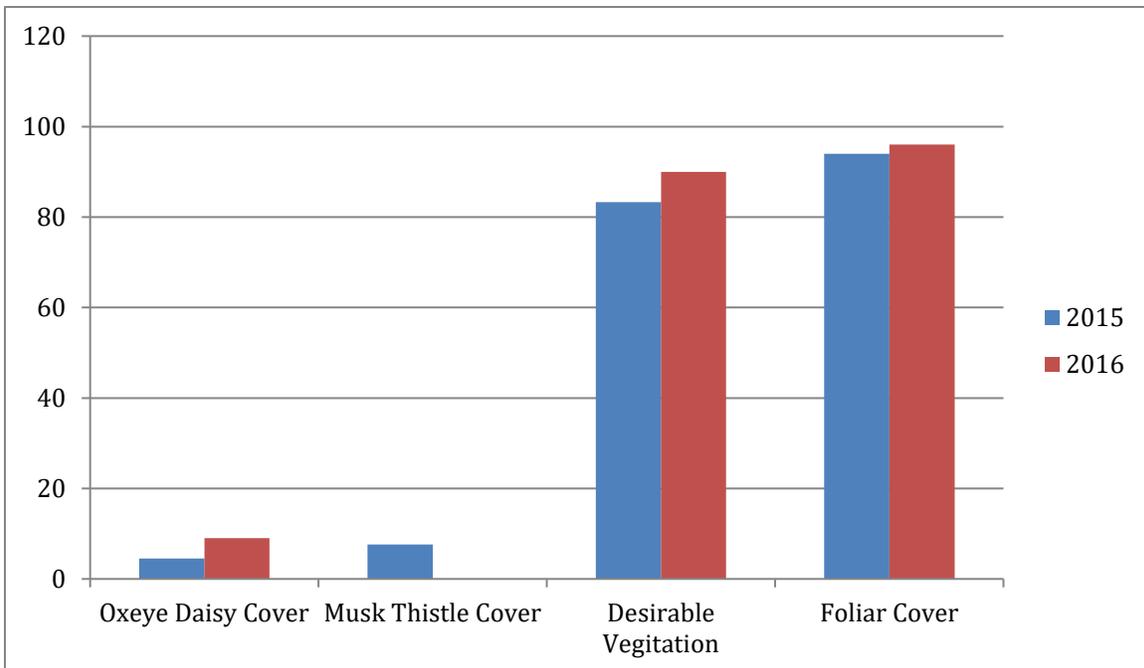
Skyline 33



2015



2016

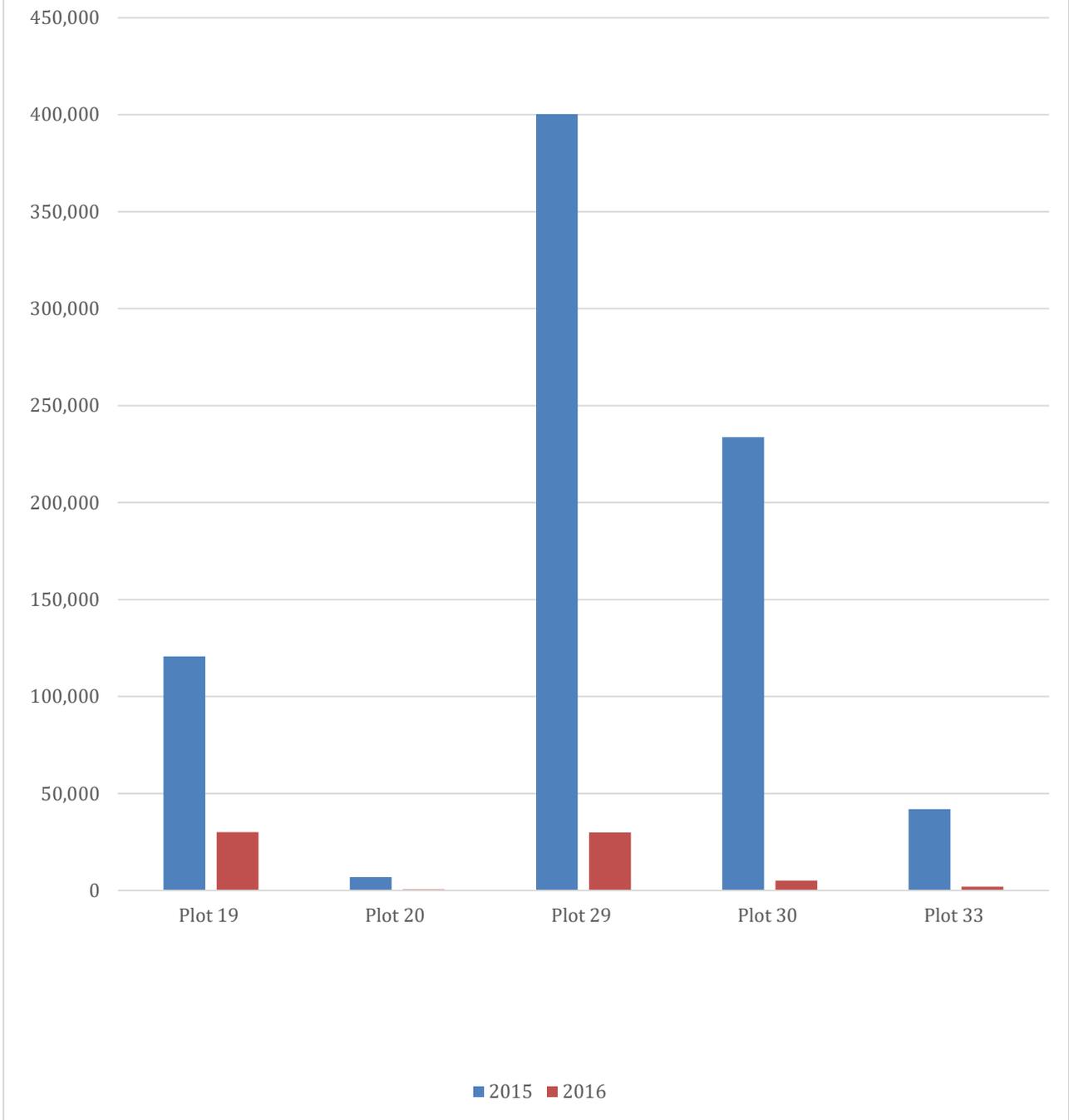


Bio Control

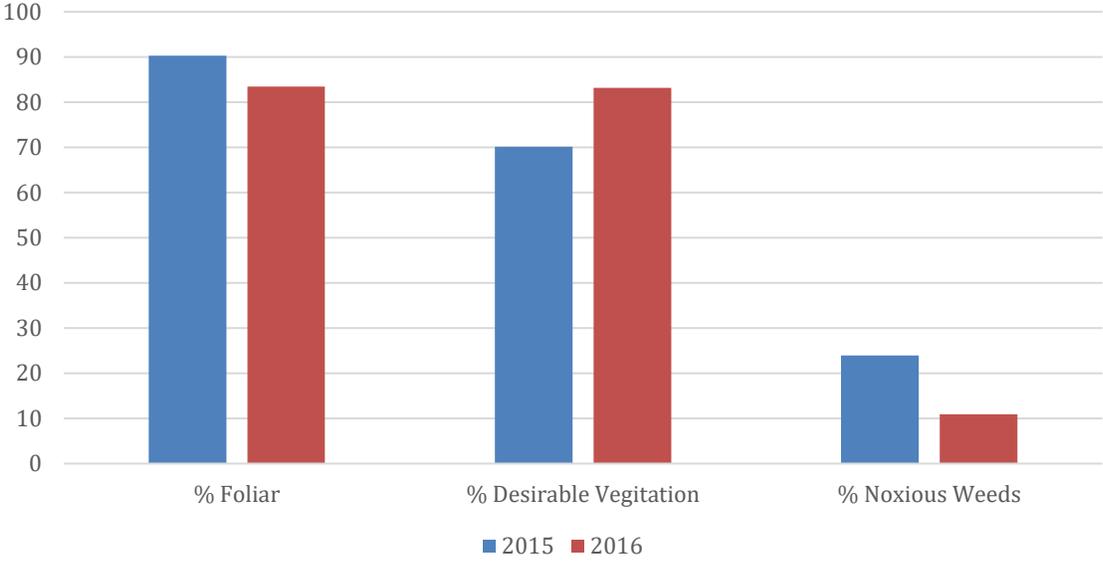


Picture 1: A dissected musk thistle head infected by the *Rhinocyllus* weevil.

Skyline CWMA Belt Transect Data for Musk Thistle



Average Plot Totals





Whiskey Canyon to Clear Creek Weed Monitoring Project

2016

Skyline CWMA

Legend

- Whiskey Canyon to Clear Creek Project Boundary
- Yellow Toadflax Biocontrol Release Sites
- Weed Monitoring Sites

