

Work Task C54: Techniques to Establish Native Grasses and Forbs

FY11 Estimate	FY11 Actual Obligations	Cumulative Expenditures Through FY11	FY12 Approved Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate
\$0	\$0	\$0	\$0	\$200,000	\$200,000	\$200,000

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Start Date: FY13

Expected Duration: FY20

Long-term Goal: Develop techniques to establish native grasses and herbaceous perennial forbs while suppressing establishment of invasive species.

Conservation Measures: MRM2, CRCR2, YHCR2, CMM1.

Location: Cibola NWR Unit #1.

Purpose: The purpose of this study is to develop successful planting techniques and research alternative methods of native grasses and forbs establishment while suppressing weed species establishment. Typically, grass and forb species can be difficult to establish when competition from weed species is high. Additionally, invasive plant species can modify riparian plant communities, degrade wildlife habitat, and increase risk of fire.

Connections with Other Work Tasks (past and future): Post-development habitat monitoring will be conducted at habitat creation sites detailed in work tasks F1-F4.

Project Description: This study addresses several conservation measures that include creation of species habitat, maintenance of existing species habitat, monitoring, and research. The HCP requires the creation of over 8,100 acres of various land cover types to provide habitat for targeted LCR MSCP covered species. The habitat requirements of covered and associated species can be established at each habitat creation site through the design and maintenance of habitat mosaics, especially through manipulation of plant species composition, stand seral stages, tree densities, and water regimes.

Currently groundcover being utilized includes non-natives such as alfalfa. Native herbaceous grass and forb species can be difficult to establish especially in areas with an abundance of weed species. This study will attempt to determine effective planting techniques that may increase the survival of native plantings while testing different methods of weed suppression and control. Once natives are established, they typically become effective competitors and may be able to keep weed presence down to a minimum. In this way, native grasses can be used in place of the

non-native groundcovers, which may provide better habitat for covered species such as cotton rats.

As the LCR MSCP moves forward, it is anticipated that conservation areas planted previously will be managed to improve habitat quality by increasing diversity at all trophic levels. A collection of native herbaceous and shrub seeds is a useful tool to have on hand when there are opportunities for seeding. Seeds of many native species are difficult to obtain from vendors on short notice. They become available based on how abundant each species was at the time of collection, and if there is a market for particular species. Some species are simply not collected because vendors are not aware of a need for them. This work task will also provide funds for seed purchase and/or collection and storage each year, for restoration, research and adaptive management purposes. This funding will also be used to determine the best and most cost effective seeding techniques, storage and handling of native seed.

Previous Activities: N/A

FY11 Accomplishments: N/A

FY12 Activities: N/A

Proposed FY13 Activities: Seeding/watering techniques will be tested to determine which native species might be used as ground cover in lieu of Bermuda grass or alfalfa.

In preparation for plot establishment, half of the field will be tilled and watered then tilled again three times throughout the first year. Soil will be collected before each scheduled tilling cycle to document changes in the seed bank. This will allow comparison of seed bank data between treatment (with tilling cycles) versus control (no tilling cycles) and how “clearing” the seed bank multiple times before planting may increase success of native grass and forb establishment while reducing the success of invasive species. After three tilling cycles, plots will be established and planting/seeding/weed suppression treatments will begin.

Seedling grass plugs will be planted and activated charcoal (i.e. activated carbon) applied to the soil around native plantings as a protective barrier against herbicide application. A pre-emergent herbicide will be sprayed throughout the grass planted areas to discourage weed germination. A post-emergent herbicide may be necessary depending on the lifecycle of local weeds and success of pre-emergent herbicide. Literature will be reviewed and collection and storage methods for seed will be determined.

Pertinent Reports: N/A