YUMA EAST WETLANDS
AHA 68 ACRE REVEGETATION PROJECT

FINAL REPORT

GRANT # 08-152WPF

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Prepared for:

The Arizona Water Protection Fund
&
Yuma Crossing National Heritage Area

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Executive Summary

The riparian area in the Yuma East Wetlands and the Lower Colorado River have been referred to as one of the most ecologically altered landscapes in the southwest, an unfortunate by-product of the dam impoundments in the river system. Historically, native cottonwood/willow gallery forest and mesquite bosques flourished along the river corridor. Under current conditions, non-native, invasive tamarisk and phragmites dominate the riparian area and banks of the lower Colorado River. Monotypic stands of tamarisk have created a degraded habitat for birds and other wildlife, including many endangered and threatened species. In 2001, a comprehensive restoration plan was produced by Fred Phillips Consulting to restore the wetlands and riparian area into valuable wildlife habitat. The Aha 68-Acre riparian restoration project (Grant # 08-152WPF) has been vital to the realization of the vision outlined in the plan.

The Aha 68 acre project is located on the southern bank of the Colorado River, south of the Demonstration Garden restoration site, north of the NAWCA-HAWPF 65 acre restoration site and east of the Quechan-Arizona Water Protection Fund 25 acre site within the Yuma East Wetlands Restoration Project on the Lower Colorado River. The primary goals of the AWPF 68 acre restoration are to restore the native ecosystem, improve ecological integrity and recover many of the missing wildlife species.

The site was initially cleared of non-native vegetation, primarily tamarisk, in March 2008. The land was then laser leveled and divided into agricultural cells by a system of irrigation canals in April 2009. Planting began in May 2009 and commenced in July 2009. Planting for the 68-acre upland areas consisted of Fremont cottonwood (*Populus fremontii*), Goodding willow (*Salix gooddingii*), sandbar willow (*Salix exigua*), honey mesquite (*Proposis glandulosa*), blue palo verde (*Parkinsonia florida*), ironwood (*Olneya tesota*), wolfberry (*Lycium andersonii*), and four-wing saltbush (*Atriplex canenscens*). Additionally, native riparian under-story species such as alkali sacaton (*Sporobolus airoides*), blue gramma (*Bouteloua gracilis*), inland saltgrass (*Distichlis spicata*), salt heliotrope (*Heliotropium curassavicum*), and wooly desert marigold (*Baileya multiradiata*) were planted. This report discusses all the actions conducted at the Aha 68-acre area during the project and evaluates the success of the project.

Overall, the Aha 68-Acre Revegetation project successfully transformed severely degraded habitat dominated by exotic saltcedar and desiccated wetlands into naturally functioning and productive riparian habitat. All species showed positive growth through the 2009 to 2010 growing seasons, with the exception of *B. salicifolia*, *L. andersonii*, and *O. tesota* (Figure 1-1). The tree and shrub species in the upland habitat were in very good to excellent condition at the end of the 2010 growing season.

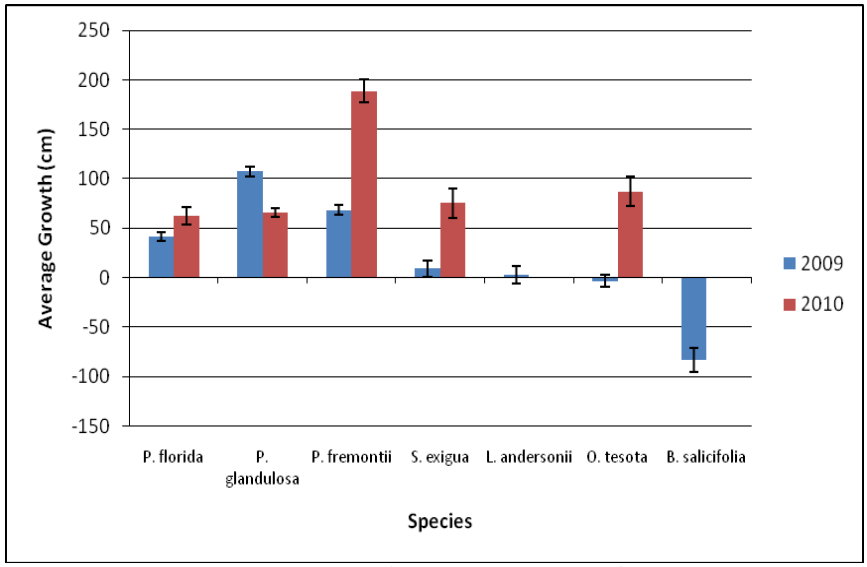


Figure 1-1. Average total growth (cm) *P. florida, P. glandulosa, P. fremontii, S. exigua, L. andersonii, O. tesota,* and *B. salicifolia* for June to October, 2009 and May to October, 2010 at the Aha 68-Acre Restoration Site. Error bars signify standard error.

1.0 Introduction

1.1 Site Background and History

The riparian areas surrounding the Yuma East Wetlands have been drastically altered by the historic damming and confinement of the river channel. These changes have decreased seasonal flooding, ended the natural process of salt removal from the soil, and impaired the ability of native cottonwood, willow, and mesquite trees to thrive and regenerate. Non-native tamarisk, (*Tamarix ramosissima* and *Tamarix pentandra*), which is well adapted to high salinity levels and regenerates rapidly, has been able to out-compete native plants. Tamarisk and common reed (*Phragmites australis*) have invaded the lands of this highly vegetated river, altering the habitat of birds and other wildlife, including many endangered and threatened species.

The Yuma East Wetlands lie along the lower Colorado River, east of downtown Yuma. Prior to restoration this land was used as an illegal dumping ground, as well as a make-shift home for transient people. However, the residents of Yuma recognized the value of the Colorado River and its wetland habitat. In 2001, a comprehensive restoration plan was produced by Fred Phillips Consulting to restore the wetlands and riparian area into valuable wildlife habitat. Partnerships between the City of Yuma, The Quechan Tribe, the State of Arizona, The Yuma Crossing National Heritage Area as well as private land owners were formed. A great deal of planning, combined with generous grants have turned the former wasteland into a vibrant ecosystem to benefit wildlife and citizens alike.

The Aha 68 acre project is located on the southern bank of the Colorado, south of the Demonstration Garden restoration site, north of the NAWCA-HAWPF 65 acre restoration site and east of the Quechan-Arizona Water Protection Fund 25 acre site within the Yuma East Wetlands Restoration Project on the Lower Colorado River (Appendix A).

The project area was cleared of non-native plant material in March 2008, and the resulting piles were burnt by April 2008. The area lay fallow until January 2009 at which time work recommenced with clearing of invasive species that had re-sprouted in the site. The burn piles were moved to the perimeter where they now form the base of the perimeter road. Replanting efforts commenced in May 2009; native species planted included*: P. fremontii, S. gooddingii, S. exigua, P. glandulosa, P. florida, O. tesota, L. andersonii,* and *A. canenscens.* Additionally, native riparian under-story species such as *S. airoides, B. gracilis, D. spicata, H. curassavicum,* and *B. multiradiata* were planted. This report summarizes all the activities that occurred at the Aha 68-Acre site. The Arizona Water Protection Fund Commission has funded all of this report. The views and findings presented are the Grantee's and do not necessarily represent those of the Commission, the State, or the Arizona Department of Water Resources.

1.2 Project Goals and Objectives

The goals of the Aha 68 acre revegetation project are two-fold, including 1) establish 68 acres of self-sustaining cottonwood, willow and mesquite native habitat by the use of flood irrigation to promote optimum tree growth/reproduction conditions and moist soils that will produce insects for neotropical migrant birds, and 2) monitor the project success of the 68 acre riparian revegetation project through plant monitoring.

The objectives of this project include 1) restore approximately 68 acres of self-sustaining, flood irrigated native cottonwood/willow/mesquite habitat adjacent to the other restored areas within the YEW and 2) Obtain valuable data to apply to future restoration activities within the YEW.

2.0 Construction and Site Analysis

2.1 Site Clearing and Grubbing

The clearing and grubbing consisted of removing all invasive species from the Aha 68-Acre site, including: common reed (*Phragmites* sp.), giant cane (*Arundo donax*) and saltcedar (*Tamarix ramosissima*) (Appendix B). Clearing of the site was accomplished using a low ground pressure bulldozer and excavator that were able to work in areas with saturated soils. The work included clearing all brush, stumps, roots, rubbish, debris and other objectionable matter from the area. This material, including logs and other organic and inorganic debris not suitable for foundation and sub-grade purposes, was excavated and piled into clearing berms (Appendix B). These piles were then burned. The depth of the soil was not less than 8 inches or greater than 2 feet than the original soil grade. Existing native trees were left on-site and were protected from damage during clearing.

2.2 Site Topography Grading Completion

A 12 foot wide maintenance road was graded and maintained during the project. The road was graded above the high water in the wetland cells so that it was drivable when all the wetland cells were flooded. Valuable existing native habitat was avoided during excavation and preserved on site. This new topographic configuration diversified habitats for terrestrial wildlife (Appendix C).

Excavated material from the channel was placed in areas that had low value as wildlife habitat (saltcedar; high-density common reed; dead stands of trees; and/or arrowweed stands) (Appendix C). All spoils excavated from the channel were finish graded with a grader so that irrigation and planting construction could easily be constructed following channel construction.

The majority of the areas in the 68 acre site that were not included within the channel, wetland or spoil areas were finish graded at a no greater than a 1% grade, with the exception of two areas on the west and east end of the site that had slopes too great to feasibly grade to 1% (Appendix C).

The burn piles left on site from the previous year were re-located to the perimeter of the project area to help form the base of the perimeter road. After the burn piles were re-located the perimeter roads were constructed. The irrigation channel was excavated from the river to the pump location using bulldozers. The pump pad was constructed to form a level and gated spot to house the pump structure. A topographic map was created of the site to understand the natural topography in order to make the site successful for flood irrigation. The site was laser leveled during the flood irrigation installation process.

Road Improvements

Funds were allocated at the end of the project period to improve all maintenance roads throughout the 68 acre project area. Road improvement activities occurred during May 2011 and consisted of adding Aggregate Base Course (ABC) to sandy and soft spots. ABC was also added as fill in low lying areas. Total improvements consisted of placing 405 tons of ABC along the maintenance roads. The ABC was then spread to a thickness of 3-5 inches using a tractor with a

hydraulic Gannon box attachment. A water truck was then used to compact the ABC. See Figure 2-3 for location of ABC. See Figure 2-2 and 2-3 for photos (Pgs. 27-28).

2.3 Irrigation Construction and Operation

As the site was laser leveled, two concrete irrigation ditches were constructed to deliver water to the planted cells. These irrigation ditches extended for a total of 1,800 feet to deliver water across the site. Eleven field cells were created to be irrigated by the two irrigation ditches (Appendix C). A series of large farm turnouts were fitted in the concrete channels to supply water to the different planting cells. The water is pumped into a distribution channel (located on the eastern boundary of the project sites) to the two flood irrigation channels by a portable Crisafulli diesel pump station. The Crisafulli pump is self contained and has the capacity to expel 8,000 gallons per minute. The border and some of the interior cell borders are drivable in order to maintain the site. The irrigation infrastructure was completed in March 2009 by I&R Contractors.

During the 2009 growing season the planting cells were irrigated by Doug Melon Farms inc. approximately twice monthly (June to October). The sandy cells on the eastern border of the project required water more frequently and were irrigated approximately every 7 days during the hottest summer months. In the 2010 and 2011 growing season, the agricultural cells were irrigated by Doug Melon Farms, Inc. twice monthly from May to October, and then once monthly under cooler conditions. Irrigation for subsequent years will still be necessary in the project.

Irrigation Infrastructure Maintenance

Funds were allocated at the end of the project period to repair irrigation infrastructure that had been damaged during normal operations. Irrigation maintenance occurred during May 2011 and consisted of repairing all cracks in the concrete lined irrigation channel. Sand and debris were removed to locate and properly repair all cracks. A concrete repair epoxy was used to repair hairline cracks. Plastic roof cement was used to repair larger cracks. A two foot concrete block wall was constructed at the pump outfall to divert spillover along the irrigation channel. Previously water would spill over the side of the irrigation channel, causing erosion and compromising the structural integrity of the channel. See Figure 2-3 for photos (Pg. 27).

2.4 Site Assessment

The site assessment was conducted to determine the physical attributes of the site in order to create a successful revegetation strategy. Soil characteristics are important indicators for determining the potential success of a revegetation project as it can detail the subsurface conditions that plants will be exposed to. Soil salinity and below ground moisture gradients (DWT) can often be the limiting factors for plant survival and growth. A total of 272 points were sampled within 67.8 acres of the site. This was approximately 2 data points per acre, and 40 points were added in order to help gain adequate knowledge of the site within the varying topography. Soil salinity was measured at the soil surface, and at depths of 2 and 6 feet below the surface in randomly selected locations throughout the site. Points were selected based on a 50 foot by 100 foot grid for reference. Soil samples collected at the soil surface were located within

the wetland revegetation cells, totaling 11 samples. Soil samples collected 2-feet below the surface were taken from the remaining 53 locations outside the wetland cells. Soil samples collected at 5-feet below the surface were obtained at 36 of the 53 locations. Depth to water was measured at all 64 points. At each data point, a 2005 Series Trimble Geo XT survey unit was used to obtain the GPS location and elevation as shown in Appendix D. Once the soil samples were obtained, the samples were placed in sealed plastic bags and sent to Utah State University Analytical Laboratory for analysis. Maps showing the soil salinity at the surface, 2 and 6 foot depth, and depth to water are shown in Appendix E.

The results of the soil salinity analysis indicated that the site had predominately high soil salinities. Historically, salts have increased in this area due to the absence of flooding in the past 25 years, which naturally mitigates high salinity problems. Additionally, the site is directly adjacent to the 2E agricultural drain, which has the highest salinity level of the Bureau of Reclamation pumps along the lower Colorado River. The Electrical conductivity units (EC's) across the site were much higher than anticipated with the samples averaging 30 mmhos/cm. EC's at the 2 foot soil depth ranged from 6-75 mmhos (Appendix E). EC's at the 5 foot soil depth ranged from 5-25 mmhos (Appendix E). The acceptable levels of EC's for cottonwood and willow range from 1-4 EC's, for mesquite's 3-9.4 EC's, and for salt tolerant native species 9.4 and above. Depth to water (DTW) ranged from 0-13 feet across the entire site.

2.5 Planting Design

The revegetation design was developed based on the results obtained from the site assessment. Because of the varying conditions across the site the project has been broken up into 27 sections with different planting designs (Appendix F). The planting designs were determined from site characteristics in each of the planting areas. The revegetation design was also determined based on the successful planting results from previous projects within the Yuma East Wetlands. The lessons learned from previous revegetation projects allowed for successful results in this project area.

The site analysis indicated that the majority of the site showed a deep depth to water (>8 feet), which was primarily suitable for upland plants, including mesquite, ironwood and wolfberry. The depth to water, in general, ranged from 13 to 0 feet heading east to west. However, approximately 16 acres had a shallow water depth that was suitable for cottonwood, willow and seep willow. These lower areas were also seeded with *H. curassavicum, O. deltoides, S. verrucosum, D. spicata,* and *S. airoides*.

The high soil salinities detected in the site analysis indicated that the site was primarily suitable for mesquite (*Prosopis* spp.) whose salinity tolerance ranges from 3- 9.4 EC's and other salt tolerant species (tolerance of >9.4 EC). Whereas the acceptable levels of EC's for *P. fremontii* and *Salix* spp. range from 1-4 EC's. Salt leaching, (using a sulfuric acid application and flood irrigation, a common farming and revegetation practice) was utilized to reduce EC's to a level that should allow for the successful establishment of cottonwood and willow species. The majority of the site had fine sand to silt soil texture, which was excellent for planting native species.

The planting plan (Appendix F) included the following design elements:

1. *P. glandulosa, O. tesota, L. andersonii* and *P. florida* were planted in the areas with a deeper water depth and higher salinity. *P. fremontii, S. exigua* and *B. salicifolia* were planted where the water depth is shallow and soil salinity lower. The planting designs lay out the plant locations.

2. *D. spicata* plugs and *S. airoides* seed were planted along the distribution channel on the east side of the project site. *S. airoides* seed was also planted along the field perimeters, 10 ft inside of edge of roads and borders.

3. The areas planted with *P. glandulosa* liners and 1 gallon pots were also seeded with *D. spicata, A. canescens, H. curassavicum* and *O. deltoides*. *A. canescens* liners were planted in clumps and distributed between the *P. glandulosa* 1-gallon stocks. All seed was distributed across the entire site, since flood irrigation allowed the seed to germinate in all areas.

4. *O. tesota* liners and *P. florida* and *L. andersonii* 1-gallon stock were planted in areas where the water depth is deepest and soil salinity levels are relatively high.

5. *S. exigua* poles and liners were planted in different cells within the site. Poles were harvested from local native stock and were planted in clusters. *H. curassavicum* and *O. deltoides* were seeded throughout the sandbar willow poles.

6. *B. salicifolia* 1-gallon stock and *P. fremontii* liners were planted in the remainder of the site. Sterile barley, *H. curassavicum, S. verrucosum* seed and *D. spicata* plugs were planted within the cottonwood planting area. Sterile barley was used to prevent re-colonization of invasive plant species for one season to allow a competitive advantage to the native species.

7. Twelve foot wide maintenance roads circumnavigate the site and are maintained as designated in the planting design to provide vehicular access for irrigation and weeding maintenance.

8. The following list contains all of the plants and seeds that were used in the revegetation project. When possible plant material was gathered from local genetic stock. If the material was not available locally it was purchased/gathered at the nearest available geographic location. The project team identified nurseries to collect and grow all of the plant material.

Plants Used in Revegetation Design		**Propagation Method**	**Seed/Cutting Source**
Sandbar willow	(*Salix exigua*)	Cuttings or liners	YEW and S & S Seed
Cottonwood	(*Populous fremontii*)	Liners	S & S Seed
Honey mesquite	(*Prosopis glandulosa var Tor*)	Liners and 1 Gal	S & S Seed

Four-wing saltbush	*(Atriplex canescens)*	Seed and Liners	S & S Seed
Seep Willow	(*Baccharis salicifolia*)	1 Gal	S & S Seed
Wolfberry	(*Lycium andersonnii*)	1 Gal	S & S Seed
Ironwood	(*Olneya tesota*)	Liners	SW Arizona
Blue Palo Verde	(*Parkinsonia florida)*	1 Gal	SW Arizona

Native Seeds/Plugs Mix used on the Revegetation Site

Inland saltgrass	*(Distichilis Spicata)*	Plugs and Seed	YEW/S&S Seed
Alkali Sacaton	*(Sporobolus airoides)*	Seed	S & S Seed
Western Sea Purslane	*(Sesuvium verrucosum)*	Seed	S & S Seed
Dune Evening Primrose	*(Oenothera deltoides)*	Seed	S & S Seed
Salt Heliotrope	*(Heliotropium curassavicum)*	Seed	S & S Seed
Sterile Barley	(*Hordeum vulgare*)	Seed	S & S Seed
Indian Ricegrass	*(Oryzopsis hymenoides)*	Seed	S & S Seed
Arizona Fescue	*(Festuca arizonica)*	Seed	S & S Seed
Sand Dropseed	*(Sporobolus cryptandrus)*	Seed	S & S Seed
Brittlebrush	*(Encelia farinosa)*	Seed	S & S Seed
California Poppy	*(Eschscholzia californica)*	Seed	S & S Seed
Desert Marigold	*(Baileya multiradiata)*	Seed	S & S Seed
Blue gramma	*(Bouteloua gracilis)*	Seed	S & S Seed

After the initial planting was completed, irrigation with the saline water resulted in high mortality of many trees and shrubs on 3.7 acres of the site. After the initial mortality occurred, the following replanting occurred on the site.

1. Harvesting and planting of 6,000 *D. spicata* plugs in high saline areas where the seed mixes did not germinate.

2. *P. fremontii* seeds were hydro-seeded onto 1/3 of a bare acre as an experiment in seed viability.

3. Three hundred *P. glandulosa* 1-gallon pots and 300 pickleweed (*Salicornia bigloveii*) were planted in all barren areas where the initial vegetation experienced 100% mortality.

Planting Mitigation

The majority of the planting followed the planting design specifications except for cells HM1 and HM2 located in the north central area of the project (Appendix F). Within these two cells, a few pockets of ground had sandy, well drained soils and were found more suitable for *S. exigua* than *P. glandulosa.* In these sandy areas, 30 1-gallon *S. exigua* pots were planted in lieu of the proposed *P. glandulosa*. Another large area on the south side of cell HM1 had sandy, well drained soils that better suited *P. fremontii*; therefore 1-gallon *P. fremontii* were planted in this area, 15 feet on center instead of *P. glandulosa*, in addition to the 2 inch *D. spicata* plugs planted three feet on center. Another area on the north side of HM1 was found unsuitable for *P.*

glandulosa due to standing water and poorly drained soils. Threesquare bulrush (*Schoenoplectus pungens*) was planted in this area instead of *P. glandulosa*. Appendix G displays a chart showing the designated number of plants and the actual plants planted. Approximately 2,800 additional *S. exigua* pole plantings were installed in cell SBWH2; 370 additional *S. exigua* 1-gallons were planted in cells SBWH2 and WB; 300 additional *P. fremontii* liners were planted in cells CWHP; 558 additional 1-gallon *P. fremontii* individuals were planted in cell HM2 (as described earlier); 8000 additional *D. spicata* plugs were planted in cells SBWH2, HMS5, HMS6, HMW1, HMW2, SBWH1 and CWHP; and 245 additional *A. canescens* individuals were planted in HMW2 and HMW1. These extra plantings occurred for several reasons:

1. Extra *S. exigua* poles were planted due to plant die-off from transplant shock.

2. The extra 8000 *D. spicata* plugs were installed because the previous 20,000 plantings were completed in a shorter timeframe than initially anticipated. *D. spicata* provides quality understory habitat and helps outcompete non-native species that may re-colonize the site.

3. The extra *A. canescens* was planted because additional plants were needed to complete the planting as shown on the final planting plan.

The total number of plants on the invoices from nurseries differs from the total plants planted for the following reasons:

1. All of the *D. spicata* and *S. pungens* plugs were harvested from the Yuma East Wetlands.

2. All of the *S. exigua* poles were harvested from Cibola National Wildlife Refuge.

3. The Yuma Heritage Area purchased some of the plant material from other funds.

At the end of the project period, funds were allocated to replant areas that had been previously unsuccessful. This occurred during April 2011. The majority of these plants were purchased by the Yuma Crossing National Heritage Area from other funds. This included the following numbers and species: 177 one gallon *P. florida,* 129 one gallon *Olneya tesota,* 250 citrus pot *P. glandulosa,* 270 one gallon *A. canescens,* 170 one gallon *L. andersonii,* 1,000 rose pot Pickleweed (*S. biglovii*), and 184 one gallon *Salix exigua*. Approximately 670 *D. spicata* plugs were harvested within the Aha and planted in bare spots within the project. See Figure 2-2 for planting locations (Pg. 28) and Figure 2-1 for photos (Pg. 26).

2.6 Maintenance

Weeding and maintenance of the revegetation site in the first and second year of growth was critical to the revegetation projects success. However, weed maintenance will continue until the invasive species are out competed by native grasses and trees. Due to the lack of seasonal flooding and presence of exotic plants in the lower Colorado River weeding maintenance will always be necessary. Re-sprouting tamarisk and phragmites in the revegetation area was controlled using mechanical and herbicide techniques. Mechanical techniques included using

shovels, hoes, small tractors and bulldozers with root knifes. Herbicide techniques included using Garlon 4 and Habitat to control salt cedar and phragmites. The cut-stump method was used on tamarisk saplings, where they were cut at the base of the plant and Garlon 4 was immediately applied to the cut area. A mixture of Habitat and Garlon was applied to all re-sprouting phragmites. Herbicide applications were performed only in the early morning hours when no breeze was present on the site.

Preventative maintenance measures included using Tubex tree protectors around individual *P. glandulosa*s to deter rabbit and small mammal browsing. Mammal browsing on screwbean mesquite rarely occurs; therefore tubex tree shelters were not necessary. In most areas, the polyethylene irrigation tubing stayed above ground to recycle for future projects. Exotic and invasive plants were weeded and dead trees were replanted. Areas that were weeded were re-planted with inland saltgrass plugs and alkali sacaton seeds.

Horseweed (*Conyza canadensis*) is a native plant that is recruiting heavily to the Aha 68 acre project. This plant is often considered weedy and invasive, and an aggressive effort was undertaken during the summer of 2010 to eradicate horseweed from project. Weeds are being manually removed using shovels and hoes.

Weeding and Maintenance of invasive and exotic species has continued through the end of the project period. As the project matures, native species continue to dominate the 68 acre project. Though the site has been successfully restored, exotic and invasive species continue to naturally reproduce from embedded seed banks and adjacent seed sources. Periodic removal will continue and allow native species to increase their dominance within the project site.

2.7 Fertilization

The Aha 68-acre project received fertilization in May and August 2010. Approximately twelve gallons of Nitrogen Liquid Fertilizer were applied per acre to the flood irrigation which in turn fertilized the agricultural cells. The trees reacted favorably to the fertilizer applications, which was evident in increased seasonal growth.

The project received fertilization in May 2011. Again, twelve gallons of Nitrogen Liquid Fertilizer was applied per acre to the flood irrigation channel, which in turn fertilized the agricultural cells. From qualitative assessments all trees appear to be reacting favorably to the fertilizer applications. Seasonal growth will be measured in September 2011 to assess the total impact of the 2011 fertilizer application.

3.0 Monitoring Data Collection Methods

3.1 Photo Monitoring Analysis

Five photo monitoring stations were established and panoramic pictures were taken three times during the 2009 and 2010 growing seasons (May through October) (Appendix H). Photos were not taken at the site until the vegetation was planted. The stations were located in elevated locations in order to obtain an overall perspective of the site. Photos included a landmark feature in the background for reference such as a rock outcropping or distant hill. Each photo point was marked with rebar and construction fence and a GPS point was taken at each spot in order to relocate the points. All photos were taken with the same camera, at the same height, and same compass bearing. The previous photos were brought to make sure the photos were aligned with the previous photos. The frame number, speed, f-stop, aperture, photo name and description were recorded for each photo (Appendix I).

3.2 Plant Monitoring

The primary purpose of monitoring vegetation is to determine if vegetation is establishing and thriving, if conditions are suitable for the vegetation planted, document the success of the project, and help guide future revegetation efforts. The variable site topography, soil salinity and surface water depths at this site provided a template for a diversity of wetland, riparian and upland plant species. Monthly monitoring was initiated in June 2009 when planting was 100% complete to establish a baseline. Monitoring occurred bimonthly from May to October (3 times) throughout the first two growing seasons. Data was collected for 290 individual plants (5 individuals for *B. salicifolia* and *L. andersonii*, 25 for *P. fremontii*, 30 *S. exigua,* 20 for *P. florida*, 10 individuals for *O. tesota*, and 195 individuals for *P. glandulosa*). The number of individuals monitored of each species depended on the total area planted of the species, where typically one transect was established per acre. There were a total of 58 transects with 5 individuals in each transect. Approximately 3% of the population was monitored, which sufficiently represented the population. Transect locations were randomly selected within the restoration area by a computer model (Appendix H). The field datasheets for the plant monitoring are located in Appendix J.

Plant monitoring methods follow the guidelines from Anderson et al. (2004) and correspondence with Bertin W. Anderson. For the initial field visit, a GPS reading was recorded at the starting point of each transect. Each transect location was marked with a spray painted iron rod identified with the transect name. Datasheets from previous sampling sessions were carried in the field in order to ensure accurate measurements and relocation of transects.

For tree and shrub species, including *P. fremontii, S. exigua*, *P. glandulosa*, *O. tesota, P. florida,* and *L. andersonii*, the following parameters were measured:

Plant height (ft) –A measuring rod with interval markings was used to measure the height of the plant from base of the trunk to the top of the tallest up-stretched leaf.

Tree condition – Overall vegetation condition was recorded for each tree in a designated transect on a 0-4 scale. A score of 0 was given to any plant that was dead; 1, for poor condition;

2, for fair condition; 3, for good condition; and 4, for excellent condition and vigorous growth. If a plant died and another plant was planted in its place no data was recorded on it for the first year to ensure accurate data collection. The survival rate was calculated from this measurement.

Factors affecting growth:

- Mammal Browsing= MB
- Insect browsing = IB
- Volunteer competition = VC and note volunteer plant type
- Herbicide affects =H
- Hog wire rub= HWR
- Water Stress = WS
- Insect Presence = IP
- Unknown
- ETC - be specific but consistent

3.3 Vegetation Cover Estimates

In order to measure the growth success for the herbaceous and grass species, fifteen randomly placed quadrats (1m x 1.5m) were installed in the areas planted with these species within the 68 acre site (Appendix H). In order to measure growth for these herbaceous species, the Daubenmire cover scale was utilized to estimate cover of vegetation species, substrate, and woody debris. This technique included measuring all vegetation that falls within a 1 x 1.5 m area delineated by a PVC constructed quadrat. Each quadrat was marked with flagging in order to relocate them in subsequent monitoring sessions. Measuring and estimating cover helped determine the growth rate and success of the species that cannot be accurately measured using the techniques to measure trees and shrubs (i.e. herbs, grasses, sedges, bulrushes, and rushes). The vegetation cover datasheets are located in Appendix K.

In each quadrat, cover was measured separately for four strata classes, including tree tall canopy (>10 m), tree middle canopy (4-10 m), shrub (0-4 m), and herbaceous and surface cover (<0.5 m). Ground cover, woody debris, and soil substrate was measured as a part of the herbaceous and surface cover. Cover for all species occurring in and hanging over the quadrat were estimated. If a species was unknown, diagnostic parts were collected in order to identify to species. Small sprouts that did not have diagnostic characteristics remained unidentified and named “unknown herb”. The Daubenmire cover scale was used to estimate percent canopy cover of each individual species (Table 3-1). Total canopy, percent canopy cover, species composition and frequency was calculated for each individual species. Vegetation cover was measured on a monthly basis during the other vegetation monitoring sessions.

Table 3-1: The Daubenmire Cover Scale

Cover Class	**Range of Cover**	**Class Midpoints (%)**	**Class Name**
1	0 – 1%	0.5	Rare
2	1 – 5%	2.5	Occasional
3	5 – 25%	15	Uncommon
4	25 – 50%	37.5	Somewhat Common
5	50 – 75%	62.5	Common
6	75 – 95%	85	Abundant
7	95 – 100%	97.5	Dominant

4.0 Monitoring Results

The Aha 68-acre restoration project consists of riparian and upland area planted with native riparian trees and shrubs with some herbaceous under-story species. Monitoring occurred from June 2009 - October 2010. The first section of the monitoring results (4.2) reflects the growth, condition, and survivorship results of the riparian shrubs and trees planted in the 68 acre riparian/upland area. The results presented below are for the first two growing seasons for the shrub and tree species planted in the 68 acre riparian/upland area. The second section (4.3) provides the results from the vegetation cover of the herbaceous species planted within the 68 acres.

4.1 Photo Monitoring Results

The photo monitoring results showed increased growth in the native vegetation through the 2009 to 2010 growing seasons (Appendix L). Photo monitoring stations one through five all show the increased growth of riparian vegetation from May 2009 to October 2010.

4.2 Species-Specific Growth Rates and Conditions

4.2.1 Seep Willow (*Baccharis salicifolia*)

The *B. salicifolia* population experienced 100% mortality during the end of the 2009 growing season. The entire plant population was installed in an extremely high saline site, and was unable to withstand the adverse conditions. *B. salicifolia* average total height increased slightly from June to July, but then decreased precipitously after July 2009 (Figure 4-1). By September all monitored individuals experienced mortality. In order to mitigate this problem, the area was planted with more salt tolerant species, such as *D. spicata* and pickleweed (*Salicornia biglovii*). Both species are surviving these conditions.

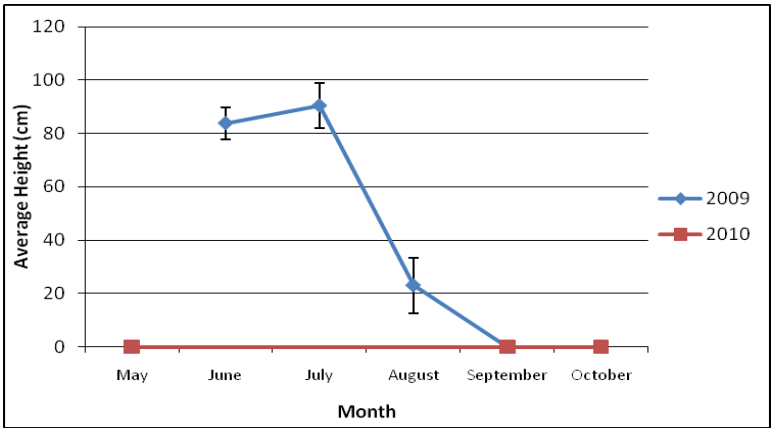


Figure 4-1: Average *B. salicifolia* height (cm) for June to October, 2009 and May to October, 2010 for the Aha 68-Acre Site, Yuma East Wetlands. Error bars signify standard error.

The average seep willow condition declined throughout the entire 2009 growing season (Figure 4-2) ending in the mortality of all individuals. The main factor affecting the seep willows during this period of time was the high levels of salinity in the soil.

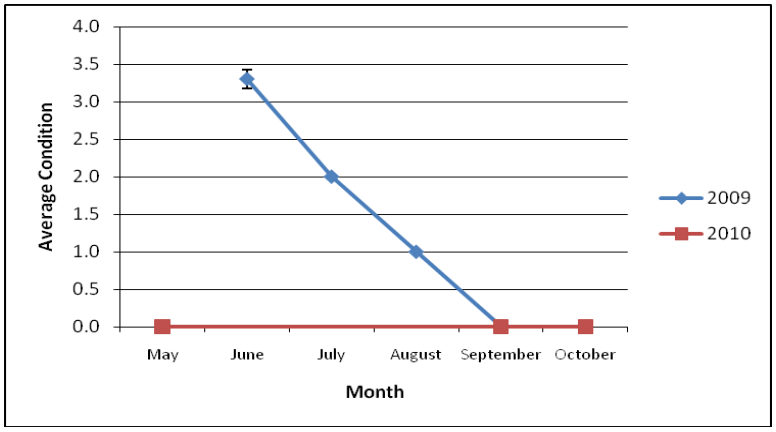


Figure 4-2: Average *B. salicifolia* condition for June to October, 2009 and for May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. 0=dead, 1=poor, 2=fair, 3=good, and 4=excellent. Error bars signify standard error.

4.2.2 Honey Mesquite (*Prosopis glandulosa*)

Overall, *P. glandulosa* thrived in the Aha 68-Acre site, and showed positive growth during the first two growing seasons. In 2009, the population had an average seasonal growth of 107.0cm (N=170, SE=4.68) (Figure 4-3). The highest overall average growth rate occurred from August to September 2009 at 1.13cm per day. From May to October 2010, the population exhibited an average total growth of 73.2cm (N=136, SE=4.3). *P. glandulosa* exhibited an 82% survivorship rate for the 2009 growing season, and the surviving individuals demonstrated 98% survivorship for the 2010 season with only one single mortality occurring throughout the entirety of the monitoring season.

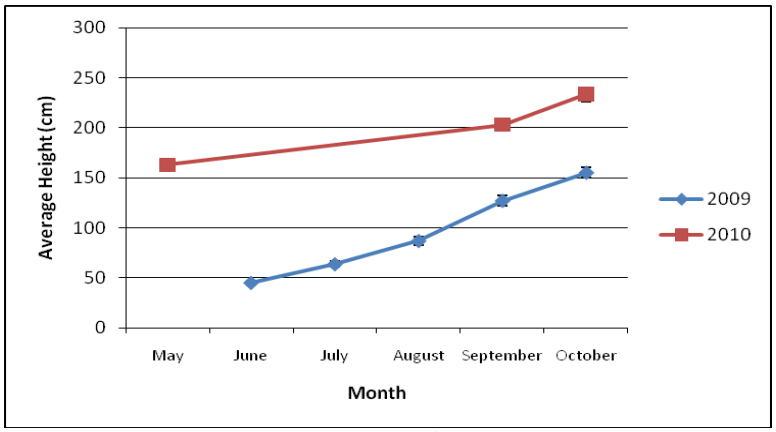


Figure 4-3: Average *P. glandulosa* height (cm) for May to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. Error bars signify standard error.

On average the condition of the *P. glandulosa* was very good during both the 2009 and 2010 growing seasons (Figure 4-4). High soil salinity levels and heat stress were the factors that caused slight declines in conditions of the trees.

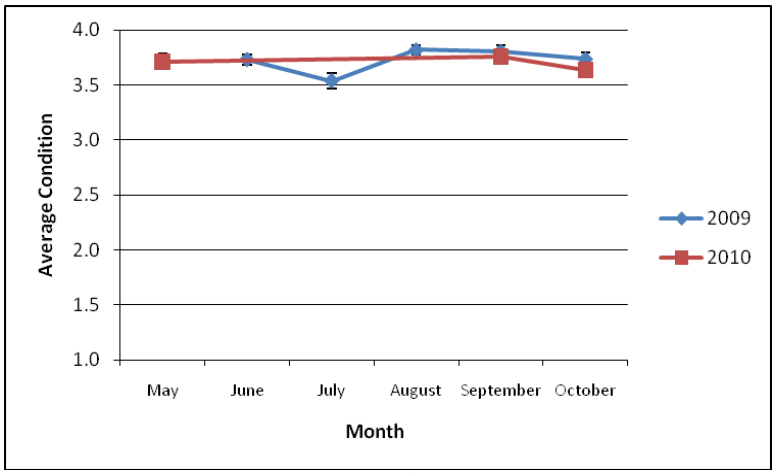


Figure 4-4: Average *P. glandulosa* condition for June to October, 2009 and May to August, 2010 for the Aha 68-Acre site, Yuma East Wetlands. 0=dead, 1=poor, 2=fair, 3=good, 4=excellent. Error bars signify standard error.

4.2.3 Sandbar Willow (*Salix exigua*)

Sandbar willow showed an overall increase in average height for the first monitoring season (Figure 4-5). The total average growth for the 2009 season was 1.93cm (N=30, SE=8.6). Sandbar willow experienced a high mortality rate of 50%, due mostly to salt and heat stress. Throughout the summer months, the trees received sufficient irrigation, however many individuals could not withstand the highly saline soils and perished. The surviving population adjusted to the conditions, and in 2010 *S. exigua* showed an average growth of 108.1cm (N=15, SE=15.1) and 100% survivorship.

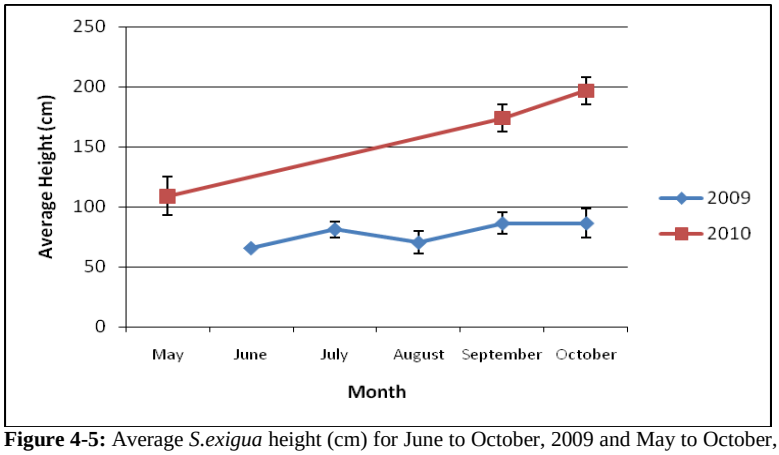


Figure 4-5: Average *S.exigua* height (cm) for June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. Error bars signify standard error.

On average, sandbar willows were in good to excellent condition during the 2009 and 2010 growing seasons (Figure 4-6). The condition of the surviving sandbar willows fluctuated during the first growing seasons due to planting stress, salt stress, and extreme heat. Salt stress was

observed in 45% of the surviving individuals and was the primary factor for the decreased condition and high mortality initially observed at the site, which is explained above. During the 2010 growing season, the surviving sandbar willows continued to establish and are recruiting.

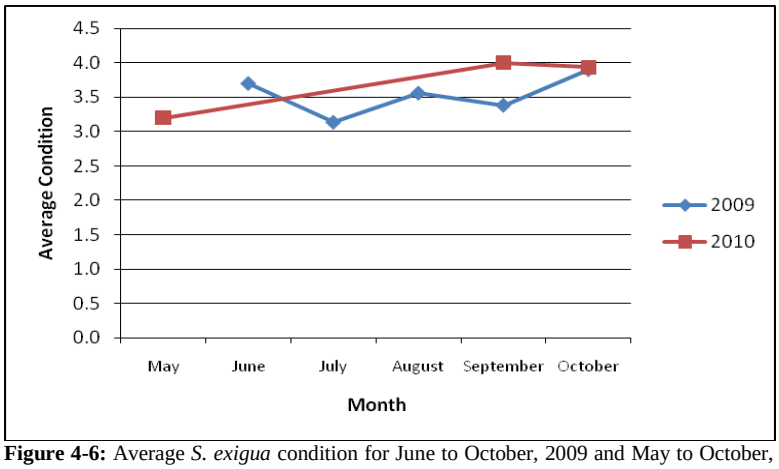


Figure 4-6: Average *S. exigua* condition for June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. 0=dead, 1=poor, 2=fair, 3=good, 4=excellent. Error bars signify standard error.

4.2.4 Fremont Cottonwood (*Populus fremontii*)

Overall, the planted *P. fremontii* individuals experienced positive growth during both growing seasons on the Aha 68-Acre site (Figure 4-7). In 2009, average tree height was 61% higher in October then when the trees were first monitored in June, and overall, the population exhibited an average growth of 68.0cm (N=40, SE=4.64). The *P. fremontii* population exhibited substantially more growth in 2010, averaging 237.3cm (N=32, SE=11.9) from May to October. The initial planted individuals experienced 82% survivorship for the 2009 growing season, and of those surviving individuals, 93% remained after the 2010 growing season.

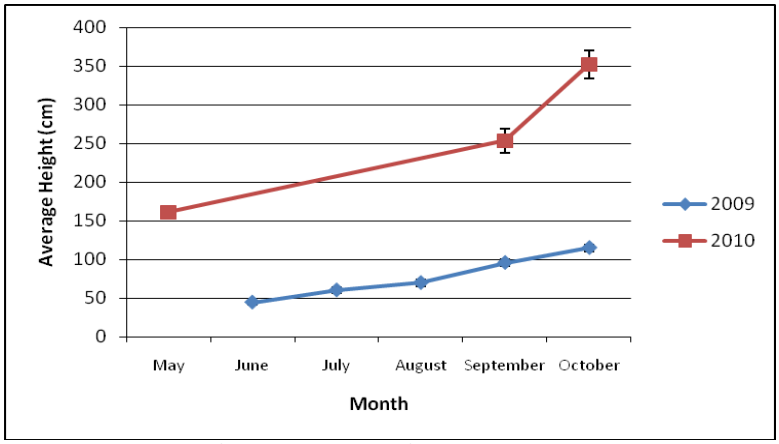


Figure 4-7: Average *P. fremontii* height (cm) for June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. Error bars signify standard error.

The overall *P. fremontii* condition was excellent during 2009 and 2010 growing seasons (Figure 4-8). The declined cottonwood condition during June and July 2009 was likely due to the extreme summer temperature.

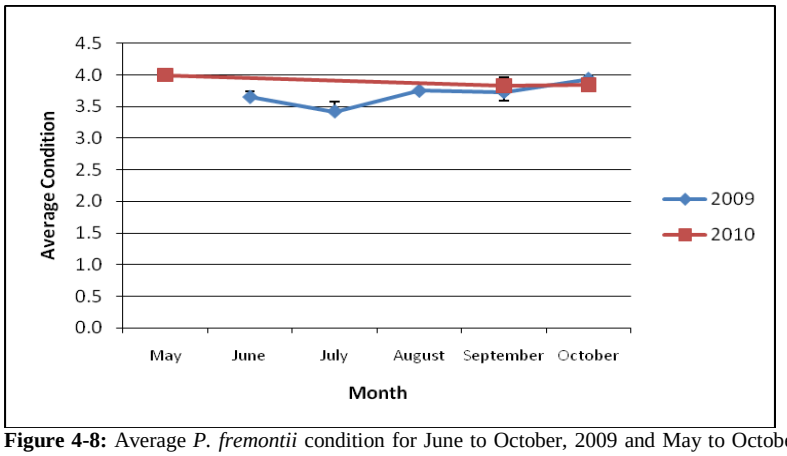


Figure 4-8: Average *P. fremontii* condition for June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. 0=dead, 1=poor, 2=fair, 3=good, 4=excellent. Error bars signify standard error.

