

Appendix B

2013 Vegetation Monitoring Program Observation Monitoring Sites and Livestock Grazing Summary for the Kern Water Bank



Great Blue Heron (*Ardea herodias*)

This page intentionally left blank.

**2013 Vegetation Monitoring Program Observation
Monitoring Sites and Livestock Grazing Summary
for the
KERN WATER BANK**



SUBMITTED TO:

KERN WATER BANK AUTHORITY

PREPARED BY:

svb
south valley biology consulting llc

May 25, 2014

2013 VEGETATION MONITORING PROGRAM
OBSERVATION MONITORING SITES AND LIVESTOCK GRAZING SUMMARY
for the
KERN WATER BANK

Submitted to:

Kern Water Bank Authority
1620 Mill Rock Way, Suite 500
Bakersfield, CA 93311

Prepared by:

South Valley Biology Consulting LLC
6510 Montagna Drive
Bakersfield, CA 93306

May 25, 2014

Vegetation Monitoring Program Observation Monitoring Sites and Livestock Grazing Summary

INTRODUCTION

The Kern Water Bank (KWB) vegetation monitoring program consists of eight permanently established vegetation monitoring sites (OMS), each one located in a representative habitat on the KWB (e.g., canal, ditch, pond, uplands, old farm lands, and conservation lands). The locations of monitoring sites have been unchanged since their establishment in the late 1990's. Their locations are indicated in Figure 1. The primary purpose of monitoring these sites is to provide a qualitative evaluation and documentation of the dynamic nature of the vegetation on the KWB. Data collected and observations made at the monitoring sites are used to help guide vegetation management decisions, particularly in regards to livestock grazing strategies, and to facilitate the application of successful adaptive management strategies for the KWB.

METHODS

All eight of the vegetation monitoring sites are visited each quarter by two biologists. The biologists collect data such as the observed plant and animal species, basic weather conditions, general vegetation conditions, and other pertinent information. Lastly, photographs from all four cardinal directions (North, East, West, and South) are taken to provide a visual representation of the conditions encountered at each site. This approach has resulted in many years of successive photographic data that help to illustrate the dynamic nature of the KWB. The data collected from each observation monitoring site is provided as Attachment 1.

