

## Appendix B

### 2014 Vegetation Monitoring Program Observation Monitoring Sites and Livestock Grazing Summary for the Kern Water Bank



Great Blue Heron (*Ardea herodias*)

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# 2014 Vegetation Monitoring Program Observation Monitoring Sites and Livestock Grazing Summary for the KERN WATER BANK



**SUBMITTED TO:**

**KERN WATER BANK AUTHORITY**



**PREPARED BY:**

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June 3, 2015

2014 VEGETATION MONITORING PROGRAM  
OBSERVATION MONITORING SITES AND LIVESTOCK GRAZING SUMMARY  
for the  
KERN WATER BANK

Submitted to:

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June 3, 2015

# **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 one or 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 2014 rain year (October 1, 2013 - September 30, 2014) for the KWB was approximately 2.42 inches, that equates to just 37% of the long term average for the Bakersfield area. This marked the third successive below-average rainfall year, and the lowest rainfall total since 2008, when only 1.77 inches fell. Three years of drought conditions have had a dramatic effect on the KWB and in 2014 there was almost no primary production as can be seen from the quarterly photographs at almost all of the observation monitoring stations. Photographs 1 - 12 provide a visual illustration of the very dry conditions that prevailed at the KWB in 2014.

Due to the very low primary production from the low precipitation, very few cattle remained on the KWB at the beginning of 2014. In January and February of 2014, only 105 AU (an AU is an Animal Unit which is equivalent to one adult cow and one calf) were present in the River Area and just 25 AU were in the North Area. However, all cattle were removed from the North Area by the end of February (Figure 2), and cattle

were steadily reduced in number in the River Area in March and April until finally all cattle were completely removed from the River Area on April 23, 2014 (Figure 2).

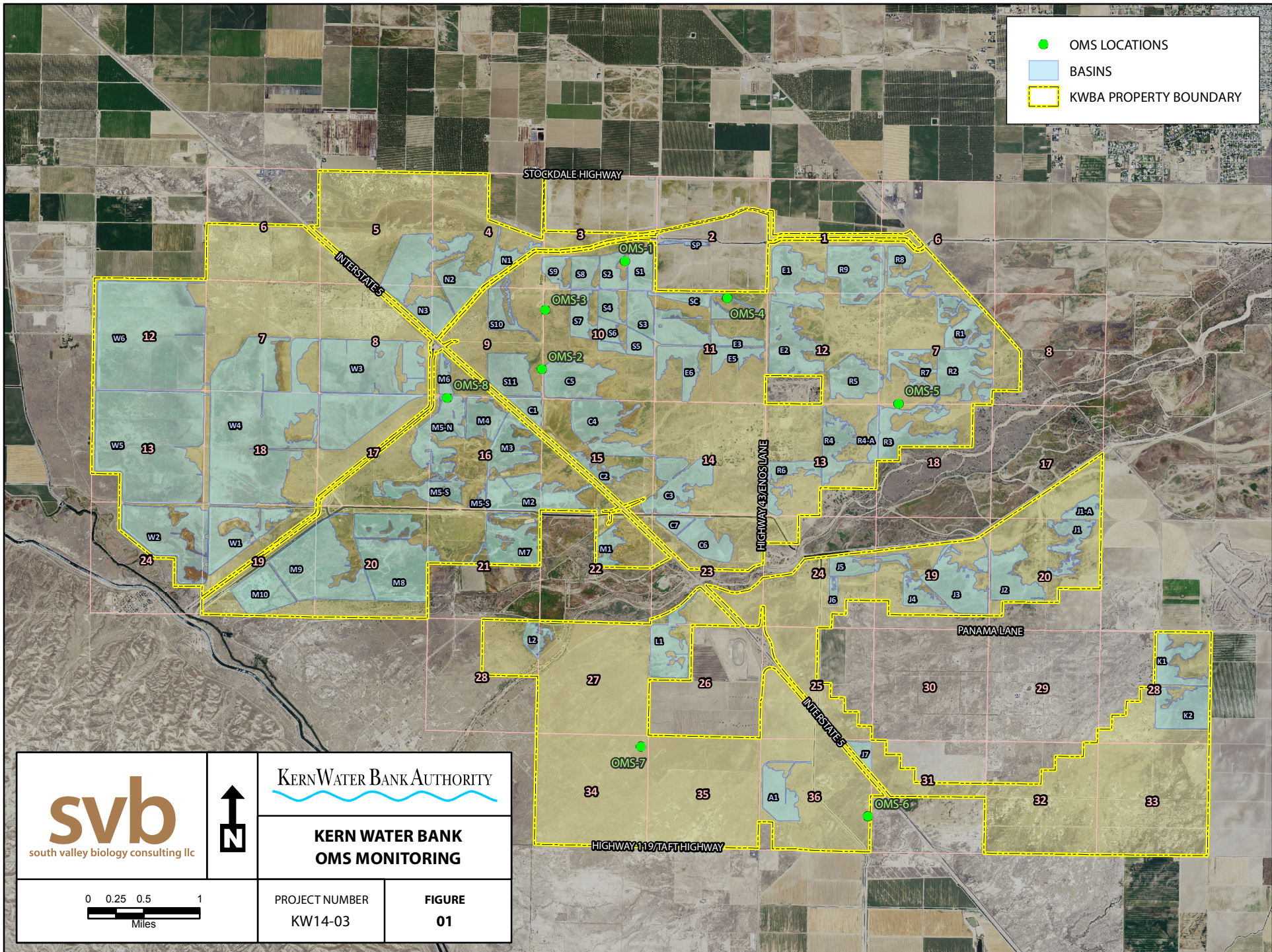
Meanwhile, although the KWB experienced its third consecutive year of below normal precipitation, the pattern of the rainfall made for favorable conditions in some areas for the germination and growth of Russian thistle (*Salsola tragus*). Trying to control Russian thistle has long been a persistent problem at the KWB. The low rainfall early in the 2014 season led to very little germination and growth of herbaceous plants that would have otherwise provided good ground cover and competition against Russian thistle. The open, bare ground that resulted from the low rainfall likely made it easier for Russian thistle to compete. Then, when a few small storms occurred in March, April, and May, bringing nearly one full inch of rain, Russian thistle was beginning to dominate the landscape over large portions of the Strand and South Areas in particular. Because of this bloom of Russian thistle, the thought of returning some cattle to the two most problematic areas (the Strand and South Areas) in an effort to combat the abundant growth of this troublesome weed seemed worth of consideration. Range conditions were such that were it not for the abundant growth of Russian thistle in these areas, cattle grazing would not be considered. However, the grazer (RCJ Cattle Company) indicated that they had cattle that were accustomed to desert grazing and it was thought that these cattle would graze on not only the newly growing Russian thistle but that they may very well eat some of the older plants that had started to produce seed. It was therefore determined that a relatively small number of head would be returned to these areas and monitored closely to determine that they would graze the Russian thistle plants and not cause any unforeseen damage to trees or shrubs.