4.2.5 Wolfberry (*Lycium andersonii*)

L. andersonii showed overall minimal growth and declined condition during the 2009 monitoring season and eventually experienced 100% morality in October 2010. In 2009, *L. andersonii* growth and condition was affected by the extreme summer heat from June to October, however the species did experience an overall average increase in growth of 9.0cm (N=5, SE=9.19) (Figure 4-9). The population had a survivorship of 100%, yet overall condition of the individuals took a dramatic downturn towards the end of the summer. *L. andersonii* tends to go through a dormant stage during the hottest months, and a decrease in condition is expected when temperatures are highest. Also, *L. andersonii* is a species that frequently increases in growth in girth instead of height and this could be a factor in the minimal recorded seasonal growth. In 2010, mortality occurred due to high soil salinities and poorly drained soil. The final shrub in the single *L.andersonii* transect expired in September 2010. *D. spicata* plugs, planted in January 2009, are providing dense native cover in this area.

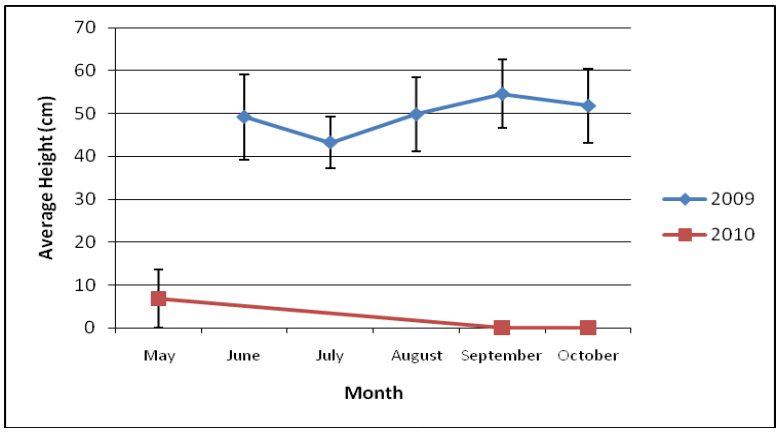


Figure 4-9: Average *L. andersonii* height (cm) for June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. Error bars signify standard error.

L. andersonii individuals were in poor to fair condition from July to October 2009, and were expected to recover to full health over the winter **(**Figure 4-10**);** nevertheless, condition continued to worsen as is seen in May 2010. Decline in condition during the hot summer months is typical of wolfberry and is explained above. However, poor draining soil and high salinity caused the eventual mortality of all monitored individuals in 2010.

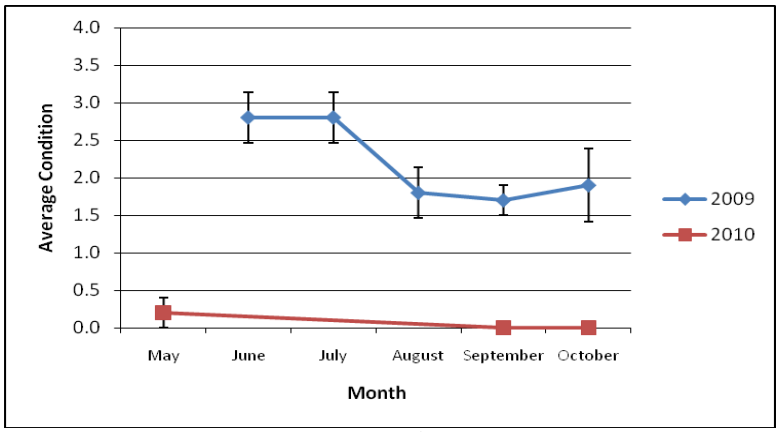


Figure 4-10: Average *L. andersonii* condition for August to October, 2009 and May to October 2010 for the Aha 68-Acre site, Yuma East Wetlands. 0=dead, 1=poor, 2=fair, 3=good, 4=excellent. Error bars signify standard error.

4.2.6 Ironwood (*Olneya tesota*)

O. tesota individuals demonstrated minimal overall average growth during the 2009 monitoring season (Figure 4-11), but proved to be healthy and established in 2010 by exhibiting 87.0cm (N=5, SE=15.4) of average growth. Minimal growth in the 2009 monitoring season was due to poor soil conditions, and planting and heat stress. Also in 2009, the *O. tesota* population experienced 60% survivorship, with all of the mortalities occurring in August. These moralities were most likely caused by overwatering. Half of the ironwood population was located in an extremely sandy agricultural cell that received irrigation more frequently than the rest of the project due to the area's inability to retain water. The individuals in this cell initially defoliated and later perished, whereas other ironwoods showed no symptoms of distress. The remaining individuals showed an 83% survivorship during the 2010 monitoring season.

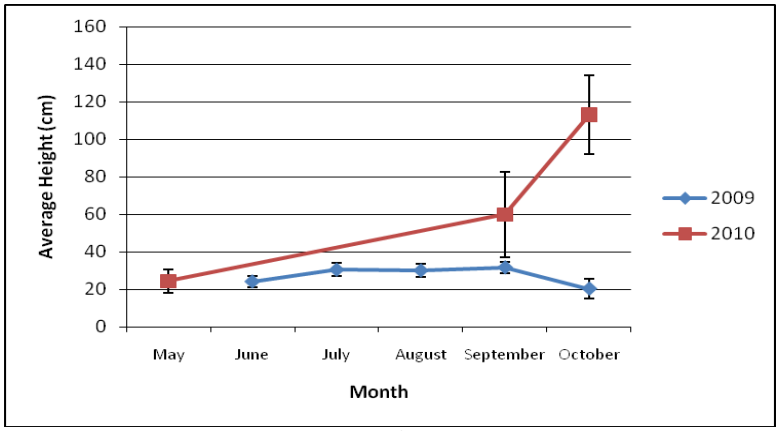


Figure 4-11: Average *O. tesota* height (cm) for June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. Error bars signify standard error.

O. tesota individuals were in fair to good condition from August to October 2009, and expected to recover to full health throughout the winter months (Figure 4-12). The primary factors affecting the condition of the population were overwatering and dormancy. The overwatering affected 60% of the population in August 2009. In May 2010, all surviving individuals showed average condition and steadily improved throughout the duration of the season.

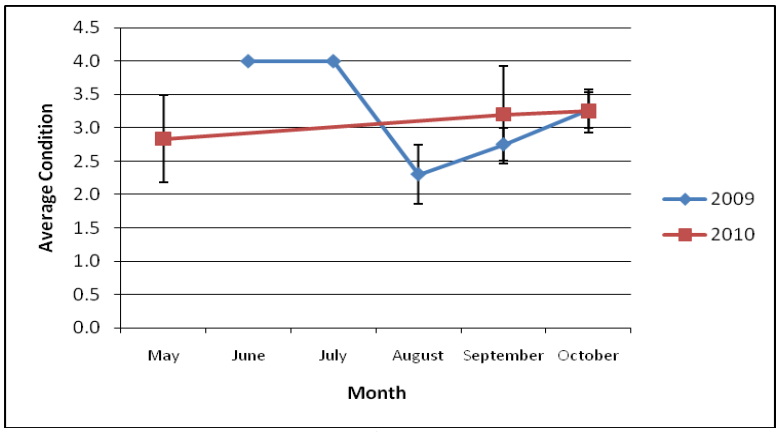


Figure 4-12: Average *O. tesota* condition for June to October, 2009 and May to October 2010, for the Aha 68-Acre site, Yuma East Wetlands. 0=dead, 1=poor, 2=fair, 3=good, 4=excellent. Error bars signify standard error.

4.2.7 Blue Palo Verde (*Parkinsonia florida)*

P. florida showed an overall increase in average height over both the 2009 and 2010 growing seasons in the Aha 68-acre revegetation site (Figure 4-13). Average height in October 2009 of the monitoring season was 42.0cm taller than in June 2009, the beginning of the monitoring season. *P. florida* grew the most vigorously from August to September 2009, exhibiting 15.8cm (N=30, SE=0.13) of growth compared to only 5.17cm of growth from June to July 2009. Similar trends occurred in 2010; with the population showing 76.1cm (N=30, SE=8.79) of average growth. *P. florida* demonstrated 100% survivorship for both growing seasons.

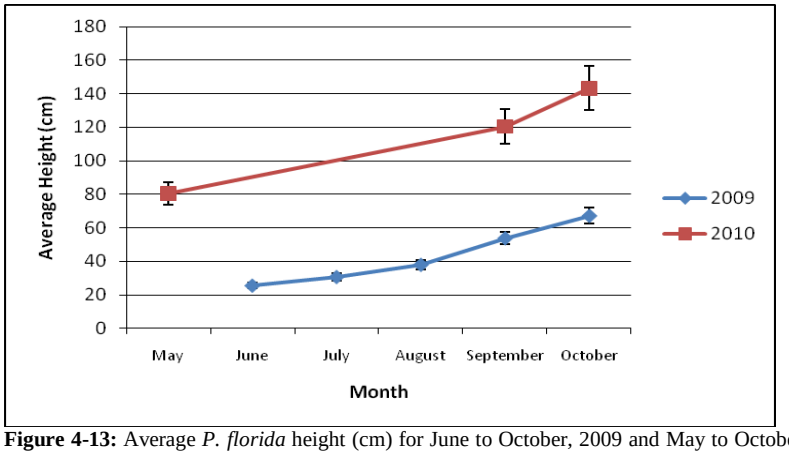


Figure 4-13: Average *P. florida* height (cm) for June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands. Error bars signify standard error.

The average condition of *P. florida* was very good to excellent throughout the 2009 and 2010 growing seasons (Figure 4-14). The slight decrease in condition observed during July to August 2009 was most likely caused by extreme temperatures weakening plants. Thirty percent of the population was affected that year. From September to October of both 2009 and 2010, plant condition declined. This is a result of cooler temperatures triggering the plants to go into dormancy.

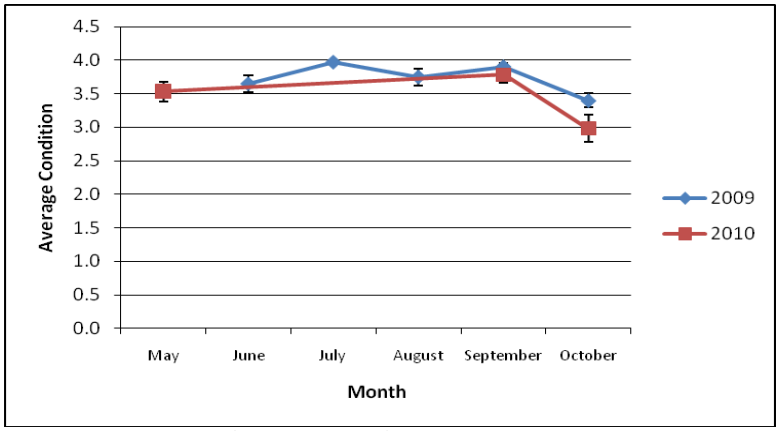


Figure 4-14: Average *P. florida* condition for June to October, 2009 and May to October, 2010 for the AHA site, Yuma East Wetlands. 0=dead, 1=poor, 2=fair, 3=good, 4=excellent. Error bars signify standard error.

4.3 Plant Cover

During the 2009 and 2010 growing seasons, *S. airoides*, *D. spicata* and *S. exigua* had the greatest percent cover for the herbaceous and shrub cover (Figures 4-15 to 4-17). *D. spicata* and *S. airoides* showed the highest cover for the monitored quadrats during 2009 and 2010, and also showed the greatest frequency of occurrence, 5.5% (2009) and 9.75% (2010) for *D. spicata* and 13.75% to 62.5% for *S. airoides*. These species have also been observed naturally colonizing riparian restoration areas. *S. exigua* was also observed in lower densities within the quadrats.

S. airoides steadily increased from August to September during the 2009 growing season from 2.5% to a peak of 15.75%. The slight decrease in cover from September to October 2009 is most likely due to researcher error. During the 2010 growing season, *S. airoides* started the season with a low percent cover at 8.87% (Figure 4-15). This may have been due to plant die-off during normal winter dormancy. The percent cover steadily increased during the 2010 growing season concluding at 62.5%.

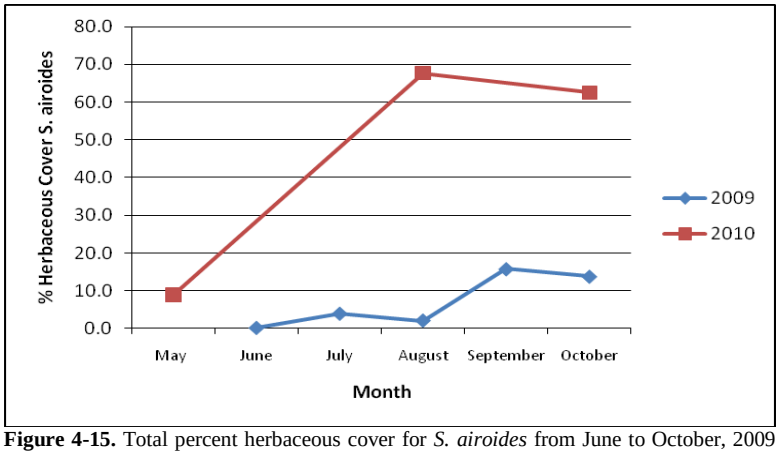


Figure 4-15. Total percent herbaceous cover for *S. airoides* from June to October, 2009 and May to October, 2010 for the Aha 68-Acre site, Yuma East Wetlands.

D. spicata slightly decreased in total percent cover from July to September of the 2009 growing season; however percent cover increased significantly from September to October with a final cover estimate of 5.5%. During the 2010 growing season, *D. spicata* started off the season with a total percent cover of 4.1% and increased to conclude the season with 9.75% cover (Figure 4-16). Overall *D. spicata* has been steadily establishing itself in the highly saline environment of the Aha 68-Acre site, and is providing decent cover and habitat for small mammals, reptiles, and birds.

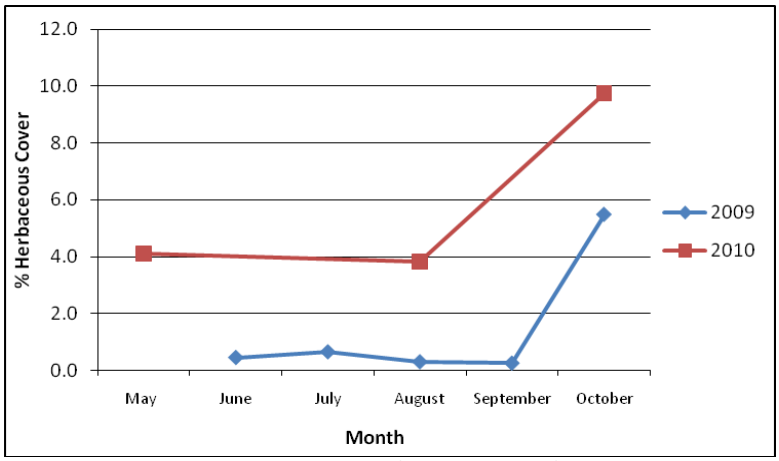


Figure 4-16: Total percent herbaceous cover for the *D. spicata* from June to October, 2009 and May to October 2010 for Aha 68- Acre site, Yuma East Wetlands.

S. exigua increased slightly in total percent cover during the 2009 growing season, showing the most significant increase from September to October of 0.4% (Figure 4-17). During the 2010 growing season, *S. exigua* increased in percent cover steadily throughout the season, and concluded in October with a high of 6.25%. *S. exigua* individuals send out rhizomes which come to the surface and then create new offspring. The gradual increase in cover outlined in the data collected from 2009 to 2010 indicates that the willows are steadily establishing themselves and reproducing.

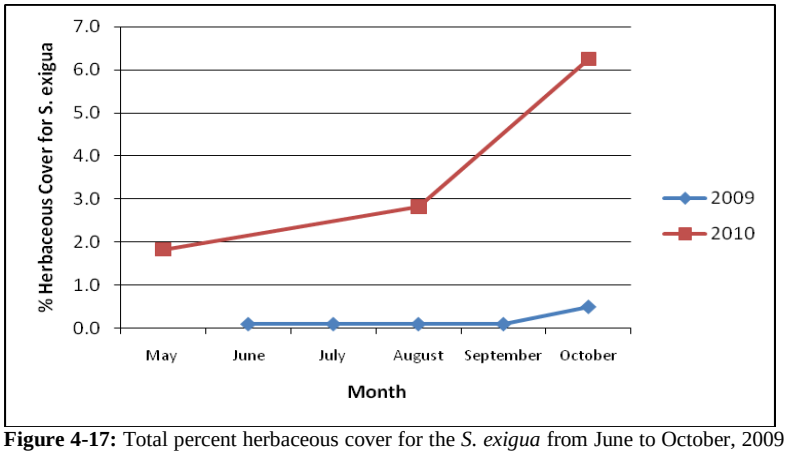


Figure 4-17: Total percent herbaceous cover for the *S. exigua* from June to October, 2009 and May to October 2010 for Aha 68- Acre site, Yuma East Wetlands.

The herbaceous cover detected within the monitoring of the Aha 68-Acre revegetation site was also dominated by *P. pubescens*, arrowweed (*Pluchea sericea)*, Spanish needles (*Palafoxia arida*) and *S. verrucosum.* This vegetation established and increased in cover during the 2009 growing season. During the 2010 growing season, these species gradually increased in percent cover within the monitored quadrats. Overall, all of the species comprising the shrub cover in the site has done very well with a slight decline in growth during the summer months due to the extreme summer temperatures.

5.0 Conclusion and Recommendations

5.1 Project Conclusions

The Yuma East Wetlands Aha 68-Acre Project has successfully transformed the severely degraded stand of salt cedar (tamarisk) and dying wetlands starved of freshwater flow to a thriving wetland and riparian habitat supporting native wetland and riparian vegetation with a renewed freshwater input to sustain the wetlands. The initial growing season concluded with the overall health of the site in good to excellent condition. The majority of upland grassland species thrived; however, some of the less salt tolerant plants experienced decreased condition due to over-watering and salt stress. Despite the challenging field conditions the majority of the species had survivorship rates of 80% and over. The site has recovered the bird life that once utilized this site prior to wetland desiccation and non-native species invasion. Also, the surviving native tree and shrub individuals showed increased growth and recruitment.

The native groundcover throughout the site flourished and provided good cover, which has provided habitat for a variety of invertebrate species and has limited the re-colonization of non-native vegetation. *S. airoides* and *D. spicata* were the two planted species that showed the greatest cover in the monitoring quadrats, however *S. verrucosum*, *H. curvassicum*, and *E. farinosa* were also detected. *D. spicata* flourishes in highly saline areas where other species are unable to survive. Herbaceous recruiters from the planted native trees, including *P. pubescens* and *S. exigua* were also detected in the quadrats. Further, native wildflowers such as popcorn flower (*Cryptantha angustifolia)* and globemallow (*Sphaeralcea ambigua)* are naturally recruiting on the site, indicating natural ecosystem function.

B. salicifolia and *L. andersonii* experienced 100% mortality by the end of the 2010 growing season due to high soil salinities and poorly drained soils. This problem was mitigated by planting high salt tolerant species such as *D. spicata* and *S. biglovii*. Since their planting, these salt tolerant species have been successful. The Aha 68-Acre area had naturally occurring high soil salinities, which supported the dense salt cedar stands that existed prior to project clearing. The remnant soil conditions have made it challenging to grow native species, however these mitigation measures will likely enable the project area to thrive.

Maintenance and weeding will have to continue to limit the growth of invasive *Phragmites* sp. and *Tamarix* spp. *Phragmites* sp. is very aggressive and can grow in extreme environmental conditions such as high salinities. Recent evidence suggests that *Phragmites* sp. exudes a root toxin that is able to kill neighboring vegetation so that it can dominate large areas. This indicates the urgency and persistence that is necessary to control this species.

5.2 Recommendations for Future Projects

Vegetation monitoring has provided information to inform the adaptive management process for restoration in the Yuma East Wetlands. Within the Aha 68 acre site, many of the lessons learned will help guide the restoration actions for future projects. Within the YEW, including the Aha 68 acre site, high soil salinities are a constant site characteristic that requires experimentation to achieve the highest planting success. The planting that occurred with salt tolerant native species within the Aha project site provided insight on the most successful methods to plant moist soils,

especially in high salinity areas, by using seeds and plugs. It was found that *S. airoides, S. verrucosum*, and *H. curvassicum* had the highest seed germination success rate; for areas that have particularly high soil salinities, these species should be planted by seed.

6.0 References

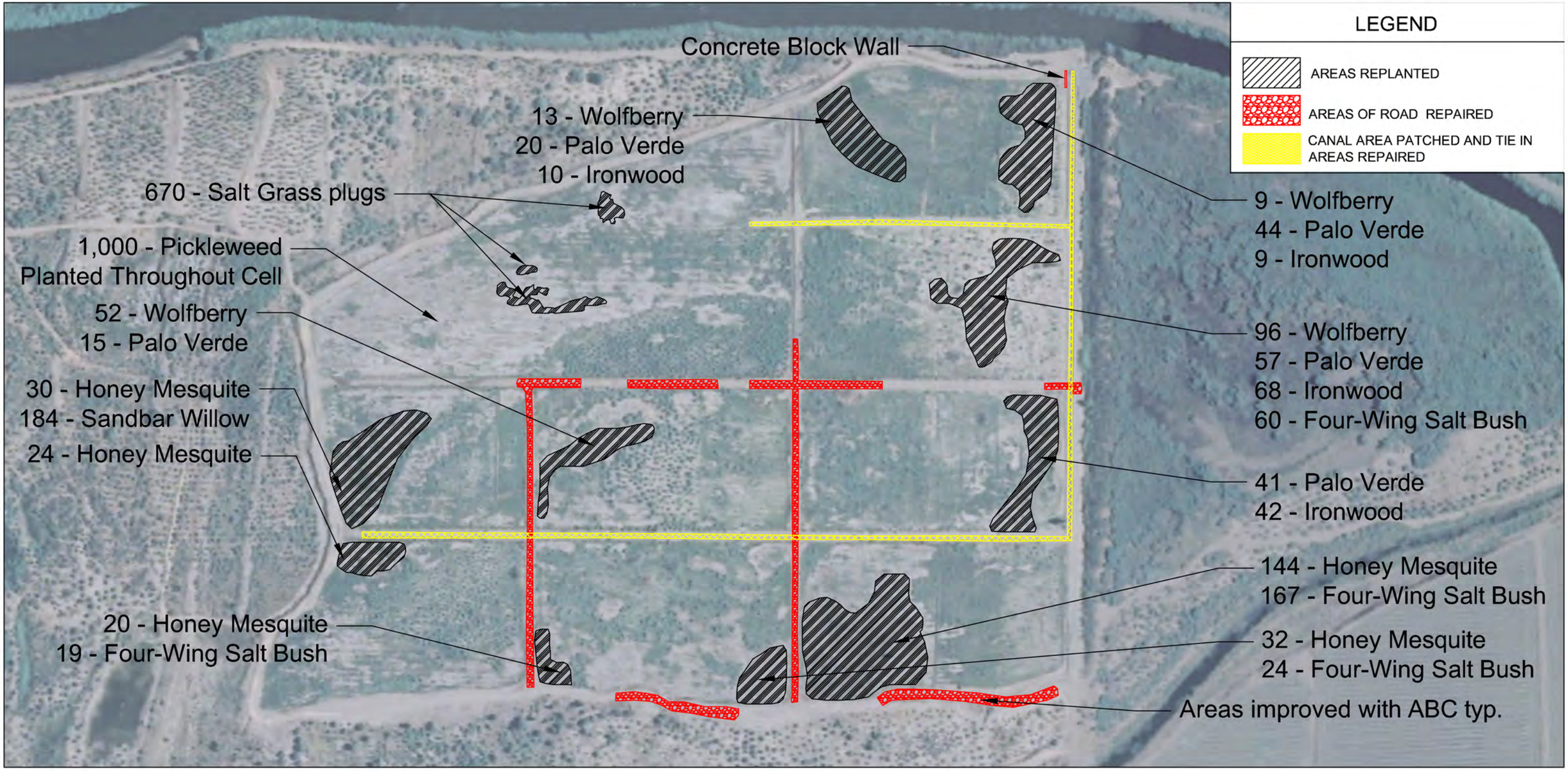
Anderson, B.W., P.E. Russell, and R.D. Ohmart. 2004. Riparian Revegetation An account of 2 decades of experience in the arid southwest. Avvar Books, Blythe, California. 268 pp.

Re-planting unsuccessful areas

Honey Mesquites, Four-Wing Saltbush, Wolfberry, Palo Verde, and Ironwood were incorporated in the re-planting efforts

Weeding tamarisk and other invasive species

Flood irrigating cells after re-planting



Fred Phillips Consulting, LLC
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TEL 928 773 1530
FAX 928 774 4166
Ecosystem Restoration Land Planning

DESIGNED FOR:

AHA REPLANTING AND ROAD REPAIR

YUMA, ARIZONA

Maintenance Plan

Scale: 1" = 250'

0' 62.5' 125 250' 500' NORTH

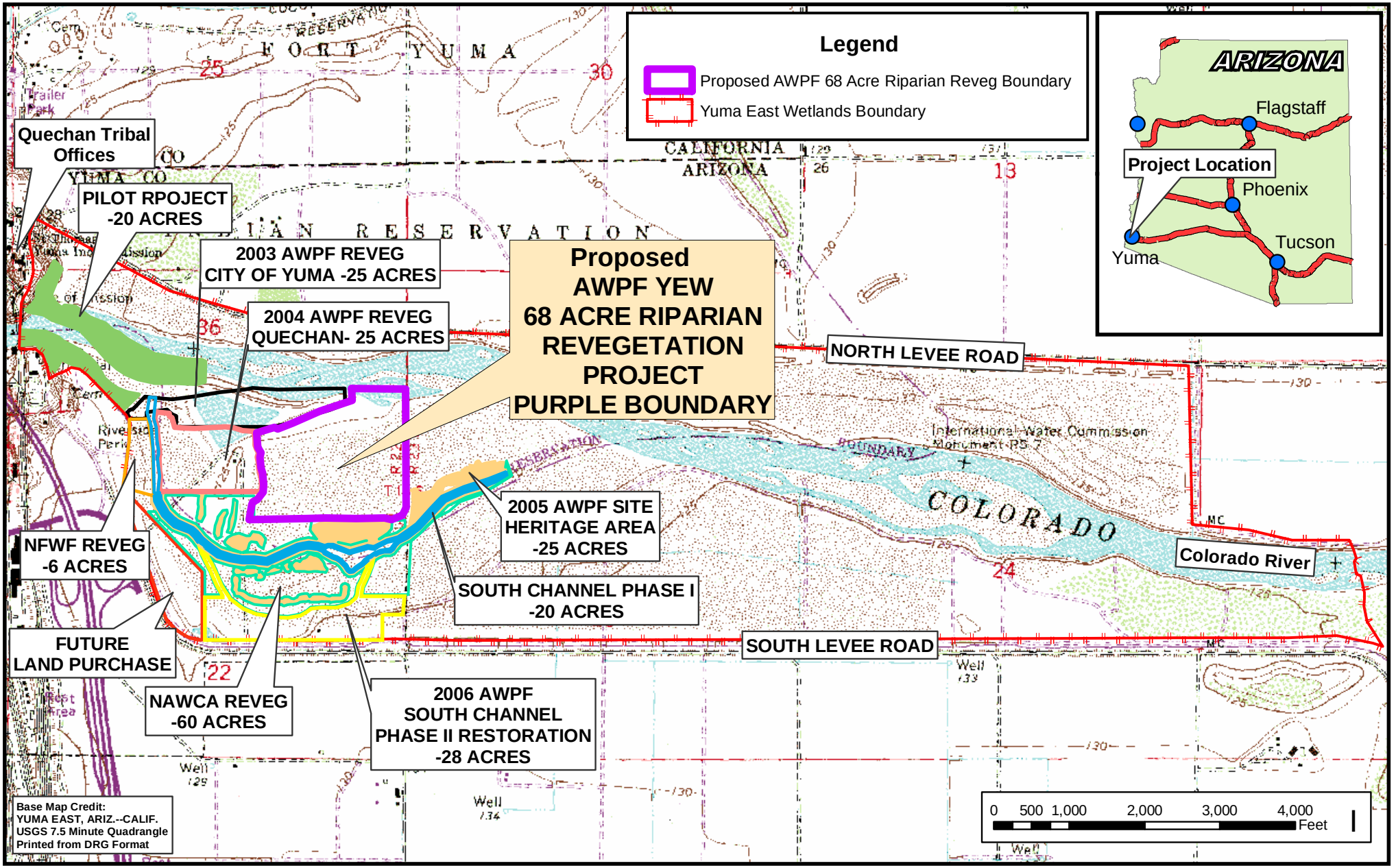
DATE: 6/7/11
JOB NO.:
DRAWN BY: KI
DESIGNED BY: FOP/DB
CHECKED BY: FOP/DB

FIGURE 2-2


Irrigation infrastructure maintenance - repairing irrigation gates and cracks in the concrete


Installing concrete block wall to stop irrigation wall from eroding the slopes of the channel


Road improvements by adding gravel and compacting with a water truck



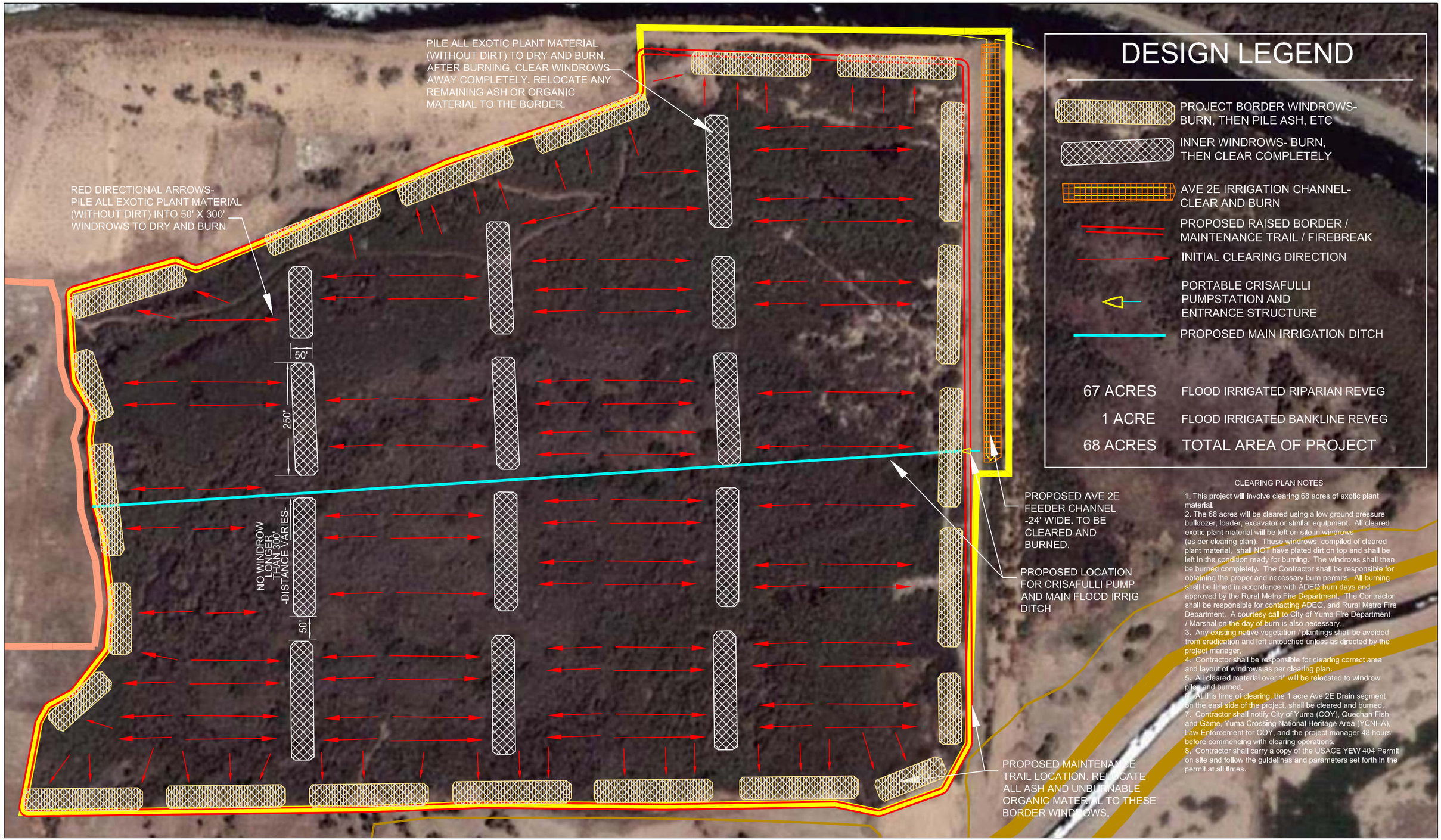
PROJECT PARTNERS:
Quechan Indian Tribe, City of Yuma,
AZ State Land Department,US Army Corps of Engineers,
Yuma County, Bureau of Indian Affairs,
Audubon Society, Bureau of Reclamation,
US Bureau of Land Management,Private Landholders

Submitted By:
Yuma Crossing National Heritage Area
180 W. First Street
Yuma, AZ 85364

Arizona Water Protection Fund Grant 2007

AWPF Yuma East Wetlands 68 Acre Riparian Revegetation Project

Appendix A- Project Location



DESIGN LEGEND

- PROJECT BORDER WINDROWS- BURN, THEN PILE ASH, ETC
- INNER WINDROWS- BURN, THEN CLEAR COMPLETELY
- AVE 2E IRRIGATION CHANNEL- CLEAR AND BURN
- PROPOSED RAISED BORDER / MAINTENANCE TRAIL / FIREBREAK
- INITIAL CLEARING DIRECTION
- PORTABLE CRISAFULLI PUMPSTATION AND ENTRANCE STRUCTURE
- PROPOSED MAIN IRRIGATION DITCH

67 ACRES	FLOOD IRRIGATED RIPARIAN REVEG
1 ACRE	FLOOD IRRIGATED BANKLINE REVEG
68 ACRES	TOTAL AREA OF PROJECT

CLEARING PLAN NOTES

1. This project will involve clearing 68 acres of exotic plant material.
2. The 68 acres will be cleared using a low ground pressure bulldozer, loader, excavator or similar equipment. All cleared exotic plant material will be left on site in windrows (as per clearing plan). These windrows, compiled of cleared plant material, shall NOT have plated dirt on top and shall be left in the condition ready for burning. The windrows shall then be burned completely. The Contractor shall be responsible for obtaining the proper and necessary burn permits. All burning shall be timed in accordance with ADEQ burn days and approved by the Rural Metro Fire Department. The Contractor shall be responsible for contacting ADEQ, and Rural Metro Fire Department. A courtesy call to City of Yuma Fire Department / Marshal on the day of burn is also necessary.
3. Any existing native vegetation / plantings shall be avoided from eradication and left untouched unless as directed by the project manager.
4. Contractor shall be responsible for clearing correct area and layout of windrows as per clearing plan.
5. All cleared material over 1" will be relocated to windrow piles and burned.
6. At this time of clearing, the 1 acre Ave 2E Drain segment on the east side of the project, shall be cleared and burned.
7. Contractor shall notify City of Yuma (COY), Quechan Fish and Game, Yuma Crossing National Heritage Area (YCNHA), Law Enforcement for COY, and the project manager 48 hours before commencing with clearing operations.
8. Contractor shall carry a copy of the USACE YEW 404 Permit on site and follow the guidelines and parameters set forth in the permit at all times.

Fred Phillips Consulting, LLC
401 SOUTH LEROUX STREET
FLAGSTAFF, AZ
86001
TEL 928 773 1530
FAX 928 774 4166
Ecosystem Restoration Land Planning

REV.	COMMENT	DATE

YUMA EAST WETLANDS

AWPF GRANT# 08-152WPF

'AHA AWPF REVEG SITE- 68 ACRES

CLEARING DESIGN

YUMA CROSSING NATIONAL HERITAGE AREA

SHEET TITLE :

CLEARING DESIGN

0 50 100 200ft NORTH

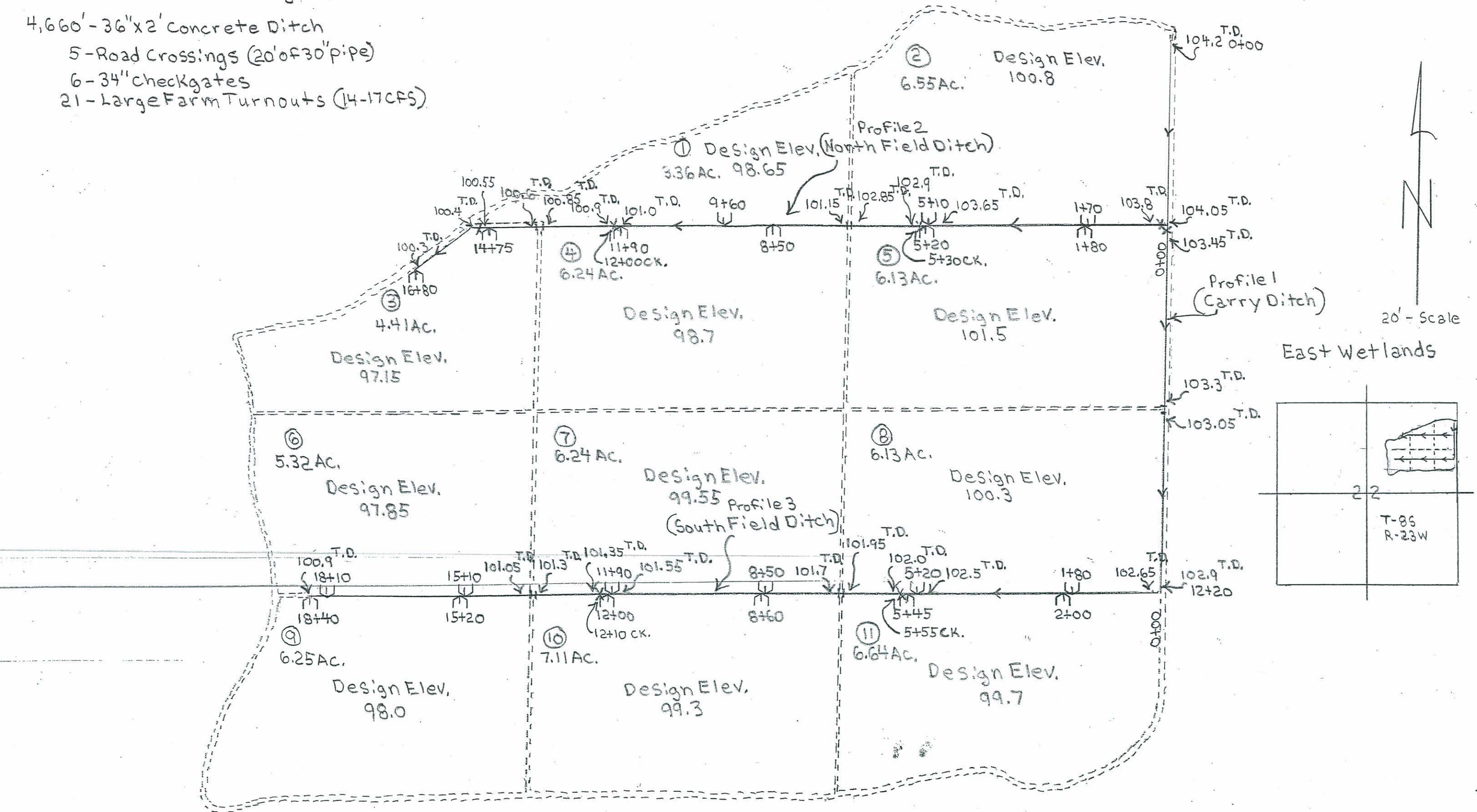
DATE:
JOB NO.:
DRAWN BY: AH
DESIGNED BY: FOP/AH
CHECKED BY: FOP

SHEET NO.:

FIGURE 1

Concrete Ditch Lining - Totals

4,660' - 36"x2' Concrete Ditch
5 - Road Crossings (20' of 30" pipe)
6 - 34" Checkgates
21 - Large Farm Turnouts (14-17CFS)



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Ecosystem Restoration Land Planning

PG & E, LLC
PO BOX 11350
PRESCOTT, AZ
86304
TEL 623 561 6094
FAX 623 561 2968

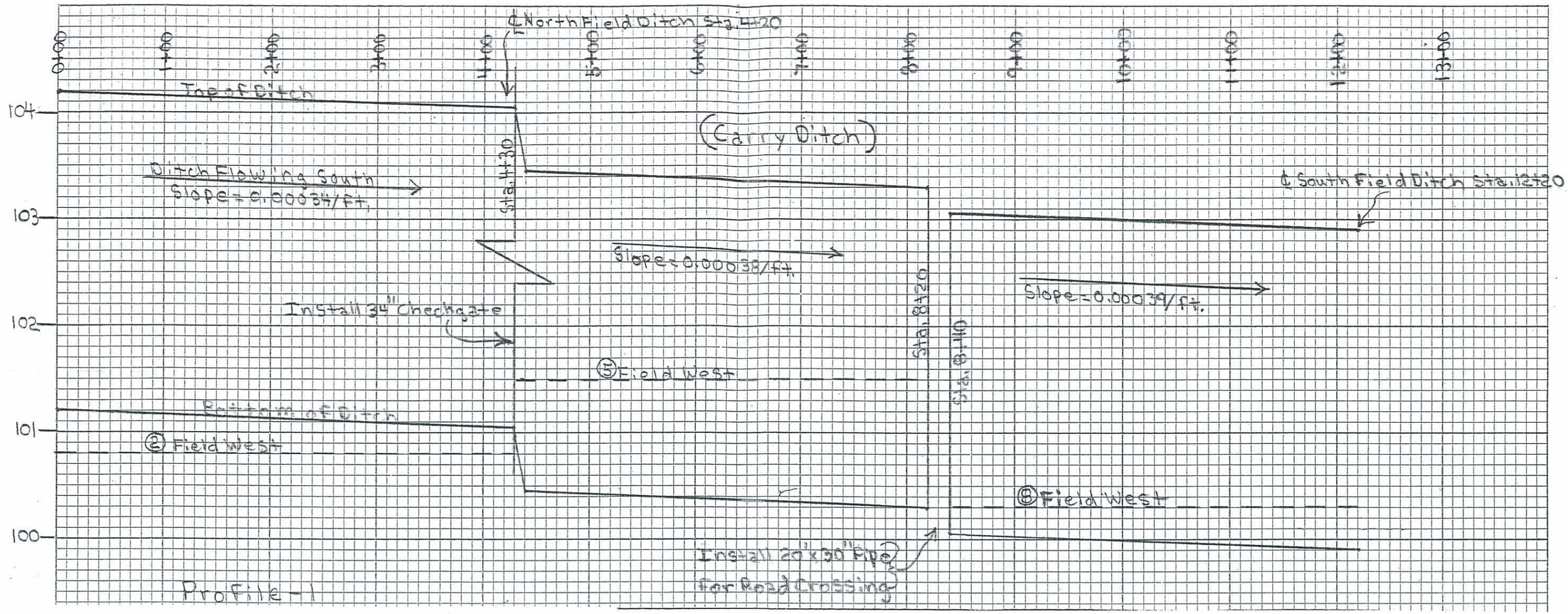
NRCS
2197 S. 4TH AVE.
STE. #104
YUMA, AZ
85364
TEL 928 726 0860
FAX 928 782 0930

ARIZONA WATER PROTECTION FUND
AHA 68 ACRE
EXCAVATION, GRADING, IRRIGATION, + PLANTING
SCHEMATIC DESIGN
YUMA CROSSING NATIONAL HERITAGE AREA

SHEET TITLE :