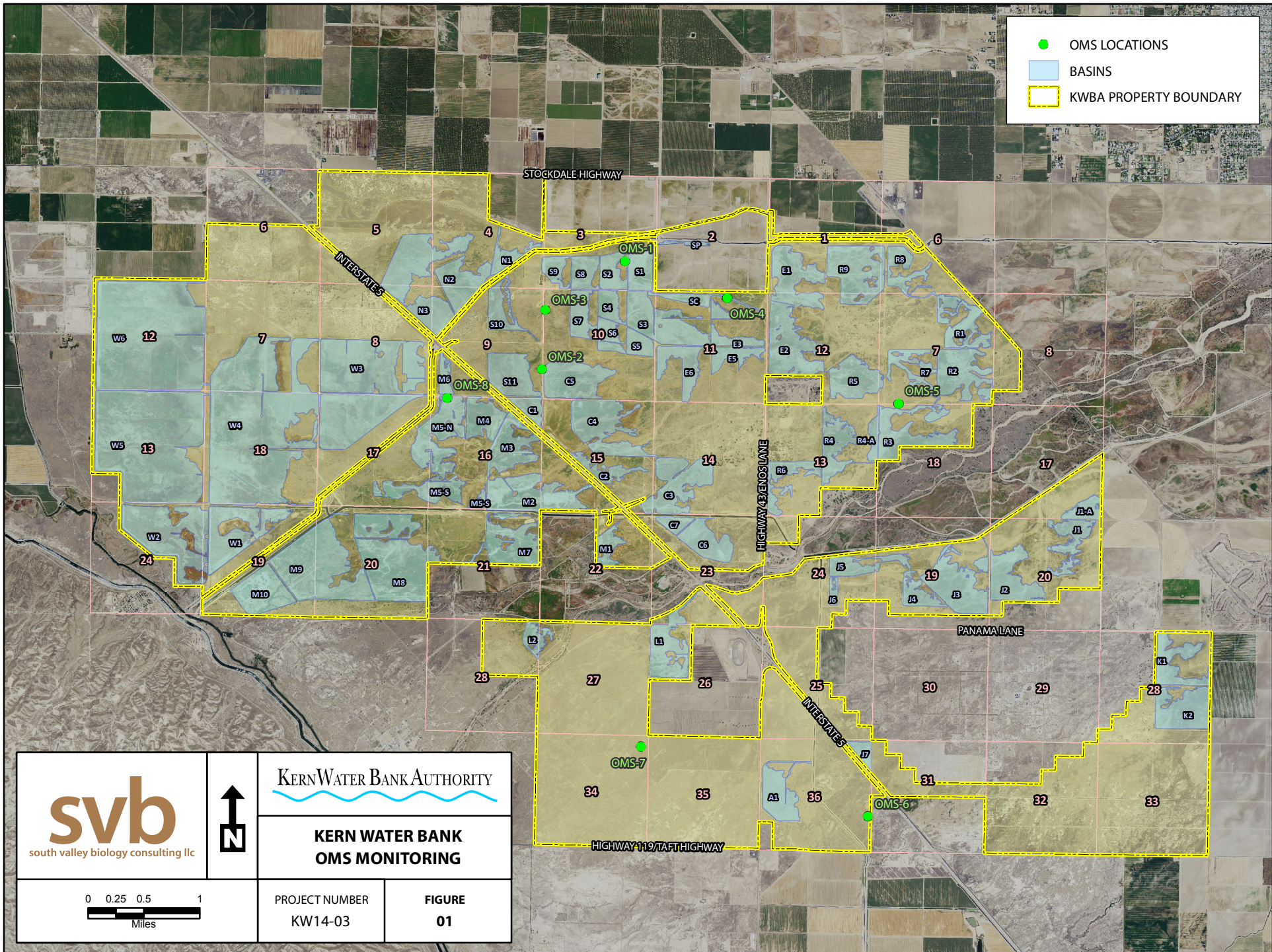
RESULTS AND DISCUSSION

Rainfall during the 2013 rain year (October 1, 2012 - September 30, 2013) for the KWB was approximately 3.13 inches (48% of normal). This marked the second successive below-average rainfall year. However, unlike what was observed during the 2012 rain year (October 1, 2011 - September 30, 2012) that brought very dry and very cold early conditions in November, December, and January that resulted in very little germination of vegetation, the 2013 rain year brought slightly more rain during the early months when plants are growing. More importantly, there were fewer frost days in 2013 so plants that germinated were not killed by frost. This allowed for early germination and growth of plants (Photograph 1); however, 2013 was very dry for the remainder of the year and vegetation did not become excessively dense (Photograph 2). One positive result of this rain pattern was that it contrasted significantly with the pattern in 2012 where a wet March and April resulted in tremendous Russian thistle (*Salsola tragus*) problems. Although Russian thistle growth did occur in 2013, it was much easier to manage and vegetation management including mowing and cattle grazing helped to lessen the impacts of Russian thistle over much of the KWB (Photographs 3 and 4).

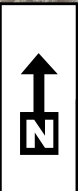
Due to the presence of large amounts of standing vegetation present throughout much of the KWB, especially in the recharge areas at the end of the 2012 season, cattle grazing continued on the KWB in most sectors into early 2013. For the first couple of months in 2013, cattle were still mainly eating the prior season's growth. Once herbaceous vegetation was growing in 2013, grazing was monitored to make sure the appropriate level of grazing was occurring. SVB biologists met with the grazer (RCJ Cattle Company) on February 5, 2013 to observe all areas where cattle were grazing and formulate a strategy for adjusting cattle numbers in the coming weeks. This is always a challenging task as it is difficult to predict what the precipitation might be more than a few days into the future.

It was determined that for the areas that were being grazed (i.e., the North, West, Strand, Main, and South Areas), the current grazing levels appeared to be appropriate and no significant changes would likely be needed for several weeks in the Main, West and Strand Areas, as these areas still had abundant rank vegetation present, especially in some of the recharge basins (Photographs 5 and 6). However, cattle would need to be removed in the coming weeks from the North Area and cattle numbers would need to be reduced sharply in the South Area. Photographs 7 - 10 help illustrate conditions in some of the areas at or near the conclusion of the grazing season. Figure 2 illustrates the number of cattle, expressed in Animal Units or AU (an AU is one adult cow and one calf), that were present in an area for each month in 2013.

The last cow was removed from the KWB within the West Area in December 2013. At that time, it was decided that there was no need to continue grazing any of the areas and a "watch and see" strategy would be in place to monitor the precipitation and subsequent growth of vegetation. By the end of March 2014, very little rain had fallen. Only 1.87 inches of rain had fallen and almost no evidence of germination or growth of vegetation could be found. The exceptions were in large portions of the Strand Area and in the South Area. Russian thistle had begun to germinate in sufficient quantity to be of concern that if late rains in April and May were to occur, this plant may flourish similarly to what was observed in 2012. As a result, it was determined that cattle would be turned out in both of these areas in an attempt to try to minimize the growth and maturation of this troublesome weed. At the time of the completion of this report (May 23, 2014), the cattle have definitely grazed heavily on the young Russian thistle plants, and it will be interesting to see how effective this grazing effort is at reducing the growth and seed-set of Russian thistle in 2014.

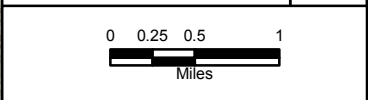


- OMS LOCATIONS
- BASINS
- KWBA PROPERTY BOUNDARY



KERN WATER BANK AUTHORITY

**KERN WATER BANK
OMS MONITORING**



PROJECT NUMBER
KW14-03

FIGURE
01



Photograph 1. Herbaceous vegetation in a dry pond basin on March 28, 2013.



Photograph 2. Same area as shown in Photograph 1 on June 25, 2013. Vegetation did not reach excessively high density and heights from a combination of low rainfall and managed cattle grazing.



Photograph 3. Heavily infested area with Russian thistle on August 28, 2012. This was a common site in 2012 over much of the KWB.



Photograph 4. Same area as shown in Photograph 3 on June 25, 2013. A combination of lower late rains, early cattle grazing, and selected areas of mowing, combined to allow for a much better open habitat over much of the KWB in 2013.



Photograph 5. Cattle grazing in the Strand Area in July 2013. The Strand Area often experiences some of the densest rank vegetation build up. Cattle will eat the dry remains of many of these plants, helping to open the habitat up for native wildlife.