A total of 41 AU were returned to the South Area on April 28, 2014. These cattle remained in the South Area for just over a month grazing on Russian thistle until May 31, when all of the cattle were removed. The Strand Area is much larger than the South Area and the Strand Area is probably the most prone to Russian thistle explosions than most of the areas of the KWB. It was decided to try 135 AU in the Strand and these cattle were turned out in March of 2014 with the idea that they would be closely monitored to make sure they were in fact eating the Russian thistle and also that they were not damaging any of the Goodding's willows (*Salix gooddingii*) or other trees. Cattle remained in the Strand Area for the rest of the summer and into the fall. They definitely grazed heavily on the Russian thistle and in many areas cattle also topped the Russian knapweed (*Acroptilon repens*), which is also an undesirable non-native plant that can form dense stands in the summer and fall at the KWB. Photographs 13 - 16 illustrate cattle effectively grazing on Russian thistle Russian knapweed in the South and Strand Areas.




Although cattle definitely grazed the Russian thistle and Russian knapweed, it is difficult to state to what degree the grazing may have been effective at reducing the seed production of these plants. This is largely because the plants were not completely removed by the cattle, rather the cattle appeared to primarily eat the outer portions of

most plants, probably because these would be the more palatable portions. Regardless, it is reasonable to assume that at a minimum, the grazed plants did not reach the size and vigor that they might otherwise have achieved were it not for being grazed, and this likely translated into less seed production for these plants.

At the time of the completion of this report, the 2014 - 2015 rain season has proven to be much better than the 2013 - 2014 rain year with over 5 inches of precipitation accumulating. Although that is still below normal, it has resulted in significantly higher primary production than any of the three prior years. However, there were significant storms in April and May that may benefit non-native summer and fall blooming species such as Russian thistle, as many of the native and desirable non-native herbaceous plants have already completed their growing season by the end of April. Cattle were turned out onto several of the areas at KWB beginning in mid-February when it was clear that abundant growth was occurring. Cattle are expected to continue to graze all areas of the KWB to help reduce the rank vegetation growth and to graze on Russian thistle plants in order to help reduce seed set and possibly lessen the severity of possible future infestations.



- OMS LOCATIONS
- BASINS
- KWBA PROPERTY BOUNDARY

		<p>KERN WATER BANK AUTHORITY</p> <hr style="border: 0; border-top: 1px solid blue; width: 100%;"/> <p><b>KERN WATER BANK OMS MONITORING</b></p>	
	<p>PROJECT NUMBER KW14-03</p>	<p>FIGURE <b>01</b></p>	
<p>0 0.25 0.5 1 Miles</p> 			





**Photograph 1.** Pond basin in Strand Area on March 7, 2014. No visible herbaceous growth.



**Photograph 2.** Same area as shown in Photograph 1 on April 9, 2014. Only the trees show any growth.



**Photograph 3.** Same area as shown on September 9, 2014. Again, only the trees show any growth.



**Photograph 4.** Same area as shown on November 7, 2014. Essentially no growth of herbaceous plants occurred throughout the season.