0 60 120 240ft NORTH

DATE: OCTOBER 21, 2008
JOB NO.:
DRAWN BY: AH/DB
DESIGNED BY: NH/FOP/AH/DP
CHECKED BY: FOP



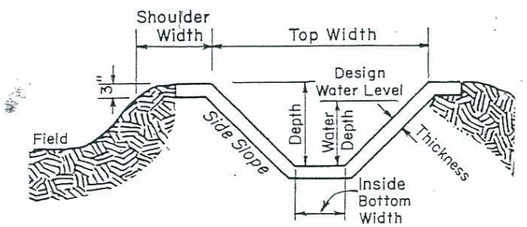
HYDRAULIC AND STRUCTURAL DATA

Station		Length Completed Ditch (Feet)		Interval Between Scorings		Slope of Ditch		Bottom Width		Depth of Ditch		Water Depth		Top Width		Thickness		Shoulder Width	
DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK
0+00 12+20		1,200'		9-10'		See Profile		2'		3'		2.5'		8'		1½"		2-3'	

STRUCTURES INSTALLED

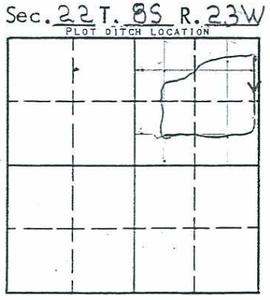
Type	Size		Number		Location
	DESIGN	CHECK	DESIGN	CHECK	
Check gate	34"		1		See Profile
Road Crossing	30"		1-20'		↓

Sacks of Cement No.____? #Cement____, #Sand____, #Gravel____, Gal. Water____, Air entrainment____
How was mix determined?____ Method of Curing____
Design capacity of ditch?____ Actual capacity of ditch?____. Side Slope ____
Does ditch meet minimum specifications? Yes__ No__, (CONTRACTOR) Yes__ No__. (SCS TECHNICIAN) If not, explain differences and what was done to make ditch satisfactory.____



TYPICAL SECTION

Sec. 22 T. 8S R. 23W
PLOT DITCH LOCATION



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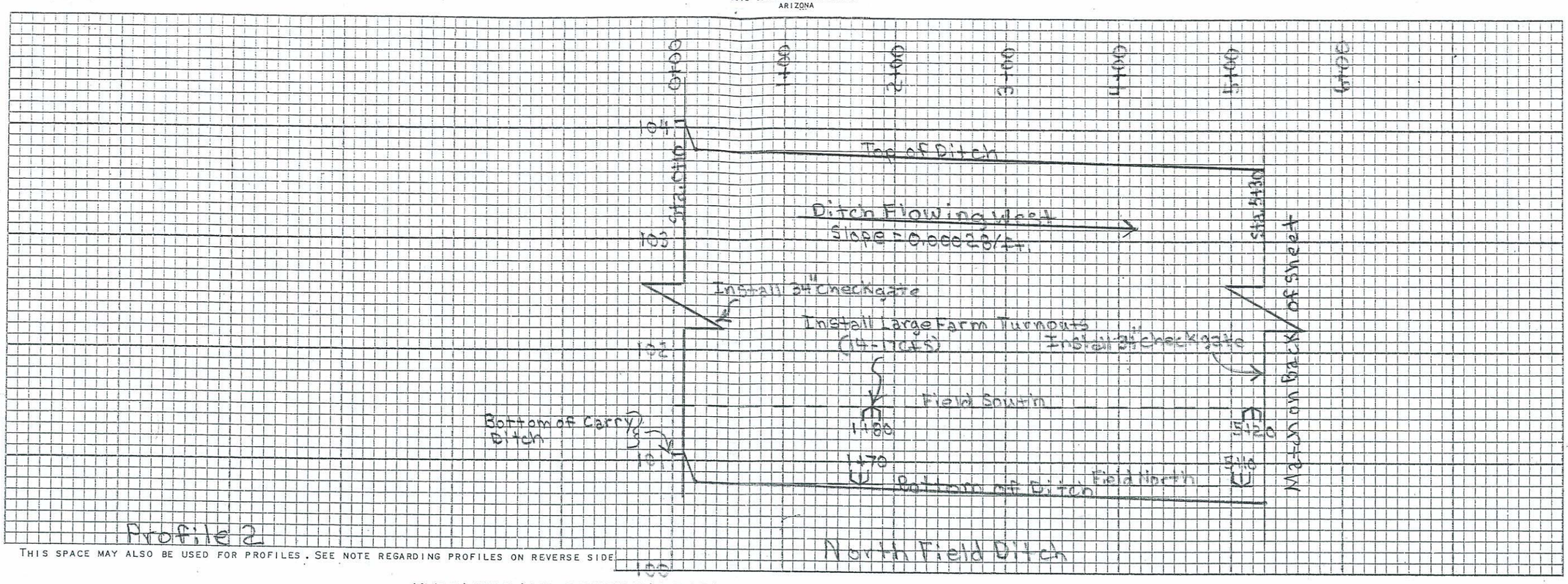
Name of Cooperator East Wetlands
Name of Contractor____
Designed By Yuma Field Office
Date Designed Sept 2009
State & County Code & Farm Serial No.____
S. C. District Laguna Program Year____
Checked By____ Date____
Survey notes filed

RECORD OF DATA

CONCRETE DITCH LINING AND APPURTENANT STRUCTURES

AZ - ENG - 3

SOIL CONSERVATION SERVICE
ARIZONA



Profile 2

THIS SPACE MAY ALSO BE USED FOR PROFILES. SEE NOTE REGARDING PROFILES ON REVERSE SIDE

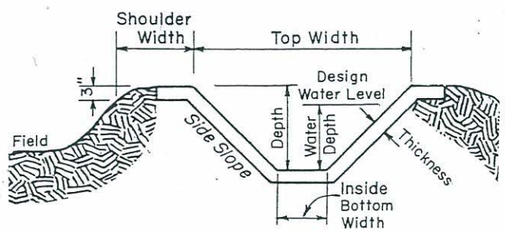
HYDRAULIC AND STRUCTURAL DATA

Station		Length Completed Ditch(Feet)		Interval Between Scorings		Slope of Ditch		Bottom Width		Depth of Ditch		Water Depth		Top Width		Thickness		Shoulder Width	
DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK
North Field Ditch 0+00 16+80		1,640'		9-10		See Profile		2'		36"		2.5'		8'		1½"		2-3'	

STRUCTURES INSTALLED

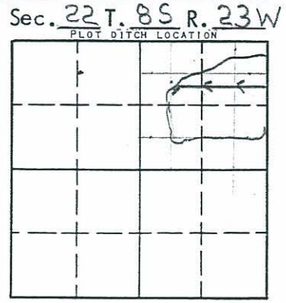
Type	Size		Number		Location
	DESIGN	CHECK	DESIGN	CHECK	
Large Farm Turnouts	14-17 CFS		9		See Profile
Check gates	34"		3		↓
Road crossings	30"		2-20'		

Sacks of Cement No.____? #Cement____, #Sand____, #Gravel____, Gal. Water____, Air entrainment____
How was mix determined?____ Method of Curing____
Design capacity of ditch?____ Actual capacity of ditch?____. Side Slope ____
Does ditch meet minimum specifications? Yes__ No__, (CONTRACTOR) Yes__ No__. (SCS TECHNICIAN) If not, explain differences and what was done to make ditch satisfactory.____



TYPICAL SECTION

Sec. 22 T. 8S R. 23W
PLOT DITCH LOCATION



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Designed By Yuma Field Office
Date Designed Sept. 2008

State & County Code & Farm Serial No.____
S. C. District Laguna Program Year____
Checked By____ Date____
Survey notes filed____

RECORD OF DATA

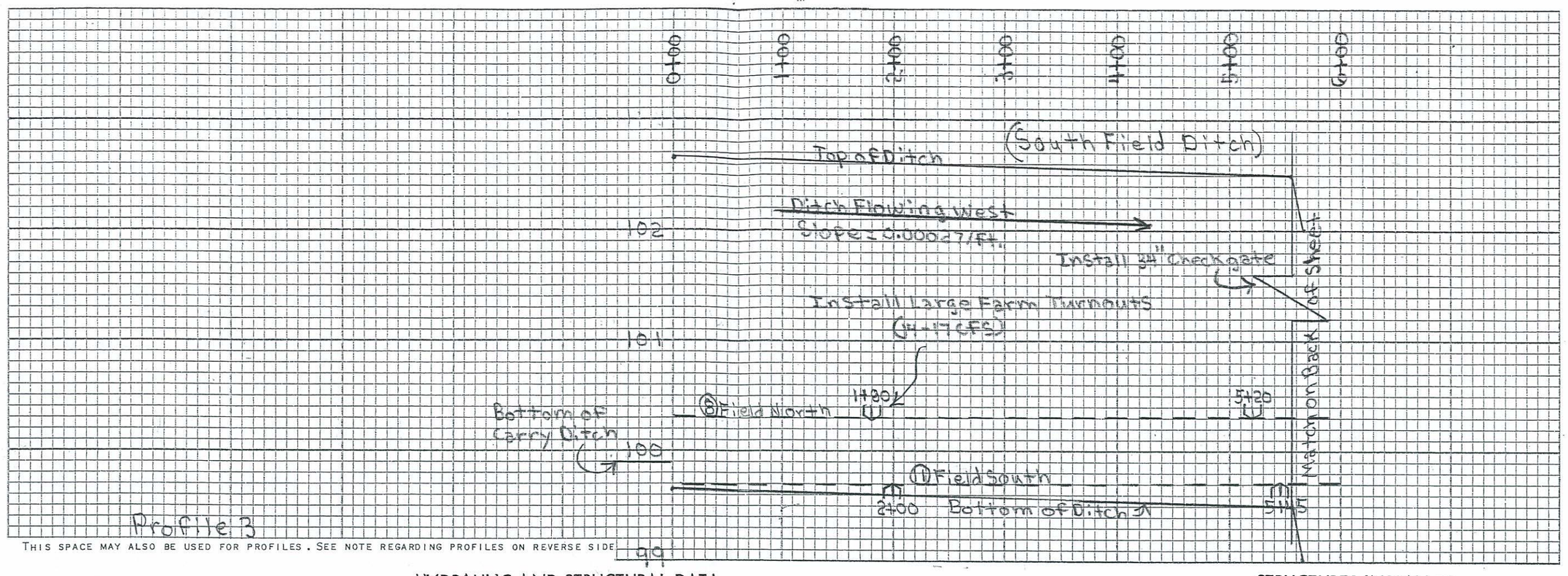
CONCRETE DITCH LINING AND APPURTENANT STRUCTURES

SHEET NO.: 6 OF 11

USDA-SCS-PORTLAND, OREG. 1971

AZ - ENG - 3

SOIL CONSERVATION SERVICE
ARIZONA



Profile 3

THIS SPACE MAY ALSO BE USED FOR PROFILES. SEE NOTE REGARDING PROFILES ON REVERSE SIDE

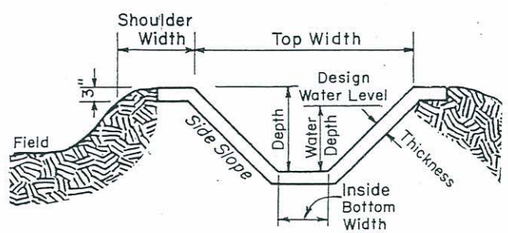
HYDRAULIC AND STRUCTURAL DATA

Station		Length Completed Ditch(Feet)		Interval Between Scorings		Slope of Ditch		Bottom Width		Depth of Ditch		Water Depth		Top Width		Thickness		Shoulder Width	
DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK	DESIGN	CHECK
South Field Ditch 0+00		1,800		9-10'		See Profile		2'		3'		2.5'		8'		1½"		2-3'	
18+40																			

STRUCTURES INSTALLED

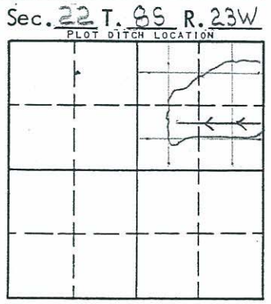
Type	Size		Number		Location
	DESIGN	CHECK	DESIGN	CHECK	
Large Farm Turnouts	14-17 CFS		12		See Profile
Check gates	34"		2		
Road Crossings	30"		2-20'		

Sacks of Cement No.____? #Cement____, #Sand____, #Gravel____, Gal. Water____, Air entrainment____
How was mix determined?____ Method of Curing____
Design capacity of ditch?____ Actual capacity of ditch?____. Side Slope ____
Does ditch meet minimum specifications? Yes__ No__ (CONTRACTOR), Yes__ No__ (SCS TECHNICIAN). If not, explain differences and what was done to make ditch satisfactory.____



TYPICAL SECTION

Sec. 22 T. 8S R. 23W
PLOT DITCH LOCATION



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Name of Contractor____
Designed By Yuma Field Office
Date Designed Sept. 2008
State & County Code & Farm Serial No.____
S. C. District Laguna Program Year____
Checked By____ Date____
Survey notes filed____

RECORD OF DATA

CONCRETE DITCH LINING AND APPURTENANT STRUCTURES

SHEET NO.: 7 OF 11

USDA-SCS-PORTLAND, OREG. 1971

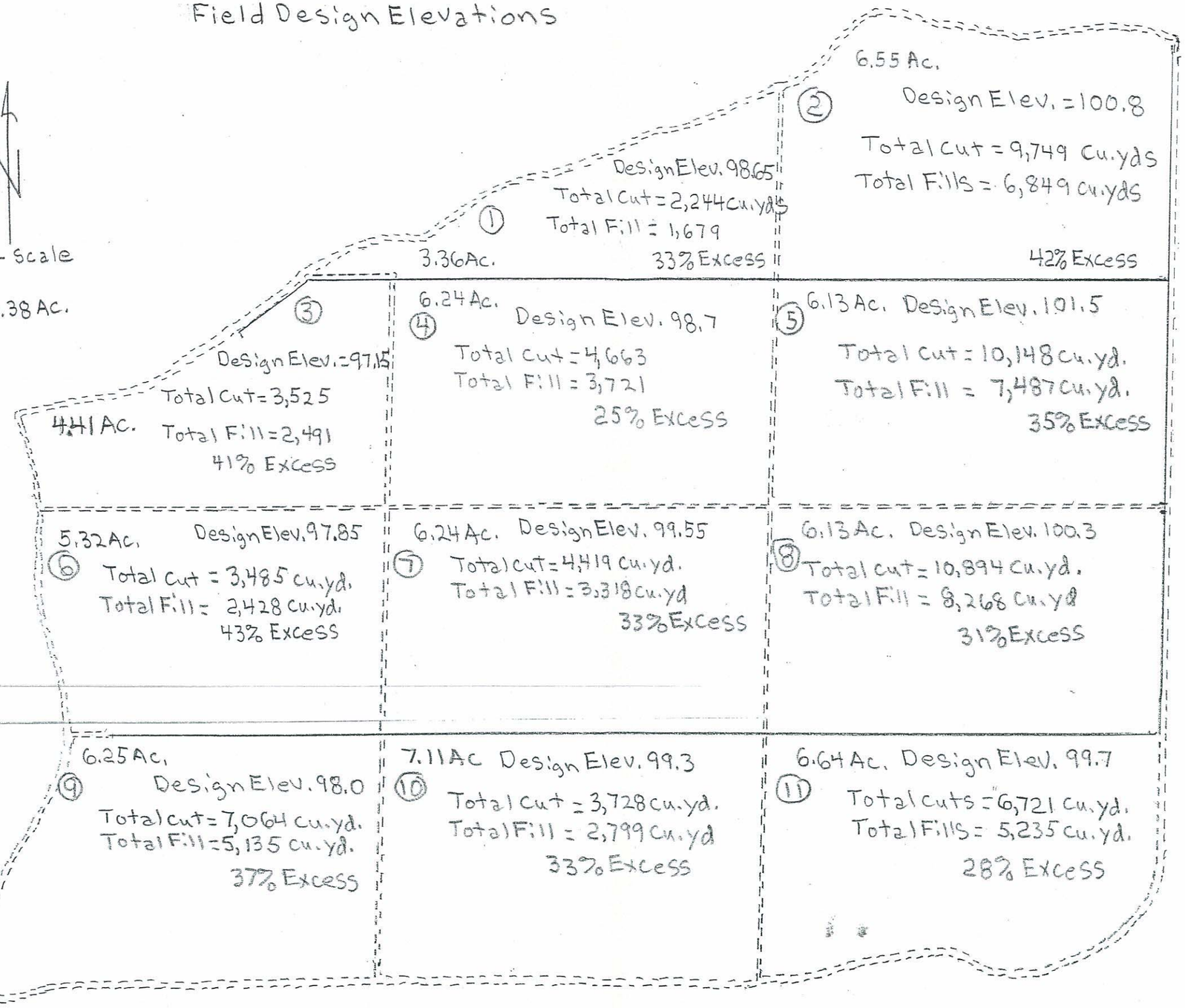
Land Leveling - Ditch Pads - Roads - Yardage

Field Design Elevations

20 - Scale

East Wetlands - 64.38 Ac.

64.38 Ac.

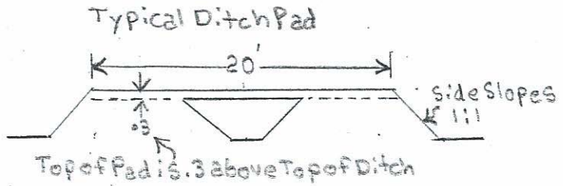


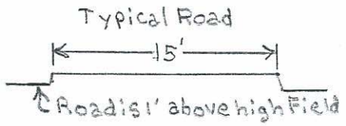
Field	Cut	Fill
1	2,244	1,679
2	9,749	6,849
3	3,525	2,491
4	4,663	3,721
5	10,148	7,487
6	3,485	2,428
7	4,419	3,318
8	10,894	8,268
9	7,064	5,135
10	3,728	2,799
11	6,721	5,235
	66,640	49,410

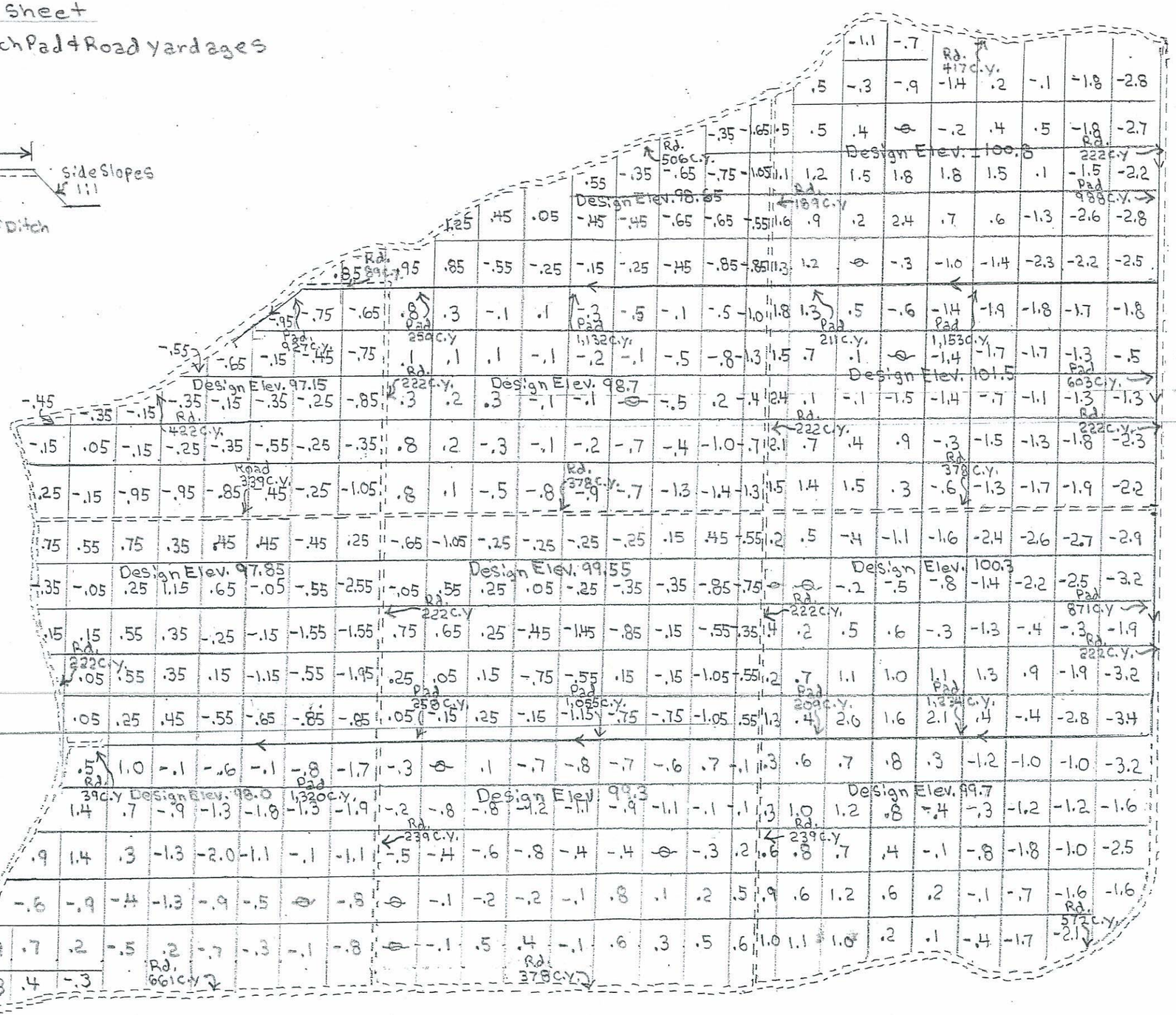
$\frac{66,640 \text{ cu.yd. cut}}{49,410 \text{ cu.yd Fill}} = 35\%$

Cut-Fill Sheet

Shows Ditch Pad & Road yardages





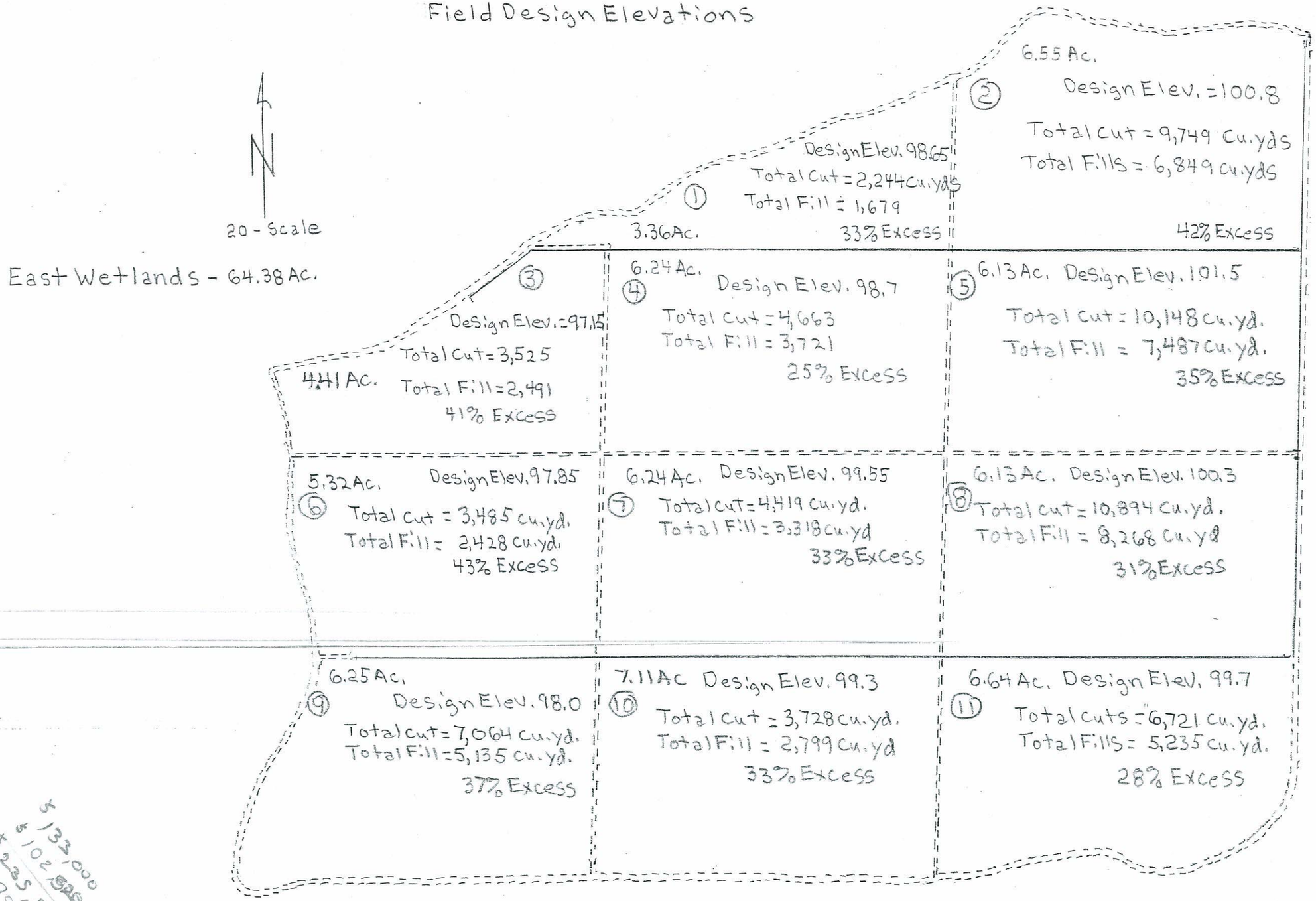


SHEET NO.:

9 OF 11

Land Leveling - Ditch Pads - Roads - Yardage

Field Design Elevations



64.38 Ac.

Field	Cut	Fill
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11	6,721	5,235
	66,640	49,410

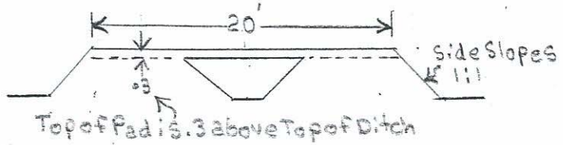
$\frac{66,640 \text{ Cu. yd. cut}}{49,410 \text{ Cu. yd Fill}} = 35\%$

$133,000
$102,580 Dep. Tax
$235,580
781,000

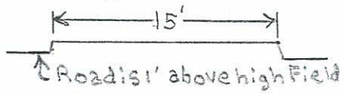
Cut - Fill Sheet

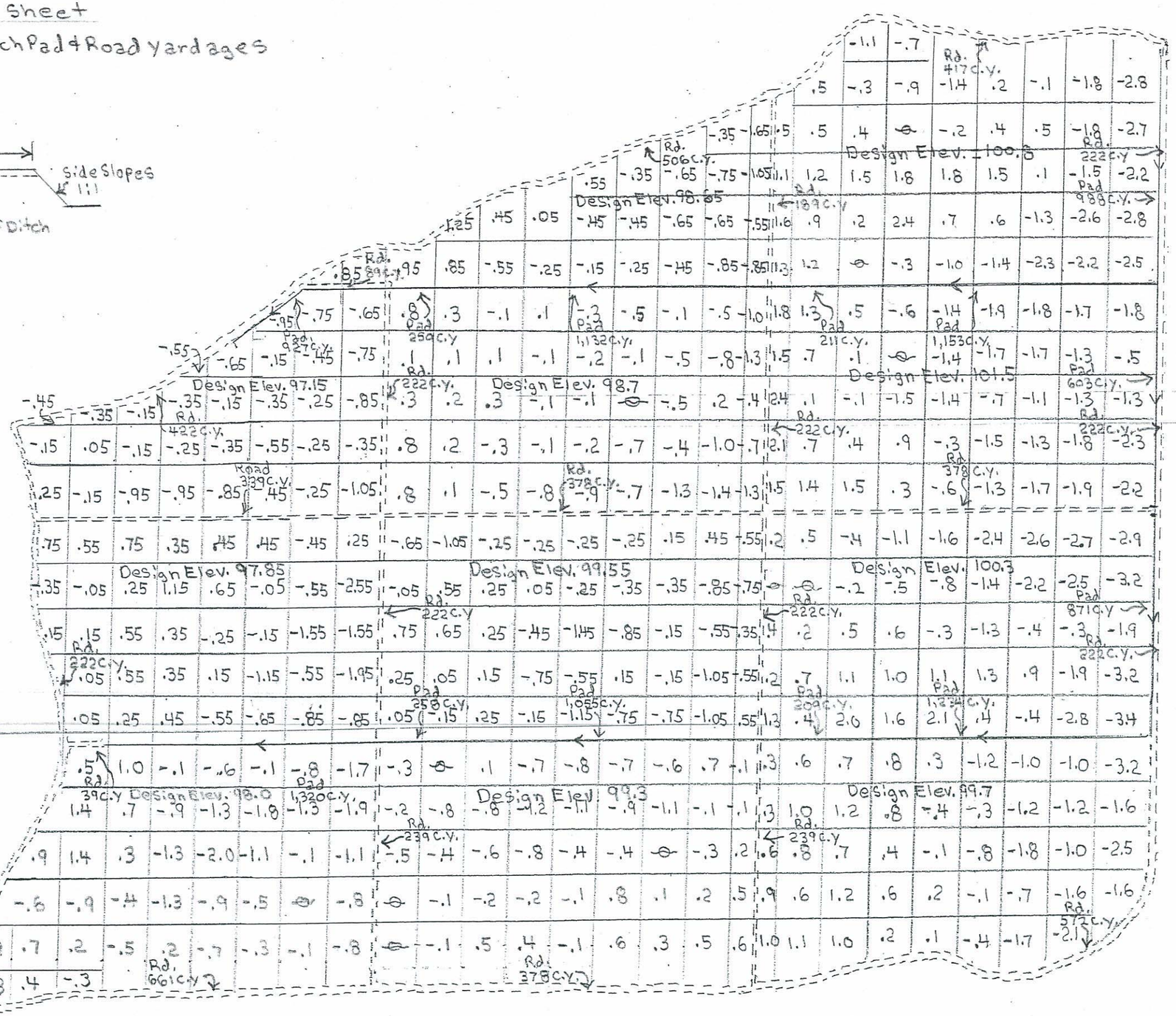
Shows Ditch Pad & Road yardages

Typical Ditch Pad

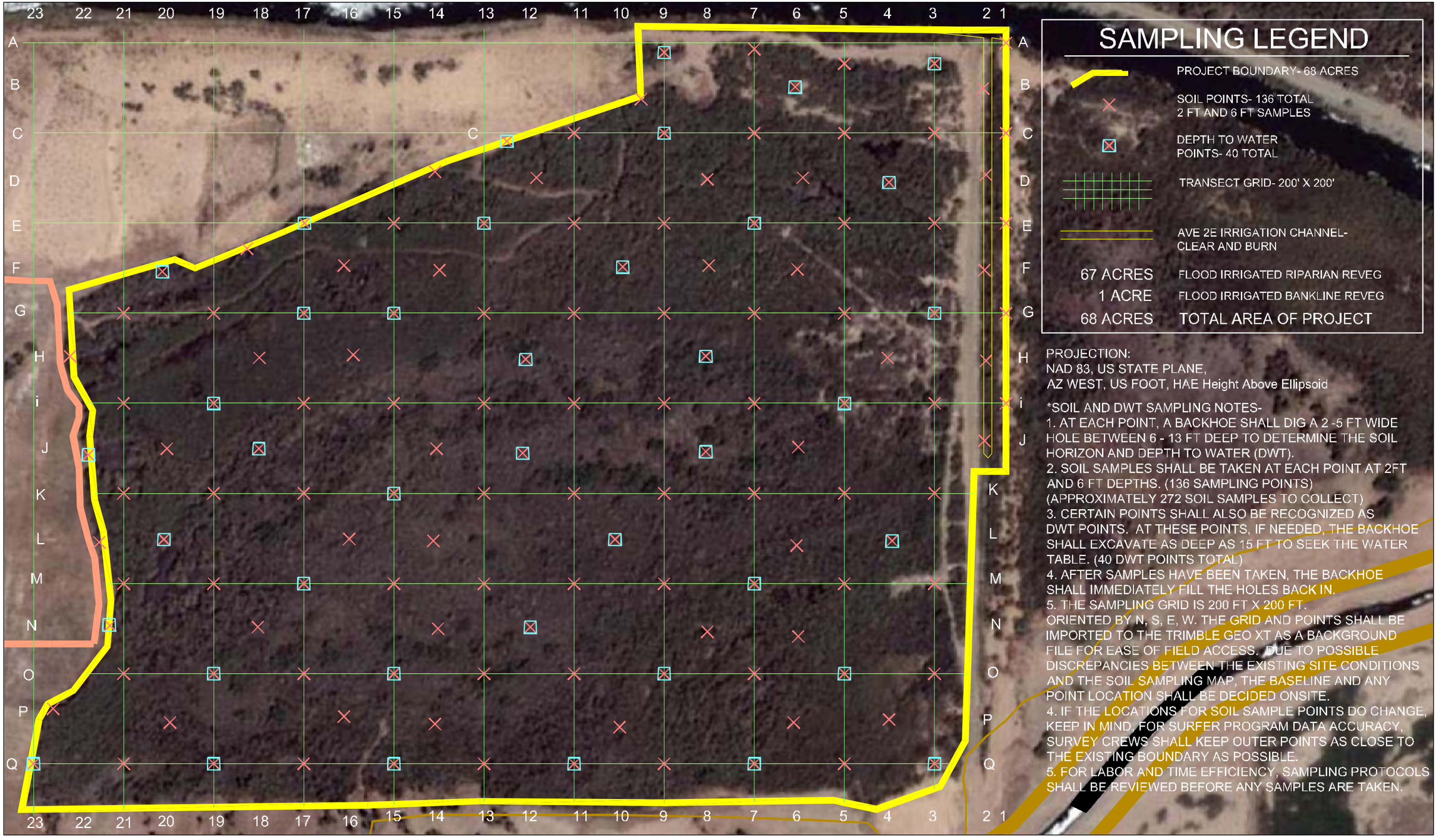


Typical Road





20 - Scale



SAMPLING LEGEND

- PROJECT BOUNDARY- 68 ACRES
- SOIL POINTS- 136 TOTAL
  2 FT AND 6 FT SAMPLES
- DEPTH TO WATER
  POINTS- 40 TOTAL
- TRANSECT GRID- 200' X 200'
- AVE 2E IRRIGATION CHANNEL-
  CLEAR AND BURN

67 ACRES	FLOOD IRRIGATED RIPARIAN REVEG
1 ACRE	FLOOD IRRIGATED BANKLINE REVEG
68 ACRES	TOTAL AREA OF PROJECT

PROJECTION:
NAD 83, US STATE PLANE,
AZ WEST, US FOOT, HAE Height Above Ellipsoid

*SOIL AND DWT SAMPLING NOTES-
1. AT EACH POINT, A BACKHOE SHALL DIG A 2 -5 FT WIDE HOLE BETWEEN 6 - 13 FT DEEP TO DETERMINE THE SOIL HORIZON AND DEPTH TO WATER (DWT).
2. SOIL SAMPLES SHALL BE TAKEN AT EACH POINT AT 2FT AND 6 FT DEPTHS. (136 SAMPLING POINTS) (APPROXIMATELY 272 SOIL SAMPLES TO COLLECT)
3. CERTAIN POINTS SHALL ALSO BE RECOGNIZED AS DWT POINTS. AT THESE POINTS, IF NEEDED, THE BACKHOE SHALL EXCAVATE AS DEEP AS 15 FT TO SEEK THE WATER TABLE. (40 DWT POINTS TOTAL)
4. AFTER SAMPLES HAVE BEEN TAKEN, THE BACKHOE SHALL IMMEDIATELY FILL THE HOLES BACK IN.
5. THE SAMPLING GRID IS 200 FT X 200 FT. ORIENTED BY N, S, E, W. THE GRID AND POINTS SHALL BE IMPORTED TO THE TRIMBLE GEO XT AS A BACKGROUND FILE FOR EASE OF FIELD ACCESS. DUE TO POSSIBLE DISCREPANCIES BETWEEN THE EXISTING SITE CONDITIONS AND THE SOIL SAMPLING MAP, THE BASELINE AND ANY POINT LOCATION SHALL BE DECIDED ONSITE.
4. IF THE LOCATIONS FOR SOIL SAMPLE POINTS DO CHANGE, KEEP IN MIND, FOR SURFER PROGRAM DATA ACCURACY, SURVEY CREWS SHALL KEEP OUTER POINTS AS CLOSE TO THE EXISTING BOUNDARY AS POSSIBLE.
5. FOR LABOR AND TIME EFFICIENCY, SAMPLING PROTOCOLS SHALL BE REVIEWED BEFORE ANY SAMPLES ARE TAKEN.

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Ecosystem Restoration Land Planning

YUMA CROSSING
NATIONAL HERITAGE
AREA

180 WEST FIRST STREET STE E
YUMA, AZ
85364

REV.	COMMENT	DATE

YUMA EAST WETLANDS

AWPF GRANT# 08-152WPF
'AHA AWPF REVEG SITE- 68 ACRES
SITE ASSESSMENT AND ANALYSIS PLAN

SHEET TITLE :
SOILS DWT
SAMPLING
MAP

0 50 100 200ft NORTH

DATE: MARCH 31, 2008
JOB NO.:
DRAWN BY: AH
DESIGNED BY: FOP/AH
CHECKED BY: FOP

SHEET NO.:
FIGURE 1

COLORADO RIVER

YEW AWPF
AHA 68 ACRE
RIPARIAN
REVEGETATION
PROJECT

0 115 230 460 690 920 Feet

N
W E
S

PLANT / SOIL SALINTY TOLERANCE RANGE

0.0 - 3.0	COTTONWOOD/WILLOWS
3.0 - 9.4	MESQUITE SPECIES
9.4 - +	NATIVE SALT TOLERANT SPECIES

50 45 40 35 30 25 24 22 20 18 16 14 12 10 9.5 9 8 7 6 5 4 3.5 3 2 1 0

EC'S IN MMHOS/CM

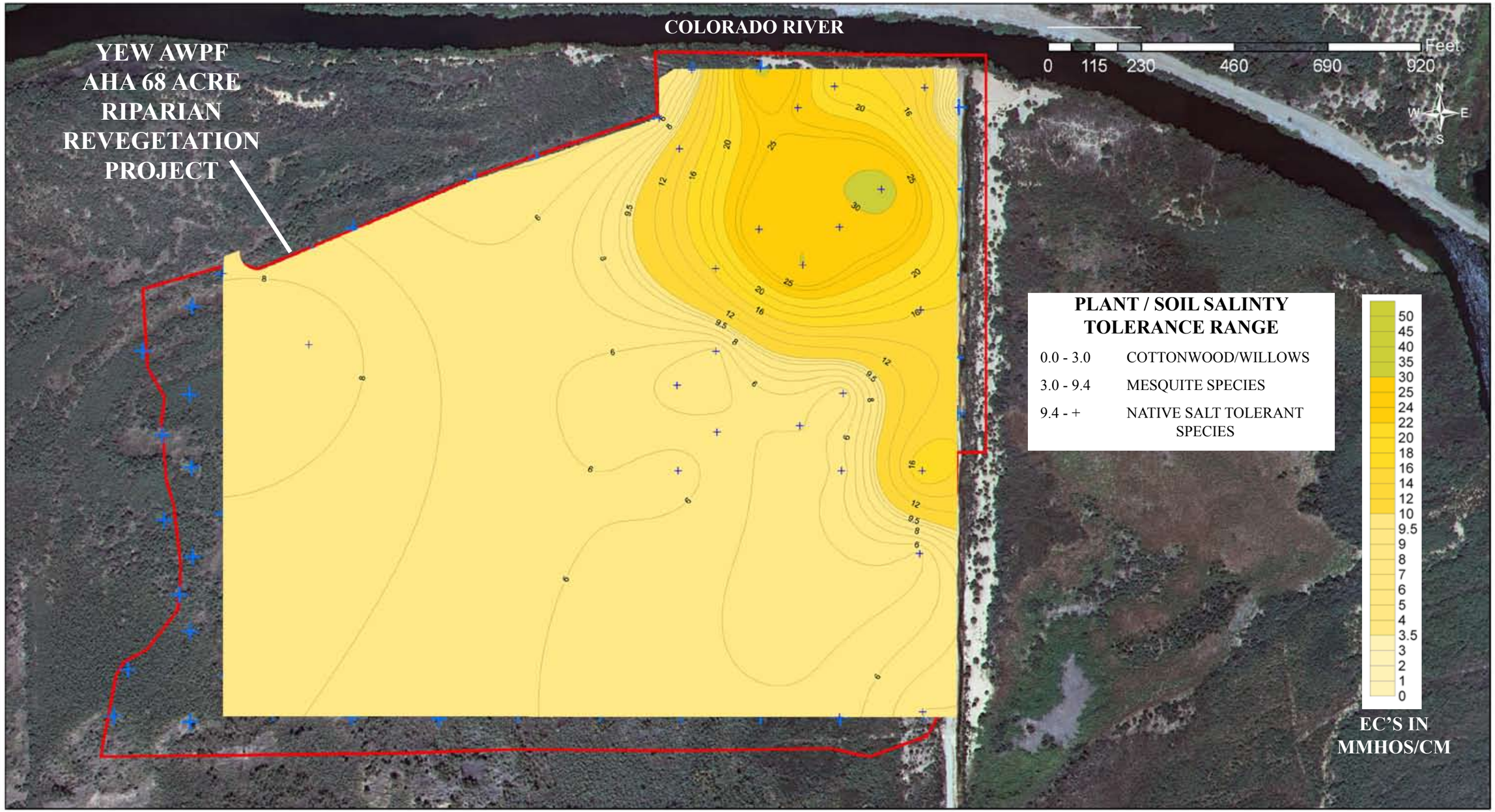
PREPARED BY:
FRED PHILLIPS CONSULTING
401 SOUTH LEROUX STREET
FLAGSTAFF AZ, 86001

PREPARED FOR:
YUMA CROSSING
NATIONAL HERITAGE AREA

YUMA EAST WETLANDS
AWPF AHA 68 ACRE
REVEGETATION PROJECT

SALINITY LEVELS AT
2 FOOT DEPTH

JUNE 2008 FIGURE 1



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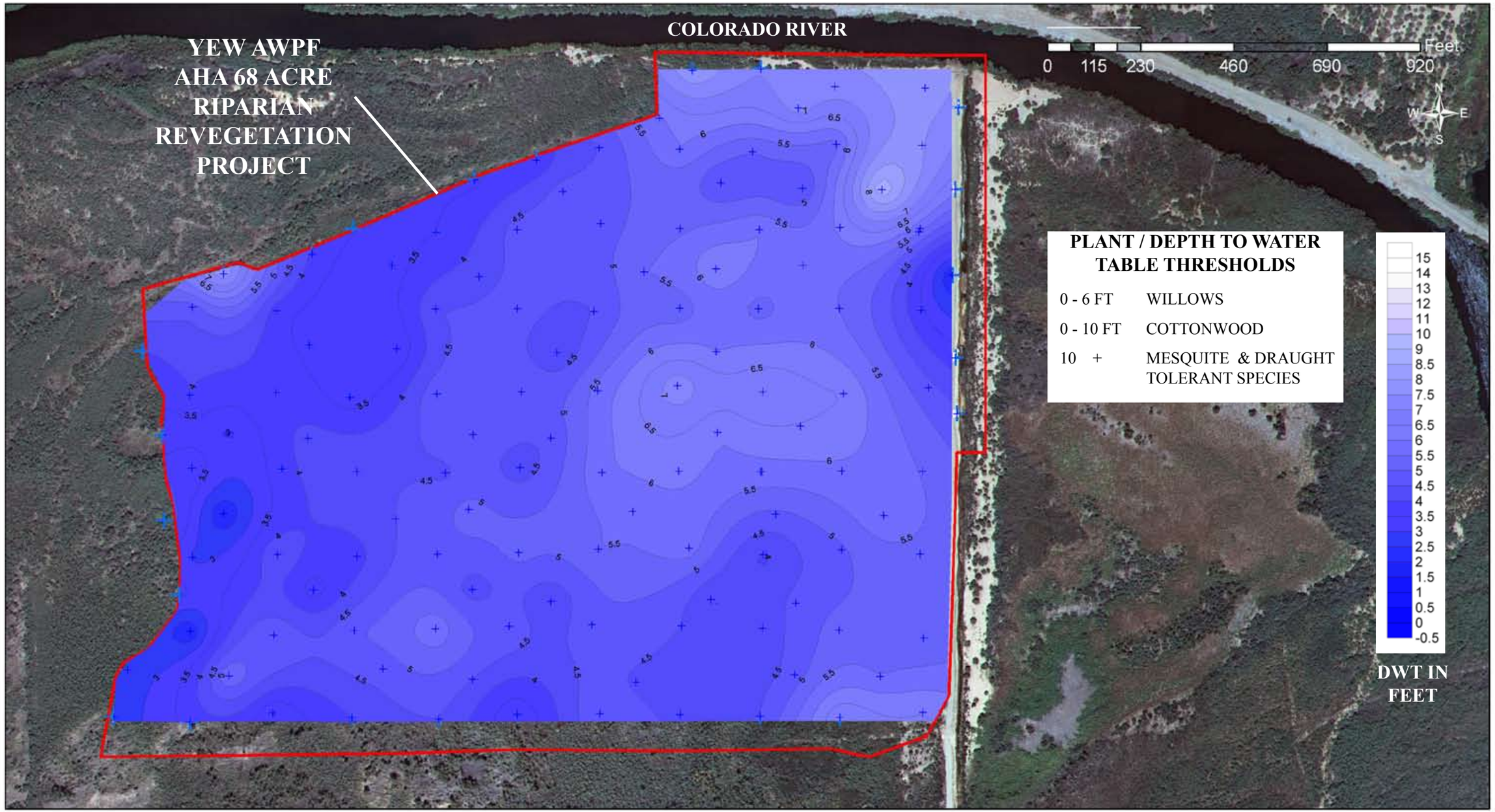
FLAGSTAFF AZ, 86001