Photograph 6. One of the recharge ponds in the West Area with dense rank vegetation on July 5, 2013. Cattle remained in the West Area throughout the entire season in 2013 in an effort to knock down the dense plants.



Photograph 7. The Strand Area on September 27, 2013 shortly after cattle grazing had concluded for the season.



Photograph 8. Pond basin in the Main Area on September 27, 2013. Cattle were removed the following month in October 2013.



Photograph 9. South Area on June 25, 2013. Only 14 cows and calves were present and all cattle were removed by the middle of September 2013.



Photograph 10. Same area as shown in Photograph 9 on September 27, 2013, just after cattle were removed.

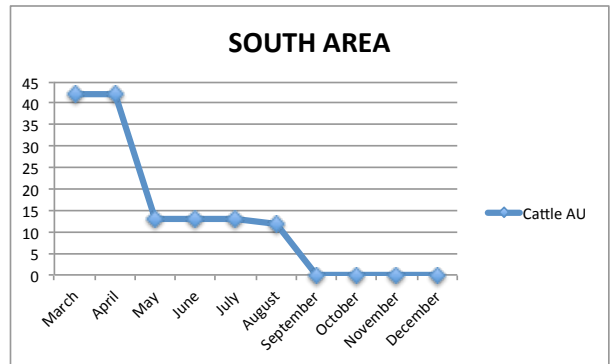
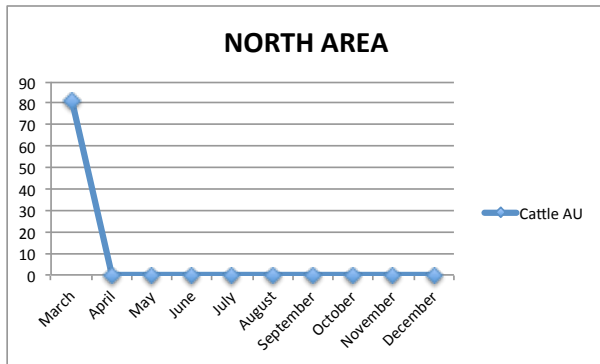
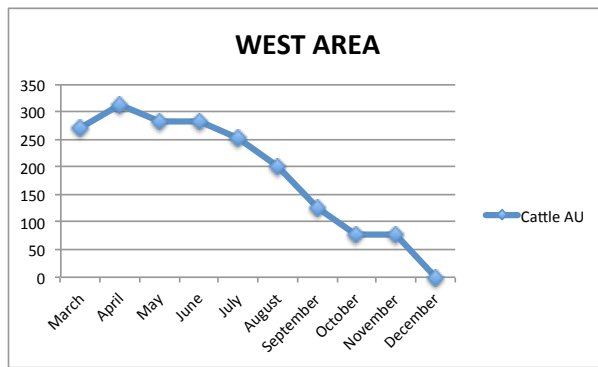
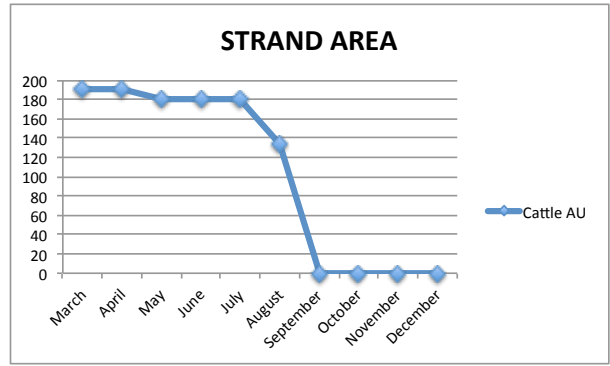
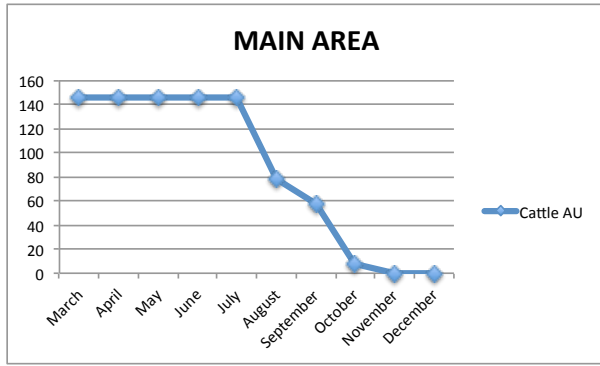


Figure 2. Charts showing the number of cattle, expressed as an Animal Unit (AU) which is one adult cow and one calf, that were present in each area by month during 2013.