**Photograph 5.** Sensitive habitat sector in the Southeast Area on March 12, 2014. No visible germination or growth of herbaceous plants.



**Photograph 6.** Same area as shown in Photograph 5 on April 23, 2014. The only visible growth is from the honey mesquite and some of the allscale shrubs.



**Photograph 7.** Same area on September 5, 2014. Visibly more growth on some of the allscale shrubs, but even the honey mesquite is losing much of its foliage.



**Photograph 8.** Same area on November 7, 2014. Very little change from what was observed at the site on September 5, 2014.



**Photograph 9.** Area within the conservation bank sector of the KWB on March 7, 2014. No germination or growth of any herbaceous plants observed.



**Photograph 10.** Same area as shown in Photograph 9 on April 23, 2014. Still no visible growth observed, other than some Russian thistle plants are germinating and growing, mostly along the road edges.



**Photograph 11.** Same area on September 5, 2014. Conditions are similar to what was observed on April 23, 2014.



**Photograph 12.** Same area on November 7, 2014. Essentially identical conditions prevailed throughout the year.



**Photograph 13.** Cattle grazing on Russian thistle in the Strand Area in August of 2014.



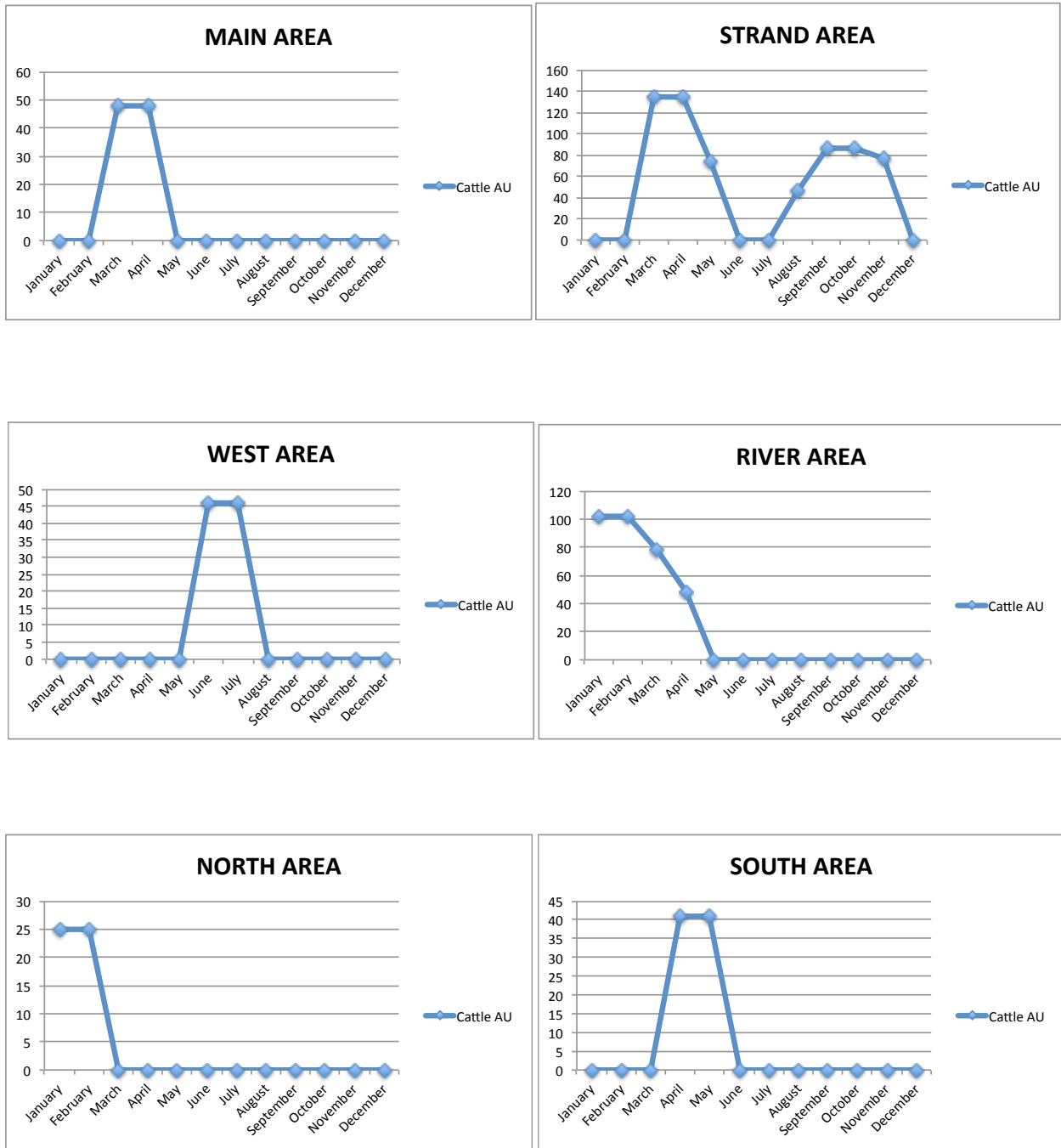
**Photograph 14.** Cow eating a mature tumbleweed within a pond basin.