PREPARED FOR:
YUMA CROSSING
NATIONAL HERITAGE AREA

YUMA EAST WETLANDS
AWPF AHA 68 ACRE
REVEGETATION PROJECT

SALINITY LEVELS AT
6 FOOT DEPTH

JUNE 2008 FIGURE 2



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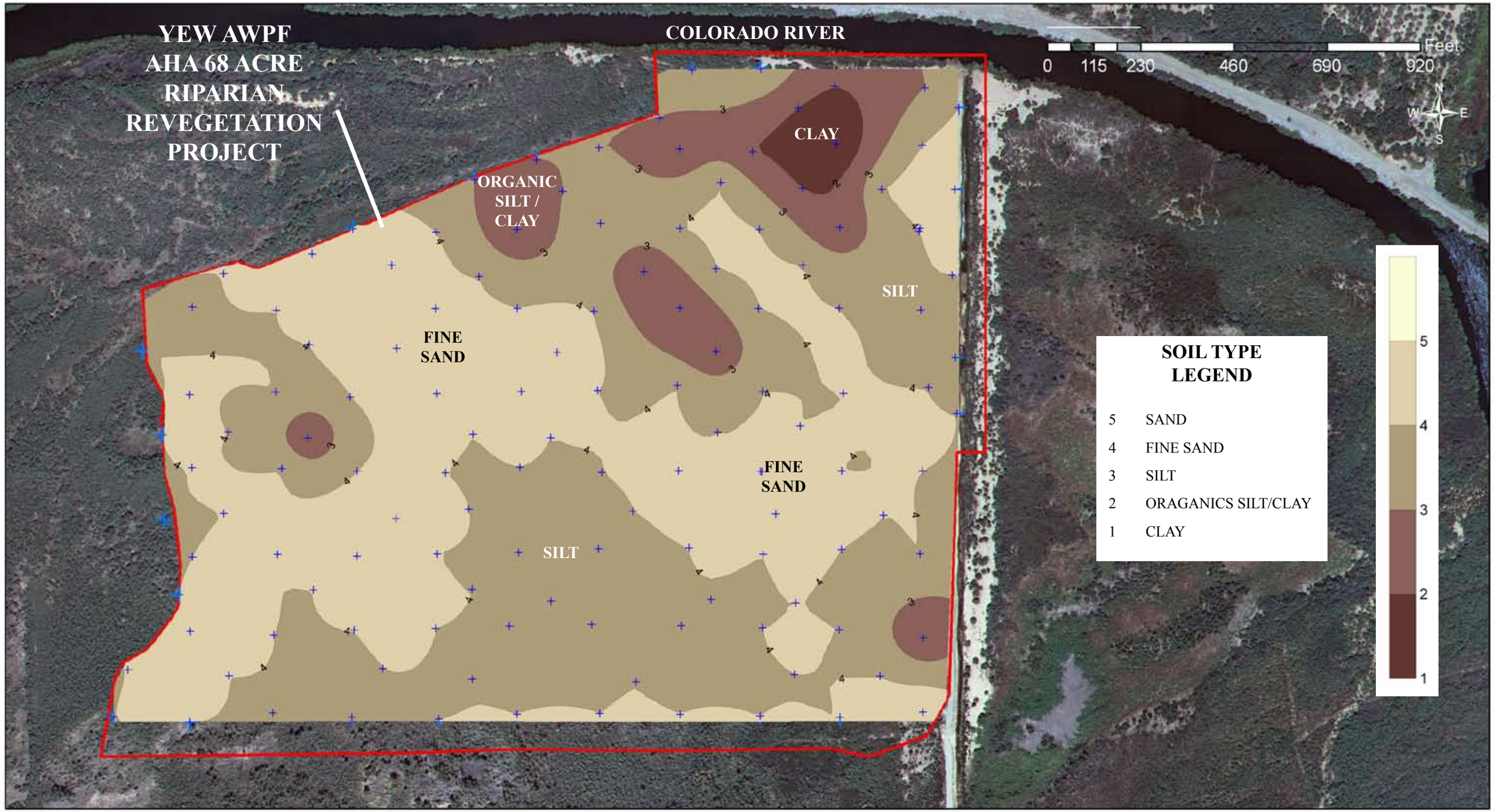
401 SOUTH LEROUX STREET
FLAGSTAFF AZ, 86001

PREPARED FOR:
YUMA CROSSING
NATIONAL HERITAGE AREA

YUMA EAST WETLANDS
AWPF AHA 68 ACRE
REVEGETATION PROJECT

DEPTH TO WATER
TABLE LEVELS

JUNE 2008 FIGURE 3



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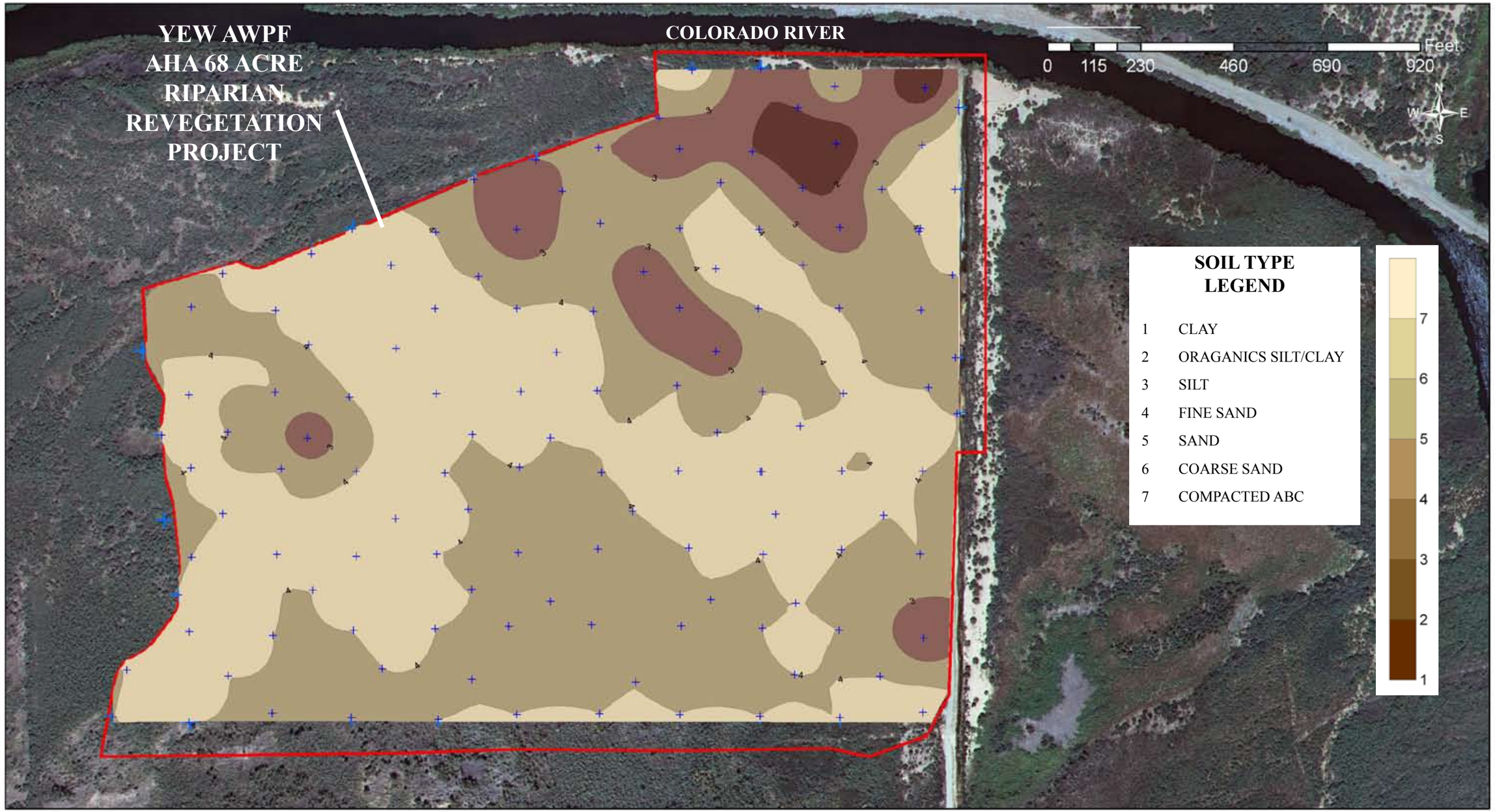
PREPARED FOR:
YUMA CROSSING
NATIONAL HERITAGE AREA

YUMA EAST WETLANDS
AWPF AHA 68 ACRE
REVEGETATION PROJECT

SOIL TEXTURE TYPE
AT 2 FOOT DEPTH

JUNE 2008 FIGURE 4



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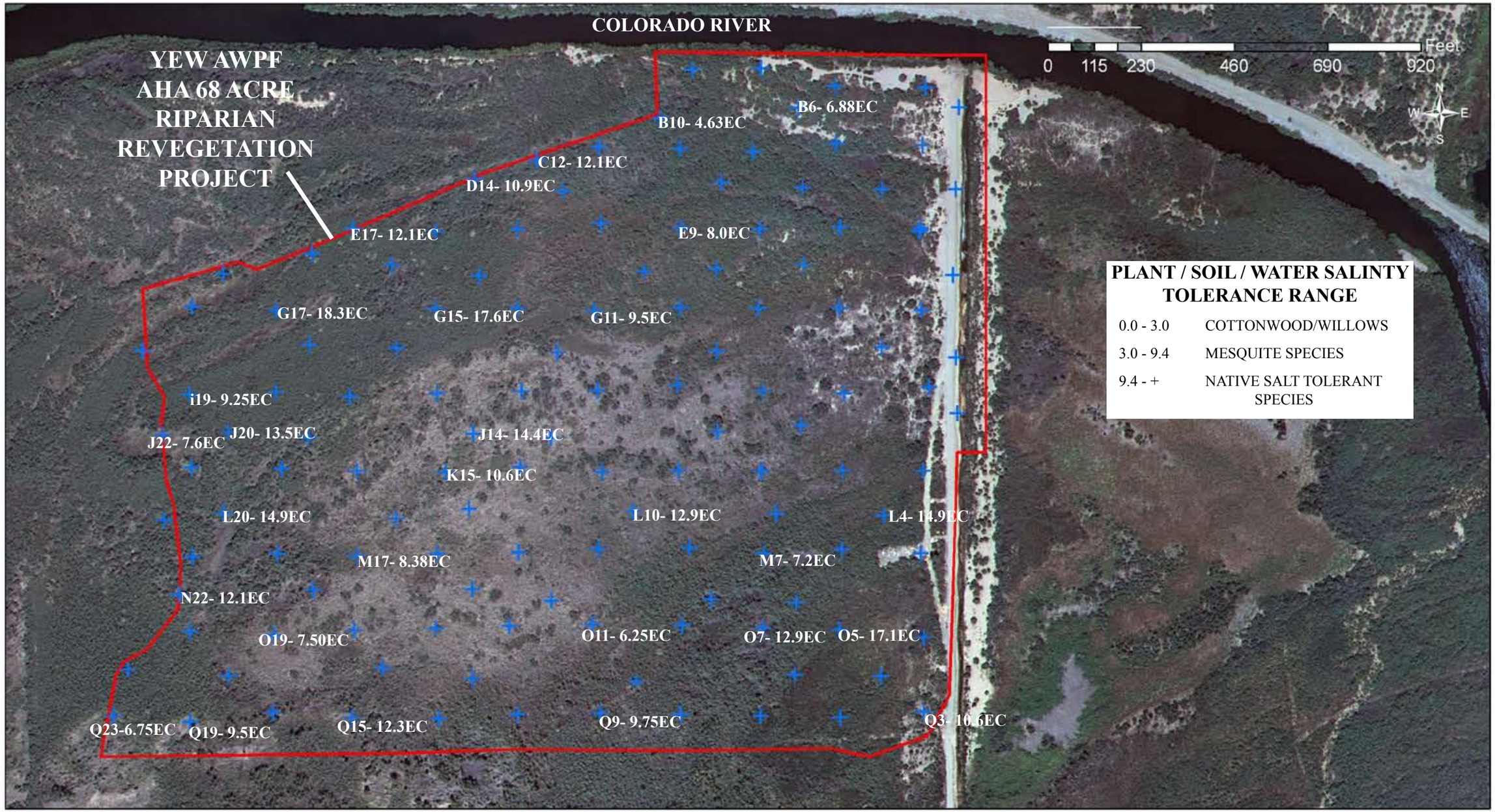
FLAGSTAFF AZ, 86001

PREPARED FOR:
YUMA CROSSING
NATIONAL HERITAGE AREA

YUMA EAST WETLANDS
AWPF AHA 68 ACRE
REVEGETATION PROJECT

SOIL TEXTURE
TYPE MAP

JUNE 2008 FIGURE 4



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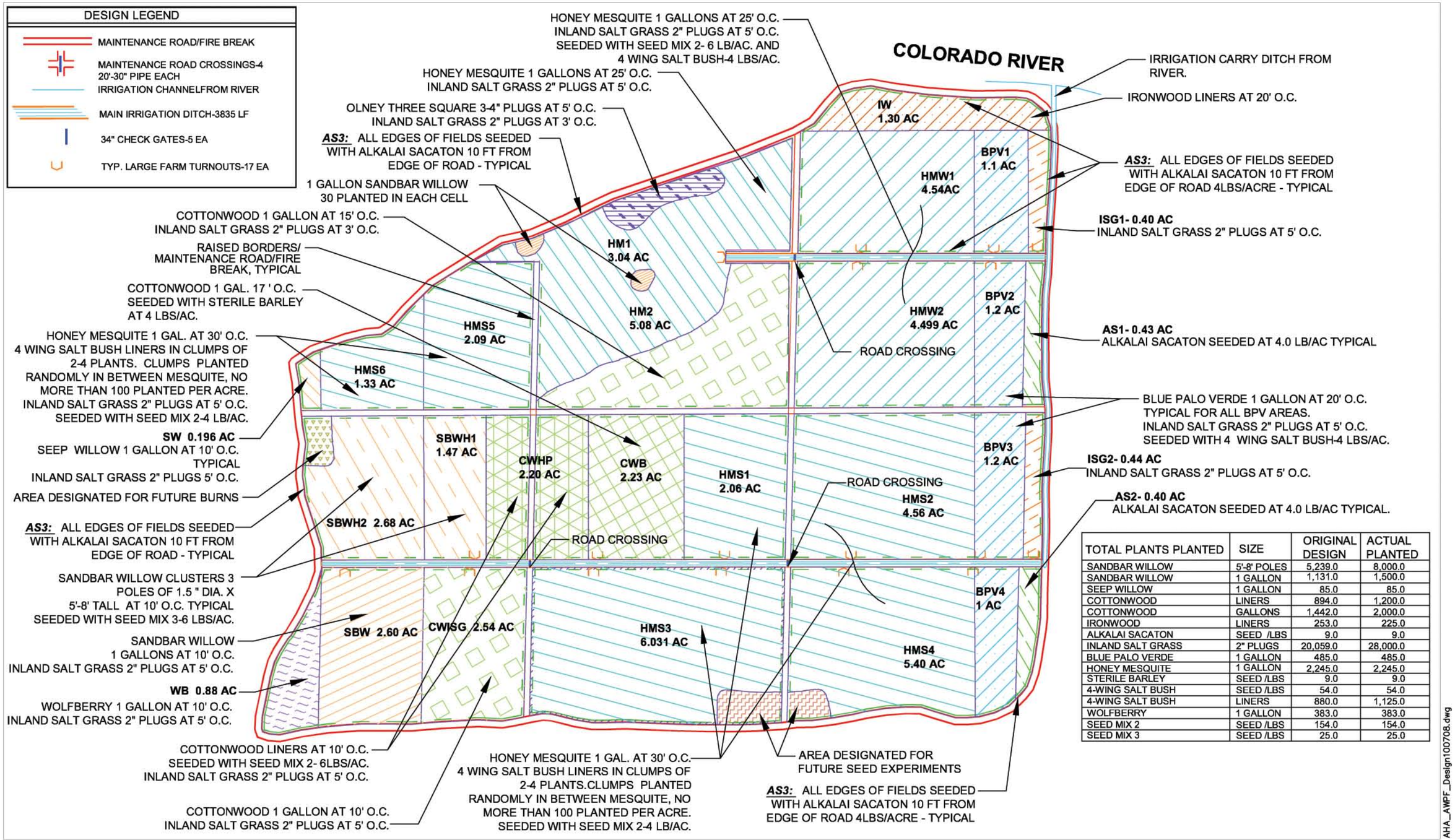
401 SOUTH LEROUX STREET
FLAGSTAFF AZ, 86001

PREPARED FOR:
YUMA CROSSING
NATIONAL HERITAGE AREA

YUMA EAST WETLANDS
AWPF AHA 68 ACRE
REVEGETATION PROJECT

GROUNDWATER
SALINITY MAP

JUNE 2008 FIGURE 6



TOTAL PLANTS PLANTED	SIZE	ORIGINAL DESIGN	ACTUAL PLANTED
SANDBAR WILLOW	5'-8' POLES	5,239.0	8,000.0
SANDBAR WILLOW	1 GALLON	1,131.0	1,500.0
SEEP WILLOW	1 GALLON	85.0	85.0
COTTONWOOD	LINERS	894.0	1,200.0
COTTONWOOD	GALLONS	1,442.0	2,000.0
IRONWOOD	LINERS	253.0	225.0
ALKALAI SACATON	SEED /LBS	9.0	9.0
INLAND SALT GRASS	2" PLUGS	20,059.0	28,000.0
BLUE PALO VERDE	1 GALLON	485.0	485.0
HONEY MESQUITE	1 GALLON	2,245.0	2,245.0
STERILE BARLEY	SEED /LBS	9.0	9.0
4-WING SALT BUSH	SEED /LBS	54.0	54.0
4-WING SALT BUSH	LINERS	880.0	1,125.0
WOLFBERRY	1 GALLON	383.0	383.0
SEED MIX 2	SEED /LBS	154.0	154.0
SEED MIX 3	SEED /LBS	25.0	25.0

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ARIZONA WATER PROTECTION FUND
AHA 68 ACRE
AS BUILT PLANTING PLAN

YUMA CROSSING NATIONAL HERITAGE AREA

SHEET TITLE :
AS BUILT PLANTING PLAN

0 60 120 240ft NORTH

DATE: JUNE 10, 2009
JOB NO.:
DRAWN BY: AH/DB
DESIGNED BY: NH/FOP/AH/DP
CHECKED BY: FOP

SHEET NO.:
1 OF 11

AHA_AWPF_Design100708.dwg

AHA 68 ACRE
IRRIGATION AND PLANTING
SCHEMATIC DESIGN PROJECT

Polygon	Acreages	# MAIN PLANTS	Inland Salt Grass Plugs	Alkalai Sacaton LBS Seed	SEED MIX 1	SEED MIX 2	SEED MIX 3	Sterile Barley LBS Seed	4-Wing Saltbush LBS Seed	4-Wing Saltbush 1 Gallon	Planting Description
SANDBAR WILLOW CLUSTERS (POLES)											
SBWH1	1.47	1736					8.82				SBW CLUSTERS NEEDED- (EACH CLUSTER= THREE 5'-8' TALL SBW POLES @1.5" DIAMETER) EACH CLUSTER PLANTED10' OC. SEED WITH SEED MIX 3-6 LBS/AC
SBWH2	2.68	3503					16.10				SBW CLUSTERS NEEDED- (EACH CLUSTER= THREE 5'-8' TALL SBW POLES @1.5" DIAMETER) EACH CLUSTER PLANTED 10' OC. SEED WITH SEED MIX 3-6 LBS/AC
	4.15	**5239**	**0**	**0**	**0**	**0.00**	**24.92**	**0**	**0**	**0**	**TOTAL SANDBAR WILLOW POLES & LBS SEED**
SANDBAR WILLOW											
SBW	2.60	1131									SANDBAR WILLOW 1 GALLON PLANTED 10' OC.
	2.60	**1131**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**TOTAL SANDBAR WILLOW LINERS**
SEEP WILLOW- 1 GALLON											
SW	0.20	85									SEEP WILLOW 1 GALLON - PLANT AT 10' OC.
	0.20	**85**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**TOTAL SEEP WILLOW 1 GALLON PLANTS**
COTTONWOOD											
CWB	2.23	335						8.92			COTTONWOOD 1 GALLONS- PLANT 17' OC. SEED WITH STERILE BARLEY- 4 LBS/AC
CWHP	2.20	894				13.20					COTTONWOOD LINERS- PLANT 10' OC. SEED WITH SEED MIX 2-6 LBS/AC
CWISG	2.54	1107	4431.65								COTTONWOOD 1 GALLON- PLANT 10' OC. INLAND SALT GRASS 2" PLUGS AT 5' OC.
	6.97	**2335**	**4431.65**	**0**	**0**	**13.20**	**0.00**	**8.92**	**0**	**0**	**TOTAL COTTONWOOD LINERS / LBS SEED**
IRONWOOD (LINERS)											
IW	1.30	253									IRONWOOD LINERS PLANTED 15' OC.
	1.30	**253**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**TOTAL IRONWOOD LINERS**
ALKALAI SACATON (SEED)											
AS1	0.43			1.70							SEED WITH ALKALAI SACATON- 4 LBS/AC
AS2	0.40			1.60							SEED WITH ALKALAI SACATON- 4 LBS/AC
AS3	1.42			5.66							SEED FIELD PERIMETERS FROM 10 FT INSIDE EDGE OF ROAD/BORDERS. 3 FT WIDE AT 4 LB/AC.
	2.24	**0**	**0**	**8.96**	**0**	**0**	**0**	**0**	**0**	**0**	**TOTAL ALKALAI SACATON / LBS SEED**

Polygon	Acreages	# MAIN PLANTS	Inland Salt Grass Plugs	Alkalai Sacaton LBS Seed	SEED MIX 1	SEED MIX 2	SEED MIX 3	Sterile Barley LBS Seed	4-Wing Saltbush LBS Seed	4-Wing Saltbush 1 Gallon	Planting Description
INLAND SALT GRASS (PLUGS)											
ISG1	0.40		704								INLAND SALT GRASS 2" PLUGS AT 5' OC
ISG2	0.44		770								INLAND SALT GRASS 2" PLUGS AT 5' OC
	0.85	**0**	**1474**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

AHA 68 ACRE
IRRIGATION AND PLANTING
SCHEMATIC DESIGN PROJECT

BLUE PALO VERDE- 1 GALLONS											
BPV1	0.85	93							3.40		BLUE PALO VERDE 1 GALLONS- PLANT AT 20' OC. AND 4 WING SALT BUSH - 4 LBS/AC
BPV2	0.85	93							3.40		BLUE PALO VERDE 1 GALLONS- PLANT AT 20' OC. AND 4 WING SALT BUSH - 4 LBS/AC
BPV3	0.92	100							3.68		BLUE PALO VERDE 1 GALLONS- PLANT AT 20' OC. AND 4 WING SALT BUSH - 4 LBS/AC
BPV4	0.91	99							3.64		BLUE PALO VERDE 1 GALLONS- PLANT AT 20' OC. AND 4 WING SALT BUSH - 4 LBS/AC
BPV5	0.92	100							3.68		BLUE PALO VERDE 1 GALLONS- PLANT AT 20' OC. AND 4 WING SALT BUSH - 4 LBS/AC
	4.45	**485**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**0**	**TOTAL BLUE PALO VERDE 1 GALLON**

Polygon	Acreages	# MAIN PLANTS	Inland Salt Grass Plugs	Alkalai Sacaton LBS Seed	SEED MIX 1	SEED MIX 2	SEED MIX 3	Sterile Barley LBS Seed	4-Wing Saltbush LBS Seed	4-Wing Saltbush 1 LINERS	Planting Description
HONEY MESQUITE (LINERS)											
HM1	3.04	213	5297								HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 25' OC. AND INLAND SALTGRASS 2" PLUGS- PLANT 5' OC.
HM2	5.08	356	8856								HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 25' OC. AND INLAND SALTGRASS 2" PLUGS- PLANT 5' OC.
HMW1	4.54	318				27.22			18.15		HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 25' OC. SEED WITH 4 WING SALT BUSH - 4 LBS/AC. AND SEED MIX 2 -6 LBS/AC.
HMW2	4.50	315				26.99			18.00		HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 25' OC. SEED WITH 4 WING SALT BUSH - 4 LBS/AC. AND SEED MIX 2 -6 LBS/AC.
HMS1	2.06	99				8.24				99	HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 30' OC. 4-WING SALT BUSH LINERS IN CLUMPS OF 2-4 PLANTS IN BETWEEN MESQUITE AT LEAST 30' O.C.(NO MORE THAN 100 PLANTS PER ACRE) SEED WITH SEED MIX 2- 4 LBS/AC
HMS2	4.56	219				18.24				219	HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 30' OC. 4-WING SALT BUSH LINERS IN CLUMPS OF 2-4 PLANTS IN BETWEEN MESQUITE AT LEAST 30' O.C.(NO MORE THAN 100 PLANTS PER ACRE) SEED WITH SEED MIX 2- 4 LBS/AC
HMS3	6.31	303				25.24				303	HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 30' OC. 4-WING SALT BUSH LINERS IN CLUMPS OF 2-4 PLANTS IN BETWEEN MESQUITE AT LEAST 30' O.C.(NO MORE THAN 100 PLANTS PER ACRE) SEED WITH SEED MIX 2- 4 LBS/AC
HMS4	5.40	259				21.60				259	HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 30' OC. 4-WING SALT BUSH LINERS IN CLUMPS OF 2-4 PLANTS IN BETWEEN MESQUITE AT LEAST 30' O.C.(NO MORE THAN 100 PLANTS PER ACRE) SEED WITH SEED MIX 2- 4 LBS/AC
HMS5	2.09	100				8.36				100	HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 30' OC. 4-WING SALT BUSH LINERS IN CLUMPS OF 2-4 PLANTS IN BETWEEN MESQUITE AT LEAST 30' O.C.(NO MORE THAN 100 PLANTS PER ACRE) SEED WITH SEED MIX 2- 4 LBS/AC
HMS6	1.33	64				5.32				64	HONEY MESQUITE VAR TORREYANA 1 GALLONS- PLANT 30' OC. 4-WING SALT BUSH LINERS IN CLUMPS OF 2-4 PLANTS IN BETWEEN MESQUITE AT LEAST 30' O.C.(NO MORE THAN 100 PLANTS PER ACRE) SEED WITH SEED MIX 2- 4 LBS/AC
	38.91	**2245**	**14154**	**0**	**0**	**141.22**	**0**	**0**	**36**	**880**	**TOTAL HONEY MESQUITE 1 GALLON & LBS SEED**

WOLFBERRY											
WB	0.88	383									WOLFBERRY 1 GALLONS PLANTED 10'
	39.79	**383**		**0**	**0**	**0.00**	**0**	**0**	**0**	**0**	TOTAL WOLFBERRY 1 GALLONS

AHA 68 ACRE
IRRIGATION AND PLANTING
SCHEMATIC DESIGN PROJECT

Polygon	Acreages	# MAIN PLANTS	Inland Salt Grass Plugs	Alkalai Sacaton LBS Seed	SEED MIX1	SEED MIX 2	SEED MIX 3	Sterile Barley LBS Seed	4-Wing Saltbush LBS Seed	4-Wing Saltbush 1 liners	Planting Description
Totals	**101.47**	**12156**	**20059**	**9**	**0**	**154**	**25**	**9**	**54**	**880**	**TOTAL PLANTS AND LBS SEED**

Seed Mixes

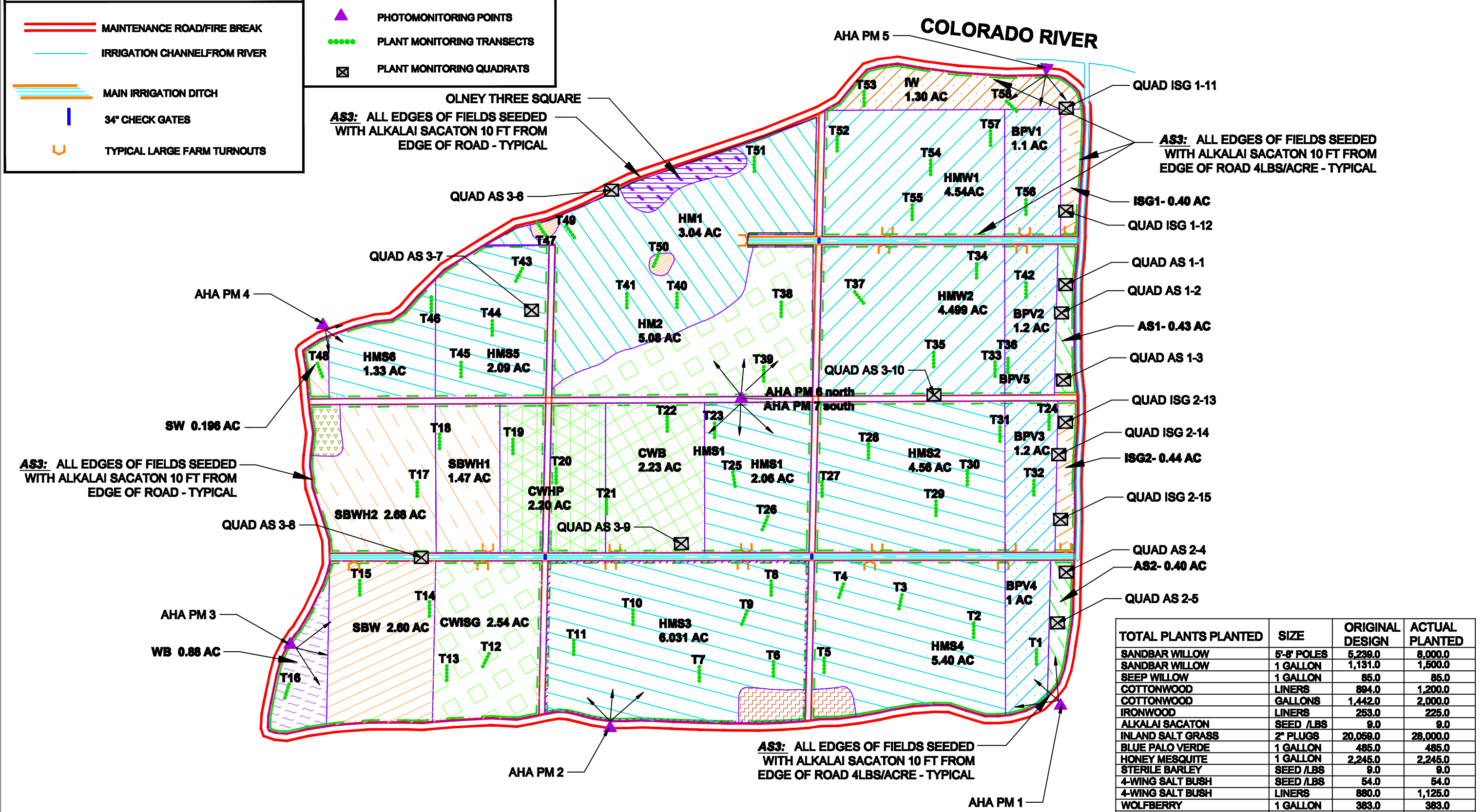
Weight (lb)	Mix Percentage	Common Name	*Scientific Name*	Price (lb)	Germination Rate
Seed Mix two (6Lbs/Acre)					
	10%	desert marigold	Baileya multiradiata	$ 60.00	70-80
	10%	Sand dropseed	*Sporobolus cryptandrus*	$ 12.00	90
	15%	Alkali sacaton	*Sporobolus airoides*	$ 31.00	93%
	10%	Indian ricegrass	*Oryzopsis hymenoides*	$ 25.00	90
	20%	Blue gramma	*Bouteloua gracilis*	$ 19.00	86%
	20%	Arizona fescue	*Festuca arizonica*	$ 64.00	62%
	10%	Brittlebush	*Encilia farinosa*		
	15%	California Poppy	Eschscholzia californica		
Seed Mix Three (6lbs/Acre)					
	10%	desert marigold	Baileya multiradiata	$ 60.00	70-80
	10%	sea purslane	*sesuvium verrucosum*	$ 158.00	76
	5%	Indian ricegrass	*Oryzopsis hymenoides*	$ 25.00	90
	25%	Blue gramma	*Bouteloua gracilis*	$ 19.00	86%
	25%	Salt heliotope	*Heliotropium curassavicum*	$ 64.00	62%
	10%	Brittlebush	*Encilia farinosa*		
	15%	California Poppy	Eschscholzia californica		

DESIGN LEGEND

- MAINTENANCE ROAD/FIRE BREAK
- IRRIGATION CHANNELFROM RIVER
- MAIN IRRIGATION DITCH
- 34" CHECK GATES
- TYPICAL LARGE FARM TURNOUTS

MONITORING LEGEND

- PHOTOMONITORING POINTS
- PLANT MONITORING TRANSECTS
- PLANT MONITORING QUADRATS



TOTAL PLANTS PLANTED	SIZE	ORIGINAL DESIGN	ACTUAL PLANTED
SANDBAR WILLOW	5'-8' POLES	5,239.0	8,000.0
SANDBAR WILLOW	1 GALLON	1,131.0	1,500.0
SEEP WILLOW	1 GALLON	85.0	85.0
COTTONWOOD	LINERS	894.0	1,200.0
COTTONWOOD	GALLONS	1,442.0	2,000.0
IRONWOOD	LINERS	253.0	225.0
ALKALAI SACATON	SEED /LBS	9.0	9.0
INLAND SALT GRASS	2" PLUGS	20,059.0	28,000.0
BLUE PALO VERDE	1 GALLON	485.0	485.0
HONEY MESQUITE	1 GALLON	2,245.0	2,245.0
STERILE BARLEY	SEED /LBS	9.0	9.0
4-WING SALT BUSH	SEED /LBS	54.0	54.0
4-WING SALT BUSH	LINERS	880.0	1,125.0
WOLFBERRY	1 GALLON	383.0	383.0
SEED MIX 2	SEED /LBS	154.0	154.0
SEED MIX 3	SEED /LBS	25.0	25.0

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ARIZONA WATER PROTECTION FUND
AHA 68 ACRE
REVEGETATION PLANT MONITORING PLAN

YUMA CROSSING NATIONAL HERITAGE AREA

SHEET TITLE :
100% PLANT MONITORING PLAN

0 60 120 240ft NORTH

DATE: JUNE 16, 2009
JOB NO.:
DRAWN BY: AH/DB
DESIGNED BY: NH/FOP/AH/DP
CHECKED BY: FOP

SHEET NO.:

AHA_AWPF_Design100708.dwg

Photo Monitoring Data Collection Sheet

NAME of SITE: AHA 68 acre

Photo Monitoring Data Collection Sheet					
	Photo # 1	**Photo # 2**	**Photo # 3**	**Photo # 4**	**Photo # 5**
Date	6/11/2009	6/11/2009	6/11/2009	6/11/2009	6/11/2009
Time					
Weather					
Location	AHA 68 acre	AHA 68 acre	AHA 68 acre	AHA 68 acre	AHA 68 acre
Subject and purpose of photo	Photo Monitoring Point	Photo Monitoring Point	Photo Monitoring Point	Photo Monitoring Point	Photo Monitoring
Camera	Canon Power Shot G6 7.1 mega pixels	Canon Power Shot G6 7.1 mega pixels	Canon Power Shot G6 7.1 mega pixels	Canon Power Shot G6 7.1 mega pixels	Canon Power Shot G6 7.1 mega pixels
Frame #'s					
Photo Label (what you want this to be called for office files	Photo Point 1	Photo Point 2	Photo Point 3	Photo Point 4	Photo Point 5
f-stop					
Speed					
Lens					
Filter					
Tripod/ Camera Height					
Marker					
Compass Bearing	North to West	North to West	East to North	South to Southeast	South to South west
Latitude	32° 43.316'	32° 43.311'	32° 43.342'	32° 43.483'	32° 43.580'
Longitude	114° 35.941'	114° 36.146'	114° 36.331'	114° 36.312'	114° 35.927'
error					
Photographer	Stephanie McCormick	Stephanie McCormick	Stephanie McCormick	Stephanie McCormick	Stephanie McCormick
Note Taker	Stephanie McCormick	Stephanie McCormick	Stephanie McCormick	Stephanie McCormick	Stephanie McCormick

Description of Location (How to find spot)	Southeast corner of AHA 68 acre	Middle of south road in AHA 68 acre	Right before turn off on west road in AHA 68 acre	Northwest corner of AHA 68 acre	Northeast corner of AHA 68 acre
Reference photos					

Photo Monitoring Data Collection Sheet

NAME of SITE: AHA 68 acre

Photo Monitoring Data Collection Sheet					
	Photo # 6	**Photo # 7**	**Photo #**	**Photo #**	**Photo #**
Date	6/11/2009	6/11/2009			
Time					
Weather					
Location	AHA 68 acre	AHA 68 acre			
Subject and purpose of photo	Photo Monitoring Point	Photo Monitoring Point			
Camera	Canon Power Shot G6 7.1 mega pixels	Canon Power Shot G6 7.1 mega pixels			
Frame #'s					
Photo Label (what you want this to be called for office files	Photo Point 6	Photo Point 7			
f-stop					
Speed					
Lens					
Filter					
Tripod/ Camera Height					
Marker					

Compass Bearing	North to East	South to East			
Latitude	32^{o} 43.431'	32^{o} 43.446'			
Longitude	114^{o} 35.954'	114^{o} 36.093			
error					
Photographer	Stephanie McCormick	Stephanie McCormick			
Note Taker	Stephanie McCormick	Stephanie McCormick			
Description of Location (How to find spot)	Just west of the intersection of the two roads running through the AHA 68 acre	Just west of the intersection of the two roads running through the AHA 68 acre			
Reference photos					

Entered 07/22/09

Aha 68-Acre Riparian Restoration

Session # & Date: Blue 06/16 Black 06/19

Weather and Time:

Participants:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Sandbar willow	21	4		
SBWH1	Aha T1	2	Sandbar willow	20	4		
SBWH1	Aha T1	3	Sandbar willow	24	4		
SBWH1	Aha T1	4	Sandbar willow	25	4		
SBWH1	Aha T1	5	Sandbar willow	19	4		
SBWH1	Aha T2	6	Sandbar willow	42	4		
SBWH1	Aha T2	7	Sandbar willow	16	4		
SBWH1	Aha T2	8	Sandbar willow	21	4		
SBWH1	Aha T2	9	Sandbar willow	18	4		
SBWH1	Aha T2	10	Sandbar willow	40	4		
SBWH2	Aha T3	11	Sandbar willow	58	4		
SBWH2	Aha T3	12	Sandbar willow	51	3.5	PS	
SBWH2	Aha T3	13	Sandbar willow	67	4		
SBWH2	Aha T3	14	Sandbar willow	49	4		
SBWH2	Aha T3	15	Sandbar willow	41	4		
SBWH2	Aha T4	16	Sandbar willow	38	4		
SBWH2	Aha T4	17	Sandbar willow	20	2	PS/WS	
SBWH2	Aha T4	18	Sandbar willow	24	4		
SBWH2	Aha T4	19	Sandbar willow	43	4		
SBWH2	Aha T4	20	Sandbar willow	49	2	PS	
SBW	Aha T5	21	Sandbar willow	40	3.5	PS	
SBW	Aha T5	22	Sandbar willow	61	4		
SBW	Aha T5	23	Sandbar willow	27	3.5	PS	
SBW	Aha T5	24	Sandbar willow	44	4		
SBW	Aha T5	25	Sandbar willow	49	3	WS	
SBW	Aha T6	26	Sandbar willow	0	D	PS	
SBW	Aha T6	27	Sandbar willow	41	4		
SBW	Aha T6	28	Sandbar willow	0	D	PS	
SBW	Aha T6	29	Sandbar willow	42	4		
SBW	Aha T6	30	Sandbar willow	53	4		
SW	Aha T7	31	Seep Willow	59	4		Seems like dif. HM variety
SW	Aha T7	32	Seep Willow	40	0	D	
SW	Aha T7	33	Seep Willow	44	4		
SW	Aha T7	34	Seep Willow	51	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SW	Aha T7	35	~~Seep Willow~~ Honey Mesquite	0			
CWB	Aha T8	36	Cottonwood	0	D	PS	
CWB	Aha T8	37	Cottonwood	19	3	PS	
CWB	Aha T8	38	Cottonwood	57	4		
CWB	Aha T8	39	Cottonwood	48	4		
CWB	Aha T8	40	Cottonwood	55	4		
CWB	Aha T9	41	Cottonwood	49	3.5	IB	
CWB	Aha T9	42	Cottonwood	51	4		seems like a different species
CWB	Aha T9	43	Cottonwood	59	0	D	
CWB	Aha T9	44	Cottonwood	6	0	D	
CWB	Aha T9	45	Cottonwood	47	0	D	
CWHP	Aha T10	46	Cottonwood	46	4		
CWHP	Aha T10	47	Cottonwood	62	4		
CWHP	Aha T10	48	Cottonwood	74	4		
CWHP	Aha T10	49	Cottonwood	38	4		
CWHP	Aha T10	50	Cottonwood	91	4		
CWHP	Aha T11	51	Cottonwood	101	4		
CWHP	Aha T11	52	Cottonwood	90	4		
CWHP	Aha T11	53	Cottonwood	88	4		
CWHP	Aha T11	54	Cottonwood	69	4		
CWHP	Aha T11	55	Cottonwood	46	4		
CWISG	Aha T12	56	Cottonwood	101	4		
CWISG	Aha T12	57	Cottonwood	60	3.5	SS	
CWISG	Aha T12	58	Cottonwood	68	2.5	SS	Mortalities <160% due to SS
CWISG	Aha T12	59	Cottonwood	57	2.5	SS	
CWISG	Aha T12	60	Cottonwood	49	3	SS	
CWISG	Aha T13	61	Cottonwood	50	4		
CWISG	Aha T13	62	Cottonwood	41	4		
CWISG	Aha T13	63	Cottonwood	53	4		
CWISG	Aha T13	64	Cottonwood	55	3.5	SS	
CWISG	Aha T13	65	Cottonwood	50	2.5	SS	
IW	Aha T14	66	Ironwood	71	4		
IW	Aha T14	67	Ironwood	88	4		
IW	Aha T14	68	Ironwood	120	4		
IW	Aha T14	69	Ironwood	107	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
IW	Aha T14	70	~~Ironwood~~ Sandbar Willow	94	4		
IW	Aha T15	71	Ironwood	76	4		
IW	Aha T15	72	Ironwood	99	4		
IW	Aha T15	73	Ironwood	83	4		
IW	Aha T15	74	Ironwood	89	4		
IW	Aha T15	75	Ironwood	91	3	PS	
BPV3	Aha T16	76	Blue Palo Verde	39	3	PS	
BPV3	Aha T16	77	Blue Palo Verde	32	2.5	PS/WS - too much	
BPV3	Aha T16	78	Blue Palo Verde	80	4		
BPV3	Aha T16	79	Blue Palo Verde	30	2.5	PS	
BPV3	Aha T16	80	Blue Palo Verde	65	2.0	PS/SS/WS	
BPV4	Aha T17	81	Blue Palo Verde	0	D		
BPV4	Aha T17	82	Blue Palo Verde	0	D		Poles
BPV4	Aha T17	83	Blue Palo Verde	0	D		
BPV4	Aha T17	84	Blue Palo Verde	1	4		
BPV4	Aha T17	85	Blue Palo Verde	84	4		seedling
BPV5	Aha T18	86	Blue Palo Verde	130	2.5	PS	plant
BPV5	Aha T18	87	Blue Palo Verde	79	4		plant
BPV5	Aha T18	88	Blue Palo Verde	4	4		pole
BPV5	Aha T18	89	Blue Palo Verde	0	D		↓
BPV5	Aha T18	90	Blue Palo Verde	0	D		↓
BPV6	Aha T19	91	Blue Palo Verde	56	4		
BPV6	Aha T19	92	Blue Palo Verde	38	4		need Tags
BPV6	Aha T19	93	Blue Palo Verde	40	4		
BPV6	Aha T19	94	Blue Palo Verde	47	4		
BPV6	Aha T19	95	Blue Palo Verde	53	4		
HM1	Aha T20	96	Honey Mesquite	14	3.5	PS	
HM1	Aha T20	97	Honey Mesquite	20	3	PS	
HM1	Aha T20	98	Honey Mesquite	33	3.5	PS	
HM1	Aha T20	99	Honey Mesquite	31	4		
HM1	Aha T20	100	Honey Mesquite	31	4		
HM1	Aha T21	101	Honey Mesquite	32	4		
HM1	Aha T21	102	Honey Mesquite	24	4		
HM1	Aha T21	103	Honey Mesquite	24	3.5	PS	
HM1	Aha T21	104	Honey Mesquite	41	4		
HM1	Aha T21	105	Honey Mesquite	40	4		