ATTACHMENT 1

Kern Water Bank 2013 Observation Monitoring Program Site Observations

KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

LOCATION INFORMATION

LOCATION: OMS-1
 SECTION: 3
 TOWNSHIP/RANGE: 30S/25E
 COORDINATES (CA5-NAD83): 6181490, 2313744
 NUMBER OF ACRES: 40
 VEGETATION TYPE: EMERGENT WETLAND SPECIES PRESENT
 SITE TYPE: POND BASIN/POND LITTORAL ZONES

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	SURVEY DATE: 03/28/2013 TIME: 11:48 AM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: NW WIND VELOCITY: 3 MPH TEMPERATURE: 75 F HUMIDITY: 45%	NORTH	EAST	SOUTH	WEST

NOTES: DENSE & SHORT STAND OF CREEPING SPIKERUSH, GOPHER MOUNDS
 WILDLIFE PRESENT: CALIFORNIA GROUND SQUIRREL, LOGGERHEAD SHIRKE, MOURNING DOVE, NORTHERN MOCKINGBIRD
 PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, CONYZA COULTERI, ELEOCHARIS MACROSTACHYA, ERODIUM CICUTARIUM, RUMEX CRISPUS, SALIX GOODDINGII, TYPHA LATIFOLIA

2ND QUARTER	SURVEY DATE: 06/25/2013 TIME: 11:20 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 8 MPH TEMPERATURE: 83 F HUMIDITY: 22%	NORTH	EAST	SOUTH	WEST

NOTES: CALIFORNIA GROUND SQUIRREL INVADING BASIN IN HIGH NUMBER. BARN OWL NESTING IN WILLOW BY TRUCK
 WILDLIFE PRESENT: BARN OWL, LOGGERHEAD SHIRKE, MOURNING DOVE
 PLANTS PRESENT: DISTICHILIS SPICATA, ELEOCHARIS MACROSTACHYA, RUMEX CRISPUS, SALIX GOODDINGII, TYPHA LATIFOLIA

3RD QUARTER	SURVEY DATE: 09/27/2013 TIME: 10:30 AM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 5 MPH TEMPERATURE: 69 F HUMIDITY: 34%	NORTH	EAST	SOUTH	WEST

NOTES: KANGAROO RAT BURROWS
 WILDLIFE PRESENT: CALIFORNIA GROUND SQUIRREL, MOURNING DOVE, RAVEN, RED-TAIL HAWK
 PLANTS PRESENT: ELEOCHARIS MACROSTACHYA, HIRSCHFELDIA INCANA, SALIX GOODDINGII, SCHISMUS ARABICUS

4TH QUARTER	SURVEY DATE: 11/15/2013 TIME: 9:30 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: N WIND VELOCITY: 8 MPH TEMPERATURE: 61 F HUMIDITY: 50%	NORTH	EAST	SOUTH	WEST

NOTES: NUMEROUS CALIFORNIA GROUND SQUIRREL BURROWS IN POND AND LEVEES
 WILDLIFE PRESENT: BLACK PHOEBE, CALIFORNIA GROUND SQUIRREL, HOUSE FINCH, MOURNING DOVE
 PLANTS PRESENT: ELEOCHARIS MACROSTACHYA, SALIX GOODDINGII, TYPHA LATIFOLIA

KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

LOCATION INFORMATION

LOCATION: OMS-2
SECTION: 9
TOWNSHIP/RANGE: 30S/25E
COORDINATES (CA5-NAD83): 6177540, 2308574
NUMBER OF ACRES: >1
VEGETATION TYPE: EMERGENT WETLAND SPECIES PRESENT/MOSTLY DOMINATED BY ANNUAL GRASSES AND WEEDS
SITE TYPE: DITCH BANK/DITCH BOTTOM

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	SURVEY DATE: 03/28/2013 TIME: 12:10 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: NW WIND VELOCITY: 5 MPH TEMPERATURE: 76 F HUMIDITY: 43%	NORTH	EAST	SOUTH	WEST

NOTES: DITCH BOTTON HAS BEEN RECENTLY CLEARED, TUMBLEWEED IN BOTTOM OF DITCH STARTING TO GROW
WILDLIFE PRESENT: CALIFORNIA GROUND SQUIRREL, RAVEN
PLANTS PRESENT: BASSIA HYSSOPIFOLIA, HELIOTROPIMUM CURASSAVICUM, HIRSCHFELDIA INCANA, LEYMUS TRITICOIDES, SALIX GOODDINGII, SALSOLA TRAGUS

2ND QUARTER	SURVEY DATE: 06/25/2013 TIME: 10:45 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 74 F HUMIDITY: 20%	NORTH	EAST	SOUTH	WEST

NOTES: TUMBLEWEED DRIFTS IN CANAL
WILDLIFE PRESENT: NORTHERN MOCKINGBIRD, RAVEN
PLANTS PRESENT: BASSIA HYSSOPIFOLIA, HELIOTROPIMUM CURASSAVICUM, LEYMUS TRITICOIDES, SALIX GOODDINGII, SALSOLA TRAGUS

3RD QUARTER	SURVEY DATE: 09/27/2013 TIME: 11:15 AM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 10 MPH TEMPERATURE: 72 F HUMIDITY: 27%	NORTH	EAST	SOUTH	WEST

NOTES: DITCH FILLED WITH TUMBLEWEED DRIFTS
WILDLIFE PRESENT: MOURNING DOVE
PLANTS PRESENT: BASSIA HYSSOPIFOLIA, ELEOCHARIS MACROSTACHYA, HELIOTROPIMUM CURASSAVICUM, HIRSCHFELDIA INCANA, LEYMUS TRITICOIDES, SALIX GOODDINGII, SALSOLA TRAGUS

4TH QUARTER	SURVEY DATE: 11/15/2013 TIME: 10:25 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: NW WIND VELOCITY: 5 MPH TEMPERATURE: 61 F HUMIDITY: 48%	NORTH	EAST	SOUTH	WEST

