

**Project Name: 2022 Yellowstone River Salt Cedar Project**

**Project Time Frame:** – September 2022

**Project Cost:** Chemical: ----- \$96,775.00

Contracted Labor: ----- \$40,000.00

**Total Project Cost:** ----- **\$136,775.00**

**Cooperative Partners:** Yellowstone County Weed District (\$ + in-kind employee time & expenses)/ \$47,210.00 covered herbicide (local budget), \$40,000.00 covered contract labor (local budget).

Yellowstone County Commissioners (in-kind)

Yellowstone CD (grant - \$25,000.00; administration - \$500.00) - \$24,500.00 – covered herbicide.

Custer County CD (grant - \$27,850.00; administration - \$2,785.00) - \$25,065.00 – covered herbicide.

**Grant Expenditure Explanation:** DNRC 223 GRANT Yellowstone Conservation District – (\$25,000): \$500.00 covered admin fees, \$24,500.00 covered herbicide cost. DNRC RD GRANT – Custer County Conservation District - (\$27,850.00): \$2,785.00 covered admin fees, \$25,065.00 covered herbicide cost.

**Objectives:** The Yellowstone River Salt Cedar Project has 4 main objectives; **1. Protect Agriculture** - What is the number one important factor in agriculture? Water!!! Salt Cedar is called the Thirsty Tree; 1 solid acre of Salt Cedar can use up to 7.7-acre feet of water which is equivalent to 2.8 million gallons of water. With agriculture being the number one driver of the Montana Economy I feel it’s important to reduce this threat along the Yellowstone River in Yellowstone County. Salt cedar can also take over valuable grazing lands to thus reducing the economic profits for farmers and ranchers. **2. Prevent Flooding along the Yellowstone River** - Salt Cedar trees are a main threat to the old oxbow floodplain areas along the Yellowstone River and if left unchecked these areas are going to become overloaded with overgrowth of Salt Cedar infestations. These old oxbow areas act as relief valve during the high-water season thus reducing the chance of flooding elsewhere. The number of Salt Cedar trees that we are finding in these areas is incredibly astronomic and require a large amount of herbicide and man hours to control. **3. Reduce the threat to native habitat and native species** - Salt Cedar infestations that become dense and

saturated cause vegetation loss of your more desirable plant species and degradation of native habitats that are critical in maintaining a healthy functioning ecosystem. **4. Reduce the potential for fire** - monocultures of salt cedar create dense brush like growth with lots of ground duff which is very flammable. Fires that occur in areas that is dense with salt cedar burn with the same types of fire behavior which is very characteristic of large forest fires.

**Purpose:** To mitigate the negative impacts to the riparian health of the Yellowstone River caused by existing salt cedar (a non-native perennial – category 2 – MT) populations. Salt cedar displaces the native plant communities by creating monocultures, consuming large quantities of water which causes habitat loss and compromises the natural regeneration of native riparian plant cycles. By controlling and reducing the salt cedar population, it will increase the amount of available water to support beneficial usage for all urban/agricultural/recreational purposes, improves the habitat quality for area resident and migratory wildlife species by minimizing the competition with native plant communities.

**Project Location:** Road 24 North to Road 26 North on the Yellowstone River in Yellowstone County, Montana – Just west of Bundy Road Bridge

**Project:** The 2022 Yellowstone River Salt Cedar Project started around the end of August due to hot temperatures earlier in the month. The 2022 Yellowstone River Salt Cedar Project picked up where the 2021 project left off which is located around road 24 North in the Huntley Project Area in Yellowstone County. The mature trees were treated using the basal bark I.P.T. (individual plant treatment) method with Remedy Ultra/Impel via 4-wheelers and backpacks. Mason Industries provided three applicators, 2 atv's and 1 utv for the project.

**Task and Outcomes:** The 2022 Yellowstone River Salt Cedar Project in Yellowstone County covered 2 new river miles with 267 acres surveyed and 259 acres of the 267 acres being treated with an estimated 1,079,574 Salt Cedar Trees treated in this year's project. Tree density has exploded exponentially over the past few project years. This gigantic exponential increase in tree density has increased the amount of herbicide used to obtain a 98-99 % mortality rate. This year's project commenced just due East of Road 26 North. I visited the project area twice while the contractor was treating the area and I witnessed firsthand how intense this project has become over the last few years. We are truly up against a serious infestation of salt cedar trees as we continue to move eastward downriver. We were only able to move two miles downriver and that was only on the south side of the river. We were not able to access the north side of the river during the project. We will have access next year on the north side after we get a contract put in place with FWP. I don't see this project making giant leaps forward in river miles from here on out. I think we are in for a slow grind on this project but as long as we keep going back and monitoring the previous year's progress, we should be in good shape to keep forging ahead.