**Photograph 15.** Grazed Russian thistle plant. This was often how the cattle would graze these mature plants, eating down to within a few inches of the ground but not eating the entire plant.



**Photograph 16.** Grazed Russian knapweed plant. Cattle typically only ate the outer margins of knapweed, including the flowers.



**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 2014.

**ATTACHMENT 1**

Kern Water Bank 2014 Observation Monitoring Program Site Observations

# KERN WATER BANK 2014 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

<b>1ST QUARTER</b>	SURVEY DATE: 03/03/2014 TIME: 9:15 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.90 IN WIND DIRECTION: NW WIND VELOCITY: 3 MPH TEMPERATURE: 62 F HUMIDITY: 55%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: CARPET OF TINY SEEDLING (UNIDENTIFIED) COVERING THE GROUND. PROBABLY REDSTEM FILAREE, GRASSES, AND SPIKERUSH. WILDLIFE PRESENT: CALIFORNIA GROUND SQUIRREL, MOURNING DOVE, RED-TAILED HAWK. PLANTS PRESENT: ELEOCHARIS MACROSTACHYA, SALIX GOODDINGII, TYPHA LATIFOLIA.				

<b>2ND QUARTER</b>	SURVEY DATE: 04/09/2014 TIME: 10:03 AM MONITOR(S): J. JONES RAINFALL TO DATE: 1.40 IN WIND DIRECTION: NW WIND VELOCITY: 2 MPH TEMPERATURE: 75 F HUMIDITY: 35%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: NO TUMBLEWEED GERMINATING. WILDLIFE PRESENT: CALIFORNIA GROUND SQUIRREL, MOURNING DOVE, RAVEN, SCRUB JAY, WESTERN KINGBIRD. PLANTS PRESENT: ELEOCHARIS MACROSTACHYA, ERODIUM CICUTARIUM, HELIOTROPIUM CURASSAVICUM, SALIX GOODDINGII, TYPHA LATIFOLIA.				

<b>3RD QUARTER</b>	SURVEY DATE: 09/05/2014 TIME: 11:30 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 1.45 IN WIND DIRECTION: NW WIND VELOCITY: 6 MPH TEMPERATURE: 90 F HUMIDITY: 30%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: BARE GROUND, ONLY REAL PLANTS ARE WILLOW TREES. WILDLIFE PRESENT: COTTONTAIL. PLANTS PRESENT: SALIX GOODDINGII.				

<b>4TH QUARTER</b>	SURVEY DATE: 11/07/2014 TIME: 10:26 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.65 IN WIND DIRECTION: NW WIND VELOCITY: 1.3 MPH TEMPERATURE: 72 F HUMIDITY: 54%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: GROUND IS MOSTLY BARE, BUT ABUNDANT GERMINATION OF ANNUAL PLANTS EVIDENT IN COTYLEDON STAGE. REDSTEM FILAREE IS IDENTIFI- ABLE BUT OTHERS ARE TOO IMMATURE. WILDLIFE PRESENT: BLACK PHOEBE, CALIFORNIA GROUND SQUIRREL. PLANTS PRESENT: ELEOCHARIS MACROSTACHYA, ERODIUM CICUTARIUM, SALIX GOODDINGII.				