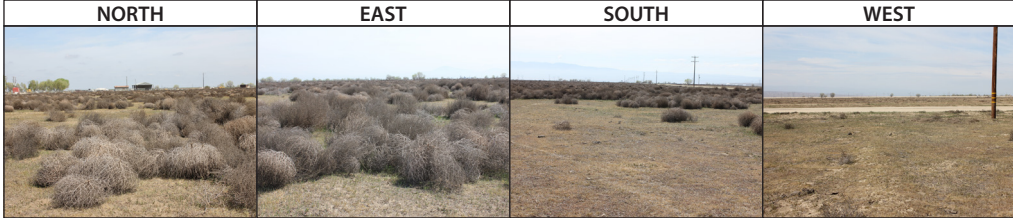
NOTES: DITCH IS FILLED WITH TUMBLEWEED DRIFTS
WILDLIFE PRESENT: MOURNING DOVE, RED-TAIL HAWK
PLANTS PRESENT: ACROPTILON REPENS, CYNODON DACTYLON, HELIOTROPIMUM CURASSAVICUM, LEYMUS TRITICOIDES, SALIX GOODDINGII, SALSOLA TRAGUS

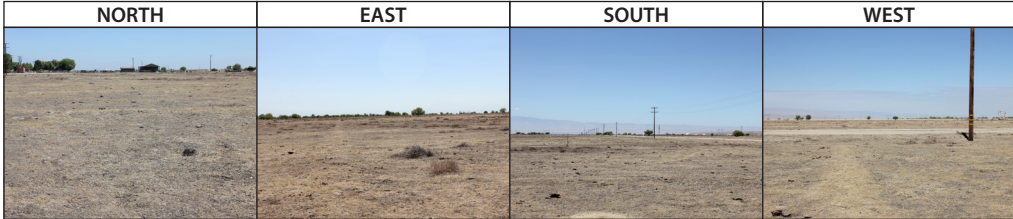
KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

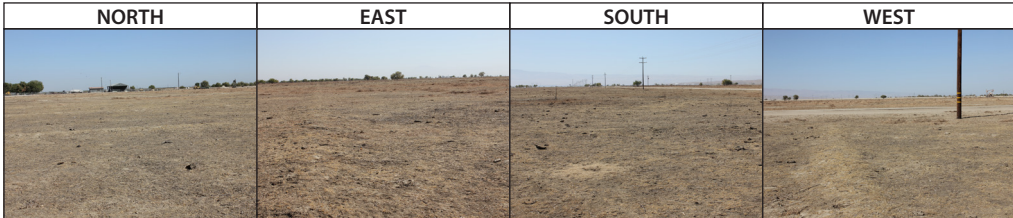
LOCATION INFORMATION

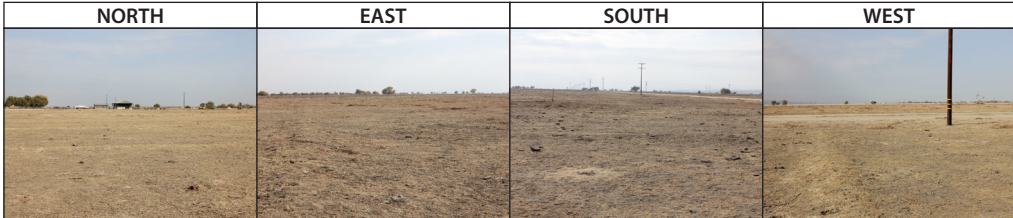
LOCATION: OMS-3
SECTION: 10
TOWNSHIP/RANGE: 30S/25E
COORDINATES (CA5-NAD83): 6177656, 2311449
NUMBER OF ACRES: 80
VEGETATION TYPE: MOSTLY DOMINATED BY ANNUAL GRASSES AND WEEDS/DOMINATED BY RUSSIAN THISTLE AND/OR PRICKLY LETTUCE
SITE TYPE: UPLAND-OLD FARM FIELD

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	<p> SURVEY DATE: 03/28/2013 TIME: 12:00 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: W WIND VELOCITY: 5 MPH TEMPERATURE: 76 F HUMIDITY: 42% </p> <p> NOTES: NO NEW TUMBLEWEED AT THIS TIME, MANY OLD TUMBLEWEED FROM LAST YEAR STANDING, FEW SCATTERED KANGAROO RAT BURROWS WILDLIFE PRESENT: ROADRUNNER PLANTS PRESENT: BROMUS RUBENS, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, LASTHENIA CALIFORNICA, SCHISMUS ARABICUS, SISYMBRIUM IRIO </p>	NORTH	EAST	SOUTH	WEST
					

2ND QUARTER	<p> SURVEY DATE: 06/25/2013 TIME: 10:30 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 73 F HUMIDITY: 20% </p> <p> NOTES: DEAD TUMBLEWEED DRIFTS. SITE HAS BEEN MOWED SINCE LAST QUARTER. KANGAROO RAT BURROWS PRESENT WILDLIFE PRESENT: PLANTS PRESENT: BROMUS RUBENS, SCHISMUS ARABICUS </p>	NORTH	EAST	SOUTH	WEST
					

3RD QUARTER	<p> SURVEY DATE: 09/27/2013 TIME: 11:00 AM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 8 MPH TEMPERATURE: 70 F HUMIDITY: 29% </p> <p> NOTES: MOSTLY SMALL, DRY SCHISMUS AND BARE GROUND. SPARSE KANGAROO RAT BURROWS WILDLIFE PRESENT: BLACK PHOEBE, MOURNING DOVE, SIDE-BLOTCHED LIZARD PLANTS PRESENT: ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, SCHISMUS ARABICUS </p>	NORTH	EAST	SOUTH	WEST
					