Looking back to 2007 when the YCWD started the salt cedar project we have witnessed some drastic improvements by controlling and eradicating salt cedar where we are able to. We have seen plant communities change for the better in these areas over time thus improving aesthetic views, improving wildlife habitat, reducing the potential for fire, reducing flooding by opening old floodplain areas that were beginning to become choked off by large densities of salt cedar trees. We have learned that by using the proper

equipment and proper application technique (basil bark treatment) we can eradicate or control the salt cedar trees to a very high degree. During the early years of the project, we were able to cover a few miles of river in one project but that was due to less tree density per acre compared to the highly dense populations that we are experiencing today. It may seem like we are progressing very slow during the last three project years but let me remind you that we are truly up against a very super invasive species that is spreading at an exponential rate downriver from where the current project has left off. To date we have covered approximately 54.37 miles of river corridor in Yellowstone County. I would say that is very impressive considering the conditions that we have run into. I would estimate that we are experiencing a 98 to 99 percent mortality rate during each project campaign. This project has given the YCWD an opportunity to teach others about the success that we are having, and that salt cedar is manageable when using the proper application rates and techniques. True success can be obtained by hard work and diligence and that is what we are accomplishing with this project.

**Conclusions:** We are noticing that as we continue eastward on the Yellowstone River, we are noticing more areas are becoming ultra-concentrated with Salt Cedar trees. Some of these areas include the old river channel areas that I refer to as the old oxbow areas of the river but also include areas where the present river channel is today. Some of the areas that are ultra-concentrated with salt cedar trees are also home to native species which makes control efforts very difficult due to the likely potential of collateral damage. We do our best to limit the damage to native species but don't always have control over what happens when you have ultra-high concentrations of salt cedar trees mixed with native species. One good thing that we have noticed from past projects is that the native species do recover a year or two later after the salt cedar had been treated. It seems like the native species come back even stronger in those areas. I'm going to continue to express how important it is that the old oxbow areas are a very important part of the floodplain of the Yellowstone River and if we do not continue to control the salt cedar in these areas of the river and let these areas fill in with salt cedar we will see drastic and detrimental flooding during the spring runoff which will affect many landowners throughout Yellowstone County that own acreage along the Yellowstone River Riparian Area. I will continue to preach that without this project and the funding that we receive through 223 grant we would be looking at some very detrimental effects from not controlling Salt Cedar along the Yellowstone River in Yellowstone County.

In concluding I would like to emphasize how important this project is. Its so important for us to go back into old project areas and recheck for any missed or any new growth trees because if we don't, we just increase the chance for these old project areas to reseed and become reinfested again over the years and therefor losing everything that we did gain through the initial treatment process.

**Opportunities for project continuation or expansion:** We will continue to monitor and maintain past project areas every year and then we will move into the new untreated areas. This project needs to continue as indicated earlier the Salt Cedar density is increasing more and more as we move eastward downriver. This project needs to be permanently funded as we are dealing with a very invasive species that seems to be getting more aggressive at spreading throughout the Yellowstone River Corridor.

**Recommendations:** Continue to revisit and retreat old project areas dating back to the start of the project in 2007. Visit and scout new treatment areas downriver to see what we are up against.

**Project Photos:** Attached

**Media documents:** Updates will be posted on the YCWD website.

# PHOTOS

## Before Treatment Photos







Young Salt Cedar Trees established in the old river channel area with mature adult Salt Cedar Trees on the bank to the right of the young trees.





Very large mature Salt Cedar Tree



Mature Salt Cedar Trees – old back-channel area of the Yellowstone River













AFTER TREATMENT PHOTOS  
September 2022







THERE IS SOME COLLATERAL DAMAGE AS SHOWN IN THIS PHOTO HOWEVER THERE ARE A FEW COTTONWOOD SEEDLINGS THAT DIDN'T GET SPRAYED. WHEN YOU HAVE A THICK DENSE PATCH OF SALT CEDAR SEEDLINGS WITH COTTONWOOD SEEDLINGS SPREAD THROUGHTOUT THERE WILL NO DOUBT BE SOME COLLATERAL DAMAGE. WE TRY TO AVOID THIS AS MUCH AS POSSIBLE.







