Program Summary:

The Resource Conservation District of Monterey County (RCDMC) and its partners are implementing individual projects funded by grants, mitigation, and private landowners to restore riparian habitat in the Salinas River Watershed. Over the life of the program restoration efforts will focus on controlling invasive non-native plants (mainly Arundo donax) and re-vegetating with native species. The Streambed Alteration Agreement authorizing this work was applied for on August 9th, 2012 and has an effective date of April 11th, 2014. Additional permits received for the program include a CEQA Mitigated Negative Declaration, USFWS Technical Assistance Letter, NOAA/NMFS Technical Assistance Letter, SWCB NPDES, and ACOE consultation. All authorizations were received by early fall of 2014 before fieldwork started. This is the first annual report for the program and it summarizes activities performed by the RCDMC during CDFW’s 2014/2015 field work year.
Summary of 2014/2015 Work:

Activities Carried Out in Year 2014/2015:

1) Initiating control of *Arundo* in the King City to Greenfield area using Wildlife Conservation Board (CADFW) Grant funding

The RCDMC performed ‘active’ control work from October 15 to November 21, 2014. Prior to October 15, open contractor selection processes were held to acquire weed management work and biological oversight. The RCDMC also spend part of the authorized work period obtaining landowner access agreements and submitting work plans to CDFW and USFWS in accordance with the program permits. Although the work period originally authorized under the 1600 agreement ended on November 15, a one-week active field work extension was granted by CDFW for this year only, due to site conditions (extreme drought, no flowing water, and minimal wildlife activity). Fieldwork was conducted by the RCDMC and three subcontractors: Dendra Inc (planning/oversight, mapping, biological monitoring, technical support), ACS Habitat Management (weed management/control work), and Dawn Reis Ecological Services (DRES) (pre-work biological surveys, project/biological trainings, and authorized on call biologist if sensitive species were encountered).

Foliar herbicide applications on *Arundo* stands were originally planned for the project area in fall 2014. Due to the severe drought conditions, and resulting dormancy and dieback of above ground Arundo biomass, the project team determined that herbicide treatment was unlikely to result in any control. The best treatment approach for the fall ‘active’ work would be to focus on reduction of standing Arundo biomass (which was dead and/or dormant) and then carry out treatments of fresh re-growth in 2015. Therefore, selected dense *Arundo* stands were mowed (reduced) and no herbicide was applied in the fall of 2014.

*Arundo* reduction in Greenfield area:

A total of 109.0 acres of invasive non-native vegetation (predominantly *Arundo* and some tamarisk) was reduced by mowers near Greenfield on 4.5 miles of the Salinas River (Figure 1). DRES pre-surveyed all work areas no more than 15 days prior to the start of activities and led 1-hour biology trainings for all involved parties who would potentially be present in the project’s areas during active work. Work occurred from after dawn to before dusk (daylight hours only) between October 15 -24, then resumed on October 27 following a 5 day/week schedule through the end of the ‘active’ work period ending on November 21. During the course of activities, one rainfall event on Oct. 31 stopped work and DRES conducted species-specific biological surveys within 24 hours after these events before authorizing treatment activities to restart. In order to ensure avoidance and minimization measures were followed at all times, biological monitoring of all work was performed by RCDMC bio-monitoring staff with limited support provided by staff from Dawn Reis Ecological Services and Dendra, as scheduling necessitated.

Protective measures implemented:

The project implemented and followed all permit conditions: 1) pre-surveys were completed, 2) training occurred, 3) bio-monitors checked all work, and 4) copies of permits were on site. Conditions were found to be excessively dry, with both native and non-native cover being
dormant or dead for the most part. Due to the extreme drought conditions wildlife activity on site was very low (Figure 2). No amphibians were observed, reptiles sightings were limited to fence lizards. There were a few song birds (white crown sparrows, phoebe, etc.) but these tended to be on the side of the river adjacent to fields. There was a barn own that roosted in the project area and it was observed hunting mowed areas. Red tails hawks and turkey vultures were also observed around work areas but not in them. No nesting activity of any kind was observed. There were some mammals observed- primarily wild pigs (three times) and there were extensive trails, feces, and wallow pits (but these were dry). Wood rat dens were specifically surveyed for, marked and avoided, over 25 were found. One rat was seen in tree cover, it may have been a wood rat- the area of the sighting was avoided. Cottontail rabbits were also seen and avoided. Nearly all sightings were outside of the Arundo stands (in adjacent native tree and scrub).

Treatment Methods:

Initial treatment involved mowing stands of dense Arundo, with some lightly interspersed Tamarisk, using rubber tired Barko mowers (Figure 3 & 4). One mower was used during the first week of work (October 15 – October 24), after which two Barko mowers were employed for the remainder of the ‘active’ work period. Mowing was selected as the preferred treatment method this year due to the severe drought. Arundo stands had low amounts of green tissue (leaves or stems), which would have reduced translocation and overall effectiveness of herbicide applications. Accordingly project partners decided to focus on reducing standing dead and dormant Arundo biomass on parcels with large, dense (e.g. ‘mower-worthy’) stands. This approach will force mowed plants to re-sprout with lush, new growth next year that will be much more effective to treat with herbicide. Re-growth in all mowed areas will be allowed to occur resulting in scattered green Arundo canes that will be 4’ to 10’ tall when treated in late summer 2015. Initial Arundo re-sprouts were frost killed in January 2015 (Figure 5).

Results - Monitoring and Re-Treatments:

Field monitoring and mapping of all work completed in the fall/winter of 2014/15 demonstrated that all accessible Arundo stands were reduced in the project area. Reduction is not a treatment method, as the underground rhizome system is still in place and viable. However, stands were so stressed by drought that some areas appear to be having limited re-growth, indicating low plant reserves so treatments in summer 2015 should be very effective. During year-end monitoring and mapping, re-sprouting canes were observed in January that were consistently browed and rotten indicating that frost damage had provided some ‘free’ initial control (Figure 5). The areas mowed in fall 2014 will receive herbicide applications starting in the late summer/early fall of 2015. All scattered Arundo and tamarisk between King City and Greenfield will also be treated as part of the project in summer/fall 2015, a more detailed work plan will be submitted in early summer 2015 (Figure 6).

Trees and Shrubs

Three cottonwood trees and one willow tree larger than 4” dbh were damaged by mowers but not killed (Figure 7). These trees were inadvertently damaged, hit by mowing implement while reducing dense Arundo stands. The root systems are intact and will allow re-sprouting of the trees. No active re-vegetation will occur during the 2014/2015 work year but the trees will be
included in the Re-vegetation and Restoration Plan for 2015-2016 which will be submitted to CDFW prior to implementation of the Project activity.

Erosion Control Plan

All work was conducted on relatively level or only slightly undulating terrain away from river banks or levees, no erosion control measures were required. No soil disturbance, grading or digging occurred during project activities.
Figure 1. Permit report: Salinas River mowed Arundo near Greenfield, fall 2014.

- Mowed Arundo
- 109.0 acres


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Figure 2 (top) Dormant Arundo stand, dry field conditions. Figure 3 (below) Barko mowed and reduced Arundo.
Figure 4 (top) Mowed Arundo. Figure 5 (below) Arundo re-sprouts killed by frost.
Figure 6. Planned summer/fall 2015 treatment area.

- **Mowed Arundo**: 109 acres
- **Treat: Arundo** 210 acres total (includes mowed area)
Figure 7. Small willow hit by mowing implement.