# KERN WATER BANK 2014 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	<p> <b>SURVEY DATE:</b> 03/07/2014  <b>TIME:</b> 10:07 AM  <b>MONITOR(S):</b> J. JONES  <b>RAINFALL TO DATE:</b> 0.90 IN  <b>WIND DIRECTION:</b> NW  <b>WIND VELOCITY:</b> 5 MPH  <b>TEMPERATURE:</b> 62 F  <b>HUMIDITY:</b> 57%                 </p> <p> <b>NOTES:</b> BOTTOM OF DITCH RECENTLY BURNED TO CLEAR TUMBLEWEEDS AND OTHER WEEDS. DITCH BOTTOM IS BARE, NEW VEGETATION GROWING ON BANKS.  <b>WILDLIFE PRESENT:</b> LOGGERHEAD SHIRKE, MOURNING DOVE.  <b>PLANTS PRESENT:</b> HELIOTROPIUM CURASSAVICUM, LEYMUS TRITICOIDES, SALIX GOODDINGII.                 </p>	NORTH	EAST	SOUTH	WEST
2ND QUARTER	<p> <b>SURVEY DATE:</b> 04/09/2014  <b>TIME:</b> 10:40 AM  <b>MONITOR(S):</b> J. JONES  <b>RAINFALL TO DATE:</b> 1.40 IN  <b>WIND DIRECTION:</b> NW  <b>WIND VELOCITY:</b> 3 MPH  <b>TEMPERATURE:</b> 81 F  <b>HUMIDITY:</b> 31%                 </p> <p> <b>NOTES:</b> NO TUMBLEWEEDS GERMINATED.  <b>WILDLIFE PRESENT:</b>  <b>PLANTS PRESENT:</b> HELIOTROPIUM CURASSAVICUM, JUNCUS BALTICUS, LEYMUS TRITICOIDES, SALIX GOODDINGII.                 </p>	NORTH	EAST	SOUTH	WEST
3RD QUARTER	<p> <b>SURVEY DATE:</b> 09/05/2014  <b>TIME:</b> 11:45 AM  <b>MONITOR(S):</b> J. JONES, Z. BRISCO  <b>RAINFALL TO DATE:</b> 1.45 IN  <b>WIND DIRECTION:</b> NW  <b>WIND VELOCITY:</b> 4 MPH  <b>TEMPERATURE:</b> 94 F  <b>HUMIDITY:</b> 27%                 </p> <p> <b>NOTES:</b> DITCH BOTTOM MOSTLY BARE SOILS.  <b>WILDLIFE PRESENT:</b> FALCON.  <b>PLANTS PRESENT:</b> BASSIA HYSSOPIFOLIA, HELIOTROPIUM CURASSAVICUM, SALIX GOODDINGII, SALSOLA TRAGUS.                 </p>	NORTH	EAST	SOUTH	WEST
4TH QUARTER	<p> <b>SURVEY DATE:</b> 11/07/2014  <b>TIME:</b> 10:48 AM  <b>MONITOR(S):</b> J. JONES  <b>RAINFALL TO DATE:</b> 0.65 IN  <b>WIND DIRECTION:</b> NW  <b>WIND VELOCITY:</b> 1.2 MPH  <b>TEMPERATURE:</b> 71 F  <b>HUMIDITY:</b> 52%                 </p> <p> <b>NOTES:</b> GROUND IS MOSTLY BARE, WITH ELEOCHARIS AND LEYMUS STARTING TO GROW.  <b>WILDLIFE PRESENT:</b> ROADRUNNER.  <b>PLANTS PRESENT:</b> BASSIA HYSSOPIFOLIA, ELEOCHARIS MACROSTACHYA, HELIOTROPIUM CURASSAVICUM, LEYMUS TRITICOIDES, SALIX GOODDINGII, SALSOLA TRAGUS.                 </p>	NORTH	EAST	SOUTH	WEST



# KERN WATER BANK 2014 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

<b>1ST QUARTER</b>	SURVEY DATE: 03/07/2014 TIME: 09:55 PM MONITOR(S): J. JONES RAINFALL TO DATE: 0.90 IN WIND DIRECTION: NW WIND VELOCITY: 1 MPH TEMPERATURE: 64 F HUMIDITY: 55%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: REDSTEM FILAREE AND GRASSES ARE GERMINATING (COTYLEDONS ONLY). GROUND IS MOSTLY BARE FROM LACK OF RAIN. A FEW KANGAROO RAT BURROWS AND SCRATCHES. WILDLIFE PRESENT: PLANTS PRESENT: ERODIUM CICUTARIUM.				

<b>2ND QUARTER</b>	SURVEY DATE: 04/09/2014 TIME: 10:25 AM MONITOR(S): J. JONES RAINFALL TO DATE: 1.40 IN WIND DIRECTION: NW WIND VELOCITY: 2 MPH TEMPERATURE: 80 F HUMIDITY: 30%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: GERMINATING AND YOUNG TUMBLEWEEDS LOOK TO BE DOMINANT. WILDLIFE PRESENT: RAVEN, RED-TAILED HAWK. PLANTS PRESENT: ACROPTILON REPENS, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, SALSOLA TRAGUS.				

<b>3RD QUARTER</b>	SURVEY DATE: 09/05/2014 TIME: 11:40 AM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 1.45 IN WIND DIRECTION: N WIND VELOCITY: 8 MPH TEMPERATURE: 95 F HUMIDITY: 27%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: BARE SOILS AND A FEW TUMBLEWEEDS. A FEW KANGAROO RAT BURROWS THAT APPEAR TO BE ACTIVE. WILDLIFE PRESENT: PLANTS PRESENT: ISOCOMA ACRADENIA, SALSOLA TRAGUS.				

<b>4TH QUARTER</b>	SURVEY DATE: 11/07/2014 TIME: 10:39 AM MONITOR(S): J. JONES RAINFALL TO DATE: 0.65 IN WIND DIRECTION: NW WIND VELOCITY: 2.5 MPH TEMPERATURE: 71 F HUMIDITY: 56%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	NOTES: GROUND IS BARE WITH ONLY VERY WIDELY SCATTERED PATCHES OF TUMBLEWEEDS. WILDLIFE PRESENT: RED-TAILED HAWK. PLANTS PRESENT: ISOCOMA ACRADENIA, SALSOLA TRAGUS.				

# KERN WATER BANK 2014 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

<b>1ST QUARTER</b>	<b>SURVEY DATE:</b> 03/07/2014 <b>TIME:</b> 10:42 AM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.90 IN <b>WIND DIRECTION:</b> W <b>WIND VELOCITY:</b> 7 MPH <b>TEMPERATURE:</b> 65 F <b>HUMIDITY:</b> 50%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> GROUND IS BARE. HELIOTROPE IS GERMINATING IN PLACES. <b>WILDLIFE PRESENT:</b> HOUSE FINCH, NORTHERN HARRIER. <b>PLANTS PRESENT:</b> HELIOTROPIUM CURASSAVICUM.				

