

## **Bobcat Ranch Fall 2019 Restoration Internship Report**

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The Restoration Internship for Bobcat Ranch was a great learning opportunity from October 2019 through March 2020. This internship taught me how to design a restoration project from the planning stage, design, purchasing, and implementation process involved with a successful restoration project. I also learned how to incorporate cattle grazing with habitat restoration and the importance on controlled grazing on the environment. This report summarizes the highlights of the internship.

### **Cottonwood Field Restoration Project**

Cottonwood field is a section of 33 acres of wetland and upland riparian habitat. In October through November 2019, fencing on the East side of the Cottonwood Field was replaced to control the grazing of cattle in the riparian area.



Installation of H-brace for fencing (Dash)



Completed fencing on East side of field

### **Planting List Creation and Native Seed Harvesting**

In November 2019 we met with Miles Deprato from UC Davis to walk the Cottonwood Field and learn about the existing native plants in the area. In addition, we harvested seed for future plantings to restore the wetland and upland plant species. We also learned how to take cuttings from existing species on the ranch and how to plant these cuttings directly into the stream bank. Miles provided guidance on native plant nurseries in the area and the best species to plant on the ranch based on previous plant surveys done on the ranch and plants in the region. We then coordinated a meeting with Brian Keely from Putah Creek Council to learn more about the native plants in the region, get guidance on restoration and planting techniques, and learn about nursery inventory. I helped create a planting list for the Cottonwood field based on meetings with conservation biologists, previous plant studies on the ranch, US Fish and Wildlife Service recommendations and grant objectives.



Harvesting seed Cottonwood Field (Miles, Dash, and Olivia) Native buckeye tree in the upland riparian area

### **Erosion Control and Pump Maintenance**

By December 2019 we completed in the erosion areas near the upper pond and water transfer system by placing riprap in one of the main water drainage channels. In addition to riprap placement, native grass was spread out to stabilize soil banks and to plant native grass seed. We also pulled the pump off the main pond to clean and store for the winter. This pump is crucial to circulate water to the storage reserve tank near the riparian area in Cottonwood Field and will also be used for irrigating the plants in the field.



Riprap placement in main drainage ditch (Dash and Olivia) Removal and maintenance of pump (Dash and Olivia)

### **ACR Meeting**

In December 2019, I had the unique opportunity to attend an ACR meeting and met with Vice President of Conservation Ranching, Marshall Johnson. I joined and listened to bond support meetings at the State Capitol with different Assembly offices. I learned about overall goals of the ACR program, current achievements and challenges, and fundraising. In addition, to

meeting many members of Audubon, Rangeland Trust partners, Board Members, stakeholders, and donors.

### **Restoration Project Preparation and Plantings**

In January, I helped build cages for the native plantings in the Cottonwood Field and around Headquarters to protect plants from cattle and other animal species. We also cleaned out the barn to move planting supplies to the Cottonwood Field area and to prepare for the barn to be dismantled. We applied mulch to existing plantings around Headquarters and along the alleyway, identifying species that needed attention by applying tubing and cages.

Plants were purchased for the Cottonwood field location once we assessed that the fencing was complete, and we had appropriate quantities of supplies. We purchased plants through Putah Creek Council, in addition to taking cuttings of trees on the ranch and harvesting seed. Plants were delivered in February 2020. Of the cuttings we took from the ranch, we planted them directly into the watershed bank in the Cottonwood field. We secured each planting with a cage and added thick mulch to ensure appropriate moisture until irrigation is installed. Additionally, of the plants purchased, 29 oaks, 7 mulefat, 1 redbud, and 1 toyon were planted around Headquarters, near the entrance gate, and on the alleyways by Dash, Olivia, Matt, and myself.



Taking cuttings (Dash and Rob Levy)



Planting of cuttings from Bobcat Ranch property

We prepped the Cottonwood riparian area for planting by adding a thick layer of mulch (~6-8 inches) to retain moisture in the soil and prevent grasses and invasive plants from competing with native plantings. Dash, Matt, Olivia and I planted a total of 38 plantings which includes the following species: mulefat, common elderberry, dusky willow, arroyo willow, Fremont cottonwood, mugwort, and California berry. After placing all the plants in the ground, we then put cages around a cluster of 3 plants each and watered everything in. Based on recommendations from Brian at Putah Creek, we performed an experiment to see how plants do with heavy mulch vs. no mulch and planted a few plants with no mulch to see how they perform.



Planting of native plants in Cottonwood Field (Nina)



East side of Cottonwood Field creek plantings

### **Repair of Existing Nature and Birding Trail**

Lastly, I helped repair an existing nature trail with Dash and Olivia that has eroded over the years. The trail is located to the north west of the Headquarters and is used by the phenology group and for other tours. We worked on the most eroded areas of the trail by cutting into the trail, leveling it out and compacting it to prevent future erosion and for ease of walking.



Trail work (Dash and Olivia)



Finished trail