Aha [illegible]-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HM1	Aha T22	106	Cottonwood / Honey Mesquite	53	4		
HM1	Aha T22	107	Honey Mesquite	32	4		
HM1	Aha T22	108	Honey Mesquite	59	4		
HM1	Aha T22	109	Honey Mesquite	23	4		
HM1	Aha T22	110	Honey Mesquite	32	2	PS	
HM2	Aha T23	111	Honey Mesquite	59	4		
HM2	Aha T23	112	Honey Mesquite	78	4		
HM2	Aha T23	113	Honey Mesquite	42	4		
HM2	Aha T23	114	Honey Mesquite	53	4		
HM2	Aha T23	115	Honey Mesquite	46	4		
HM2	Aha T24	116	Honey Mesquite / Blue Palo Verde	37	4		
HM2	Aha T24	117	Honey Mesquite	27	4		
HM2	Aha T24	118	Honey Mesquite	25	4		
HM2	Aha T24	119	Honey Mesquite	17	4		
HM2	Aha T24	120	Honey Mesquite	12	2.5	PS	
HM2	Aha T25	121	Honey Mesquite	69	4		
HM2	Aha T25	122	Honey Mesquite	59	4		
HM2	Aha T25	123	Honey Mesquite	76	4		
HM2	Aha T25	124	Honey Mesquite	62	4		
HM2	Aha T25	125	Honey Mesquite	70	4		
HM2	Aha T26	126	Honey Mesquite	68	4		
HM2	Aha T26	127	Honey Mesquite	43	4		
HM2	Aha T26	128	Honey Mesquite	67	4		
HM2	Aha T26	129	Honey Mesquite	38	4		
HM2	Aha T26	130	Honey Mesquite	60	4		
HM2	Aha T27	131	Honey Mesquite	61	4		
HM2	Aha T27	132	Honey Mesquite	74	4		
HM2	Aha T27	133	Honey Mesquite	55	4		
HM2	Aha T27	134	Honey Mesquite	32	3.5	PS	
HM2	Aha T27	135	Honey Mesquite	73	3.5	PS	
HMW1	Aha T28	136	Honey Mesquite	67	4		
HMW1	Aha T28	137	Honey Mesquite	58	3.5	PS	
HMW1	Aha T28	138	Honey Mesquite	64	3.5	PS	
HMW1	Aha T28	139	Honey Mesquite	40	4		
HMW1	Aha T28	140	Honey Mesquite	72	4		
HMW1	Aha T29	141	Honey Mesquite	34	3	PS	

Aha 68-Acre Riparian Restoration

Session # & Date: 6/11/09 MW/MB

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW1	Aha T29	142	Honey Mesquite	53	4		
HMW1	Aha T29	143	Honey Mesquite	70	4		
HMW1	Aha T29	144	Honey Mesquite	60	3	PS	
HMW1	Aha T29	145	Honey Mesquite	66	4		
HMW1	Aha T30	146	Honey Mesquite	73	4		
HMW1	Aha T30	147	Honey Mesquite	71	4		
HMW1	Aha T30	148	Honey Mesquite	71	4		
HMW1	Aha T30	149	Honey Mesquite	43	4		
HMW1	Aha T30	150	Honey Mesquite	52	3	PS	
HMW1	Aha T31	151	Honey Mesquite	69	4		
HMW1	Aha T31	152	Honey Mesquite	68	4		
HMW1	Aha T31	153	Honey Mesquite	38	3.5	PS	
HMW1	Aha T31	154	Honey Mesquite	72	4		
HMW1	Aha T31	155	Honey Mesquite	64	4		
HMW1	Aha T32	156	Honey Mesquite	29	3.5	PS	
HMW1	Aha T32	157	Honey Mesquite	24	4		
HMW1	Aha T32	158	Honey Mesquite	13	4		
HMW1	Aha T32	159	Honey Mesquite	12	3	PS	
HMW1	Aha T32	160	Honey Mesquite	14	4		
HMW2	Aha T33	161	Honey Mesquite	46	4		
HMW2	Aha T33	162	Honey Mesquite	55	4		
HMW2	Aha T33	163	Honey Mesquite	60	4		
HMW2	Aha T33	164	Honey Mesquite	63	4		
HMW2	Aha T33	165	Honey Mesquite	70	4		
HMW2	Aha T34	166	Honey Mesquite	33	4		
HMW2	Aha T34	167	Honey Mesquite	76	4		
HMW2	Aha T34	168	Honey Mesquite	93	4		
HMW2	Aha T34	169	Honey Mesquite	37	4		
HMW2	Aha T34	170	Honey Mesquite	68	4		
HMW2	Aha T35	171	Honey Mesquite	72	4		
HMW2	Aha T35	172	Honey Mesquite	33	3.5	PS	
HMW2	Aha T35	173	Honey Mesquite	51	4		
HMW2	Aha T35	174	Honey Mesquite	56	4		
HMW2	Aha T35	175	Honey Mesquite	38	4		
HMW2	Aha T36	176	Honey Mesquite	23	3.5	PS	
HMW2	Aha T36	177	Honey Mesquite	36	4		

Blue Palo Verde

Blue Palo Verde

Aha 68-Acre Riparian Restoration

Session # & Date: 6/11/09 MW MB

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW2	Aha T36	178	Honey Mesquite	35	1.5	PS	
HMW2	Aha T36	179	Honey Mesquite	36	4		
HMW2	Aha T36	180	Honey Mesquite	30	4		
HMS1	Aha T37	181	Honey Mesquite/4-Wing	56	4		
HMS1	Aha T37	182	Honey Mesquite/4-Wing	23	3	PS	
HMS1	Aha T37	183	Honey Mesquite/4-Wing	36	4		
HMS1	Aha T37	184	Honey Mesquite/4-Wing	54	4		
HMS1	Aha T37	185	Honey Mesquite/4-Wing	36	3	PS	
HMS1	Aha T38	186	Honey Mesquite/4-Wing	71	4		
HMS1	Aha T38	187	Honey Mesquite/4-Wing	72	3	PS	
HMS1	Aha T38	188	Honey Mesquite/4-Wing	43	2	PS	
HMS1	Aha T38	189	Honey Mesquite/4-Wing	58	4		
HMS1	Aha T38	190	Honey Mesquite/4-Wing	87	4		
HMS1	Aha T39	191	Honey Mesquite/4-Wing	48	4		
HMS1	Aha T39	192	Honey Mesquite/4-Wing	39	4		
HMS1	Aha T39	193	Honey Mesquite/4-Wing	45	4		
HMS1	Aha T39	194	Honey Mesquite/4-Wing	49	4		
HMS1	Aha T39	195	Honey Mesquite/4-Wing	80	4		
HMS1	Aha T40	196	Honey Mesquite/4-Wing	34	4		
HMS1	Aha T40	197	Honey Mesquite/4-Wing	23	4		
HMS1	Aha T40	198	Honey Mesquite/4-Wing	29	4		
HMS1	Aha T40	199	Honey Mesquite/4-Wing	24	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	36	4		
HMS1	Aha T41	201	Honey Mesquite/4-Wing	33	4		
HMS1	Aha T41	202	Honey Mesquite/4-Wing	21	2	PS/SS	
HMS1	Aha T41	203	Honey Mesquite/4-Wing	24	D		
HMS1	Aha T41	204	Honey Mesquite/4-Wing	21	D		
HMS1	Aha T41	205	Honey Mesquite/4-Wing	22	1	PS/SS	
HMS2	Aha T42	206	Honey Mesquite/4-Wing	32	4		
HMS2	Aha T42	207	Honey Mesquite/4-Wing	19	1.5	PS	
HMS2	Aha T42	208	Honey Mesquite/4-Wing	18	4		
HMS2	Aha T42	209	Honey Mesquite/4-Wing	27	4		
HMS2	Aha T42	210	Honey Mesquite/4-Wing	16	3.5	PS	
HMS2	Aha T43	211	Honey Mesquite/4-Wing	23	4		
HMS2	Aha T43	212	Honey Mesquite/4-Wing	21	4		
HMS2	Aha T43	213	Honey Mesquite/4-Wing	39	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS2	Aha T43	214	Honey Mesquite/4-Wing	53	4		
HMS2	Aha T43	215	Honey Mesquite/4-Wing	15	1	PS	
HMS2	Aha T44	216	Honey Mesquite/4-Wing	31	4		
HMS2	Aha T44	217	Honey Mesquite/4-Wing	22	4		
HMS2	Aha T44	218	Honey Mesquite/4-Wing	27	4		
HMS2	Aha T44	219	Honey Mesquite/4-Wing	29	3	PS	
HMS2	Aha T44	220	Honey Mesquite/4-Wing	20	2	PS/SS	
HMS2	Aha T45	221	Honey Mesquite/4-Wing	27	3.5	PS	
HMS2	Aha T45	222	Honey Mesquite/4-Wing	31	4		
HMS2	Aha T45	223	Honey Mesquite/4-Wing	33	4		need Tag
HMS2	Aha T45	224	Honey Mesquite/4-Wing	41	4		
HMS2	Aha T45	225	Honey Mesquite/4-Wing	37	4		
HMS2	Aha T46	226	Honey Mesquite/4-Wing	34	3	PS	
HMS2	Aha T46	227	Honey Mesquite/4-Wing	31	4		need Tag
HMS2	Aha T46	228	Honey Mesquite/4-Wing	42	4		
HMS2	Aha T46	229	Honey Mesquite/4-Wing	41	1	PS/SS	
HMS2	Aha T46	230	Honey Mesquite/4-Wing	24	1.5	PS/SS	
HMS3	Aha T47	231	Honey Mesquite/4-Wing	90	4		
HMS3	Aha T47	232	Honey Mesquite/4-Wing	107	4		need Tag
HMS3	Aha T47	233	Honey Mesquite/4-Wing	80	3	WS	
HMS3	Aha T47	234	Honey Mesquite/4-Wing	74	3	WS	
HMS3	Aha T47	235	Honey Mesquite/4-Wing	78	3.5	WS	
HMS3	Aha T48	236	Honey Mesquite/4-Wing	91	3	PS/WS	
HMS3	Aha T48	237	Honey Mesquite/4-Wing	89	3.5	PS	need Tag
HMS3	Aha T48	238	Honey Mesquite/4-Wing	87	3.5	PS	
HMS3	Aha T48	239	Honey Mesquite/4-Wing	92	3.5	PS	
HMS3	Aha T48	240	Honey Mesquite/4-Wing	60	3	PS/WS	
HMS3	Aha T49	241	Honey Mesquite/4-Wing	27	4		
HMS3	Aha T49	242	Honey Mesquite/4-Wing	72	3.5	PS	
HMS3	Aha T49	243	Honey Mesquite/4-Wing	21	4		
HMS3	Aha T49	244	Honey Mesquite/4-Wing	41	4		
HMS3	Aha T49	245	Honey Mesquite/4-Wing	20	3.5	PS	
HMS3	Aha T50	246	Honey Mesquite/4-Wing	86	3.5	SS/PS	61, 4
HMS3	Aha T50	247	Honey Mesquite/4-Wing	18	0	D	102, 4
HMS3	Aha T50	248	Honey Mesquite/4-Wing	21	4		89, 4
HMS3	Aha T50	249	Honey Mesquite/4-Wing	40	4		81, 3.5 PS
HMS3	Aha T50	250	Honey Mesquite/4-Wing	19	3	SS/PS	72, 2 PS/WS

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS3	Aha T51	251	Honey Mesquite/4-Wing	~~21~~ ~~46~~"	~~5~~ D	P3 * too much H_2O /SS	
HMS3	Aha T51	252	Honey Mesquite/4-Wing	11	D	"	"
HMS3	Aha T51	253	Honey Mesquite/4-Wing	42	4		very muddy
HMS3	Aha T51	254	Honey Mesquite/4-Wing	36	3.5	too much H_2O /SS	
HMS3	Aha T51	255	Honey Mesquite/4-Wing	10	D	too much H_2O * PS/SS	
HMS3	Aha T52	256	Honey Mesquite/4-Wing	23	3	P6	
HMS3	Aha T52	257	Honey Mesquite/4-Wing	22	4		
HMS3	Aha T52	258	Honey Mesquite/4-Wing	8	3	PS	
HMS3	Aha T52	259	Honey Mesquite/4-Wing	41	3	PS	
HMS3	Aha T52	260	Honey Mesquite/4-Wing	45	4		
HMS4	Aha T53	261	Honey Mesquite/4-Wing	20	4		
HMS4	Aha T53	262	Honey Mesquite/4-Wing	22	4		
HMS4	Aha T53	263	Honey Mesquite/4-Wing	21	4		
HMS4	Aha T53	264	Honey Mesquite/4-Wing	13	4		
HMS4	Aha T53	265	Honey Mesquite/4-Wing	21	4		
HMS4	Aha T54	266	Honey Mesquite/4-Wing	38	4		
HMS4	Aha T54	267	Honey Mesquite/4-Wing	4	4		
HMS4	Aha T54	268	Honey Mesquite/4-Wing	44	3.5	PS	
HMS4	Aha T54	269	Honey Mesquite/4-Wing	23	4		
HMS4	Aha T54	270	Honey Mesquite/4-Wing	39	2.5	PS	
HMS4	Aha T55	271	Honey Mesquite/4-Wing	~~51~~	4		
HMS4	Aha T55	272	Honey Mesquite/4-Wing	59	4		
HMS4	Aha T55	273	Honey Mesquite/4-Wing	46	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	~~33~~	~~3~~	PS	
HMS4	Aha T55	275	Honey Mesquite/4-Wing	33	3.5	PS	
HMS4	Aha T56	276	Honey Mesquite/4-Wing	46"	4		
HMS4	Aha T56	277	Honey Mesquite/4-Wing	24	3	PS	
HMS4	Aha T56	278	Honey Mesquite/4-Wing	36	4		
HMS4	Aha T56	279	Honey Mesquite/4-Wing	32	4		
HMS4	Aha T56	280	Honey Mesquite/4-Wing	12	3.5	PS	
HMS4	Aha T57	281	Honey Mesquite/4-Wing	36	4		
HMS4	Aha T57	282	Honey Mesquite/4-Wing	21	4		
HMS4	Aha T57	283	Honey Mesquite/4-Wing	37"	4		
HMS4	Aha T57	284	Honey Mesquite/4-Wing	101	4		
HMS4	Aha T57	285	Honey Mesquite/4-Wing	28	4		
WB	Aha T58	286	Wolfberry	39	4		
WB	Aha T58	287	Wolfberry	34	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
WB	Aha T58	288	Wolfberry	9	4		
WB	Aha T58	289	IRON WOOD Wolfberry	25	4		
WB	Aha T58	290	Wolfberry	37	4		

Factors Affecting Growth

MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height

5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

(Log in) Entered 07/22/09

Aha 68-Acre Riparian Restoration

Session # & Date: 07/13/09 - ME 7am-12pm

Weather and Time:

Participants:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Honey Mesquite	39	4		
SBWH1	Aha T1	2	Honey Mesquite	34	4		
SBWH1	Aha T1	3	Honey Mesquite	36	4		
SBWH1	Aha T1	4	Honey Mesquite	36	4		
SBWH1	Aha T1	5	Honey Mesquite	30	4		
SBWH1	Aha T2	6	Honey Mesquite	60	4		
SBWH1	Aha T2	7	Honey Mesquite	24	4		
SBWH1	Aha T2	8	Honey Mesquite	39	4		
SBWH1	Aha T2	9	Honey Mesquite	50	4		
SBWH1	Aha T2	10	Honey Mesquite	55	4		
SBWH2	Aha T3	11	Honey Mesquite	100	1	SS	
SBWH2	Aha T3	12	Honey Mesquite	—	D		
SBWH2	Aha T3	13	Honey Mesquite	64	3	SS	
SBWH2	Aha T3	14	Honey Mesquite	61	4		
SBWH2	Aha T3	15	Honey Mesquite	—	D		
SBWH2	Aha T4	16	Honey Mesquite	55	3	SS	
SBWH2	Aha T4	17	Honey Mesquite	—	D		
SBWH2	Aha T4	18	Honey Mesquite	40	3.5	SS	
SBWH2	Aha T4	19	Honey Mesquite	76	4		
SBWH2	Aha T4	20	Honey Mesquite	41	.5	SS	
SBW	Aha T5	21	Honey Mesquite	41	3.5	SS	
SBW	Aha T5	22	Honey Mesquite	100	3.5	SS	
SBW	Aha T5	23	Honey Mesquite	—	D		
SBW	Aha T5	24	Honey Mesquite	70	4		
SBW	Aha T5	25	Honey Mesquite	59	4		
SBW	Aha T6	26	Honey Mesquite	-	D		
SBW	Aha T6	27	Honey Mesquite	58	4		
SBW	Aha T6	28	Honey Mesquite	—	D		
SBW	Aha T6	29	Honey Mesquite	53	3	SS	
SBW	Aha T6	30	Honey Mesquite	61	4		
SW	Aha T7	31	Honey Mesquite	101	4		
SW	Aha T7	32	Honey Mesquite	—	D		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SW	Aha T7	33	Honey Mesquite	41	3.5	SS	
SW	Aha T7	34	Honey Mesquite	61	4		
SW	Aha T7	35	Honey Mesquite	155	4		— check this!
CWB	Aha T8	36	Honey Mesquite	—	D		
CWB	Aha T8	37	Honey Mesquite	85	~~3~~ 3.0	SS	
CWB	Aha T8	38	Honey Mesquite	77	4		
CWB	Aha T8	39	Honey Mesquite	95	4		
CWB	Aha T8	40	Honey Mesquite	63	3.5	1B	
CWB	Aha T9	41	Honey Mesquite	71	4		
CWB	Aha T9	42	Honey Mesquite	61	4		
CWB	Aha T9	43	Honey Mesquite	58	4		— check this!
CWB	Aha T9	44	Honey Mesquite	—	D		
CWB	Aha T9	45	Honey Mesquite	—	D		
CWHP	Aha T10	46	Honey Mesquite	58	4		
CWHP	Aha T10	47	Honey Mesquite	80	4		
CWHP	Aha T10	48	Honey Mesquite	168	4		
CWHP	Aha T10	49	Honey Mesquite	59	3	SS	
CWHP	Aha T10	50	Honey Mesquite	160	4		
CWHP	Aha T11	51	Honey Mesquite	117	4		
CWHP	Aha T11	52	Honey Mesquite	131	4		
CWHP	Aha T11	53	Honey Mesquite	130	4		
CWHP	Aha T11	54	Honey Mesquite	120	4		
CWHP	Aha T11	55	Honey Mesquite	63	4		
CWISG	Aha T12	56	Cottonwood	76	3.5	SS	
CWISG	Aha T12	57	Cottonwood	60	3.5	SS	
CWISG	Aha T12	58	Cottonwood	76	2	SS	
CWISG	Aha T12	59	Cottonwood	70	2.5	SS	
CWISG	Aha T12	60	Cottonwood	59	3.5	SS	
CWISG	Aha T13	61	Cottonwood	59	3.5	SS	
CWISG	Aha T13	62	Cottonwood	—	D		
CWISG	Aha T13	63	Cottonwood	61	4		
CWISG	Aha T13	64	Cottonwood	58	3	SS	
CWISG	Aha T13	65	Cottonwood	59	3.5	SS	
IW	Aha T14	66	Sandbar Willow	60	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
IW	Aha T14	67	Sandbar Willow	99	4		
IW	Aha T14	68	Sandbar Willow	128	4		
IW	Aha T14	69	Sandbar Willow	113	4		
IW	Aha T14	70	Sandbar Willow	105	4		
IW	Aha T15	71	Sandbar Willow	71	2	SS	need tags
IW	Aha T15	72	Sandbar Willow	92	2	SS	↓
IW	Aha T15	73	Sandbar Willow	79	2.5	SS	↓
IW	Aha T15	74	Sandbar Willow	80	3	SS	↓
IW	Aha T15	75	Sandbar Willow	—	D		↓
BPV3	Aha T16	76	Wolfberry	41	1	SS	dormant?
BPV3	Aha T16	77	Wolfberry	22	2	SS	↓
BPV3	Aha T16	78	Wolfberry	65	2	SS	↓
BPV3	Aha T16	79	Wolfberry	33	2	SS	↓
BPV3	Aha T16	80	Wolfberry	45	2	SS	↓
BPV4	Aha T17	81	Sandbar Willow	—	D		poles
BPV4	Aha T17	82	Sandbar Willow	—	D		↓
BPV4	Aha T17	83	Sandbar Willow	—	D		↓
BPV4	Aha T17	84	Sandbar Willow	—	D		↓
BPV4	Aha T17	85	Sandbar Willow	86	3.5	H20	
BPV5	Aha T18	86	Sandbar Willow	—	D		
BPV5	Aha T18	87	Sandbar Willow	90	4		
BPV5	Aha T18	88	Sandbar Willow	45	4		
BPV5	Aha T18	89	Sandbar Willow	—	D		
BPV5	Aha T18	90	Sandbar Willow	—	D		
BPV6	Aha T19	91	Cottonwood	74	4		need tags
BPV6	Aha T19	92	Cottonwood	60	4		↓
BPV6	Aha T19	93	Cottonwood	61	4		↓
BPV6	Aha T19	94	Cottonwood	61	4		↓
BPV6	Aha T19	95	Cottonwood	68	4		↓
HM1	Aha T20	96	Cottonwood	—	D		
HM1	Aha T20	97	Cottonwood	—	D		
HM1	Aha T20	98	Cottonwood	78	4		
HM1	Aha T20	99	Cottonwood	26	1	SS	
HM1	Aha T20	100	Cottonwood	34	1	SS	
HM1	Aha T21	101	Cottonwood	60	4		

Black 07/13 – Blue 07/10

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HM1	Aha T21	102	Cottonwood	50	4		
HM1	Aha T21	103	Cottonwood	49	4		
HM1	Aha T21	104	Cottonwood	81	4		
HM1	Aha T21	105	Cottonwood	80	4		
HM1	Aha T22	106	Cottonwood	90	4		
HM1	Aha T22	107	Cottonwood	78	4		
HM1	Aha T22	108	Cottonwood	101	4		
HM1	Aha T22	109	Cottonwood	70	4		
HM1	Aha T22	110	Cottonwood	50	2	SS	
HM2	Aha T23	111	Honey Mesquite	120	4		
HM2	Aha T23	112	Honey Mesquite	149	4		
HM2	Aha T23	113	Honey Mesquite	80	4		
HM2	Aha T23	114	Honey Mesquite	58	4		
HM2	Aha T23	115	Honey Mesquite	83	4		
HM2	Aha T24	116	Blue Paloverde	9	3.5	HH	
HM2	Aha T24	117	Blue Paloverde	29	4		
HM2	Aha T24	118	Blue Paloverde	33	4		
HM2	Aha T24	119	Blue Paloverde	31	4		
HM2	Aha T24	120	Blue Paloverde	36	4		
HM2	Aha T25	121	Honey Mesquite	112	4		
HM2	Aha T25	122	Honey Mesquite	103	4		
HM2	Aha T25	123	Honey Mesquite	156	4		
HM2	Aha T25	124	Honey Mesquite	109	4		
HM2	Aha T25	125	Honey Mesquite	104	4		
HM2	Aha T26	126	Honey Mesquite	111	4		
HM2	Aha T26	127	Honey Mesquite	102	4		
HM2	Aha T26	128	Honey Mesquite	98	4		
HM2	Aha T26	129	Honey Mesquite	79	4		
HM2	Aha T26	130	Honey Mesquite	76	4		
HM2	Aha T27	131	Honey Mesquite	107	4		
HM2	Aha T27	132	Honey Mesquite	84	4		
HM2	Aha T27	133	Honey Mesquite	99	4		
HM2	Aha T27	134	Honey Mesquite	95	4		
HM2	Aha T27	135	Honey Mesquite	83	4		
HMW1	Aha T28	136	Honey Mesquite	152	4		
HMW1	Aha T28	137	Honey Mesquite	77	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW1	Aha T28	138	Honey Mesquite	108	4		
HMW1	Aha T28	139	Honey Mesquite	81	4		
HMW1	Aha T28	140	Honey Mesquite	94	4		
HMW1	Aha T29	141	Honey Mesquite	70	4		
HMW1	Aha T29	142	Honey Mesquite	71	4		
HMW1	Aha T29	143	Honey Mesquite	110	4		
HMW1	Aha T29	144	Honey Mesquite	63	3.5	SS	
HMW1	Aha T29	145	Honey Mesquite	137	4		
HMW1	Aha T30	146	Honey Mesquite	153	4		
HMW1	Aha T30	147	Honey Mesquite	131	4		
HMW1	Aha T30	148	Honey Mesquite	107	4		
HMW1	Aha T30	149	Honey Mesquite	88	4		
HMW1	Aha T30	150	Honey Mesquite	59	4		
HMW1	Aha T31	151	Honey Mesquite	109	4		
HMW1	Aha T31	152	Honey Mesquite	99	4		
HMW1	Aha T31	153	Honey Mesquite	78	4		
HMW1	Aha T31	154	Honey Mesquite	137	4		
HMW1	Aha T31	155	Honey Mesquite	79	4		
HMW1	Aha T32	156	Blue Paloverde	29	4		
HMW1	Aha T32	157	Blue Paloverde	30	4		
HMW1	Aha T32	158	Blue Paloverde	11	4		
HMW1	Aha T32	159	Blue Paloverde	10	4		
HMW1	Aha T32	160	Blue Paloverde	11	4		
HMW2	Aha T33	161	Honey Mesquite	89	4		
HMW2	Aha T33	162	Honey Mesquite	75	4		
HMW2	Aha T33	163	Honey Mesquite	82	4		
HMW2	Aha T33	164	Honey Mesquite	91	4		
HMW2	Aha T33	165	Honey Mesquite	77	4		
HMW2	Aha T34	166	Honey Mesquite	71	4		
HMW2	Aha T34	167	Honey Mesquite	104	4		
HMW2	Aha T34	168	Honey Mesquite	107	4		
HMW2	Aha T34	169	Honey Mesquite	81	4		
HMW2	Aha T34	170	Honey Mesquite	111	4		
HMW2	Aha T35	171	Honey Mesquite	72	4		
HMW2	Aha T35	172	Honey Mesquite	76	4		
HMW2	Aha T35	173	Honey Mesquite	103	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW2	Aha T35	174	Honey Mesquite	~~79~~	~~4~~		~~88~~ 4
HMW2	Aha T35	175	Honey Mesquite	~~76~~	~~1.5~~	~~SS~~	~~83~~ 4
HMW2	Aha T36	176	Blue Paloverde	~~47~~	~~.25~~	~~SS~~	~~38~~ 4
HMW2	Aha T36	177	Blue Paloverde	←			56 4
HMW2	Aha T36	178	Blue Paloverde	43	4		
HMW2	Aha T36	179	Blue Paloverde	43	4		
HMW2	Aha T36	180	Blue Paloverde	39	4		
HMS1	Aha T37	181	Honey Mesquite/4-Wing	70	4		
HMS1	Aha T37	182	Honey Mesquite/4-Wing	37	2	1B/SS	
HMS1	Aha T37	183	Honey Mesquite/4-Wing	41	4		
HMS1	Aha T37	184	Honey Mesquite/4-Wing	71	3.5	1B	
HMS1	Aha T37	185	Honey Mesquite/4-Wing	40	.5	SS	
HMS1	Aha T38	186	Cottonwood	79	4		
HMS1	Aha T38	187	Cottonwood	76	1.5	SS	
HMS1	Aha T38	188	Cottonwood	47	.25	SS	
HMS1	Aha T38	189	Cottonwood	63	4		
HMS1	Aha T38	190	Cottonwood	90	4		
HMS1	Aha T39	191	Cottonwood	63	4		
HMS1	Aha T39	192	Cottonwood	49	4		
HMS1	Aha T39	193	Cottonwood	64	4		
HMS1	Aha T39	194	Cottonwood	59	4		
HMS1	Aha T39	195	Cottonwood	87	4		
HMS1	Aha T40	196	Honey Mesquite/4-Wing	31	3	SS	
HMS1	Aha T40	197	Honey Mesquite/4-Wing	28	2	SS	
HMS1	Aha T40	198	Honey Mesquite/4-Wing	58	4		
HMS1	Aha T40	199	Honey Mesquite/4-Wing	47	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	73	4		
HMS1	Aha T41	201	Honey Mesquite/4-Wing	36	3	SS	
HMS1	Aha T41	202	Honey Mesquite/4-Wing	—	0	D	
HMS1	Aha T41	203	Honey Mesquite/4-Wing	—	0	D	
HMS1	Aha T41	204	Honey Mesquite/4-Wing	—	0	D	
HMS1	Aha T41	205	Honey Mesquite/4-Wing	40	2.5	SS	
HMS2	Aha T42	206	Blue Paloverde	43	4		
HMS2	Aha T42	207	Blue Paloverde	20	4		
HMS2	Aha T42	208	Blue Paloverde	29	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS2	Aha T42	209	Blue Paloverde	42	4		
HMS2	Aha T42	210	Blue Paloverde	20	4		
HMS2	Aha T43	211	Honey Mesquite/4-Wing	40	3	SS	
HMS2	Aha T43	212	Honey Mesquite/4-Wing	41	2.5	SS	
HMS2	Aha T43	213	Honey Mesquite/4-Wing	48	1	SS	
HMS2	Aha T43	214	Honey Mesquite/4-Wing	—	0	D	
HMS2	Aha T43	215	Honey Mesquite/4-Wing	—	0	D	
HMS2	Aha T44	216	Cottonwood	30	4		needs tags
HMS2	Aha T44	217	Cottonwood	34	4		
HMS2	Aha T44	218	Cottonwood	29	3	SS	
HMS2	Aha T44	219	Cottonwood	40	4		
HMS2	Aha T44	220	Cottonwood	27	4		
HMS2	Aha T45	221	Cottonwood	51	3	SS	
HMS2	Aha T45	222	Cottonwood	41	4		
HMS2	Aha T45	223	Cottonwood	41	3	SS	
HMS2	Aha T45	224	Cottonwood	80	4		
HMS2	Aha T45	225	Cottonwood	78	4		
HMS2	Aha T46	226	Sandbar Willow	31	3	SS	
HMS2	Aha T46	227	Sandbar Willow	39	3	SS	
HMS2	Aha T46	228	Sandbar Willow	51	2.5	SS	
HMS2	Aha T46	229	Sandbar Willow	41	.5	SS	
HMS2	Aha T46	230	Sandbar Willow	24	.5	SS	
HMS3	Aha T47	231	Sandbar Willow	95	3.5	SS	
HMS3	Aha T47	232	Sandbar Willow	101	4		
HMS3	Aha T47	233	Sandbar Willow	91	4		
HMS3	Aha T47	234	Sandbar Willow	74	4		
HMS3	Aha T47	235	Sandbar Willow	78	4		
HMS3	Aha T48	236	Baccharis salicifolia	97	2	SS	
HMS3	Aha T48	237	Baccharis salicifolia	95	2	SS	
HMS3	Aha T48	238	Baccharis salicifolia	92	2	SS	
HMS3	Aha T48	239	Baccharis salicifolia	109	2	SS	
HMS3	Aha T48	240	Baccharis salicifolia	59	2	SS	
HMS3	Aha T49	241	Honey Mesquite/4-Wing	31	3	SS	
HMS3	Aha T49	242	Honey Mesquite/4-Wing	58	4		
HMS3	Aha T49	243	Honey Mesquite/4-Wing	33	2.5	SS	
HMS3	Aha T49	244	Honey Mesquite/4-Wing	45	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS3	Aha T49	245	Honey Mesquite/4-Wing	46	3	SS	
HMS3	Aha T50	246	Honey Mesquite/4-Wing	61	1	SS	needs tags - trying to resprout
HMS3	Aha T50	247	Honey Mesquite/4-Wing	99	4		↓
HMS3	Aha T50	248	Honey Mesquite/4-Wing	64	2	SS	
HMS3	Aha T50	249	Honey Mesquite/4-Wing	80	.5	SS	
HMS3	Aha T50	250	Honey Mesquite/4-Wing	141	1	SS	resprouting
HMS3	Aha T51	251	Honey Mesquite/4-Wing	–	D	SS	
HMS3	Aha T51	252	Honey Mesquite/4-Wing	–	D	SS	
HMS3	Aha T51	253	Honey Mesquite/4-Wing	36	2	SS	
HMS3	Aha T51	254	Honey Mesquite/4-Wing	41	2	SS	
HMS3	Aha T51	255	Honey Mesquite/4-Wing	–	D	SS	
HMS3	Aha T52	256	Honey Mesquite/4-Wing	46	4		
HMS3	Aha T52	257	Honey Mesquite/4-Wing	0	D	SS	
HMS3	Aha T52	258	Honey Mesquite/4-Wing	19	2	HS/SS	
HMS3	Aha T52	259	Honey Mesquite/4-Wing	52	2	HS/SS	
HMS3	Aha T52	260	Honey Mesquite/4-Wing	65	4		
HMS4	Aha T53	261	Ironwood	19	4		
HMS4	Aha T53	262	Ironwood	38	4		
HMS4	Aha T53	263	Ironwood	29	4		
HMS4	Aha T53	264	Ironwood	23	4		
HMS4	Aha T53	265	Ironwood	31	4		
HMS4	Aha T54	266	Honey Mesquite/4-Wing	36	2.0	HS/SS	
HMS4	Aha T54	267	Honey Mesquite/4-Wing	0	D		
HMS4	Aha T54	268	Honey Mesquite/4-Wing	47	1.5	HS/SS	
HMS4	Aha T54	269	Honey Mesquite/4-Wing	54	4		
HMS4	Aha T54	270	Honey Mesquite/4-Wing	43	2.5	HS/SS	
HMS4	Aha T55	271	Honey Mesquite/4-Wing	103	3	HS/SS	
HMS4	Aha T55	272	Honey Mesquite/4-Wing	54	3	HS	
HMS4	Aha T55	273	Honey Mesquite/4-Wing	52	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	71	3	HS	
HMS4	Aha T55	275	Honey Mesquite/4-Wing	33	3	HS	
HMS4	Aha T56	276	Honey Mesquite/4-Wing	51	4		
HMS4	Aha T56	277	Honey Mesquite/4-Wing	21	3.5		
HMS4	Aha T56	278	Honey Mesquite/4-Wing	33	4		
HMS4	Aha T56	279	Honey Mesquite/4-Wing	42	4		
HMS4	Aha T56	280	Honey Mesquite/4-Wing	12	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS4	Aha T57	281	Honey Mesquite/4-Wing	51	4		
HMS4	Aha T57	282	Honey Mesquite/4-Wing	0	D	H20	
HMS4	Aha T57	283	Honey Mesquite/4-Wing	56	3.5	IP	
HMS4	Aha T57	284	Honey Mesquite/4-Wing	72	4		
HMS4	Aha T57	285	Honey Mesquite/4-Wing	43	3.5	H20	
HMS4	Aha T58	286	Ironwood	45	4		
HMS4	Aha T58	287	Ironwood	32	4		
HMS4	Aha T58	288	Ironwood	11	4		
HMS4	Aha T58	289	Ironwood	29	4		
HMS4	Aha T58	290	Ironwood	41	4		

Factors Affecting Growth

MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height

5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

Aha 68-Acre Riparian Restoration

Entered - 08-05-09-

Session # & Date: 08/03/09 Session #1

Weather and Time: 105° Clear + Sunny 5-10mph

Participants: M. Brabec

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Blue Paloverde	47	4		
SBWH1	Aha T1	2	Blue Paloverde	35	4		
SBWH1	Aha T1	3	Blue Paloverde	30	4		
SBWH1	Aha T1	4	Blue Paloverde	38	4		
SBWH1	Aha T1	5	Blue Paloverde	38	4		
SBWH1	Aha T2	6	Honey Mesquite	106	4		
SBWH1	Aha T2	7	Honey Mesquite	39	4		
SBWH1	Aha T2	8	Honey Mesquite	81	4		
SBWH1	Aha T2	9	Honey Mesquite	92	4		
SBWH1	Aha T2	10	Honey Mesquite	83	4		
SBWH2	Aha T3	11	Honey Mesquite	63	2.5	SS	
SBWH2	Aha T3	12	Honey Mesquite	DEAD	—		
SBWH2	Aha T3	13	Honey Mesquite	0	DEAD	SS	
SBWH2	Aha T3	14	Honey Mesquite	69	4		
SBWH2	Aha T3	15	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	16	Honey Mesquite	73	4		
SBWH2	Aha T4	17	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	18	Honey Mesquite	39	3.5	SS	
SBWH2	Aha T4	19	Honey Mesquite	103	4		
SBWH2	Aha T4	20	Honey Mesquite	0	DEAD		
SBW	Aha T5	21	Honey Mesquite	48	3.5	SS	
SBW	Aha T5	22	Honey Mesquite	—	DEAD		
SBW	Aha T5	23	Honey Mesquite	DEAD	—		
SBW	Aha T5	24	Honey Mesquite	100	4		
SBW	Aha T5	25	Honey Mesquite	70	4		
SBW	Aha T6	26	Honey Mesquite	DEAD	—		
SBW	Aha T6	27	Honey Mesquite	78	4		
SBW	Aha T6	28	Honey Mesquite	DEAD			
SBW	Aha T6	29	Honey Mesquite	51	3-0	SS	
SBW	Aha T6	30	Honey Mesquite	60	4		
SW	Aha T7	31	Honey Mesquite	140	4		
SW	Aha T7	32	Honey Mesquite	DEAD			