<b>2ND QUARTER</b>	<b>SURVEY DATE:</b> 04/09/2014 <b>TIME:</b> 12:22 PM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 1.40 IN <b>WIND DIRECTION:</b> N <b>WIND VELOCITY:</b> 5 MPH <b>TEMPERATURE:</b> 84 F <b>HUMIDITY:</b> 28%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> TOP OF BANKS HAVE PATCHY TUMBLEWEED GROWING. <b>WILDLIFE PRESENT:</b> WESTERN KINGBIRD. <b>PLANTS PRESENT:</b> HELIOTROPIUM CURASSAVICUM, HIRSCHFELDIA INCANA, SALSOLA TRAGUS.				

<b>3RD QUARTER</b>	<b>SURVEY DATE:</b> 09/05/2014 <b>TIME:</b> 12:15 PM <b>MONITOR(S):</b> J. JONES, Z. BRISCO <b>RAINFALL TO DATE:</b> 1.45 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 4 MPH <b>TEMPERATURE:</b> 93 F <b>HUMIDITY:</b> 28%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> MOSTLY BARE GROUND. <b>WILDLIFE PRESENT:</b> <b>PLANTS PRESENT:</b> HELIOTROPIUM CURASSAVICUM, SALSOLA TRAGUS.				

<b>4TH QUARTER</b>	<b>SURVEY DATE:</b> 11/07/2014 <b>TIME:</b> 10:05 AM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.65 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 2 MPH <b>TEMPERATURE:</b> 70 F <b>HUMIDITY:</b> 59%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> GROUND IS MOSTLY BARE WITH WIDELY SCATTERED HELIOTROPE CLUMPS AND TUMBLEWEEDS. <b>WILDLIFE PRESENT:</b> AMERICAN KESTREL, HORNED LARK. <b>PLANTS PRESENT:</b> HELIOTROPIUM CURASSAVICUM, PHYLLOSTACHYS NODIFLORA, SALSOLA TRAGUS.				

# KERN WATER BANK 2014 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

<b>1ST QUARTER</b>	<b>SURVEY DATE:</b> 03/07/2014 <b>TIME:</b> 11:08 AM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.90 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 7 MPH <b>TEMPERATURE:</b> 63 F <b>HUMIDITY:</b> 46%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<p> <b>NOTES:</b> GROUND IS BARE WITH GERMINATING REDSTEM FILAREE. OTHER PLANTS JUST STARTING. OCCASIONAL KANGAROO RAT BURROWS.  <b>WILDLIFE PRESENT:</b> NORTHERN HARRIER  <b>PLANTS PRESENT:</b> ERODIUM CICUTARIUM, PROSOPIS GLANDULOSA VAR. TORREYANA.                 </p>				

<b>2ND QUARTER</b>	<b>SURVEY DATE:</b> 04/09/2014 <b>TIME:</b> 01:38 PM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 1.40 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 2 MPH <b>TEMPERATURE:</b> 89 F <b>HUMIDITY:</b> 22%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<p> <b>NOTES:</b> GROUND IS BARE WITH DRYING SMALL SCHISMAS AND REDSTEM FILAREE. NO TUMBLEWEEDS OBSERVED.  <b>WILDLIFE PRESENT:</b> RAVEN, SIDE-BLOTHCHED LIZARD  <b>PLANTS PRESENT:</b> ERODIUM CICUTARIUM, PROSOPIS GLANDULOSA VAR. TORREYANA, SCHISMUS ARABICUS.                 </p>				

<b>3RD QUARTER</b>	<b>SURVEY DATE:</b> 09/05/2014 <b>TIME:</b> 11:13 AM <b>MONITOR(S):</b> J. JONES, Z. BRISCO <b>RAINFALL TO DATE:</b> 1.45 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 6 MPH <b>TEMPERATURE:</b> 89 F <b>HUMIDITY:</b> 30%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<p> <b>NOTES:</b> BARE SOIL, OCCASIONAL MESQUITE AND JIMSON WEED. VERY FEW INACTIVE KANGAROO RAT BURROWS.  <b>WILDLIFE PRESENT:</b>  <b>PLANTS PRESENT:</b> DATURA WRIGHTII, PROSOPIS GLANDULOSA VAR. TORREYANA.                 </p>				

<b>4TH QUARTER</b>	<b>SURVEY DATE:</b> 11/07/2014 <b>TIME:</b> 11:35 AM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.65 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 1.5 MPH <b>TEMPERATURE:</b> 72 F <b>HUMIDITY:</b> 53%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<p> <b>NOTES:</b> GROUND IS BARE, BUT THERE ARE MANY SMALL GERMINATING ANNUAL PLANTS IN COTYLEDON STAGE.  <b>WILDLIFE PRESENT:</b> RAVEN  <b>PLANTS PRESENT:</b> DATURA WRIGHTII, ERODIUM CICUTARIUM, PROSOPIS GLANDULOSA VAR. TORREYANA.                 </p>				