4TH QUARTER	<p> SURVEY DATE: 11/15/2013 TIME: 10:10 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 68 F HUMIDITY: 40% </p> <p> NOTES: DEAD TUMBLEWEEDS. CHOPPING & GRAZING HAS OPENED UP THE SITE. ACTIVE KANGAROO RAT BURROWS WILDLIFE PRESENT: RAVEN PLANTS PRESENT: SALSOLA TRAGUS, SCHISMUS ARABICUS </p>	NORTH	EAST	SOUTH	WEST
					

KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

LOCATION INFORMATION

LOCATION: OMS-4
SECTION: 11
TOWNSHIP/RANGE: 30S/25E
COORDINATES (CA5-NAD83): 6186254, 2311943
NUMBER OF ACRES: 10
VEGETATION TYPE: MOSTLY DOMINATED BY ANNUAL GRASSES AND WEEDS/NON-NATIVE PLANTS
SITE TYPE: DITCH BANK/DITCH BOTTOM

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	SURVEY DATE: 03/28/2013 TIME: 11:30 AM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: NW WIND VELOCITY: 5 MPH TEMPERATURE: 75 F HUMIDITY: 46%	NORTH	EAST	SOUTH	WEST

NOTES: NUMEROUS SMALL TUMBLEWEEDS GROWING IN DITCH BOTTOM
WILDLIFE PRESENT: RAVENS
PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, RUMEX CRISPUS, SALSOLA TRAGUS, SISMBRIUM IRIO

2ND QUARTER	SURVEY DATE: 06/25/2013 TIME: 11:35 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 7 MPH TEMPERATURE: 84 F HUMIDITY: 18%	NORTH	EAST	SOUTH	WEST

NOTES: SITE IS MOWED. VERY LITTLE VEGETATION PRESENT
WILDLIFE PRESENT: MOURNING DOVE, WESTERN KINGBIRD
PLANTS PRESENT: HELIOTROPIUM CURASSAVICUM, TYPHA LATIFOLIA

3RD QUARTER	SURVEY DATE: 09/27/2013 TIME: 12:05 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 5 MPH TEMPERATURE: 73 F HUMIDITY: 27%	NORTH	EAST	SOUTH	WEST

NOTES: MOSTLY BARE GROUND FROM MOWING
WILDLIFE PRESENT:
PLANTS PRESENT: BASSIA HYSSOIFOLIA, HELIOTROPIUM CURASSAVICUM, SALSOLA TRAGUS

4TH QUARTER	SURVEY DATE: 11/15/2013 TIME: 11:00 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: N/A WIND VELOCITY: 0 MPH TEMPERATURE: 64 F HUMIDITY: 42%	NORTH	EAST	SOUTH	WEST

NOTES: SMALL TUMBLEWEED PLANTS ARE GROWING AROUND THE SITE
WILDLIFE PRESENT:
PLANTS PRESENT: BROMUS RUBENS, HELIOTROPIUM CURASSAVICUM, SALSOLA TRAGUS

KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

LOCATION INFORMATION

LOCATION: OMS-5
SECTION: 7
TOWNSHIP/RANGE: 30S/26E
COORDINATES (CA5-NAD83): 6194387, 2306947
NUMBER OF ACRES: 50
VEGETATION TYPE: MOSTLY DOMINATED BY ANNUAL GRASSES AND WEEDS/NON-NATIVE PLANTS/RUDERAL VEGETATION
SITE TYPE: UPLAND-OLD FARM FIELDS

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	SURVEY DATE: 03/28/2013 TIME: 11:15 AM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: NW WIND VELOCITY: 3 MPH TEMPERATURE: 73 F HUMIDITY: 46%	NORTH	EAST	SOUTH	WEST

NOTES: SPARSE COVER OF HERBACEOUS PLANTS WITH LAST SEASON'S TUMBLEWEED
WILDLIFE PRESENT: BLACK-TAILED JACKRABBIT, WESTERN MEADOWLARK
PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, SALSOLA TRAGUS, SCHISMUS ARABICUS

2ND QUARTER	SURVEY DATE: 06/25/2013 TIME: 11:50 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 86 F HUMIDITY: 18%	NORTH	EAST	SOUTH	WEST

NOTES: SEVERAL KANGAROO RAT BURROWS. OLD TUMBLEWEED DRIFTS SCATTERED ABOUT
WILDLIFE PRESENT:
PLANTS PRESENT: AMSINCKIA MENZIESII, HIRSCHFELDIA INCANA, SALSOLA TRAGUS, SCHISMUS ARABICUS

3RD QUARTER	SURVEY DATE: 09/27/2013 TIME: 12:30 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 6 MPH TEMPERATURE: 75 F HUMIDITY: 25%	NORTH	EAST	SOUTH	WEST

NOTES: SCATTERED KANGAROO RAT BURROWS
WILDLIFE PRESENT: AMERICAN KESTREL
PLANTS PRESENT: AMSINCKIA MENZIESII, SALSOLA TRAGUS, SCHISMUS ARABICUS