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SW	Aha T7	33	Honey Mesquite	41	3	SS	
SW	Aha T7	34	Honey Mesquite	87	4		
SW	Aha T7	35	Honey Mesquite	222	4		
CWB	Aha T8	36	Honey Mesquite	DEAD	—		
CWB	Aha T8	37	Honey Mesquite	30	4		
CWB	Aha T8	38	Honey Mesquite	107	4		
CWB	Aha T8	39	Honey Mesquite	115	4		
CWB	Aha T8	40	Honey Mesquite	63	3.5	IB	
CWB	Aha T9	41	Honey Mesquite	75	4		
CWB	Aha T9	42	Honey Mesquite	109	4		
CWB	Aha T9	43	Honey Mesquite	83	4		
CWB	Aha T9	44	Honey Mesquite	DEAD			
CWB	Aha T9	45	Honey Mesquite	DEAD	—		
CWHP	Aha T10	46	Honey Mesquite	73	4		
CWHP	Aha T10	47	Honey Mesquite	112	4		
CWHP	Aha T10	48	Honey Mesquite	134	4		
CWHP	Aha T10	49	Honey Mesquite	85	4		
CWHP	Aha T10	50	Honey Mesquite	183	4		
CWHP	Aha T11	51	Honey Mesquite	190	4		
CWHP	Aha T11	52	Honey Mesquite	146	4		
CWHP	Aha T11	53	Honey Mesquite	199	4		
CWHP	Aha T11	54	Honey Mesquite	141	4		
CWHP	Aha T11	55	Honey Mesquite	86	4		
CWISG	Aha T12	56	Cottonwood	89	4		
CWISG	Aha T12	57	Cottonwood	90	4		
CWISG	Aha T12	58	Cottonwood	79	3	SS	
CWISG	Aha T12	59	Cottonwood	83	4		
CWISG	Aha T12	60	Cottonwood	63	4		
CWISG	Aha T13	61	Cottonwood	78	4		
CWISG	Aha T13	62	Cottonwood	~~DEAD~~ 32	1	resprouted!	
CWISG	Aha T13	63	Cottonwood	85	4		
CWISG	Aha T13	64	Cottonwood	—	DEAD		
CWISG	Aha T13	65	Cottonwood	78	4		
IW	Aha T14	66	Sandbar Willow	90	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
IW	Aha T14	67	Sandbar Willow	97	4		
IW	Aha T14	68	Sandbar Willow	129	4		
IW	Aha T14	69	Sandbar Willow	114	4		
IW	Aha T14	70	Sandbar Willow	114	4		
IW	Aha T15	71	Sandbar Willow	DEAD	—		
IW	Aha T15	72	Sandbar Willow	DEAD	—		
IW	Aha T15	73	Sandbar Willow	85	3	SS	
IW	Aha T15	74	Sandbar Willow	86	3.5	SS	
IW	Aha T15	75	Sandbar Willow	DEAD	—		
BPV3	Aha T16	76	Wolfberry	45	1.5	Dormant ? + SS	
BPV3	Aha T16	77	Wolfberry	30	1.0	↓	
BPV3	Aha T16	78	Wolfberry	81	3.0		
BPV3	Aha T16	79	Wolfberry	39	2.0		
BPV3	Aha T16	80	Wolfberry	54	1.5		
BPV4	Aha T17	81	Sandbar Willow	DEAD	—		
BPV4	Aha T17	82	Sandbar Willow	DEAD	—		
BPV4	Aha T17	83	Sandbar Willow	DEAD	—		
BPV4	Aha T17	84	Sandbar Willow	DEAD	—	—	
BPV4	Aha T17	85	Sandbar Willow	86	3	SS	
BPV5	Aha T18	86	Sandbar Willow	DEAD			
BPV5	Aha T18	87	Sandbar Willow	86	4		need tag
BPV5	Aha T18	88	Sandbar Willow	65	4		
BPV5	Aha T18	89	Sandbar Willow	DEAD			
BPV5	Aha T18	90	Sandbar Willow	DEAD			
BPV6	Aha T19	91	Cottonwood	90	4		
BPV6	Aha T19	92	Cottonwood	64	4		
BPV6	Aha T19	93	Cottonwood	67	4		
BPV6	Aha T19	94	Cottonwood	80	4		
BPV6	Aha T19	95	Cottonwood	71	4		
HM1	Aha T20	96	Cottonwood	DEAD			
HM1	Aha T20	97	Cottonwood	DEAD			
HM1	Aha T20	98	Cottonwood	DEAD			
HM1	Aha T20	99	Cottonwood	31	1.5		
HM1	Aha T20	100	Cottonwood	90	4		
HM1	Aha T21	101	Cottonwood	66	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HM1	Aha T21	102	Cottonwood	58	4		tags
HM1	Aha T21	103	Cottonwood	57	4		↓
HM1	Aha T21	104	Cottonwood	90	4		
HM1	Aha T21	105	Cottonwood	87	4		
HM1	Aha T22	106	Cottonwood	106	4		tags
HM1	Aha T22	107	Cottonwood	82	4		↓
HM1	Aha T22	108	Cottonwood	110	4		
HM1	Aha T22	109	Cottonwood	81	4		
HM1	Aha T22	110	Cottonwood	42	2	SS	
HM2	Aha T23	111	Honey Mesquite	171	4		
HM2	Aha T23	112	Honey Mesquite	225	4		
HM2	Aha T23	113	Honey Mesquite	101	4		
HM2	Aha T23	114	Honey Mesquite	56	4		
HM2	Aha T23	115	Honey Mesquite	118	4		
HM2	Aha T24	116	Blue Paloverde	40	4		
HM2	Aha T24	117	Blue Paloverde	50	4		
HM2	Aha T24	118	Blue Paloverde	38	4		
HM2	Aha T24	119	Blue Paloverde	32	4		
HM2	Aha T24	120	Blue Paloverde	13	2	SS/HS	
HM2	Aha T25	121	Honey Mesquite	120	4		
HM2	Aha T25	122	Honey Mesquite	128	4		
HM2	Aha T25	123	Honey Mesquite	186	4		
HM2	Aha T25	124	Honey Mesquite	138	4		
HM2	Aha T25	125	Honey Mesquite	136	4		
HM2	Aha T26	126	Honey Mesquite	143	4		
HM2	Aha T26	127	Honey Mesquite	106	4		
HM2	Aha T26	128	Honey Mesquite	111	4		
HM2	Aha T26	129	Honey Mesquite	95	4		
HM2	Aha T26	130	Honey Mesquite	114	4		
HM2	Aha T27	131	Honey Mesquite	140	4		
HM2	Aha T27	132	Honey Mesquite	97	4		
HM2	Aha T27	133	Honey Mesquite	119	4		
HM2	Aha T27	134	Honey Mesquite	124	4		
HM2	Aha T27	135	Honey Mesquite	133	4		
HMW1	Aha T28	136	Honey Mesquite	190	4		
HMW1	Aha T28	137	Honey Mesquite	111	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW1	Aha T28	138	Honey Mesquite	180	4		
HMW1	Aha T28	139	Honey Mesquite	135	4		
HMW1	Aha T28	140	Honey Mesquite	119	4		
HMW1	Aha T29	141	Honey Mesquite	114	4		
HMW1	Aha T29	142	Honey Mesquite	97	4		
HMW1	Aha T29	143	Honey Mesquite	160	4		
HMW1	Aha T29	144	Honey Mesquite	90	4		
HMW1	Aha T29	145	Honey Mesquite	179	4		
HMW1	Aha T30	146	Honey Mesquite	193	4		
HMW1	Aha T30	147	Honey Mesquite	194	4		
HMW1	Aha T30	148	Honey Mesquite	111	4		
HMW1	Aha T30	149	Honey Mesquite	121	4		
HMW1	Aha T30	150	Honey Mesquite	56	4		
HMW1	Aha T31	151	Honey Mesquite	139	4		
HMW1	Aha T31	152	Honey Mesquite	134	4		
HMW1	Aha T31	153	Honey Mesquite	99	4		
HMW1	Aha T31	154	Honey Mesquite	195	4		
HMW1	Aha T31	155	Honey Mesquite	107	4		
HMW1	Aha T32	156	Blue Paloverde	34	4		
HMW1	Aha T32	157	Blue Paloverde	30	4		
HMW1	Aha T32	158	Blue Paloverde	18	4		
HMW1	Aha T32	159	Blue Paloverde	17	4		
HMW1	Aha T32	160	Blue Paloverde	16	4		
HMW2	Aha T33	161	Honey Mesquite	99	4		
HMW2	Aha T33	162	Honey Mesquite	77	4		
HMW2	Aha T33	163	Honey Mesquite	76	4		
HMW2	Aha T33	164	Honey Mesquite	101	4		
HMW2	Aha T33	165	Honey Mesquite	80	4		
HMW2	Aha T34	166	Honey Mesquite	78	4		
HMW2	Aha T34	167	Honey Mesquite	114	4		
HMW2	Aha T34	168	Honey Mesquite	110	25	HS	
HMW2	Aha T34	169	Honey Mesquite	93	4		
HMW2	Aha T34	170	Honey Mesquite	139	4		
HMW2	Aha T35	171	Honey Mesquite	82	4		
HMW2	Aha T35	172	Honey Mesquite	82	4		
HMW2	Aha T35	173	Honey Mesquite	152	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW2	Aha T35	174	Honey Mesquite	109	4		
HMW2	Aha T35	175	Honey Mesquite	112	4		
HMW2	Aha T36	176	Blue Paloverde	35	4		
HMW2	Aha T36	177	Blue Paloverde	55	4		
HMW2	Aha T36	178	Blue Paloverde	41	2.5	HS	
HMW2	Aha T36	179	Blue Paloverde	41	1	HS	
HMW2	Aha T36	180	Blue Paloverde	37	1	HS	
HMS1	Aha T37	181	Honey Mesquite/4-Wing	125	4		
HMS1	Aha T37	182	Honey Mesquite/4-Wing	DEAD	—	H20	
HMS1	Aha T37	183	Honey Mesquite/4-Wing	40	4		
HMS1	Aha T37	184	Honey Mesquite/4-Wing	96	4		
HMS1	Aha T37	185	Honey Mesquite/4-Wing	DEAD	—	H20	
HMS1	Aha T38	186	Cottonwood	86	4		
HMS1	Aha T38	187	Cottonwood	DEAD	—	SS	
HMS1	Aha T38	188	Cottonwood	DEAD	—	SS	
HMS1	Aha T38	189	Cottonwood	62	4		
HMS1	Aha T38	190	Cottonwood	95	4		
HMS1	Aha T39	191	Cottonwood	70	4		
HMS1	Aha T39	192	Cottonwood	58	4		
HMS1	Aha T39	193	Cottonwood	66	4		
HMS1	Aha T39	194	Cottonwood	68	4		
HMS1	Aha T39	195	Cottonwood	89	4		
HMS1	Aha T40	196	Honey Mesquite/4-Wing	48	3	SS	
HMS1	Aha T40	197	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T40	198	Honey Mesquite/4-Wing	86	4		
HMS1	Aha T40	199	Honey Mesquite/4-Wing	67	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	101	4		
HMS1	Aha T41	201	Honey Mesquite/4-Wing	42	4		
HMS1	Aha T41	202	Honey Mesquite/4-Wing	DEAD			
HMS1	Aha T41	203	Honey Mesquite/4-Wing	DEAD			
HMS1	Aha T41	204	Honey Mesquite/4-Wing	DEAD			
HMS1	Aha T41	205	Honey Mesquite/4-Wing	23	3	SS	
HMS2	Aha T42	206	Blue Paloverde	59	4		
HMS2	Aha T42	207	Blue Paloverde	29	4		
HMS2	Aha T42	208	Blue Paloverde	28	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS2	Aha T42	209	Blue Paloverde	46	4		
HMS2	Aha T42	210	Blue Paloverde	63	4		
HMS2	Aha T43	211	Honey Mesquite/4-Wing	60	4		
HMS2	Aha T43	212	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T43	213	Honey Mesquite/4-Wing	41	.5	SS	
HMS2	Aha T43	214	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T43	215	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T44	216	Cottonwood	39	4		
HMS2	Aha T44	217	Cottonwood	37	2	SS	
HMS2	Aha T44	218	Cottonwood	DEAD	—	SS	
HMS2	Aha T44	219	Cottonwood	43	1	SS	
HMS2	Aha T44	220	Cottonwood	31	2	SS	
HMS2	Aha T45	221	Cottonwood	60	4		
HMS2	Aha T45	222	Cottonwood	46	4		
HMS2	Aha T45	223	Cottonwood	59	4		
HMS2	Aha T45	224	Cottonwood	102	4		
HMS2	Aha T45	225	Cottonwood	82	4		
HMS2	Aha T46	226	Sandbar Willow	30	3	SS	
HMS2	Aha T46	227	Sandbar Willow	38	2	SS	
HMS2	Aha T46	228	Sandbar Willow	58	3.5	SS	
HMS2	Aha T46	229	Sandbar Willow	39	1	SS	
HMS2	Aha T46	230	Sandbar Willow	29	2	SS	
HMS3	Aha T47	231	Sandbar Willow	101	3	SS	
HMS3	Aha T47	232	Sandbar Willow	119	4		
HMS3	Aha T47	233	Sandbar Willow	93	4		
HMS3	Aha T47	234	Sandbar Willow	73	2	SS	
HMS3	Aha T47	235	Sandbar Willow	80	4		
HMS3	Aha T48	236	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	237	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	238	Baccharis salicifolia	23	.5	SS	resprout
HMS3	Aha T48	239	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	240	Baccharis salicifolia	DEAD	—		
HMS3	Aha T49	241	Honey Mesquite/4-Wing	32	3	SS	
HMS3	Aha T49	242	Honey Mesquite/4-Wing	85	4		
HMS3	Aha T49	243	Honey Mesquite/4-Wing	64	4		
HMS3	Aha T49	244	Honey Mesquite/4-Wing	64	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS3	Aha T49	245	Honey Mesquite/4-Wing	55	4		
HMS3	Aha T50	246	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS3	Aha T50	247	Honey Mesquite/4-Wing	109	4		
HMS3	Aha T50	248	Honey Mesquite/4-Wing	88	2	SS	resprouting
HMS3	Aha T50	249	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T50	250	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	251	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	252	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	253	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	254	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	255	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T52	256	Honey Mesquite/4-Wing	72	4		
HMS3	Aha T52	257	Honey Mesquite/4-Wing	39 DEAD	3	SS	
HMS3	Aha T52	258	Honey Mesquite/4-Wing	31	3.5	SS	
HMS3	Aha T52	259	Honey Mesquite/4-Wing	60	4		
HMS3	Aha T52	260	Honey Mesquite/4-Wing	79	4		
HMS4	Aha T53	261	Ironwood	24	4		
HMS4	Aha T53	262	Ironwood	32	4		
HMS4	Aha T53	263	Ironwood	33	3	HS	
HMS4	Aha T53	264	Ironwood	34	4		
HMS4	Aha T53	265	Ironwood	20	3	HS	
HMS4	Aha T54	266	Honey Mesquite/4-Wing	55	4		
HMS4	Aha T54	267	Honey Mesquite/4-Wing	DEAD	—		
HMS4	Aha T54	268	Honey Mesquite/4-Wing	69	4		
HMS4	Aha T54	269	Honey Mesquite/4-Wing	74	4		
HMS4	Aha T54	270	Honey Mesquite/4-Wing	62	4		
HMS4	Aha T55	271	Honey Mesquite/4-Wing	91	4		
HMS4	Aha T55	272	Honey Mesquite/4-Wing	58	4		
HMS4	Aha T55	273	Honey Mesquite/4-Wing	61	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	41	4		
HMS4	Aha T55	275	Honey Mesquite/4-Wing	41	4		
HMS4	Aha T56	276	Honey Mesquite/4-Wing	68	4		
HMS4	Aha T56	277	Honey Mesquite/4-Wing	25	3	H20	
HMS4	Aha T56	278	Honey Mesquite/4-Wing	49	4		
HMS4	Aha T56	279	Honey Mesquite/4-Wing	64	4		
HMS4	Aha T56	280	Honey Mesquite/4-Wing	24	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS4	Aha T57	281	Honey Mesquite/4-Wing	75	4		
HMS4	Aha T57	282	Honey Mesquite/4-Wing	~~DEAD~~ 36	4		resprout!
HMS4	Aha T57	283	Honey Mesquite/4-Wing	93	4		
HMS4	Aha T57	284	Honey Mesquite/4-Wing	102	4		
HMS4	Aha T57	285	Honey Mesquite/4-Wing	61	4		
HMS4	Aha T58	286	Ironwood	46	1	D	Defoliating, but stem is green - reaction to heat?
HMS4	Aha T58	287	Ironwood	32	1	D	
HMS4	Aha T58	288	Ironwood	8	1	D	↓
HMS4	Aha T58	289	Ironwood	27	1	D	
HMS4	Aha T58	290	Ironwood	45	1	D	

Factors Affecting Growth

MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height			
5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

~~Aha 63~~-Acre Riparian Restoration — Entered

Session # & Date: Sept 2+3, 2009

Weather and Time: 1:30-3:00pm 7:00 am - 3pm 100°F+ 15-20mph winds sunny

Participants: M. Brabec

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Blue Paloverde	53	4		
SBWH1	Aha T1	2	Blue Paloverde	55	4		
SBWH1	Aha T1	3	Blue Paloverde	42	4		
SBWH1	Aha T1	4	Blue Paloverde	56	4		
SBWH1	Aha T1	5	Blue Paloverde	46	4		
SBWH1	Aha T2	6	Honey Mesquite	191	4		
SBWH1	Aha T2	7	Honey Mesquite	83	4		
SBWH1	Aha T2	8	Honey Mesquite	131	4		
SBWH1	Aha T2	9	Honey Mesquite	108	4		
SBWH1	Aha T2	10	Honey Mesquite	80	3	SS	
SBWH2	Aha T3	11	Honey Mesquite	63	2	SS	
SBWH2	Aha T3	12	Honey Mesquite	DEAD	—		
SBWH2	Aha T3	13	Honey Mesquite	DEAD	—	SS	
SBWH2	Aha T3	14	Honey Mesquite	73	4		
SBWH2	Aha T3	15	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	16	Honey Mesquite	98	4		
SBWH2	Aha T4	17	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	18	Honey Mesquite	43	4		
SBWH2	Aha T4	19	Honey Mesquite	102	4		
SBWH2	Aha T4	20	Honey Mesquite	DEAD	—	SS	
SBW	Aha T5	21	Honey Mesquite	57	4		
SBW	Aha T5	22	Honey Mesquite	DEAD	—	SS	
SBW	Aha T5	23	Honey Mesquite	DEAD	—		
SBW	Aha T5	24	Honey Mesquite	129	4		
SBW	Aha T5	25	Honey Mesquite	78	4		
SBW	Aha T6	26	Honey Mesquite	DEAD	—		
SBW	Aha T6	27	Honey Mesquite	150	4		
SBW	Aha T6	28	Honey Mesquite	DEAD	—		
SBW	Aha T6	29	Honey Mesquite	52	4		
SBW	Aha T6	30	Honey Mesquite	92	4		
SW	Aha T7	31	Honey Mesquite	169	3.5	HS	
SW	Aha T7	32	Honey Mesquite	DEAD			

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SW	Aha T7	33	Honey Mesquite	45	2.5	55	
SW	Aha T7	34	Honey Mesquite	107	4		
SW	Aha T7	35	Honey Mesquite	283	4		
CWB	Aha T8	36	Honey Mesquite	DEAD			
CWB	Aha T8	37	Honey Mesquite	57	4		
CWB	Aha T8	38	Honey Mesquite	161	4		
CWB	Aha T8	39	Honey Mesquite	183	4		
CWB	Aha T8	40	Honey Mesquite	107	4		
CWB	Aha T9	41	Honey Mesquite	103	4		
CWB	Aha T9	42	Honey Mesquite	177	4		
CWB	Aha T9	43	Honey Mesquite	150	4		
CWB	Aha T9	44	Honey Mesquite	DEAD	—		
CWB	Aha T9	45	Honey Mesquite	DEAD	—		
CWHP	Aha T10	46	Honey Mesquite	115	4		
CWHP	Aha T10	47	Honey Mesquite	139	4		
CWHP	Aha T10	48	Honey Mesquite	161	4		
CWHP	Aha T10	49	Honey Mesquite	131	4		
CWHP	Aha T10	50	Honey Mesquite	211	4		
CWHP	Aha T11	51	Honey Mesquite	208	4		
CWHP	Aha T11	52	Honey Mesquite	190	4		
CWHP	Aha T11	53	Honey Mesquite	222	4		
CWHP	Aha T11	54	Honey Mesquite	199	4		
CWHP	Aha T11	55	Honey Mesquite	137	4		
CWISG	Aha T12	56	Cottonwood	117	4		
CWISG	Aha T12	57	Cottonwood	111	4		
CWISG	Aha T12	58	Cottonwood	88	4		
CWISG	Aha T12	59	Cottonwood	83	4		
CWISG	Aha T12	60	Cottonwood	109	4		
CWISG	Aha T13	61	Cottonwood	112	4		
CWISG	Aha T13	62	Cottonwood	DEAD	—		
CWISG	Aha T13	63	Cottonwood	123	4		
CWISG	Aha T13	64	Cottonwood	—	DEAD		
CWISG	Aha T13	65	Cottonwood	95	4		
IW	Aha T14	66	Sandbar Willow	93	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
IW	Aha T14	67	Sandbar Willow	98	4		
IW	Aha T14	68	Sandbar Willow	129	4		
IW	Aha T14	69	Sandbar Willow	118	4		
IW	Aha T14	70	Sandbar Willow	109	4		
IW	Aha T15	71	Sandbar Willow	DEAD	—	SS	
IW	Aha T15	72	Sandbar Willow	DEAD	—	SS	
IW	Aha T15	73	Sandbar Willow	DEAD	—	SS	
IW	Aha T15	74	Sandbar Willow	88	4		
IW	Aha T15	75	Sandbar Willow	DEAD	—		
BPV3	Aha T16	76	Wolfberry	43	1		DORMANT
BPV3	Aha T16	77	Wolfberry	131	2		
BPV3	Aha T16	78	Wolfberry	84	2		
BPV3	Aha T16	79	Wolfberry	55	1.5		
BPV3	Aha T16	80	Wolfberry	60	2		
BPV4	Aha T17	81	Sandbar Willow	DEAD	—		
BPV4	Aha T17	82	Sandbar Willow	DEAD	—		
BPV4	Aha T17	83	Sandbar Willow	DEAD	—		
BPV4	Aha T17	84	Sandbar Willow	DEAD	—		
BPV4	Aha T17	85	Sandbar Willow	07	3	SS	
BPV5	Aha T18	86	Sandbar Willow	DEAD	—		
BPV5	Aha T18	87	Sandbar Willow	93	4		
BPV5	Aha T18	88	Sandbar Willow	73	3	SS	
BPV5	Aha T18	89	Sandbar Willow	DEAD			
BPV5	Aha T18	90	Sandbar Willow	DEAD			
BPV6	Aha T19	91	Cottonwood	99	4		
BPV6	Aha T19	92	Cottonwood	75	4		
BPV6	Aha T19	93	Cottonwood	83	4		
BPV6	Aha T19	94	Cottonwood	93	4		
BPV6	Aha T19	95	Cottonwood	91	4		
HM1	Aha T20	96	Cottonwood	DEAD	—		
HM1	Aha T20	97	Cottonwood	DEAD	—		
HM1	Aha T20	98	Cottonwood	DEAD	—		
HM1	Aha T20	99	Cottonwood	13	3	SS	resprouting
HM1	Aha T20	100	Cottonwood	111	3.5	SS	
HM1	Aha T21	101	Cottonwood	79	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HM1	Aha T21	102	Cottonwood	87	4		
HM1	Aha T21	103	Cottonwood	69	4		
HM1	Aha T21	104	Cottonwood	106	4		
HM1	Aha T21	105	Cottonwood	110	4		
HM1	Aha T22	106	Cottonwood	139	4		
HM1	Aha T22	107	Cottonwood	109	4		
HM1	Aha T22	108	Cottonwood	140	4		
HM1	Aha T22	109	Cottonwood	126	4		
HM1	Aha T22	110	Cottonwood	68	4		
HM2	Aha T23	111	Honey Mesquite	228	4		
HM2	Aha T23	112	Honey Mesquite	243	4		
HM2	Aha T23	113	Honey Mesquite	157	4		
HM2	Aha T23	114	Honey Mesquite	57	4		
HM2	Aha T23	115	Honey Mesquite	156	4		
HM2	Aha T24	116	Blue Paloverde	64	4		
HM2	Aha T24	117	Blue Paloverde	72	4		
HM2	Aha T24	118	Blue Paloverde	49	4		
HM2	Aha T24	119	Blue Paloverde	51	4		
HM2	Aha T24	120	Blue Paloverde	23	3	SS	
HM2	Aha T25	121	Honey Mesquite	181	4		
HM2	Aha T25	122	Honey Mesquite	168	4		
HM2	Aha T25	123	Honey Mesquite	103	4		
HM2	Aha T25	124	Honey Mesquite	202	4		
HM2	Aha T25	125	Honey Mesquite	107	4		
HM2	Aha T26	126	Honey Mesquite	221	4		
HM2	Aha T26	127	Honey Mesquite	152	4		
HM2	Aha T26	128	Honey Mesquite	125	4		
HM2	Aha T26	129	Honey Mesquite	159	4		
HM2	Aha T26	130	Honey Mesquite	139	4		
HM2	Aha T27	131	Honey Mesquite	199	4		
HM2	Aha T27	132	Honey Mesquite	123	4		
HM2	Aha T27	133	Honey Mesquite	187	4		
HM2	Aha T27	134	Honey Mesquite	159	4		
HM2	Aha T27	135	Honey Mesquite	212	4		
HMW1	Aha T28	136	Honey Mesquite	148	4		
HMW1	Aha T28	137	Honey Mesquite	214	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW1	Aha T28	138	Honey Mesquite	157	4		
HMW1	Aha T28	139	Honey Mesquite	174	4		
HMW1	Aha T28	140	Honey Mesquite	233	4		
HMW1	Aha T29	141	Honey Mesquite	187	4		
HMW1	Aha T29	142	Honey Mesquite	151	4		
HMW1	Aha T29	143	Honey Mesquite	238	4		
HMW1	Aha T29	144	Honey Mesquite	134	4		
HMW1	Aha T29	145	Honey Mesquite	181	4		
HMW1	Aha T30	146	Honey Mesquite	222	4		
HMW1	Aha T30	147	Honey Mesquite	229	4		
HMW1	Aha T30	148	Honey Mesquite	152	4		
HMW1	Aha T30	149	Honey Mesquite	203	4		
HMW1	Aha T30	150	Honey Mesquite	83	4		
HMW1	Aha T31	151	Honey Mesquite	193	4		
HMW1	Aha T31	152	Honey Mesquite	226	4		
HMW1	Aha T31	153	Honey Mesquite	145	4		
HMW1	Aha T31	154	Honey Mesquite	278	4		
HMW1	Aha T31	155	Honey Mesquite	162	4		
HMW1	Aha T32	156	Blue Paloverde	41	4		
HMW1	Aha T32	157	Blue Paloverde	37	4		
HMW1	Aha T32	158	Blue Paloverde	24	4		
HMW1	Aha T32	159	Blue Paloverde	33	4		
HMW1	Aha T32	160	Blue Paloverde	26	4		
HMW2	Aha T33	161	Honey Mesquite	180	4		
HMW2	Aha T33	162	Honey Mesquite	165	4		
HMW2	Aha T33	163	Honey Mesquite	110	4		
HMW2	Aha T33	164	Honey Mesquite	108	4		
HMW2	Aha T33	165	Honey Mesquite	116	4		
HMW2	Aha T34	166	Honey Mesquite	140	4		
HMW2	Aha T34	167	Honey Mesquite	160	4		
HMW2	Aha T34	168	Honey Mesquite	112	4		
HMW2	Aha T34	169	Honey Mesquite	119	4		
HMW2	Aha T34	170	Honey Mesquite	219	4		
HMW2	Aha T35	171	Honey Mesquite	100	4		
HMW2	Aha T35	172	Honey Mesquite	126	4		
HMW2	Aha T35	173	Honey Mesquite	199	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW2	Aha T35	174	Honey Mesquite	159	4		
HMW2	Aha T35	175	Honey Mesquite	174	4		
HMW2	Aha T36	176	Blue Paloverde	64	4		
HMW2	Aha T36	177	Blue Paloverde	84	4		
HMW2	Aha T36	178	Blue Paloverde	41	3	HS	
HMW2	Aha T36	179	Blue Paloverde	52	4		
HMW2	Aha T36	180	Blue Paloverde	35	3	HS	
HMS1	Aha T37	181	Honey Mesquite/4-Wing	184	4		
HMS1	Aha T37	182	Honey Mesquite/4-Wing	31	1	SS	
HMS1	Aha T37	183	Honey Mesquite/4-Wing	111	4		
HMS1	Aha T37	184	Honey Mesquite/4-Wing	160	4		
HMS1	Aha T37	185	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS1	Aha T38	186	Cottonwood	164	4		
HMS1	Aha T38	187	Cottonwood	DEAD	—	SS	
HMS1	Aha T38	188	Cottonwood	DEAD	—	SS	
HMS1	Aha T38	189	Cottonwood	61 ~~DEAD~~	4	~~SS~~	
HMS1	Aha T38	190	Cottonwood	105	4	!	
HMS1	Aha T39	191	Cottonwood	92	4		
HMS1	Aha T39	192	Cottonwood	76	4		
HMS1	Aha T39	193	Cottonwood	89	4		
HMS1	Aha T39	194	Cottonwood	86	4		
HMS1	Aha T39	195	Cottonwood	109	4		
HMS1	Aha T40	196	Honey Mesquite/4-Wing	86	4		
HMS1	Aha T40	197	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS1	Aha T40	198	Honey Mesquite/4-Wing	105	4		
HMS1	Aha T40	199	Honey Mesquite/4-Wing	107	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	129	4		
HMS1	Aha T41	201	Honey Mesquite/4-Wing	97	4		
HMS1	Aha T41	202	Honey Mesquite/4-Wing	DEAD			
HMS1	Aha T41	203	Honey Mesquite/4-Wing	DEAD			
HMS1	Aha T41	204	Honey Mesquite/4-Wing	DEAD			
HMS1	Aha T41	205	Honey Mesquite/4-Wing	31	2	SS	
HMS2	Aha T42	206	Blue Paloverde	86	4		
HMS2	Aha T42	207	Blue Paloverde	53	4		
HMS2	Aha T42	208	Blue Paloverde	47	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS2	Aha T42	209	Blue Paloverde	109	4		
HMS2	Aha T42	210	Blue Paloverde	64	4		
HMS2	Aha T43	211	Honey Mesquite/4-Wing	77	4		
HMS2	Aha T43	212	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS2	Aha T43	213	Honey Mesquite/4-Wing	40	2	SS	
HMS2	Aha T43	214	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T43	215	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T44	216	Cottonwood	41	1	SS	
HMS2	Aha T44	217	Cottonwood	38	1	SS	
HMS2	Aha T44	218	Cottonwood	DEAD	—	SS	
HMS2	Aha T44	219	Cottonwood	DEAD	—	SS	
HMS2	Aha T44	220	Cottonwood	DEAD	—	SS	
HMS2	Aha T45	221	Cottonwood	93	4		
HMS2	Aha T45	222	Cottonwood	43	4		
HMS2	Aha T45	223	Cottonwood	80	4		
HMS2	Aha T45	224	Cottonwood	105	4		
HMS2	Aha T45	225	Cottonwood	110	4		
HMS2	Aha T46	226	Sandbar Willow	39	4		
HMS2	Aha T46	227	Sandbar Willow	31	1	SS	
HMS2	Aha T46	228	Sandbar Willow	78	4		
HMS2	Aha T46	229	Sandbar Willow	37	1	SS	
HMS2	Aha T46	230	Sandbar Willow	30	1	SS	
HMS3	Aha T47	231	Sandbar Willow	102	4		
HMS3	Aha T47	232	Sandbar Willow	124	4		
HMS3	Aha T47	233	Sandbar Willow	97	4		
HMS3	Aha T47	234	Sandbar Willow	75	3.5	SS	
HMS3	Aha T47	235	Sandbar Willow	80	4		
HMS3	Aha T48	236	Baccharis salicifolia	DEAD	—	SS	
HMS3	Aha T48	237	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	238	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	239	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	240	Baccharis salicifolia	DEAD	—		
HMS3	Aha T49	241	Honey Mesquite/4-Wing	47	4		
HMS3	Aha T49	242	Honey Mesquite/4-Wing	105	4		
HMS3	Aha T49	243	Honey Mesquite/4-Wing	104	4		
HMS3	Aha T49	244	Honey Mesquite/4-Wing	149	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS3	Aha T49	245	Honey Mesquite/4-Wing	64	4		
HMS3	Aha T50	246	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS3	Aha T50	247	Honey Mesquite/4-Wing	102	4		
HMS3	Aha T50	248	Honey Mesquite/4-Wing	DED	—	SS	
HMS3	Aha T50	249	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS3	Aha T50	250	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS3	Aha T51	251	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	252	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	253	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS3	Aha T51	254	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS3	Aha T51	255	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T52	256	Honey Mesquite/4-Wing	128	4		
HMS3	Aha T52	257	Honey Mesquite/4-Wing	~~DEAD~~ 56	4		
HMS3	Aha T52	258	Honey Mesquite/4-Wing	73	4		
HMS3	Aha T52	259	Honey Mesquite/4-Wing	109	4		
HMS3	Aha T52	260	Honey Mesquite/4-Wing	124	4		
HMS4	Aha T53	261	Ironwood	24	4		
HMS4	Aha T53	262	Ironwood	31	4		
HMS4	Aha T53	263	Ironwood	39	3	HS	
HMS4	Aha T53	264	Ironwood	31	4		
HMS4	Aha T53	265	Ironwood	34	4		
HMS4	Aha T54	266	Honey Mesquite/4-Wing	98	4		
HMS4	Aha T54	267	Honey Mesquite/4-Wing	DEAD			
HMS4	Aha T54	268	Honey Mesquite/4-Wing	98	4		
HMS4	Aha T54	269	Honey Mesquite/4-Wing	111	4		
HMS4	Aha T54	270	Honey Mesquite/4-Wing	102	4		
HMS4	Aha T55	271	Honey Mesquite/4-Wing	111	4		
HMS4	Aha T55	272	Honey Mesquite/4-Wing	84	4		
HMS4	Aha T55	273	Honey Mesquite/4-Wing	79	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	97	4		
HMS4	Aha T55	275	Honey Mesquite/4-Wing	76	4		
HMS4	Aha T56	276	Honey Mesquite/4-Wing	↑	↑		
HMS4	Aha T56	277	Honey Mesquite/4-Wing	97	4		
HMS4	Aha T56	278	Honey Mesquite/4-Wing	33	4		
HMS4	Aha T56	279	Honey Mesquite/4-Wing	82	4		
HMS4	Aha T56	280	Honey Mesquite/4-Wing	87	4		
				49	4		

Gambel oak Willow

BPV

BPV

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS4	Aha T57	281	Honey Mesquite/4-Wing	80	4		
HMS4	Aha T57	282	Honey Mesquite/4-Wing	~~DEAD~~ 39	4		
HMS4	Aha T57	283	Honey Mesquite/4-Wing	101	4		
HMS4	Aha T57	284	Honey Mesquite/4-Wing	107	4		
HMS4	Aha T57	285	Honey Mesquite/4-Wing	73	4		
HMS4	Aha T58	286	Ironwood	48	2.5	HS	
HMS4	Aha T58	287	Ironwood	29	0	HS	Appears Dead - Dormant?
HMS4	Aha T58	288	Ironwood	12	0	"	"
HMS4	Aha T58	289	Ironwood	25	3	HS	
HMS4	Aha T58	290	Ironwood	44	2.5	HS	

Factors Affecting Growth

MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height			
5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

Aha 68-Acre Riparian Restoration

Session # & Date: 4 15 October 2009

Weather and Time: M. Brabec

Participants:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Blue Paloverde	~~42~~	~~3~~	D	going dormant? yellowing leaves
SBWH1	Aha T1	2	Blue Paloverde	61	2		
SBWH1	Aha T1	3	Blue Paloverde	57	3		
SBWH1	Aha T1	4	Blue Paloverde	64	3		
SBWH1	Aha T1	5	Blue Paloverde	42	2		
SBWH1	Aha T2	6	Honey Mesquite	255	4		
SBWH1	Aha T2	7	Honey Mesquite	121	4		
SBWH1	Aha T2	8	Honey Mesquite	166	3	SS	
SBWH1	Aha T2	9	Honey Mesquite	184	4		
SBWH1	Aha T2	10	Honey Mesquite	106	.5	SS	
SBWH2	Aha T3	11	Honey Mesquite	69	3	SS	
SBWH2	Aha T3	12	Honey Mesquite	DEAD	—		
SBWH2	Aha T3	13	Honey Mesquite	DEAD	—		
SBWH2	Aha T3	14	Honey Mesquite	70	.5	SS	
SBWH2	Aha T3	15	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	16	Honey Mesquite	130	3	SS	
SBWH2	Aha T4	17	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	18	Honey Mesquite	55	3	SS	
SBWH2	Aha T4	19	Honey Mesquite	215	4		
SBWH2	Aha T4	20	Honey Mesquite	DEAD	—		
SBW	Aha T5	21	Honey Mesquite	54	2	SS	
SBW	Aha T5	22	Honey Mesquite	DEAD	—		
SBW	Aha T5	23	Honey Mesquite	DEAD	—		
SBW	Aha T5	24	Honey Mesquite	164	3.5	SS	
SBW	Aha T5	25	Honey Mesquite	77	.5	SS	
SBW	Aha T6	26	Honey Mesquite	DEAD	—		
SBW	Aha T6	27	Honey Mesquite	187	4		
SBW	Aha T6	28	Honey Mesquite	DEAD	—		
SBW	Aha T6	29	Honey Mesquite	51	.5	SS	
SBW	Aha T6	30	Honey Mesquite	98	4		
SW	Aha T7	31	Honey Mesquite	222	4		
SW	Aha T7	32	Honey Mesquite	DEAD	—		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SW	Aha T7	33	Honey Mesquite	45	2	SS	
SW	Aha T7	34	Honey Mesquite	149	4		
SW	Aha T7	35	Honey Mesquite	282	4		
CWB	Aha T8	36	Honey Mesquite	DEAD	—		
CWB	Aha T8	37	Honey Mesquite	73	4		
CWB	Aha T8	38	Honey Mesquite	182	4		
CWB	Aha T8	39	Honey Mesquite	203	4		
CWB	Aha T8	40	Honey Mesquite	131	4		
CWB	Aha T9	41	Honey Mesquite	144	4		
CWB	Aha T9	42	Honey Mesquite	190	4		
CWB	Aha T9	43	Honey Mesquite	176	4		
CWB	Aha T9	44	Honey Mesquite	DEAD	—		
CWB	Aha T9	45	Honey Mesquite	DEAD	—		
CWHP	Aha T10	46	Honey Mesquite	159	4		
CWHP	Aha T10	47	Honey Mesquite	158	4		
CWHP	Aha T10	48	Honey Mesquite	192	4		
CWHP	Aha T10	49	Honey Mesquite	170	4		
CWHP	Aha T10	50	Honey Mesquite	199	4		
CWHP	Aha T11	51	Honey Mesquite	230	4		
CWHP	Aha T11	52	Honey Mesquite	181	4		
CWHP	Aha T11	53	Honey Mesquite	252	4		
CWHP	Aha T11	54	Honey Mesquite	218	4		
CWHP	Aha T11	55	Honey Mesquite	163	4		
CWISG	Aha T12	56	Cottonwood	160	4		
CWISG	Aha T12	57	Cottonwood	139	4		
CWISG	Aha T12	58	Cottonwood	89	4		
CWISG	Aha T12	59	Cottonwood	97	4		
CWISG	Aha T12	60	Cottonwood	138	4		
CWISG	Aha T13	61	Cottonwood	113	4		
CWISG	Aha T13	62	Cottonwood	DEAD	—		
CWISG	Aha T13	63	Cottonwood	167	4		
CWISG	Aha T13	64	Cottonwood	DEAD	—		
CWISG	Aha T13	65	Cottonwood	113	4		
IW	Aha T14	66	Sandbar Willow	95	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
IW	Aha T14	67	Sandbar Willow	103	4		
IW	Aha T14	68	Sandbar Willow	129	4		
IW	Aha T14	69	Sandbar Willow	122	4		
IW	Aha T14	70	Sandbar Willow	117	4		
IW	Aha T15	71	Sandbar Willow	DEAD	—		
IW	Aha T15	72	Sandbar Willow	DEAD	—		
IW	Aha T15	73	Sandbar Willow	DEAD	—		
IW	Aha T15	74	Sandbar Willow	95	3.5	SS	
IW	Aha T15	75	Sandbar Willow	DEAD	—		
BPV3	Aha T16	76	Wolfberry	45	.1	SS	resprouting from dormancy?
BPV3	Aha T16	77	Wolfberry	35	2.5	SS	" "
BPV3	Aha T16	78	Wolfberry	87	1.5	SS	" "
BPV3	Aha T16	79	Wolfberry	57	2	SS	" "
BPV3	Aha T16	80	Wolfberry	35	2	SS	" "
BPV4	Aha T17	81	Sandbar Willow	DEAD	—		
BPV4	Aha T17	82	Sandbar Willow	DEAD	—		
BPV4	Aha T17	83	Sandbar Willow	DEAD	—		
BPV4	Aha T17	84	Sandbar Willow	DEAD	—		
BPV4	Aha T17	85	Sandbar Willow	91	4		
BPV5	Aha T18	86	Sandbar Willow	DEAD			
BPV5	Aha T18	87	Sandbar Willow	94	4		
BPV5	Aha T18	88	Sandbar Willow	80	3	SS	
BPV5	Aha T18	89	Sandbar Willow	DEAD	—		
BPV5	Aha T18	90	Sandbar Willow	DEAD	—		
BPV6	Aha T19	91	Cottonwood	109	4		
BPV6	Aha T19	92	Cottonwood	82	3	SS	yellowing leaves
BPV6	Aha T19	93	Cottonwood	97	3.5	"	" "
BPV6	Aha T19	94	Cottonwood	109	3.5	"	" "
BPV6	Aha T19	95	Cottonwood	97	4		
HM1	Aha T20	96	Cottonwood	DEAD	—		
HM1	Aha T20	97	Cottonwood	DEAD	—		
HM1	Aha T20	98	Cottonwood	DEAD	—		
HM1	Aha T20	99	Cottonwood	DEAD	—		
HM1	Aha T20	100	Cottonwood	160	4		
HM1	Aha T21	101	Cottonwood	128	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HM1	Aha T21	102	Cottonwood	133	4		
HM1	Aha T21	103	Cottonwood	81	4		
HM1	Aha T21	104	Cottonwood	141	4		
HM1	Aha T21	105	Cottonwood	141	4		
HM1	Aha T22	106	Cottonwood	184	4		
HM1	Aha T22	107	Cottonwood	172	4		
HM1	Aha T22	108	Cottonwood	201	4		
HM1	Aha T22	109	Cottonwood	161	4		
HM1	Aha T22	110	Cottonwood	108	4		
HM2	Aha T23	111	Honey Mesquite	261	4		
HM2	Aha T23	112	Honey Mesquite	265	4		
HM2	Aha T23	113	Honey Mesquite	192	4		
HM2	Aha T23	114	Honey Mesquite	58	2.5	SS	
HM2	Aha T23	115	Honey Mesquite	191	4		
HM2	Aha T24	116	Blue Paloverde	86	3.5		
HM2	Aha T24	117	Blue Paloverde	87	3.5		
HM2	Aha T24	118	Blue Paloverde	57	3.5		
HM2	Aha T24	119	Blue Paloverde	56	3		
HM2	Aha T24	120	Blue Paloverde	36	3	HS	going dormant? yellowing leaves
HM2	Aha T25	121	Honey Mesquite	200	4		
HM2	Aha T25	122	Honey Mesquite	176	4		
HM2	Aha T25	123	Honey Mesquite	198	4		
HM2	Aha T25	124	Honey Mesquite	225	4		
HM2	Aha T25	125	Honey Mesquite	215	4		
HM2	Aha T26	126	Honey Mesquite	246	4		
HM2	Aha T26	127	Honey Mesquite	173	4		
HM2	Aha T26	128	Honey Mesquite	150	4		
HM2	Aha T26	129	Honey Mesquite	149	4		
HM2	Aha T26	130	Honey Mesquite	160	4		
HM2	Aha T27	131	Honey Mesquite	226	4		
HM2	Aha T27	132	Honey Mesquite	158	4		
HM2	Aha T27	133	Honey Mesquite	219	4		
HM2	Aha T27	134	Honey Mesquite	197	4		
HM2	Aha T27	135	Honey Mesquite	228	4		
HMW1	Aha T28	136	Honey Mesquite	285	4		
HMW1	Aha T28	137	Honey Mesquite	201	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW1	Aha T28	138	Honey Mesquite	200	4		
HMW1	Aha T28	139	Honey Mesquite	259	4		
HMW1	Aha T28	140	Honey Mesquite	169	4		
HMW1	Aha T29	141	Honey Mesquite	210	4		
HMW1	Aha T29	142	Honey Mesquite	172	4		
HMW1	Aha T29	143	Honey Mesquite	235	4		
HMW1	Aha T29	144	Honey Mesquite	166	4		
HMW1	Aha T29	145	Honey Mesquite	186	4		
HMW1	Aha T30	146	Honey Mesquite	224	4		
HMW1	Aha T30	147	Honey Mesquite	253	4		
HMW1	Aha T30	148	Honey Mesquite	181	4		
HMW1	Aha T30	149	Honey Mesquite	258	4		
HMW1	Aha T30	150	Honey Mesquite	93	2.5	SS	
HMW1	Aha T31	151	Honey Mesquite	193	4		
HMW1	Aha T31	152	Honey Mesquite	231	4		
HMW1	Aha T31	153	Honey Mesquite	159	4		
HMW1	Aha T31	154	Honey Mesquite	275	4		
HMW1	Aha T31	155	Honey Mesquite	232	4		
HMW1	Aha T32	156	Blue Paloverde	55	3	HS?	going dormant? yellowing leaves
HMW1	Aha T32	157	Blue Paloverde	48	4		
HMW1	Aha T32	158	Blue Paloverde	38	3.5	HS?	" "
HMW1	Aha T32	159	Blue Paloverde	44	3.5	"	" "
HMW1	Aha T32	160	Blue Paloverde	28	2.5	"	" "
HMW2	Aha T33	161	Honey Mesquite	245	4		
HMW2	Aha T33	162	Honey Mesquite	238	4		
HMW2	Aha T33	163	Honey Mesquite	114	4		
HMW2	Aha T33	164	Honey Mesquite	128	4		
HMW2	Aha T33	165	Honey Mesquite	174	4		
HMW2	Aha T34	166	Honey Mesquite	228	4		
HMW2	Aha T34	167	Honey Mesquite	231	4		
HMW2	Aha T34	168	Honey Mesquite	101	4		
HMW2	Aha T34	169	Honey Mesquite	130	4		
HMW2	Aha T34	170	Honey Mesquite	265	4		
HMW2	Aha T35	171	Honey Mesquite	152	4		
HMW2	Aha T35	172	Honey Mesquite	149	4		
HMW2	Aha T35	173	Honey Mesquite	223	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW2	Aha T35	174	Honey Mesquite	172	4		
HMW2	Aha T35	175	Honey Mesquite	229	4		
HMW2	Aha T36	176	Blue Paloverde	76	3.5	~~86~~ otherwise ↓	going dormant? yellowing leaves?
HMW2	Aha T36	177	Blue Paloverde	111	4		
HMW2	Aha T36	178	Blue Paloverde	45	4		
HMW2	Aha T36	179	Blue Paloverde	63	3.5	"	" "
HMW2	Aha T36	180	Blue Paloverde	31	3	"	" "
HMS1	Aha T37	181	Honey Mesquite/4-Wing	204	4		
HMS1	Aha T37	182	Honey Mesquite/4-Wing	~~DEAD~~	—		
HMS1	Aha T37	183	Honey Mesquite/4-Wing	202	4		
HMS1	Aha T37	184	Honey Mesquite/4-Wing	198	4		
HMS1	Aha T37	185	Honey Mesquite/4-Wing	~~DEAD~~ 69	4		
HMS1	Aha T38	186	Cottonwood	127	4		
HMS1	Aha T38	187	Cottonwood	DEAD	—		
HMS1	Aha T38	188	Cottonwood	DEAD	—		
HMS1	Aha T38	189	Cottonwood	66	4		
HMS1	Aha T38	190	Cottonwood	114	4	;	
HMS1	Aha T39	191	Cottonwood	135	4		
HMS1	Aha T39	192	Cottonwood	97	4		
HMS1	Aha T39	193	Cottonwood	122	4		
HMS1	Aha T39	194	Cottonwood	127	4		
HMS1	Aha T39	195	Cottonwood	137	4		
HMS1	Aha T40	196	Honey Mesquite/4-Wing	112	4		
HMS1	Aha T40	197	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T40	198	Honey Mesquite/4-Wing	151	4		
HMS1	Aha T40	199	Honey Mesquite/4-Wing	122	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	181	4		
HMS1	Aha T41	201	Honey Mesquite/4-Wing	134	4		
HMS1	Aha T41	202	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T41	203	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T41	204	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T41	205	Honey Mesquite/4-Wing	28	2	55	
HMS2	Aha T42	206	Blue Paloverde	103	4		
HMS2	Aha T42	207	Blue Paloverde	73	4		
HMS2	Aha T42	208	Blue Paloverde	62	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS2	Aha T42	209	Blue Paloverde	93	4		
HMS2	Aha T42	210	Blue Paloverde	83	3.5	other factors?	going dormant? yellowing leaves.
HMS2	Aha T43	211	Honey Mesquite/4-Wing	94	4		
HMS2	Aha T43	212	Honey Mesquite/4-Wing	DEAD	0		
HMS2	Aha T43	213	Honey Mesquite/4-Wing	57	2.5	SS	
HMS2	Aha T43	214	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T43	215	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T44	216	Honey Mesquite	35	2	SS	
HMS2	Aha T44	217	Honey Mesquite	41	2	SS	
HMS2	Aha T44	218	Honey Mesquite	DEAD	—		
HMS2	Aha T44	219	Honey Mesquite	DEAD	—		
HMS2	Aha T44	220	Honey Mesquite	DEAD	—		
HMS2	Aha T45	221	Honey Mesquite	104	4		
HMS2	Aha T45	222	Honey Mesquite	50	2	SS	
HMS2	Aha T45	223	Honey Mesquite	107	4		
HMS2	Aha T45	224	Honey Mesquite	121	3	SS	
HMS2	Aha T45	225	Honey Mesquite	120	4		
HMS2	Aha T46	226	Honey Mesquite	63	4		
HMS2	Aha T46	227	Honey Mesquite	DEAD	0	SS	
HMS2	Aha T46	228	Honey Mesquite	113	4		
HMS2	Aha T46	229	Honey Mesquite	DEAD	0	SS	
HMS2	Aha T46	230	Honey Mesquite	DEAD	0	SS	
HMS3	Aha T47	231	Sandbar Willow	105	4		
HMS3	Aha T47	232	Sandbar Willow	137	4		
HMS3	Aha T47	233	Sandbar Willow	101	4		
HMS3	Aha T47	234	Sandbar Willow	78	4		
HMS3	Aha T47	235	Sandbar Willow	83	4		
HMS3	Aha T48	236	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	237	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	238	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	239	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	240	Baccharis salicifolia	DEAD	—		
HMS3	Aha T49	241	Honey Mesquite/4-Wing	67	4		
HMS3	Aha T49	242	Honey Mesquite/4-Wing	146	4		
HMS3	Aha T49	243	Honey Mesquite/4-Wing	153	4		
HMS3	Aha T49	244	Honey Mesquite/4-Wing	183	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS3	Aha T49	245	Honey Mesquite/4-Wing	76	4		
HMS3	Aha T50	246	sandbar Willow	DEAD	—		
HMS3	Aha T50	247	sandbar Willow	120	4		
HMS3	Aha T50	248	sandbar Willow	DEAD	—		
HMS3	Aha T50	249	sandbar Willow	DEAD	—		
HMS3	Aha T50	250	sandbar Willow	DEAD	—		
HMS3	Aha T51	251	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	252	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	253	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	254	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	255	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T52	256	Honey Mesquite/4-Wing	147	4		
HMS3	Aha T52	257	Honey Mesquite/4-Wing	74	4		
HMS3	Aha T52	258	Honey Mesquite/4-Wing	86	4		
HMS3	Aha T52	259	Honey Mesquite/4-Wing	118	4		
HMS3	Aha T52	260	Honey Mesquite/4-Wing	161	4		
HMS4	Aha T53	261	Ironwood	28	4		
HMS4	Aha T53	262	Ironwood	33	4		
HMS4	Aha T53	263	Ironwood	31	4		
HMS4	Aha T53	264	Ironwood		←	—	Dead? Unable to find
HMS4	Aha T53	265	Ironwood	31	2.5	VC w/	Screwbean Mesquite
HMS4	Aha T54	266	Honey Mesquite/4-Wing	124	4		
HMS4	Aha T54	267	Honey Mesquite/4-Wing	DEAD	—		
HMS4	Aha T54	268	Honey Mesquite/4-Wing	112	4		
HMS4	Aha T54	269	Honey Mesquite/4-Wing	174	4		
HMS4	Aha T54	270	Honey Mesquite/4-Wing	143	4		
HMS4	Aha T55	271	Honey Mesquite/4-Wing	165	4		
HMS4	Aha T55	272	Honey Mesquite/4-Wing	105	4		
HMS4	Aha T55	273	Honey Mesquite/4-Wing	106	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	139	4		
HMS4	Aha T55	275	Honey Mesquite/4-Wing	90	4		
HMS4	Aha T56	276	Blue Paloverde	126	4	↑	↑ ↑
HMS4	Aha T56	277	Blue Paloverde	51	4		
HMS4	Aha T56	278	Blue Paloverde	123	3.5		
HMS4	Aha T56	279	Blue Paloverde	91	3.5		
HMS4	Aha T56	280	Blue Paloverde	63	3.5	other	factors going dormant

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS4	Aha T57	281	Honey Mesquite/4-Wing	131	4		
HMS4	Aha T57	282	Honey Mesquite/4-Wing	112 ~~DEAD~~	4		
HMS4	Aha T57	283	Honey Mesquite/4-Wing	176	4		
HMS4	Aha T57	284	Honey Mesquite/4-Wing	180	4		
HMS4	Aha T57	285	Honey Mesquite/4-Wing	130	4		
HMS4	Aha T58	286	Ironwood	42	3	SS	
HMS4	Aha T58	287	Ironwood	DEAD	0	SS	
HMS4	Aha T58	288	Ironwood	DEAD	0	SS	
HMS4	Aha T58	289	Ironwood	38	4		
HMS4	Aha T58	290	Ironwood	DEAD	0	SS	→ too much H_2O?