# KERN WATER BANK 2014 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

<b>1ST QUARTER</b>	<b>SURVEY DATE:</b> 03/12/2014 <b>TIME:</b> 12:15 PM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.90 IN <b>WIND DIRECTION:</b> N <b>WIND VELOCITY:</b> 11 MPH <b>TEMPERATURE:</b> 75 F <b>HUMIDITY:</b> 22%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

**NOTES:** NO EVIDENCE OF GERMINATION OF HERBS DUE TO LOW RAIN. GROUND IS BARE BETWEEN SHRUBS.  
**WILDLIFE PRESENT:** LOGGERHEAD SHIRKE, RAVEN.  
**PLANTS PRESENT:** ATRIPLEX POLYCARPA, BROMUS RUBENS, ERODIUM CICUTARIUM, PROSOPIS GLANDULOSA VAR. TORREYANA.

<b>2ND QUARTER</b>	<b>SURVEY DATE:</b> 04/23/2014 <b>TIME:</b> 01:00 PM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 1.40 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 8 MPH <b>TEMPERATURE:</b> 68 F <b>HUMIDITY:</b> 32%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

**NOTES:** NO HERBACEOUS PLANTS GROWING.  
**WILDLIFE PRESENT:** RAVEN, SIDE-BLOTCHED LIZARD.  
**PLANTS PRESENT:** ATRIPLEX POLYCARPA, PROSOPIS GLANDULOSA VAR. TORREYANA.

<b>3RD QUARTER</b>	<b>SURVEY DATE:</b> 09/05/2014 <b>TIME:</b> 10:30 AM <b>MONITOR(S):</b> J. JONES, Z. BRISCO <b>RAINFALL TO DATE:</b> 1.45 IN <b>WIND DIRECTION:</b> N <b>WIND VELOCITY:</b> 1.5 MPH <b>TEMPERATURE:</b> 85 F <b>HUMIDITY:</b> 28%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

**NOTES:** NO LIVING HERBACEOUS PLANTS. KANGAROO RAT BURROWS DO NOT APPEAR TO BE ACTIVE.  
**WILDLIFE PRESENT:**  
**PLANTS PRESENT:** ATRIPLEX POLYCARPA, PROSOPIS GLANDULOSA VAR. TORREYANA.

<b>4TH QUARTER</b>	<b>SURVEY DATE:</b> 11/07/2013 <b>TIME:</b> 12:30 PM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.65 IN <b>WIND DIRECTION:</b> W <b>WIND VELOCITY:</b> 2.8 MPH <b>TEMPERATURE:</b> 75 F <b>HUMIDITY:</b> 47%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

**NOTES:** BARE GROUND BETWEEN SHRUBS AND MESQUITES.  
**WILDLIFE PRESENT:** WESTERN MEADOWLARK  
**PLANTS PRESENT:** ATRIPLEX POLYCARPA, PROSOPIS GLANDULOSA VAR. TORREYANA.

# KERN WATER BANK 2014 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

<b>1ST QUARTER</b>	<p> <b>SURVEY DATE:</b> 03/07/2014  <b>TIME:</b> 12:05 PM  <b>MONITOR(S):</b> J. JONES  <b>RAINFALL TO DATE:</b> 0.90 IN  <b>WIND DIRECTION:</b> W  <b>WIND VELOCITY:</b> 4 MPH  <b>TEMPERATURE:</b> 65 F  <b>HUMIDITY:</b> 49%                 </p> <p> <b>NOTES:</b> GROUND IS BARE WITH REDSTEM FILAREE AND OTHER HERBS GERMINATING.  <b>WILDLIFE PRESENT:</b> LOGGERHEAD SHIRKE, RAVEN.  <b>PLANTS PRESENT:</b> BROMUS RUBENS, ERODIUM CICUTARIUM.                 </p>	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

<b>2ND QUARTER</b>	<p> <b>SURVEY DATE:</b> 04/23/2014  <b>TIME:</b> 11:25 AM  <b>MONITOR(S):</b> J. JONES  <b>RAINFALL TO DATE:</b> 1.40 IN  <b>WIND DIRECTION:</b> W  <b>WIND VELOCITY:</b> 2 MPH  <b>TEMPERATURE:</b> 68 F  <b>HUMIDITY:</b> 34%                 </p> <p> <b>NOTES:</b> RUSSIAN THISTLE GERMINATING AND GROWING OVER MUCH OF THE AREA. GRAZING MAY BE NEEDED.  <b>WILDLIFE PRESENT:</b>  <b>PLANTS PRESENT:</b> ERODIUM CICUTARIUM, SALSOLA TRAGUS, SCHISMUS ARABICUS, SISYMBRIUM IRIO.                 </p>	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