4TH QUARTER	SURVEY DATE: 11/15/2013 TIME: 11:20 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 63 F HUMIDITY: 36%	NORTH	EAST	SOUTH	WEST

NOTES: ACTIVE KANGAROO RAT BURROWS
WILDLIFE PRESENT: RED-TAIL HAWK
PLANTS PRESENT: SALSOLA TRAGUS, SCHISMUS ARABICUS

KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

LOCATION INFORMATION

LOCATION: OMS-6
SECTION: 36
TOWNSHIP/RANGE: 30S/25E
COORDINATES (CA5-NAD83): 6192992, 2287399
NUMBER OF ACRES: 160
VEGETATION TYPE: MIXED ANNUAL GRASSLAND WITH SCATTERED SHRUBS/SCATTERED SHRUBS-BARE SOIL
SITE TYPE: UPLAND-SENSITIVE HABITAT

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	<p> SURVEY DATE: 03/25/2013 TIME: 1:45 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: NW WIND VELOCITY: 10 MPH TEMPERATURE: 82 F HUMIDITY: 28% </p>	NORTH	EAST	SOUTH	WEST
	<p> NOTES: PLANTS & GRASSES ARE SHORT EXCEPT AROUND SHRUBS WHERE THE GRASSES ARE 10-12 INCHES TALL. CONDITIONS ARE DRYING BUT NOT NEARLY AS OMS-7 WILDLIFE PRESENT: PLANTS PRESENT: ATRIPLEX POLYCARPA, BROMUS RUBENS, ERODIUM CICUTARIUM, GILIA TRICOLOR, HORDEUM MURINUM SSP. LEPORINUM, LASTHENIA CALIFORNICA, LEPIDIUM NITIDUM, PROSOPIS GLANDULOSA, SCHISMUS ARABICUS </p>				
2ND QUARTER	<p> SURVEY DATE: 06/25/2013 TIME: 12:30 PM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 85 F HUMIDITY: 18% </p>	NORTH	EAST	SOUTH	WEST
	<p> NOTES: SMALL AMOUNT OF KANGAROO RAT BURROWS. AREA VERY DRY. MANY PLANTS APPEAR UNHEALTHY WILDLIFE PRESENT: MOURNING DOVE PLANTS PRESENT: ATRIPLEX POLYCARPA, BROMUS RUBENS, ERODIUM CICUTARIUM, PROSOPIS GLANDULOSA, SCHISMUS ARABICUS </p>				
3RD QUARTER	<p> SURVEY DATE: 09/27/2013 TIME: 1:30 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 3 MPH TEMPERATURE: 78 F HUMIDITY: 23% </p>	NORTH	EAST	SOUTH	WEST
	<p> NOTES: SCATTERED ACTIVE KANGAROO RAT BURROWS. MANY BARE AREAS FROM 2-YEARS OF LOW PRECIPITATION SEASONS WILDLIFE PRESENT: BALCKTAILED JACKRABBIT, RAVEN PLANTS PRESENT: AMSINCKIA MENZIESII, ATRIPLEX POLYCARPA, BROMUS RUBENS, ERODIUM CICUTARIUM, PROSOPIS GLANDULOSA, SCHISMUS ARABICUS </p>				
4TH QUARTER	<p> SURVEY DATE: 11/15/2013 TIME: 12:20 PM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: NW WIND VELOCITY: 10 MPH TEMPERATURE: 64 F HUMIDITY: 34% </p>	NORTH	EAST	SOUTH	WEST
	<p> NOTES: ACTIVE KANGAROO RAT BURROWS. VERY LITTLE HERBACEOUS VEGETATION DUE TO DRY CONDITIONS. SHRUBS & MESQUITE SHOW BROWSING BY RABBITS WILDLIFE PRESENT: LOGGERHEAD SHIRKE PLANTS PRESENT: ATRIPLEX POLYCARPA, BROMUS RUBENS, ERODIUM CICUTARIUM, PROSOPIS GLANDULOSA, SCHISMUS ARABICUS </p>				

KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

LOCATION INFORMATION

LOCATION: OMS-7
SECTION: 34
TOWNSHIP/RANGE: 30S/25E
COORDINATES (CA5-NAD83): 612246, 2290740
NUMBER OF ACRES: 160
VEGETATION TYPE: MOSTLY DOMINATED BY ANNUAL GRASSES AND WEEDS
SITE TYPE: UPLAND-SENSITIVE HABITAT/UPLAND-OLD FARM FIELDS