Factors Affecting Growth

MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height			
5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

Aha 68-Acre Riparian Restoration

Session # & Date: 5/11/10 Entered 07/26/10

Weather and Time:

Participants: M. Brabec

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Blue Paloverde	47	2	D	coming back from dormancy
SBWH1	Aha T1	2	Blue Paloverde	59	2	D	" "
SBWH1	Aha T1	3	Blue Paloverde	57	2	D	" "
SBWH1	Aha T1	4	Blue Paloverde	61	2	D	" "
SBWH1	Aha T1	5	Blue Paloverde	48	2	D	" "
SBWH1	Aha T2	6	Honey Mesquite	267	4		
SBWH1	Aha T2	7	Honey Mesquite	204	4		
SBWH1	Aha T2	8	Honey Mesquite	168	4		
SBWH1	Aha T2	9	Honey Mesquite	190	4		
SBWH1	Aha T2	10	Honey Mesquite	DEAD	—	SS	// am resprouting /
SBWH2	Aha T3	11	Honey Mesquite	62	3	SS	
SBWH2	Aha T3	12	Honey Mesquite	DEAD	—		
SBWH2	Aha T3	13	Honey Mesquite	110 DEAD	2		Resprouting from dead stem
SBWH2	Aha T3	14	Honey Mesquite	DEAD	—	SS	
SBWH2	Aha T3	15	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	16	Honey Mesquite	140	4		
SBWH2	Aha T4	17	Honey Mesquite	DEAD	—		
SBWH2	Aha T4	18	Honey Mesquite	56	2	SS	
SBWH2	Aha T4	19	Honey Mesquite	189	4		
SBWH2	Aha T4	20	Honey Mesquite	DEAD	—		
SBW	Aha T5	21	Honey Mesquite	DEAD	SS		
SBW	Aha T5	22	Honey Mesquite	DEAD	—		
SBW	Aha T5	23	Honey Mesquite	DEAD	—		
SBW	Aha T5	24	Honey Mesquite	164	4		
SBW	Aha T5	25	Honey Mesquite	80 +	[illegible]	[illegible]	
SBW	Aha T6	26	Honey Mesquite	DEAD	—		
SBW	Aha T6	27	Honey Mesquite	204	4		
SBW	Aha T6	28	Honey Mesquite	DEAD	—		
SBW	Aha T6	29	Honey Mesquite	DEAD	—	SS	
SBW	Aha T6	30	Honey Mesquite	126	4		
SW	Aha T7	31	Honey Mesquite	187	4		
SW	Aha T7	32	Honey Mesquite	DEAD	—		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
SW	Aha T7	33	Honey Mesquite	DEAD	—	SS	
SW	Aha T7	34	Honey Mesquite	129	4		
SW	Aha T7	35	Honey Mesquite	302	4		
CWB	Aha T8	36	Honey Mesquite	DEAD	—		
CWB	Aha T8	37	Honey Mesquite	47	4		
CWB	Aha T8	38	Honey Mesquite	134	4		
CWB	Aha T8	39	Honey Mesquite	205	4		
CWB	Aha T8	40	Honey Mesquite	149	4		
CWB	Aha T9	41	Honey Mesquite	160	4		
CWB	Aha T9	42	Honey Mesquite	234	4		
CWB	Aha T9	43	Honey Mesquite	189	4		
CWB	Aha T9	44	Honey Mesquite	DEAD	—		
CWB	Aha T9	45	Honey Mesquite	DEAD	—		
CWHP	Aha T10	46	Honey Mesquite	162	4		
CWHP	Aha T10	47	Honey Mesquite	175	4		
CWHP	Aha T10	48	Honey Mesquite	208	4		
CWHP	Aha T10	49	Honey Mesquite	188	4		
CWHP	Aha T10	50	Honey Mesquite	213	4		
CWHP	Aha T11	51	Honey Mesquite	229	4		
CWHP	Aha T11	52	Honey Mesquite	165	4		
CWHP	Aha T11	53	Honey Mesquite	231	4		
CWHP	Aha T11	54	Honey Mesquite	246	4		
CWHP	Aha T11	55	Honey Mesquite	171	4		
CWISG	Aha T12	56	Cottonwood	198	4		
CWISG	Aha T12	57	Cottonwood	190	4		
CWISG	Aha T12	58	Cottonwood	100	4		
CWISG	Aha T12	59	Cottonwood	114	4		
CWISG	Aha T12	60	Cottonwood	169	4		
CWISG	Aha T13	61	Cottonwood	137	4		
CWISG	Aha T13	62	Cottonwood	DEAD	—		
CWISG	Aha T13	63	Cottonwood	223	4		
CWISG	Aha T13	64	Cottonwood	DEAD	SS		
CWISG	Aha T13	65	Cottonwood	139	4		
IW	Aha T14	66	Sandbar Willow	[illegible]	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
IW	Aha T14	67	Sandbar Willow	114	4		
IW	Aha T14	68	Sandbar Willow	139	4		
IW	Aha T14	69	Sandbar Willow	180	4		
IW	Aha T14	70	Sandbar Willow	124	4		
IW	Aha T15	71	Sandbar Willow	DEAD	—		
IW	Aha T15	72	Sandbar Willow	DEAD	—		
IW	Aha T15	73	Sandbar Willow	DEAD	—		
IW	Aha T15	74	Sandbar Willow	153	4		
IW	Aha T15	75	Sandbar Willow	DEAD	—		
BPV3	Aha T16	76	Wolfberry	DEAD	—	SS	
BPV3	Aha T16	77	Wolfberry	DEAD	—	SS	
BPV3	Aha T16	78	Wolfberry	DEAD	—	SS	
BPV3	Aha T16	79	Wolfberry	34	1	SS	
BPV3	Aha T16	80	Wolfberry	DEAD	—	SS	
BPV4	Aha T17	81	Sandbar Willow	DEAD	—		
BPV4	Aha T17	82	Sandbar Willow	DEAD	—		
BPV4	Aha T17	83	Sandbar Willow	DEAD	—		
BPV4	Aha T17	84	Sandbar Willow	DEAD	—		
BPV4	Aha T17	85	Sandbar Willow	~~DEAD~~	~~SS~~	118	4
BPV5	Aha T18	86	Sandbar Willow	DEAD	—		
BPV5	Aha T18	87	Sandbar Willow	DEAD	—	SS	
BPV5	Aha T18	88	Sandbar Willow	DEAD	—	SS	
BPV5	Aha T18	89	Sandbar Willow	DEAD	—	SS	
BPV5	Aha T18	90	Sandbar Willow	~~DEAD~~	~~4~~	SS	DEAD
BPV6	Aha T19	91	Cottonwood	123	4		
BPV6	Aha T19	92	Cottonwood	104	4		
BPV6	Aha T19	93	Cottonwood	112	4		
BPV6	Aha T19	94	Cottonwood	128	4		
BPV6	Aha T19	95	Cottonwood	121	4		
HM1	Aha T20	96	Cottonwood	DEAD	—		
HM1	Aha T20	97	Cottonwood	DEAD	—		
HM1	Aha T20	98	Cottonwood	DEAD	—		
HM1	Aha T20	99	Cottonwood	84	4		
HM1	Aha T20	100	Cottonwood	193	4		
HM1	Aha T21	101	Cottonwood	174	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HM1	Aha T21	102	Cottonwood	165	4		
HM1	Aha T21	103	Cottonwood	72	4		
HM1	Aha T21	104	Cottonwood	182	4		
HM1	Aha T21	105	Cottonwood	185	4		
HM1	Aha T22	106	Cottonwood	231	4		
HM1	Aha T22	107	Cottonwood	216	4		
HM1	Aha T22	108	Cottonwood	254	4		
HM1	Aha T22	109	Cottonwood	238	4		
HM1	Aha T22	110	Cottonwood	248	4		
HM2	Aha T23	111	Honey Mesquite	260	4		
HM2	Aha T23	112	Honey Mesquite	281	4		
HM2	Aha T23	113	Honey Mesquite	207	4		
HM2	Aha T23	114	Honey Mesquite	41	2	SS	
HM2	Aha T23	115	Honey Mesquite	210	4		
HM2	Aha T24	116	Blue Paloverde	86	4		
HM2	Aha T24	117	Blue Paloverde	106	4		
HM2	Aha T24	118	Blue Paloverde	68	4		
HM2	Aha T24	119	Blue Paloverde	56	2	D	
HM2	Aha T24	120	Blue Paloverde	35	3	D	coming out of dormancy - new foliage
HM2	Aha T25	121	Honey Mesquite	231	4		
HM2	Aha T25	122	Honey Mesquite	192	4		
HM2	Aha T25	123	Honey Mesquite	202	4		
HM2	Aha T25	124	Honey Mesquite	233	4		
HM2	Aha T25	125	Honey Mesquite	221	4		
HM2	Aha T26	126	Honey Mesquite	230	4		
HM2	Aha T26	127	Honey Mesquite	197	4		
HM2	Aha T26	128	Honey Mesquite	174	4		
HM2	Aha T26	129	Honey Mesquite	171	4		
HM2	Aha T26	130	Honey Mesquite	173	4		
HM2	Aha T27	131	Honey Mesquite	184	4		
HM2	Aha T27	132	Honey Mesquite	166	4		
HM2	Aha T27	133	Honey Mesquite	214	4		
HM2	Aha T27	134	Honey Mesquite	219	4		
HM2	Aha T27	135	Honey Mesquite	220	4		
HMW1	Aha T28	136	Honey Mesquite	298	4		
HMW1	Aha T28	137	Honey Mesquite	177	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW1	Aha T28	138	Honey Mesquite	190	4		
HMW1	Aha T28	139	Honey Mesquite	280	4		
HMW1	Aha T28	140	Honey Mesquite	194	4		
HMW1	Aha T29	141	Honey Mesquite	212	4		
HMW1	Aha T29	142	Honey Mesquite	183	4		
HMW1	Aha T29	143	Honey Mesquite	262	4		
HMW1	Aha T29	144	Honey Mesquite	172	4		
HMW1	Aha T29	145	Honey Mesquite	196	4		
HMW1	Aha T30	146	Honey Mesquite	237	4		
HMW1	Aha T30	147	Honey Mesquite	256	4		
HMW1	Aha T30	148	Honey Mesquite	193	4		
HMW1	Aha T30	149	Honey Mesquite	262	4		
HMW1	Aha T30	150	Honey Mesquite	109	3	SS	
HMW1	Aha T31	151	Honey Mesquite	220	4		
HMW1	Aha T31	152	Honey Mesquite	228	4		
HMW1	Aha T31	153	Honey Mesquite	165	4		
HMW1	Aha T31	154	Honey Mesquite	353	4		
HMW1	Aha T31	155	Honey Mesquite	208	4		
HMW1	Aha T32	156	Blue Paloverde	61	4		
HMW1	Aha T32	157	Blue Paloverde	64	4		
HMW1	Aha T32	158	Blue Paloverde	49	4		
HMW1	Aha T32	159	Blue Paloverde	41	4		
HMW1	Aha T32	160	Blue Paloverde	60	4		
HMW2	Aha T33	161	Honey Mesquite	233	4		
HMW2	Aha T33	162	Honey Mesquite	217	4		
HMW2	Aha T33	163	Honey Mesquite	150	4		
HMW2	Aha T33	164	Honey Mesquite	172	4		
HMW2	Aha T33	165	Honey Mesquite	231	4		
HMW2	Aha T34	166	Honey Mesquite	232	4		
HMW2	Aha T34	167	Honey Mesquite	207	4		
HMW2	Aha T34	168	Honey Mesquite	124	4		
HMW2	Aha T34	169	Honey Mesquite	165	4		
HMW2	Aha T34	170	Honey Mesquite	297	4		
HMW2	Aha T35	171	Honey Mesquite	189	3.5	VC	w/ Baccharis multi-trunked
HMW2	Aha T35	172	Honey Mesquite	166	4		
HMW2	Aha T35	173	Honey Mesquite	250	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMW2	Aha T35	174	Honey Mesquite	195	4		
HMW2	Aha T35	175	Honey Mesquite	200	4		
HMW2	Aha T36	176	Blue Paloverde	92	3	D	dormant - new foliage is beginning to bud
HMW2	Aha T36	177	Blue Paloverde	128	4		
HMW2	Aha T36	178	Blue Paloverde	67	4		
HMW2	Aha T36	179	Blue Paloverde	91	4		
HMW2	Aha T36	180	Blue Paloverde	31	4		
HMS1	Aha T37	181	Honey Mesquite/4-Wing	186	4		
HMS1	Aha T37	182	Honey Mesquite/4-Wing	20	2	SS	resprouting
HMS1	Aha T37	183	Honey Mesquite/4-Wing	165	4		
HMS1	Aha T37	184	Honey Mesquite/4-Wing	213	4		
HMS1	Aha T37	185	Honey Mesquite/4-Wing	119 ~~DEAD~~	4		
HMS1	Aha T38	186	Cottonwood	159	4		
HMS1	Aha T38	187	Cottonwood	DEAD	—		
HMS1	Aha T38	188	Cottonwood	DEAD	—		
HMS1	Aha T38	189	Cottonwood	101	4		
HMS1	Aha T38	190	Cottonwood	142	4		
HMS1	Aha T39	191	Cottonwood	169	4		
HMS1	Aha T39	192	Cottonwood	155	4		
HMS1	Aha T39	193	Cottonwood	166	4		
HMS1	Aha T39	194	Cottonwood	145	4		
HMS1	Aha T39	195	Cottonwood	~~189~~ 175	4		
HMS1	Aha T40	196	Honey Mesquite/4-Wing	131	4		
HMS1	Aha T40	197	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T40	198	Honey Mesquite/4-Wing	140	4		
HMS1	Aha T40	199	Honey Mesquite/4-Wing	122	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	191	4		
HMS1	Aha T41	201	Honey Mesquite/4-Wing	141	4		
HMS1	Aha T41	202	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T41	203	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T41	204	Honey Mesquite/4-Wing	DEAD	—		
HMS1	Aha T41	205	Honey Mesquite/4-Wing	46	4		
HMS2	Aha T42	206	Blue Paloverde	128	4		
HMS2	Aha T42	207	Blue Paloverde	97	4		
HMS2	Aha T42	208	Blue Paloverde	82	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS2	Aha T42	209	Blue Paloverde	114	4		
HMS2	Aha T42	210	Blue Paloverde	90	4		
HMS2	Aha T43	211	Honey Mesquite/4-Wing	114	4		
HMS2	Aha T43	212	Honey Mesquite/4-Wing	DEAD	—	SS	
HMS2	Aha T43	213	Honey Mesquite/4-Wing	56	4		
HMS2	Aha T43	214	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T43	215	Honey Mesquite/4-Wing	DEAD	—		
HMS2	Aha T44	216	Honey Mesquite	36	4		
HMS2	Aha T44	217	Honey Mesquite	35	4		
HMS2	Aha T44	218	Honey Mesquite	DEAD	—		
HMS2	Aha T44	219	Honey Mesquite	DEAD	—		
HMS2	Aha T44	220	Honey Mesquite	DEAD	—		
HMS2	Aha T45	221	Honey Mesquite	127	3	SS	
HMS2	Aha T45	222	Honey Mesquite	63	3.5	SS	
HMS2	Aha T45	223	Honey Mesquite	115	3.5	SS	
HMS2	Aha T45	224	Honey Mesquite	119	4		
HMS2	Aha T45	225	Honey Mesquite	141	4		
HMS2	Aha T46	226	Honey Mesquite	141	4		
HMS2	Aha T46	227	Honey Mesquite	DEAD	—	SS	
HMS2	Aha T46	228	Honey Mesquite	~~92~~	4		92
HMS2	Aha T46	229	Honey Mesquite	DEAD	SS	—	
HMS2	Aha T46	230	Honey Mesquite	DEAD	—	SS	
HMS3	Aha T47	231	Sandbar Willow	129	4		
HMS3	Aha T47	232	Sandbar Willow	186	4		
HMS3	Aha T47	233	Sandbar Willow	153	4		
HMS3	Aha T47	234	Sandbar Willow	84	4		
HMS3	Aha T47	235	Sandbar Willow	137	4		
HMS3	Aha T48	236	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	237	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	238	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	239	Baccharis salicifolia	DEAD	—		
HMS3	Aha T48	240	Baccharis salicifolia	DEAD	—		
HMS3	Aha T49	241	Honey Mesquite/4-Wing	116	4		
HMS3	Aha T49	242	Honey Mesquite/4-Wing	226	4		
HMS3	Aha T49	243	Honey Mesquite/4-Wing	141	4		
HMS3	Aha T49	244	Honey Mesquite/4-Wing	159	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS3	Aha T49	245	Honey Mesquite/4-Wing	96	4		
HMS3	Aha T50	246	sandbar Willow	DEAD	—		
HMS3	Aha T50	247	sandbar Willow	DEAD	SS		
HMS3	Aha T50	248	sandbar Willow	DEAD	—		
HMS3	Aha T50	249	sandbar Willow	DEAD	—		
HMS3	Aha T50	250	sandbar Willow	DEAD	—		
HMS3	Aha T51	251	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	252	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	253	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	254	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T51	255	Honey Mesquite/4-Wing	DEAD	—		
HMS3	Aha T52	256	Honey Mesquite/4-Wing	140	3	SS,IB	Aphids
HMS3	Aha T52	257	Honey Mesquite/4-Wing	61	3	SS	
HMS3	Aha T52	258	Honey Mesquite/4-Wing	103	3	SS	
HMS3	Aha T52	259	Honey Mesquite/4-Wing	112	3	SS	
HMS3	Aha T52	260	Honey Mesquite/4-Wing	159	3.5	SS	
HMS4	Aha T53	261	Ironwood	25	4		
HMS4	Aha T53	262	Ironwood	28	3	VC	w/ 156
HMS4	Aha T53	263	Ironwood	—	DEAD	? VC w/ 156 cannot find.	
HMS4	Aha T53	264	Ironwood	—			
HMS4	Aha T53	265	Ironwood	14	2	VC	w/ honey mesquite
HMS4	Aha T54	266	Honey Mesquite/4-Wing	133	4		
HMS4	Aha T54	267	Honey Mesquite/4-Wing	DEAD	—		
HMS4	Aha T54	268	Honey Mesquite/4-Wing	120	4		
HMS4	Aha T54	269	Honey Mesquite/4-Wing	154	4		
HMS4	Aha T54	270	Honey Mesquite/4-Wing	139	4		
HMS4	Aha T55	271	Honey Mesquite/4-Wing	171	4		
HMS4	Aha T55	272	Honey Mesquite/4-Wing	121	4		
HMS4	Aha T55	273	Honey Mesquite/4-Wing	139	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	177	4		
HMS4	Aha T55	275	Honey Mesquite/4-Wing	102	4		
HMS4	Aha T56	276	Blue Paloverde	151	4		
HMS4	Aha T56	277	Blue Paloverde	85	4		
HMS4	Aha T56	278	Blue Paloverde	186	4		
HMS4	Aha T56	279	Blue Paloverde	117	4		
HMS4	Aha T56	280	Blue Paloverde	169	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height	Condition	Effects	Comments
HMS4	Aha T57	281	Honey Mesquite/4-Wing	162	4		
HMS4	Aha T57	282	Honey Mesquite/4-Wing	~~136~~ DEAD	4		
HMS4	Aha T57	283	Honey Mesquite/4-Wing	174	4		
HMS4	Aha T57	284	Honey Mesquite/4-Wing	199	4		
HMS4	Aha T57	285	Honey Mesquite/4-Wing	140	4		
HMS4	Aha T58	286	Ironwood	43	4		
HMS4	Aha T58	287	Ironwood	DEAD	—		Innapropriate Soil Conditions !
HMS4	Aha T58	288	Ironwood	DEAD	—		↓
HMS4	Aha T58	289	Ironwood	36	4		
HMS4	Aha T58	290	Ironwood	DEAD	—		" "

Factors Affecting Growth	
MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height			
5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

Aha 68-Acre Riparian Restoration

ENTERED 09-23-2010

Session # & Date: 08/16-18

Weather and Time:

Participants: M. BEABER

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Blue Paloverde	47	65	2.0	VC	w/ ALSAC
SBWH1	Aha T1	2	Blue Paloverde	59	60	1	VC	w/ ALSAC
SBWH1	Aha T1	3	Blue Paloverde	57	118	4		
SBWH1	Aha T1	4	Blue Paloverde	61	123	4		
SBWH1	Aha T1	5	Blue Paloverde	48	48	4	VC	w/ ALSAC
SBWH1	Aha T2	6	Honey Mesquite	267	283	4		
SBWH1	Aha T2	7	Honey Mesquite	204	189	3	SS	
SBWH1	Aha T2	8	Honey Mesquite	168	211	4		
SBWH1	Aha T2	9	Honey Mesquite	190	245	4		
SBWH1	Aha T2	10	Honey Mesquite	11	0	DEAD	SS	
SBWH2	Aha T3	11	Honey Mesquite	62	71	2.5	SS	
SBWH2	Aha T3	12	Honey Mesquite	Dead	—	—		
SBWH2	Aha T3	13	Honey Mesquite	16	DEAD	SS		
SBWH2	Aha T3	14	Honey Mesquite	0	38	4		resprouting - previously dead
SBWH2	Aha T3	15	Honey Mesquite	Dead	—	—		
SBWH2	Aha T4	16	Honey Mesquite	140	178	4		
SBWH2	Aha T4	17	Honey Mesquite	Dead	—	—		
SBWH2	Aha T4	18	Honey Mesquite	56	73	2.5	SS	
SBWH2	Aha T4	19	Honey Mesquite	189	250	4		
SBWH2	Aha T4	20	Honey Mesquite	Dead	—	—		
SBW	Aha T5	21	Honey Mesquite	0	—	—		
SBW	Aha T5	22	Honey Mesquite	Dead	—	—		
SBW	Aha T5	23	Honey Mesquite	Dead	—	—		
SBW	Aha T5	24	Honey Mesquite	164	173	4		
SBW	Aha T5	25	Honey Mesquite	80	81	3	SS	
SBW	Aha T6	26	Honey Mesquite	Dead	—	—		
SBW	Aha T6	27	Honey Mesquite	204	280	4		
SBW	Aha T6	28	Honey Mesquite	Dead	—	—		
SBW	Aha T6	29	Honey Mesquite	0	—	—		
SBW	Aha T6	30	Honey Mesquite	126	135	4		
SW	Aha T7	31	Honey Mesquite	187	264	4		
SW	Aha T7	32	Honey Mesquite	Dead	—	—		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
SW	Aha T7	33	Honey Mesquite	0	35	1.5	SS	resprouting
SW	Aha T7	34	Honey Mesquite	129	165	4		
SW	Aha T7	35	Honey Mesquite	302	305	4		
CWB	Aha T8	36	Honey Mesquite	Dead	—	—		
CWB	Aha T8	37	Honey Mesquite	67	76	4		
CWB	Aha T8	38	Honey Mesquite	134	192	4		
CWB	Aha T8	39	Honey Mesquite	205	281	4		
CWB	Aha T8	40	Honey Mesquite	149	237	4		
CWB	Aha T9	41	Honey Mesquite	160	263	4		
CWB	Aha T9	42	Honey Mesquite	234	293	4		
CWB	Aha T9	43	Honey Mesquite	189	264	4		
CWB	Aha T9	44	Honey Mesquite	Dead	—	—		
CWB	Aha T9	45	Honey Mesquite	Dead	—	—		
CWHP	Aha T10	46	Honey Mesquite	162	203	4		
CWHP	Aha T10	47	Honey Mesquite	175	219	4		
CWHP	Aha T10	48	Honey Mesquite	208	231	4		
CWHP	Aha T10	49	Honey Mesquite	188	292	4		
CWHP	Aha T10	50	Honey Mesquite	213	268	4		
CWHP	Aha T11	51	Honey Mesquite	229	247	4		
CWHP	Aha T11	52	Honey Mesquite	165	258	4		
CWHP	Aha T11	53	Honey Mesquite	231	301	4		
CWHP	Aha T11	54	Honey Mesquite	246	304	4		
CWHP	Aha T11	55	Honey Mesquite	171	223	4		
CWISG	Aha T12	56	Cottonwood	198	334	4		
CWISG	Aha T12	57	Cottonwood	190	313	4		
CWISG	Aha T12	58	Cottonwood	100	134	4		
CWISG	Aha T12	59	Cottonwood	114	158	4		
CWISG	Aha T12	60	Cottonwood	169	269	4		
CWISG	Aha T13	61	Cottonwood	137	286	4		
CWISG	Aha T13	62	Cottonwood	Dead	—	—		
CWISG	Aha T13	63	Cottonwood	223	347	4		
CWISG	Aha T13	64	Cottonwood	Dead	—	—		
CWISG	Aha T13	65	Cottonwood	139	217	4		
IW	Aha T14	66	Sandbar Willow	113	146	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
IW	Aha T14	67	Sandbar Willow	114	171	4		
IW	Aha T14	68	Sandbar Willow	139	173	4		
IW	Aha T14	69	Sandbar Willow	180	213	4		
IW	Aha T14	70	Sandbar Willow	124	169	4		
IW	Aha T15	71	Sandbar Willow	Dead	—	—		
IW	Aha T15	72	Sandbar Willow	Dead	—	—		
IW	Aha T15	73	Sandbar Willow	Dead	—	—		
IW	Aha T15	74	Sandbar Willow	153	190	4		
IW	Aha T15	75	Sandbar Willow	Dead	—	—		
BPV3	Aha T16	76	Wolfberry	0	—	—		
BPV3	Aha T16	77	Wolfberry	0	—	—		
BPV3	Aha T16	78	Wolfberry	0	—	—		
BPV3	Aha T16	79	Wolfberry	34	0	DEAD		Inappropriate soil conditions for much clay
BPV3	Aha T16	80	Wolfberry	0	—	—		
BPV4	Aha T17	81	Sandbar Willow	Dead	—	—		
BPV4	Aha T17	82	Sandbar Willow	Dead	—	—		
BPV4	Aha T17	83	Sandbar Willow	Dead	—	—		
BPV4	Aha T17	84	Sandbar Willow	Dead	—	—		
BPV4	Aha T17	85	Sandbar Willow	118	131	4		
BPV5	Aha T18	86	Sandbar Willow	Dead	—	—		
BPV5	Aha T18	87	Sandbar Willow	0	82	4		
BPV5	Aha T18	88	Sandbar Willow	0	190	4		
BPV5	Aha T18	89	Sandbar Willow	Dead	220	4		
BPV5	Aha T18	90	Sandbar Willow	Dead	—	—		
BPV6	Aha T19	91	Cottonwood	123	210	4		
BPV6	Aha T19	92	Cottonwood	104	185	4		
BPV6	Aha T19	93	Cottonwood	112	204	4		
BPV6	Aha T19	94	Cottonwood	128	223	4		
BPV6	Aha T19	95	Cottonwood	121	194	4		
HM1	Aha T20	96	Cottonwood	Dead	—	—		
HM1	Aha T20	97	Cottonwood	Dead	—	—		
HM1	Aha T20	98	Cottonwood	Dead	—	—		
HM1	Aha T20	99	Cottonwood	84	0	DEAD	SS	
HM1	Aha T20	100	Cottonwood	193	233	2.5	SS	
HM1	Aha T21	101	Cottonwood	174	261	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HM1	Aha T21	102	Cottonwood	165	290	4		
HM1	Aha T21	103	Cottonwood	72	119	4		
HM1	Aha T21	104	Cottonwood	182	288	4		
HM1	Aha T21	105	Cottonwood	185	335	4		
HM1	Aha T22	106	Cottonwood	231	373	4		
HM1	Aha T22	107	Cottonwood	216	354	4		
HM1	Aha T22	108	Cottonwood	254	404	4		
HM1	Aha T22	109	Cottonwood	238	389	4		
HM1	Aha T22	110	Cottonwood	248	371	4		
HM2	Aha T23	111	Honey Mesquite	260	283	4		
HM2	Aha T23	112	Honey Mesquite	281	292	4		
HM2	Aha T23	113	Honey Mesquite	207	242	4		
HM2	Aha T23	114	Honey Mesquite	41	55	3	55	
HM2	Aha T23	115	Honey Mesquite	210	285	4		
HM2	Aha T24	116	Blue Paloverde	86	95	4		
HM2	Aha T24	117	Blue Paloverde	106	145	4		
HM2	Aha T24	118	Blue Paloverde	68	85	4		
HM2	Aha T24	119	Blue Paloverde	56	60	4		
HM2	Aha T24	120	Blue Paloverde	35	35	3.5	WS	
HM2	Aha T25	121	Honey Mesquite	231	235	4		
HM2	Aha T25	122	Honey Mesquite	192	270	4		
HM2	Aha T25	123	Honey Mesquite	202	295	4		
HM2	Aha T25	124	Honey Mesquite	233	250	3	1B	
HM2	Aha T25	125	Honey Mesquite	221	284	4		
HM2	Aha T26	126	Honey Mesquite	230	290	4		
HM2	Aha T26	127	Honey Mesquite	197	198	4		
HM2	Aha T26	128	Honey Mesquite	174	208	4		
HM2	Aha T26	129	Honey Mesquite	171	206	4		
HM2	Aha T26	130	Honey Mesquite	173	212	4		
HM2	Aha T27	131	Honey Mesquite	184	226	4		
HM2	Aha T27	132	Honey Mesquite	166	184	4		
HM2	Aha T27	133	Honey Mesquite	214	284	4	228	4
HM2	Aha T27	134	Honey Mesquite	219	278	4	283	4
HM2	Aha T27	135	Honey Mesquite	220	283	4	237	4
HMW1	Aha T28	136	Honey Mesquite	298	298	4		
HMW1	Aha T28	137	Honey Mesquite	177	207	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMW1	Aha T28	138	Honey Mesquite	190	229	4		
HMW1	Aha T28	139	Honey Mesquite	280	299	4		
HMW1	Aha T28	140	Honey Mesquite	194	243	4		
HMW1	Aha T29	141	Honey Mesquite	212	273	4		
HMW1	Aha T29	142	Honey Mesquite	183	213	4		
HMW1	Aha T29	143	Honey Mesquite	262	270	4		
HMW1	Aha T29	144	Honey Mesquite	172	214	4		
HMW1	Aha T29	145	Honey Mesquite	16	231	4		
HMW1	Aha T30	146	Honey Mesquite	237	212	4		
HMW1	Aha T30	147	Honey Mesquite	256	244	4		
HMW1	Aha T30	148	Honey Mesquite	193	~~244~~ 256	~~4~~	256	4
HMW1	Aha T30	149	Honey Mesquite	262	~~283~~ 283	~~4~~	283	4
HMW1	Aha T30	150	Honey Mesquite	109	115	4		
HMW1	Aha T31	151	Honey Mesquite	220	252	4		
HMW1	Aha T31	152	Honey Mesquite	228	233	4		
HMW1	Aha T31	153	Honey Mesquite	165	170	4		
HMW1	Aha T31	154	Honey Mesquite	353	278	4		top limb broke off
HMW1	Aha T31	155	Honey Mesquite	208	222	4		
HMW1	Aha T32	156	Blue Paloverde	61	70	3	WS	
HMW1	Aha T32	157	Blue Paloverde	64	87	4		
HMW1	Aha T32	158	Blue Paloverde	49	75	4		
HMW1	Aha T32	159	Blue Paloverde	41	70	4		
HMW1	Aha T32	160	Blue Paloverde	60	65	4		
HMW2	Aha T33	161	Honey Mesquite	233	261	4		
HMW2	Aha T33	162	Honey Mesquite	217	221	4		
HMW2	Aha T33	163	Honey Mesquite	150	181	4		
HMW2	Aha T33	164	Honey Mesquite	172	180	4		
HMW2	Aha T33	165	Honey Mesquite	231	231	4		
HMW2	Aha T34	166	Honey Mesquite	232	232	4		
HMW2	Aha T34	167	Honey Mesquite	207	218	4		
HMW2	Aha T34	168	Honey Mesquite	124	155	4		
HMW2	Aha T34	169	Honey Mesquite	165	205	4		
HMW2	Aha T34	170	Honey Mesquite	297	270	4		tree has fallen down
HMW2	Aha T35	171	Honey Mesquite	189	200	3	VC	w/ Baccharis multiradiata
HMW2	Aha T35	172	Honey Mesquite	166	247	4		
HMW2	Aha T35	173	Honey Mesquite	250	264	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMW2	Aha T35	174	Honey Mesquite	195	227	4		
HMW2	Aha T35	175	Honey Mesquite	200	240	4		
HMW2	Aha T36	176	Blue Paloverde	92	92	4		
HMW2	Aha T36	177	Blue Paloverde	128	234	4		
HMW2	Aha T36	178	Blue Paloverde	67	173	4		
HMW2	Aha T36	179	Blue Paloverde	91	134	4		
HMW2	Aha T36	180	Blue Paloverde	31	68	4		
HMS1	Aha T37	181	Honey Mesquite/4-Wing	186	240	4		
HMS1	Aha T37	182	Honey Mesquite/4-Wing	20	20	1	SS,BN,S	
HMS1	Aha T37	183	Honey Mesquite/4-Wing	165	211	4		
HMS1	Aha T37	184	Honey Mesquite/4-Wing	213	284	4		
HMS1	Aha T37	185	Honey Mesquite/4-Wing	119	193	4		
HMS1	Aha T38	186	Cottonwood	159	245	4		
HMS1	Aha T38	187	Cottonwood	Dead	—	—		
HMS1	Aha T38	188	Cottonwood	Dead	—	—		
HMS1	Aha T38	189	Cottonwood	101	129	4		
HMS1	Aha T38	190	Cottonwood	142	214	4		
HMS1	Aha T39	191	Cottonwood	169	247	4		
HMS1	Aha T39	192	Cottonwood	155	208	4		
HMS1	Aha T39	193	Cottonwood	166	280	4		
HMS1	Aha T39	194	Cottonwood	145	263	4		
HMS1	Aha T39	195	Cottonwood	175	293	4		
HMS1	Aha T40	196	Honey Mesquite/4-Wing	131	179	4		
HMS1	Aha T40	197	Honey Mesquite/4-Wing	Dead	—	—		
HMS1	Aha T40	198	Honey Mesquite/4-Wing	140	195	4		
HMS1	Aha T40	199	Honey Mesquite/4-Wing	122	193	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	191	266	4		
HMS1	Aha T41	201	Honey Mesquite/4-Wing	141	208	4		
HMS1	Aha T41	202	Honey Mesquite/4-Wing	Dead	—	—		
HMS1	Aha T41	203	Honey Mesquite/4-Wing	Dead	—	—		
HMS1	Aha T41	204	Honey Mesquite/4-Wing	Dead	—	—		
HMS1	Aha T41	205	Honey Mesquite/4-Wing	46	60	2.5	SS	
HMS2	Aha T42	206	Blue Paloverde	128	212	4		
HMS2	Aha T42	207	Blue Paloverde	87	170	4		
HMS2	Aha T42	208	Blue Paloverde	82	130	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMS2	Aha T42	209	Blue Paloverde	114	180	4		
HMS2	Aha T42	210	Blue Paloverde	90	140	4		
HMS2	Aha T43	211	Honey Mesquite/4-Wing	114	135	4		
HMS2	Aha T43	212	Honey Mesquite/4-Wing	Dead	—	—		
HMS2	Aha T43	213	Honey Mesquite/4-Wing	56	98	3	SS	
HMS2	Aha T43	214	Honey Mesquite/4-Wing	Dead	—	—		
HMS2	Aha T43	215	Honey Mesquite/4-Wing	Dead	—	—		
HMS2	Aha T44	216	Honey Mesquite	36	49	2	SS	
HMS2	Aha T44	217	Honey Mesquite	35	80	4		
HMS2	Aha T44	218	Honey Mesquite	Dead	—	—		
HMS2	Aha T44	219	Honey Mesquite	Dead	—	—		
HMS2	Aha T44	220	Honey Mesquite	Dead	—	—		
HMS2	Aha T45	221	Honey Mesquite	127	178	~~3~~ 4	SS	
HMS2	Aha T45	222	Honey Mesquite	63	85	4		
HMS2	Aha T45	223	Honey Mesquite	115	148	4		
HMS2	Aha T45	224	Honey Mesquite	119	139	4		
HMS2	Aha T45	225	Honey Mesquite	141	206	4		
HMS2	Aha T46	226	Honey Mesquite	141	124	4		
HMS2	Aha T46	227	Honey Mesquite	Dead	—	—		
HMS2	Aha T46	228	Honey Mesquite	92	175	4		
HMS2	Aha T46	229	Honey Mesquite	Dead	—	—		
HMS2	Aha T46	230	Honey Mesquite	Dead	—	—		
HMS3	Aha T47	231	Sandbar Willow	129	171	4		
HMS3	Aha T47	232	Sandbar Willow	186	246	4		
HMS3	Aha T47	233	Sandbar Willow	156	206	4		
HMS3	Aha T47	234	Sandbar Willow	84	109	4		
HMS3	Aha T47	235	Sandbar Willow	137	191	4		
HMS3	Aha T48	236	Baccharis salicifolia	Dead	—	—		
HMS3	Aha T48	237	Baccharis salicifolia	Dead	—	—		
HMS3	Aha T48	238	Baccharis salicifolia	Dead	—	—		
HMS3	Aha T48	239	Baccharis salicifolia	Dead	—	—		
HMS3	Aha T48	240	Baccharis salicifolia	Dead	—	—		
HMS3	Aha T49	241	Honey Mesquite/4-Wing	116	135	4		
HMS3	Aha T49	242	Honey Mesquite/4-Wing	146	225	4		
HMS3	Aha T49	243	Honey Mesquite/4-Wing	153	208	4		
HMS3	Aha T49	244	Honey Mesquite/4-Wing	183	217	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMS3	Aha T49	245	Honey Mesquite/4-Wing	96	188	4		
HMS3	Aha T50	246	sandbar Willow	Dead	—	—		
HMS3	Aha T50	247	sandbar Willow	0	—	—		
HMS3	Aha T50	248	sandbar Willow	Dead	—	—		
HMS3	Aha T50	249	sandbar Willow	Dead	—	—		
HMS3	Aha T50	250	sandbar Willow	Dead	—	—		
HMS3	Aha T51	251	Honey Mesquite/4-Wing	Dead	—	—		
HMS3	Aha T51	252	Honey Mesquite/4-Wing	Dead	—	—		
HMS3	Aha T51	253	Honey Mesquite/4-Wing	Dead	—	—		
HMS3	Aha T51	254	Honey Mesquite/4-Wing	Dead	—	—		
HMS3	Aha T51	255	Honey Mesquite/4-Wing	Dead	—	—		
HMS3	Aha T52	256	Honey Mesquite/4-Wing	140	140	2	SS	
HMS3	Aha T52	257	Honey Mesquite/4-Wing	61	76	2	SS	
HMS3	Aha T52	258	Honey Mesquite/4-Wing	10	102	2	SS	
HMS3	Aha T52	259	Honey Mesquite/4-Wing	112	160	4		
HMS3	Aha T52	260	Honey Mesquite/4-Wing	159	195	4		
HMS4	Aha T53	261	Ironwood	25	71	4		
HMS4	Aha T53	262	Ironwood	28	0	Dead	VC	156
HMS4	Aha T53	263	Ironwood	0	46	4		
HMS4	Aha T53	264	Ironwood	Dead	—	—		
HMS4	Aha T53	265	Ironwood	14	0	Dead	unable to locate	
HMS4	Aha T54	266	Honey Mesquite/4-Wing	133	194	4		
HMS4	Aha T54	267	Honey Mesquite/4-Wing	Dead	—	—		
HMS4	Aha T54	268	Honey Mesquite/4-Wing	120	154	4		
HMS4	Aha T54	269	Honey Mesquite/4-Wing	154	223	4		
HMS4	Aha T54	270	Honey Mesquite/4-Wing	139	195	4		
HMS4	Aha T55	271	Honey Mesquite/4-Wing	171	189	4		
HMS4	Aha T55	272	Honey Mesquite/4-Wing	121	148	4		
HMS4	Aha T55	273	Honey Mesquite/4-Wing	139	172	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	177	178	4		
HMS4	Aha T55	275	Honey Mesquite/4-Wing	102	130	4		
HMS4	Aha T56	276	Blue Paloverde	151	197	4		
HMS4	Aha T56	277	Blue Paloverde	85	145	4		
HMS4	Aha T56	278	Blue Paloverde	186	206	4		
HMS4	Aha T56	279	Blue Paloverde	117	212	4		
HMS4	Aha T56	280	Blue Paloverde	69	120	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMS4	Aha T57	281	Honey Mesquite/4-Wing	162	234	4		
HMS4	Aha T57	282	Honey Mesquite/4-Wing	136	228	4		
HMS4	Aha T57	283	Honey Mesquite/4-Wing	174	256	4		
HMS4	Aha T57	284	Honey Mesquite/4-Wing	199	257	4		
HMS4	Aha T57	285	Honey Mesquite/4-Wing	140	190	4		
HMS4	Aha T58	286	Ironwood	43	100	4		
HMS4	Aha T58	287	Ironwood	Dead	—	—		
HMS4	Aha T58	288	Ironwood	Dead	—	—		
HMS4	Aha T58	289	Ironwood	36	142	4		
HMS4	Aha T58	290	Ironwood	Dead				