<b>3RD QUARTER</b>	<p> <b>SURVEY DATE:</b> 09/05/2014  <b>TIME:</b> 10:55 AM  <b>MONITOR(S):</b> J. JONES, Z. BRISCO  <b>RAINFALL TO DATE:</b> 1.45 IN  <b>WIND DIRECTION:</b> N  <b>WIND VELOCITY:</b> 10 MPH  <b>TEMPERATURE:</b> 87 F  <b>HUMIDITY:</b> 28%                 </p> <p> <b>NOTES:</b> ONLY VISIBLE HERBACEOUS PLANTS ARE TUMBLEWEEDS AND JIMSON WEEDS. KANGAROO RAT BURROWS DO NOT APPEAR TO BE ACTIVE.  <b>WILDLIFE PRESENT:</b>  <b>PLANTS PRESENT:</b> DATURA WRIGHTII, SALSOLA TRAGUS.                 </p>	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

<b>4TH QUARTER</b>	<p> <b>SURVEY DATE:</b> 11/07/2014  <b>TIME:</b> 11:55 AM  <b>MONITOR(S):</b> J. JONES  <b>RAINFALL TO DATE:</b> 0.65 IN  <b>WIND DIRECTION:</b> NW  <b>WIND VELOCITY:</b> 2.8MPH  <b>TEMPERATURE:</b> 73 F  <b>HUMIDITY:</b> 47%                 </p> <p> <b>NOTES:</b> GROUND IS BARE, WITH WIDELY SCATTERED TUMBLEWEED PATCHES.  <b>WILDLIFE PRESENT:</b>  <b>PLANTS PRESENT:</b> DATURA WRIGHTII, SALSOLA TRAGUS.                 </p>	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>

# KERN WATER BANK 2014 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

<b>1ST QUARTER</b>	<b>SURVEY DATE:</b> 03/07/2014 <b>TIME:</b> 10:32 AM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.90 IN <b>WIND DIRECTION:</b> N <b>WIND VELOCITY:</b> 8 MPH <b>TEMPERATURE:</b> 63 F <b>HUMIDITY:</b> 51%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> SEVERAL KANGROO RAT BURROWS <b>WILDLIFE PRESENT:</b> KILLDEER, COYOTE. <b>PLANTS PRESENT:</b> ACROPTILON REPENS, CYNODON DACTYLON, ELEOCHARIS MACROSTACHYA, HELIOTROPUM CURASSAVICUM, JUNCUS BALTICUS, LYTHRUM CALIFORNICUM, PHLYA NODIFLORA, SALIX GOODDINGII, TYPHA LATIFOLIA.				

<b>2ND QUARTER</b>	<b>SURVEY DATE:</b> 04/09/2014 <b>TIME:</b> 11:00 AM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 1.40 IN <b>WIND DIRECTION:</b> N <b>WIND VELOCITY:</b> 3 MPH <b>TEMPERATURE:</b> 83 F <b>HUMIDITY:</b> 26%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> NO TUMBLEWEEDS IN POND HAVE GERMINATED. <b>WILDLIFE PRESENT:</b> CLIFF SWALLOW, HOUSE FINCH, LOGGERHEAD SHRIKE, MOURNING DOVE. <b>PLANTS PRESENT:</b> ACROPTILON REPENS, CYNODON DACTYLON, ELEOCHARIS MACROSTACHYA, HELIOTROPUM CURASSAVICUM, JUNCUS BALTICUS, LYTHRUM CALIFORNICUM, PHLYA NODIFLORA, SALIX GOODDINGII, TYPHA LATIFOLIA.				

<b>3RD QUARTER</b>	<b>SURVEY DATE:</b> 09/05/2014 <b>TIME:</b> 12:00 PM <b>MONITOR(S):</b> J. JONES, Z. BRISCO <b>RAINFALL TO DATE:</b> 1.45 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 4 MPH <b>TEMPERATURE:</b> 91 F <b>HUMIDITY:</b> 28%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> NO KANGAROO RAT BURROWS. <b>WILDLIFE PRESENT:</b> KILLDEER, MOURNING DOVE, RAVEN. <b>PLANTS PRESENT:</b> ACROPTILON REPENS, BASSIA HYSSOPIHOLIA, HELIANTHUS ANNUUS, HELIOTROPUM CURASSAVICUM, PHLYA NODIFLORA, SALIX GOODDINGII.				

<b>4TH QUARTER</b>	<b>SURVEY DATE:</b> 11/07/2014 <b>TIME:</b> 11:05 AM <b>MONITOR(S):</b> J. JONES <b>RAINFALL TO DATE:</b> 0.65 IN <b>WIND DIRECTION:</b> NW <b>WIND VELOCITY:</b> 1.2 MPH <b>TEMPERATURE:</b> 73 F <b>HUMIDITY:</b> 50%	<b>NORTH</b>	<b>EAST</b>	<b>SOUTH</b>	<b>WEST</b>
	<b>NOTES:</b> GROUND IS LARGELY BARE WITH SCATTERED PHLYA CLUMPS. <b>WILDLIFE PRESENT:</b> GREAT BLUE HERON, WHITE-CROWNED SPARROW. <b>PLANTS PRESENT:</b> ACROPTILON REPENS, HELIANTHUS ANNUUS, PHLYA NODIFLORA, SALIX GOODDINGII, TYPHA LATIFOLIA.				