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	<p> SURVEY DATE: 03/25/2013 TIME: 1:05 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: NW WIND VELOCITY: 8 MPH TEMPERATURE: 83 F HUMIDITY: 26% </p> <p> NOTES: LAST SEASON'S DRIED TUMBLEWEEDS DOMINATE THE AREA. SITE IS DRYING FAST. ALL PLANT SPECIES ARE SHORT, LESS THAN 4-5 INCHES TALL. SEVERAL ACTIVE KANGAROO RAT BURROWS WILDLIFE PRESENT: LOGGERHEAD SHIRKE PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, ERODIUM CICUTARIUM, HOREDUM MURINUM SSP. LEPORINUM, SALSOLA TRAGUS, SCHISMUS ARABICUS </p>	NORTH	EAST	SOUTH	WEST
2ND QUARTER	<p> SURVEY DATE: 06/25/2013 TIME: 12:00 PM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 86 F HUMIDITY: 18% </p> <p> NOTES: KANGAROO RAT BURROWS WILDLIFE PRESENT: PLANTS PRESENT: HORDEUM MURINUM SSP. LEPORINUM, SCHISMUS ARABICUS </p>	NORTH	EAST	SOUTH	WEST
3RD QUARTER	<p> SURVEY DATE: 09/27/2013 TIME: 12:50 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 8 MPH TEMPERATURE: 77 F HUMIDITY: 24% </p> <p> NOTES: SEVERAL ACTIVE KANGAROO RAT BURROWS. MOSTLY DRIED SCHISMUS AND BARE GROUND FROM GRAZING. ONLY TUMBLEWEEDS ARE DRIED DRIFTS AGAINST PIPES, POLES, ETC. WILDLIFE PRESENT: HORNED LARK PLANTS PRESENT: DATURA WRIGHTII, SALSOLA TRAGUS, SCHISMUS ARABICUS </p>	NORTH	EAST	SOUTH	WEST
4TH QUARTER	<p> SURVEY DATE: 11/15/2013 TIME: 1:45 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: NW WIND VELOCITY: 28MPH TEMPERATURE: 65 F HUMIDITY: 40% </p> <p> NOTES: MANY ACTIVE KANGAROO RAT BURROWS AND TRAILS WILDLIFE PRESENT: RAVENS PLANTS PRESENT: DATURA WRIGHTII, SCHISMUS ARABICUS </p>	NORTH	EAST	SOUTH	WEST

KERN WATER BANK 2013 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

LOCATION INFORMATION

LOCATION: OMS-8
 SECTION: 16
 TOWNSHIP/RANGE: 30S/25E
 COORDINATES (CA5-NAD83): 6173009, 2307209
 NUMBER OF ACRES: 40
 VEGETATION TYPE: MOSTLY DOMINATED BY ANNUAL GRASSES AND WEEDS/NON-NATIVE PLANTS
 SITE TYPE: POND BASIN

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	<p>SURVEY DATE: 03/28/2013 TIME: 12:30 PM MONITOR(S): J. JONES RAINFALL TO DATE: 3.03 IN WIND DIRECTION: NW WIND VELOCITY: 5 MPH TEMPERATURE: 77 F HUMIDITY: 45%</p>	NORTH	EAST	SOUTH	WEST

NOTES:
WILDLIFE PRESENT: MEADOWLARK, MOURNING DOVE, RED-TAIL HAWK
PLANTS PRESENT: AMARANTHUS SP., ATRIPLEX SEMIBACCTA, BASSIA HYSSOPIFOLIA, BROUMS RUBENS, CENTAUREA MELITENSIS, CONYZA CANADENSIS, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEOPRINUM, LYTHRUM CALIFORNICUM, MELILOTUS INDICA, PHLYA NODIFLORA, POLYGONUM ARENASTRUM, RUMEX CRISPUS, SALIX GOODDINGII, SISYMBRIUM IRIO, TYPHA LATIFOLIA

2ND QUARTER	<p>SURVEY DATE: 06/25/2013 TIME: 11:00 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 3.13 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 77 F HUMIDITY: 21%</p>	NORTH	EAST	SOUTH	WEST

NOTES: KANGAROO RAT BURROWS
WILDLIFE PRESENT: WESTERN KINGBIRD
PLANTS PRESENT: ACROPTILON REPENS, AMARANTHUS SP., HELIANTHUS ANNUUS, HELIOTROPIUM CURASSAVICUM, HIRSCHFELDIA INCANA, PHLYA NODIFLORA, POLYGONUM ARENASTRUM, SALIX GOODDINGII, TYPHA LATIFOLICA, XANTHIUM SPINOSUM

3RD QUARTER	<p>SURVEY DATE: 09/27/2013 TIME: 11:30 AM MONITOR(S): J. JONES RAINFALL TO DATE: 3.13 IN WIND DIRECTION: NW WIND VELOCITY: 11 MPH TEMPERATURE: 73 F HUMIDITY: 27%</p>	NORTH	EAST	SOUTH	WEST

NOTES: DRY CATTAIL PATCHES & CARPET OF PHLYA NODIFLORA. A FEW SCATTERED KANGAROO RAT BURROWS
WILDLIFE PRESENT: BLACK PHOEBE, CALIFORNIA GROUND SQUIRREL, GREAT BLUE HERON, TURKEY VULTURE
PLANTS PRESENT: ACROPTILON REPENS, HELIOTROPIUM CURASSAVICUM, LYTHRUM CALIFORNICUM, PHLYA NODIFLORA, SALIX GOODDINGII, TYPHA LATIFORLIA

4TH QUARTER	<p>SURVEY DATE: 11/15/2013 TIME: 10:40 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.97 IN WIND DIRECTION: N WIND VELOCITY: 3 MPH TEMPERATURE: 61 F HUMIDITY: 45%</p>	NORTH	EAST	SOUTH	WEST

NOTES: ACTIVE KANGAROO RAT BURROWS
WILDLIFE PRESENT: COYOTE (ADULT FORAGING IN POND BASIN), MOURNING DOVE
PLANTS PRESENT: HELIOTROPIUM CURASSAVICUM, LYTHRUM CALIFORNICUM, PHLYA NODIFLORA, SALIX GOODDINGII, TYPHA LATIFOLIA