Factors Affecting Growth

MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height			
5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

Aha 68-Acre Riparian Restoration

Session # & Date: 10/28/10, 10/29/10

Weather and Time:

Participants:

Polygon	Transect #	Plant Number	Species	Height September '10	Height	Condition	Effects	Comments
SBWH1	Aha T1	1	Blue Paloverde	65	55	2	WS	Too much H2O
SBWH1	Aha T1	2	Blue Paloverde	60	46	0.5	WS	"
SBWH1	Aha T1	3	Blue Paloverde	118	117	3		
SBWH1	Aha T1	4	Blue Paloverde	123	142	4		
SBWH1	Aha T1	5	Blue Paloverde	48	45	1	WS	Too much H2O
SBWH1	Aha T2	6	Honey Mesquite	283	258	3.5	WS	"
SBWH1	Aha T2	7	Honey Mesquite	163	144	3	"	"
SBWH1	Aha T2	8	Honey Mesquite	211	216	3	"	"
SBWH1	Aha T2	9	Honey Mesquite	245	241	3	"	"
SBWH1	Aha T2	10	Honey Mesquite	0	dead			died previously
SBWH2	Aha T3	11	Honey Mesquite	71	dead	-	-	
SBWH2	Aha T3	12	Honey Mesquite	dead	-	-	-	
SBWH2	Aha T3	13	Honey Mesquite	0	-	-	-	
SBWH2	Aha T3	14	Honey Mesquite	38	168	3	WS	overwatering
SBWH2	Aha T3	15	Honey Mesquite	dead	96	3	WS	"
SBWH2	Aha T4	16	Honey Mesquite	178	189	3	WS	overwatering
SBWH2	Aha T4	17	Honey Mesquite	dead	-	-	-	
SBWH2	Aha T4	18	Honey Mesquite	73	80	2	WS	overwatering
SBWH2	Aha T4	19	Honey Mesquite	250	246	3	WS	overwatering
SBWH2	Aha T4	20	Honey Mesquite	dead	-	-	-	
SBW	Aha T5	21	Honey Mesquite	dead	-	-	-	
SBW	Aha T5	22	Honey Mesquite	dead	-	-	-	
SBW	Aha T5	23	Honey Mesquite	dead	-	-	-	
SBW	Aha T5	24	Honey Mesquite	173	167	3.5		
SBW	Aha T5	25	Honey Mesquite	81	85	2	WS	overwatering
SBW	Aha T6	26	Honey Mesquite	dead	-	-	-	
SBW	Aha T6	27	Honey Mesquite	280	327	4		
SBW	Aha T6	28	Honey Mesquite	dead	-	-	-	
SBW	Aha T6	29	Honey Mesquite	dead	-	-	-	
SBW	Aha T6	30	Honey Mesquite	135	151	4		
SW	Aha T7	31	Honey Mesquite	264	291	4		
SW	Aha T7	32	Honey Mesquite	dead	-	-	-	

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
SW	Aha T7	33	Honey Mesquite	35	36	1.5	SL WS	
SW	Aha T7	34	Honey Mesquite	165	165	4		
SW	Aha T7	35	Honey Mesquite	305	330	4		
CWB	Aha T8	36	Honey Mesquite	dead	–	–	–	
CWB	Aha T8	37	Honey Mesquite	76	72	2	WS	overwatering
CWB	Aha T8	38	Honey Mesquite	192	144	4		
CWB	Aha T8	39	Honey Mesquite	281	305	4		
CWB	Aha T8	40	Honey Mesquite	237	306	4		
CWB	Aha T9	41	Honey Mesquite	263	336	4		
CWB	Aha T9	42	Honey Mesquite	293	338	4		
CWB	Aha T9	43	Honey Mesquite	264	298	4		
CWB	Aha T9	44	Honey Mesquite	dead	–	–	–	
CWB	Aha T9	45	Honey Mesquite	dead	–	–	–	
CWHP	Aha T10	46	Honey Mesquite	203	214	4		
CWHP	Aha T10	47	Honey Mesquite	219	248.5	4		
CWHP	Aha T10	48	Honey Mesquite	231	293	4		
CWHP	Aha T10	49	Honey Mesquite	292	347	4		
CWHP	Aha T10	50	Honey Mesquite	268	289	4		
CWHP	Aha T11	51	Honey Mesquite	247	301	4		
CWHP	Aha T11	52	Honey Mesquite	258	329	4		
CWHP	Aha T11	53	Honey Mesquite	301	335	4		
CWHP	Aha T11	54	Honey Mesquite	304	316	4		
CWHP	Aha T11	55	Honey Mesquite	223	247	4		
CWISG	Aha T12	56	Cottonwood	334	419	4		
CWISG	Aha T12	57	Cottonwood	313	400	4		
CWISG	Aha T12	58	Cottonwood	134	131	2.5	WS	Too much H2O, clay
CWISG	Aha T12	59	Cottonwood	158	157	2.5	WS	" " "
CWISG	Aha T12	60	Cottonwood	269	336	4		
CWISG	Aha T13	61	Cottonwood	286	348.5	4		
CWISG	Aha T13	62	Cottonwood	dead	–	–	–	
CWISG	Aha T13	63	Cottonwood	347	423.5	4		
CWISG	Aha T13	64	Cottonwood	dead	–	–	–	
CWISG	Aha T13	65	Cottonwood	217	228	3.5	WS	edges of leaves are brown
IW	Aha T14	66	Sandbar Willow	145	164	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
IW	Aha T14	67	Sandbar Willow	171	186.5	4		
IW	Aha T14	68	Sandbar Willow	173	179	4		
IW	Aha T14	69	Sandbar Willow	213	242.5	4	VC	HM
IW	Aha T14	70	Sandbar Willow	169	172	4		
IW	Aha T15	71	Sandbar Willow	dead	—	—	—	
IW	Aha T15	72	Sandbar Willow	dead	—	—	—	
IW	Aha T15	73	Sandbar Willow	dead	—	—	—	
IW	Aha T15	74	Sandbar Willow	190	202	4		
IW	Aha T15	75	Sandbar Willow	dead	—	—	—	
BPV3	Aha T16	76	Wolfberry	dead	—	—	—	
BPV3	Aha T16	77	Wolfberry	dead	—	—	—	
BPV3	Aha T16	78	Wolfberry	dead	—	—	—	
BPV3	Aha T16	79	Wolfberry	0	—	—	—	
BPV3	Aha T16	80	Wolfberry	dead	—	—	—	
BPV4	Aha T17	81	Sandbar Willow	dead	—	—	—	
BPV4	Aha T17	82	Sandbar Willow	dead	—	—	—	
BPV4	Aha T17	83	Sandbar Willow	dead	—	—	—	
BPV4	Aha T17	84	Sandbar Willow	dead	—	—	—	
BPV4	Aha T17	85	Sandbar Willow	131	155	4		
BPV5	Aha T18	86	Sandbar Willow	dead	—	—	—	
BPV5	Aha T18	87	Sandbar Willow	82	155	4	VC	Rare
BPV5	Aha T18	88	Sandbar Willow	190	250	4	VC	sprangletop, ak sac
BPV5	Aha T18	89	Sandbar Willow	220	261	4	VC	sprangletop
BPV5	Aha T18	90	Sandbar Willow	dead	—	—	—	
BPV6	Aha T19	91	Cottonwood	210	320	4		
BPV6	Aha T19	92	Cottonwood	185	280	4		
BPV6	Aha T19	93	Cottonwood	204	281.5	4		
BPV6	Aha T19	94	Cottonwood	223	315	4		
BPV6	Aha T19	95	Cottonwood	194	322	4		
HM1	Aha T20	96	Cottonwood	dead	—	—	—	
HM1	Aha T20	97	Cottonwood	dead	—	—	—	
HM1	Aha T20	98	Cottonwood	dead	—	—	—	
HM1	Aha T20	99	Cottonwood	0	—	—	—	
HM1	Aha T20	100	Cottonwood	223	284	3		thin
HM1	Aha T21	101	Cottonwood	261	391.5	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HM1	Aha T21	102	Cottonwood	290	399	4		
HM1	Aha T21	103	Cottonwood	119	200	4		
HM1	Aha T21	104	Cottonwood	288	381	4		
HM1	Aha T21	105	Cottonwood	335	466.5	4		
HM1	Aha T22	106	Cottonwood	373	488	4		
HM1	Aha T22	107	Cottonwood	354	461	4		
HM1	Aha T22	108	Cottonwood	404	506	4		
HM1	Aha T22	109	Cottonwood	289	522	4		
HM1	Aha T22	110	Cottonwood	371	491	4		
HM2	Aha T23	111	Honey Mesquite	283	267	4		
HM2	Aha T23	112	Honey Mesquite	292	358	2		
HM2	Aha T23	113	Honey Mesquite	242	269	4		
HM2	Aha T23	114	Honey Mesquite	55	48	4		
HM2	Aha T23	115	Honey Mesquite	285	335	4		
HM2	Aha T24	116	Blue Paloverde	95	100	3		
HM2	Aha T24	117	Blue Paloverde	145	160	2.5	dead	
HM2	Aha T24	118	Blue Paloverde	85	85	2	dead	
HM2	Aha T24	119	Blue Paloverde	60	40	1	dead	Partially dead
HM2	Aha T24	120	Blue Paloverde	35	55	2.5	dead	
HM2	Aha T25	121	Honey Mesquite	235	310	4		
HM2	Aha T25	122	Honey Mesquite	270	280	4		
HM2	Aha T25	123	Honey Mesquite	295	327	4		
HM2	Aha T25	124	Honey Mesquite	250	269	4		
HM2	Aha T25	125	Honey Mesquite	284	374	4		
HM2	Aha T26	126	Honey Mesquite	290	327	4		
HM2	Aha T26	127	Honey Mesquite	198	206	4		
HM2	Aha T26	128	Honey Mesquite	208	232	4		
HM2	Aha T26	129	Honey Mesquite	206	211	4		
HM2	Aha T26	130	Honey Mesquite	212	239	4		
HM2	Aha T27	131	Honey Mesquite	226	258	4		
HM2	Aha T27	132	Honey Mesquite	184	246	4		
HM2	Aha T27	133	Honey Mesquite	228	267	4		
HM2	Aha T27	134	Honey Mesquite	283	303	4		
HM2	Aha T27	135	Honey Mesquite	237	285	4		
HMW1	Aha T28	136	Honey Mesquite	298	276	3.5		unsure why reg. growth
HMW1	Aha T28	137	Honey Mesquite	207	230	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMW1	Aha T28	138	Honey Mesquite	229	280	4		
HMW1	Aha T28	139	Honey Mesquite	299	326	4		
HMW1	Aha T28	140	Honey Mesquite	243	291.5	4		
HMW1	Aha T29	141	Honey Mesquite	273	292	4		
HMW1	Aha T29	142	Honey Mesquite	213	239	4		
HMW1	Aha T29	143	Honey Mesquite	270	250	4		
HMW1	Aha T29	144	Honey Mesquite	214	200	2		fell over, still alive
HMW1	Aha T29	145	Honey Mesquite	231	265	4		
HMW1	Aha T30	146	Honey Mesquite	212	245	4		
HMW1	Aha T30	147	Honey Mesquite	244	286	4		
HMW1	Aha T30	148	Honey Mesquite	256	302.5	4		
HMW1	Aha T30	149	Honey Mesquite	283	343	4		
HMW1	Aha T30	150	Honey Mesquite	115	140	3		
HMW1	Aha T31	151	Honey Mesquite	252	330	4		
HMW1	Aha T31	152	Honey Mesquite	233	271	4		
HMW1	Aha T31	153	Honey Mesquite	170	179	3		leaf loss
HMW1	Aha T31	154	Honey Mesquite	278	280	3.5		leaning
HMW1	Aha T31	155	Honey Mesquite	222	279	3.5		leaning
HMW1	Aha T32	156	Blue Paloverde	70	95	2		[illegible]
HMW1	Aha T32	157	Blue Paloverde	87	106	2.5		
HMW1	Aha T32	158	Blue Paloverde	75	110	2.5		
HMW1	Aha T32	159	Blue Paloverde	70	70	1		leaf loss
HMW1	Aha T32	160	Blue Paloverde	65	182.5	3		
HMW2	Aha T33	161	Honey Mesquite	261	312	4		
HMW2	Aha T33	162	Honey Mesquite	221	290	3.5		leaning
HMW2	Aha T33	163	Honey Mesquite	181	194	4		growing at more than a
HMW2	Aha T33	164	Honey Mesquite	180	227.5	3		leaning
HMW2	Aha T33	165	Honey Mesquite	231	199	3		leaning
HMW2	Aha T34	166	Honey Mesquite	232	318	4		
HMW2	Aha T34	167	Honey Mesquite	218	333	4		
HMW2	Aha T34	168	Honey Mesquite	155	160	3.5		leaning
HMW2	Aha T34	169	Honey Mesquite	205	261	4		
HMW2	Aha T34	170	Honey Mesquite	270	316	4		
HMW2	Aha T35	171	Honey Mesquite	200	216.5	4	vc	desert marigold
HMW2	Aha T35	172	Honey Mesquite	247	303.5	4		
HMW2	Aha T35	173	Honey Mesquite	264	253	4		Growing more outward than up

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMW2	Aha T35	174	Honey Mesquite	227	367	4		
HMW2	Aha T35	175	Honey Mesquite	240	275	4		
HMW2	Aha T36	176	Blue Paloverde	92	110	3.5	VC	Spanish needle
HMW2	Aha T36	177	Blue Paloverde	234	269	4		
HMW2	Aha T36	178	Blue Paloverde	173	207	4		
HMW2	Aha T36	179	Blue Paloverde	134	195	4		
HMW2	Aha T36	180	Blue Paloverde	68	41	2		stunted
HMS1	Aha T37	181	Honey Mesquite/~~4-Wing~~	248	451	4		
HMS1	Aha T37	182	Honey Mesquite/~~4-Wing~~	20	15	1		
HMS1	Aha T37	183	Honey Mesquite/~~4-Wing~~	211	2625	4		
HMS1	Aha T37	184	Honey Mesquite/~~4-Wing~~	284	330	4		
HMS1	Aha T37	185	Honey Mesquite/~~4-Wing~~	193	205	4		
HMS1	Aha T38	186	Cottonwood	245	327	4		
HMS1	Aha T38	187	Cottonwood	dead	–	–	–	
HMS1	Aha T38	188	Cottonwood	dead	–	–	–	
HMS1	Aha T38	189	Cottonwood	129	158	3.5		lower [illegible]
HMS1	Aha T38	190	Cottonwood	214	262	4	VC	strangle
HMS1	Aha T39	191	Cottonwood	247	380	4	"	"
HMS1	Aha T39	192	Cottonwood	308	398	4	"	"
HMS1	Aha T39	193	Cottonwood	280	387	4	"	"
HMS1	Aha T39	194	Cottonwood	263	360.5	4	"	"
HMS1	Aha T39	195	Cottonwood	293	443	4	"	"
HMS1	Aha T40	196	Honey Mesquite/4-Wing	179	2365	4		
HMS1	Aha T40	197	Honey Mesquite/4-Wing	dead	–	–	–	
HMS1	Aha T40	198	Honey Mesquite/4-Wing	195	218	4		leaning
HMS1	Aha T40	199	Honey Mesquite/4-Wing	193	2325	4		
HMS1	Aha T40	200	Honey Mesquite/4-Wing	266	288	4		
HMS1	Aha T41	201	Honey Mesquite/~~4-Wing~~	208	229	4		
HMS1	Aha T41	202	Honey Mesquite/~~4-Wing~~	dead	–	–	–	
HMS1	Aha T41	203	Honey Mesquite/~~4-Wing~~	dead	–	–	–	
HMS1	Aha T41	204	Honey Mesquite/~~4-Wing~~	dead	–	–	–	
HMS1	Aha T41	205	Honey Mesquite/~~4-Wing~~	60	62	2	VC	Sprangletop
HMS2	Aha T42	206	Blue Paloverde	212	260	4		
HMS2	Aha T42	207	Blue Paloverde	170	211	4		
HMS2	Aha T42	208	Blue Paloverde	130	160	4		

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMS2	Aha T42	209	Blue Paloverde	180	214	4		
HMS2	Aha T42	210	Blue Paloverde	140	193	4		
HMS2	Aha T43	211	Honey Mesquite/~~4-Wing~~	135	150	3.5		some yellowing
HMS2	Aha T43	212	Honey Mesquite/~~4-Wing~~	dead	–	–	–	
HMS2	Aha T43	213	Honey Mesquite/~~4-Wing~~	98	115	2		leaf loss, yellowing
HMS2	Aha T43	214	Honey Mesquite/~~4-Wing~~	dead	–	–		
HMS2	Aha T43	215	Honey Mesquite/~~4-Wing~~	dead	–	–		
HMS2	Aha T44	216	Honey Mesquite	49	0			died this yr. - salinity?
HMS2	Aha T44	217	Honey Mesquite	80	91	3.5		salinity
HMS2	Aha T44	218	Honey Mesquite	dead	–	–	–	
HMS2	Aha T44	219	Honey Mesquite	dead	–	–	–	
HMS2	Aha T44	220	Honey Mesquite	dead	–	–		
HMS2	Aha T45	221	Honey Mesquite	179	176.5	3.5	VC	alk. sac., growing out
HMS2	Aha T45	222	Honey Mesquite	85	106	3		yellowing
HMS2	Aha T45	223	Honey Mesquite	148	167	4	VC	alk. sac.
HMS2	Aha T45	224	Honey Mesquite	139	155	4		
HMS2	Aha T45	225	Honey Mesquite	206	187	4		alk. sac.
HMS2	Aha T46	226	Honey Mesquite	124	171.5	4		
HMS2	Aha T46	227	Honey Mesquite	dead	–	–	–	
HMS2	Aha T46	228	Honey Mesquite	175	178	4		
HMS2	Aha T46	229	Honey Mesquite	dead	–	–	–	
HMS2	Aha T46	230	Honey Mesquite	dead	–	–	–	
HMS3	Aha T47	231	Sandbar Willow	171	182	4		
HMS3	Aha T47	232	Sandbar Willow	246	257	4		
HMS3	Aha T47	233	Sandbar Willow	206	209.5	4		
HMS3	Aha T47	234	Sandbar Willow	109	115	3		some yellowing
HMS3	Aha T47	235	Sandbar Willow	191	219.5	4		
HMS3	Aha T48	236	Baccharis salicifolia	dead	–	–	–	
HMS3	Aha T48	237	Baccharis salicifolia	dead	–	–	–	
HMS3	Aha T48	238	Baccharis salicifolia	dead	–	–	–	
HMS3	Aha T48	239	Baccharis salicifolia	dead	–	–	–	
HMS3	Aha T48	240	Baccharis salicifolia	dead	–	–	–	
HMS3	Aha T49	241	Honey Mesquite/4-Wing	135	165	4		
HMS3	Aha T49	242	Honey Mesquite/4-Wing	225	222	3.5		leaning
HMS3	Aha T49	243	Honey Mesquite/4-Wing	208	194	3.5		leaning
HMS3	Aha T49	244	Honey Mesquite/4-Wing	217	213	3.5		leaning

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMS3	Aha T49	245	Honey Mesquite/4-Wing	188	202	4		
HMS3	Aha T50	246	sandbar Willow	dead	–	–	–	
HMS3	Aha T50	247	sandbar Willow	dead	–	–	–	
HMS3	Aha T50	248	sandbar Willow	dead	–	–	–	
HMS3	Aha T50	249	sandbar Willow	dead	–	–	–	
HMS3	Aha T50	250	sandbar Willow	dead	–	–	–	
HMS3	Aha T51	251	Honey Mesquite/4-Wing	dead	–	–	–	
HMS3	Aha T51	252	Honey Mesquite/4-Wing	dead	–	–	–	
HMS3	Aha T51	253	Honey Mesquite/4-Wing	dead	–	–	–	
HMS3	Aha T51	254	Honey Mesquite/4-Wing	dead	–	–	–	
HMS3	Aha T51	255	Honey Mesquite/4-Wing	dead	–	–	–	
HMS3	Aha T52	256	Honey Mesquite/4-Wing	140	144	4		
HMS3	Aha T52	257	Honey Mesquite/4-Wing	76	84	1		
HMS3	Aha T52	258	Honey Mesquite/4-Wing	102	105	1.5		
HMS3	Aha T52	259	Honey Mesquite/4-Wing	160	173	3		
HMS3	Aha T52	260	Honey Mesquite/4-Wing	195	209	3		
HMS4	Aha T53	261	Ironwood	71	104	3	VC	alk. sac.
HMS4	Aha T53	262	Ironwood	0	–	–	–	
HMS4	Aha T53	263	Ironwood	46	60	2.5	VC	FSG
HMS4	Aha T53	264	Ironwood	dead	–	–	–	
HMS4	Aha T53	265	Ironwood	0	–	–	–	
HMS4	Aha T54	266	Honey Mesquite/4-Wing	194	216	4		
HMS4	Aha T54	267	Honey Mesquite/4-Wing	dead	–	–	–	
HMS4	Aha T54	268	Honey Mesquite/4-Wing	154	172.5	4		
HMS4	Aha T54	269	Honey Mesquite/4-Wing	223	217	3.5		leaning
HMS4	Aha T54	270	Honey Mesquite/4-Wing	195	222	4		
HMS4	Aha T55	271	Honey Mesquite/4-Wing	189	277	4		
HMS4	Aha T55	272	Honey Mesquite/4-Wing	148	197.5	4		
HMS4	Aha T55	273	Honey Mesquite/4-Wing	172	204	4		
HMS4	Aha T55	274	Honey Mesquite/4-Wing	178	214.5	4		
HMS4	Aha T55	275	Honey Mesquite/4-Wing	130	160	3.5		
HMS4	Aha T56	276	Blue Paloverde	197	217.5	4		
HMS4	Aha T56	277	Blue Paloverde	145	178	4		
HMS4	Aha T56	278	Blue Paloverde	206	240.5	4		
HMS4	Aha T56	279	Blue Paloverde	212	238	4		
HMS4	Aha T56	280	Blue Paloverde	120	155	3.5	VC	[illegible]

Aha 68-Acre Riparian Restoration

Session # & Date:

Polygon	Transect #	Plant Number	Species	Height May '10	Height	Condition	Effects	Comments
HMS4	Aha T57	281	Honey Mesquite/~~4-Wing~~	234	241	3,5		sparse
HMS4	Aha T57	282	Honey Mesquite/~~4-Wing~~	228	257.5	4		
HMS4	Aha T57	283	Honey Mesquite/~~4-Wing~~	256	257.5	3,5		leaning
HMS4	Aha T57	284	Honey Mesquite/~~4-Wing~~	257	260	4		
HMS4	Aha T57	285	Honey Mesquite/~~4-Wing~~	190	204	3		
HMS4	Aha T58	286	Ironwood	100	115	3-5		stunted
HMS4	Aha T58	287	Ironwood	dead	—	—	—	
HMS4	Aha T58	288	Ironwood	dead	—	—	—	
HMS4	Aha T58	289	Ironwood	142	173.5	4		
HMS4	Aha T58	290	Ironwood	dead	—	—	—	

Factors Affecting Growth

MB	Mammal Browsing
IP	Insect Presence
IB	Insect Browsing
P	Pruned
VC	Volunteer Plant Competition
DEAD	Dead
H	Herbicide
HWR	Hogwire Rub
D	Dormant
H2O	Water Stress
N/A	Non Applicable or No factors affecting
MISC	Any new Factors

Height			
5'	60"	19'	228"
6'	72"	20'	240"
7'	84"		
8'	96"		
9'	108"		
10'	120"		
11'	132"		
12'	144"		
13'	156"		
14'	168"		
15'	180"		
16'	192"		
17'	204"		
18'	216"		

Project Name: Aha 68 Acre Date: 06/16/09 - 06/19/09 Collector: _____ Page ____ of ____

Entered 7-22-09

Species: Alkali Sacaton

Plant Species	Polygon / Strata Class	AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10	Comments	Unknown Species: Description	Unknown Species: Collected
BG	H	5	6	4	7	7	7	7	7	7	7			
Dust	H	2	1	3	1	1	1	1	1	1	1			
WD	H	4	3	4	1	1	1	1	1	1	1			
SBW	H	1	1	1	0	0	0	0	0	0	0			
AlxGrc	H	\	\	\	\	\	1	0	0		1			
Unknown Herb	H	\	\	\	\	\	1	0	0		1	[illegible]		
Unk	H	\	\	\	\	\	\	0	0		1			
Unk	H	\	\	\	\	\	\	0	0		1			
ISG									1					
pursiane										2				

Species: Inland Saltgrass

Plant Species	Polygon / Strata Class	ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15	Comments	Unknown Species: Description	Unknown Species: Collected
BG	H	7	7	7	6	7			
Dust	H	2	1	1	2	1			
WD	H	2	2	1	3	1			
ISG	H	1	1	0	1	1			
SBW	H	\	1	\	0	0			
Arrowweed	H	\	\	\	0	1			

Entered 07/22/09

Project Name: Aha 68 Acre **Date:** 7/13/09 **Collector:** MB Page 1 of 1

Species: Alkali Sacaton

Plant Species	Polygon / Strata Class	Quadrat Cover Class										Comments	Unknown Species	
		AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10		Description	Collected
B, G	Herb	7	7	2	7	7	9	7	3	7	3			
Duff		1	1	1	1	1	1	1	1		1			
Woody Debris		1	1	5	2	1	1	1	1	1	1			
purslane									3		1			
heliotrope														
Isla		1							1	1				
AL SAC					1	1		1			4			
Screwbean mesquite										1				
primrose											1			
brittlebrush											1			
Sandbar willow	↓	1	1	1										

Species: Inland Saltgrass

Plant Species	Polygon / Strata Class	Quadrat Cover Class										Comments	Unknown Species	
		ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15							Description	Collected
B.G.	herb	6	7	7	6	7								
Duff		1		1	1	1								
Woody debris		2	1	1	2	1								
arrowweed				1		1								
Isla		1	1	1	1	1								
Sandbar Willow	↓		1											

Project Name: Aha 68 Acre Date: 08/04/09 Collector: M. Brabec Page ___ of ___

Species: Alkali Sacaton

Plant Species	Polygon / Strata Class	Quadrat Cover Class										Comments	Unknown Species	
		AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10		Description	Collected
B.G.	herb	7	7	7	6	6	7	7	3	6	3			
W.D.		1	1	1	1	1	1	1	1	1	~~3~~ 1			
Duff		1	1	1	1	1	1	1	1	1	1			
ISG				~~2~~			1		1		~~2~~			
Purslane									4		1			
Heliotropium									1					
Screwbean										1				
ALSAC				1	2	2				2	~~3~~			
Sandbar		1	1	1							1			
4 wing											1			
Brittlebrush											1			
unknown														

Species: Inland Saltgrass

Plant Species	Polygon / Strata Class	Quadrat Cover Class										Comments	Unknown Species	
		ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15							Description	Collected
B.G.		7	6	7	6	7								
W.D		1	~~0~~	1	2	1								
Duff		1	1	1	1	1								
ISG	herb	1	~~3~~ 1	1	2	1								
Sandbar	herb		1											
ALSAC	herb		1											
cirsium				1		1								

Project Name: Aha 68 Acre Entered 10/16 Date: Septembe 24 3, 2009 Collector: M. Brabec Page 1 of 1

Species: Alkali Sacaton

Plant Species	Polygon / Strata Class	Quadrat Cover Class AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10	Comments	Unknown Species Description	Unknown Species Collected
BG		6	7	5	3	4	7	7	3	4	3			
WD		1	1	1	2	1	1	1	1	1	1			
Duff		1	1	1	1	1	1	1	1	1	1			
Purslane									5		1			
ISG									1					
heliotropium					1				1					
Tamarisk									1					
Screwbean										2				
ALSAL		2		2	4	3				4	5			
Brittlebrush											1			
Sandbar willow		1	1	1										

Species: Inland Saltgrass

Plant Species	Polygon / Strata Class	Quadrat Cover Class ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15	Comments	Unknown Species Description	Unknown Species Collected
BG	herb	4	4	6	5	6			
WD		1	1	1	1	1			
Duff		1	1	1	1	1			
ISG		2	2	2	2	1			
ALSAL		2	3		2	1			
Sandbar Willow	herb		1						
arrowweed				1		1			

Project Name: Aha 68 Acre Date: 10/16/2009 Collector: M. Brabec Entered 10/16 Page 1 of 1

Species: Alkali Sacaton

Plant Species	Polygon / Strata Class	AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10	Comments	Unknown Species Description	Unknown Species Collected
~~Alkali Sacaton~~	#													
BG		6	7	6	3	5	5	7	3	5	2			
WD		1	1	1	2	1	1	1	1	1	1			
Duft		1	1	1	1	1	1	1	1	1	1			
Alkali Sacaton	H	2		2	4	3	2			3	5			
Purslane	H					1	2		5		3			
Arrowweed	H					1								
Heliotropium	H				2				1					
Sandbar Willow	H	2		2										
Brittle Brush	H										1			
Blue gramma	H										2			
4 wing Saltbush	H										1			
Screwbean Mesq.	H								2	3				
Salt Cedar	H								1					
ISG									2					

Species: Inland Saltgrass

Plant Species	Polygon / Strata Class	ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15	Comments	Unknown Species Description	Unknown Species Collected
BG		6	5	6	6	6			
WD		1	1	1	1	1			
Duft		1	1	1	1	1			
ISG	H	2	2	2	2	3			
Alakali Sacaton	H	2	3	2	2				
Sandbar Willow	H		2						

Project Name: Aha 68 Acre **Date:** 05-11-2010 **Collector:** Martha Brabec Page ___ of ___

Species: Alkali Sacaton

Plant Species	Polygon / Strata Class	Quadrat Cover Class: AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10	Comments	Unknown Species: Description	Unknown Species: Collected
B.G.		6	6	6	3	5	6	7	4	3	2			
Woody Debris		1	1	1	3	1	1	1	1	1	1			
Duff		1	1	1	2	1	1	1	1	1	1			
Alk Sac	H	1			4	3	2			3	6			
Purslane	H					1	1		4		2			
Jungle Love Grass	H										1			
ISG	H						2		2					
Sandbar willow	H	3	2	2		2			2	2				
heliotropium	H				1				3					
Mediterranian grass	H			2					1					
Screwbean mesquite	Shrub									4				
horseweed	H					2				1				
Bermuda grass	H									1				
Sow thistle	H					2				1				
Cryptantha	H			1										
Spanish needles	H	2	2	2										
Sand dropseed	H		1											

Species: Inland Saltgrass

Plant Species	Polygon / Strata Class	Quadrat Cover Class: ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15	Comments	Unknown Species: Description	Unknown Species: Collected
B.G.		5	3	5	5	6			
Woody Debris		1	1	1	1	1			
Duff		1	1	1	1	1			
ISG	H	2	2	2	3	2			
Spanish Needles	H			1					
ALSAC	H	3	4	3	3	2			
mares tail	H				2				
Sow thistle	H				2				
mediterranian grass	H				2	1			
Sand dropseed	H	2	2						
baccan's salsibilia	H	1							
Sandbar willow	S		3						

Project Name: Aha 68 Acre Date: 08-16-2010 Collector: Martha Brabec Page ___ of ___

Species: Alkali Sacaton

Plant Species	Polygon Strata Class	Quadrat Cover Class AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10	Comments	Unknown Species Description	Unknown Species Collected
BG		5	9	4	3	4	5	7	2		2			
WD		1	1	1	2	1	1	1	1		1			
Drift		1	1	2	1	1	1	1	1		1			
ALSAC	S	2	3	3	5	4	3		.	4	6			
Purslane	H						2		3					
Spanish Needles	H	3	2	3					[illegible]					
Sandbar Willow	H	2	2			2			3	2	2			
Screwbean Mes	S								2	5				
Spearmint	H						1		2					
ISG	H						3		4					
Bassia sabinifolia	H								2					
Invasive grass	H								2					
Mare's tail	H					1			1	2				
Horsetail	H								1					

Species: Inland Saltgrass

Plant Species	Polygon Strata Class	Quadrat Cover Class ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15						Comments	Unknown Species Description	Unknown Species Collected
BG		4	3	5	5	5								
WD		1	1	1	1	1								
Drift		1	1	3	1	1								
ALSAC	H	4	5	3	3	3								
Purslane	H	1												
SB Willow	S		3											
Horsetail	H				2									
ISG					2	2								

Project Name: Aha 68 Acre Date: 11/02/10 Collector: M. BRABEC Page ___ of ___

Species: Alkali Sacaton

Plant Species	Polygon Strata Class	Quadrat Cover Class AS1 1	AS1 2	AS1 3	AS2 4	AS2 5	AS3 6	AS3 7	AS3 8	AS3 9	AS3 10	Comments	Unknown Species Description	Unknown Species Collected
Bg		4	5	3	2	2	3	7						
WD		1	1		2		1	1						
Duff		1	1	3		1	1	1						
ALSAC	H	3	3	4	6	5	3			6	7			
Sandbar Willow	H		3			3			3	2				
Spanish Needles	H	4		3										
Arrowweed	H		2								2			
Screwbean Mesquite	S								3	4				
Isb	H						5		3					
Sprangletop	H						2		3					
Bigelow's Sunflower	H								3					
Purslane	H								3					

Species: Inland Saltgrass

Plant Species	Polygon Strata Class	Quadrat Cover Class ISG1 11	ISG1 12	ISG2 13	ISG2 14	ISG2 15	Comments	Unknown Species Description	Unknown Species Collected
Bg		4	3	4	4	4			
WD					2	1			
Duff		3	1	2		1			
ALSAC	H	4	10	3	4	4			
Isb	H			3	2	2			
Sandbar Willow	S		3						
Wooly Desert Marigold	H	2							

AHA AWPF PM#1 N to W. Point located in Southeast corner of 68-Acre AHA. 3 pics no zoom February 2009
N 32^0 43.316’ W 114^0 32.941’

AHA AWPF PM#1 N to W. Point located in Southeast corner of 68-Acre AHA. 3 pics no zoom March 2009
N 32^0 43.316’ W 114^0 32.941’

AHA AWPF PM#1 N to W. Point located in Southeast corner of 68-Acre AHA. 3 pics no zoom May 2009
N 32^0 43.316’ W 114^0 32.941’

AHA AWPF PM#1 N to W. Point located in Southeast corner of 68-Acre AHA. 3 pics no zoom June 2009
N 32^0 43.316’ W 114^0 32.941’

AHA AWPF PM#1 N to W. Point located in Southeast corner of 68-Acre AHA. 3 pics no zoom October 2009
N 32^0 43.316’ W 114^0 32.941’

AHA AWPF PM#1 N to W. Point located in Southeast corner of 68-Acre AHA. 3 pics no zoom March 2010
N 32^0 43.316’ W 114^0 32.941’

AHA AWPF PM#1 N to W. Point located in Southeast corner of 68-Acre AHA. 3 pics no zoom May 2010
N 32^0 43.316' W 114^0 32.941'

AHA AWPF PM#2 N to W. Point located mid-way on South road of 68-Acre AHA. 4 pics no zoom February 2009
N 32^o 43.311' W 114^o 36.146'

AHA AWPF PM#2 N to W. Point located mid-way on South road of 68-Acre AHA. 4 pics no zoom March 2009
N 32^o 43.311' W 114^o 36.146'

AHA AWPF PM#2 N to W. Point located mid-way on South road of 68-Acre AHA. 4 pics no zoom May 2009
N 32° 43.311' W 114° 36.146'

AHA AWPF PM#2 N to W. Point located mid-way on South road of 68-Acre AHA. 4 pics no zoom June 2009
N 32° 43.311' W 114° 36.146'

AHA AWPF PM#2 N to W. Point located mid-way on South road of 68-Acre AHA. 4 pics no zoom October 2009
N 32° 43.311' W 114° 36.146'

AHA AWPF PM#2 N to W. Point located mid-way on South road of 68-Acre AHA. 4 pics no zoom March 2010
N 32° 43.311' W 114° 36.146'

AHA AWPF PM#2 N to W. Point located mid-way on South road of 68-Acre AHA. 4 pics no zoom May 2010
N 32° 43.311' W 114° 36.146'

AHA AWPF PM #3 E to N. Point loacted right before turn off on West road in the 68-Acre AHA. 3pis no zoom February 2009
N 32° 43.342' W 114° 36.331'

AHA AWPF PM #3 E to N. Point loacted right before turn off on West road in the 68-Acre AHA. 3pis no zoom March 2009
N 32° 43.342' W 114° 36.331'

AHA AWPF PM #3 E to N. Point loacted right before turn off on West road in the 68-Acre AHA. 3pis no zoom May 2009
N 32° 43.342' W 114° 36.331'

AHA AWPF PM #3 E to N. Point loacted right before turn off on West road in the 68-Acre AHA. 3pis no zoom June 2009
N 32° 43.342' W 114° 36.331'

AHA AWPF PM #3 E to N. Point loacted right before turn off on West road in the 68-Acre AHA. 3pis no zoom October 2009
N 32° 43.342' W 114° 36.331'

AHA AWPF PM #3 E to N. Point loacted right before turn off on West road in the 68-Acre AHA. 3pis no zoom March 2010
N 32° 43.342' W 114° 36.331'

AHA AWPF PM #3 E to N. Point loacted right before turn off on West road in the 68-Acre AHA. 3pis no zoom May 2010
N 32° 43.342' W 114° 36.331'

AHA AWPF PM#4 S to SE. Point located in Northwest corner of 68-Acre AHA. 3pics no zoom February 2009
N 32° 43.483' W 114° 36.312'

AHA AWPF PM#4 S to SE. Point located in Northwest corner of 68-Acre AHA. 3pics no zoom March 2009
N 32° 43.483' W 114° 36.312'

AHA AWPF PM#4 S to SE. Point located in Northwest corner of 68-Acre AHA. 3pics no zoom May 2009
N 32° 43.483' W 114° 36.312'

AHA AWPF PM#4 S to SE. Point located in Northwest corner of 68-Acre AHA. 3pics no zoom October 2009
N 32° 43.483' W 114° 36.312'

AHA AWPF PM#4 S to SE. Point located in Northwest corner of 68-Acre AHA. 3pics no zoom March 2010
N 32° 43.483' W 114° 36.312'

AHA AWPF PM#4 S to SE. Point located in Northwest corner of 68-Acre AHA. 3pics no zoom May 2010
N 32° 43.483' W 114° 36.312'

AHA AWPF PM#5 S to SE. Point located in Northeast corner of 68-Acre AHA. 3pics no zoom February 2009
N 32° 43.580' W 114° 35.927'

AHA AWPF PM#5 S to SE. Point located in Northeast corner of 68-Acre AHA. 3pics no zoom March 2009
N 32° 43.580' W 114° 35.927'

AHA AWPF PM#5 S to SE. Point located in Northeast corner of 68-Acre AHA. 3pics no zoom May 2009
N 32° 43.580' W 114° 35.927'

AHA AWPF PM#5 S to SE. Point located in Northeast corner of 68-Acre AHA. 3pics no zoom June 2009
N 32° 43.580' W 114° 35.927'

AHA AWPF PM#5 S to SE. Point located in Northeast corner of 68-Acre AHA. 3pics no zoom October 2009
N 32° 43.580' W 114° 35.927'

AHA AWPF PM#5 S to SE. Point located in Northeast corner of 68-Acre AHA. 3pics no zoom March 2010
N 32° 43.580' W 114° 35.927'

AHA AWPF PM#5 S to SE. Point located in Northeast corner of 68-Acre AHA. 3pics no zoom May 2010
N 32° 43.580' W 114° 35.927'

AHA AWPF PM#6 N to NE (facing North). Point located just West of where the main North-South and East-West roads cross. 3pics no zoom
February 2009 N 32° 43.431' W 114° 35.945'

AHA AWPF PM#6 N to NE (facing North). Point located just West of where the main North-South and East-West roads cross. 3pics no zoom
March 2009 N 32° 43.431' W 114° 35.945'

AHA AWPF PM#6 N to NE (facing North). Point located just West of where the main North-South and East-West roads cross. 3pics no zoom
May 2009 N 32° 43.431' W 114° 35.945'

AHA AWPF PM#6 N to NE (facing North). Point located just West of where the main North-South and East-West roads cross. 3pics no zoom
June 2009 N 32° 43.431' W 114° 35.945'

AHA AWPF PM#6 N to NE (facing North). Point located just West of where the main North-South and East-West roads cross. 3pics no zoom
October 2009 N 32° 43.431' W 114° 35.945'

AHA AWPF PM#6 N to NE (facing North). Point located just West of where the main North-South and East-West roads cross. 3pics no zoom
March 2010 N 32° 43.431' W 114° 35.945'

AHA AWPF PM#6 N to NE (facing North). Point located just West of where the main North-South and East-West roads cross. 3pics no zoom
May 2010 N 32° 43.431' W 114° 35.945'

AHA_AWPF PM#7 S to SE (facing South). Point located just West of where the main North-South and East-West roads cross. Photo point is the same physical point but is facing in a 180 degrees different direction from PM#6. 3 pics no zoom June 2009
N 32° 43.446’ W 114° 36.093

AHA_AWPF PM#7 S to SE (facing South). Point located just West of where the main North-South and East-West roads cross. Photo point is the same physical point but is facing in a 180 degrees different direction from PM#6. 3 pics no zoom October 2009
N 32° 43.446’ W 114° 36.093

AHA_AWPF PM#7 S to SE (facing South). Point located just West of where the main North-South and East-West roads cross. Photo point is the same physical point but is facing in a 180 degrees different direction from PM#6. 3 pics no zoom March 2010
N 32° 43.446’ W 114° 36.093

AHA_AWPF PM#7 S to SE (facing South). Point located just West of where the main North-South and East-West roads cross. Photo point is the same physical point but is facing in a 180 degrees different direction from PM#6. 3 pics no zoom May 2010
N 32° 43.446’ W 114° 36.093